



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.
SECTOR 10 — CHART INFORMATION

SECTOR 10

IYO NADA AND BUNGO SUIDO

Plan.—This sector commences with a description of Iyo Nada and includes, in the order listed, the islands in the N and NE parts, the N side along with the S coast of Yashiro-jima, and the SE side which comprises the NW coast of Shikoku. The progression is from E to W. The description continues with the Kyushu coast, on the W side of Iyo Nada, and finally concluding with Bungo Suido, the E and W sides of which, respectively, are discussed in a S to N direction.

General Remarks

10.1 Iyo Nada.—This part of the Naikai lies next E of Suo Nada. It is bounded SW by part of the NE coast of Kyushu, SE by the NW coast of Shikoku, and NE by a chain of islands and islets extending E from the E side of Murotsu Hanto. It is approached from the S through Bungo Suido. See charts for courses to be followed.

Bungo Suido leads from the Pacific Ocean to the Naikai between the E side of Kyushu and the SW end of Shikoku; it is entered from the S between **Tsurumi Saki** (32°56'N., 132°05'E.) and Komo Saki, about 20 miles E, and at its N end is Hayasui Seto, the entrance into Iyo Nada.

[Pilotage information for the Naikai can be found in paragraph 6.1.](#)

south Coast—Islands in the North and Northeast Parts

10.2 Kata Shima (33°55'N., 132°28'E.) appears as two parts joined by a low isthmus. The NW and higher part attains an elevation of 216m. Tokkuri Se lies 0.1 mile SW of the S extremity of Kata Shima. O Ishi, 2.9m high, lies about 0.3 mile E of Kata Shima. A light is shown from O Ishi. Tide rips occur in the vicinity of Tokkuri Se and O Ishi during the flood tide.

Yuri Shima lies 5 miles SE of Kata Shima, and consists of two parts, connected by a low sandy isthmus. It appears as two islands when seen from the N or S. A light is shown from the S end of the island. Kamoji Sho is a group of submerged rocks in a depth of 7.3m, lying about 2.5 miles NW of Yuri Shima.

Ao Shima (33°44'N., 132°30'E.) lies 7 miles SSW of Yuri Shima and shows a light from its W side. A sunken rock, with a depth of 1.2m, lies about 0.2 mile E of the E extremity of the island. Three beacons stand near the middle of the N side of the island.

Ko-minase Shima lies about 5 miles NW of Ao Shima and is flat-topped and wooded. The NE coast of the island has perpendicular cliffs. Tide rips occur in the vicinity of a rocky patch, with a depth of 0.3m, off the NW end of the island. Three beacons stand on the island; these beacons are one end of a measured distance, the other end being the beacons on Ao Shima. A light is shown from the E end of Ko-minase Shima.

O-minase Shima (33°48'N., 132°25'E.) lies about 1.5 miles N of Ko-minase, and has a flat and wooded summit. Tide rips occur on occasions within 0.5 mile N and SE of the island.

Sengai Se dries 1.5m and lies about 1.5 miles NW of O-minase Shima. Ko Sengai Se, a rock with a depth of less than 1.8m, lies about 0.2 mile further SE. A light is shown from Sengai Se.

South Coast of Yashiro-Jima and Adjacent Islands

10.3 Yuu Ura (33°56'N., 132°27'E.) lies on the extreme end of the SE coast of Yashiro-jima, about 1 mile WNW of the NW extremity of Kata-jima. The bay affords anchorage, sheltered from N winds, to small vessels with local knowledge, in depths of 20.1m, hard mud. A light is shown from a breakwater at the head of Yuu Ura.

Kodomari Wan lies about 2 miles WSW of Yuu Ura and affords anchorage, in depths of 12 to 20m, sheltered from all but the S wind. Hage Shima and Sasa-jima lie on a reef on the W side of Kodomari Wan.

Okikamuro Shima (33°51'N., 132°22'E.) lies close off the central part of the SE coast of Yashiro Shima, about 4 miles SSW of Kodomari Wan. The island's summit, 173m high, is densely wooded and appears black in color. A light is shown from a group of rocks, close off the S coast of the island. A light is also shown from the N side, between the island and Yashiro Shima.

Agenosho Wan lies about 4 miles NW of Okikamuro Shima and affords anchorage, in 20.1 to 30m, mud or sand. A good anchorage can be obtained, except during SE winds, in 20.1m, mud, about 0.5 mile N of Age Saki, the W entrance point of the bay. Take San, with a tower about 2.5 miles N of Age Saki, is a good landmark. A light is shown from a breakwater in Agenoura and Tononyu at the head of the bay.

Hoshi Saki (33°51'N., 132°13'E.) lies about 4 miles WSW of Agenosho Wan. The point is dark in color and 142m high. From the W, it appears as an island and is very prominent.

Kami-ninai Shima (33°50'N., 132°12'E.) is located about 0.5 mile SSW of Hoshi Saki and is 108m high. The island is thickly covered with brambles. Kura Iso lies 0.5 mile S of the island, and is sometimes marked by tide rips.

Shimo-ninai Shima, about 1 mile W of Kamininai Shima, is a rounded island with a small flat summit that resembles an inverted bowl. The island is densely covered with shrubs and shows a light on its NE side.

Heigun-jima (33°48'N., 132°13'E.) lies about 3 miles S of Hoshi Saki. Near the middle of the island, two mountains of nearly equal elevation, and covered with shrubs, are prominent. Mi Shima consists of three islets, close off the S extremity of Heigun-jima. Okino Iso and Jino Iso lie close S of Mi Shima. A light is shown from Okino Iso.

10.4 Heigun Suido.—This strait is bounded on its S side by the W part of the N coast of Heigun-jima. It is an alternate track to the N of the main track; this route is to a vessel's advantage when navigating with the tidal current. However,

numerous small vessels and tugs with tows use the route; it is not recommended for night navigation. The track is plainly laid out on the charts.

Kaketsu-jima (33°49'N., 132°15'E.) lies about 0.8 mile off the NE coast of Heigun-jima. The island is 201m high, partly cultivated, and grassy. Matsubushi Se, a steep-to rock with a depth of 3.2m, lies about 0.5 mile ENE of the N extremity of the island.

Hando-jima, a perpendicular rock, lies about 1 mile S of Kushi Saki, located on the W side of Heigun-jima. The rock, 15.8m high, resembles a boat under sail.

10.5 Ya Shima (33°44'N., 132°09'E.) lies about 4.5 miles SW of Heigun-jima. The island has a flat summit on its S side, trees cover most of the hills on the island. A narrow isthmus in the middle of the island separates the N from the S end of the island. Three submarine cables project from the W coast of this narrow isthmus, in a NW direction to Naga Shima. Tide rips occur in the vicinity of Su Zaki, the N extremity of Ya Shima, during the ebb tide.

Anchorage.—The bay on the W side of the isthmus that joins the middle and S part of Ya Shima affords anchorage, in 6 to 30m, mud and sand. The anchorage is sheltered from E winds, but with NW winds and N and S gales, swells run into the bay. A submarine cable is landed in the NE corner of this bay and should be avoided when anchoring.

On the E side of the isthmus, there is an opened bay suitable only as a temporary anchorage during W winds. A rock, with a depth of 2m, lies nearly 0.1 mile from the shore in a position about 0.4 mile NW of the S entrance point of the bay.

Lights are shown from Hirane Zaki, the S point of the island, and from a breakwater at Yashima, on the W side of the island. A lighted buoy marks Sengai Se, off the NW coast of Ya Shima.

Uwa-jima (33°44'N., 132°02'E.) lies about 5 miles W of Ya Shima, is 85m high and wooded. Hojiro Shima, the mostly W island in the N part of Iyo Nada, lies less than 0.5 mile WSW of Uwa-jima. A light is shown from Hojiro Shima.

Iyo Nada—Southeast Side—Northwest Coast of Shikoku

10.6 Between Gunchu Ko and Nagahama Ko, on the NW coast of Shikoku, a distance of 14 miles, the mountains slope down to the shore, and off it there are no known dangers more than 0.5 mile offshore.

Gunchu Ko (33°45'N., 132°42'E.) is a small harbor, protected by three breakwaters, in which there are depths of 1.4 to 3.2m. The town of Gunchu lies with its S end abreast the harbor. A light is shown from the SW breakwater.

Nagahama Ko (33°37'N., 132°29'E.) is a local harbor lying close NE of the mouth of the Hiji Kawa. A large bridge across the mouth of the river and a red chimney on the W side of the harbor are conspicuous.

Katayama Su is a sandbank lying about 0.3 mile N of the head of the N breakwater at Nagahama Ko. The sandbank at the mouth of the river continually changes position, particularly at times of winter gales.

Two breakwaters, N and S, protect the small harbor, in which there are depths of 2 to 5.8m in the main part. The mud and sand bottom in the harbor affords a relatively safe anchorage, except during strong NE winds.

A floating pier and two wharves accommodate 1,000 grt vessels in an alongside depth of 4.9m. A light is shown from the head of the N breakwater and the E breakwater.

Mitsukue Ko lies about 14 miles SW of Nagahama Ko and is entered between Fusuma Saki and Hasede Hana. It is exposed to the NNW, and with N winds, a heavy sea runs into the bay. On the W side of the bay is a cove that is sheltered from all winds and has depths of 10.1m, but is only available to small vessels with local knowledge. A light is shown from Fusuma Saki and a point on the W side of Mitsukue Ko.



Mimai Saki Light

Anchorage.—All the bays between Mitsukue Ko and Mimai Saki, about 7 miles SW, afford anchorage, but with indications of N winds, vessels should put to sea. Anchorage is afforded in Mitsukue Ko, in depths of from 20 to 30m, mud, good holding ground.

From September to April, there are seaweed beds on the E and S sides of Mitsukue Ko.

Sada Misaki (33°20'N., 132°01'E.), the SE entrance point to Iyo Nada, is cliffy and steep-to. A light is shown from the point and a signal station operates during daylight hours from the



Sada Misaki Light

lighthouse. A radio direction signal station is situated near the lighthouse.

Iyo Nada—West Side—Northeast Coast of Kyushu

10.7 Taka Shima (33°16'N., 131°57'E.) lies on the W side of Hoyo Kaikyo, the strait between Sada Misaki and Jizo Misaki. Ashika Bae, a rock, 15.2m high, lies close off the E extremity of the island and shows a light.

Jizo Misaki (Seki Saki), the NE extremity of a wooded peninsula on the SW side of Hoyo Kaikyo, lies about 2 miles WSW of Taka Shima. A light is shown from the point and Naikai Pilots board vessels SE of the light.

Saganoseki Ko (33°15'N., 131°52'E.) ([World Port Index No. 62165](#)), located about 2 miles WSW of Jizo Misaki, is an open harbor and port of entry.

Tides—Currents.—The MHW interval at Saganoseki Ko is 8 hours 18 minutes; spring tides rise 2.1m and neap tides rise 1.5m.

Depths—Limitations.—Depths in the harbor range from 8 to 16m in the outer part and 4.9 to 8m in the inner part.

The draft limitation in the channel is 8.8m. Pier 1 has a draft limitation of 9m, a length of 100m, and a grt capacity of 15,000. Pier 2 is 200m long, with a draft limitation of 9.4m, and accommodates vessels up to 20,000 grt. Pier 3 is 130m long, with a draft limitation of 9.4m, and accommodates ves-

sels up to 7,000 grt. Vessels are also moored at several mooring buoy berths in the harbor. The inner harbor can accommodate small ore vessels in depths of 2.7 to 4m.

Pilotage.—Pilotage is not compulsory, but pilots are available and board either at the quarantine anchorage or Seki Saki; VHF channel 16 is used. Pilots is only available during day-light hours.

Anchorage.—The harbor affords good anchorage, with a mud bottom, but is exposed to NW winds during winter months.

Oita Ko (33°15'N., 131°40'E.)

[World Port Index No. 62160](#)

10.8 Oita Ko includes about 8 miles of the shore on the S side of the approach and entrance to Beppu Wan. The port includes Kasagura Harbor, Sumiyoshi Harbor, and **Tsurusaki Harbor** (33°15'N., 131°41'E.). Reclamation projects, some of which have been completed, are in progress throughout the port area.

Winds—Weather.—The harbor is protected most of the year, but during strong NW seasonal winds, the harbor becomes quite rough.

Tides—Currents.—The MHW interval is 8 hours 21 minutes. The tidal currents in the harbor are weak.

Depths—Limitations.—The three sections of harbors are protected by breakwaters. Kasagura Harbor can berth vessels of up to 5,000 grt, with drafts of up to 7.3m, Sumiyoshi Harbor berths vessels of up to 15,000 grt, with a deep draft of 10.1m. Tsurusaki Harbor berths vessels with drafts up to 5.5m. A number of privately-owned piers can berth vessels of up to 50,000 grt, with drafts of up to 11.9m.

Pilotage.—Pilots are not compulsory, but is recommended. Vessels may berth during daylight only, and unberthing is generally impracticable from wharfs during the hours of darkness. Vessels at Sea-Berth and Seichin Berth may depart up to 2000, depending on weather conditions; VHF channel 16 is used.

Anchorage.—Anchorage is available within Nishi Oita Hakuchi, in 6.5 to 7m, sand and mud, good holding ground. Except for periods of NW winds, the harbor is quiet throughout the year.

Large vessels anchor off Tsurusaki Harbor's E breakwater, in depths of 37 to 38m. The quarantine anchorage is situated in position 33°16'N, 131°46'E, in depths of 25 to 43m.

The fairway through the central part of the Tsurusaki Hakuchi is designated as a prohibited anchorage area.

Caution.—All vessels except those having the permission of the Port Captain are prohibited from approaching within 30m of any tanker loading inflammable materials, or any such vessel not certified gas-free within Oita Ko.

10.9 Beppu Wan (33°18'N., 131°35'E.) is entered between Oita Ko and Toro Hana, about 6 miles to the N. Fishing nets are laid within 0.2 to 0.3 mile of its shores, except on the S side of the bay.

The track of the swept channel leading from a position about 5 miles N of Jizo Misaki into the center of Beppu Wan is marked by lighted buoys.

Beppu Ko (33°19'N., 131°31'E.)

World Port Index No. 62150

10.10 Beppu Ko, the head of Beppu Wan, fronts the entire W shore of the bay. The harbor includes the four anchorages of Beppu Hakuti, Beppu Kokusi-kanko Hakuti, Kamegawa Hakuti, and Hizi Ko (Hiji Ko).

Tides—Currents.—The MHW interval at Kamegawa Hakuti and Hizi Ko is 8 hours 19 minutes; spring tides rise 2.1m and neap tides rise 1.5m.

Depths—Limitations.—Beppu Hakuti consists of three small basins, protected by breakwaters, with depths of 2.1 to 4.3m. Beppu Kokusaikanko Hakuti is protected by a detached breakwater, 0.5 mile in length, and a second breakwater on the S side. Depths inside the breakwaters range from 4 to 11.9m. Lights are shown from the head of the S breakwater, and about 100m from the head of the E breakwater. Wharf No. 1 to Wharf No. 3 have alongside depths of approximately 3.1m, 4.9m, and 7 to 12.5m, respectively. Kamekawa Gyoko lies about 1.5 miles N of Kokusaikanko Hakuti, a boat basin having general depths of 3.4m, protected by a lighted breakwater. Hizi Ko is protected by breakwaters and is available for small vessels.

Aspect.—The red tower of the geophysical institute stands toward the rear of Beppu and is conspicuous. The electric lights of a cable railway on the hillside W of Beppu are visible for a considerable distance. The blue colored buildings of the hospital in Kamegawa are good landmarks from a distance. The white walls in front of the town of Hizi are conspicuous.

Beppu is a renowned hot spring resort and columns of white steam rising from the springs may be seen in the approach to the port.

Anchorage.—Anchorage is prohibited from April through September within an area extending about 300m E of the S side of the pier at Beppu Hakuti.

Vessels usually anchor NE of Beppu Hakuti breakwater, seaward of the prohibited anchorage. Vessels anchor off Kamegawa Hakuti, but local knowledge is necessary. Hizi Ko affords anchorage in moderate depths, mud and sand bottom.

Caution.—Fishing nets and fishing reefs are hazards in Beppu Ko. A large number of fixed nets are set along the coast in the vicinity of Hizi Ko.

10.11 Kitsuki Wan (33°23'N., 131°40'E.) is entered between Gongen Bana and Usuishi Hana, from which a light is shown, about 3 miles to the ENE. The head and NE side of the bay are fringed with sandbanks that dry out 0.5 mile in places. The town of Kitsuki lies at the head of the bay.

Morie Ko, about the middle of the NE side of Kitsuki Wan, is shallow and is sheltered from all but S winds, but is only available to small vessels with local knowledge. A light is shown from a sandspit on the S side of Morie Ko.

Gyoja Misaki, 4.5 miles NNE of Tsukuishi (Usuishi) Hana, is a headland now overlaid by the development of Oita Airport. An aeronautical light is shown from the airport.

The E side of the airport is fringed with foul ground extending 0.5 mile offshore. A lighted buoy is moored off the SE edge of the foul ground.

Numerous fish havens exist within 4 miles of Gyoja Misaki Light.

Kurotsuno Hana (33°32'N., 131°45'E.) is about 4 miles N of Gyoja Misaki, and consists of a rocky point backed by a dense growth of pine trees. The point should be given a wide berth for numerous reefs lie in the vicinity.

Kunisaki (Tabuka) lies about 1.3 miles N of Kurotsuno Hana. There is a small basin, protected by breakwaters, and available to small vessels at Kunisaki. A light is shown from the E breakwater, and a second light from the S breakwater. O Se, a narrow reef with depths of less than 5m, extends about 0.6 mile ENE, from abreast of Kunisaki. A lighted buoy marks the E extremity of O Se.

Futago Yama (33°35'N., 131°36'E.) rises about 6 miles WNW of Kunisaki, and is 721m high. It is the highest mountain in this vicinity, and makes an excellent landmark.

10.12 Tomiku lies about 3 miles NNW of Kunisaki. It has a small basin, protected by breakwaters, but is only available to small craft with local knowledge. A light is shown from the head of the N breakwater. Me Se, a rocky ledge that dries 0.6m, extends about 0.5 mile offshore, about 0.4 mile SE of the breakwater light of Tomiku.

Tsurugi Hana (33°40'N., 131°40'E.) is located 5 miles NNW of Tomiku; between them the shore is fringed with a bank, with the depths of less than 5.5m, extending about 0.3 mile offshore, but there are no off-lying dangers. There are many fish havens up to 3.5 miles offshore in this area.

Imi, a village protected by breakwaters, is situated about 3.5 miles WNW of Tsurugi Hana. A light is shown from the head of the N breakwater at Imi.

Hime Shima (33°44'N., 131°40'E.) is separated from the mainland by Himeshima Suido, with its SW extremity about 2 miles NE of Imi. Yahazu Take, a remarkable conical peak, 267m high, forms the summit of the island, and lies on its S side. A large number of fish havens, consisting of sunken hulks, lie on all sides of Hime Shima and in Himeshima Suido.

A light is shown from Hashiragatake Hana, the E extremity of the island. Lights are shown from the SW and NW sides of the island.

Anchorage.—Anchorage during SE winds can be taken, in 24m, sand, off the NW side of Hime Shima, with Su Hana, the W extremity, bearing 180°, distant 0.75 to 1 mile off. Lighter draft vessels can anchor closer inshore.

During N winds, anchorage is afforded, in about 14.9m, sand, about 0.6 mile SW of a sharp pointed rock at the E extremity of Hime Shima.

Bungo Suido

10.13 Bungo Suido (33°08'N., 132°08'E.) passes between the W coast of Shikoku and the E coast of Kyushu and is the channel leading from the Pacific Ocean to the Naikai (Inland Sea). The S entrance lies between Komo Saki on Shikoku, and Tsurumi Saki on Kyushu, about 20 miles to the W. Hoyo Kai-kyo is the N entrance.

Komo Saki (32°54'N., 132°29'E.) is a black, steep, cliffy headland, forming the SW extremity of a peninsula on the E side of the S entrance of Bungo Suido. A light is shown from the point. Okino So, a group of rocks, lies about 1.5 miles SW of Komo Saki.



Komo Saki Light

Ka Shima is located about 2.5 miles NNW of Komo Saki. Its summit, near its E end, is 214m high. The S coast of the island consists of dark brown cliffs. There are tide rips in the narrow channel between Ka Shima and the coast to the SE. A light stands on the NE side.

Yoko Shima (32°56'N., 132°24'E.) lies about 4 miles WNW of Komo Saki; steep cliffs mark the S and W sides of the island. A black rock lies about 1.5 mile N of Yoko Shima. Close to the S end of Yoko Shima lies Ko Yoko Shima, 59m high, with tide rips occurring in the area to its E.

Hirajo Ko (32°59'N., 132°30'E.) shows a light from the N entrance point, located about 3.3 miles NE of Ka Shima Light. Hirajo Ko, sheltered from all winds, affords anchorage to vessels with local knowledge. Mabune, a rock on the W side of Hirajo Ko, shows a light.

Komatsu Saki is a steep headland faced with reddish-brown cliffs and marked by a round hill, 119m high. Kashiwa Ura is a cove on the E side of Kimatsu Saki and affords anchorage to small vessels, except during S winds.

Between Komatsu Saki and Yura Saki, about 5 miles W, the shore forms a bight in which are a number of small bays, most of which are exposed S and have depths too great for anchorage. A light is shown from Yura Saki.

10.14 Suge Saki (33°04'N., 132°25'E.) lies about 3.5 miles NNE of Yura Saki, and between it and Kashiwa Saki, about 3.3 miles further NNE, the shore forms a bight in which are numerous small bays. Arashi Ura lies about 3.5 miles E of Suge Saki, has depths of 27.4 to 45.7m, and is sheltered and free of dangers, but can only be entered with local knowledge. A light is shown from Suge Saki.

Iwamatsu Byoti lies 4 miles NNE of Suge Saki and is a sheltered bay and anchorage. Shono Shima, a rocky islet, lies on the S side of Iwamatsu Byoti and shows a light. A light is also shown at Iwamatsu Ko, situated at the head of the inlet.

Aspect.—Takega Shima, located with its S extremity about 2 miles N of Suge Saki Light, is prominent, with a wooded summit. The W side of the island is cliffy, and a light is shown from the W end of the island. A water pipeline and a submarine cable are laid from Takega Shima E to the mainland.

Oitsukami Shima (33°06'N., 132°20'E.) lies 4 miles W of Takega Shima. The W side of the island consists of high cliffs fringed by rocks. Nedoko Iwa, two prominent rocks, lie about 0.8 mile of the E side of Oitsukami Shima.



Hiburi Shima Light

Hiburi Shima, sparsely covered with trees, is located about 2.5 miles N of Oitsukami Shima. The island is divided into two parts by a narrow boat channel that can only be used during HW. The SW part of the island is mostly cliffy and is fringed in places with rocks. The NE side is indented; at the heads of three of the bays lie small villages. A light is shown from the W side of the island.

Anchorage.—Vessels with local knowledge can obtain anchorage in Ako Ura, near the village of Ako, on the E side of the NW part of Hiburi Shima, when the winds are S to W. The depths in the greater part of the bay are too deep for anchorage. During N to E winds, the anchorage is untenable.

10.15 Komobuchi Byochi (33°10'N., 132°25'E.) is a sheltered bay entered between Kuro Shima and Noto Saki, about 1.5 miles ESE. A light is shown from Noto Saki. There are two sheltered coves at the head of Komobuchi Ko, one on the SE and one on the NW. A light is shown from a small islet which lies close off the W entrance point of the NW cove. There are depths of 32 to 55m, mud and sand, in each cove.

A canal has been constructed across a narrow neck which forms the NW branch of Komobuchi Ko; at LW the canal has a depth of 3.1m. A light is shown on the W side of the N entrance to the canal.

To Shima (33°12'N., 132°22'E.) is located 2 miles W of the canal light on Komobuchi Ko. The island is densely wooded; on its E side are the villages of Honura and Kojuura. A light is shown from the breakwater at Honura Ko. Ka Shima lies about

0.8 mile NNW of To Shima, and a light is shown from its N side.

Fubushino Seto (Hubusi-no Seto) is the channel between To Shima and the mainland. In the middle of the channel, at its narrowest part, is Oko Shima, an islet, from which a light is seen. There is no passage on the W side of the islet, as it is obstructed by a reef.

Uwa-jima Wan (33°14'N., 132°28'E.) is entered between Mizugaura Saki, about 3.3 miles E of Oko Shima, and Ora Saki, the S extremity of Ora Shima, about 2.8 miles N. Ko Shima, a small islet from which a light is shown, lies close S of Ora Saki.

Mizugaura Ko lies close S of Mizugaura Saki and is protected by a breakwater. Two lights, disposed horizontally, are shown from the breakwater.

Nishi Ura and Higashi Ura, two small bays in the SE part of Uwa-jima Wan, affords anchorage to small vessels with the aid of local knowledge.

Maru Se, a detached rock with a depth of 1.3m, lies in the middle of the entrance to Uwa-jima Wan. A lighted buoy is moored off the NW side of the rock.

Uwa-Jima Ko (33°13'N., 132°34'E.)

World Port Index No. 62010

10.16 Uwa-jima Ko lies at the head of Uwa-jima Wan and consists of a natural harbor, with anchorage for large vessels and berthage for small vessels.

Winds—Weather.—In winter during strong NW winds, swells enter the harbor up to the breakwater. With the wind from any other direction, the harbor is safe and affords good shelter. The wind is mostly E during the typhoon season.

Tides—Currents.—The MHW water interval at Uwa-jima Wan is 7 hours 21 minutes; spring tides rise 2.1m and neap tides rise 1.5m.

Depths—Limitations.—Depths of 21m and greater lie in the channel NE of Ku Shima; similar depths lie in the narrow channel S of the island. Ushiga Se, a detached rock with a depth of less than 1.8m, lies about 0.4 mile E of Hako Saki, the S extremity of Ku Shima.

Depths in the outer part of the harbor range from 10.1 to 20m; depths in the inner part SE to S of the breakwater range from 4 to 4.9m.

There is a pier, with a depth of 4m alongside, at the head of the harbor; between it and an area of reclaimed land to the S is a shallow harbor. There is a pier at the outer end of the reclaimed land. On the S side of the reclaimed land is a harbor with a depth of 4.6m in the outer part and a depth of 2.4m in the inner part.

Aspect.—Ebisu Yama, on the S side of the harbor entrance, is a conspicuous round-topped hill, about 1.3 miles ESE of the summit of Ku Shima. The white tower of a castle stands on the SE side of Shiro Yama and is conspicuous in the city.

A light is shown from a red tower situated on the head of a breakwater on the S side of Ku Shima.

Anchorage.—Good anchorage can be had, in about 13m, mud, about 320m NNW of the head of the breakwater. O Ura,

on the N side of the harbor, affords good anchorage to small vessels during strong NW winds; local knowledge is essential.

Anchorage.—**Yoshida Ko** (33°15'N., 132°31'E.), a local harbor in the NE corner of Uwa-jima Wan, affords anchorage to large vessels, in 25m and greater, mud.

Directions.—Hikide Hana, in line bearing 092° with Gongenmori, leads about 183m N of O Se, 0.25 mile N of the dangers of No Shima, and 183m S of Kirige Se.

Uwa-jima Ko is entered between Udono Saki, the N point of Ku Shimas, and Hikide Hana, about 0.3 mile NE of Udono Saki.

The passage S of Ku Shima is narrow between the shoals that extend from each shore.

Hokezu Wan is entered between Ora Saki and Hirabae Hana, a conspicuous red point, about 3.8 miles NW. Takamori Yama, 635m high, rises conspicuously about 1.3 miles NE of the head of the bay.

Anchorage.—Anchorage is available at Tawaratsu Ko, on the N side of Hokezu Wan. Vessels anchor, in 12.8m, off the village of Waki. Vessels with local knowledge can anchor in Takayama Ko and Tamatsu Ko.



Osaki Hana Light

10.17 Osaki Hana (33°19'N., 132°22'E.) is a densely wooded promontory, lying about 5 miles W of Hokezu Wan.

The point is fringed by reefs extending about 0.1 mile offshore. A light is shown from the point.

Okuchi Wan is entered between Muro Hana, about 1 mile NNE of Osaki Bana, and Su Zaki, a projecting headland with steep cliffs, about 1.5 miles farther NNE. The entrance to the bay is about 0.6 mile wide. Taka Shima, the larger of a number of islets on the S side of the entrance, shows two lights.

Nakano Ura, Minae Ura, and Kuranuki Ura lie on the S side of the bay from W to E, respectively. Mikamie Ko lies in the NE part of Okuchi Wan.

Anchorage.—Nakano Ura, sheltered by the islets on the S side of the entrance of Okuchi Wan, affords a safe refuge anchorage for vessels of local knowledge. Mikamie Ko is also sheltered.

In general, anchorage can be found according to the direction of the wind in the inlets on the S and E sides of the bay, but they are restricted in the area due to the fact the depths are somewhat great and the anchorage space is limited.

10.18 Jino O Shima (33°22'N., 132°21'E.), 128m high and uninhabited, is located about 1.5 miles WNW of Su Zaki. A light is shown from Ko Shima, which lies close off the NE extremity of Jino O Shima. O Shima, lying close N of the W end of Jino O Shima, has a flat-topped summit.

Watariga Haya, a rock that dries 0.9m, lies about 0.8 mile N of the N end of O Shima. A lighted buoy marks the NW side of Watariga Haya.

Shitama Ko (33°26'N., 132°24'E.) is entered between Tatsu Saki and Suwa Saki, about 1.5 miles to the N. The bay is unsuitable as an anchorage because of its exposure to W winds. A light is shown from a rock close off Suwa Saki.

Sa Shima, a barren reddish-colored island, lies on the S side of the main approach to Yawatahama Wan, about 0.8 mile W of Suwa Saki. A light is shown from the W side of the island. Kuro Shima and Karasu Shima lie to the W of the approach to Yawatahama Wan.

A reef extends about 0.1 mile E from the E end of Sa Shima; on its extremity is a rock with a depth of 2.2m.

Yawatahama Ko (33°27'N., 132°25'E.)

World Port Index No. 62020

10.19 Yawatahama Ko is located at the head of the bay and consists of a town and a small harbor, with anchorage and berthing space for small vessels.

Tides—Currents.—The MHW interval at Yawatahama Ko is 7 hours 20 minutes; spring tides rise 2.1m and neap tides rise 1.5m.

Depths—Limitations.—The maximum length vessel that can be safely accommodated in the port is 70m. Oki-Shinden Quay has a depth of 7m alongside and is situated along the N side of the breakwater. In the inner harbor there is a depth of 5m alongside Yawatahama Jetty.

Aspect.—Suwa Saki is conspicuous on the S side of the entrance. Sanuki Mine rises between the heads of Yawatahama Ko and Kawanoishi Ko, about 2.3 miles NE of Suwa Saki; the wooded summit is a good landmark. A radio tower, with an obstruction light, stands on a hill about 0.5 mile E of the breakwater at the head of the harbor.

Anchorage.—Vessels anchor, in depths of 12 to 16m, mud, W of the head of the breakwater at the mouth of Shin Kawa. The anchorage is sheltered from all winds except from the W.

10.20 Kawanoishi Ko (33°28'N., 132°23'E.) is entered between Yono Saki and Nihonmatsu Hana, about 0.4 mile to the W. The town of Kawanoishi lies at the head of the harbor.

Kawanoishi Ko affords anchorage sheltered from all winds. Vessels anchor in the E side of the harbor, in depths of 11 to 20m, mud; local knowledge is necessary.

Ikata Wan is the small bay W of Kawanoishi Ko. Muroga Hana (Muro Saki), the W entrance point, shows a light and is conspicuous. The depths in the bay are too great for convenient anchorage.



Muroga Hana Light

Kucho Wan (33°28'N., 132°18'E.) is located about 3 miles WSW of Ikata Wan. The shores of the bay are fringed with reefs extending about 0.2 mile offshore in places, but landing can be effected at a wharf at Kucho, at the head of the bay. A submarine cable projects out through Kucho Wan, laid SW through Bungo Suido.

Between Kuicho Shima and Ko-Kajiya Hana, about 10.5 miles to the SW, the coast is fringed with reefs in places, but fairly close inshore. The only danger is a rock, awash, less than

0.5 mile SSE of Ko-kajiya Hana. A lighted buoy is moored close S of the rock.

Misaki Ko (33°22'N., 132°05'E.) is located about 1.5 miles NW of Ko-kajiya Hana, and is entered NW of **Doji Hana** (33°22'N., 132°06'E.). The village of Misaki lies at the head of the bay and shows a light. Sada Ura and Ino Ura are two coves on the SE side of the bay.

Misaki Ko affords anchorage to vessels with local knowledge, except during W winds. When the wind is W, small vessels can obtain shelter in either Sada Ura or Ino Ura.

From the head of Misaki Ko, the shore trends SW for a distance of 6 miles to Sada Misaki. The point is shown by a light and is a remark signal station. There are no known offshore dangers.

West Side of Bungo Suido and Off-lying Islands

10.21 Shibiko Se (32°57'N., 132°16'E.) is an isolated rock, with a depth of 14m, lying almost in mid-channel in the S approach to Bungo Suido.

Mizunoko Shima is a small dark islet, 19.2m high, lying in mid-channel, about 7.5 miles NW of Shibiko Se. Ko Bae, about 0.2 mile S of the islet, is a brown, rounded rock, about 0.6m high. Hira Se, about 0.2 mile SE of the islet, has a depth of 1.8m, rock. A light with racon is shown from Mizunoko Shima.

Montonoma Kaikyo (32°57'N., 132°04'E.) separates the S end of **O Shima** (32°58'N., 132°04'E.) from the N end of the peninsula of which Tsurumi Zaki is the E extremity. The strait is narrow and almost impassable because of rocks on either side and the strong tidal currents. An overhead power cable, with a vertical clearance of 26m, spans the channel. A light is shown from the S side of the strait.

Sakino Se consists of three islets lying about 1.3 miles E of the NE extremity of O Shima. The middle islet is dark in color and shows a light.

10.22 Takate Shima (32°59'N., 132°04'E.), 42m high and covered with dense growth, lies about 0.5 mile NNW of the N extremity of O Shima; between them is Komo Shima, flat-topped, with a growth of pine trees.

Saiki Wan is entered between Takate Shima and Kamado Saki, about 5 miles to the NW. The shores of the bay are indented with coves and inlets. The several headlands within the bay should all be given a wide berth, for off them lie dangerous reefs and rocks.

Aspect.—Higashikuro Mine and Tonoue Yama, two high peaks on the S side of the bay, are very conspicuous. Takahira Yama, bare and dome-shaped, serves as a landmark on the N side of the bay, about 2 miles W of Kamado Saki.

Caution.—Sunokoshi is a sandbank in the middle of the entrance of Saiki Wan. The S extremity of **Takega Shima** (32°59'N., 131°59'E.) and Tsurumatsu Bana, the NW extremity of a **Ya Shima** (32°58'N., 131°57'E.), in line bearing 240°, leads close NW of Sunokoshi.

Takega Shima and Katashiro-jima, about 1.8 miles to the WNW, lie on the E and W sides of the fairway, respectively.

Saiki Ko (32°58'N., 131°56'E.)

World Port Index No. 62175

10.23 Saiki Ko, the site of a naval air base and commercial harbor, lies in the SW corner of Saiki Wan. Main commodities handled include cement, wood chip, wood pulp, and general cargo. About 100 vessels visit the port annually. The port consists of a town and a small natural harbor, with anchorage and berthage for vessels up to 12,000 dwt.

Tides—Currents.—The MHW interval at Saiki Ko is 7 hours 8 minutes; spring tides rise 1.5m and neap tides rise 1.2m.

The tidal currents in the approach to the anchorages set E and W between Takega Shima and Todo-jima, on the falling and rising tides, respectively, but do not attain any great rate.

Depths—Limitations.—Vessels are limited to a maximum draft of 11m in the channel.

The Nihon Cement Pier has a permissible draft of 8.5m; the Kokoku Jinken Pulp Pier allows a draft of 5m; and the Dolphin Pier has a depth of 9m, with a 12,000 dwt capacity.

Me-jima Pier has an alongside depth of 10m, and there is a mooring buoy in a depth of 12m able to accommodate vessels of up to 20,000 grt.

The lumber anchorage has a depth of 14m and is able to handle four 10,000 dwt vessels.

Aspect.—A large chimney and four towers are good landmarks on Me Shima, on the S side of the entrance to the harbor. The two chimneys of the cement factory, about 1.5 miles WNW of the summit of Onyu Shima, are good marks for entering when S of Onyu Shima.

Pilotage.—Pilotage is not compulsory, but pilots are available and board at the quarantine anchorage; VHF channel 16 is used.

Anchorage.—Anchorage is afforded large vessels in the vicinity of the quarantine anchorage E of Todo Hana, in a depth of about 20.1m. Anchorage can also be obtained ENE of the cove on the W side of the harbor and between the W side of Onyu Shima and the mainland shore; the bottom is mud and sand. The latter anchorage is safest when the winds are E to S during typhoons.

10.24 Hoto Shima (33°06'N., 132°01'E.) lies about 2.5 miles N of Kamado Saki, and has a pointed summit, sparsely covered with shrubs. A light is shown from a white tower on the N side of Hoto Shima. From its E extremity, a reef, on which several above-water rocks lie, extends about 1 mile NE. A light is shown from a rock near the end of the reef. A light is shown from the head of a breakwater, on the SW side of Hoto Shima.

Tsukumi Wan (32°06'N., 131°53'E.) is entered between **Kannon Zaki** (33°06'N., 131°57'E.) and Kusuya Saki, about 2 miles to the NNW. A light is shown on Kusuya Saki. A light is also shown from a white tower at a point 0.6 mile SW of Kannon Zaki.

Steep cliffs mark the shores of Tsukumi Wan. The crumbling white cliffs that back Tsukumi Ko at the head of the bay are conspicuous.

Shira Ishi is a white rock, 5.2m high, lying in the entrance to Tsukumi Wan, about 0.8 mile N of Kannon Zaki. A light is

shown from the rock. Kuro Iwa is a black rock lying about 1.8 miles W of Shira Ishi. A lighted buoy is moored close off the E side of Kuro Iwa.

Kuro Shima (33°06'N., 131°54'E.), 92m high and wooded, lies about 0.8 mile WSW of Kuro Iwa. Chinu Saki is the extremity of a promontory that extends NW from the S shore of the bay. A light is shown from Chinu Saki, situated at the head of a breakwater extending N from the point.

Tsukumi Ko (33°05'N., 131°52'E.)

World Port Index No. 62170

10.25 Tsukumi Ko lies at the head of Tsukumi Wan and is divided into two parts by a peninsula, the head of which lies 0.75 mile W of Chinu Saki. The port consists of a town and a natural harbor with anchorage and berthage for large vessels. The port is mainly used for the export of limestone and cement.

Tides—Currents.—The MHW interval at Tsukumi Ko is 7 hours 38 minutes; spring tides rise 1.8m and neap tides rise 1.5m.

The tidal currents W of Shira Ishi are slight; the direction and velocity are uncertain.

Depths—Limitations.—The Onoda Cement Wharf, Berth A through Berth D, have depths alongside from 13 to 16m. All berths can accommodate vessels up to 60,000 dwt, except for Berth C, which accommodates 2,000 dwt. There are five other berths, with drafts of 7 to 10.5m, for vessels of 3,000 to 23,000 dwt.

Aspect.—The limestone quarries on the hills that back Tsukumi Ko are conspicuous from a distance and serve as landmarks for the harbor. Two chimneys of a cement factory on the S side of the mouth of Aoe Kawa are conspicuous. A conspicuous cement factory stands at the head of the N part of the harbor.

Pilotage.—Pilotage is not compulsory, but a pilot is available. It is recommended unless the master is acquainted with the locality. Pilot embarks the vessel at the anchorage in position 33°5'30"N, 131°54'E. Call "TSUKUMI-HO-AN" on VHF channels 16 and 12. There are no restrictions to night berthing/sailing, but to avoid accidents they are subject to master/pilot agreement.

Signals.—A weather signal station stands on the S side of the mouth of the Aoe Kawa, in a position about 0.5 mile SW of No Shima, the E extremity of the peninsula that separates the harbor into N and S parts. Weather signals are displayed by flashing light from the signal mast.

Anchorage.—The anchorage lies between Kuro Shima and Yokura Zaki, the point on the N side of the entrance to Tsukumi Ko.

Open to the NE, anchoring in Tsukumi Ko is impossible during strong NE to E winds; sea and swell enter the harbor with these winds. Mountains on three sides of Tsukumi Ko afford protection from winds from other directions; anchorage can be obtained, in 9.2 to 29m, clay, to within about 0.1 mile of the shores of the harbor. However, the inlet on the S side of Tsukumi Ko is exposed to NNW winds.

The quarantine anchorage lies SW of Kuro Shima.

Usuki Wan

10.26 Usuki Wan (33°10'N., 131°53'E.) is entered between Kusuya Bana and Kushiga Hana, about 5.3 miles to the NNW.

Tsukumi Shima, a dark, wooded islet with a sharp summit, lies about 0.8 mile off the S shore of Usuki Wan in a position about 1.8 miles WNW of Kusuya Bana.

Two rocks, the N of which has a depth of 0.9m, with the other drying 0.6m, lie between Tsukumi Shima and the shore S. A beacon stands on the drying rock. A yellow light is shown from the beacon. A lighted buoy is moored 0.7 mile E of Tsukumi Shima.

Shitanoe Ko (33°10'N., 131°50'E.) is a small harbor on the NW side of Usuki Wan, about 3.5 miles SW of Kushiga Hana. Depths of 4.9 to 8.9m, mud, affords anchorage to small vessels with local knowledge. A light is shown on the E entrance point to Shitanoe Ko.

Usuki Ko is a local harbor at the head of Usuki Wan. A basin, enclosed by breakwaters, lies on the S side of the head of the harbor, depths of 3.1 to 4.9m in this basin affords shelter to small vessels. A light is shown from the head of the SE breakwater, as well as from the breakwater on the N side of the mouth of Usuki Kawa.

The harbor is relatively safe from all winds except those from the NE. A chimney at the head of the harbor is conspicuous.

Tsuta Shima (33°14'N., 131°54'E.) lies about 5.5 miles NNE of Shitanoe Ko, and about 1.8 miles S of Jizo Misaki in the approach to Shita Ura, which is the winter anchorage for Saganoseki. A light is shown from a small breakwater on the NE side of Shita Ura. A lighted buoy is moored about 0.2 mile S of Tsuta Shima.

The Naikai pilots board vessels in the vicinity of Tsuta Shima.