



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.
SECTOR 12 — CHART INFORMATION

SECTOR 12

NEW ZEALAND—WEST AND EAST COASTS OF SOUTH ISLAND

Plan.—This sector describes the W and E coasts of South Island, excluding Cook Strait, which is described beginning in paragraph 11.19. The narrative begins with a description of the W shore of South Island from Cape Farewell SW to Foveaux Strait. The E shore is the described from Cape Campbell, the NE extremity of South Island, to the E entrance of Foveaux Strait.

General Remarks

12.1 The W shore of South Island from Cape Farewell, which is described in paragraph 11.26, SSW to the entrance of **Milford Sound** (44°34'S., 167°47'E.), is largely unfriendly and unremarkable affording little shelter. The only harbors along this stretch of coast, Westport and Greymouth, become impassable during heavy W weather.

The generally featureless aspect of this coast changes somewhat between Cape Foulwind, about 94 miles SW of Cape Farewell, and Cascade Point, about 196 miles further SW. However, two readily identifiable marks are the gorge of the Grey River and Mount Cook. The gorge of the Grey River, from the S, appears as a well-defined cut in a steep coast. Mount Cook, the highest peak in New Zealand, lies 80 miles SW of the river's mouth. Mount Cook is a remarkable snow-clad summit of the Great Southern Alps, and it will be seen, from the W, in two separate peaks, the higher, Mount Cook, the lower, Mount Tasman. The bases of these mountains are usually enveloped in clouds.

A prominent bare ridge, 237m high, lies about 3.7 miles SW of Cape Farewell; there is a landslip at its N end.

Except for the approaches to Westport and Greymouth, charts of the W coast of South Island, from the Karamea River to Charles Sound, are based on old and imperfect surveys. Mariners without local knowledge should exercise caution when navigating in sparsely sounded areas, particularly when approaching the coast in depths less than 37m.

Winds—Weather.—The SW winds on this part of the coast generally shift to the W and draw into Cook Strait after passing Cape Farewell.

Tides—Currents.—The tide rises highest with E winds and lowest with W winds. The flood current begins 3 hours before HW and runs to the SW, parallel with the coast, as far as West Haven Inlet, at a rate of 0.5 to 2 knots. The ebb current begins 3 hours before LW. South of Cascade Point, between September and November, a SW set which attains a rate of 1 knot predominates.

Caution.—A voluntary code of shipping routes around the New Zealand coast, to reduce the potential for pollution of the marine environment, has been introduced. For further information, see Pub. 120, Sailing Directions (Planning Guide) Pacific Ocean and Southeast Asia.

South Island—West Coast

12.2 Whanganui Inlet is entered between Bar Point and South Cone Head; the entrance is easily recognized as both entrance points are conspicuous. South Cone Head shows up as a yellow, cliffy, and cone-shaped summit, 203m high. A bar, with a depth of 1.8m, which has not been thoroughly investigated, fronts the entrance.

Anchorage.—Anchorage for small vessels with local knowledge, but which is accessible only in moderate to good weather, is available, in a depth of 7.3m, about 1 mile above the entrance.

Grey Cliffs, with a prominent landslide scar in the middle, lies about 12 miles SW of the entrance to Whanganui Inlet; the shore between is rocky with sandy beaches backed by high, rough, broken ground covered with bush.

Kahurangi Point (40°46'S., 172°13'E.) is scrub-covered, with a remarkable white patch on its N face. A submerged rock lies about 0.5 mile WNW of the point and depths of less than 11m extend about 1 mile N from the point.

Caution.—Paturau Bank, comprised of patches with depths of 34.7 to 36.6m, lies about 11 miles W of the entrance to Whangerai Inlet. Paturau Shoal, with a depth of 9.7m, lies about 5.5 miles ESE of Paturau Bank.

Kahurangi Shoals, with a least depth of about 7.6m and Stewart Rock at its center, lies about 5.5 miles NNW of Kahurangi Point. In rough weather, this shoal breaks heavily.

12.3 Rocks Point stands about 6 miles SW of Kahurangi Point; it forms the N entrance of Big Bay (Seal Bay). Big Bay is entered between Rocks Point and Steep Point, 2.2 miles SW.

Small vessels with local knowledge can obtain anchorage, in a depth of about 7.3m, about 1 mile S of Rocks Point. A reef extends about 0.4 mile NW from Rocks Point.

Wekakura Point lies about 10 miles SW of Kahurangi Point; the shore between is reef-fringed with shingle beaches in spots, backed by high ground with many gorges covered with vegetation.

Karamea Bight lies between Wekakura Point and Cape Foulwind, 59 miles SSW.

The **Karamea River** (41°15'S., 172°06'E.) empties out into the bight about 20.5 miles S of Wekakura Point. A conspicuous clearing stands about 3 miles NE of the river's mouth. The Karamea River is exposed to heavy seas from the W which break a considerable distance offshore. Vessels should not attempt to enter the river without extensive local knowledge. The bar is subject to changes in depths and direction. Because of shoaling in the entrance, the port was shut down.

Anchorage.—Anchorage may be found in good weather, in a depth of 11m, about 2 miles off the entrance to the river.

Little Wanganui Head lies about 9 miles SW of the entrance to the Karamea River; it forms the S entrance of the Little Wanganui River. From the head, a prominent line of cliffs rise

to heights of almost 457m, extending about 9.5 miles SW to the entrance of the Mokihinui River.

12.4 Old Man Rock, 29m high, stands nearly 5 miles SW of Little Wanganui Head. The sandy beach fronting this stretch of shore is covered with rocks from landslips.

The Mokihinui River empties out into the sea about 5 miles SW of Old Man Rock; it has a depth of 3 to 3.7m over the bar at HWS; 2.4 to 3m at neaps. Depths within the bar range from 1.8 to 2.1m at LW and local knowledge is essential for entry.

The Waimangaroa River empties out into Karamea Bight about 13 miles SW of the Mokihinui River. The town of Denniston, from which powerful lights are shown, lies about 3.5 miles SE of the river's entrance. A prominent TV mast, marked by red lights, stands on the summit of Mount Rochfort, 3.5 miles SW of Denniston.

Buller Bay (41°45'S., 171°32'E.) lies between the entrance of the Buller River and Cape Foulwind, about 5.5 miles WSW. From the entrance to the river, the shore for about 4 miles is fronted by a beach backed by low, swampy ground, with patches of gorge and scrub; then to Cape Foulwind it is comprised of sandy cliffs. Three conspicuous white chimneys, each 60m high, and two white silos of a cement works, at which powerful lights are shown, stand about 1.5 miles E of Cape Foulwind.

Westport Harbor (41°44'S., 171°36'E.)

World Port Index No. 55450

12.5 Westport Harbor lies at the mouth of the Buller River and it has a bar at its entrance. The entrance is formed by two breakwaters about 155m apart; farther in are three training walls. Vessels must not enter the port until clearance is given.

Dredging at the entrance bars can be expected day and night. Care must be taken to avoid fouling the dredge moorings. Masters should exercise caution in using anchors in the vicinity of the cement silos, as permanent moorings of heavy chains may be laid across the river bed at any point.

Passage over the bar is considered impracticable when the river is in flood or during a NW gale. In bad weather, the sea breaks heavily over the outer part of the bar.

Westport Harbor

<http://www.westpotharbour.co.nz>

Tides—Currents.—A N or E set may be experienced up to 1 mile offshore and attains a rate of 1 to 3 knots, while off the bar the flood sets W and the ebb sets E. The rate of the current is least about the time of HW and during 1 to 2 hours before and after HW. Meteorological effects may cause the above rates to be increased by as much as 2 knots. During river freshets, which may occur any time of the year, the river current in the harbor attains a rate of 8 to 10 knots. The tides rise highest with E winds and lowest with W winds.

Currents set across the bar according to the direction and force of the wind. Strong winds from the W and SW cause E sets with rates of up to 6 knots; E winds cause sets to the W with less effect.



Courtesy of David Barnes, Port Manager, Westport Harbor

Westport Harbor Entrance



Courtesy of David Barnes, Port Manager, Westport Harbor

Westport Harbor—Crane Wharf

The rise and fall of tide can be 3.6m.

Depths—Limitations.—Information regarding bar conditions and tides is communicated via blinker light, VHF radio-telephone, or fax upon request from the harbormaster.

Depths over the sand and shingle bar at the harbor entrance vary between 3.6m after heavy freshets, and 1.8m during extended spells of dry weather. It is dangerous for mariners without recent local knowledge to attempt to cross the bar. When weather conditions permit, dredging may take place on the bar as required. The harbor tide gauge shows automatically the depth over the bar and also records the scend.

The bar is only impracticable with a heavy NW gale or with a freshet in the river. With W winds a strong E set is experienced across the entrance, which, with the beam sea, make it difficult to keep on the range line. With NE winds, there is

occasionally a W set across the entrance, but of less strength than the above. In bad weather, the sea breaks heavily over the bar.

There are sufficient depths in the river for all vessels that can cross the bar. Vessels up to 120m in length can turn in the harbor at HWN provided they do not draw more than 5.4m forward. Vessels up to 130m in length can use the port, but there is only swinging room if drawing not more than 4.9m forward.

All vessels may, depending on the weather, bar, and draft conditions, enter, berth, or depart during hours of darkness. Vessels berth or unberth at or near HW.

Crane Wharf is a wooden type with a total berthage of 670m and depths of 5.8m alongside. There are six berths numbered sequentially from the N.

Merchandise Wharf, also wooden, lies 0.1 mile S of Crane Wharf; it is 213m long, with depths of 4.3 to 5.2m alongside. The bottom at both wharves is shingle.

Vessels berthing at Crane Wharf should be prepared for an upriver set during the flood, and a set onto the wharf at the seaward end and off the wharf at the upriver end.

Vessels up to 91m long lie at the wharves with their heads upriver. Vessels over 91m in length have to be swung before loading.

Aspect.—The Westport Harbor entrance faces N. Westport Airfield lies behind the E end of Carters Beach. The control tower and three radio masts stand on the W side of the airfield. Three conspicuous white chimneys, each 61m high, and two white silos of a cement works, at which powerful lights are shown, stand about 1.5 miles E of Cape Foulwind, which is described in paragraph 12.6, about 4 miles W of Westport.

The hospital chimney, 22m high, which is prominent, lies 1.5 miles SSE of the entrance to the Buller River. A clock tower stands nearly 0.5 mile SW of the chimney.

Pilotage.—Pilotage is compulsory. All vessels should notify the harbormaster of intention to enter 12 hours before arrival. No vessel must attempt to enter the port until authority to do so is received from the signal station. Pilots board vessels from a launch 2.1 miles N of Westport (West Breakwater) directional light. In the event of a pilot being unable to board, a vessel will be led through the bar.

Regulations.—Mariners are advised they must keep at least 1 mile off the entrance until making their approach to cross the bar. New Zealand authorities advise that the master of any vessel which touches the bar when outbound shall inform the harbormaster by radiotelephone, VHF channel 14, or blinker light, after the vessel is clear of the bar. This signal will be acknowledged by the harbormaster.

Signals.—A signal station, comprising a square concrete building fitted with a white signal mast, lies about 0.1 mile within the head of the W breakwater. Vessels can communicate with the station by blinker light or radiotelephone. The call sign is Westport Harbor.

There is a radar surveillance service at Westport and masters of vessels equipped with radiotelephone may request from the harbormaster's office, during conditions of restricted visibility, particulars of their bearing and range, as shown on the radar screen.

Advice from the harbormaster on bar conditions, depth of water, and the recommended route across the bar is available 24 hours by telephone (03) 788-8086 or mobil 021 959-279.

Anchorage.—Vessels can anchor in Buller Bay, in depths from 18.3 to 23.7m. A recommended berth lies 2 miles N of the signal station. However, caution must be exercised as there is poor holding ground E of the entrance to the harbor and in the SW part of Buller Bay. Vessels should be prepared to proceed to sea directly if winds come up from the W to N quarter; the anchorage in Buller Bay is unsafe during NW gales. A falling barometer and lightning W and SW of Westport are good indications of deteriorating weather.

The Quarantine Anchorage is bound by the arc of a circle, radius 2 miles, centered on the signal station or in such position as directed by the harbormaster.

Directions.—When within about 2.2 miles of the harbor entrance or on the harbormaster's advice, bring the main range lights into alignment. At night, wharf working lights, close to the line of the range lights, will be extinguished when the vessel has notified intention to enter.

After passing between the breakwater heads, vessels should then head for the inner range lights. By day, the wharves may be steered for when about 0.9 mile within the entrance, and at night, when the inner light on the E training wall changes from white to green. The directional light shown below the Main Harbor Light is directed so that its white sector indicates the best water over the bar.

12.6 Cape Foulwind (41°45'S., 171°28'E.), a conspicuous promontory, lies about 5.7 miles WSW of the entrance to the Buller River. The cape is faced by cliffs 40 to 52m high, and it is a salient promontory, off which several reefs and rocks lie. Cape Foulwind Light is prominent. A radio mast showing red lights stands close S of the light. Three Steeples, a group of rocks, the highest being 91m high, lie 1.7 miles N by E of Cape Foulwind Light; the area between is encumbered by rocks and shoals. Black Reef lies 0.5 mile S of Three Steeples. A rock, 3m high, lies about 0.6 mile SSW of Black Reef.

Buckland's Peaks, 1,309m high, rise at the N end of Paparoa Range, about 10.5 miles SE of Cape Foulwind. The higher summits of the Paparoa Range are snow-covered. From Cape Foulwind, the shore trends SSW for about 44 miles to the entrance to the Grey River, where the town and port of Grey-mouth are situated.

Perpendicular Point (42°06'S., 171°20'E.) lies about 21 miles SW of Cape Foulwind and is rock-fringed and bold, rising abruptly from the sea to a height of 366m. A range of mountains, with unusual jagged outlines, backs the shore, making this part of the shore very remarkable.

Caution.—Several dangers exist within an 8.5 mile radius of Perpendicular Point; caution should be exercised while navigating in this area.

Point Elizabeth (42°23'S., 171°13'E.), 35.4m high, represents the N end of the Twelve Apostles Range. From this notable limestone double bluff, 4 miles SSW, the shore is formed by a shingle beach. The shore 6.7 miles NNE from Point Elizabeth to Seventeen-Mile Bluff is formed by a shingle beach interspersed with reef-fringed stretches and backed by steep, bush-covered hills.

There are two lights shown about 0.2 mile N of Seventeen Mile Bluff, and these should not be mistaken for the lights at Greymouth.

Tides—Currents.—Between Cape Foulwind and Jacksons Bay, about 180 miles SW, the currents are affected by the prevailing winds. Northerly and NW winds raise the general level of the sea about 0.5m; while S and SW winds lower it about the same amount.

Greymouth Harbor (42°26'S., 171°13'E.)

World Port Index No. 55440

12.7 Greymouth Harbor, located on the S bank of the Grey River, has a bar at the entrance. This port is primarily used by coastal traffic. Mariners are warned not to enter Greymouth Harbor without first contacting the Greymouth Harbor Board by radio in order to ascertain the condition of depths on the bar and in the harbor. The principal exports are coal, timber, tuna, and ilmenite.

Tides—Currents.—There is a considerable set into the tidal lagoons at certain stages of the tides. As the current sets onto the wharf, where it curves, care must be taken when going alongside that the vessel is not swept on the wharves. The current attains rates of 2 knots at springs and 1.5 knots at neaps.

Vessels can experience a S set close to the harbor entrance.

Freshets, rising to a rate of more than 10 knots, are not infrequent in the Grey River, and 12 to 24 hours warning can usually be given. Vessels berth head upriver and, if alongside during a freshet, it is the practice to lay out extra lines forward and go ahead on main engines with revolutions for about 7 knots.

Depths—Limitations.—Depths over the sand bar change frequently, but vessels up to 5.5m draft, 109m in length, and 15.2m beam can enter the river under favorable conditions at MHWS.

Vessels may berth alongside or leave any wharf by day or night. The nature of bottom alongside all berths is shingle.

During dry weather, especially after SW winds, the bar is subject to silt up completely, but there is always a depth of at least 2.4m over it at LW. At such times, if there is any swell running outside, the bar quickly becomes unworkable and remains that way until the swell subsides or a freshet in the river washes the bar away.

There are dredged depths of 5.5m at the wharf which is 130m in length.

A dredge is frequently underway in the harbor; moorings may be laid out in several directions and care must be exercised when navigating in its vicinity.

Richmond Wharf, consisting of Berth No. 1 and Berth No. 2, has a length of 573m and depths of 5.2 to 6.1m alongside.

Pilotage.—Pilotage is not compulsory, but it is dangerous for mariners without recent local knowledge to attempt to cross the bar. If pilotage is required, vessels should forward their ETA 48 hours in advance of arrival at the port roadstead. Before attempting entry, contact must be established with Harbor Supervisor. The pilot boarding position is within 3 miles of the harbor entrance. Vessels wishing to enter or requiring assistance should contact Taupo Maritime Radio (ZLM).

Signals.—A disused signal station and flagstaff stand near the head of the S breakwater. Information regarding bar conditions, tides, and berths is communicated to ships by radiotelephone.

A red flag by day or a red light at night indicates the position on the wharf where a vessel's bridge should be placed alongside.

Anchorage.—There is good anchorage, in depths of 18.3 to 27.4m, about 3 miles W of the entrance of the Grey River. Vessels seldom anchor off Greymouth, as the roadstead is exposed to the prevailing wind.

The Quarantine Anchorage lies in the roadstead enclosed in a circle, with a radius of 2 miles from the signal station or where harbor authorities direct.

Directions.—The harbor should not be entered without local knowledge.

Vessels entering the harbor must guard against the general N set of the current outside. It is preferable to enter the harbor just after HW.

Vessels approach the Grey River with the range lights on Richmond Wharf in line, bearing 128.2°. The vessel should then pass between the breakwater heads, staying in the channel, which leads to the wharves.

The shore between Greymouth Harbor and Abut Head, about 58 miles SW, is mostly low, sandy, and featureless.

Caution.—Depths on the bar at the harbor entrance are subject to frequent change and it is dangerous for mariners without recent local knowledge to attempt to cross it. Mariners should contact the Grey District Council to ascertain the latest bar and harbor depths. A quick flashing blue light may be shown from the flagstaff on the S breakwater to warn that the bar is considered dangerous to cross.

Thick fog and strong winds can occur between the Grey River Gorge and the harbor entrance after a cool night. Generally, the range lights and beacons will be obscured by fog.

12.8 The **Hokitika River** (Brunner River) (42°43'S., 170°59'E.), with the town of the same name on the N side of the river's entrance, is navigable by shallow draft vessels with local knowledge for about 0.7 mile within the bar. The bar is frequently shifting its position and varying in depth. During W gales, a heavy sea rolls in on this shore. Sometimes even in good weather a heavy W swell rolls in, the effect of gales in the offing which do not reach the coast.

The harbor is no longer in use and all navigational aids have been removed. Red lights, shown from radio masts, stand on the S side of the river entrance. Two additional radio masts stand 0.2 mile SW of the above.

Ruatapu village, where there is a church, lies about 5.5 miles SSW of the entrance to the Hokitika River. The Mikonui River empties out into the sea about 2.7 miles SW of the entrance to the Totara River. Mount Greenland, 904m high, and Mount Rangitoto, 1,125m high, both heavily forested, rise 4.7 miles SE and 6.5 miles SSE, respectively, of the entrance to the Mikonui River.

Bold Head (42°56'S., 170°42'E.), a bush-covered bluff, 142.3m high, prominent from the NE or SW, lies about 3.2 miles SW of the entrance to the Mikonui River.

The Wanganui River is entered through a narrow entrance about 12 miles SW of Bold Head and it is only used by small

vessels with extensive local knowledge. A rather remarkable hill or headland close to the coast rises over the S bank of this river.

An ODAS buoy lies 22 miles NW of Wanganui Bluff.

Abut Head (43°06'S., 170°16'E.) is a strikingly bold headland, 51m high, that is fringed with rocks.

Waitahi Bluff (Waitaki Bluff), 44.5m high and white, lies about 2.7 miles SSW of Abut Head.

Okarito Harbor lies at the entrance of the Okarito Lagoon; it is only used by small craft with extensive local knowledge, as it is subject to extensive changes and it is occasionally completely closed. The tidal currents in the harbors entrance run quite strongly. The holding ground in the offing is very poor. At the village of Okarito there is a monument at the foot of a tree-covered hill on the S side of the lagoons entrance.

Kohuamarua Bluff (43°14'S., 170°10'E.) is a remarkable bush-covered promontory, 173m high, that lies about 1.7 miles SW of the entrance to the Okarito Lagoon.

12.9 The Wekeka River (43°26'S., 169°48'E.) is entered NE of Cooks Bluff. Cooks Bluff is very conspicuous and easily made out as it rises steeply from its inland side, ending in Malcolms Knob, a cliff, 129m high. The shore between Cooks Bluff and Karangarua Bluff, a yellow cliff, 51.2m high, about 2.5 miles SSW, is formed by sandy beaches, backed by steep, forested land. Between Karangarua Bluff and Tititira Head, 16 miles SW, the shore is indented by several indentations. The projecting bluffs, which separate the indentations, have the appearance from sea of islands lying close offshore. Mount Tasmann and Mount Cook, the highest peaks of the Great Southern Alps, lie about 20 miles ESE of Karangarua Bluff.

Bruce Bay is entered between Makawhio Point and Heretanewha Point, 4.2 miles WSW. Heretanewha Point is a bold, rocky promontory that is reef-fringed. Small vessels with local knowledge can obtain anchorage in Bruce Bay, in a depth of 5.5m, hard speckled sand. This anchorage, lying close in under Heretanewha Point, is sheltered from moderate S winds. However, during S or SW gales, a heavy sea comes in making it untenable. In general, Bruce Bay resembles Jacksons Bay, about 45 miles farther WSW.

The Paringa River empties out into the sea on the E side of Tititira Head (43°37'S., 169°26'E.). Small vessels with local knowledge can cross the bar of this river, over which there are depths of 1.5 to 3m, but they cannot proceed farther than 0.1 mile within the entrance.

The shore, 11.2 miles WSW from Tititira Head to Arnott Point, is clifty and tree-covered. Several rocks, best shown on the chart, project off this section of shore.

Tauparikaka Point is located 3.2 miles SW of Arnott Point. A rocky shoal, with a depth of 6.6m, lies 5.7 miles WSW of Tauparikaka Point.

The **Haast River** (43°51'S., 169°03'E.), 7 miles SW of Tauparikaka Point, is entered about 5 miles SW of the entrance of the Waita River, and there is a depth of 1.8 to 4.3m over the bar at HW. However, the channel is ever shifting due to freshets.

Alhambra Rock, 3.4m high, lies 1.5 miles W of the Haast River entrance, the sea breaks heavily on this rock in bad weather.

12.10 The Open Bay Islands, made up of Taumaka Island and Popotai Island, lie at the N limit of foul ground that projects NE from Mussel Point. These above islands are joined at LW by a rocky ridge. Bignell Reef, which dries, lies about 0.5 mile ENE of Taumaka Island; An islet, 0.4m high, lies about 1 mile further ENE. Vessels should give the Open Bay Islands a berth of about 3 miles; passage S of these islands exists, but shoals, with a least depth of 2.7m, lie between 1 mile N and 2 miles NNW of Mussel Point, and it requires extensive local knowledge. Several dangers, best seen on the chart, lie W of the Open Bay Islands.

Tides—Currents.—With N winds, a strong current sets S between the Open Bay Islands and the mainland, attaining rates of 3 knots.

Anchorage.—Vessels with local knowledge can obtain sheltered anchorage off the Open Bay Islands. The best berth is in a depth of 9.1m, rock, E of Taumaka Island. Vessels approach this anchorage with the town of Okuru bearing about 198°; when Taumaka Island bears about 275°, course should be changed W for the anchorage.

12.11 Mount Mclean (44°01'S., 168°45'E.) is a conspicuous, cone-shaped, forested hill that rises from the low ground. The Waitototo River, and the Arawata River, lying about 5.5 miles WSW of Mussel Point, can be used by small vessels with local knowledge, but they are subject to extensive changes and can only be navigated a short distance above their bars.

Jacksons Bay (43°59'S., 168°40'E.) lies between the entrance of the Arawata River and Jacksons Head, about 3.5 miles NW. Jackson Head, both bold and conspicuous, is joined to the mainland by a low narrow neck, and it is easily made out from any direction. Several islets lie off Jacksons Head; there is a dangerous rock 0.3 mile NE of the headland.

A rocky shoal, with a depth of 10m, lies 7 miles NE of Jacksons Head.

Jacksons Bay affords good protection from S or W winds and some shelter even from those from the NNW. It has been reported that even with gales from the N to NE, the anchorage, in 7.3m or 9.1m, is safe. Because the sea breaks in a depth of about 12.8m; only the swell is felt inside that depth. In heading for the anchorage, Jacksons Head should be passed at a distance of about 2 miles on a S course with the Arawata River entrance bearing 180°, and the bay then entered from the E. Small vessels can find anchorage, in a depth of about 8m, blue clay, E of a wharf situated 1 mile SSW of Jacksons Head, at the village of Jacksons Bay.

There is no difficulty in leaving Jacksons Bay at the beginning of a NW gale. North gales are usually preceded by a swell setting into the bay, and generally begin from the NNE with clear weather, shifting to NW with heavy squalls and thick rain; from this point the gale is most severe, and if disposed to last, will shift around again to the N. A shift to the SW is generally preceded by a lull with heavy rain; at the latter point it again blows hard, but the gale is then of short duration, and soon subsides into a moderate breeze, with good weather. Gales are not frequent here in summer, though their directions are much the same; SW and WSW winds then prevail.

With the exception of the roadstead under Cape Foulwind, Jacksons Bay is the N anchorage on this coast where shelter can be found for large vessels during S winds.

Depths—Limitations.—Jacksons Bay Wharf is L-shaped, 61m long, with a least depth alongside of 3.7m and a height of 4.5m. The wharf is of wooden construction and the outer face is protected by spring piling. At the root of the wharf, on the inner side, there is a landing place. The wharf has been reported to be in need of repair.

The wharf should be approached from the E. When berthing, care should be taken to avoid small craft moorings which lie off the outer face.

12.12 Cascade Point (44°01'S., 168°21'E.) is a cliffy projecting bluff which lies about 12.5 miles WSW of Jacksons Head. The bare face of Cascade Point is striped by numerous waterfalls which, after rain, are visible for quite a distance. A notable dome-shaped peak rises close S of the point.

Caution.—A heavy swell usually sets on shore between Jacksons Head and Cascade Point.

Barn Bay lies about 5 miles SW of Cascade Point; near its head it is encumbered by several rocks and islets. The land immediately over this part of the coast is steep and backed by lofty and rugged mountain ranges. Barn Bay has a well-defined peak rising over its S entrance point.

Awarua Point (44°16'S., 168°03'E.), the NE entrance point of Awarua Bay, lies about 20 miles SW of Cascade Point. Several dangers, best shown on the chart, lie off this section of coast.

Awarua Bay (Big Bay) is entered between Awarua Point and an unnamed point about 4.5 miles SSW. Long Reef extends 0.5 mile WNW from the S entrance point; the sea breaks 1.5 miles N of that point.

Martin Bay lies on the S side of the S entrance point of Awarua Bay. The Hollyford River, flowing out of Lake McKerrow, enters the sea at the N end of Martin Bay. The entrance to the lake has a depth of 1.2m and is about 46m wide, thus limiting its use to small craft with local knowledge.

Kaipo Bay lies close S of Martins Bay; there are several islets lying off its S side. A rock, 46m high, lies 5.2 miles SW of the entrance to the Kaipo River; it is a good landmark.

Yates Point, the NE entrance point of Milford Sound, lies nearly 2.7 miles SW of the above rock. Between Yates Point and Dale Point, about 6.5 miles S, the shore is made up of high wooded slopes fronted by a succession of sandy or shingle bays, with several rocks and foul ground lying off it.

The Sounds

12.13 The Sounds represent the only natural harbors along the W shore of South Island. These 13 sounds or inlets indent the SW shore of South Island between the parallels of 44°35'S and 46°10'S. To a vessel approaching this part of South Island from sea, the aspect of the shore is very similar. Therefore, unless a vessel knows its particular position accurately, it will experience difficulty distinguishing the entrance of a particular sound. Also, the smaller inlets, when seen from a distance of 4 or 5 miles, have more the look of ravines between high and rugged mountains rather than harbor entrances.

In moderately clear weather, the shore can be made with confidence as the entrances are somewhat equidistant from each other and all trend in a general E direction.



Milford Sound

One of the more notable features of The Sounds is their great depth of water. Soundings can rarely be obtained under 146m, and frequently much greater depths are found.

The prevailing winds on this coast are from the NW to SW; the former frequently bring rain and thick weather. As the shore is approached, the NW winds generally veer to the N; SW winds are fine and clear. Rain is common occurrence and often lasts for several days with no intermission. As The Sounds are enclosed by mountains of such magnitude, except for about 2 hours before and after noon, the sun is rarely visible.

Caution.—Due to the imperfect nature of the surveys of the area covered by the charts, mariners without local knowledge should exercise caution in depths less than 100m. Most of the offshore islands are wildlife sanctuaries and in many cases landing is prohibited without a permit.

12.14 Milford Sound (44°34'S., 167°47'E.) represents the northernmost of The Sounds and it is deep throughout. The mountains which encompass Milford Sound are the highest on the coast.

Aspect.—Pembroke Peak, 2,045m high and always snow-covered, rises over its N side about 3 miles inland. Llawrenny Peaks are prominent, saddle-shaped, snow-covered mountains; they lie on The Sounds S side. Tutoko Peak, 2,756m high, is a well-defined cone lying conspicuously, 6.5 miles E of Pembroke Peak.

Mitre Peak, 1,675m high, rising abruptly over the S side of The Sounds, is one of the more notable features in this vicinity. A dome-shaped mountain lies opposite Mitre Peak; it is nearly devoid of vegetation, and due to its unique color looks like a mountain of metal.

From sea, The Sounds entrance resembles that of a bay and vessels with local knowledge should only enter it on a clear day.

Brig Rock, 2m high, and surrounded by a reef of rocks, lies about 3 miles N of St. Anne Point, the S entrance point of Milford Sound. The ground, on which there are rocks, awash, between Brig Rock and the shore E, is foul. A depth of 5.5m was reported to lie about 1 mile ENE of St. Anne Point.

A bank, with a least charted depth of 14.1m, extends 1 mile from the coast, 4 miles S of Yates Point.

Anita Bay is entered between Fox Point, with an islet lying close off it and Greenstone Point, about 0.5 mile SE.

Anchorage.—Vessels with local knowledge can obtain convenient anchorage, in depths of 21.9 to 32.9m, about 0.1 mile SW of Fox Point. At this anchorage, vessels will be sheltered from NW winds, but with N winds, a swell rolls around the point. A bank, with a least charted depth of 14.1m, extends 1 mile from the coast, 4 miles S of Yates Point.

From Anita Bay, The Sounds extends in a funnel shape to the SE for 1.5 miles to Dale Point, where it narrows and barely exceeds 0.5 mile in width, with towering perpendicular cliffs rising on either side. The depths in mid-channel are 120m. From Dale Point, The Sounds leads in an E and SE direction for 6.5 miles between cliffy walls, the breadth varying from 0.2 to 0.7 mile. At 0.1 mile from the highest cliffs on the N shore, near a large waterfall, a sounding of 428m, mud, was obtained. At 4 miles above Dale Point, on the N shore, lies Harrison Cove, a confined deep-water cove. The E bight of this cove is

subject to williwaws during NW gales; the W bight is free from these squalls. In 1975, a tree and a stake set in concrete close S, and fitted with white reflectors, formed a range on which to anchor.

The head of Milford Sound ends in two basins separated by Separation Tongue, fronted by boulder bank, steep-to, and covered at HW. Fresh Water Basin, the N basin, now dries except for a shallow channel leading to a jetty in the NE corner of the basin. Deep Water Basin, at the head of Milford Sound, has a maximum depth of 53m. It is approached from the N by a channel dredged to a depth of 2.7m.

Caution.—Much of Doubtful Sound SE of Dale Point is a marine reserve.

12.15 Bligh Sound (44°46'S., 167°29'E.) is entered between Tommy Point and Chasland Head, about 2 miles SW. Foul ground is reported to extend 0.5 mile from the shore between Tommy Point and Jagged Rocks, 2.5 miles ENE.

Two conspicuous peaks, Mount Longsight, 1402m high, lying 3.2 miles E of Tommy Point, and Table Mountain, about 0.7 mile WSW of Mount Longsight, are good marks for identifying the entrance of Bligh Sound.

Bligh Sound has three reaches; the outer, which is 2 miles wide at its entrance, extends SE for 3.7 miles and narrows gradually to Turn-Round Point on the S side, where the channel is only 0.2 mile across and known as Cloudy Pass. The second reach then continues SSW for about 4 miles to Evening Point. The third reach continues for about 2.2 miles to Bounty Haven.

Anchorage.—Amazon Cove, lying 0.7 mile NE of Evening Point, affords anchorage for small craft with local knowledge. There is also good anchorage for those vessels with extensive local knowledge, off the head of Bounty Haven, in a depth of 21.9m, close to a stony flat, through which flows the Pitt River. Rugged, lofty mountains rise steeply from either shore. A vessel of 1,200 grt anchored, in a depth of 29.3m, about 0.7 mile WNW of the entrance to the Pitt River, abreast a waterfall on the N side.

Clio Rock, which is steep-to, with a depth of 2.7m, lies on the SE side of the second reach of Bligh Sound, midway between Turn-Round and Evening Points. Between Clio Rock and the shore S are two more steep-to submerged rocks.

12.16 George Sound (44°50'S., 167°22'E.) has its entrance about 6.5 miles SW of Bligh Sound; the shore between is steep and slightly indented. A depth of 11.9m was reported in the middle of the entrance to George Sound.

Because of this sound's width, and the tendency of the winds to generally blow with more steadiness, it is easier than most to enter or leave. George Sound is surrounded by mountains with a rugged and precipitous nature.

Anchorage.—Vessels with local knowledge can obtain good anchorage in Anchorage Cove, in a depth of 27.4m, on the E side of the sound at the head of the first reach. With NW gales a swell sets in. The head of this cove is a sandy beach.

A vessel of 4,800 grt anchored, in a depth of 53m, in George Sound's SW arm, about 0.5 mile from an islet, and 0.7 mile from the arms head, There is good anchorage in the SE arm, in about 27.4m, with the anchor being dropped as the waterfall is seen.

The shore SW from the entrance of George Sound, about 13.5 miles SW to Caswell Sound, is steep and rocky, affording no shelter, and indented only by Looking Glass and Two Thumb Bays. Looking Glass Bay is sandy with a beach of large boulders at its head; Two Thumb Bay is blocked by rocks.

12.17 Caswell Sound is entered through a passage roughly 0.3 mile wide. Styles Islet lies close N of McKerr Point, the S entrance point of Caswell Sound. A small reef, awash, lies close off the N end of the islet, between it and a submerged rock, over which the sea breaks in heavy weather, about 0.3 mile NNE, lies the entrance. A narrow bank, with depths of 40 to 80m, stretches part way across the entrance from Styles Islet. However, close within the entrance there is no bottom at a depth of 240m. To the S of Styles Island is a boat channel.

From the entrance, the sound leads 1.5 miles SE to Hansard Point, on the N shore. As in other sounds the shores are very steep and depths are great.

Boat Rock, awash at HW, lies about 6 miles ESE of the Sounds entrance, and it is surrounded by a sandbank.

Anchorage.—Vessels with local knowledge can obtain anchorage E of Boat Rock, in a depth of 7.3m, but the bank is very steep. There are general depths above Boat Rock of 40 to 160m; the head of Caswell Sound is a shallow flat.

The shore between Caswell Sound and Charles Sound, about 3 miles SW, is very rugged. Nugget Point lies about halfway between the sounds, with a ridge of high rocks extending 0.3 mile off it. Even under good conditions, this section of coast should be given a berth of at least 1 mile.

12.18 Charles Sound is entered about 4 miles SW of Caswell Sound and there are depths in the entrance of 70 to 101m, increasing within to 186m. In the E and SE arms there are depths of 26 to 92m. Turn Peak, lying between Charles Sound and Nancy Sound, is a good mark for making out the entrance. A rock, with a depth less than 1.8m, lies close off the NE shore 0.7 mile within the entrance to the Sound.

Eleanor Islet lies at the entrance of Emelius Arm; there is a deep water channel on either side. Gold Arm, the SE arm of the sound, has Fanny Islet and Catherine Islet lying within 2 miles of its head.

Anchorage.—Vessels with extensive local knowledge can obtain anchorage, in depths of 25.6 to 36.6m, above Fanny Islet and Catherine Islet. However, this anchorage is not convenient and vessels seeking haven should not attempt to enter, as Nancy Sound and Caswell Sound are preferable.

12.19 Nancy Sound lies about 4.5 miles SW of Charles Sound; there are two boulder beaches between. Turn Peak is a conspicuous, sharp-peaked mountain rising over the N side of Nancy Sound. This peak, which can be seen from sea and presents the same appearance from any direction, affords an accurate means of identifying the entrance of Nancy Sound. When within 5 or 6 miles of the sound's entrance a notable red patch, caused by a landslide, will be seen on the high land close N of the entrance. Also, a white patch, similarly caused, on the lower part of the cliffs N and S of the entrance will be seen. Two rugged islets lie 0.2 mile N of Anxiety Point, the S entrance point of the sound. A submerged rock, whose position is

approximate, lies 0.5 mile W of the Anxiety Islets. Entrance Islet, 15.2m high and flat-topped, lies close W of Burnett Point, the N entrance point of the Sound.

The main entrance channel lies S of Entrance Islet; it is about 0.3 mile wide with a depth of 14.6m in mid-channel. A bar, with depths of 60 to 80m, extends across the entrance to this sound; however, it does not continue sufficiently far to allow vessels to utilize it for anchoring.

Nancy Sound projects 1.2 miles E to Sweep Point, on the S shore, and then 5 miles SE to Bend Point, on the N shore. A small islet lies close W of Bend Point.

Anchorage.—Vessels with local knowledge can obtain anchorage, in a depth of 27.4m, about 0.5 mile S of the islet, in Heel Cove, 100m from the stony beach. Additional anchorage may be found off the head of Toe Cove, in depths of 18.3 to 31.1m.

12.20 Thompson Sound is entered between Shanks Head and Colonial Head, about 3.5 miles SW of Nancy Sound. Thompson Sound projects about 10 miles SSE to its junction with Doubtful Sound and Bradshaw Sound.

The entrance to Thompson Sound is mostly free from dangers, except for a rock, with a depth of 3.7m, lying about 0.7 mile S of Shanks Head, and three rocks, close to the E shore, with depths of less than 1.8m, lying between 7 and 7.5 miles S of Shanks Head, and three rocks, close to the E shore, with depths of less than 1.8m, lying between 7 and 7.5 miles S of Shanks Head. There are depths of 120 to 160m in the entrance of Thompson Sound.

A peninsula, indented on its N and S sides by small coves, lies about 3.2 miles S of Shanks Head. The N cove, Neck Cove, is blocked by rocks and it is exposed. The S indentation, Deas Cove, though small, affords sheltered anchorage, in depths ranging from 11 to 29.3m. On the W side of Deas Cove, the cliffs are steep-to, but the E side is fronted by a bank that extends offshore. There is anchorage for vessels with local knowledge, in a depth of 18.3m, about 0.1 mile off the sandy beach at the head of Deas Cove.

12.21 Bradshaw Sound is entered at the S end of Thompson Sound, between Richards Point and Evans Head, nearly 1 mile SSE. Between Sharp Head, lying 4.5 miles ENE of Richards Point, and Macdonell Island, about 1 mile further ENE, there is a bay where anchorage may be found. This anchorage lies about 0.1 mile WNW of the NW point of Macdonell Island, in a depth of 29.3m.

Precipice Cove, which lies E of Macdonell Island, is bound by high cliffs. There is a depth of 9.1m in the entrance, lying between Macdonell Island and an islet lying close N of Gardener Head.

Gaer Arm, the SE arm of Bradshaw Sound, projects about 3 miles SSE from its entrance, between Gardener Head and Glyn Point, about 1 mile SW. A rock was reported to lie about 0.5 mile WSW of Gardener Head. Vessels with local knowledge can obtain anchorage at the head of Gaer Arm in Shoal Cove. This anchorage, in depths of 11 to 25.6m, lies about 0.5 mile W of the three islets, lying about 1 mile from the arms head.

12.22 Doubtful Sound (45°16'S., 166°51'E.) is separated from Thompson Sound, to the NE, by Secretary Island. Its entrance, between Nea Island and Febrero Point, 2 miles SW,

with high mountains on either side, presents a wide opening from sea. This entrance is easily made out from a considerable distance. All Round Peak and Mount Grono, on Secretary Island, are prominent. Hares Ears, lying 0.3 mile N of the Febrero Point, are two notable peaked rocks. Upon close approach, the Nea Islets will be seen projecting 1 mile S from the N entrance point. Also, from the offing, Solitary Cone, lying nearly 14 miles SW of the entrance to Doubtful Sound, is conspicuous.

Doubtful Sound projects about 17.5 miles SE with three arms that each project SW, named, First Arm, Crooked Arm, and Halls Arm; these areas are all marine reserves.

12.23 Islands and dangers within Doubtful Sound.—The **Shelter Islands** (45°17'S., 166°53'E.) represent a rocky group that lie about 2 miles SSE of the N entrance point of Doubtful Sound and the Nea Islets. A reef, awash, lies 0.2 mile SW of the N Nea Islet. There is a channel, with a least depth of 24m, through the middle of the Shelter Islands. However, this channel and the channel between the Shelter Islands and Bauza Island, close S, is not recommended.

Bauza Island lies in the center of Doubtful Sound, roughly 2 miles within the entrance, and there is deep water on either side. The S channel, Gaol Passage, is the better channel, as it is wider and deeper.

Snug Cove, located at the head of First Arm, affords anchorage, in a depth of 22m, about 0.2 mile from the beach at its head.

Blanket Bay, which affords anchorage for small vessels with local knowledge, indents the S shore of Secretary Island.

Common Head is the SE end of Secretary Island; between it and Wood Head, 1.2 miles SE, is a channel leading to Thompson Sound. Seymour Islet, with a smaller islet off its N side, lies in this channel. Omapere Rock, with a depth of 1.5m and steep-to, lies about 0.3 mile SSW of Common Head. Tidal currents are reported strong between the rock and Seymour Islet.

Malaspina Reach represents the main part of Doubtful Sound; it is deep throughout, affording no anchorages.

Crooked Arm (45°22'S., 167°03'E.) is entered between Ransom Head and Kellard Point through an entrance nearly 0.5 mile wide. Vessels with extensive local knowledge can obtain anchorage at the head of Crooked Arm, in Haulashore Cove, in a depth of 22m, within 0.3 mile of the beach.

Deep Cove is located at the head of Malaspina Reach, about 6.5 miles SE of the entrance of Crooked Arm. Halls Arm extends about 4.5 miles SW from the entrance of Deep Cove. The N side of Deep Cove is formed by a precipice, with waterfalls on each side of the cove and at its head. No anchorage is available in Deep Cove.

A wharf, about 41m long, with a dolphin and bollard off each end, lies on the W side of the cove. There is a depth alongside the wharf of 14m.

Halls Arm is entered between Davidson Head and a small cliffy isthmus; depths within are great. A stretch of beach made of sand and shingle extends along the SE side of this arm.

Matai Island lies close to the NE shore of Malaspina Reach, about 1 mile SE of Wood Head.

Fergusson Islet lies in mid-channel about 0.7 mile W of **Solitary Cone** (45°24'S., 167°07'E.). Elizabeth Island lies close SE of Fergusson Islet; its N end is reported to extend 0.2

mile further than charted. Vessels normally pass W of Fergusson Islet and Elizabeth Island. The passage E of these islands has not been surveyed.

Rolla Islet fronts the entrance to Deep Cove, about 0.2 mile NW of its W entrance point. Tarawera Rock lies between the islet and the point, and it has a depth less than 1.8m. A reef, awash, lies in the entrance to Halls Arm, about 0.6 mile SW of Rolla Islet.

12.24 Peninsula Point (45°22'S., 166°46'E.) is a salient point that lies about 6 miles SW of the entrance to Doubtful Sound; the shore between is steep, cliffy, and overlooked by high mountains. From Peninsula Point, the shore heads 1 mile S to Castoff Point, the N entrance point of Dagg's Sound.

Dagg's Sound is entered between Castoff Point and Towing Head, 1.5 mile SW. The sound leads about 4.5 miles SE from its entrance, where it divides into a NW arm and a SE arm.

Anchorage Arm, the NW arm, is entered between Otago Point and Seventy Fathoms Point, 0.5 mile E. The SE arm is entered between Seventy Fathoms Point and Schooner Point, 0.1 mile S. In the entrance and for 1.2 miles within it, there are depths of 31 to 55m. However, as the channel narrows, about 2 miles within the entrance, depths increase to 100 to 184m.

Vessels with local knowledge can obtain good anchorage at the head of Anchorage Arm, in depths of 22 to 33m, mud, about 0.2 mile off a sandy beach.

The Towing Islets lie on a spit of foul ground extending about 0.3 mile NW from Towing Head. Four Fathom Bank, with a least depth of 7.3m, lies in mid-channel, about 2 miles within the entrance. A steep-to rock, with a depth of 2.7m, lies about 0.2 mile WNW of Schooner Point.

Breaksea Sound, fronted by Breaksea Island, is entered about 13 miles SW of Dagg's Sound and it is joined with Dusky Sound S by Acheron Passage. The entrance to Breaksea Sound is narrow and bound by high land, making identification difficult until close upon it.

The recommended channel into the sound lies N of Breaksea Island. It is about 1 mile wide and apparently free from dangers in mid-channel, except for a 5.5m shoal reported to lie about 0.5 mile SSE of Oliver Point. The channel between Breaksea Island and the four small islets S of Breaksea Island is not recommended, as it is narrow and encumbered by dangers.

The Gilbert Islands are two distinct groups more than 0.5 mile apart projecting off the NE shore of **Resolution Island** (45°41'S., 166°39'E.). The only anchorage among these islands is in Stevens Cove, which lies on the W side of the S entrance point to Breaksea Sound. At this anchorage, a vessel of moderate size with local knowledge can find anchorage, in a depth of 7.3m, with its stern secured to trees. This anchorage is approached between the two E Gilbert Islands.

Entry Island lies about 1 mile E of the E Gilbert Islands. A submerged rock was reported to lie in the channel SW of Entry Island. From the vicinity of Entry Island, Acheron Passage leads 8.5 miles S to Dusky Sound, between the E coast of Resolution Island and the mainland. Alternately, from E of Entry Island, Breaksea Sound continues ENE for about 8 miles to Chatham Point, where it separates into a NE and E arm known, respectively, as Vancouver Arm and Broughton Arm. Foul ground was reported to extend 0.2 mile NW of the shore NE of Chatham Point.

Anchorage.—Good anchorage may be found, by vessels with local knowledge, about 3 miles E of Entry Island in Beach Harbor fronted by the Harbor Islands, which form its NW side. There is confined well-sheltered anchorage, in a depth of 21.9m, off a sandy beach between the S Harbor Island and the mainland. This anchorage may be approached either S of the S Harbor Island or around the N end of the N island, which is the better passage.

A vessel of 1,000 grt found sheltered anchorage, in a depth of 31.1m, mud, off the head of Broughton Arm, with 0.1 mile of swinging room.

12.25 Resolution Island (45°41'S., 166°39'E.) separates the entrance of Breaksea Sound from that of Dusky Sound. The Five Fingers Peninsula, joined to the NW shore of Resolution Island by a narrow neck of land, extends about 8 miles SW from the island. Five Fingers Point, the SW end of the peninsula, is easily made out from the N. Several high pointed rocks project 0.4 mile SSW from the point, and when seen from various directions, appear as the fingers of a hand. An islet, 21.3m high, lies about 1.7 miles NNW of Five Fingers Point. A reef, with above and below-water rocks, lies about 0.3 mile SW of the islet. A rock, awash, over which the sea breaks, lies about 0.7 mile SW from the islet. This rock should be given a berth of at least 1.5 miles.

Dusky Sound is entered between Five Fingers Point and South Point, about 4.5 miles S; it is encumbered with many islets and rocks, most of which are visible.

Aspect.—When approaching from the S, Chalky Island is a good guide to the entrance. West Cape, which will appear as a well-defined projecting point of moderate height, dropping a short distance within its extremity and then rising again with a gradual slope towards the high land, is a good mark.

Approaching from the N, Five Fingers Point is a good landmark.

Southwest winds roll a heavy sea into the entrance, but it is broken by the numerous islands; smooth water is found at a short distance within.

12.26 Anchor Island (45°46'S., 166°30'E.), lying in the entrance to Dusky Sound, is encompassed by many islets and dangers, many of which are best seen on the chart.

From the W to E, the Seal Islands, the Many Islands, Stop Island, and the Passage Isles are groups that lie within 1 mile of the S shore of Anchor Island. Thrum Cap and No Mans Islet lie about 1.5 miles S of the E summit of Anchor Island. An above-water rock lies 0.2 mile WNW of No Man islet. Several rocks and islets extend nearly 0.5 mile off the NE and N shores of Anchor Islet. The westernmost of these islands is the Petrel Islands. Parrot Island lies about 1.7 miles NNE of Small Petrel Island, the northernmost of the group.

A rock, with a depth of 4.6m, lies about 1 mile SW of Parrot Island. An islet lies midway between the NE end of Anchor Island and Pidgeon Island. A reef extends 0.2 mile S of the islet and a rock, which dries, lies upon a patch of foul ground extending 0.3 mile NE from the islet.

12.27 North side of Dusky Sound.—Anchor Island Harbor (45°46'S., 166°32'E.) lies almost in the center of Anchor Island; it affords good sheltered anchorage.

Directions.—Vessels with local knowledge entering via the W passage may pass on either side of Entry Islet, lying about 2.4 miles E of Five Finger Point. If entering N of Entry Islet, the SW end of Large Petrel Islet should be kept close aboard to avoid a submerged rock, with a depth of 3.7m, lying in mid-channel. Then she should pass on either side of an above-water rock lying almost in the middle of the harbor, 0.4 mile E by S of Entry Islet. Then the vessel should steer SE for the entrance and anchor, in a depth of 29.3m, about 0.1 mile offshore.

The passage from the E is wider, but it was reported that a 7.3m shoal lay about 0.1 mile E of the SE end of Large Petrel Islet.

Facile Harbor, lying on the N side of Dusky Sound, is a deep-water anchorage, formed by the W side of Resolution Island and by Parrot Islet and Pigeon Islet on the S.

The entrance to Facile Harbor lies about 4.5 miles NE of Five Fingers Point. There is safe anchorage in Facile Harbor, in depths of 27.4 to 60m.

A ledge of rocks, with a depth of 2.7m, lies in the center of the entrance to a cove in the NE corner of Facile Harbor. This cove is only available to small vessels with extensive local knowledge through a passage, 26m wide, on the W side of the ledge of rocks; the E passage is too narrow and crooked for navigation.

Cormorant Cove and Goose Cove lie in the bight N of Facile Harbor. Cormorant Cove affords snug anchorage, in moderate depths ranging from 20 to 24m. An islet lies 0.1 mile off the N entrance point of Cormorant Cove; a submerged rock lies 0.2 mile further NNW.

Directions.—Vessels entering Dusky Sound bound for Facile Harbor do so between Five Fingers Point and Anchor Island. The channel appears clear of dangers until within 1 mile of Parrot Island, where a 4.6m rock lies about 1 mile SW of that island. To clear this rock, keep the E summit of Anchor Island in line with the islet, about 1 mile NW of it, bearing 152°. This course leads NE of the rock.

The NW end of the islet off **Whidbey Point** (45°42'S., 166°33'E.) in line with the SE end of the islet, 0.7 mile NE of it, bearing 045°, leads midway between the rock lying 1 mile SW of Parrot Island and the Five Fingers Peninsula.

In leaving Facile Harbor it will often be convenient, with W winds, to pass between Parrot Island and Pigeon Island. This channel is about 0.1 mile wide with depths of 9.1 to 16.5m.

12.28 Duck Cove (45°44'S., 166°40'E.) indents the S shore of Resolution Island; it lies about 2.7 miles ENE of Fixed Head. Fixed Head is the W end of an islet that lies about 1 mile ESE of Anchor Point, the E extremity of Anchor Island. The E entrance of Duck Cove, Porpoise Point, is reported to have a submerged rock and a rock, awash, lying 0.3 mile WNW and 0.1 mile SW, respectively, of it. In 1984, a 3.7m shoal was reported to lie 0.5 mile NW of Porpoise Point.

Duck Cove is easy to access and affords convenient anchorage under most circumstances. Mountains rise on either side of Duck Cove to heights of almost 914m and are separated at its head by a valley.

Bowen Channel lies between Resolution Island and Long Island, E of Porpoise Point.

Acheron Passage is the channel that joins Dusky Sound with Breaksea Sound, lying between the E shore of Resolution Is-

land and the mainland. Acheron Passage is entered about 3 miles NE of Porpoise Point, between Passage Point and a point about 0.5 mile W. The Front Isles lie about 0.7 mile SSW of Passage Point. A submerged rock lies about 1 mile SSE of Passage Point. The Shag Isles lie about 1.7 miles SE of Passage Point. A submerged rock was reported to lie about 2.2 miles E of Passage Point.

The aspect of both sides of Acheron Passage is that of high, steep, sheer-sided, forested mountains rising to heights of nearly 1,219m. The depths in this passage are quite great, however, there are several places where temporary anchorage can be found.

Temporary anchorage may be found in a small sandy bight close N of Passage Point, in a depth of 23.8m. However, it is exposed to SW winds and cannot be recommended when other shelter can be obtained. Anchorage may be found by vessels with local knowledge on the W side of Acheron Passage, about 2.5 miles NW of Passage Point, in depths 16.5 to 21.9m. Occasional Cove affords anchorage near the N entrance of Acheron Passage; the entrance to Breaksea Sound is just shut in from this anchorage.

Wet Jacket Arm extends ENE from about the middle of Acheron Passage, 3.5 miles N of Passage Point. Vessels with local knowledge can obtain anchorage near the head of this arm, in depths of 18.3 to 32.9m. In 1975, anchorage was found, in 38.4m, sand and mud, between Oke Island and the bay N. Oke Island lies about 5 miles within the entrance of Wet Jacket Sound.

Directions.—Vessels with local knowledge entering by the N passage, after passing Anchor Island, should steer through the channel between its E end and Resolution Island. Known dangers in this passage include the rocks on each side of the islet midway between Parrot Island and the E end of Anchor Island, Anchor Point, and the 16.5m shoal lying midway between Anchor Point and the Useless Isles. Anchor Point should be given a berth of at least 0.1 mile.

12.29 South side of Dusky Sound.—South Point (45°49'S., 166°28'E.) is the S entrance point of Dusky Sound and the bay close E of the point is unsurveyed. A reef of rocks lies about 3 miles ENE of South Point.

Caution.—The inshore area between South Point and Cape Providence has not been fully surveyed. Deep draft vessels should remain seaward of the 100m curve and avoid areas which shoal to less than 100m.

Pickersgill Harbor lies 5 miles ENE of South Point; Crayfish Islet lies close off its W entrance point. The best channel to enter the harbor lies E of Crayfish Island, avoiding the foul ground that extends about 0.1 mile NNE from the harbor's head and the foul ground projecting 100m S from the SE end of Crayfish Islet. This entrance channel is about 100m wide and within it, about 0.1 mile offshore, there is confined anchorage for vessels with local knowledge, in a depth of 27.4m.

Cascade Cove is entered E of Wales Point, about 1 mile E of Crayfish Islet. Heron Islet lies in the middle of the coves entrance. A submerged rock and an above-water rock lie midway between Heron Islet and the shore SE. A rock, with a depth of 3.7m, lies about 1.5 miles SW of Heron Islet. Vessels

with local knowledge can obtain anchorage E of the rock, in depths of 21.9 to 27.4m. The head of Cascade Cove ends in a sandy beach.

There are three main islands that front this S shore of Dusky Sound, namely, Indian Island, Long Island, and Cooper Island. These three islands, which extend from off Cascade Cove to nearly the head of the sound, have deep-water channels both N and S of them.

The channel S of the islands is known as Cook Channel. The channels between the islands are encumbered with many dangers. Nine Fathoms Passage, with depths of 4.6m and 100m wide, lies between the E end of Cooper Island and the shore S. Rocks line both sides of this passage.

The head of Dusky Sound ends in two coves, the N, Supper Cove, and the S, Shark Cove. Vessels with extensive local knowledge can obtain anchorage in either of these two coves.

Directions.—Vessels with local knowledge entering Dusky Sound via the S passage from the W, should enter with the S side of Anchor Island in line with the 457m summit near the center of Long Island, bearing about 089°. This course leads about 1.5 miles N of the rock, awash, lying about 2.7 miles WNW of South Point. When Five Fingers Point bears 030°, vessels should change course SE and pass midway between the Seal Islands and the shore S.

Vessels approaching from the SW should steer with the 414m summit of Anchor Island in line with Mount Clerke, bearing about 056°, which leads about 1.2 miles SE of the rock awash. Having entered the sound, vessels should keep to the S shore until reaching Thrum Cap, when course should be changed N to avoid the rock off the W side of Indian Island, when course can then be made for the entrance to Duck Cove.

12.30 Cape Providence (46°01'S., 166°28'E.) lies about 12 miles S of South Point and the intervening shore is high. This shore should be given a berth of at least 2 miles, as shoal ground is reported to lie 1 mile off it. Sugarloaf, an above-water rock, lies close off the cape. Foul ground projects SW of the Cape. A 29.3m shoal, whose position is approximate, lies about 6 miles SSW of Cape Providence.

A bank, with depths less than 183m, lies centered about 14 miles SW of the Cape. A depth of 23.7m was reported about 17.5 miles WSW of Cape Providence. A depth of 33m lies about 13 miles W of Cape Providence in approximately 46°00'S, 166°10'E. A rock was reported to lie roughly 1.2 miles SSW of Cape Providence.

Chalky Inlet (Dark Cloud Inlet) is entered between Cape Providence and Gulches Head, 6.5 miles SE.

Chalky Island, which lies in the entrance to the inlet, is notable for its white cliffs; they serve to indicate the inlets entrance. Drop Point is the NE end of Chalky Island; Pinnacle Rock, along with several other rocks, extend 0.2 mile E and N from it. Sealers Bay indents the N shore of the island, and Bay Rock lies in its entrance. There are rocks on either side of the bay and kelp in its entrance.

Finger Rocks and Zero Nugget lie close off the N end of Chalky Island. A rock, with a depth of 11m, over which the sea breaks, lies about 1 mile W of Zero Nugget. The Passage Islands lie N of Chalky Island, separated from it by Bad Passage. The larger of the two Passage Islands is rock-fringed.

Great Island, lying N of the Passage Islands and separated from it by Return Channel, is joined to the mainland NW by a sandy bar. Return Rock, a pinnacle with a depth of 1.5m, lies off the S end of Great Island.

12.31 Table Rock (46°06'S., 166°32'E.), brown, low, boxlike, and conspicuous lies about 2 miles SSW of the SE end of Chalky Island. A shoal, with a depth of 4.6m, lies about 0.7 mile ENE of Table Rock. A depth of 7.3m exists about 1 mile NNE of Table Rock; the charted position is approximate.

Ballyeny Reef, which breaks heavily, lies about 2.5 miles SE of Chalky Point, the SE end of Chalky Island. Broke-adrift Passage lies between the reef and Gulches Head; it has an irregular rocky bottom.

A 9.1m shoal was reported to lie 1.5 miles S of Gulches Head. A depth of 12.2m lies 0.3 mile S of this position; two 7.3m shoals were reported to lie about 1.2 miles W and 1.5 miles WNW of the same head, but their existence is doubtful. A rock, awash, lies 0.3 mile S of the head.

Chalky Island divides the entrance of Chalky Inlet into Western Passage and Eastern Passage.

Vessels with local knowledge using Western Passage should give Cape Providence a berth of about 2 miles so as to avoid the dangers S and SW of it. Care should also be taken to avoid the 11m rock lying 1 mile W of Zero Nugget. Vessels generally steer a NE course through Western Passage fairway until Return Channel opens, taking care when rounding Great Island to avoid Return Rock.

Eastern Passage, which lies between the SE point of Chalky Island and Gulches Head, about 2.5 miles SE, is the preferred channel into Chalky Inlet for vessels with local knowledge approaching from S, entering through Broke-adrift Passage or between Chalky Point and Table Rock. The E shore of Chalky Island should be given a good berth. Care must be taken to avoid the 7.3m patch that was reported to lie about 0.7 mile S of Chalky Point.

Caution.—Floats marking the positions of crayfish pots are found throughout the inlet; heavier concentrations in the bays and fjords are used as shipping stations. Crayfish pot floats can often be encountered over rocky features well offshore.

12.32 South Port (46°03'S., 166°38'E.) is entered between the Garden Islets and Reef Point through an entrance narrowed by islets and rocks to less than 0.1 mile. Outer Rock, awash, lies in the center of the entrance at the NE tip of foul ground extending E from the Garden Islets. Foul ground projects SW from Reef Point.

Anchorage Cove, lying close SE of Reef Point, affords sheltered anchorage, in depths of 16.5 to 25.6m.

Directions.—Entering South Port to anchor via Eastern Passage, vessels should pass N of the Garden Islets and Outer Rock, then head up the bay keeping within 0.1 mile of the E shore. The submerged rock lying W of Reef Point may be passed close to, however, if it is not seen, then Reef Point must be kept within less than 0.1 mile until this rock is passed. When changing course into Anchorage Cove, Reef Point must not be rounded closely.

Those vessels entering by Western Passage, when Return Channel is open, will see Stripe Head lying 1 mile N of Reef Point; course should be shaped midway between it and the

Garden Islets. As soon as the rock, awash, in the entrance is passed, vessels should proceed as directed above.

North Port (45°59'S., 166°36'E.) lies between the NE end of Great Island and Little Island. Ship Entrance, S of Little Island, is about 100m wide and steep-to on either side.

Vessels with local knowledge can obtain land-locked anchorage, in a depth 25.6m, mud, about 0.1 mile W of Little Island. Care must be taken to avoid the rock, awash, about 0.1 mile E of the anchorage.

Edwardson Sound, the NE arm of Chalky Inlet, is bound on either side by steep and rugged mountain ranges. There are depths exceeding 183m in its central part. In 1984, a dangerous rock was reported to lie about 100m off Divide Head, the E entrance point. The sound terminates in Lake Cove, where there are moderate depths for anchorage.

Cunaris Sound, the E arm of Chalky Inlet, is deep with the Small Craft Harbor Islets lying near the center of its entrance. Small vessels with local knowledge can obtain anchorage on the SW side of the Small Craft Harbor Islets in a cove, in a depth of 14.6m.

Caution.—Some shoaling is evident in the area S and E of the islands. It is in this area of shoals that a pinnacle, with a minimum depth of 2.1m, rises from surrounding depths of 30m. This shoal appears with very little warning close to deep water. Large vessels or those without local knowledge should pass N of the islands when proceeding to Cunaris Sound.

12.33 Preservation Inlet represents the southernmost of The Sounds that indent the SW shore of South Island; it is entered between Gulches Head and Puysegur Point. Gulches Head rises to a height of 85m at its E end, from which a reef projects about 0.2 mile SE. A 9.1m and a 12.2m shoal lie about 1 mile S of Gulches Head.

Vessels approaching Preservation Inlet from the S should have little trouble identifying it as it is the first opening seen.

Ballyeny Reef lies about 1 mile SSW of Preservation Inlet. Caution should be exercised while navigating into the inlet when approaching from the SSW due to shoals, which consist of isolated rock outcrops rising from a sandy bottom, extending off the S and E sides of the reef.

Treble Mount (46°01'S., 166°43'E.) has the appearance from the W of twin peaks and provides a good mark for identifying the entrances of Chalky Inlet and Preservation Inlet.

Tides—Currents.—The flood current is barely felt in Preservation Inlet. This current runs E between Gulches Head and Ballyeny Reef, setting SE across the entrance. The ebb current sets SW out of the inlet. Both the flood and the ebb attain rates of about 1 knot.

Coal Island fronts the SE part of Preservation Inlet and it is joined to the mainland SE by a shallow bank. Steep-to Islet is joined to the NE end of Coal Island by a reef. A dangerous steep-to reef, over which the sea does not always break, lies nearly 1 mile NNW of Pinnacle Rock, at the N end of Coal Island.

The Spit Islets are a group of islets and rocks lying about 1.5 miles N of Pinnacle Rock. This group is joined to the mainland NNE by a drying sandspit.

Cavern Head (46°05'S., 166°40'E.) is a rugged and broken point on which a swell is always breaking. Several rocks, above-water and submerged, lie W of the head.

The Cording Islets are a chain of islets and rocks that lie in the fairway about 1.5 mile ENE of Cavern Head. The channels through this group can only be used by vessels with extensive local knowledge. An above-water rock lies on the end of a reef that extends about 0.3 mile S from the SE Cording Islet. Whale Rock, lying about 1 mile SE of Cavern Head, is awash and steep-to.

12.34 North side of Preservation Inlet.—The shore E between Gulches Head and Cavern Head, about 5 miles NE, forms a bay with a sandy beach at its head.

Welcome Road, which fronts Prices Beach, affords temporary shelter during NW winds in depths of 11 to 16m.

Cuttle Cove (46°04'S., 166°41'E.) lies about 1 mile NNE of Cavern Cove; it affords sheltered anchorage for small vessels with local knowledge, in depths of 9 to 11m, between the shore and Single Tree Islet. A 5.5m patch lies between Single Tree Islet and the S entrance point of Cuttle Cove. Brokenshore Bay lies NE of Cuttle Cove separated from it by Bounding Point. A crescent-shaped islet lies off its E entrance point. A submerged rock lies midway between this islet and the largest of the Cording Islets.

12.35 South side of Preservation Inlet.—**Otagos Retreat** (46°09'S., 166°38'E.) is entered E of the S tip of Coal Island, between it and the mainland. Small vessels with extensive local knowledge can obtain anchorage in the entrance, in depths of 14.6 to 16.5m. Also, good anchorage may be found inside Otagos Retreat, in a depth of 7.3m, in calm water. About 1 mile within the entrance of Otagos Retreat, a bar of sand extends across the channel.

Fishing Bay is formed between the NE end of Coal Island and Steep-to Island, close NE and joined to it by a reef. Small vessels with extensive local knowledge can obtain anchorage in Fishing Bay, in depths of 11 to 18.3m, about 0.1 mile off the NW side of the reef, but the anchorage cannot be recommended as depths decrease rapidly as it is approached.

Revolver Bay (46°05'S., 166°45'E.) is entered about 2.7 miles ENE of the N end of Steep-to Island; it has moderate depths. Vessels with local knowledge can obtain anchorage, in depths of 21.9m, 0.2 mile from its head on the W side. A depth of 0.4m was reported to lie in the middle of the bay, about 0.25 mile from its head.

Long Sound is entered NE of Revolver Bay; it projects about 13 miles NE from its entrance at **Narrow Bend** (46°04'S., 166°46'E.). Harries Bay lies about 2 miles within the sound's entrance, close N of Sandy Point. This bay is deep, but vessels with local knowledge can obtain anchorage, in a depth of 27.4m, 0.1 mile from the beach. Shoal water projects 0.1 mile off Sandy Point. A rock, with less than 1.8m, lies 0.2 mile NW of Sandy Point.

Jane Coves lies 2 miles NNW of Sandy Point. Trevaccoon Head is a high, cliffy promontory about 2.5 miles NE of Jane Coves, with Last Cove about 0.7 mile further NE. Small vessels with extensive local knowledge might find shelter in Last Cove.

Only islands lie above 3 miles SW of the head of Long Sound. Vessels with local knowledge might find shelter inside these islands.

12.36 Marshalls Rock (46°10'S., 166°38'E.), flat-topped and conspicuous, lies about halfway between Puysegur Point, the S entrance point of Preservation Inlet, and Windsor Point, 3 miles SSE. Submerged rocks lie N and S of Marshalls Rock.

Long Reef Point (46°13'S., 166°41'E.) represents the SW end of South Island, and 27 miles E to Sand Hill Point the shore is low, rocky, and unexamined. Mount Aitken, 1189m high, backs this stretch of shore about 14 miles ENE of Long Reef Point.

The Green Islets, which are green in color and rock-fringed, lie close off a point, 88m high, about 4.5 miles ESE of Long Reef Point. The Big River empties out into the sea about 0.5 mile NW of Price Point and the river may be made out by the gap in the mountains caused by its large valley. Reefs are reported to project 1 mile off the coast between Price Point and Long Point.

Sand Hill Point (46°15'S., 167°21'E.) is comprised of sand dunes backed by bush and it is 17.4m high. A detached reef, awash, lies with its seaward end about 1.2 miles SSE of Sand Hill Point.

Tewaewae Bay is entered between Sand Hill Point and Pahia Point, about 15 miles ESE. In S or heavy SW gales, the sea breaks all over this bay.

Mid Bay Reef, which breaks occasionally, lies almost in the center of the bays entrance. Tewaewae Bay is largely unsurveyed and it is unsuitable for anchorage except in its W part. A heavy swell rolls in from the S, even with E or W winds.

Mussel Beach, at the S end of which is Port Craig, lies about 3 miles NNE of Sand Hill Point. Timber is loaded in good weather conditions about 1 mile NNE of Port Craig. Vessels anchor in a depth of about 8.2m.

Foveaux Strait

12.37 Foveaux Strait separates South Island from Stewart Island; it has a navigable width of not less than 10 miles.

The N shore of the strait, from Bluff Harbor to the W entrance of Tewaewae Bay, a distance of nearly 50 miles, is fringed with islets and reefs. Ruapuke Island lies almost in the center of the strait and is almost encompassed on all sides by islets, reefs, and tide rips, making the approach from E somewhat difficult to someone not familiar with the strait.

Local magnetic anomalies.—The normal magnetic variation may be decreased by up to 3° in the W approaches to and in the W entrance of Foveaux Strait. In coastal waters of the strait, further anomalies exist. In open waters and at the E end of the strait, the normal variation may be increased or decreased by up to 1°, while in the area 5 to 10 miles S of Ruapuke Island, it may be increased by up to 2°.

Winds—Weather.—Irrespective of local influences, the prevailing winds on the S shore of New Zealand are from the NW through SW. Gales are frequent from this quadrant; however, those from NW are frequent in all seasons. There have been times when a gale will blow for many days with lulls only a few hours long.

Tides—Currents.—The flood current sets through Foveaux Strait from the W to E, and is strongest between Bluff Harbor and Ruapuke Island, attaining a velocity of 1 to 3 knots. This current influence is felt as far as Long Point, 45 miles E of Ruapuke Island. Between Stewart Island and Ruapuke Island,

the flood sets SE running parallel to the shores of the former. The ebb runs exactly opposite to the flood current.

The E current running between Pahia Point and the N extremity of Stewart Island, begins to run from 30 minutes to 2 hours after LW by the shore. The turn of the current and duration of SW is dependent upon the direction of the wind, with W winds advancing the time the tide turns. At the E entrance to the strait the E current begins to run about 3 hours after LW by the shore. Both currents run for about 6 hours.

Along the NE coast of Stewart Island, the SE current runs for 1 hour 20 minutes after HW at Port William, which is situated about 13 miles SE of Black Rock Point, the N extremity of this island.

The strength of the tidal current varies from 0.5 to 2.5 knots; in the narrowest part of the strait, between Ruapuke Island and Bluff Harbor, they sometimes attain a rate of 3 knots.

With the flood, the current coming from S strikes the S end of Stewart Island and divides. One part runs N along its W side and then E through Foveaux Strait; the other sets NE along the S side of the island, as far as Port Adventure, at its SE end, where the currents meet again and flow E. With the ebb, the current takes a contrary direction, splitting near Port Adventure; it sets NW through Foveaux Strait, down the W side of the island, and SW along the S side as far as Southwest Cape, the SW extremity of the island.

The strength of the currents off the coast is from 0.5 to 1.5 knots, except in the narrow passages; thus, inside the group of islands off **Port William** (46°51'S., 168°05'E.) and Paterson Inlet, about 3.5 miles S of Port William, they attain a rate of 1 to 3 knots, and in the passage between Southwest Cape and Big South Cape, about 2.7 miles NW, 4 knots during springs.

Directions.—The directions for both the E and W approaches to Foveaux Strait will be found at the end of the narrative of the strait. The descriptive sequence is divided into two parts, the N side and the S side. The description of the N side begins with Centre Islet, SE to Waipapa Point, including Ruapuke Island. The description of the S side begins with Solander Island, then Stewart Island, and other off-lying islands that comprise the S side of Foveaux Strait.

Caution.—Because of the unique pinnacle formation of underwater features in these waters, other dangers may exist, in addition to those shown on the chart. Mariners without local knowledge should exercise caution in depths less than 100m W of 167°48'E. To the E of this longitude, deep-draft vessels off the recommended tracks are advised to remain in depths greater than 30 fathoms. Vessels navigating in unfrequented waters of less depth should keep a good lookout for surface disturbances or unusual soundings which might indicate possible danger.

12.38 North side of Foveaux Strait—Centre Island (46°27'S., 167°51'E.) lies about 10.5 miles SE from Pahia Point; it lies close to the S limit of islets and reefs projecting off the N shore of the Strait. Centre Island is a good mark for avoiding these dangers. Midway between the island and shore N are two reefs. Hapuka Rock, 0.3m high, lies about 1 mile SW of the W end of Centre Island. Fish Reef, over which the sea breaks, lies about 6 miles WNW of Centre Island; it is steep-to on its S side.

Escape Reefs lie on a bank about 4 miles ESE of Centre Island. Rocks surround the bank. A foul area, best shown on the chart, lies NNW of Escape Reefs.

Howells Point, the E entrance point of Colac Bay, is cliffy with sand hills, 35m high, on its S side.

Pig Island, 8.2m high, lies about 2.5 miles SW of Howells Point, the shore between being foul. Pig Island is surrounded by rocks.

Local magnetic anomalies.—The normal magnetic variation is increased by up to 6° or decreased by up to 8° NE of Centre Island.

Caution.—It is recommended that vessels not pass within the 37m curve off this section of coast as the dangers are numerous. Fish Reef should be given a berth of at least 2 miles. Centre Island and Escape Reefs should be given a berth of at least 3 miles.

New River Harbor is entered between Entrance Point and Steep Head, about 2 miles SW. A shifting bar, with a depth of 2.7m, lies between a sand spit, on which there are heavy breakers, and Steep Head. Inside the bar there are depths of 3.7 to 4.3m. New River Harbor can only be used by small vessels with extensive local knowledge as there are rapid tidal currents and a shifting bar and channel. The town of Invercargill lies on the E shore of New River Harbor, about 7 miles above the entrance.

Bluff Harbor (46°36'S., 168°21'E.)

World Port Index No. 55400

12.39 Bluff Harbor lies on the NE side of Bluff Hill in Foveaux Strait; Bluff is the only deep-water port S of Port Chalmers. The harbor is well-sheltered from prevailing W winds. Bluff is the harbor for the town of Invercargill.

The safest time to enter the harbor is at high water. Strict attention should be paid to information from the signal station on Stirling Point. No vessel should attempt to enter without a pilot unless in possession of local knowledge.

The available space for anchorage is narrow and confined; for vessels of moderate size, it does not extend much above 1 mile NW of the entrance.

South Port NZ

<http://www.southport.co.nz>

Winds—Weather.—Fogs are not frequent but may be expected during spring and autumn.

Tides—Currents.—The port of Bluff is a tidal port; major shipping movements occur only at slack water. Off Stirling Point, in South Channel, the ebb current attains a rate of 5 to 6 knots; the flood current attains a rate of 3 to 4 knots. Between Tiwail Point and Burial Point, both the ebb and flood currents attain a rate from 5 to 7 knots. Both currents are weak off Main Wharf, but the ebb attains a rate of 1 knot. In deep waters NE of Middle Bank, the flood attains a rate of 5 to 6 knots, the ebb 4 to 5 knots. The currents run evenly in the direction of the channel, with heavy tide rips off Stirling Point and Channel Rocks.

Depths—Limitations.—Two channels are used for approaching Bluff. The S channel has a minimum depths of 12.5m. The N channel has a minimum depth of 7.2m. The maximum dimensions for vessels entering the port are a length of 198m and an overall beam of 29m.

The maximum permissible draft in the entrance channel is 9.7m at HW and 7.0m at LW; the HW draft may be increased to 10m, depending on the height of tide. Vessels drawing 9.7m can berth at Town Wharf and Island Harbor; vessels of maximum channel draft can berth at Smelter Wharf. Vessels may enter, berth, unberth, or depart during hours of darkness in good weather only.

The Main Wharf, sometimes called Town Wharf, is 552m long and can accommodate vessels with drafts to 9.7m. Berths are numbered 11, 12, and 14 from the E. Oil tankers berth at No. 11; bitumen tankers berth at No. 12. Bulk fertilizer is also discharged at the Main Wharf. On the S side of the wharf, the W part is used for berthing by the fishing fleet.

At Island Harbor there are nine berths, numbered as shown on the chart, except for No. 7 and No. 8, which are situated on the NE side of reclaimed land N of No. 5. The maximum size of vessel that can be accommodated and normal use of each berth is given in the accompanying table.

Bluff Harbor—Berth Information			
Berth	Length	Draft	Use
1	160m	7.0m	Fishing industry
2	190m	7.7m	Bulk grain
2X	70m	6.0m	
3	213m	9.7m	Ro-ro and break bulk
3A	153m	9.2m	Sulfuric acid
4	213m	9.7m	Timber
5	213m	9.7m	General cargo
6	135m	7.7m	Supply and fishing
7	100m	8.0m	
8	230m	10.2m	Woodchips, coal, and grain
11	210m	9.7m	Petroleum products
12	183m	8.7m	Bitumen

The height of all the berths is 4.4m above MLWS, except No. 8 Berth, which has a height of 3.8m.

Tiawa Wharf lies cross channel from Main Wharf and Island Harbor. Vessels up to 11m draft and lengths to 225m may enter to berth, depending on tide. An aluminum smelter is situated at the berth. The road access to the wharf is 1200m from the shoreline.

Dog Island, which lies in the SE approach to Bluff Harbor, is fringed by a reef of rocks outside which are thick beds of kelp. The sea breaks heavily on its N and E sides. When passing to the E of Dog Island it should be given a berth of 3.5 miles; when passing to the S and W a berth of more than 1 mile.

A depth of 14.6m lies about 1.5 miles W of Dog Island.

Old Man Rock, over which the sea breaks, lies on the edge of kelp extending N of Dog Island. The Dogs Tongue is a rocky ridge that extends ENE from Dogs Island. A spit, with depths of 6.1m near the outer end, extends about 3.2 miles E from the E end of Dog Island.

Dog Island, which lies in the SE approach to Bluff Harbor, is fringed by a reef of rocks outside which are thick beds of kelp. The sea breaks heavily on its N and E sides. When passing to the E of Dog Island, it should be given a berth of 3.5 miles; when passing to the S and W of Dog Island, a berth of more than 1 mile should be given.

A depth of 14.6m lies about 1.5 miles W of Dog Island.

Old Man Rock, over which the sea breaks, lies on the edge of kelp extending N of Dog Island. The Dogs Tongue is a rocky ridge that extends ENE from Dogs Island. A spit, with depths of 6.1m near the outer end, extends about 3.2 miles E from the E end of Dog Island.

Aspect.—There are two ways to enter Bluff Harbor, via South Channel or North Channel. South Channel is preferred, as North Channel is not buoyed and depths within it are less.

The Bluff, a headland, with a height of 261m at Bluff Hill, about 3 miles SE of Shag Rock, forms a prominent feature in contrast to the level land in its vicinity, and, for vessels making Foveaux Strait from E. The headland is covered with scattered scrub and rocky outcrops on its W side and is bush-covered on its E side; it is connected to the mainland at its NW end by a low, narrow isthmus.

From **Stirling Point** (46°37'S., 168°22'E.), the shore surrounding The Bluff projects about 0.6 mile NNW to Burial Point, where the War Memorial lies. The wharfs front the town of Bluff; the Island Harbor wharves lie close NW.

A bank, with a least charted depth of 12.2m, lies about 0.5 mile off the entrance to South Channel in the white sector of the Entrance Light, between the bearings of 342° and 077.5°.

Entrance Shoal lies about 0.5 mile ESE of Stirling Point; it forms the E side of South Channel. With a heavy sea running, the shoals in the vicinity of Stirling Point form a mass of broken water with heavy breakers. Therefore, vessels should keep outside of the 10m curve.

Davey Shoal, with a least depth of 4.6m, lies on the E side of South Channel, about 0.4 mile S of Tiwai Point.

Channel Rocks, with a least depth of 3.7m, lie on the S side of the fairway, about 0.2 mile SW of Tiwai Point. Tiwai Point and its vicinity are fringed by foul ground, as best seen on the chart.

Pilotage.—Pilotage is compulsory for all vessels over 100grt. Pilots board vessels from a launch equipped with VHF, 1.5 miles SSW of the Entrance Light and within its white sector. Vessels, other than those exempt from pilotage, must not proceed beyond the Entrance Light without a pilot. Vessels should send their ETA 24 hours prior to arrival, confirming 4 hours in advance.

Pilots usually board vessels, except in bad weather, between 30 minutes and 1 hour before slack water, day or night. Tankers are generally berthed during daylight hours only. Arrangements regarding boarding will be made via radio or visual signal from the signal station or pilot launch.

In heavy W weather, a safe boarding area for the pilot, lying nearly 5.5 miles ENE of Dog Island Light, is sometimes used.

Arrangements for the use of this anchorage will be made by radiotelephone or blinker light.

Coastal pilots, licensed to pilot vessels between the entrance to Otago Harbor and Milford Sound, including the sounds and coasts and harbors of Stewart Island, can be obtained with 24 hours notice.

Vessels stopping to pick up a pilot are warned not to approach the 10m curve too closely nor enter the red sector of the Entrance Light when within 1 mile of the light, especially during the flood as the current sets strongly onto Entrance Shoal.

Signals.—The signal station at Stirling Point is no longer manned; vessels about to enter the harbor should ascertain whether an outbound vessel is in the entrance channel by contacting Bluff Harbor Radio. A continuous listening watch on VHF channel 16 is maintained by Bluff Harbor Radio.

Anchorage.—In good weather, vessels waiting for the tide to enter Bluff Harbor may obtain anchorage, in a depth of about 21.9m, about 2 miles WNW of Dog Island. A good anchorage for vessels delayed longer than 6 hours awaiting to enter Bluff Harbor lies about 5 miles E of Dog Island, in depths of 14.6 to 18.5m.

Shelter from severe weather may be obtained off Otaku Point under the lee of Stewart Island, less than 20 miles from the Bluff in 26m, with Saddle Point beacon bearing 324° or off Half Moon Bay in 12.8 to 16.5m. Anchorage can be found anywhere offshore between these points, with the quietest anchorage being found off the long beach adjacent to the Murray River.

The quarantine anchorage is an area enclosed by an arc of a circle, radius 3 miles, centered on Stirling Point, or other such area as indicated by the harbor authorities.

The explosives anchorage, as charted, for vessels carrying more than 5 tons of explosives, lies about 1 mile NNE of Dog Island. The recommended approach route is NW of the island. Reports have it that the harbormaster may designate explosives anchorages other than those charted and should be consulted on the matter.

An abandoned submarine telegraph cable lies between Dog island and the shore N.

Directions.—South Channel has a least depth of 8.8m on the leading line, but depths of 5.5m or less lie close NE of the line between Lighted Beacon No. 2 and Lighted Beacon No. 3; in addition, a vessel's draft is restricted owing to the strong tidal current off Channel Rocks. North Channel has a least depth of 6.1m in the fairway.

Vessels normally enter the channels so as to berth at SW, bows W. Vessels drawing 6.7m or more should enter South Channel at HW. If entering with a strong flood tidal current, great care must be exercised, especially when rounding the lighted beacon 0.2 mile N of Burial Point, as, if the bow gets into SW with the stern in the full strength of the tide, a vessel may be turned right around.

Caution.—Vessels should make due allowance for the strong currents present in the approach channels to the harbor.

An abnormal magnetic variation exists in the area between Island Harbor and Smelter Wharf.

Toetoes Bay (46°38'S., 168°41'E.) lies between Bushy Point and Waipapa Point, 14 miles ESE. Bushy Point, from which a

light is shown, is low and has a conspicuous patch of scrub upon it.

12.40 East and south shores of Ruapuke Island.—**Ruapuke Island** (46°46'S., 168°31'E.) lies almost in the center of the E entrance to Foveaux Strait and, except for its NW side, dangers almost surround it. The center of the island is flat with a height of 41m, and there are hummocks on its N, S, and W ends. Also, the island is covered with stunted trees.

North Head (46°44'S., 168°32'E.), the N end of Ruapuke Island, is a cliffy promontory rising to a hummock, 62m high. There is a heavy tide race around North Head. Seal Rocks, the highest being 7.3m, with submerged rocks N and S of them, lie near the outer end of a sandy ridge, with depths less than 9.1m, which extends about 3 miles E from North Head. In heavy weather the sea sometimes breaks over the E part of the sandy ridge.

Foul ground extends up to 0.7 mile offshore between North Head and Observation Bluff, the E extremity of Ruapuke Island. Green Island, with a flat top, lies near the outer edge of a spit which extends about 1.7 miles E from Observation Bluff. Two islets lie between Green Island and the Bluff. A submerged rock lies about 0.7 mile NNW of Green Island. There is a depth of 2.7m between the above islets and Green Island.

Toby Rock, below-water, lies about 4 miles E of North Head; it is the most dangerous rock in this vicinity, due to it not being marked by kelp as are many of the other dangers. Fairchild Rock, with a depth of 4.6m, lies about 5.5 miles E of North Head, and a 4.9m patch lies about 1 mile ENE of it. These dangers, off the E shore of Ruapuke Island, should be approached with great caution.

The Breaksea Isles, comprised of two islets, are located over 1 mile SW of Green Island; they lie upon a reef surrounded by rocks.

The South Islets lie on a reef that projects about 0.5 mile S from South Point, the S end of Ruapuke Island. Depths of less than 9.1m project about 1 mile SSE of the end of the spit. Rocks project about 0.5 mile W from the W side of South Point. Kelly Rock, with a depth of 11m, lies about 1.7 miles SSW of South Point.

Henrietta Bay indents the SW shore of Ruapuke Island; foul ground projects 0.4 mile from its head.

The Hazelburgh Group lies on the S side of a bank with depth less than 11m. A 10.7m patch lies 0.7 mile S of the W end of the group.

Half Passage Rock, 16.2m high, with two drying rocks SE, lies about 1.2 miles W of the W end of the Hazelburgh Group. Two submerged rocks lie between the Group and Half Passage Rock.

Fife Rock lies about 1.7 miles NNW of Half Passage Rock. Lachlan Shoals, two separate groups, lie at the W limits of the shoals lying off the W side of Ruapuke Island. A 14.6m patch lies about 2.7 miles SW of Half Passage Rock. Several rocks, best seen on the chart, lie in the N approaches to Henrietta Bay.

Caution.—Vessels navigating in the vicinity of Ruapuke Island should maintain a good lookout. Unless a vessel is intending to anchor, Ruapuke Island should be given a wide berth. The passages between the many small islets and rocks should be left to small vessels with extensive local knowledge.

12.41 Northwest shore of Ruapuke Island.—Caroline Bay lies in the S part of the bight formed by North Head and a point about 2.2 miles SW. White Islet lies on a spit, with depths less than 11m, off the S entrance point of the bight. A 9.4m patch lies about 0.5 mile NW of White Islet. A bank, with a depth of 12.5m near its S end, lies about 1 mile W of White Islet.

Lagoon Bay is entered between White Island and the W point of Ruapuke Island. Tupis Island, 18.3m high, lies close off the S entrance point of the bay. Shoal water extends 0.3 mile NW from the islet.

Anchorage.—Vessels with local knowledge, approaching from the E and intending to anchor off Ruapuke Island, should pass from 5 to 6 miles S of Waipapa Point and when S of it the island will be generally seen. Green Island and Seal Rocks become visible from 6 or 7 miles. When about 0.5 mile from Green Island, vessels should pass around its N end, passing midway between it and the submerged rock about 0.5 mile NW, anchoring, in a depth of about 11m, sand, 0.4 mile W of the N end of Green Island. Vessels should not proceed closer inshore, due to the foul ground that projects off the E shore of Ruapuke Island. Additionally, vessels should not attempt to reach the anchorage via S and W of Green Island, as depths are shoal SW of the island. With W or SW winds this anchorage is relatively secure, but with S winds a swell rolls in which may break over the islets that shelter it from that direction. Vessels should not lie here in E winds.

12.42 South side of Foveaux Strait.—The S side of Foveaux Strait is formed, from the W to E, by the Solander Islands, Stewart Island, and Ruapuke Island.

The **Solander Islands** (46°34'S., 166°53'E.) lie upon a bank with depths less than 100m. The E and larger of the islands rises almost sheer from the sea and has a notable peaked summit, 335m high. In clear weather this peak can be seen about 40 miles. It is wooded with the exception of its NE end which is a bare, white rocky face. There is a deep cave on the E side of the island and a large arch on its S end. Three rocks lie close off the N side of the E island, the easternmost being 7.6m high. Several large rocks lie off the S side. It was reported that there were signs of submerged rocks lying farther S.

The W Solander Island, lying about 1.2 miles W of the E island, has a barren appearance, attaining a height of about 152m. This island is guano-covered.

Stewart Island (47°00'S., 168°00'E.), whose NE shore forms a major part of the S side of Foveaux Strait, is partly mountainous and thickly wooded. The shores of this island are fringed with many islets and rocks over which seas break.

An irregular mountain ridge, of which Mount Anglem is the highest peak, extends along Stewart Island's NE shore. The S end of Stewart Island is very mountainous though it doesn't attain the heights in the N part. Frazer Peaks, 427m high, and Smiths Lookout, 536m high, are prominent, bare granite peaks, lying 7.5 and 3 miles NE, respectively, of Southwest Cape.

12.43 West side of Stewart Island.—**Rugged Point** (46°43'S., 167°44'E.) is the NW end of Stewart Island. The Rugged Islets, a group of high, black, craggy rocks, worn by the sea, extend 1.5 miles NW from the point. Heavy tide rips extend from a distance seaward of the islets and depths of 44 to

55m have been found rounding them at a distance of 0.5 to 1 mile.

North Red Head is located 2 miles SSW of Putatara Point. About midway between the headland and a point 2.5 miles S, a reef, with rocks above and below water, extends about 0.8 mile from the coast.

Red Head Peak, a conspicuous bold and rocky peak, rises close behind the coast about 3 miles S of Rugged Point.

Codfish Island lies with its NW end about 4 miles W of Red Head and it is moderately high and flat-topped. High Rock, with submerged rocks close N and S of it, lies midway between Codfish Island and the shore E.

Sealers Bay, lying in the NE part of Codfish Island, affords confined anchorage, sheltered from W winds, in depths of 11 to 14.6m. The entrance points to this bay are rock-fringed.

Mason Bay is entered about 8.5 miles SE of Codfish Island between Mason Head and the Ernest Islands, about 5 miles SW. The NE end was reported to dry 1 mile. Look-Out-For-Reef, nearly awash, lies about 3.5 miles WSW of Mason Head. A dangerous rock, over which the sea seldom breaks, lies about 3 miles W of Richards Point. Shoaling was reported between the point and the rock.

The Ernest Islands are two red cliffy islands that lie close together and are almost joined to the mainland by a sandy neck.

Mason Bay affords anchorage, in depths of 5.5 to 7.3m, in its S part, sheltered from W and NW winds. A heavy sea rolls into this bay from the N.

The Mutton Bird Islands front the SW part of Stewart Island. There are clear passages among the Mutton Bird Islands, but the tidal currents run at a great speed making these unsurveyed passages hazardous. There are heavy tide rips at the N end. The Boat Group is the northeasternmost of these islands and is made up of three islets. The Brothers, two islets with a submerged rock about 0.5 mile N of them, lie about 1.7 miles S of the S islet of the Boat Group.

Mokinui Island (Moggy Island), the westernmost of the Mutton Bird Islands, is rock-fringed. A submerged rock, whose position is approximate, was reported to lie about 1 mile SW of the S end of the island. Wedge Island is the SW of the Mutton Bird Island, lying about 7 miles WNW of Southwest Cape, with Hidden Island, Long Island, and Evening Island between. A reef, on which there are above-water rocks, projects about 1.5 miles SW from the S end of Hidden Island. A patch of foul ground was reported to lie about 1 mile WNW and a 14.6m patch, the position of which is approximate, lies about 1 mile NNE of the N end of Hidden Island. Foul ground projects SW, about 1.5 miles, from the S end of Hidden Island.

Long Island, the largest island off this section of shore, is rock-fringed. An islet lies close off its N end. Evening Island lies close S of Long Island. A submerged rock lies about 0.5 mile SE of Evening Rock. There are strong tide rips in this vicinity.

12.44 South coast of Stewart Island.—**Southwest Cape** (47°17'S., 167°29'E.) is the promontory that forms the SW end of Stewart Island and the land in close proximity is high and bold, with a steep, rugged shore. There are strong tide rips close E of the cape.

Wilson Bay is entered about 5.5 miles E of Southwest Cape and it is exposed with tide rips in its entrance. Small vessels with local knowledge can obtain shelter in Burial Cove on the W side of the bay, about 1.5 miles NNE of its W entrance point.

Port Pegasus (47°12'S., 167°42'E.), which presents a broken appearance from sea, is fronted by three islands, Noble Island, Anchorage Island, and Pearl Island. Port Pegasus has several entrances requiring local knowledge for use. Acheron Passage, off the NW shores of Noble Island and Anchorage Island, joins the North Arm to the South Arm.

The main entrance channel, known as Broad Passage, lies between Anchorage Island and Pearl Island, and leads into North Arm. It has a least width of about 0.4 mile, with depths ranging from 32 to 47m in the fairway, and is free from dangers. Several rocks lie off the NE end of Anchorage Island.

Narrow Passage lies between the SW side of Noble Island and the mainland W. Pigeon House Hill, on the SW side of the passage, is notable. Rocks fringe the S side of Noble Island. Narrow Passage has depths ranging from 22 to 31m in the fairway.

Whale Passage is the NE passage leading between the NE shore of Pearl Island and the mainland. It has a least depth of 9.1m in the fairway and a least width of 135m. Orphans Rock lies 0.2 mile E of the entrance, with a submerged rock about 0.1 mile further S.

The NW shore of South Arm is indented by Sylvan Cove, Shipbuilders Cove, and Islet Cove. The SE side of South Arm is indented by Fright Cove. An islet, 15m high, lies in the entrance to South Arm. Micrometer Rock, above-water and surrounded by kelp, lies about 0.1 mile W of the islet. A shoal, with a depth of 3.7m, lies about 0.2 mile NW, and a submerged rock, marked by kelp, lies about 0.3 mile SW, respectively, of Micrometer Rock.

Anchorage may be found, in depths of 21.9 to 25.6m, midway between Micrometer Rock and Noble Island. The entrance to Shipbuilders Cove is encumbered with foul ground and rocks. A submerged rock, marked by kelp, lies about 0.3 mile E of the S entrance point of Shipbuilders Cove.

Acheron Anchorage (47°11'S., 167°41'E.), lying between the NW shores of Anchorage Island and Noble Island, and the mainland, is about 0.2 mile wide. The NE end of this anchorage is partially blocked by Tremulous Island and several islets and dangers NE to the mainland. Steamer Pass leads S of Tremulous Island; it is about 100m wide, with a depth of 12.8m in the fairway. Vessels with local knowledge can obtain sheltered anchorage, the best in Port Pegasus, in Acheron Anchorage, in depths of 16.5 to 20.1m, mud.

North Arm is fronted by Pearl Island; it has depths 21.9 to 47m. An islet, surrounded by kelp, lies near the head of this arm. Vessels with local knowledge can obtain anchorage, in a depth of 21.9m, close W of the above islet.

12.45 The Lords River (47°07'S., 168°08'E.) is entered between Surf Head and John Point, about 0.4 mile E. It is navigable by vessels with local knowledge for about 1 mile within its entrance, in depths 7.3 to 37m.

Owen Island is the largest of a group of rocky islands extending SE from John Point that aid in identifying the entrance

of the Lords River. A 5.5 patch and a 0.9m patch, both marked by kelp, lie in the middle of the fairway about 0.4 mile and 0.5 mile NW of the NE end of Surf Head. Small vessels with local knowledge can obtain anchorage about 0.4 mile within the entrance, in a depth of 11m. The Lords River has not been extensively surveyed.

North Trap (47°22'S., 167°55'E.) fronts the S shore of Stewart Island, lying about 17.5 miles SW by S of the entrance to the Lords River, and is comprised of a reef of above and below-water rocks. A rock, 1.5m high, stands near the W end of the reef, and a rock, 0.9m high, near its E end, give North Trap the look of an overturned boat. Boomerang Breaker was reported to lie about 7 miles SSW of North Trap.

South Trap, a reef of above-water rocks, 1.2 to 1.8m high, and below-water rocks, lies about 10.5 miles S by W of North Trap. There are heavy breakers over this reef. Breakers have been reported E of North Trap and South Trap in bad weather. Due to the unsurveyed nature of the area in the vicinity of these reefs and of strong tidal currents, they should be given a wide berth.

The **Snares Islands** (48°00'S., 166°34'E.) are a bold group of bird-covered islands lying about 57 miles SW of Southwest Cape. The Snares Islands are an excellent landmark when approaching from the W. Also, these islands should be made the point of departure when passing S of Stewart Island. The Snares were reported to lie 1.7 miles ESE of their charted position.

Northeast Island, 189m high on its S side, is covered with scrub and is mostly steep, except on its NE side. The island is made up of rough, coarse granite showing, in places, a pink or red tint covered with dark peat. Broughton Island lies close S of Northeast Island. A group of rocks lies midway between Broughton Island and Alert Stack.

The Snares are surrounded by deep water and there is no anchorage, except for vessels with local knowledge, close under and E of Northeast Island.

The Snares have been designated as a nature reserve. Landing is by permit only.

Vancouver Rock, over which the sea breaks, lies nearly 2 miles SW of Northeast Island. Four islets, forming a rugged ridge of barren rocks, extend up to 1 mile SW of Vancouver Rock.

12.46 Northeast coast of Stewart Island.—Black Rock Point (46°41'S., 167°52'E.) is the N end of Stewart Island, and close W of it is a remarkable white sandy patch. Foul ground extends NW from the point. The Bishop and Clerk Islets lie nearly 3 miles WNW of Black Rock Point, with a shoal area lying between them. Strong tide rips exist over the E side of Bishop and Clerk Islets as well as over the shoal. An above-water rock lies between the shoal area and Black Rock Point.

Between **Saddle Point** (46°43'S., 167°59'E.) and Gull Rock, a white rock, 4.6m high, lying close offshore about 5.2 miles SE, sheltered anchorage may be found. A 14.6m patch lies 0.7 mile NNE of Gull Rock. A notable sandy patch lies about 0.8 mile S of Gull Rock. Newton Rock, with a depth of 1.8m, lies about 1.2 miles E of Gull Rock and it is steep-to, and seldom breaks. Banks extend NW and SE from Newton Rock.

Local magnetic anomaly.—Off Saddle Point, the normal magnetic variation is decreased by 4°.

In moderate weather, vessels can obtain anchorage between Gull Rock and Port William, about 1 mile offshore, taking care to avoid the charted dangers.

West Head is the N entrance point of Port William. A rocky shoal, with a depth of 7.3m, lies about 1.2 miles N and a 16.5m patch lies about 0.6 mile NE, respectively, of West Head.

Port William (46°51'S., 168°05'E.) is entered between the S end of West Head and Cultivation Head, about 0.7 mile S. Wooding Bay, in the S part of Port William, lies between Cultivation Head and Dark Head, about 0.5 mile WNW. Port William is a well-sheltered harbor.

The entrance to Port William is narrowed by foul ground projecting from each entrance point. Pender Rock, submerged and marked by kelp, lies on the outer end of a spit of foul ground that extends about 0.3 mile SE from West Head. Depths less than 5.5m project about 0.3 mile N from Cultivation Point.

Small vessels with local knowledge can obtain anchorage in the N part of Port William, while larger vessels can lie about 0.2 mile S of West Head, in depths of 9.1 to 11m.

East Head (46°51'S., 168°08'E.) lies about 1.2 miles E of Cultivation Head and the shore between is indented by Lee Bay. Garden Mound, 179m high, stands about 0.7 mile SSW of East Head. A bank, with depths less than 5.2m, lies in the center of Lee Bay. A rock, with a depth of 4.6m, and marked by kelp, lies about 0.2 mile WNW, and a bank, with depths from 8 to 10.7m, lies over 0.5 mile NNW, respectively, of East Head.

12.47 Off-lying islands and dangers.—There are three groups of islands that lie within 6.5 miles of Port William, the North Isles, the Mutton Bird Islands, and the Fancy Group. These groups form a chain of barren islands and craggy rocks, with strong tidal currents and rips among them. Therefore, this chain should not be approached closely.

The North Isles, the northernmost group, lie about 5 miles ENE of East Head. North Islet, 43m high, and Pikomamaku Islet, 36m high, 0.3 mile SSE, are connected by a reef of above and below-water rocks. Zero Rock, above-water, lies 0.1 mile ENE of the N end of North Islet. Rocks, with depths of 8.8m and 5.2m, lie about 1 mile ESE and 0.7 mile NE, respectively, of Pikomamaku Islet. Wairau Shoal, with a depth of 9.1m, lies about 1.7 miles E by S of North Islet.

The Mutton Bird Islands are made up of three islands and some islets and rocks lying SW of the North Isles. Motunui Islet, the N islet of the group, is 55m high. Pukeokaoka Island, 57m high, lies 0.3 mile S of Motunui Island and Herekopare Island, 54.2m high, lies 1 mile SSE of Pukeokaoka Island. A reef connects the islands. Mary Higgins Rock, 1.8m high, lies nearly 1 mile NNE of Herekopare Island. Polybank Shoal, with a depth of 6.1m, lies 1.2 miles W and Fish Rock lies nearly 1.7 miles WSW, respectively, of Pukeokaoka Island. A shoal, with a depth of 12.8m, lies 0.2 mile SW of Fish Rock. Fast Rock lies 1.2 miles SSW of Herekopare Island. Several rocky patches lie about 1.5 miles ENE of Fast Rock.

The Fancy Group, the southernmost of the islands lying off Port William, is made up of two separate groups with a narrow channel between. The N group is made up of Bunker Islet and three islets NW of it; the S group contains Kanetoi Islet, 14 high. A 17.7m patch lies about 1 mile NNE of Kanetoi Island.

Abbot Passage separates the Fancy Group from Bench Island, 96m high, about 2.5 miles SW. Flat Rock, 24m high, lies about 0.3 mile ENE of the NE end of Bench Island. The Twins are two notable rocks, 34m high, that lie 0.2 mile E of the SE end of Bench Island, with rocks between. Passage Islet, 20m high, lies about 1 mile W of the SW end of Bench Island in Carter Passage, upon a bank with depths less than 11m. An 18.3m patch lies about 1 mile SSE of Passage Islet.

12.48 Horseshoe Bay (46°52'S., 168°09'E.) is entered about 1.5 miles NNW of Ackers Point, with a sandy beach at its head. Rocks fringe the shore on either side, with submerged rocks off the N side of the head of this bay, where there is a jetty. A bank, with a depth of about 7.6m, lies close outside the entrance of the bay. Vessels with local knowledge can obtain anchorage, in depths of 9.1 to 11m, during offshore winds.

Half Moon Bay (46°53'S., 168°09'E.) is the next indentation S from Horseshoe Bay and is separated from it by a peninsula, 102m high. This bay is encumbered with several rocks; foul ground projects up to 0.2 mile from its head. The town of Oban stands at the head of the bay.

A submerged rock lies about 0.1 mile SSW of the N entrance point of the bay, and a rock, 3m high, from which foul ground projects about 0.1 mile WNW, lies about 0.3 mile further SSW. Submerged rocks lie up to 0.4 mile SW of the 3m high rock.

Vessels with local knowledge can obtain anchorage in Half Moon Bay during offshore winds, in depths of 12.8 to 16.5m.

Oban (46°53'S., 168°08'E.), the only port and principal town of Stewart Island, is situated at the head of Half Moon Bay.

Depths—Limitations.—At the N end of Oban there is a ferry wharf, with a depth of about 5m alongside the S face. Vessels can berth on this face, at the outer end, but are required to move for ferries. A scend may be experienced at the wharf, which is untenable in heavy E weather.

Pilotage.—Pilotage is compulsory. Pilots may be obtained from Bluff Harbor.

The signal station maintains listening watch at 0900, 1200, and 1500. The call sign is Half Moon Bay (ZLRZ), 2045 kHz.

Directions.—A vessel bound for Oban should keep about 0.1 mile off the S shore of Half Moon Bay, until 0.7 mile within the entrance; then it should pass about 50m S of the 3m high rock, not less than 40m N of the lighted beacon, and N of the beacon; then to the wharf.

12.49 Paterson Inlet is entered between **Ackers Point** (46°55'S., 168°12'E.) and Anglem Point, nearly 2 miles SE. The N and S shores of the inlet are formed by high irregular land.

Rakeahua (46°57'S., 167°53'E.) is a conspicuous dome-shaped mountain, 676m high, whose summit may be seen from just about all directions in clear weather.

There is a least depth of 12.2m in the fairway on the range line E of Native Island, which lies about 1.2 miles SSW of Ackers Point. Further within the entrance, there are depths of 12.8 to 23.7m in the channel that leads N of **Ulva Island** (46°56'S., 168°08'E.). The channel S of Ulva Island has a least depth of 14.9m in the fairway.

Native Island (46°55'S., 168°09'E.), 75m high, lies in the entrance to Paterson Inlet and it is almost connected to the shore NW by reefs and foul ground. A 7.6m patch, over which dur-

ing E winds the sea occasionally breaks, lies near the limit of the coastal bank, about 0.5 mile NE of the E end of Native Island. Ulva Island, rock-fringed, lies about 1.5 miles SW of Native Island and it is about 88.1m high.

An islet, 19m high, lies about 0.5 mile SW of the W end of Ulva Island and the shore between is encumbered with rocks. Sydney Cove lies in the center of the N side of Ulva Island and it is sandy with a rock close off its W entrance point. A bank, with a least depth of 8.2m, lies between Ulva Island and Native Island.

12.50 North shore.—Iona Islet (46°54'S., 168°07'E.), 49m high, lies about 1 mile WNW of Native Island and fronts Golden Bay, where there is a wharf. An islet, 11m high, lies about 1.7 miles W of Iona Islet.

Kaipipi Bay is entered between Prices Point and the mainland N. The peninsula, of which Prices Point is the E tip, is fringed with rock on its N side. Foul ground extends about 0.5 mile from the bays head. West of Kaipipi Bay the inlet narrows and depths decrease.

Vessels with local knowledge can obtain anchorage in Sydney Cove, but not during E winds. Anchorage may be found by vessels with local knowledge, in depths of 20 to 22m, mud and sand, about 1.2 miles E of Prices Point.

12.51 South shore.—**Anglem Point** (46°55'S., 168°12'E.), the SE entrance point of Paterson Inlet and the N end of the Bradshaw Peninsula, has upon it a prominent clump of trees. A reef, upon which there is a rock 1.5m high, extends about 0.1 mile N from Anglem Point. Another reef, which dries 1.8m, lies almost 0.7 mile WSW of Anglem Point. A 3.7m patch lies about 0.7 mile SW of the drying reef, with another reef close SW.

Glory Cove (46°58'S., 168°10'E.), located at the root of the Bradshaw Peninsula, is entered between Little Glory and Isle Point, an islet forming the SW entrance point.

Vessels with local knowledge can obtain anchorage off the W side of the Bradshaw Peninsula, in depths of 18 to 22m, off Old Neck. Glory Cove is the best anchorage in Paterson Inlet, in depths of 7.3 to 11m, stiff mud, good holding ground.

Southwest Bay, known locally as Glory Harbor, is entered between the Boat Passage Islets, a group of islets and rocks lying 0.2 mile WNW of Islet Point, and Bravo Islet, 1 mile W. Bravo Islet is joined to the mainland by a thin strip of land. Five islets lie on the coastal bank N of Bravo Islet.

Vessels with local knowledge can obtain anchorage, in depths of 23 to 25m, in Southwest Bay, about 1.5 miles from its head or, in 9.1 to 11m, mud, 0.5 mile from its head. Swinging room is limited in Southwest Bay.

Abraham Bay is entered about 4 miles SW of Ulva Island. It has a depth of 7.3m in its entrance gradually shoaling to a sandy beach at its head. Pryse Peak rises to a height of 350m along the W side of Abrahams Bay.

Directions.—Vessels with local knowledge entering Paterson Inlet from N should remain W of the off-lying islands, and when off Port William head for Ackers Point Light, bearing 174.5°. This course passes about 2.5 miles W of Motunui Island and about 0.5 mile W of Fish Rock. When Herekopare Island is abeam to port, distance 2.7 miles, change course to 132°, heading for the W end of Bench Island. Remain

on this course until the E end of Ulva Island comes into range with the NW end of Groper Island, bearing 212.2°, when course should be changed to enter the fairway passing about 4 mile E of Native Island. When a tangent of the N shore of Ulva Island bears 100°, steer for it passing S of the bank S of Native Island, then steering about WNW remaining in the fairway midway between Ulva Island and Iona Island, passing about 0.5 mile S of the latter. Then shape course for the anchorages situated about 1.2 miles E or 1 mile SW of Prices Point. Vessels with local knowledge approaching Paterson Inlet from the S proceed either through Carter Passage or Abbot Passage.

Local magnetic anomaly.—The normal magnetic variation is decreased by about 6° in the channel between Anglem Point and Passage Islet.

The shore between Anglem Point and East Cape, about 5.5 miles S, is formed by bold headlands fringed by rock affording no shelter.

A rock, with less than 1.8m, lies 0.4 mile offshore 3.2 miles S of Anglem Point.

12.52 Port Adventure (47°04'S., 168°11'E.) indents the SE shore of Stewart Island and is entered between Stirling Head and Shelter Point, about 1.7 miles SSE.

Stirling Head is steep and cliffy rising to a height of 126.8m about 2.5 miles WNW. A reef extends about 0.5 mile S from the point.

Weka Islet lies near the center of a reef which projects about 0.6 mile E from Stirling Head. Weka Reef, covered but always breaks, lies about 1.5 miles E of Stirling Head. Theresa Rock, submerged, lies about 0.5 mile E of Weka Reef. A 13.7m patch lies about 0.5 mile WNW of Weka Reef.

Wreck Reef lies just above water about 2 miles E of Shelter Point, and the sea usually breaks heavily over it. A shoal, with a depth of 7.9m, lies almost 1 mile NNE of Wreck Reef.

Entrance Island (Tia Island) (47°05'S., 168°13'E.) lies in the middle of the entrance to Port Adventure. Its W extremity is known as Memory Point. Dangerous Rocks lie within 0.2 mile E and SE of the E end of Entrance Island; a reef extends about 0.4 mile N from Memory Point.

Passage Rock, surrounded by kelp, lies about 0.4 mile NNE of East Point, the S entrance point of Port Adventure. A depth of 9.1m was reported to lie close E by N of Passage Rock.

The Breaksea Islands are a chain of barren craggy islets and rocks lying within about 1.5 miles SW of Shelter Point. These rocks form a barrier to the heavy swell which rolls along the SE side of Stewart Island.

The S shore of Port Adventure has several rocks, marked by kelp, lying off it. A sunken rock, with a depth of 2.7m, lies nearly 1.2 miles WNW of East Point.

The NW shore of Port Adventure is indented by Oyster Cove in the NW part and North Arm in the N part, with Redsand Cove and White Beach and an unsurveyed cove between. A rocky islet lies in the entrance to North Arm; the Redsand Coves entrance is filled with kelp.

Directions.—Port Adventure should not be entered without local knowledge. The best passage into Port Adventure lies N of Entrance Island, between it and Stirling Head. It is barely 800m wide, with depths of 28 to 40m, except for a 6m patch and reef extending NW from Memory Point. The passage S of

Entrance Island is encumbered by Passage Rock, as well as a reported depth of 9.1m in the passages center.

Directions for Foveaux Strait

12.53 Vessels entering Foveaux Strait from the W should make **Solander Island** (46°34'S., 166°54'E.), the largest of which is an excellent landmark. An approximate but helpful guide to determining a vessels longitude in the approach is the tongue, with depths less than 183m, projecting S from the bank about 26.5 miles SW of **Cape Providence** (46°01'S., 166°20'E.). By arranging to pass Ruapuke Island by daylight, vessels may make the passage without difficulty.

The only port on the N shore of Foveaux Strait suitable for vessels of large size is Bluff Harbor.

On the SW side of the strait there are several anchorages and harbors, which are always accessible and safe, and where vessels can wait for an opportunity to enter Bluff harbor.

Caution.—Owing to the exceptional pinnacle formation of underwater features in these waters, it cannot be certain that all dangers have been discovered. Deep-draft vessels off recommended or recognized routes are advised to keep in greater depths than 55m. Vessels navigating in unfrequented waters of less depth should keep a lookout for surface disturbances or unusual soundings which may indicate potential danger.

Vessels approaching Foveaux Strait from the E have two viable choices, that is, to pass N or S of **Ruapuke Island** (46°46'S., 168°31'E.). The passage N of the island is the recommended route for deep-draft vessels.

12.54 North Passage.—Vessels passing along the S shore of South Island at a distance of 4 or 5 miles will, in clear weather when abeam of Slope Point, see The Bluff. The Bluff is a conspicuous lone hill which looks like a small islet rising from the W side of the entrance of Bluff Harbor.

When in a position about 4 miles S of **Waipapa Point** (46°40'S., 168°51'E.), vessels should head for Bushy Point Light, bearing about 298°. Vessels in this vicinity should allow for the tidal currents that attain 1 knot. When the N end of Ruapuke Island bears about 242°, vessels should bring Waipapa Light astern bearing about 083°, or steer for **Mount Anglem** (46°45'S., 167°55'E.) bearing about 263°, which leads about 2.7 miles S of Dog Island. In this area tidal currents attain rates from 0.5 to 2.2 knots. When The Bluff is on a NNW bearing, course should be changed WNW to pass about 4 miles N of Stewart Island and halfway between Solander Island and the mainland N.

12.55 South Passage.—Vessels from the E bound to any of the ports of Stewart Island would probably pass S of Ruapuke Island, giving it a berth of about 4 miles and passing 2 miles S of the Hazelburgh Group. The NE side of this S channel is bordered by the Hazelburgh Group, Half Passage Rock, and Lachlan Shoals; the SW side is formed by the Fancy Group, the Mutton Bird Islands, and the North Isles. Vessels should steer through this passage in mid-channel. Then, if proceeding through Foveaux Strait, head to pass about 4 miles N of Stewart Island and proceed as above under North Passage.

South Island—East Coast

12.56 Cape Campbell to the Kaikoura Peninsula.—From Cape Campbell, the coast trends in a SSW direction for about 30 miles to the Kaikoura Peninsula. Several rivers flow into the sea on this coast and there are a few indentations.

All dangers along the coast appear to be contained within the 37m curve, which lies 1.7 miles off Cape Campbell and up to 3 miles off the coast in other places.

Caution.—Owing to the pinnacle nature of the underwater rocks off the coast of New Zealand, it can not be certain that all dangers have been discovered. Deep-draft vessels, when off recommended routes, are advised to keep in depths greater than 55m. Vessels navigating in unfrequented waters of less depth should keep a lookout for uncharted dangers.

Shepherdess Reef (41°45'S., 174°18'E.) lies 1.5 miles SE of Cape Campbell Light on an extensive foul area; the reef dries in places.

The Flaxbourne River enters the sea 8 miles S of Cape Campbell.

A 5.5m rocky patch lies on the 30m line, about 3 miles NE of the mouth of the Flaxbourne River.

Anchorage may be taken, in depths of 14.6 to 18.3m, in Welds Anchorage, 0.4 mile E of the reef at the entrance to the Flaxbourne River.

The coast from the Flaxbourne River to the **Clarence River** (42°10'S., 173°55'E.) is formed by sand and shingle beaches, with rocky points and steep spurs descending from the mountains.

Mount Tapuaenuka (41°39'S., 173°40'E.) rises to a height of 2,884m, about 15 miles NW of the mouth of the Clarence River. The mountain ranges on this coast rise to numerous sharp and rugged peaks. A break in the mountain range formed by the Clarence River has the appearance of a harbor when seen from the offing.

Waipapa Point (42°12'S., 173°52'E.) lies about 3.7 miles SSW of the entrance to the Clarence River.

12.57 Point Kean (42°26'S., 173°43'E.), 14.5 miles SSW of Waipapa Point, is the E extremity of the Kaikoura Peninsula. The peninsula rises to a height of 106m about 1 mile W of the point.

Ingles Bay is formed on the N side of the peninsula. Davidson Rocks, awash at LWS, lie 0.7 mile offshore, a little over 1.5 miles NNW of Point Kean. Nine Pin Rocks and Saint Kilda Rocks lie 1 mile and 0.6 mile NNW, respectively, of the same point.

Anchorage in Ingles Bay may be taken, in 18.3 to 20.1m, 0.7 mile N of the light on Point Kean. This anchorage is about 0.2 mile NE of Saint Kilda Rocks.

Lynch Reef extends 0.3 mile NE from Point Kean. Fyffe Cove is formed between this reef and Observation Point 0.7 mile NW.

The **Kaikoura Peninsula** (42°25'S., 173°42'E.) is a hummocky tongue of land that is reported to give good radar returns up to 23 miles.

Caution.—The Kaikoura Peninsula should only be approached during daylight hours in good visibility, unless the vessel has recent local knowledge.

12.58 The Kaikoura Peninsula to Point Gibson.—The coast for a distance of 11 miles S of Kaikoura Peninsula forms a continuous bight, then continues SSW for about 21 miles to Point Gibson.

Atia Point (42°26'S., 173°41'E.) is the S extremity of the Kaikoura Peninsula. South Bay is formed between Atia Point and Baxter Reef, 0.6 mile WNW. Cone Rock lies 0.3 mile offshore, 0.2 mile SW of Baxter Reef.

Gooch Bay lies between the SW extremity of Baxter Reef and Pinnacle Rock, 4.5 miles WSW. Gooch Bay affords anchorage, sheltered from all winds except those from the SE to S, in 14.6 to 16.5m, good holding ground, about 1 mile WNW of Atia Point.

Haumuri Bluffs (42°34'S., 173°31'E.) lie about 7 miles S of Pinnacle Rock. The bluffs are 177m high and are bare. Rocks, 3m high, lie 1 mile offshore, close inside the 20m curve, 2 mile N of Haumuri Bluffs.

The Conway River flows into the sea about 4 miles S of Haumuri Bluffs through a narrow channel. The land on either side of the entrance is low and flat.

From the entrance of the river to the Waiau River, 10.5 miles SSW, the coast is fronted by cliffs about 30m high. Mount Wilson, 643m high, rises 5 miles SW of the entrance to the Conway River.

Bushett Shoal, with a least depth of 3.6m, lies 3 miles offshore, 5.5 miles SSE of the Conway River entrance. **Bushett Rocks** (42°43'S., 173°30'E.), with a depth of 3.6m, marked by kelp, lie about 1 mile S of Bushett Shoal. Both dangers are steep-to and lie close inside the 50m line.

Between the entrance to the Waiau River and the town of Gore Bay, 5.5 miles SSW, the coast is steep and bare. **Shag Rock** (42°49'S., 173°21'E.), 34m high, is located close to the shore, 2.2 miles SSW of the Waiau River entrance.

Point Gibson (42°53'S., 173°19'E.) lies 1.5 miles SSE of Gore Bay. Port Robinson is situated in the bight on the NW side of the point.

12.59 Point Gibson to Steep Head.—From Point Gibson, the coast trends in a SSW direction for 14.5 miles to Motunau Island. A bight, that is indented about 15 miles, lies between Motunau Island and the Banks Peninsula, about 37 miles S. Steep Head is the E extremity of the Banks Peninsula.

The Hurunui River flows into the sea 2.2 miles SSW of Point Gibson, and **Sail Rock** (42°58'S., 173°13'E.) lies close off a projecting cliffy coast 4 miles SSW of the Hurunui River. About 8 miles farther SW Motunau Island rises to a height of 34m. A light is situated on a point 1 mile N of Motunau Island. Motunau Island lies about 0.6 mile S of the entrance to the Motunau River, and is connected to it by reefs.

Pegasus Bay is nearly 40 miles wide, N and S; its N shore from Motunau Island to Double Corner, 12 miles SW, is cliffy, with a sand and stone beach at LW. Four miles WSW of Motunau Island are two shallow patches extending 1 mile from shore which should be avoided.

Caution.—An area in which explosives are dumped is centered 42 miles ESE of Motunau Island.

From Double Corner, the coast trends in a S direction to **Godley Head** (43°35'S., 172°49'E.), about 27 miles distant. Five rivers run into the sea along this sandy beach.

The general depths of water across the mouth of Pegasus Bay is 37m, shoaling gradually to 11 to 13m, about 1 mile from the beach.

From Cape Campbell to the Banks Peninsula, a distance of 130 miles, there is no place of shelter, with the exception of temporary anchorage in good weather. Deep-draft vessels are recommended not to approach the coast nearer than 3 miles.

Tides—Currents.—Currents on this part of the coast generally set N, but occasionally after S winds it has been found to run in the opposite direction. Inshore the flood current sets to the N and the ebb to the S, both at a rate of 1 knot.

The **Banks Peninsula** (43°45'S., 173°00'E.) is formed by a mass of rugged, and in parts, densely-wooded mountains which rise to a height of 913m. It is bound by a coast which is exceedingly broken and indented with numerous bays and coves. The peninsula has been reported to give good radar returns up to 26 miles.

Godley Head, in the SW corner of Pegasus Bay, is a perpendicular cliff of dark-red color, and has been reported to give good radar returns to 19 miles.

Port Lyttelton (43°36'S., 172°43'E.)

World Port Index No. 55320

12.60 Port Lyttelton, the port of Christchurch, is entered between Godley Head and Adderly Head, about 1 mile SE. The harbor area was formed by the crater of an extinct volcano. The harbor extends about 8 miles WSW and is the principal import port for South Island. The port area has more than a half dozen finger piers, lying in a well protected basin.

The port is under the jurisdiction of Lyttelton Harbor Board.

Lyttelton Port Company Limited

<http://www.lpc.co.nz>

Tides—Currents.—Mean spring tides rise about 2.7m and mean neaps tides rise about 2.3m. The tides are irregular, both at springs and neaps, and are greatly affected by the wind.

Currents generally attain rates between 0.2 knot and 1 knot in the approaches, anchorages, and channels of the port. A S set may be experienced off the entrance moles.

Depths—Limitations.—Port Lyttelton lies with its outer harbor about 4 miles within the entrance between Godley Head and Adderly Head. The approach channel, which is entered about 1 mile ESE of Goodley Head, is maintained at a dredged depth of 11.6m; a depth of 10.5m is maintained in the greater part of the harbor, except in the NW part where there are depths of less than 9.1m.

Vessels up to 293m in length, with a beam of 32m and drafts of 12.2m at HW, may use the port. Facilities for handling bulk petroleum, grain, dry bulk, containers, cattle, and ro-ro cargo, as well as breakbulk commodities, are available. A drydock



Port Lyttelton

and slipway are also found in the port. Depths alongside the piers range from 7.0 to 12.2m.

Port Lyttelton—Berth Information			
Berth	Length	Draft	Use
1	140m	9.5m	General cargo and ro-ro
2E	270m	11.3m	General and bulk
2W	169m	10.5m	General and bulk
3E	195m	10.0m	
3W	223m	10.7m	
4E	148m	11.0m	Ro-ro
4W	170m	9.2m	Ro-ro
7E	187m	9.9m	Containers
7W	200m	9.7m	Ro-ro
Oil	202m	12.0m	LPG
Cattle	60m	7.0m	Livestock

Aspect.—The N shore of Port Lyttelton from Godley Head to Sticking Point is indented with small bays backed by cliffs rising to a bare tableland, which rises to Mount Pleasant, 498m high, 1.2 miles NNW of Sticking Point; there is a flagstaff on the cliff top about 0.3 mile WNW of the same point.

On the S side of the harbor are Little Port Cooper, Camp Bay, and Purau Bay. Mount Evans, 702m high, rises 1.2 miles S of the head of Camp Bay.

Pilotage.—Pilotage is compulsory for all vessels over 100 nrt and is available 24 hours. Vessels should forward their ETA and maximum draft 24 hours and 4 hours prior to arrival. Vessels should not enter before receiving instructions from the signal station.

The pilot boards in position 43°35'00"S, 172°51'12"E. Large bulk vessels may be boarded by helicopter.

Vessels awaiting a pilot may anchor 1.5 miles E of Godley Head, in 16 to 18m.

Regulations.—The quarantine anchorage is off Camp Bay.

Signals.—Berthing signals are given by radio or signal light. No vessel is to enter and take up a berth unless signaled to do so from the signal station near the head of Gladstone Pier.

Anchorage.—In good weather, vessels awaiting pratique or the pilot may anchor, in depths of 15 to 16m, soft mud, about 1.5 miles seaward of Godley Head. Vessels drawing less than 8.5m, and with the harbormaster's permission, may anchor, in depths of 10.6m, soft mud, off Camp Bay, clear of the dredged channel. Vessels should anchor on the range shown from the SW corner of the bay, but no further W than a line drawn 345° from the rear beacon.

As the holding ground throughout the area is soft mud, local authorities recommend anchoring with a long scope of cable, with a second anchor ready.

Directions.—Herbert Peak (43°41'S., 172°47'E.), the highest peak on the Banks Peninsula, is an excellent mark for vessels approaching from the N.

A vessel approaching from the S should keep at least 1.5 miles offshore after rounding the peninsula, until Lyttelton becomes visible.

The approach channels are well-marked by ranges, lights, and buoys.

Caution.—Several Submarine Exercise Areas are charted in the waters of, and off Pegasus Bay; vessels are encouraged to exercise the appropriate discretion when approaching the area from seaward.

A submarine pipeline extends across the channel about 0.5 mile W of the Inner harbor entrance, and is best seen on the appropriate chart.

Local authorities sometimes recommend dropping an anchor off the dock and that additional lines be used to control surging along the dock.

Christchurch, the capital city of the Canterbury provincial district, is situated on the plains about 2.5 miles NW of Lyttelton.

12.61 Port Levy (43°37'S., 172°50'E.) lies on the N coast of the Banks Peninsula, and is entered between Adderly Head and Baleine Point, about 1 mile E. A reef, with Beacon Rock at its outer end, extends about 0.1 mile NE from the E extremity of Baleine Point. The port recedes about 3.7 miles SSW from its entrance.

Pigeon Bay is entered between **Pigeon Point** (43°37'S., 172°55'E.), 2.5 miles SE of Beacon Rock, and Wakaoa Point, 0.8 mile E.

Anchorage may be taken about 1.7 miles within the entrance of Pigeon Bay, in 9.1m, good holding ground.

Between Pigeon Bay and **Steep Head** (43°44'S., 173°08'E.), 11 miles SE, the coast is indented by several small bays and bights.

Steep Head is a sheer cliff about 91 to 122m high. Le Bons Peak, 499m high, rises 2.5 miles W of the light on Steep Head. The peak is conspicuous from the E.

12.62 The Banks Peninsula to Jacks Point.—Between **East Head** (43°46'S., 173°08'E.), 1 mile S of Steep Head, and Akaroa Head, 11 miles SSW, the coast is rocky and indented with numerous narrow bays. The cliffs on the projecting points are 183m high. Pompeys Pillar, a remarkable columnar rock, lies close to the coast, 6 miles SSW of East Head. Stony Bay Peak rises to a height of 805m, 6.5 miles SSW of East Head.

Akaroa (43°48'S., 172°58'E.) (World Port Index No. 55330) stands on the E side of the harbor, 6 miles within the entrance. The harbor is entered between Te Ruahine, the W extremity of Akaroa Head, and Timutimu Head, 1 mile WSW. The Long Boat, a rock about 1.2m high, lies 0.1 mile SE of Te Ruahine, and foul ground extends 0.2 mile S of Timutimu Head.

Anchorage.—Vessels may anchor in Akaroa Harbor above Nine Fathom Point, which lies on the E shore 2.5 miles within the entrance. Anchorage may be taken, in 7.3m, mud, 0.7 mile W of the wharf situated S of the town.

Caution.—During strong SW winds, there is a heavy cross sea at the entrance to Akaroa Harbor, with violent baffling squalls caused by the high precipitous nature of the shores.

Timutimu Head (43°54'S., 172°57'E.) is a perpendicular cliff of a dark gray color, 159m high. On the W side of Timutimu Head the cliffs are about 183m high, decreasing to about 76m, about 5.5 miles W. About 4 miles W of these cliffs, the rugged and imposing coast line is succeeded by a low cliffy and shingle shore.

Ninety-miles Beach begins at the SW extremity of the Banks Peninsula and trends in a SW direction to Timaru, about 75 miles distant. The first 15 miles is a narrow strip of shingle beach about 0.5 mile wide. From this point for a distance of about 55 miles the coast is composed of low cliffs from 6.1 to 12.2m high, fronted by shingle beach.

Several rivers flow into the sea on this coast, after traversing the plains from the hills 25 miles inland.

Tides—Currents.—An onshore current is experienced toward Ninety-miles Beach, between the Banks Peninsula and Timaru, especially after SE winds.

Caution.—Canterbury Bight is formed between the Banks Peninsula and Timaru. This bight has only been partially examined and, within a distance of 3 to 5 miles from the coast, is unsurveyed, except in the approach to Timaru Harbor.

Timaru Harbor (44°23'S., 171°16'E.)

World Port Index No. 55350

12.63 Timaru Harbor, an artificial harbor, is formed by North Mole Wharf on its W side, with Outer North Mole and Inner North Mole projecting SE from it, and on the E side by Eastern Extension Mole, with East Mole extending N from its root.

A spur breakwater has been reported to be under construction on the seaward side of the Eastern Extension Mole, extending in a 100° direction for 149m. The new spur breakwater will be of similar width to the existing Eastern Extension Mole.

The harbor is under the jurisdiction of Timaru Harbor Board. The town of Timaru is situated at the head of the harbor.

PrimePort Timaru

<http://www.primeport.co.nz>

Tides—Currents.—The MHW interval at Timaru is 3 hours 37 minutes. Springs rise 2.2m, neaps rise 2m.

Tidal currents may attain rates up to 1 knot.

Depths—Limitations.—There is a least depth of 9.9m, hard sand, in the approach to the dredged channel at the entrance to the harbor. The dredged channel is maintained at a depth of 9.9m. The swinging basin in the inner harbor, and all wharfs except North Mole Wharf and the N side of No. 3 Wharf, are maintained at this depth. The bottom in the dredged channel is mud and sand; the bottom at the wharves is mud.

The maximum permissible draft in the entrance channel is 8 to 10m, which may be increased to 10m at the harbormaster's

discretion. Ships up to 228m in length can be accommodated. Ships of 8.4m draft are berthed at any state of the tide.

Timaru Port Facilities			
Berth	Depth	Max. Length	Remarks
No. 1 Ext.	10.6m	200m	Bulk liquids and logs
No. 1 East	8.6m	100m	Fish
No. 1	8.5m	200m	Reefer export and bulk chemicals
No. 2 North	10.5m	190m	Grain
No. 3 South	10.5m	190m	Fish
North Mole	11.0m	200m	Containers
Fish Wharf	10.0m	90m	Fish

Six berths are available for the handling of petroleum, container, ro-ro, fish, and bulk solid cargoes. Alongside depths range from 8.8 to 10.4m.

Aspect.—A silo, 37m high; a chimney; and a floodlight tower stand about 1 mile SSW of the head of Eastern Extension Mole.

The War Memorial Light is shown from a flagstaff about 0.4 mile S of the Signal Station. A tower is situated on the W side of North Mole Wharf. There is a radar station on a cliff at the head of the harbor.



Courtesy of PrimePort - Timaru
Timaru Harbor—North Mole

Pilotage.—Pilotage is compulsory and should be ordered through the harbormaster, also stating the vessel's ETA and maximum arrival draft, by 1320 on the last working day prior to arrival, confirming when in radio range of the signal station. The signal station maintains a radio watch on a fixed schedule.

The pilot boarding area is 1 mile E of Fairway Beacon. Vessels should remain 2.5 miles to seaward of the Eastern Extension Mole and S of the transit of the leading lights. Pilots

usually disembark from departing vessels when abeam of Eastern Extension Molehead.

Regulations.—The quarantine anchorage is reported to be anywhere along a line bearing 265° from Eastern Extension Molehead, 1.5 to 2.5 miles off the structure. Due to the exposed nature of the anchorage, vessels are usually boarded at the wharves.

Vessels may not enter the harbor without the permission of the signal station.

Signals.—The signal station is situated at the SW end of No. 1 Wharf in the Harbor Board Building, and communicates by radiotelephone.

The signal station monitors 2162 kHz and VHF channel 16, 15 minutes before the hour, every 4 hours commencing at 0345. Communications may be established outside the schedule by prior arrangement.

A red flag by day or a red light at night indicates the vessels assigned berth.

Anchorage.—Vessels may anchor, in 12.8m, sand, not less than 1 mile ESE of the Eastern Extension Mole.

Directions.—Vessels should approach the harbor on the outer range shown from Benvenue Cliff. When the light structure at the head of East Mole is in line with the light at the base of No. 2 Wharf, change course to pass through the middle of the harbor entrance. Take care to pass S of the alignment of lights shown from No. 3 Wharf, as it marks the limit of the dredged channel.

Caution.—Due to smoke and haze experienced in the harbor, at times the navigational lights may be obscured. Floodlights, which may be seen at a considerable distance, may make it difficult to distinguish the harbor lights on some bearings. A vessel approaching from the S will find that Eastern Extension Mole Light is clear of such interference.

12.64 Patiti Point to Cape Wandrow.—**Patiti Point** (44°25'S., 171°16'E.), 1.7 miles S of Timaru Harbor, sandy and 10.7m high, can be recognized by the pine trees on it. Reefs of rock and kelp extend 0.5 mile off Patiti Point and should be given a wide berth.

Tuhawaiki Point (44°27'S., 171°16'E.), a low cliff 13.4m high, is located 2 miles S of Patiti Point. Foul ground extends 0.3 mile offshore from the point.

Between Tuhawaiki Point and the entrance of the Waitaki River, about 30 miles S, the coast is fronted by a shingle beach, with several streams intervening. From the Waitaki River, the coast trends 13 miles SSW to Cape Wanbrow. This coast is low and cliffy with a shingle beach. A radio mast, 70m high, stands about 0.5 mile WSW of the entrance to the Waitaki River.

Mount Studholme, 1,082m high, located 19 miles SW of Tuhawaiki Point, is the highest summit in this area.

Cape Wanbrow (45°07'S., 170°59'E.), is faced with cliffs about 31m high and rises to a height of 142m, 0.7 mile NW.

Between Cape Wanbrow and South Head, its N extremity, 0.6 mile distant, the cliffs are 31 to 73m high.

Oamaru Harbor (45°07'S., 170°59'E.), on the N side of Cape Wanbrow, is formed by a breakwater on the E side and a mole on the N side, and is under the jurisdiction of the Oamaru Harbor Board.

Mariners are warned that Oamaru Harbor is closed to shipping and is dangerous to small craft because of extensive shoaling in the entrance.

12.65 Cape Wanbrow to Cornish Head.—From Cape Wanbrow the coast trends in a SSW direction for 32 miles to Cornish Head. This coast is indented with several bays, and the mountain ranges approach the coast in several places.

From Cape Wanbrow to **Kakanui Point** (45°09'S., 170°54'E.), about 5.5 miles S, the coast is formed by a beach backed by low cliffs. A monument stands on a hill 91m high, about 4 miles W of Cape Wanbrow.

Middle Shoal, with a least charted depth of 15.9m, lies 2.5 miles SE of Cape Wanbrow.

Lookout Bluff (45°16'S., 170°52'E.), 5 miles SSW of Kakanui Point, 111m high, forms the N point of Moeraki Bay; Moeraki Point, 5 miles S, is the S extremity.

Kelp Reef, nearly 3 miles long and covered with kelp, extends nearly across the entrance to Moeraki Bay and lies 1.5 miles off the sandy beach. Above and below-water rocks extend about 0.7 miles N of Moeraki Point.

Moeraki Point (45°21'S., 170°52'E.) is the N extremity of a peninsula which attains an elevation of 153m. The town of Moeraki is situated on the N side of the peninsula, 1 mile W of the point.

Mount Miserable rises to a height of 885m, 11 miles NW of Moeraki Point.

Katiki Point (45°24'S., 170°52'E.) is located 2.2 miles S of Moeraki Point. A bay, foul, lies between Katiki Point and Shag Point, 5 miles SSW.

Fish Reef, which dries, and is well-marked by kelp at other times, lies with its N extremity 1.2 miles SE of the light on Katiki Point.

Danger Reef lies 1.2 miles offshore, about 2 miles S of Shag Point. The dangerous rock on the S end of the reef is marked by kelp.

Between **Shag Point** (45°28'S., 170°50'E.) and Cornish Head, 10.5 miles SSW, the coast is generally steep with patches of scrub on the hills within it.

Cornish Head (45°37'S., 170°42'E.), sheer on its S side, rises to an elevation of 164m; its E fall is tree and scrub-covered.

Ahuriri Rock lies 0.8 mile from shore, 2 miles NE of Cornish Head; the rock is sometimes marked by kelp.

Caution.—Vessels should not approach the coast between Shag Point and Cornish Head within 2.5 miles, as it has not been fully examined and is considered to be foul.

12.66 Cornish Head to Cape Saunders.—From Cornish Head, the coast recedes about 1 mile and forms Waikouaiti Bay. **Karitane Point** (45°38'S., 170°40'E.), a cliffy peninsula 41m high, about 1.5 miles SSW of Cornish Head, is the S entrance point of the bay. Anchorage may be taken in the bay, in a depth of 11 to 12.8m, sand.

Shag Rock, 9.1m high, lies close E of Karitane Point. Shoals, with depths of 6.4 and 10.7m, and rocks, awash, lie about 0.2 mile NE, 0.4 mile E, and 0.4 mile S, respectively, of Shag Rock.

Blueskin Bay lies between Karitane Point and Heyward Point, about 7 miles S. The shore of the bay from Karitane

Point to Warrington, about 5.5 miles SW, is steep and scrub-covered, rising to Hammond Hill, 435m high, 1.5 miles inland. A sandy spit extends 1.5 miles S from Warrington; a mud flat is formed behind the spit. A hill, 184m high, is located 1 mile S of the sand spit. The coast from the hill to Heyward Point, 3.7 miles ESE is indented by a bay, and the coast is formed by sandy bays, separated by high rocky points.

Anderson Rocks, with a depth of 4.5m, lies 0.3 mile E of the light on Heyward Point.

Depths—Limitations.—A general description has been given of the coast between the Banks Peninsula and Otago Harbor, a distance of 150 miles. A reference to the chart will show that for 120 miles of the distance, or as far as Moeraki Bay, it is free from danger to within 2 miles of the shore, but that Timaru Harbor should be approached with caution. The bank of soundings is well-defined, and knowing the latitude, a vessels position on approaching the land may be determined with tolerable accuracy. North of Moeraki Bay, from 91 to 110m, sand, will be found at a distance of 30 miles from the coast, and about 55m at half that distance, decreasing gradually to 18.3m which is found at 3 miles from the shore, where the bottom is chiefly gravel and stones.

Between Lookout Bluff and Otago Harbor, the only dangers are Kelp Reef, which lies across the entrance of Moeraki Bay, Fish and Danger Reefs, and Ahuriri Rock; all these, excepting Ahuriri Rock, are either visible or their positions marked by kelp, and do not lie more than 2 miles from the coast.

South of Moeraki Bay, the deep water approaches nearer to the coast; at the distance of 15 miles offshore there are depths of 110m, sand and coral, and at 30 miles distant no bottom was found at 732m; at 2 miles from the coast the depth is from 27 to 33m.

Immediately E of Otago Harbor, the 183m curve does not extend beyond about 15 miles from the land, and within that distance it shoals rather rapidly to a depth of 55m. Soundings of 26m will be obtained within 2 miles of the entrance.

Caution.—Local authorities recommend that deep-draft vessels keep to depths greater than 55m, in the waters between Cornish Head and **Waipapa Point** (46°40'S., 168°51'E.). Due to the pinnacle contour of the bottom, vessels in unfrequented waters within this area, and in depths of less than 55m should keep a good lookout for surface disturbances, or unusual soundings which may indicate potential danger.

Otago Harbor (45°49'S., 170°37'E.)

World Port Index No. 55370

12.67 Otago Harbor contains three separate ports. Port Chalmers and Ravensbourn, stand 4.7 and 9 miles within the entrance, respectively; Dunedin stands at its head, about 3 miles W of Ravensbourn. These ports serve the Dunedin and Central Otago Districts.

Port Otago Limited

<http://www.portotago.co.nz>

The harbor is under the jurisdiction of the Otago Harbor Board.



Otago Harbor—Dunedin

Tides—Currents.—The MHW interval at Taiaroa Head is 3 hours 9 minutes; at Port Chalmers it is 3 hours 34 minutes; and at Dunedin it is 4 hours 3 minutes. The mean range of the tide is 1.5m; the spring range is 1.8m. At Dunedin, the flood lasts 5 hours 40 minutes while the ebb lasts 6 hours 30 minutes.

The average interval of SW at Port Chalmers is 10 minutes; at Dunedin it is 10 minutes.

The greatest strength of the tide is in the narrow passage abreast Harrington Point, where the ebb runs from 2 to 3 knots and the flood somewhat less; on the bar the greatest rate is 2 to 3 knots.

There is little interval of SW at the entrance of the harbor. The flood runs 5 hours 20 minutes; the ebb runs 7 hours 0 minutes, with the latter beginning at 40 minutes after HW and the former beginning 1 hour 40 minutes after LW. In the upper part of the port, the ebb and flood are of about the same duration, with the greatest velocity being 2 knots on the ebb and 1.5 knots on the flood.

The tidal current runs strongly through Victoria Channel.

Depths—Limitations.—Otago Harbor, entered between Heyward Point and Taiaroa Head, 1.7 miles SE, comprises a narrow inlet of water with a navigable width of 91 to 388m, and dredged depths of 12.5m for 6 miles to Port Chalmers, and a dredged channel known as Victoria Channel, with a least depth of 7.3m and a least width of 73m, for another 7 miles to

Dunedin. The three ports are divided between the Lower Harbor and the Upper Harbor. A training wall protects the SE side of Victoria Channel. The basin off the Harbor Office in Dunedin was reported to be shoaling.

A sand spit, with a least charted depth of 6.4m, extends about 1 mile N from Taiaroa Head.

The container terminal at Port Chalmers has four berths. The George Street (inner and outer) berths are 600m long and have a maximum draft of 12.5m. The Beach Street Forestry berth is 412m in length and has a maximum draft of 11.8m.

The wharf at Ravensbourne, in the upper harbor, offers a T-berth with a length of 149m and is able to accept vessels with drafts of 8m alongside. Bulk commodities are handled here.

The channel between Port Chalmers and Dunedin is capable of handling vessels of up to 8m draft and 190m long. Dunedin is situated at the head of the inlet. Tankers, 184m in length and cargo vessels up to 178m in length, can be accommodated in Dunedin, in daylight only. The maximum draft permissible is 8m at HW and 6.4m at LW. A dedicated LPG discharge facility is situated at the NE end of Dunedin Harbor. The maximum draft at this berth is 5.5m. Leith Wharf, which can handle ro-ro vessels, can accommodate vessels up to 180m in length, with a draft of 7.7m. Victoria Wharf is 183m in length and can handle vessels with a draft of 8.0m. Rattray Wharf is 426m in length, with a depth of 5.4m alongside. Cross Wharf has a length of



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137m and a depth of 5.2m alongside. Birch Street Wharf has a length of 310m and a depth of 6.6m alongside.

An overhead power cable, with a vertical clearance of 51.2m, spans Victoria Channel about 0.7 mile S of Port Chalmers. Submarine cables cross the channel at several points and are best seen on the chart.

Aspect.—When this harbor is seen from the N and E, it may be identified by the gap in the coast; in hazy weather it may be identified by a bank of dazzling white sand heaped at the base of the steep cliffs forming the W entrance head. From the offing this bank of sand is often mistaken for breakers over the bar.

The approach from the S is well-defined by Cape Saunders and Mount Charles.

Taiaroa Head, the E entrance point of the harbor, is a bold dome-shaped rocky headland, with an elevation of 75m; a flagstaff is situated on its summit. A radiobeacon is situated on Taiaroa Head.

Pilotage.—Pilotage is compulsory. The vessel's ETA at the boarding position must be provided to the harbormaster 12 hours in advance and confirmed 4 hours before arrival.

Pilot boarding areas, Alpha and Bravo, are situated about 3.4 and 2.4 miles NE of Heyward Point. A vessel approaching the entrance should keep a good offing, especially with heavy E weather, which causes the sea to break heavily over the spit extending N from Taiaroa Head, and raises a confused sea in the channel.

Regulations.—Vessels requesting pratique will be boarded at the dock.

Any vessel wishing to enter, exit, or transit the waters of the port must obtain permission from the Otago Harbor Control.

Signals.—The Signal Station, which is situated on Taiaroa Head, has been decommissioned (2002) and replaced by Otago Harbor Control, which is based in Port Chalmers. Surveillance of the port and approaches is by radar, camera, and VHF radio systems, with remote relay of data from sites on the Otago Peninsula back to Otago Harbor Control. Vessels should obtain permission to enter the port and will be advised of port

movements and upon request, berth information and the sea state at the entrance.

Otago Harbor Control can be contacted on VHF channel 16; the working frequency is VHF channel 14. It can also be contacted by telephone at 64(0)3-4729882.

When sea conditions at the entrance area are considered hazardous for small craft due to breaking sea on the bar, a flashing red light is exhibited from the mast head on top of the station. This signal does not necessarily indicate the port is closed; however, it is recommended that all vessels contact Otago Harbor Control for sea condition details when the light is on or at any time when in doubt. Conversely, the fact that the light is not showing does not mean that the entrance area is not hazardous and great care must be taken by navigators at all times when navigating in the entrance area.

Anchorage.—The recommended outer anchorage, which is considered safe in nearly all winds except in an E gale, is in 24m, sand and mud, about 1.2 miles NE of Heyward Point Light. There is no anchorage inside the port, but in an emergency, a vessel might find anchorage in the swinging basin off Port Chalmers.

Anchorage is restricted in the approach to Otago for a distance of 4 miles N of Taiaroa Head. The restricted area is best seen on the chart.

Directions.—No vessel should attempt to enter Otago Harbor without the permission of the Signal Station, or without local knowledge.

Vessels approaching from seaward should keep well offshore, especially in E gales, as a heavy sea is raised in the vicinity of the entrance channel. Approach Heyward Point Light between the bearings of 127° and 258°, but do not alter course for the entrance channel until Taiaroa Head Light bears less than 175°. Passing W of the entrance lighted beacon, steer onto the fixed white sector of the directional light shown from **Te-U-Mukuri Point** (45°48'S., 170°43'E.), then into the dredged channel for the various docks and loading places detailed above. The channel above the entrance is well-marked, but requires extensive local knowledge, therefore, no directions are given.

Caution.—The directional light mentioned above shows a fixed white light outside the outer boundaries for the fixed green and red sectors shown on the chart. Mariners should insure that they have passed through either of the fixed colored sectors before changing course for the channel entrance.

12.68 Cape Saunders to Quoin Point.—**Cape Saunders** (45°53'S., 170°44'E.), a bold headland 6.5 miles S of Taiaroa Head, is the SE extremity of the Otago Peninsula, which forms the S side of Otago Harbor. Mount Charles, 1.2 miles N of the cape, rises to a height of 406m.

Hydra Rock, with a depth of 5.2m, lies near the 20m curve 3 miles NNE of Cape Saunders.

Caution.—An area in which explosives are dumped is centered 21 miles ESE of Cape Saunders.

The coast from Cape Saunders trends SW and then S, curving toward Quoin Point, a rounded projection, 30 miles distant. The intervening coast forms a bight, the land being moderately high and in some parts thickly wooded.

Black Head (45°56'S., 170°26'E.), a remarkable rocky head, 127m high, is located 10.5 miles WSW of Cape Saunders Light. Saddle Hill, known by its shape, rises to a height of 476m, 3.5 miles WNW of Black Head.

From Black Head the coast is low, with a shingle beach, for 12 miles to the Taieri River. From the Taieri River, for a distance of 2.2 miles SSW, the coast is fringed with reefs. Quoin Point lies about 6 miles S of the river.

Gull Rocks (45°54'S., 170°39'E.) lie close off a cliffy head, 3.7 miles WSW of Cape Saunders Light. Tow Rock, 3.7m high, lies about 0.4 mile S of Gull Rocks.

White Islet, 12.8m high, lies 1 mile off the coast 6.5 miles WSW of Tow Rock. Green Islet, 41m high, lies a similar distance offshore, 4.5 miles WSW of White Islet.

Taieri Islet, 30m high, lies off the mouth of the Taieri River. Submerged rocks extend about 0.5 mile E from the islet, and similar rocks lie between the islet and the coast to the SW.

A 5.5m rocky patch was reported to lie about 4.5 miles ENE of Quoin Point.

12.69 Quoin Point to Waipapa Point.—**Cooks Head Rock** (46°12'S., 170°05'E.), a remarkable feature, stands on the coast 4.7 miles SW of Quoin Point.

Australian Reef extends about 1 mile offshore from a position 6.2 miles SW of Cooks Head Rock.

A detached 4.9m shoal lies about 3.7 miles SW of Australian Reef and about 1 mile offshore. Foul ground extends from the coast to the reef.

Molyneux Bay is entered between a point 5 miles SW of Australian Reef and **Nugget Point** (46°27'S., 169°49'E.), about 8.5 miles SSW. Kaitangata, a tree covered summit, 213m high, rises 1.7 miles NW of the bays N entrance point.

Nugget Point is a bold projecting headland covered with scrub, that is the termination of a prominent ridge which rises to a height of 220m, 1.2 miles inland.

Anchorage may be taken in Molyneux Bay, with offshore winds, in a depth of 14.6m, about 3 miles N of Nugget Point. Care should be taken to anchor clear of the reef which extends 1 mile N and 0.5 mile E of Campbell Point.

From Nugget Point, the coast trends SW for a distance of 12.5 miles to **Long Point** (46°35'S., 169°35'E.), which has a height of 65m, and a hill, 234m high, rises about 2 miles N of Long Point.

The intervening coast between Nugget Point and Long Point is broken, with some off-lying islets and reefs lying near the shore.

False Islet, a small bare promontory, 60m high, lies 3.5 miles SW of Nugget Point; it is connected to the mainland by a sandy isthmus.

White Head (46°31'S., 169°42'E.), about 3.5 miles SW of False Islet, is a bold cliff which rises to a height of 122m. Hinahina Hill, 376m high, rises 3 miles W of White Head.

The coast from White Head for a distance of about 4 miles SW is formed by cliffs from 61 to 183m high.

Long Point is steep-to, with the 55m curve lying about 0.6 mile off the point. Approaching from the N, the tidal currents of Foveaux Strait begin to be felt in this vicinity.

12.70 The Tautuku Peninsula (46°37'S., 169°26'E.) lies 6 miles WSW of Long Point; the peninsula is 30m high.

Tautuku Bay, with a sandy beach backed by low scrub, is formed on the N side of the Tautuku Peninsula. A river enters the sea in the SW corner of the bay.

There is anchorage in Tautuku Bay, in depths of 13 to 17m, during W and NW winds, but it is exposed in other directions.

Chaslands Mistake, 145m high, a prominent black headland, lies 3.7 miles WSW of the Tautuku Peninsula.

Between Chaslands Mistake and The Brothers Point, 6.5 miles WSW, the coast forms a bight, and near its center there is a small rocky headland from which The Sisters, a reef, extends 0.4 mile SE.

The Brothers Point (46°40'S., 169°12'E.) is 54m high; a reef extends 0.4 mile SE from the point.

South Head lies 4 miles W of The Brothers Point. The tidal currents of Foveaux Strait slacken considerably off this part of the coast, and the NE current runs for a longer period.

Between South Head and Waipapa Point, nearly 11 miles W, the coast should not be approached by small craft, except in good weather, due to the irregular tidal currents.

Slope Point (46°41'S., 169°00'E.), 4.5 miles WSW of South Head, is the S extremity of South Island. This is a high and bare point, with the sea breaking on a sunken ridge about 1 mile off it. A light is situated on the point.

12.71 Waipapa Point (46°40'S., 168°51'E.) lies 6.2 miles W of Slope Point; it is low and sandy, sloping gradually to the sea from the mountains to the NE. Foul ground extends in a SSE direction from the point. There are depths of 4.6m and 9.1m, 1 and 2 miles SSE, respectively, of the point. A rocky ridge, with a least depth of 18.3m, lies about 4 miles SSW of the light on Waipapa Point. The sea is reported to break heavily in depths of 12.2 to 18.3m off this point.

Toetoe Bay lies between Waipapa Point on the E and Bushy Point on the W, a distance of 14 miles WNW.

The Mataura River, which drains a large extent of the country, flows into the sea 5 miles NNW of Waipapa Point.

For a distance of 3 miles NNW of Waipapa Point, the coast is formed by low, grass covered hills, and is fronted by foul ground extending 0.8 mile offshore.

Fortrose, a town, stands on the E bank of the Mataura River. The entrance to the river has a shifting bar with a depth of 0.6m.

Between Fortrose and Bushy Point, 11.5 miles W, the coast is low, sandy, and backed by an extensive plain.

Bushy Point (46°36'S., 168°31'E.), which is low, can be identified by the light and a prominent patch of scrub.