



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

SECTOR 2 — CHART INFORMATION

SECTOR 2

KOREA — EAST COAST

Plan.—This sector describes the E coast of Korea from Busan Hang, at the NE entrance of Korea Strait, to the Tumen River, at the border between Korea and Siberia. The descriptive sequence of this coast, which forms the W limit of the Sea of Japan, is from S to N.

General Remarks

2.1 Winds—Weather.—Between Yongch'u Gap and Suwon Gap local inhabitants report on this coast W winds prevail in December and January, changing to a NW direction in February and March, with rough weather. During June the direction is variable with intermittent S, SE and NE winds. Gales may sometimes accompany SE or NE winds in late August. Fisherman report that the heaviest seas on the E coast of Korea are raised along this stretch, particularly with N winds from October to March.

Tides—Currents.—Between Busan and Ulsan the current which flows through the Western Channel of the Korea Strait, flows NE parallel to the coast. In winter this current is weak, but in April or May its strength gradually increases. The S current ordinarily does not extend to this area, but it may be experienced on rare occasions.

The flood tidal currents between Busan and Kwaogge Mal sets SW and the ebb current is NE. The SW current is extremely weak, but the NE ebb attains a velocity of about 1.5 to 2 knots. The NE current usually flows for about 9 hours, and the SW current for about 3 hours. Both currents may be influenced greatly by winds and seasonal conditions.

Between Orang Dan and the Tuman River, there are no regular currents, but irregular currents may set in any direction for 1 or 2 days at a velocity of 1 knot or less, depending on the winds prevailing for the few preceding days.

The current between Musu Dan and Orang Dan at a distance between 2 to 10 miles offshore sets in a S direction with a velocity of about 1 knot. Near the two headlands it increases somewhat in strength, especially during strong N winds when a velocity of about 2 knots may be attained.

The current between Yujin Dan and Musu Dan S of Al Som probably sets in a S direction. To the N of Al Som it may set in an E or W direction. The direction and velocity of these currents cannot be depended on. Its irregularity is because it is being deflected by Al Som and Yang Do.

Caution.—Offshore fishing industries and their operations are frequently met in the areas covered by this sector. For further information, see [paragraph 1.1](#).

A dangerous wreck lies approximately 0.3 mile N of Cho Do.

Although the E coast of Korea has generally a uniform appearance, its character changes suddenly from being mountainous and rocky it becomes low and sandy, and then resuming its former appearance after a short interval. This coast is generally steep-to at a short distance offshore; in some places sunken dangers lie close to the coast. At night or in thick

weather, vessels should not proceed into depths of less than 200m.

Extensive mine laying operation took place in Korean waters during the 1950-53 war. [For further details, refer to Pub. 120, Sailing Directions \(Planning Guide\) Pacific Ocean and Southeast Asia.](#)

Off-lying Islands

2.2 Liancourt Rocks (Dok To) (Take Shima) (37°15'N., 131°52'E.), about 118 miles off the Korean coast, consists of two barren, rocky islets, about 183m apart and surrounded by numerous rocks. A depth of 19m was reported, 2 miles NW of Liancourt Rocks. The W islet has a sharp peak, 157m high, with the E islet being lower and flatter. A light is shown from the E islet.

Ullung Do (Ulleung Do)(37°30'N., 130°50'E.), about 70 miles off the Korean coast, is a mountainous island with sharp conical peaks, most of which are wooded. Several islets and rocks lie close off the coast, particularly its N and E sides. Jug Do (Chuk To), with a flat summit and covered with trees, lies off the NE extremity of Ullung Do.

Landing can be effected in fine weather on the occasional small shingly beaches, but the greater part of the island is inaccessible.

Kanyong Mal, the southernmost extremity of Ullung Do, has a light on a white tower 5m in height. A light is shown on a rock close off the N point of the island. A light is situated on the W extremity of the island. Hyongnangap Light is situated about 2.8 miles NE of Kanyong Mal. There are two breakwaters and a cargo handling wharf situated about 0.5 mile NNW of the light structure.

A shoal, with depths of 22 to 58m, lies about 55 miles NNW of Ullung Do.

Busan Hang to Ulsan Man

2.3 Between the NE entrance of Busan Hang and Ulsan Man, about 25 miles NNE, mountain ranges run parallel with the coast. Other ranges slope to the coast. Trees are extremely rare on this part of the coast and mountains are mostly covered with verdure. There is a green appearance in summer, but in autumn and winter the mountains show no signs of vegetation.

Suyeong Man (Suyong Man) (35°08'N., 129°09'E.), NE of Busan Hang, is entered between Tongsaeng Mal (Dongsaeng Mal) at the N end of a promontory and Kodu Mal (Godu Mal), about 3.3 miles ENE. The bay is open SE and has depths of 5 to 14.5m, but it is encumbered with rocky shoals varying in depth from less than 2 to 9m. The bottom is irregular and consequently this bay is not suitable as an anchorage.

Suyeong Gang discharges into the head of Suyeong Man. Land has been reclaimed on both sides of the river mouth. Vessels calling at Suyeong Man should proceed first to Busan

to obtain pratique, then proceed to Suyeong Man. There is quoyage in the SW corner of Suyeong Man which fronts a Steel Manufacturing Company Works. There are reported depths of between 2.9m and 6.3m alongside.

Jang San (Chang San), 634m high lying N of the bay, is a good landmark standing 3 miles NW of Kodu Mal. Busan Aerodrome Light is shown from about 3 miles WNW of Kodu Mal. Another light for the use of aircraft is shown from Kumyor (Kumnyon San), a 415m high summit about 2 miles NW of Tongsaeng Mal.

Pilotage.—Pilotage is available during daylight hours only.

Signals.—Storm signals are displayed during daytime from a white metal mast, 12m high, on a breakwater 1.6 miles NW of Tongsaeng Mal.

Caution.—There is a bridge under construction (2001) in the entrance to Suyeong Man.

Off-lying Dangers

2.4 A rock, which dries 0.5m, lies 0.5 mile SW of Kodu Mal and there are others closer inshore SW and E of the point.

A detached reef, consisting of above and below water rocks and on which there is a wreck, lies 1 mile ENE of Kodu Mal.

Songjungri Light marks a reef with above and below water rocks lying 2 miles NE of Kodu Mal. A detached rocky 8.5m patch lies 0.5 mile offshore, 0.75 mile NE of Songjungri Light.

The coastal bank along the stretch S of **Daebyeon Hang** (35°13'N., 129°14'E.) is narrow; there are several islets and below water rocks, but they all lie close inshore.

Daebyeon Hang

2.5 Daebyeon (Taebyon) (35°13'N., 129°14'E.), where there is a small harbor, is situated at the head of Daebyeon Hang. A breakwater, 180m, extends W from the E side of the harbor. It affords shelter to small vessels up to 100 tons except during S and SW winds.

The harbor is used by many fishing boats during the months of August and November. A light is shown from the head of the breakwater.

Signals.—Storm signals are shown from about 0.3 mile NE of the breakwater head.

A rock, drying 0.3m, lies on the E side of the approach 0.3 mile SE of the breakwater head. An islet lies on the W side of the approach, 0.2 mile S of the head of the breakwater at the end of a spit extending from the W shore. A rock, 2m high, lies 0.45 mile SSE of the breakwater head at the end of another spit extending from the W shore.

Gwanggye Mal (Kwanggye Mal) (35°14'N., 129°15'E.) is a promontory, dark brown and fringed by scattered boulders. A pointed hill, 228m high and very prominent, stands on Gwanggye Mal.

Godong Mal (Kodong Mal) (35°19'N., 129°18'E.), is a low sandy point; a short distance inland is a sharp hill covered with vegetation.

A reef of below-water rocks lies 0.2 mile SSE of Gwanggye Mal.

A black rock, 10m high, lies close offshore 0.5 mile E of Godong Mal.

A small bay lies on the W side of Godong Mal and has depths of 5 to 12m, sand and mud. There is a wharf at the head of this bay with a depth of 5.2m alongside.

The N and E sides of Godong Mal are being reclaimed to become the site of S Korea's first nuclear power station. In front of the site there is a breakwater, 80m in length, on the inner side of which is a coast wall, 110m long and with depths of 5.3m alongside, where vessels of 1,000 tons can berth.

Anchorage.—Small local vessels obtain temporary anchorage in the small bay W of Godong Mal except with winds between E and S, in depths of 11m, mud.

Kanjol Gap (Ganjeol Gap) (35°21'N., 129°22'E.) is a flat point of sand and gravel, fringed with rocks which extend 1 mile offshore. A light is shown from Kanjol Gap. A mountain, the best landmark between Busan and Ulsan, stands about 7.8 miles WNW of Kanjol Gap. The summit of this mountain has several sharp peaks. Two other mountains, with conspicuous sharp summits, stand about 12 miles NW of Kanjol Gap.

Hoeya Gang

2.6 Hoeya Gang discharges 2 miles NNW of Kanjol Gap. Small vessels with local knowledge and a draft of not more than 1m can proceed about 2 miles up this river. An islet, 16m high and covered with pine trees, lies about 0.3 mile SE of the mouth of the river.

Yonja Do (Yeonja Do) (35°25'N., 129°22'E.), 11m high and foul all round, lies in the middle of the bay. Vessels should not proceed W of a line drawn N and S through Yonja Do as the bay W of this islet is foul. There is a jetty on both the N and S sides of Yonja (Yeonja) Do.

Beomweo Gabl (Pomwol Gab) is the N entrance point of Yonja Do. A rocky shoal, with 14.3m and marked SE by a lighted buoy, lies 0.7 mile NE of Beom-weal Gab.

A restricted area, 0.4 mile wide, is centered on a large mooring buoy (35°25'N., 129°23'E.), which is connected by submarine pipeline to the shore, 0.5 mile NW of Yonja Do (Yeonja Do).

Choam Do (Joam Do) (35°26'N., 129°22'E.), 7m high, lies close offshore 0.5 mile NNW of Beomweol (Pomwol) Gab.

Onsan

2.7 On San (Onsan) (35°27'N., 129°22'E.) lies at the mouth of Sangnam Cheon (Oehwang Gang), which flows from the W and empties into Ulsan Man. The port is entered 0.6 mile NNE of Choam Do, between the head of a breakwater which extends 0.5 mile NNE of Choam Do, and the head of another breakwater which extends 0.75 mile SE from a position 1.25 miles N of Choam (Joam) Do. The entrance is 0.2 mile wide.

Onsan SBM is situated 0.9 mile SE of Pomwol Gap. Tankers of 30,000 dwt berth at the terminal. A light is shown and a fog signal is sounded from the SBM, and a submarine pipeline leads W to the shore 0.5 mile NW of **Yonja Do** (35°25.0'N., 129°21.7'E.).

Depths—Limitations.—A pier with berths on both sides, used for unloading tankers, is situated close NE of **Chun Do** (35°26.3'N., 129°21.3'E.) islet. The NW side of the pier has charted depths of 12.1 to 12.4m alongside; the SE side of the

pier has charted depths of 11.2 to 12.7m alongside. A second pier, close E, has a depth of 13.9m along its W side.

Ships normally berth with bows NE; berthing and unberthing is carried out in daylight hours only. Ships should be well secured as the pier is open to E swells which are common in the summer months.

Pilotage.—Pilotage is mandatory for entering into the port of On San.

Anchorage.—Anchorage in On San is not recommended, although it is sheltered from the W and protected by breakwaters from E, because of the rock and shoals which encumber it.

Ulsan Man (35°27'N., 129°24'E.)

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2.8 Ulsan, a port of entry, stands about 3.5 miles upstream from the mouth of the Taehwa Gang which flows into the head of Ulsan Man. Ulsan Man is one of the main ports of South Korea. The harbor limits are marked on the chart.

Ulsan Hang(35°30'N., 129°23'E.) is the inner port of Ulsan Man. It lies between two rugged, mountainous peninsulas and is entered at the N end of Ulsan Man. The peninsulas form the E and W shores of the harbor and protect ships from the prevailing winds. Extensive ship repair facilities exist on the W coast of the peninsula that forms the E shore of Ulsan Hang.

Winds—Weather.—In summer the winds are frequently E, but in other seasons N winds prevail. Southerly winds may send a heavy sea into the inlet. Heavy fogs occur from April to late August, most frequently in June and July.

Tides—Currents.—In the area from 1 to 2 miles outside the entrance of Ulsan Man, the ebb current sets to the NE with a velocity of about 2 knots, and the flood current to the SW with a velocity of about 1.3 knots.

Depths—Limitations.—In the approach to Ulsan Man the depths are deep and clear of dangers. In the entrance and in the central part of the harbor the depths range from 10 to 20m. A shoal, with a depth of 3m, lies about 0.4 mile SSE of Hwaam Chu. This shoal, which is reported to break in rough weather, can be identified at high water. In the N part of the harbor a buoyed channel, with depths of 11.8 to 13.6m, leads to the quays.

Fairway I leads N from Ulsan Man to a system of quays situated within a large open basin at the NW end Ulsan Hang. The basin is protected by a breakwater from the flow of Taehwa Gang on the N side. It has been reported (1991) that the depths in Fairway I, N of the entrance, are shallower than charted. At the head of Ulsan Hang there are several numbered wharves, with depths of 7 to 11m alongside.

The submarine pipeline berths Yukong A through C belong to the SK Corporation, and represent terminals 1 through 3 respectively. They are SBM's, and lie 1.25, 1.5 and 2 miles SSW, respectively, of Hwaam Chu.

Yukong SBM A and Yukong SBM B have a depth of 23m and can handle vessels up to 300,000 dwt, with a maximum draft of 19.7m. Yukong SBM C has a depth of 26.6m and can handle vessels up to 325,000 dwt, with a maximum draft of 22.6m.



Ulsan Hang

Ssangyoung Oil D lies 2.5 miles SSW of Hwaam Chu, has a depth of 27m, and can handle vessels up to 350,000 gross tons.

Korea Oil E lies 3 miles SSW of Hwaam Chu, has a depth of 27m, and can handle vessels up to 300,000 gross tons.

Vessels may berth by day only, although departure from the buoys is allowed at any time. As the berths are exposed to S and SE winds, vessels must always be ready to move. Vessels may tend to ride up against the mooring buoy as the tidal currents change.

Navigation is restricted within 400m of the buoys and anchorage is not permitted less than 1 mile from them. Yugong Sea Berth extends 280m SE from **Kwanch'ong Mal** (Gwancheong Mal)(35°29'N., 129°23'E.) has a T-head berth at its seaward end, with dolphins N and S of it, for tankers of up to 40,000 dwt. From a point near its T-head, the pier extends further 380m to the S. This extension also has T-head with dolphins N and S of it. The depths alongside the T-head are 13.8 to 15.2m.

T5 Oil Pier consists of a concrete jetty with a T-head, extending NE from the shore 0.35 mile NNW of Kwanch'ong Mal. The coastal area NNW of the oil pier has been reclaimed.

There is a dolphin berth at the head of this jetty with a depth of 10m alongside; it is available for tankers up to 25,000 tons.

It was reported that vessels having 215m in length, 11m draft, and 45,000 dwt could use the wharves at the head of Ulsan Hang. The port is under development as a major petrochemical and industrial complex involving the handling of much larger vessels.

Jangsaengpo Hang (Changsaengp'o Hang) is entered from the NW corner of Ulsan Man, 2.25 miles NW of Hwaam Chu. Fairway II leads NW into the harbor. Lighted buoys mark the fairway in places.

The entrance to Jangsaengpo Hang is narrow and the sides of the channel are marked by buoys. An overhead cable, with a vertical clearance of 40m, spans the entrance. Within Jangsaengpo Hang, land has been reclaimed on the S shore, 0.25 mile within the entrance.

A refinery stands at the head of Jangsaengpo Hang.

A wharf, 250m long with a depth of 7m alongside, lies on the S side of the inlet, 0.6 mile within the entrance. The wharf is used by tankers of up to 7,000 tons.

Care should be taken when entering Jangsaengpo Hang to avoid the shallow water on the N side of the entrance which is only 91m wide. When navigating in Jangsaengpo Hang large vessels should exercise great caution due to shoals, lack of maneuvering room, and fishing nets.

Aspect.—Three prominent chimneys, 149m high, stand near **Sin Po** (35°28'N., 129°23'E.), the W entrance point of Ulsan Hang.

Bongdae San (Pongdae San), 132m high, stands about 0.4 mile NW of Sin Po. Bongdae San summit, on which is a ruined cairn, appears dome shaped from a distance and forms a good mark.

Several silver oil tanks stand near the shore S of Bongdae San. The peninsula forming the E side of Ulsan Hang presents an ochre appearance. Hwaam Chu, the S extremity of this peninsula, consists of reclaimed land.

In the approach, good radar returns will be received from the tanks ashore at about 20 miles, the Imodco buoys at about 8 miles, and the small buoys marking the floating hose at about 1.5 miles.

Pilotage.—Pilots board in position 35°24'N, 129°25'E, except for VLCC's. They are boarded 1 mile to the SE of this position. If a vessel is at anchor the pilot will board at the anchorage. Pilotage is undertaken by day only. The ETA of a vessel should be given 24 hours in advance.

Regulations.—Designated Areas, best seen on the chart, have been established in the approaches to Ulsan Man.

Vessels over 200m long, deep draft vessels, tug boats, and vessels carrying dangerous cargo are requested to inform the District Maritime and Port Authority of the vessel's name, gross tonnage, and scheduled time to enter the Designated Area at least 12 hours prior to entering the Designated Area.

Limits of Designated Areas are bounded by Ulsan Harbor Limits and a 6 mile radius centered on position 35°24'26"N 129°08'00"E.

Anchorage.—Anchorage may be obtained in Ulsan Man, in depths of about 12m, but S winds raise a heavy swell.

Anchorage can be obtained, best seen on the chart and clear of the passage, as follows:

1. M1 to M7—Vessels less than 5,000 gross tons.

2. M9—Vessels less than 20,000 gross tons.
3. M10—Vessels less than 50,000 gross tons.
4. M11/M12/M14/M16—Vessels less than 20,000 gross tons.

Vessels must also keep clear of the charted prohibited anchorage areas.

Vessels are advised to contact local authorities for further details on anchorage berths, anchorage areas, and anchorage regulations.

Quarantine Anchorage E1 and Quarantine Anchorage E2 lie 1 mile SSE and 2 miles S of Hwaam Chu, respectively. Area E1 is for vessels of 10,000 grt or less, while E2 is for vessels of 10,000 to 30,000 grt. Anchorage E3 lies 3 miles SE of Hwaam Chu and is for vessels over 30,000 grt. All anchorages are exposed from N through E to S. Radio pratique is not granted. Anchorage is prohibited within 500m of the obstruction in position 35°26'N, 129°26'E.

Caution.—Fishing stakes, partly obstructing navigation, may be found from September to March in any part of Ulsan Man. Near the entrance, and along the coast outside the bay, they may be found at anytime.

Bangeojin Hang

2.9 Bangeojin Hang (Pangojin Hang), entered between a position about 0.8 mile ENE of Hwaam Chu, the E entrance point of Ulsan Man, and Seul Do 0.4 mile SE, is a major fishing harbor open S, with depths of 3 to 10m, sand and mud.

A breakwater extends E from the W entrance point to within about 0.2 mile of the E shore. A light is shown from the head of the breakwater.

Seul Do (35°29'N., 129°26'E.), an islet 9m high with a flat top, has isolated depths of less than 5.5m extending about 0.3 mile S and SE.

Anchorage.—The best anchorage outside the breakwater is about 0.35 mile SSW of the E end of the breakwater, in a depth of 16m, sand and mud.

Ul Gi (Ulgi) (35°29'N., 129°27'E.), a peninsula about 1 mile NW of Seul Do, is covered with pine trees and, from a distance S, appears as an island. A light is shown from Ul Gi.

Daeyang Am, an island 21m high, lies close off the SE point of Ul Gi.

There is a small bay close N of Ul Gi with depths of 7m in the middle and a drying reef 183m SE of the N entrance point. The major part of this bay is used for seaweed cultivation.

Mi Po

2.10 **Mi Po** (Mipo) (35°31'N., 129°27'E.) port consists of two bays 1.75 miles and 2.75 miles N of Seul Do. The designated harbor limit is found by a semicircle which has a 2,000m radius and is centered about a midpoint located on the E shores of the port.

The port is engaged in major shipbuilding of tankers up to 1,000,000 tons, and the repair of tankers up to 700,000 tons. There are three drydocks and two repair docks. The N harbor gives access to two drydocks. Both bays are protected by breakwaters.

North Harbor has irregular depths within the harbor; the quays, concrete and rubber faced, are 1,140m long with depths

alongside of 7.9 to 10.4m. Temporary lights can be shown from the heads of the breakwaters and the quays are well lit at night.

Pilotage is compulsory; pilots are available from Ulsan Man.

Mi Po (Mipo) to Gampo Hang (Kampo Hang)

2.11 Caution.—A 3.4m shoal lies 0.5 mile offshore; the area between this shoal and the mainland to the NW is foul. The coast is fringed by numerous rocks and vessels should keep well offshore.

Reo eo Mal (35°35'N., 129°28'E.) is a low point from which below-water rocks extend 0.3 mile E. A flat rock, 1.5m, lies 0.3 mile SW of this point.

Uga Mal (Ugi Mal) (35°36'N., 129°28'E.) is a rocky point with a flat summit, 153m high. This point is densely wooded, blackish in color, and prominent from a distance.

Sunyeom Mal (35°40'N., 129°28'E.), 3.5 miles N of Uga Mal, is a flat cultivated point 3m high.

Daebon Mal (35°45'N., 129°30'E.), 5 miles NNE of Sunyeom Mal, is a black rocky point, fringed with rocks.

Songdae Mal, 3.5 miles N of Daebon Mal, is a low rocky point, densely wooded, and prominent. A light is shown from **Songdae Mal** (35°48'N., 129°31'E.).

Fish havens, composed of sunken hills and concrete blocks, lie within about 0.5 mile E and SE of Songdae Mal.

A rock, 4m high, lies 0.2 mile SE of Songdae Mal.

Gampo Hang (Kampo Hang) (35°48'N., 129°31'E.) is a small fishing harbor close SW of Songdae Mal, and affords shelter from N and W winds. There are some wooden piers at which small boats can go alongside.

Winds—Weather.—In spring and summer, S through SE winds are the most frequent; in winter, the W through NW winds are strong. The air is generally dry and, with the influence of the currents, most of the time the humidity level is healthy. From June until August, there is sometimes dense fog.

Anchorage.—The best anchorage outside the breakwater is 0.3 mile SE of the head of the S breakwater, in a depth of 18m, sand, but this anchorage is not suitable with a heavy swell between E and S. Small local vessels up to 300 tons anchor inside the breakwater, in depths of 4 to 8m, coarse sand.

Directions.—When approaching Gampo Hang, Daebon Mal and the low-lying land at the mouth of Daejong Cheon, 0.75 mile SW of that point, can usually be identified, even when visibility is restricted. When a vessel is closer to the dense growth of pine trees on Songdae Mal, the village standing on the W shore of Gampo Hang can be seen.

Yangpo Hang to Changgi Gap (Janggi Gab)

2.12 Yangpo Hang (Yang Po Hang) (35°52'N., 129°32'E.) lies a little over 4 miles N of Gampo Hang. A breakwater extends S from the northern entrance point of the bay. Rocky reefs extend 0.5 mile NE of the root of the breakwater.

A light with remark and a DGPS station is situated on Jeongjog Mal, the S entrance point of Yangpo Hang

There are depths of 18m in Yangpo Hang on a line joining the two entrance points of the bay, and the depths shoal gradually towards the shore.

Anchorage.—Small local vessels anchor, in a depth of 5m, in Yangpo Hang, sheltered from S and W winds.

Guryongpo Hang (Kuryongp'o Hang)(35°59'N., 129°34'E.) is a small fishing harbor, lying about 7 miles N of Yangpo Hang. It is sheltered by hills and one of the principal fishing harbors on the E coast of Korea. A breakwater, 0.25 mile long, extends SW from the N side of the harbor. Inside the breakwater there is a concrete pier, 15m long, and also a number of quays. A pier, 120m long, extends SE from the NW side of the harbor.

Good landmarks at a distance of about 5 miles offshore include the town on the NE side of the harbor and the tanks near the root of the breakwater. Storm signals are shown. A light is shown from Saramal (Sara Mal), close NE of Guryongpo Hang.

Anchorage.—Anchorage may be obtained by small vessels, in depths of 7 to 10m, sand, but there are rocky patches and the holding ground is poor.

Changgi Gap (Janggi Gab) (36°05'N., 129°34'E.) is the NE point of a promontory and can be identified in clear weather from 18 miles. A light is shown from the point.

A light is situated on Kyosokch'o (Gyoseog Cho), 1 mile NW of Changgi Gap.

Yongil Man (Yeongil Man)(36°04'N., 129°28'E.), the bay, is surrounded by the mainland on the W and S and Changgi Gap on the E. It is entered between Changgi Gap and **Talman Gap** (Dalman Gap) (36°06'N., 129°26'E.), a low point 6 miles WNW.

Pohang Hang (36°03'N., 129°23'E.)

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2.13 Pohang stands at the entrance of a shallow river at the W end of Yongil Man. Pohang Hang, which includes the entire SW part of Yongil Man, consists of an important fishing harbor at the old mouth of Hyseonsan Gang lying within the breakwaters of the river, and the deep-water facilities of an iron and steel company about 2 miles SE. There are two breakwaters, the S breakwater is 183m and extends NNE from the S entrance; the N breakwater is 80m in length. A light is situated on the head of each breakwater.

Winds—Weather.—From November to April, NE winds cause a heavy swell making it difficult for small vessels to enter the harbor; during the summer when S winds prevail the inner part of Yongil Man is calm. This bay is reported to have the least fog on the E coast of Korea. Yongil Man is never ice bound.

Depths—Limitations.—Yongil Man, open to the NE, has depths of 15 to 29m in the entrance decreasing to less than 10m about 0.8 mile from the head. The bottom is mostly mud and sand, affording good holding ground.

The submerged oil pipeline berth, marked at its seaward end by buoys, has a depth of about 12m.

Aspect.—**Changgi Gap** (36°04'N., 129°34'E.), the SE entrance of Yongil Man, is the NE extremity of the peninsula which forms the E side of the bay. In clear weather the cape



Pohang New Harbor

can be identified at about 18 miles. Talman Gap, the NW entrance of the bay, about 6 miles WNW, is a low promontory.

The SE side of the bay is high with black rocky hills rising somewhat abruptly. The NW shore is backed by hills, about 95 to 115m high, with cultivated valleys. The head of the bay consists of white sandy beaches with two or three streams emptying into it.

Regulations.—Designated Areas, best seen on the chart, have been established in the approaches to Pohang Hang.

Vessels over 200m long, deep draft vessels, tug boats, and vessels carrying dangerous cargo are requested to inform the District Maritime and Port Authority of the vessel's name, gross tonnage, and scheduled time to enter the Designated Area at least 12 hours prior to entering the Designated Area.

Caution.—In summer it is reported that numerous fishing nets may extend as much as 3 miles offshore.

A rock, dangerous to surface navigation, lies in a depth of 0.4m in position 36°18'56"N., 129°22'56"E.

A sunken wreck, dangerous to surface navigation in position 36°01'10"N., 129°27'10"E., is marked by P'ohang Shin Hang Lighted Buoy.

Pohang New Harbor

2.14 Pohang New Harbor (36°01'N., 129°25'E.) consists of an outer basin with an inner harbor. It serves a large steel and iron plant complex with many chimneys standing on its NW side. The harbor facilities are constantly being expanded.

The main breakwater, 1 mile in length, protects the outer basin and the inner harbor. Another breakwater on the E side, 0.3 mile in length, extends N from an area reclaimed for harbor development. A large reclamation project is underway in the harbor. Two detached breakwaters have been constructed near the middle of the harbor to protect the inner basin.

The harbor's entrance channel has a 160m width, decreased to about 90m about 0.5 mile E of the head of the main breakwater, with a dredged depth of 18.5m. Proceeding W to Pier 1 the depth is 18m.

Pohang New Harbor has 8 piers. Piers 1 and 2 are located along the W shore of the harbor. Piers 3-6 are located on the SW shore of the harbor. Piers 7 and 8 are located on the E side of the harbor. Pier facilities are described in the accompanying table.

Pilotage.—Pilotage is compulsory and available by day only. Pilots board either 3 miles E or 4 miles ENE of Yonam Gap. To request a pilot, cable "Pilot Pohang," indicating ETA and date.

Anchorage.—Eighteen designated anchorages exist in Pohang Hang. The anchorages are within the port limits and separated into five sections, which are best seen on the chart. The restrictions for vessels anchoring in each section are, as follows:

1. Section I—For vessels of 10,000 tons or less.
2. Section II—For vessels of 100,000 tons or less.
3. Section III—For vessels of 100,000 tons or less.
4. Section IV—For vessels of 30,000 tons or less.
5. Section V—For vessels of 100,000 tons or less.

Anchorage is prohibited in the harbor approach, about 0.3 to 2.3 miles ENE of the head of the main (outer) breakwater.

Directions.—When entering Pohang New Harbor a set of range lights, bearing 241.5°, leads through the approach channel. The forward beacon is situated on the E breakwater.

Caution.—Vessels at berths may experience difficulty in a storm in summer; in these conditions a heavy and confused swell can develop in the harbor.

Vessels berthed at Pohang New Harbor may additionally experience difficulty from September to April, when heavy NE winds may occur, or during the passage of a tropical cyclone in summer.

Changgi Gap to Yongchu Gab

2.15 Between Changgi Gap and Yongchu Gab, about 60 miles N, the coast is backed by a range of mountains attaining heights of over 975m and running parallel to the coast about 10 miles inland. The first 25 miles of this stretch of coast is backed by a range of mountains lying about 7 miles inland. This range, over 600m high and with several conspicuous sharp peaks, is mostly treeless, grass and weeds being the general vegetation. In winter this range has an ochre color. In summer it appears green. Lower ranges extend from this range to the coast.

Bihag San (36°09'N., 129°16'E.), the highest peak in this part of the coastal range, is conical and very conspicuous. About 9 miles farther NNE is a summit with three sharp peaks which can be easily identified from a considerable distance.

Weolpo Man, approximately 6 miles NNW of Talman Gap, is about 1.8 miles wide at its entrance. A light is shown from Weolpo Man.

Ganggu Hang (Kanggu Hang) (36°21'N., 129°24'E.), a fishing harbor used only by local small craft, lies at the mouth of Osib Chon which discharges 9 miles N of Weolpo Man. A sand bank often forms at the river mouth.

Changpo Mal (36°25'N., 129°26'E.), 4 miles NNE of Ganggu Hang, is a sandy point; from S it appears to project a good distance from the coast.

Daetan Mal (Taet'an Mal), 1 mile NNE of Changpo Mal, is a black point of rock and cliffs; it is the most projecting point between Yeongil Man and Chugsan Hang. The point is marked by a light.

2.16 Chugsan Hang (Ch'uksan Hang) (36°31'N., 129°27'E.) is a small inlet with a depth of 3.7m; the head of the inlet is sandy.

Chukto, 78m high and conical, is a peninsula connected to the mainland by a narrow isthmus forming the S sides of Chugsan Hang. The harbor lies between two isolated hills. The S hill appears as an island at a distance. Ponghwa San, 286m high, about 1.3 miles NW of the S hill, is the highest hill in the vicinity.

Anchorage.—Small local vessels find temporary anchorage, in a depth of 11m, sand, about 0.15 mile offshore in a small bay on the S side of Chukto off a river mouth.

Hup'o Hang (36°40.5'N., 129°27.0'E.) is a small bay on the W side of **Bingjang Mal** (Pingjang Mal) (36°41'N., 129°28'E.) with depths of 2.7 to 4.6m, sand. It is protected by three breakwaters; the W breakwater extends from the coast in a SSE direction for a little over 0.3 mile. Another breakwater extends about 0.5 mile SW from the E side of the harbor. A light is situated at the head of the E and W breakwater.

A fish haven is established 1.5 miles S of Pingjang Mal.

Signals.—Storm signals are displayed from a storm signal station at Hup'o Ri, a village standing at the head of Hup'o Hang. A light is shown about 1 mile E of Hup'o Ri.

Caution.—A bank, with a number of dangerous shoals of which the shallowest is a 5.4m patch, lies between 14 miles E and 13 miles ENE of Bingjang Mal. North of these dangers is a coral patch, with a depth of 6.5m, lying 13.5 miles ENE of Hup'o Light.

Pohang New Harbor—Port Facilities				
Pier	Length	Depths	Vessel size	Remarks
1	1,680m	16.0-18.0m	250,000 dwt	Ore imports
2	1,010m	5.0--12.0m	50,000 dwt	Ore imports
3	545m	7.5-9.0m	10,000 dwt	Steel exports
4	420m	10.0--12.0m	30,000 dwt	Steel exports
5	855m	6.7-10.6m	20,000 dwt	Steel exports
6	375m	4.5-7.7m	2,000 dwt	Steel exports
7	1,338m	7.1-12.3m	30,000 dwt	General cargo
8	1,448m	11.0m	30,000 dwt	General cargo

2.17 To the W of Hupo Hang there are several conspicuous peaks in the coastal range, which is from 3 to 9 miles inland on this part of the coast. Geumjeong San (Kumjong San), about 10.5 miles WNW of Bingjang Mal, is a sharp summit covered with dark trees and is very conspicuous. The height of the mountain range decreases N of Geumjeong San until it rises again N of latitude 37°N. A fish haven is established about 4 mile NNE of Hup'o Hang.

Hwamo Mal, 5.5 miles N of Bingjang Mal, is a hilly sandy point 69m high. A light is shown from the point.

Hasa Mal (36°50'N., 129°27'E.), about 4 miles NNW of Hwamo Mal, is a black rocky point, 115m high. A prominent conical hill, 198m high, lies about 1 mile SW of this point. A fish haven is situated about 2 miles SSE of Hasa Mac.

Hyeonjong San, 2.75 miles NW of Hasa Mal and 0.75 mile from the coast, is a very prominent mountain with three peaks; the middle peak, 415m high, is the highest.

Gyujem Cho (Kyujem Cho), a rock with a depth of less than 2m, lies about 3.3 miles NNW of Hasa Mal and 0.75 mile offshore. It is steep-to and the sea breaks over it in rough weather. An 8.6m patch, which is also steep-to, lies 0.75 mile S of Gyujem Cho.

Jinmi Mal (36°54'N., 129°25'E.), a salient point 4.25 miles NNW of Hasa Mal, rises to over 100m high a short distance W of the point. A light is shown from the point.

Sujeon Mal (37°00'N., 129°25'E.) is a steep headland, 37m high, with several rocks close offshore in its vicinity.

Jugbyeon Man (Chukpyon Man)(37°03'N., 129°25'E.), on the SW side of Yongchu Gap, is a shallow harbor protected by breakwaters. The bay affords protection from NW winds, but it is not a good anchorage because of the heavy swells. A light is shown from Jugbyeon Man.

Yongchu Gap to Mukho Hang

2.18 Yongchu Gap (37°03'N., 129°26'E.) is a promontory, covered with bamboo, which forms the E side of Chukpyon Man. Ungbong San, 999m high and covered with dark trees, lies about 10 miles W of Yongchu Gap. Kum San, another mountain, sharp-peaked, stands about 8 miles SE of Ungbong San.

The coast N continues mountainous with few breaks. Most of the peaks are densely wooded, with an occasional conspicuous rocky peak. The hills close to the coast are for the most part barren, but the valleys are cultivated.

Imun Mal (37°14'N., 129°21'E.), about 11 miles NNW of Yongchu Gap, is a light brown rocky point rising close inland to a hill on which are the conspicuous remains of a cairn. A light is shown on Imun Mal.

Imun Hang is a small harbor protected by breakwaters and entered about 0.8 mile SW of Imun Mal. Vessels with local knowledge can anchor SW of Imun Mal, in 12.8 to 20.1m, sand and rock. This small bay is completely open to winds from E and SE.

Galsan Man (Kalsan Man) (37°17'N., 129°19'E.), about 3 miles NNW of Imun Mal, is a high, steep, and conspicuous point. A group of rocks lie between Galsan Mal and Jangho (Changho), a bare sandy point 0.75 mile NW. A light is shown from Jangho.

Sail Dan (Sail Tan) (37°18'N., 129°18'E.), 1.75 miles NW of Jangho, is a black cliffy point.

2.19 Samcheog Hang (Samch'ok Hang) (37°26'N., 129°12'E.) is an important fishing center located a little over 14 miles NNW of Imun Hang. The harbor entrance has depths of 5.8 to 8.5m.

Depths—Limitations.—Pier No. 1 is 220m long, with a depth of 5.5m alongside. Pier No. 2 is 305m long, with a depth of 6.5m alongside. Pier No. 3 is 270m long, with a depth of 4m alongside. The cargo landing pier is 300m long, with a depth of 4m alongside.

A conveyor loading system for cement clinker is situated W of the port entrance. The maximum draft allowed alongside the conveyor berth is reported to be 6.8m.

The harbor is protected by breakwaters. A prominent chimney, 53m high, is a good landmark lying 0.25 mile SW of the harbor entrance with numerous other chimneys. Pi Mal (Bi Mal), about 4.5 miles SE of Samcheog Hang, is black and cliffy and is a good landmark; an islet close off this point is conspicuous when seen from N or S. A light is shown on Pi Ma. A directional light is shown from Wharf No. 1.

Pilotage.—Pilotage is compulsory; there are three pilots for the area of Muk'o Hang and Samcheog Hang.

Anchorage.—Good anchorage may be obtained, in depths of 12 to 22m, sand and mud, E of the harbor entrance.

Tut'a San, 1,353m high about 9 miles W of Samcheog Hang (Samchok Hang), is somewhat dome-shaped and when seen from a distance is prominent.

2.20 Bugpyeong Hang (Pukp'yong Hang) (Tonghae Hang) (37°29'N., 129°09'E.), 3 miles N of Gwangjin Dan (Kwangjindan), is a port designed to provide increased handling capacity to that of Mukho Hang. Depths inside the harbor are 9 to 14m. The port is protected by two breakwaters; the N breakwater extending 1,400m SE and ESE from the shore and the short S breakwater extending NNE towards the knuckle of the N breakwater leaving an entrance 240m wide.

The S pier, which is 735m long and has alongside depths of 12 to 13.5m, can accommodate vessels up to 30,000 dwt. The central pier, which is 270m long and has alongside depths of 8.1 to 14.3m, can accommodate vessels up to 50,000 dwt. The N pier, which is 570m long and has alongside depths of 7.8 to 12.9m, can accommodate vessels up to 30,000 dwt. The coal pier, which is 270m long and has alongside depths of 13 to 14m, can accommodate vessels up to 50,000 dwt. A floating pier is situated in the SW part of the harbor.

Vessels up to 65,000 dwt, with a maximum draft of 12.5m, can use the harbor. Charted depths inside the harbor are 10 to 17m.

Pilotage.—Pilotage is compulsory.

Anchorage.—A quarantine anchorage, 500m radius, lies approximately 0.8 mile ENE of the of the N breakwater. Anchorages A1 through A5 and B1 through B3, best seen on chart, lie N and E of the N breakwater.

Caution.—The harbor is exposed to an E swell, which can prevent berthing.

A wreck, dangerous to navigation, lies in the approach to Bugpyeong Hang in position 37°31.2'N, 129°09.2'E.



Bugpyeong Hang (Tonghae Hang)

Mukho Hang (37°33'N., 129°07'E.)

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2.21 Mukho Hang (Mugho Hang) (Muk'o Hang) is a small artificial harbor protected by breakwaters. Mukhojin-ni (Mughojin Ri) stands at the head of the harbor.

Ch'oroksan, the best landmark in the vicinity, is a conspicuous mountain with two peaks standing about 3 miles SW of the harbor. This mountain is almost barren except for a small dense growth of pine trees near its summit. It appears ochre and contrasts with the dark green color of the neighboring mountains.

Depths—Limitations.—In the approach to the harbor the depths are deep and free of dangers. The maximum size vessel permitted to enter the harbor is 180m in length, with a draft of 8.5m.

Mukho Hang has five piers, Pier No. 1 is exclusively used for the loading of coal or graphite in bulk. A maximum draft at LW of 7.5m is allowed alongside Berth A, and a maximum LW draft of 8m is allowed alongside Berth B. Pier No. 2 is the naval pier with a 4m depth alongside. Pier No. 3, for the loading and discharging of bulk and bagged cement along with general cargo, accepts a maximum LW draft of 8.5m. Pier No. 4, which is utilized for the same purpose as Pier No. 3, has a permissible LW draft of 7.5m. Central Pier, which is exclusively used for general cargo, has a permissible LW depth of 6.5m.

Pilotage.—Pilotage is compulsory, and pilots are available from 0500 to 2200. The pilots usually board approximately 1 mile to the ESE of the E breakwater head.

Anchorage.—A quarantine anchorage lies approximately 0.6 mile ESE of the E breakwater. Anchorages A1 through A3, B1, and B2, best seen on chart, lie NE of the E breakwater.

It is reported that with E winds the harbor becomes rough, and cargo cannot be worked. It is common practice to keep engines ready with E winds of over force 4.

Kanshin Tan to Sokch'o Hang

2.22 Between **Kanshin Tan** (37°34'N., 129°07'E.) and Chongdongjin Dan (Jeongdongjin Dan), about 6.5 miles NNW, is an open sandy bay. Lights are shown on both Kanshin Tan and Chongdongjin Dan. Chongdongjin Dan is a rocky and cliffy point, which appears to project some way from the coast and to be an unusual dark blue color when seen at a considerable distance either N or S. Detached patches, ochre in color, can be seen on this point within a distance of about 7 miles.

Chumunjin Hang (37°53'N., 128°50'E.), lying between Chumunjin Dan and the river Yongok Ch'on, about 2 miles SSE, is a roadstead well protected from N winds, but exposed to swells from E. The holding ground, which is mostly sand, gradually becomes rocky as Chumunjin Dan is approached. Breakwaters enclose the fishing harbor and commercial port. A light with radiobeacon and DGPS are shown 0.2 mile N of the S extremity of **Chumunjin Dan** (37°54'N., 128°50'E.).

Aspect.—About 10 miles inland a high range of mountains runs parallel to the coast. Within it are several conspicuous mountains and peaks. The range extends from a position about 14 miles SSW of Chumunjin Dan at an elevation of 1,123m, in a NNW direction for about 30 miles. The S end of the range is cone-shaped and has a dark blue color.

This very conspicuous mountain is the best landmark in the vicinity, unless there are low thick clouds. Sorak San (Seorag San), at the N end of this range, is of an indigo color and also a good landmark when there are no low-lying clouds. At a distance its pointed summit towers up over the other mountains.

A light has been established on Namae Ri (Namae Hang), approximately 4 miles NNW of Chumunjin Hang. Kisamun Dan is a low-lying inconspicuous cliffy point, 8.5 miles NW of Chumunjin Dan. A light is shown on the point.

Anchorage.—Anchorage may be obtained about 0.15 mile S of the E breakwater head, in a depth of 9m, sand.

2.23 Susan Dan (38°05'N., 128°41'E.), about 13.5 miles NW of Chumunjin Dan, is a rocky precipitous point with a cairn on its summit. A light is shown from Susan Dan. About 0.5 mile farther NW is a small point, dark-colored and conspicuous, which has the appearance of an islet when seen at a distance.

Sokch'o Hang (38°12'N., 128°36'E.) ([World Port Index No. 60435](#)), about 8.5 miles NNW of Susan Dan, consists of a small artificial harbor protected by two breakwaters. The bay, open between E and S, has depths of 5 to 14.6m.

Pisonjang (Biseonjang) is a small, protruding, cliffy cape 36m high, its summit covered with pine trees. A silvery radio tower stands 0.5 mile SW of the cape. Sokch'o Hang Light is situated on Pisonjang. A dangerous shoal, over which the sea breaks in rough weather, lies in the entrance of the harbor.

Chodo (Cho Do), about 1 mile SE of Pisonjang, is 21m high, ochre-colored, and is conspicuous.

Ongjin Dan (Ongjindan), about 1 mile S of Chodo, is a slightly-projecting point, the cliffs of which are composed of ochre-colored rocks and are conspicuous. Taep'o Hang (Daebo Hang), open between E and S, is on the SW side of Ongjin Dan. It is a small fishing harbor with wharves where fishing vessels can berth. A breakwater, 240m long, extends from the N shore.

Regulations.—A restricted area, best seen on chart, exists in the E approaches to Sokch'o Hang. All vessels over 100 grt, except military and fishing vessels, are prohibited to enter.

Anchorage.—Anchorage may be obtained off the N breakwater. A quarantine anchorage lies approximately 1.5 miles SE of Cho Do.

Ayajin Ni (38°16'N., 128°33'E.) stands at the head of a small bay about 5 miles NNW of Chodo.

Deogpo Dan to Suwon Dan

2.24 Deogpo Dan (Tokp'o Dan) (38°22'N., 128°31'E.), lying a little over 6 miles NNW Ayajin Ni, is a slightly-projecting point 47m high. Half of the face of this point is wooded and the other half is barren, which has the effect of rendering it very prominent.

Geojin Hang (38°27'N., 128°28'E.), SW of Geojin Dan, is a small artificial harbor protected by breakwaters. The shore of the roadstead consists of a sandy beach.

Geojin Dan (Kojin Dan) (38°27'N., 128°28'E.) is a projecting point with a deep blue color. A light is shown on Geojin Dan. The E side of Geojin Dan is foul up to 183m offshore.

The E breakwater extends about 0.4 mile SW of Geojin Dan. The W breakwater, 0.15 mile in length, extends E from a position a little over 0.5 mile SW of Geojin Dan Light. Koro Ho, about 10 miles SW of Geojin Dan, is a good mark in the approach to the roadstead. This rugged peak, 1,293m high, is indigo-colored and resembles a hat.

Anchorage.—Anchorage can be obtained, in 7.8 to 9.1m, fine sand, close off the harbor. It is sheltered from N winds, but a swell runs into the roadstead with strong N winds.

Taejin Ni (Daejin Ri) (38°30'N., 128°26'E.), a small bay, is entered close S of a small promontory marked by a light 3.75 miles NNW of Geojin Dan, with depths of less than 2m. A sandy beach lies at the head of the bay.

The coast between Geojin Dan and Suwon Dan, about 15 miles NNW, is precipitous in places with rocky cliffs and a few off-lying rocks. It is backed by a range which runs parallel to the coast and has only a few conspicuous peaks.

Tongjoso Man

2.25 Tongjoso Man (39°30'N., 128°00'E.), the major indentation on the E coast of Korea, is usually defined as lying between Suwon Dan and Mayang (Mayan) Do, about 80 miles N. The gulf recedes about 40 miles and has no obstructions in its approach and central part.

Nan Do (39°00'N., 128°06'E.), a good mark for vessels approaching from SE, lies about 8 miles offshore. This islet has a pointed summit and steep cliffs on its E side.

Ranges of high mountains fringe the N and S shores of the gulf; lower hills and coastal plains are at the head of the gulf.

Winds—Weather.—From October to May, prevailing W winds blow offshore, being especially strong in winter. In summer E winds are fairly prevalent and frequent gales send heavy swells into the gulf. Typhoons are of rare occurrence. Fog prevails during the rainy season, which is usually in July and August.

Tides—Currents.—In Tongjoso Man, the tidal currents are weak and irregular, but the warm and cold ocean currents off the E coast of Korea meet in this area, flowing in directions which are counterclockwise. Generally, in summer the cold current sets in a S direction along the shores of the gulf and the warm current is N in the offing. In the area N of latitude 39°N, between these two currents, a circular counterclockwise set is formed. The velocity of this current seldom exceeds 1 knot.

According to observations made from June to August, the currents near Mayang Do usually set in an E direction. One branch flowing from S of Mayang Do and another N of that island. The velocity is about 1 knot. These branches combine off Songdo Gap, about 5 miles E of the island, and the resultant current appears to turn gradually to the SW through S.

Caution.—A danger area bounded by a circle, radius of 1 mile, lies in position 39°16'N., 128°02'E.

Anchoring is prohibited in an area extending SW from Nan Do to the mainland.

Tongjoso Man—Southwest Shore

2.26 Suwon Dan (38°41'N., 128°22'E.), the S entrance of Tongjoso Man, is a low promontory which gradually rises

inland. The cape is fringed by rocks. A light is shown on Suwon Dan. Between Suwon Dan and **Irari Gak** (39°09'N., 127°36'E.), about 45 miles NW, the mountains slope gradually to the coast. Piro Bong (Kumgang San), about 12 miles WSW of Suwon Dan, is a good mark for vessels approaching this cape. This mountain, which has several peaks, is dark-colored and conspicuous, but is sometimes obscured by clouds.

Changjon Man (38°44'N., 128°12'E.), about 7 miles NW of Suwon Dan, is a fishing harbor entered between Changadae Kkut and Gyegan Mal (Kyegan Mal), about 3 miles WSW. A light is shown from the N part of the entrance. The shores of the bay are low and sandy, but inland are several conspicuous peaks. Changadae Kkut, which consists of black rocks piled one on another, is a good mark in the approach from S. Also, conspicuous on the offing is the isolated mountain, 333m high, about 4 miles S of Changadae Kkut.

The inlet has depths of about 7 to 11m and afford shelter. Small vessels with local knowledge can obtain good anchorage, in 6.4m, sand, sheltered from all directions, about 0.2 mile W of the point about 0.8 mile SW of Gyegan Mal. Close SE of this anchorage the depths are about 9m, sand, but the holding ground is not good.

Large vessels can anchor outside the inlet, in 13 to 15m, about 1 mile SSW of the N end of Changadae Kkut during E winds, but the holding ground is not very good. Strong N winds cause a swell in the inlet.

Sol Som (Song Do), about 3.5 miles NNW of Gyegan Mal, is wooded with a flat summit. The islet is very conspicuous and presents a black color when seen from a distance.

A hill, 145m high at the head of Changjon Man, bearing 222° leads through the middle of the fairway of the entrance to the harbor.

Caution.—Winds, which are dangerous to shipping, periodically blow down from Piro Bong. Warnings of these winds are shown by dark clouds covering the highest peak of Piro Bong, and rain clouds moving fast in a NE direction; distant thunder in this direction is a further warning.

2.27 Kojo P'o (38°58'N., 127°53'E.), about 20 miles NW of Changjon Man, is a small fishing harbor sheltered from all directions except E. Ch'ongsok Tan, the SE entrance of the harbor, is a long, somewhat conspicuous rocky point. A light is shown from Ch'ongsok Tan. Kusin Dan, about 3.3 miles SE, is a steep cliffy point, easily identified by wood on its summit. From a point on the E side of the harbor, about 0.9 mile W of the E extremity of Ch'ongsok Tan, a breakwater extends W.

Amyong Kkut (Amnyong Kkut) (39°08'N., 127°45'E.) 11 miles NW of Kojo P'o, is a black, cliffy, rocky point about 30m high. From it a low sandy isthmus, on which there is a green dome-shaped hill 31m high, extends 2 miles SE where it joins the mainland. The islet Kuk To, about 1 mile WNW of Amyong Kkut, is precipitous.

Caution.—An area which is dangerous to navigation lies 16 miles NE of Amyong Kkut.

Irari Gak (39°10'N., 127°36'E.), the S entrance point of Yonghung Man, is 44m high; there is a large village on the neck of land within the point. Umi Do, lying about 0.2 mile

NNW of Irari Gak, is 29m high and wooded. A spit, with a depth of 3.7m, extends about 0.2 mile N from this islet.

Anchoring is prohibited in an area close W of Irari Gak; this area extends NNE to Yo Do.

Yonghung Man

2.28 Yonghung Man (39°15'N., 127°30'E.), in the SW part of Tongjosen Man, is entered between Irari Gak and Taegang Got, about 8.5 miles N. There is fairly good holding ground throughout the bay, and considerable protection is afforded by the islets and reefs in the entrance. The port of Wonsan is on the S side of the bay, and the sheltered anchorage of Songjon Man is on the N side of the bay.

Yo Do, the largest of the islets at the seaward end of Yonghung Man, lies close outside the middle of the entrance about 4 miles NNE of Irari Gak. This high islet is densely wooded and fringed by shoals extending SW from it. The main fairways leading into the bay pass on either side of Yo Do.

Taegang Got, the N entrance of the bay, is the small tongue of land at the S end of **Hodo Pando** (Ho Do) (39°20'N., 127°33'E.). Duyu Bong (Samsang Bong), about 1.5 miles NNW of Taegang Got, has two sharp pointed peaks close together. These peaks, together with the islets in the entrance, make identification of the entrance of Yonghung Man easy for vessels approaching from E. Some low wooded hills on the sandy isthmus N of Hodo Pando appear to be islets from a distance.

Regulations.—A TSS has been established for Yonghung Man as shown on chart.

Caution.—Vessels are required to follow the traffic separation scheme as shown on the chart. If approaching from the S steer to pass between Irari Gak and **Taeo Do** (39°13'N., 127°38'E.). Care should be taken not to pass within a distance of 1 mile of Irari Gak, or into depths of less than 11m. Proceed E of Sin Do to join the traffic scheme which leads into the harbor.

Wonsan

2.29 Wonsan (39°10'N., 127°27'E.) ([World Port Index No. 60440](#)), an important industrial and transportation center, stands on the SW side of Wonsan Hang. This natural harbor is sheltered on its E side by **Kalma Bando** (39°11'N., 127°29'E.) which is low except at its N end. Kalma Gak, the N extremity of Kalma Bando, is cliffy and precipitous, and from a distance appears as an island. The harbor area is protected by breakwaters.

Winds—Weather.—At Wonsan, W winds prevail, and a strong blow from that direction will often last intermittently for several days in winter. These winds are very cold in January and February. Thick fogs, often low lying, have been recorded at Wonsan on an average of about 10 days annually, and are said to be still more frequent at the entrance of the bay where they come in from the E and gradually dissipate.

Ice.—Wonsan Hang is never icebound, but during W winds in winter, drift ice accumulates on the W side of Kalma Bando, and when the comparatively warm E wind sets in, the drift ice moves in a SW direction into the harbor.

Depths—Limitations.—In the approach to the harbor there are general depths of 11 to 18.5m, decreasing to depths of 6.7 to 8.2m in the entrance and middle part of the inner harbor. A chain of rocky shoals, with a least depth of 3.7m, extends SE from Ghangdok To. The positions of the buoys marking these shoals can not be relied on during the winter because of drift ice. Other dangers lie in the approach to the harbor and in the vicinity of Kalma Gak.

There are numerous wharves and quays within Wonsan Hang, but the biggest are in front of and to the NW of the Customs House. Depths alongside range from 3 to 7.2m.

Pilotage.—It was reported that the pilot boarding station was situated in a position about 3 miles NE of Yo Do.

Anchorage.—Anchorage may be obtained N of the E and W breakwaters, in depths of 7 to 13m. A good position, sheltered from W winds, is 0.5 mile NNW of **Changdok To** (39°10.5'N., 127°26.4'E.), in a depth of 12m. There is also anchorage inside the breakwaters in a depth of about 7m, sand, or mud and silt.

Caution.—Areas where anchoring and fishing are prohibited are located in the S part of Yonghung Man in the approaches to Wonsan and are best seen on the chart.

Songjon Man

2.30 Songjon Man (39°20'N., 127°30'E.), the N part of Yonghung Man, is entered between Mangdok Kot, the SW extremity of Hodo Pando (Ho Do), and Wonch'u Gak, about 3 miles W. The bay affords sheltered anchorage to large vessels, with good holding ground, but has no commercial importance.

Ice.—The bay for about two months during the winter may be covered with thin ice, but it is broken up with strong winds; N winds drift it into Wonsan Hang.

Anchorage.—There is good anchorage in the outer part of Songjon Man in position 39°20.5'N, 127°29.5'E, in depths of 10 to 16m, mud. Vessels can anchor with Mangdok Kot bearing 154° and Wonch'u Gak 227°. Wonch'u Gak is very conspicuous.

Hungnam (39°50'N., 127°37'E.)

[World Port Index No. 60450](#)

2.31 Hungnam stands along the N shore of Sohojin Hang at the N end of Hamhung Man. This bay is entered between Yongo Dan and Oeyangdo Dan, about 11.5 miles NNE, and has a low sandy beach on which the sea breaks during E winds. The city of Hamhung is about 6 miles above the entrance of the Songch'on Gang in the N part of the bay. The harbor consists of a small basin protected by a breakwater and has limited berthing space.

Winds—Weather.—In winter and spring, when W winds prevail, gales from the NW usually raise a considerable sea. Winds from the S sometimes send in a heavy sea in summer, but this is not common. The harbor is fog bound only about twice a year. Thin ice, causing no hindrance to navigation, may be experienced.

Depths—Limitations.—In the approach to Hamhung Man, the depths are deep and clear of dangers. The 18.5m curve lies roughly across the entrance of the bay. In the middle of the bay are general depths of 11 to 14.7m, with a gradual shoaling

toward the shore. Hyongje Do, two conspicuous white rocks, 15.8m and 14.9m high, lie near the S and N ends of the steep-to rocky shoal about 4.3 miles NNE of Yongo Dan.

At Hungnam, vessels up to 7.6m draft can berth alongside; vessels in excess of this draft discharge cargo into barges at the anchorage, about 1 mile S of the breakwater.

Aspect.—A good mark in the approach to the bay is Tansok San. This peak, conical in shape, stands at the S end of a ridge of mountains about 21 miles WNW of Yongo Dan. Also, conspicuous from a distance, is the clump of scrub surmounting the knoll on the summit of Hwa Do. The sea breaks on the spit which connects this island to the mainland NW.

Oeyangdo Dan, where a light is shown, the N entrance of Hamhung Man, is faced with reddish cliffs which can be identified from a distance. This point along with two hills close N appear to be detached when seen from offshore.

A dangerous wreck lies 3 miles SE of Oeyangdo Dan Light.

A waiting area is located 4 miles SSE of the same light.

Unju Bong, about 7.5 miles N of Oeyangdo Dan, is conspicuous.

Pilotage.—Pilotage is compulsory. Pilots board off Oeyangdo Dan from a launch.

Regulations.—A TSS has been established in the approach to Sohojin Hang (Hungnam Harbor). This scheme is not IMO-adopted. Mariners are advised to assume that Rule 10 of the 72 COLREGS applies, since it is not known what regulations are in force.

Anchorage.—An anchorage area is located 1.25 miles S of Taejin Do breakwater light, in depths of from 10.9 to 12.8m. The area off the breakwater, where vessels often have to anchor because of the limited facilities, is exposed to winds from SE to SW through S.

Tongjoson Man—Northwest Shore

2.32 T'oejo Man (39°53'N., 127°47'E.), about 7.5 miles NE of Oeyangdo Dan, affords the best anchorage on this stretch of coast. The shores of the inlet are high, steep, and indented with small bays with sandy beaches at their heads. The coast on either side of the entrance of T'oejo Man consists of high precipitous cliffs. Chindong Do and Tae Som lie E of the entrance of the bay.

Anchorage may be obtained in T'oejo Man, in depths of 10 to 16m, mud, where it is sheltered from all winds except those from SE which do not cause much swell. The bay is never ice bound, but during exceptionally cold periods there is thin ice close inshore.

Ansong Gap (39°53'N., 127°53'E.) together with Ongnyo Bong, about 1.8 miles WNW, make good landmark for identifying the coast in this vicinity. This cape, connected to the mainland by a sandy isthmus, has high precipitous cliffs on its S and E sides. When seen from a distance the peninsula appears as a dark island. During SW winds, shelter can be obtained in 14.6 to 18.3m off the NE side of the peninsula.

Between Ansong Gap and Songnyong Man, about 10 miles NE, the coast consists mainly of low sandy beaches. Chonsuk To lies off the entrance of a bay about 3.3 miles N of Ansong Gap; Som Pawi lies about 1.3 miles farther ENE. Chuk To, two islets lying close together, is about 3 miles NE of Chonsuk To.

Songnyong Man (40°02'N., 128°00'E.), about 4 miles wide at its entrance, affords shelter from N winds to vessels with local knowledge. Mukpang San, about 8 miles NNE of the W entrance of the bay, has a conical shape and is a good mark when seen from seaward. **Kiwa Pau** (Wa Am) (40°01'N., 128°02'E.), a black prominent rock 5m high, lies close off the middle of the entrance to the bay.

Anchorage.—Anchorage for small vessels, sheltered from the N, may be obtained in the bay, in a depth of about 12m.

2.33 Pongsu Pando (40°00'N., 128°09'E.), a conspicuous headland, rises to a conical peak which has the appearance of an island at a distance. A fairly conspicuous white landslip is at the SW end of this headland.

Mayang Do (Mayan Do)(40°00'N., 128°11'E.), the N entrance of Tongjosen Man, is an irregularly shaped island lying close offshore. The pointed summit of the island surmounts a chain of hills which rise steeply along the S side of the island. The lower part of the two highest peaks has a striking reddish appearance.

Caution.—During the fishing season, from June to September, nets may be encountered in the area at the E end of Mayang Do.

Sinp'o (40°02'N., 128°12'E.)

World Port Index No. 60460

2.34 Sinp'o stands at the head of Sinp'o Hang, the largest of the coves N of Mayang Do. The harbor, sheltered from all except S winds, is approached via the strait lying between Mayang Do and the mainland. The E entrance is free from dangers in the fairways; the W entrance is comparatively shallow and should not be used by large vessels.

Winds—Weather.—In December and January, thin ice forms in the inlets on the coast of Mayang Do, but the strait is never icebound. Some fog, usually accompanied by E winds, occurs from April through June. The prevailing winds are from E to SE in spring and summer, S to SW from late summer to early autumn, and W to NW in winter.

Depths—Limitations.—The E and recommended entrance of the strait is unobstructed over a width of about 0.8 mile between the reef extending about 183m off the NE point of Mayang Do and Taegu Do, close off the N side of the strait. The S side of this islet is cliffy and somewhat conspicuous. Sinp'o Hang has depths of 5.5 to 9.1m.

Aspect.—The E part of the mainland N of Mayang Do consists of spurs of hills which terminate in three small and rocky points. The W part, low and sandy, extends to Pongsu Pando which serves as a good mark for the W entrance of the strait.

Landmarks for Sinp'o Hang include a black rock, 11.9m high, close off Saam Dan, the W entrance of the harbor and two chimneys, three radio masts, and a flag staff, all on the W side of the harbor. The above black rock can be identified from both the E and W entrances of the strait.

Anchorage.—Anchorage, protected except from the S, may be obtained, in a depth of about 7m, mud and sand.

Songdo Gap to Hwangdan Tan

2.35 Songdo Gap (40°02'N., 128°20'E.), the E entrance of Yanghwa Man, is the extremity of a blackish promontory, which is joined to the mainland by a low, flat, white sandy beach. The cape has two conspicuous summits which have the appearance of being detached islets when seen from a distance.

Yanghwa Man, free from dangers, affords shelter to large vessels, in depths of 14.6 to 21.9m.

Sinch'ang Hang (40°07'N., 128°29'E.), about 8.5 miles NE of Songdo Gap, is entered between Yonggo Dan and Ungam Dan, about 4 miles NE. The bay is exposed to swells with all but N winds. A basin fronts the village in the NE part of the bay. Some brown cliffs stand on the N side of the mouth of the shallow river at the head of the bay and help to identify it.

Yonggo Dan is cliffy on its SE side and is conspicuous when seen from a distance. Ungam Dan is precipitous and can be identified by a brownish rock, about 35m high, on its SW side. Taedok San, about 12 miles NNW of Ungam Dan, is conspicuous. Mountain ranges extend in a S and SE direction from Taedok San toward the coast.

Ch'aho (40°12'N., 128°39'E.)

World Port Index No. 60470

2.36 Ch'aho, the principal fishing harbor in the area, stands at the head of Ch'aho Hang, a deep narrow inlet entered W of Chinsuk To (Chonch'o Do). The harbor, which is sheltered by the surrounding hills, is about 0.4 mile wide.

Winds—Weather.—Dense fog occurs on an annual average of nine days from March through August, and is a slight hindrance to navigation. Light snowfall begins in November. Ice may form in the inlet, but it does not freeze over solidly.

Depths—Limitations.—The depths in the entrance range from 14.6 to 21.9m. The navigable channel has a depth of 9m or more. An iron pier, with a depth of 9.1m alongside its T-head, lies at the S end of town, about 1 mile N of the W entrance point. There are also three small wharves in the harbor, one of which has a depth of 5.8m alongside.

Aspect.—Hwangdan Tan, about 1 mile SW of the entrance of Ch'aho Hang, is a precipitous cape, particularly conspicuous because of its reddish color. It is backed by the conspicuous Kwan San with its sharp peak. Sam Bong, with three sharp peaks, is about 4 miles farther WNW. Nip Am, 24m high and conspicuous, lies close S of the W entrance of Ch'aho Hang.

Chinsuk To (Chonch'o Do), forming the E entrance of Ch'aho Hang, is high and densely wooded. The island appears black when seen from a distance. A treeless islet lies between Chinsuk To and the mainland N.

Anchorage.—Ch'aho Hang affords anchorage to moderate sized vessels, in a depth of about 16m, mud, in the middle of the harbor.

Iwon Hang to Kimch'aek

2.37 Iwon Hang (40°17'N., 128°39'E.), about 4 miles wide at its entrance, affords shelter during S winds, but E winds cause a heavy swell. The S entrance point is treeless, rising to a wooded hill about 0.5 mile inland. Close ESE of the S entrance

point is a prominent grayish rock 11m high. Ch'ongnyong Mal, the N entrance of the bay, is a headland with brownish cliffs which can be made out fairly easily from seaward. Ch'udok San, about 7 miles NNW of Ch'ongnyong Mal, is dome-shaped, and can, together with two other peaks farther W, be easily identified. Chokoku San, about 5 miles farther NNW, is, together with two other peaks about 2 miles NW, conspicuous from a distance.

Anchorage.—Anchorage can be taken in Iwon Hang, in 12.8 to 14.6m. The shore of the bay consists of a white sandy beach which is densely wooded.

2.38 Nan Do (40°19'N., 128°46'E.), about 4.3 miles E of Ch'ongnyong Mal and 1.5 miles offshore, is a gray cliffy islet, densely wooded and conspicuous from a distance. Chak To (Jag Do) islet, about 2.3 miles WNW of Nan Do, is wooded with a flat summit.

The W part of the coast between Iwon Hang and Yongdae Gap, about 21 miles NE, is characterized by steep cliffs interspersed with sandy beaches, while the E part is mostly low and sandy. Sabujin, about 8.3 miles NE of Nan Do, is an artificial harbor sheltered by two breakwaters.

Kwae Do (40°27'N., 129°00'E.), about 5 miles NE of Sabujin and 0.75 mile offshore, is a brownish rock conspicuous from a distance. Unju San, about 5.3 miles WNW of Kwae Do, has three gray peaks and is conspicuous. The mountain range extends about 8 miles N from Unju San, then about 6 miles NW; it contains peaks that can be identified. Another good landmark is the black mountain with two peaks about 4 miles NW of Unju San.

Yongdae Gap (40°28'N., 129°04'E.) is the S extremity of a peninsula which forms the E side of Yongdae Myoji. Wonsandok San, about 4 miles N of Yongdae Gap, has a pointed summit and is conspicuous at a distance. Yongyon San, about 17 miles farther NNW, is the highest mountain of a range which extends about 25 miles N from the cape.

Yongdae Myoji affords anchorage, in 9.1 to 13m, fine sand, about 0.5 mile off the shallow cove in its NE part. It is not a safe anchorage, except with NE winds.

The coast for a distance of about 13 miles NNE is high and fringed by numerous rocks, most of which are steep to.

Kimch'aek (40°40'N., 129°12'E.)

World Port Index No. 60480

2.39 Kimch'aek stands on the coast at the SW entrance of Immyong Hae. Songjin Hang, one of the important harbors of NE Korea, occupies two small bights separated by Songjin Pando. Songjin Pando is a cliffy tongue of land, surmounted by conspicuous pine trees, and joined to the mainland by a low neck of land. The principal harbor is N of Songjin Pando; the S harbor, S of Songjin Pando, is the fishing center. Both harbors are somewhat protected by breakwaters.

Winds—Weather.—The prevailing winds from September to March are NW; in the remaining months the direction is predominantly S or SE. During April and May, from about 1100 to 1500, strong S or SSE winds are liable to blow toward Kimch'aek. Sea fogs from NE usually occur in the morning.

The rivers always freeze in the winter, but the harbor is never obstructed by ice. It is reported that weather rarely interferes with the working of cargo. Light snow, frequently accompanied by N or NW winds, falls on an average of about forty days. Drift ice does not penetrate to the shores of Immyong Hae. Thin ice, not sufficient to obstruct navigation, is sometimes seen floating in the middle of the bay.

Depths—Limitations.—In the greater part of Immyong Hae there are depths of 18.3 to 36.6m. The shores of the bay are fringed in places by rocks, but there are no dangers beyond a distance of about 0.2 mile offshore.

Dangerous wrecks lie about 0.5 mile SSW of Yujin Dan, the N entrance point of Immyong Hae.

Within the N harbor there are depths of 9.1 to 18.3m. Alongside the 400m long quay on the N side of Songjin Pando there is a depth of 9.8m. The small basins at the head of the N and S harbor are shoal.

Aspect.—The land on either side of the entrance of Immyong Hae is high, but the head of the bay is low and sandy. Yujin Dan, the E entrance of the bay, is conspicuous from E and S.

Also conspicuous are the white cliffs at the foot of the mountain, about 1 mile N of Yujin Dan; these cliffs are the best mark in approaching from S. Other prominent peaks are farther N.

Anchorage.—The outer harbor affords adequate protection from W winds, but with S or SE winds shelter is limited to the constricted section close N of Songjin Pando. Depths are from 12.8 to 14.6m.

Yujin Dan to Musu Dan

2.40 The coast NE of Yujin Dan is high for a distance of about 4 miles, then it becomes low and sandy to Tadong Dan, about 8 miles farther NE. Then between Tadong Dan and Musu Dan, about 9.5 miles ENE, the coast is indented by several small coves. Kwanam Bong, about 4.5 miles NW of Tadong Dan, is very conspicuous because of its distinctive cockscomb appearance.

Hwangamdong Myoji (40°49'N., 129°34'E.), about 2 miles NE of Tadong Dan, affords anchorage, in about 11m, about 0.4 mile offshore. Hyongje Do is a group of rocks lying about 0.4 mile SE off the SW entrance of the bay. The two E rocks of this group are rugged, bare, and reddish-brown in color; the S of these two rocks, somewhat higher than the other, is dome-shaped. Yom Am, light brown in color, lies in the entrance of the bay.

Kalma P'o, about 1 mile NW of Musu Dan, affords shelter to small vessels. The inlet is surrounded by high steep hills.

Al Som (Nan Do) (40°39'N., 129°33'E.), about 11.3 miles E of Yujin Dan, is a conspicuous white, barren, rocky islet. The two rocks close E of the islet are very pointed. Al Som, a good mark for vessels running the coast, is reported to be altered in appearance due to a mirage occurring from about the middle of May to the end of July.

Yang Do, about 2 miles S of Tadong Dan, consists of the two NW islets in a group of three. Kanghui Do is the SE islet and the highest of the group.

Anchorage.—Large vessels can obtain shelter from S winds, in 18.3 to 21.9m, about 0.2 mile N of Yang Do.

Musu Dan to Orang Dan

2.41 Musu Dan (40°50'N., 129°43'E.) consists of high, reddish cliffs at the extremity of a bold promontory projecting S. These cliffs slope gradually to their S end.

A light is shown on the S extremity of Musu Dan. A rock, reported to be 16.8m high, lies close S of the cape. Another rock lies close offshore approximately 1.8 miles N of Musu Dan. This rock, which is conspicuous, resembles two crouching dogs facing each other when seen from N or S.

Abnormal magnetic variation has been reported over the years in the vicinity of Musu Dan.

Between Musu Dan and Orang Dan, about 33 miles N, the coast is entirely composed of steep rocky cliffs, with ranges of hills and low mountains rising inland. Rocky peaks, often oddly shaped, are common. The color of the cliffs on either side of Poksuk Tan, about midway along this stretch of coast, creates a distinct contrast. Those S of Poksuk Tan are reddish-brown, while those N of the point are whitish-brown. In addition, the elevations S of Poksuk Tan are higher than those N.

The coast N of Musu Dan consists of high, precipitous, ash-colored cliffs for a distance of about 5 miles to Mokchin Dan, a conspicuous black, rocky point. Unmandae Dan, about 2 miles farther N, is also conspicuous. Prominent peaks backing this part of the coast include Ch'imabawi San, about 3 miles N of Musu Dan; Kaegi Bong, about 4.5 miles W of Unmandae Dan, and Kkach'i Bong (Kakch'i Bong), about 5 miles NW of Kaegi Bong.

P'ohang Man (40°59'N., 129°44'E.), about 3.3 miles NNW of Unmandae Dan, affords shelter to small vessels in a 10.5m depth about 0.2 mile off the SW part of the bay. The bay is encumbered by islets and foul ground. Chondok Tan, the N entrance of the bay, is the extremity of a densely wooded peninsula with conspicuous cliffs on its S side.

2.42 Hwangjin Man (41°06'N., 129°44'E.), with steep cliffy shores, is entered N of Poksuk Tan. The bay affords shelter to small vessels in a depth of 13m, fine sand, about 0.8 mile W of Poksuk Tan. This conspicuous point consists of reddish-black cliffs.

Taeryanghwa Man (41°13'N., 129°44'E.), about 6.5 miles N of Poksuk Tan, is entered between Song Dan and a point about 0.4 mile N. Song Dan, 51m high and densely wooded, is the NE end of a peninsula which appears as a detached island from seaward; its SE end is composed of light brown cliffs. It is always a good mark because in winter the trees on the point are almost black and in summer the cliffs on the SE side of the peninsula are white.

Anchorage.—Taeryanghwa Man is open to the E. It affords anchorage to large vessels, except during E winds when there is a heavy swell, 0.4 mile NW of Song Dan, in depths of 11 to 15m, sand. Smaller craft can anchor closer to the N or S shore of the bay according to the direction of the wind.

Tajin Man (Dajin Man) (41°16'N., 129°45'E.) lies about 3.5 miles NNE of Taeryanghwa Man. It consists of two almost identical bays. Between them is Haeju Do, 55m high, a good landmark. Both bays are open to the SE and their waters sufficiently deep. For small vessels, they are good anchorages. The central part of the S bay provides shelter from SE to SW winds;

vessels of less than 1,000 tons can better avoid the strong E wind here which occasionally blows in the area in the summer and winter than in Taeryanghwa Man.

2.43 Kyongsong Man (41°35'N., 129°50'E.), crescent-shaped, lies between Orang Dan and Komalsan Dan, about 23 miles N. The head of this bay, which is open E, is mostly sandy and presents a white color, except for two or three rocky points. The several hills sloping down to the shore of the bay divide the land within the head into a number of valleys and wide plains. Conspicuous among these hills are **Chinjudok San** (41°30'N., 129°37'E.), about 11 miles NW of Orang Dan, and one located about 7 miles N of Chinjudok San.

Orang Dan (41°23'N., 129°48'E.), the S entrance of Kyongsong Man, is a treeless, rocky, precipitous point with a pointed summit. A pointed rock, 15m high and conspicuous from seaward, is close off Orang Dan. A light is situated on Orang Dan.

The harbors within Kyongsong Man include Odaejin Hang and the important Ch'ongjin Hang.

Odaejin (41°23'N., 129°47'E.) ([World Port Index No. 60490](#)) stands at the head of the small boat basin about 1 mile WNW of Orang Dan. Odaejin Hang, off the boat basin, is shallow, but affords some shelter. Bagaso Gan, a pointed rock 9m high, lies about 0.15 mile N of the E entrance of the bay. Another rock, 12m high, lies about 137m S of Bagaso Gan, and between the two lies a rock with a depth of less than 2m.

Fishing nets usually extend some distance seaward from the E entrance point to Odaejin Hang.

Anchorage.—Large vessels can obtain anchorage, in a depth of 15m, 0.3 mile W of the 12m rock. Small vessels can obtain safe anchorage in the boat basin, in depths of 1 to 5m.

Caution.—Anchorage is reported to be poor during N and E winds.

Ch'ongjin (41°46'N., 129°49'E.)

[World Port Index No. 60500](#)

2.44 Ch'ongjin, the principal commercial center of NE Korea, stands along the N shores of Ch'ongjin Hang at the extreme N end of Kyongsong Man. The harbor is entered on the W side of the promontory terminating in Komalsan Dan. The city is backed by an alluvial plain, through which the Susong Ch'on flows into the sea. Encircling mountains rise farther inland. It is an important developing port area consisting of Main Harbor, Fishing Harbor, and Wwest Harbor. Main Harbor is the built up area to the NE of Ch'ongjin. Breakwaters protect the harbors.

Winds—Weather.—The prevailing winds are NW in winter and from E directions in summer. Thick fog, sometimes continuing for several days and hindering navigation, is frequently blown in by E winds from the Japan Sea in the foggy season from April until early August. The snowfall, usually light, lasts from early November to April.

Ice is not a hindrance to navigation, though ice about 0.2m thick has been encountered in the E basin, and floes from N occasionally drift to the vicinity of the harbor.

Tides—Currents.—Observations made indicated that a S current flows about 5 miles from the coast of Ch'ongjin Hang at

a velocity of 0.3 to 0.75 knot. It was also reported that vessels have been set toward the mouth of Susong Ch'on, particularly during E or S winds, and during the seasons when thick fogs occur and snow falls.

It has also been reported (1994) that vessels entering the harbor are set to the W.

Depths—Limitations.—In the approach to Ch'ongjin Hang the depths are deep and clear of dangers, except for the shoal reported to lie about 2.3 miles SSW of Komalsan Dan. Depths of over 18.3m are within 0.3 mile of the basins.

The E basin, protected by a breakwater on its S side, is entered from W in depths of 10 to 17m, a wharf, with 7.6 to 8.8m alongside, can accommodate a vessel up to 9,000 tons.

The W basin protected by breakwaters, is entered from S. Depths of 6.1 to 9.1m are reported in this basin; vessels of up to 10,000 tons can be accommodated.

Aspect.—Komalsan Dan is the SE extremity of the promontory which forms the E side of the harbor. A light is shown on Komalsan Dan. Komal San, near the center of the promontory, is a rounded treeless hill, 183m high; it is conspicuous from E. Ch'oltan Bong, farther N, is also conspicuous.

Chonma San rises near the W end of the E basin and is an excellent mark. Radio masts are on the slope of this hill. Several stacks are in the area about 1 mile WSW of Chonma San.

The walls surrounding the town of Kyongsong, about 10 miles SW of Komalsan Dan, can be sighted from several miles seaward.

Pilotage.—Pilotage is compulsory. Pilots board about 2.8 miles SSE of Komalsan Dan; closer approach without a pilot is forbidden. The vessel's ETA at this position must be passed through the ship's agent as no VHF contact is possible. The pilot does not board before 0800 and entry is not normally allowed after 1600. Vessels leaving must do so at least 1 hour 30 minutes before sunset.

Regulations.—A TSS has been established in the approach to Ch'ongjin Hang. This scheme is not IMO-adopted. Mariners are advised to assume that Rule 10 of the 72 COLREGS applies, since it is not known what regulations are in force.

Anchorage.—Large vessels can anchor off the NE side of Ch'ongjin Hang, in depths of about 10.1 to 34.7m, mud and sand, with good holding ground.

This anchorage is reported to be exposed and SW winds create a heavy sea.

Kidong Man to Najin Man

2.45 Kidong Man (41°54'N., 129°56'E.), entered W of Kal Tan, is suitable for temporary anchorage except during strong winds between E and SW. The shore of the bay, consisting of rocky places alternating with sandy beaches, is backed by hills. Fishing nets are laid in the entrance of the bay from the beginning of March until the end of August.

Kal Tan is a conspicuous, barren, cliffy point, fringed by rocks which are steep-to, and the highest being 7m.

Ssangp'o Man (41°57'N., 129°59'E.), about 4 miles N of Kal Tan, is the first of three small bays indenting the coast N of Kal Tan. Yongje Man and Sajin Man are the two other bays. Chungbong Dan, the S entrance point of Ssangp'o Man, is foul for a distance of 183m offshore. A bank, with depths of less

than 5m, extends 0.2 mile from the SW side of the bay. Yongje Man, the center of the three bays, is open E and strong E winds raise a heavy swell. Sajin Dan, the E entrance of Sajin Man, is the extremity of a narrow peninsula. It is a rocky precipitous point which rises to a grassy rounded summit. The S rock off Sajin Dan is conspicuous.

Anchorage.—Ssangp'o Man affords anchorage, except during strong E winds, in 6.9 to 20.1m, fine sand. The other two bays, Yongje Man and Sajin Man, are better anchorages, except during August and September when S winds are frequent. Moderate sized vessels can anchor in Yongje Man, in 14.6 to 20.1m, mud, good holding ground. A bare rock, lying about 0.3 mile offshore from the SW side of the bay, somewhat restricts the anchorage.

2.46 Ijin Man (42°04'N., 130°07'E.), about 5 miles NNE of Sajin Dan, affords temporary shelter to vessels with local knowledge. The bay is entered between Piso Dan and Hwa Dan. The latter point is cliffy and conspicuous. Anchorage is available in the bay, in 10.5 to 29.3m, sand or mud. Care is necessary in the approach because of the dangers SW of Hwa Dan and in the center of the bay. At the head of the bay are two projecting points with green woods on their summits. At a distance these points appear as islets with trees on them and are prominent.

Naksan Man (42°05'N., 130°11'E.), the inlet N of Hwa Dan, is divided into two parts by the two islets at its head. Nose Dan, the NE entrance of the bay, has a bluish aspect from seaward and is conspicuous. The NW side of Nose Dan is cone-shaped. Large vessels can obtain good sheltered anchorage in the NE part of the bay, in depths of up to 20.1m, sand. Care is necessary to avoid the dangers off Nose Dan.

Najin (42°14'N., 130°18'E.)

World Port Index No. 60510

2.47 Najin, an important commercial outlet, stands at the head of Najin Hang at the N end of Najin Man. The port was the first in North Korea to be declared a free port and improvements to the berths are expected.

This deep natural bay, surrounded by hills, indents the coast about 5 miles in a NNE direction and is reported to be the best natural harbor on the NE coast of Korea. The main entrance lies W of Taech'o Do and Soch'o Do.

Winds—Weather.—The prevailing winds are SE from May to September, and NW during the balance of the year. During strong SE winds, a heavy swell runs in past the islands on its exposed side. The rainy season lasts from June through August, and snow falls from October to February. Dense fogs occur from April to August, being especially frequent from June until the end of July.

Ice does not seriously hinder navigation in the main part of the harbor.

Depths—Limitations.—In the comparatively unobstructed W part of the entrance of Najin Man the depths are from 27.4 to 36.6m, decreasing gradually toward the head of the bay. Depths of less than 11m lie within about 0.2 mile of the NW shore, and up to a maximum of 1 mile from the NE shore of the harbor.

There are three quays in the NW part of the harbor, all of which have dredged depths of 9.5m. The cargo handling wharf to the N of these quays has a dredged depth of 4m. Oryong Am, about 0.7 mile W of the SW side of Taech'o Do, breaks in bad weather. Vessels should pass W of this danger. It is marked on its W side by a lighted buoy.

Numerous shoals lie between Taech'o Do and the coast NE, and Soch'o Do and the coast E. Both navigation and anchorage is prohibited within this area, and fishing nets extend from **Kolsom** (42°10'N., 130°19'E.).

Aspect.—Kwangjang Bong, on the W side of the entrance of Najin Man about 2.5 miles NNW of Nose Dan, has a somewhat sharp peak, covered with vegetation and conspicuous. Another conspicuous sharp conical peak is about 0.8 mile farther NNE. The E side of the entrance of Najin Man rises to Yondu Bong about 1 mile NE of Songjong Dan. The two peaks of Such'o Bong, about 2 miles farther NNE, are good marks.

Kamt'o Bong, on the NW side of the bay about 4.3 miles WNW of Songjong Dan, is a conspicuous densely wooded mountain with a green appearance and a sharp summit. Poroji Bong, about 5 miles farther N, has a sharp and very conspicuous summit. It is the highest peak in the mountain range NNW of the bay.

Taech'o Do, in the middle of the entrance of Najin Man, has a somewhat sharp summit which is wooded. The E side of this conspicuous island is mostly cliffy, but the W side slopes gradually to the coast.

Soch'o Do, about 0.8 mile NE of Taech'o Do, is a round-topped islet that appears saddle-shaped when seen from SE. A conical knob at the N extremity of the islet is conspicuous.

Song Do, densely wooded and conspicuous, lies on the N side of the bay about 1.8 miles WNW of Taech'o Do at the NE entrance of Yujin Man.

Between **Songjong Dan** (42°11'N., 130°19'E.) and Ch'wijin Dan (Chujin Dan), 4 miles NE, there are several bays exposed to S and E winds. There are no off-lying dangers. Small boats can land at the head of the bay on the W side of Ch'wijin Dan, except when the wind is blowing from S.

Pilotage.—Pilotage is desirable, though not compulsory. The resident pilot will board near the lighted buoy 0.6 mile SSW of Oryong Am.

Regulations.—A TSS has been established in the approach to Najin Man. This scheme is not IMO-adopted. Mariners are advised to assume that Rule 10 of the 72 COLREGS applies, since it is not known what regulations are in force.

Foreign vessels waiting to enter Najin Hang are to use the designated area 1 mile SE of P'i Do best seen on the chart.

Anchorage.—Good anchorage for large vessels may be obtained anywhere in Najin Hang according to draft, in depths of about 10 to 22m.

The foreign vessel anchorage is located 0.5 mile NE of Soch'o Do.

Caution.—Vessels approaching Najin Man in thick weather should exercise great caution. A possible SW or W set, in which vessels may close the land in the vicinity of Hwa Dan, has been reported. As the coast is steep-to, very little warning can be had from soundings.

Chosan Man

2.48 Chosan Man (42°17'N., 130°30'E.), entered between Ch'wijin (Chujin Dan) and Op'o Dan, about 10 miles E, contains several inlets and coves, all of which, with the exception of Sosura Hang, are exposed to heavy seas from the E. In winter the inlets and coves afford shelter from the prevailing NW winds; they are occasionally covered by a thin coating of ice. Unggi Hang is in the NW corner of the bay.

The W side of Chosan Man is backed by a range of hills, about 305m high, which slope down from the inland ranges. Songjin San, about 7 miles NW of Unggi, has a sharp peak and is an excellent landmark. Its summit, the highest in the vicinity, may be made out frequently during fog and rain. The NE shore of the bay is low; a few isolated hills inland resemble scattered islands at a distance.

Al-Som (Nan Do), with a conspicuous irregular rocky summit, lies in the entrance of Chosan Man about 3 miles SW of Op'o Dan. A light is shown on the SW end of Al-Som (Nan Do). Two small islets lie on the reef which extends about 0.5 mile NE from Al-Som. About 1.5 miles NW of Al-Som (Nan Do), Sogunsok and Tonggunsok are islands lying at either end of a rocky reef.

Kwak Tan, the N entrance of the bay of **Kaidae Man** (42°15'N., 130°23'E.), is formed by a high cliff with a grass-covered summit.

A conspicuous sharp peak is about 1 mile NNW of Kwak Tan. Kaidae Man is open SE and has depths of 9 to 27m. Anchorage for small vessels during E winds may be obtained E of **Song Do** (42°15'N., 130°22.5'E.), which lies close off the W side of Kaidae Man.

Ch'angjin Man, about 2 miles N of Kwak Tan, affords temporary anchorage except during SE winds.

Taejin Man, on the N side of Chosan Man, is an open bay exposed to the S and SE winds in the summer. In other seasons it affords good shelter. It is entered between **Tae Dan** (42°18.2'N., 130°27.1'E.) and a point 3.3 miles ENE. A rock, 2m high lies 0.55 mile NW of the E entrance point of Taejin Man.

Og Am (42°18'N., 130°30'E.), 2.5 miles E of Tae Dan has a depth of about 3.2m and is steep-to.

Sosura Hang lies at the E end of Chosan Man, and is entered between **Hung Dan** (42°18'N., 130°35'E.) and P'ansok Tan, 1.75 miles S. It affords shelter from N through E to SE winds, but not S or SW winds.

In the N part of the bay, E of Hung Dan, stands a range of hills with four prominent peaks. The two W peaks have rocky summits.

Sosuraji (42°16'N., 130°36'E.) stands on the S side of Sosura Hang, and is an important fishing station. The port is used by vessels according to season and wind direction. The shallow basin off the town is protected by breakwaters.

Aspect.—The red chimney of a sardine factory lies about 137m E of P'ansok Tan.

Unggi (42°20'N., 130°24'E.)

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2.49 Unggi, in the NW corner of Chosan Man, stands on the NE side of the head of Unggi Hang. Five vessels of 5,000 tons can berth at a quay protected by breakwaters and there is a quay with a reported depth of 7.3m alongside.

A superbuoy, surrounded by a prohibited area, both of which are best seen on the chart, is located in the entrance to Unggi Hang.

Winds—Weather.—During the winter, N winds prevail in Unggi Hang, blowing down from Unggi San. In summer, when S winds are predominant, occasional SE gales may send in heavy seas which interrupt cargo operations.

Fogs occur from April to August, most frequently in June and July. They are usually of short duration, but may last for days, especially when accompanied by fine rain.

The harbor is never ice-bound. Fast ice may fringe the shores of the outer harbor, interfering with the operation of lighters, and on occasion the small craft basin freezes solidly.

Depths—Limitations.—In the outer part of Unggi Hang, the depths vary from 11 to 23.8m. Closer in the depths decrease to about 3m at the head of the harbor. There was 6.4m reported between the breakwaters. Within the basin, there are reported depths of from about 1.8 to 4.9m.

Aspect.—Pip'a Do (Pip'a-som) and Tae Dan are both conspicuous. The former has a conspicuous rock on a flat sum-

mit covered with grass. A beacon stands on the E extremity of the islet.

Other conspicuous landmarks reported are Unggi San, about 2 miles NNW of Tae Dan, and the red brick meteorological station on the NE side of the head of the harbor.

It was reported that at night Pip'a Do is difficult to make out against the hills behind it. In thick weather Songjin San, about 6.5 miles NW of Unggi, may sometimes be a useful mark.

Anchorage.—Large vessels are afforded suitable anchorage, and though SE winds may send in long swells, there is good holding ground with little danger of dragging. Vessels may anchor anywhere in the harbor, in 5.4 to 21.9m, mud or sand, good holding ground.

2.50 The **Tumen River** (42°17'N., 130°41'E.), the boundary between Korea and Siberia, is reported to be generally navigable by junks for a distance of about 40 miles from its mouth. The entrance, partly blocked by a shifting bar, has a maximum depth of about 1.8m in a very narrow channel.

The coast in the vicinity of the river is low, with Chogaramsan (Ogaram San), about 2 miles W of the river entrance, rising to jagged summits resembling somewhat a conspicuous castle. The sea surface which is from 5 to 6 miles offshore in this vicinity has a very muddy color.

Tides—Currents.—The direction of the current off the mouth of the Tumen River appears, from earlier observations, to be very irregular. It attains a velocity of about 0.3 knot.