of 50 miles. Above Sacramento, small craft go to Colusa, 125 miles above the mouth, but there is no regular navigation above this point.

Channels.—Sacramento Ship Channel extends from Suisun Bay through lower Sacramento River, Cache Slough, and a 22-mile land cut to a triangular harbor and turning basin at the Port of Sacramento. A barge canal with navigation lock connects the channel with the Sacramento River at Sacramento. Controlling dimensions follow: ship channel, 30 feet deep, 200 to 300 feet wide; barge canal, 13 feet deep, 120 feet wide; navigation lock, 600 feet long, 86 feet wide, 13 feet deep. **Navigation regulations** are given in **207.640,** Chapter 2.

The controlling depth of the river route is about 10 feet. Above Sacramento, the controlling depth is about 6 feet to Colusa.

Bridges.—The vertical-lift highway bridge across the Sacramento Ship Channel just above Rio Vista has clearances of 15 feet down and 140 feet up at **mean lower low water during lowest river stages.** The highway-railroad bascule bridge across the barge canal just west of the lock at Sacramento has a clearance of 8 feet.

The minimum clearance of the power cables across the Sacramento Ship Channel is 140 feet.

Clearances of bridges across the shallow route of the Sacramento River above Rio Vista Bridge are given with the description of the river; refer to **203.716,** Chapter 2, for **drawspan regulations.** The clearances below Sacramento are at **mean lower low water during lowest river stages.**

The minimum clearance of the power cables over the Sacramento River below Sacramento is 110 feet.

Tides and currents.—At low-river stages the mean range of tide is 3.2 feet at the entrance to Sacramento River and 2.3 feet in the river at Sacramento; at other stages the tide is negligible.

Currents in Sacramento River depend on the river stage. During high-river stages there is little or no flood current and the ebb current is strong to Sacramento. During the dry season a flood current can be carried to Paintersville and from there slack water to Freeport, 30 and 41 miles above the mouth, respectively. At times of extreme low-river stages, flood current may be evident as far as Sacramento. Local knowledge is required to estimate current conditions for a particular time.

Major floods in the Sacramento River valley usually occur from November to April and are generally caused by intense general storms of several days' duration, the runoff from which may be augmented by the melting of snow in the mountains. At the mouth of the river an ordinary flood will cause a rise of 8 feet and an extreme flood a rise of 10 feet in the river level. At Sacramento, ordinary flood will cause a rise in the river level of 20 feet and extreme flood, a rise of 30 feet.

Reports of gage heights of the Sacramento River can be obtained from the Sacramento Weather Bureau Office at any time of the year. The information is published in the Sacramento Bee and, in addition, is reported on the radio broadcast from station KFBK whenever the gage heights are of sufficient magnitude to be of general interest. Information on gage heights can also be obtained from the State Department of Public Works, Division of Water Resources, Public Works Building, Sacramento.

The upper 20 miles of Sacramento Ship Channel are free of river current and flood waters.

Routes.—The deep-draft channel to the Port of Sacramento through Sacramento Ship Channel is marked with navigational aids.

The shallow-draft route continues in Sacramento River from 1.5 miles above Rio Vista Bridge to Sacramento, and for the most part is marked by leading lights.

From **Ida Island** for a distance of 3.5 miles upstream there are shifting shoals. After passing Ida Island, work gradually over to the southern shore and keep within 200 feet or less of it until near the bridge above Isleton, then gradually work over to the western half of the channel and favor that side around the next bend. From this point to Clarksburg the channel is clear, and midchannel courses may be followed favoring the falling tide bends. At Clarksburg favor the eastern shore a little until just past the town, then swing into midchannel again. From just below Freeport the channel is rather shoal and wing dams have been built at several places to scour out the channel. These are covered at high-water stages and may be struck if the shore is approached too closely. By favoring the ebbtide bends no trouble should be encountered from here to Sacramento.

Note.—Care should be exercised at all times to keep clear of the levees, as most of them are faced with rock which may damage vessels that drag along them.

Pilotage.—The River Lines, acting for the city of Sacramento, will furnish pilots on call between Sacramento and other points on the Sacramento River, San Joaquin River, and San Francisco Bay area.

Towage.—Tugs up to 1,050 horsepower are available.

Chart 5527.—Rio Vista, 10.5 miles above the mouth of the Sacramento River, is the most important town commercially below Sacramento. Fuel, marine hardware, and groceries may be obtained.

Isleton, on the south bank 15 miles above the mouth of the river, has an oil landing where gasoline and other petroleum products, and supplies in moderate quantities may be obtained. A highway bridge with a double-bascule span across the river 0.7 mile above Isleton has a clearance of 18 feet.

Chart 5528.—Walnut Grove, 24 miles above the mouth of Sacramento River, is at the junction with Georgiana Slough. Gasoline, oils, and supplies may be obtained in moderate quantities. The river is crossed here by a highway bridge with a double-bascule span having a clearance of 21 feet. Five miles above Walnut Grove at the small village of **Paintersville,** a highway bridge with a double-bascule span across the river has a clearance of 24 feet.

Courtland, 31 miles above the mouth of the river, has supplies in moderate quantities; gasoline and oils may be obtained from an oil company's landing.

At Clarksburg, 37.5 miles above the mouth of the river,

two oil companies have landings; this is a distributing point for petroleum products.

Freeport, 41.5 miles above the mouth of the river, has gasoline, oils, and groceries in small quantities. The highway bascule bridge at Freeport has a clearance of 30 feet.

Two bridges cross at Sacramento. The Capitol Street bridge is a railway and highway vertical-lift bridge with clearances of 38 feet down and 128 feet up. The Eye Street bridge is a railway and highway swing bridge with a clearance of 33 feet.

A paved highway between Antioch and Sacramento runs along the levee of the river for nearly its entire distance.

Sacramento, the State capital, is the head of navigation for most of the shipping on the river, and is a distribution and transportation center for northern California and parts of Nevada and Oregon. The **Port of Sacramento,** at the head of the deep-water channel, is an important point for interchange of cargo between rail, highway, and water transportation.

Wharves.—There are five berths for deep-draft vessels and two slips for barges at the Port of Sacramento terminal. Modern rapid loaders and cargo-handling machinery, including conveyor systems for handling bulk grain and rice direct from landside storage, are available. Open and covered storage areas are provided.

Wharves along the shallow part of the Sacramento River have ample depths alongside to accommodate vessels able to negotiate the river. There are transit sheds and storage warehouses. Nearly all freight is handled by shipside loading.

Supplies.—Groceries and marine hardware may be had in any quantity; water is piped to the terminal wharves. Fuel for large vessels is available from barge at the Port of Sacramento; bunkering is also done at the oil terminals in the San Pablo Bay area. Small craft can obtain gasoline and diesel fuel along the river fronting Sacramento.

Repairs.—Some dockside repairs can be made, but major repairs to large vessels are made at the drydocks in Oakland aud San Francisco.

A skidway, on the west side of the Sacramento River at Sacramento, has a depth of water over the foot of about 3½ feet at extreme low water. Flat-bottom river craft up to 6-foot draft can be handled on the marine ways.

Charts 5529, 5530, 666.—Above Sacramento the prevailing flood conditions are as follows: At Verona at the junction of Feather River, 70 miles above the mouth, 20 feet at ordinary floods and 24 feet at extreme floods; at Colusa, 125 miles above the mouth, 25 feet at ordinary floods and 32 feet at extreme floods.

Between Sacramento and Colusa are numerous warehouses and small landings. Freight is also handled on the bank.

The minimum clearauce of the swing and bascule span bridges over the Sacramento River between Sacramento and Colusa is 25 feet at **low water.** Drawspan regulations are given in **203.716,** Chapter 2. The minimum clearance of the power cables across the river is 110 feet.

Feather River rises in the Sierra Nevada and empties into Sacramento River at **Verona,** 18 miles above Sacramento. The river has been improved by snagging and the construction of wing dams at **Marysville,** 26 miles above the mouth. The controlling depth is usually 3 feet from about February 15 to June 15. Ordinary flood fluctuation is 20 feet and extreme flood fluctuation is about 25 feet. With the exception of several small privately owned landings, all loading is handled on the banks. There has been no commercial navigation on the Feather River in recent years. A highway bridge with removable span, 8.1 miles above the mouth, has a clearance of 37 feet at low water. The clearance of the fixed highway bridge near Marysville, 24.8 miles above the mouth, is 44 feet at low water.

★ (3504) **CALIFORNIA—Sacramento River—Overhead Power Cable.**—An overhead power cable has been established over the Sacramento River northwest of Meridian centered in approximately 39°09′41″ N., 121°56′00″ W. extending on a bearing of 066°30′–246°30′ with an authorized clearance of 106 feet.

(N.M. 22/66.)

(C. & G.S. CL-1793/65.)

C. & G.S. Chart **666 (Side B).**

C. & G.S. Coast Pilot 7, 1963, page **137.**

8. SAN FRANCISCO BAY TO POINT ST. GEORGE, CALIFORNIA

Charts 5502, 5603.—From Point Reyes, the coast trends in a general northerly direction for 10 miles as a broad white sand beach backed by bigh grassy sand dunes, and then curves northwestward for 6 miles in high yellow cliffs, terminating in **Tomales Point.** The large white building at the radio statiou, 7 miles northeastward of Point Reyes, is prominent.

Bodega Bay, a broad opening between Tomales Point and Bodega Head, affords shelter from northwesterly weather at its northern end, but is dangerous in southerly or westerly weather. The summit of **Bodega Head** is rounding and grassy, with steep rocky cliffs on the southern and western ends. Low **Bodega Rock** and foul ground extend from 0.2 to 0.7 mile southeastward of the south face of Bodega Head.

Lighted buoys mark the entrance to Bodega Bay. In good weather small boats having local knowledge sometimes use the passage between Bodega Head and Bodega Rock, but the passage is dangerous during periods of heavy ground swells because of the combers.

Boundary lines of inland waters.—The lines established for Bodega and Tomales Bays are described in **82.131,** Chapter 2.

Tomales Bay enters the southern part of Bodega Bay eastward of Tomales Point, and extends southeastward for 12 miles with an average width of 0.5 mile. The channel with depths of 4 to 8 feet is marked by buoys for about 4 miles to deeper water inside the hay. The entrance bar is dangerous and should not be attempted by strangers. A 6-knot current may be encountered on a spring tide at the entrance to the bay.

Fish, clams, and oysters are taken from Tomales Bay by commercial and sport fishermen, and moved to San Francisco by truck. There are several small-craft repair yards where ordinary repairs can be made; most boats go to the yards in San Francisco Bay for major work. Long piers used by sport fishermen extend out into the bay at several places. Gasoline, fishing supplies, and groceries can be obtained.

Bodega Harbor, in the northern part of Bodega Bay, is an important commercial fishing base and in season an active sports fishing and recreation harbor. During salmon season more than 500 fishing craft either anchor just outside in the shelter of the northerly part of the bay, or inside at the moorings which ordinarily accommodate about 200 boats.

A marked dredged channel, protected hy entrance jetties, leads from Bodega Bay to the facilities at the town of **Bodega Bay.** The project depth of 12 feet is generally maintained to the wharves and docks. Gasoline, diesel oil, lubricants, ice, water, some marine hardware, fishing supplies, and groceries are available.

Chart 5502.—The coast from Bodega Head for 57 miles to Point Arena trends in a general northwesterly direction. There are some dangers, but they do not extend over a mile offshore, and in thick weather the 30-fathom curve may be followed with safety. In the summer the rocks are generally marked by kelp which extends in some cases to the 10-fathom curve, but during the winter gales much of the kelp is torn away.

In clear weather the mountains may be readily seen, and at times are visible when the lower land is shut in by haze or fog. In thick weather soundings should be taken frequently, as the currents are extremely irregular both in direction and velocity.

Protection from the prevailing northwesterly winds of summer may be had at several places, but there is no shelter from the winter winds, which are usually accompanied by a heavy westerly swell.

Northward of Bodega Head the cliffs are about 200 feet high for 2 miles, and then are succeeded by a broad sand beach 2 miles long backed by sand dunes 120 feet high. From this point the coast northward consists of abrupt rocky cliffs, broken by gulches, to the mouth of the Russian River, 10 miles northward of Bodega Head.

Numerous rocks, 20 to 130 feet high, are within 0.3 mile of the shore, but some extend as much as a mile offshore. **Gull Rock,** 100 feet higb, is 1.7 miles southeastward of the mouth of Russian River and 0.3 mile offshore. About 0.5 mile northwestward of Gull Rock and 400 yards offshore is a large arched rock, 85 feet high, with a flat top. This is the largest arched rock on this part of the coast.

Duncans Landing, 6 miles northward of Bodega Head, is a fair small-boat landing in northwesterly weather.

The spit making out from the southern point of **Russian River** has been partially reinforced by a short rock jetty, hut the mouth of the river is closed by a shallow bar. The bold sharp point immediately to the southward of the river appears as an island from the southward; it is connected to the mainland by a roadway. Many summer resorts are on the shores of Russian River; at the settlement of **Jenner** there is a landing where gasoline and water may be obtained.

Ross Mountain, 3 miles inland and northward of Russian River, is the highest knob on the ridge. A few clusters of trees are near its summit; the slopes are bare of trees and the gulches are wooded.

From Russian River for 6.5 miles to Fort Ross Cove the coast is high, consisting of bare steep spurs from Ross Mountain. **Sunken Reef** extends 0.8 mile from shore 4.5

★ (1732) **CALIFORNIA—Point Arena—Buoys changed.**—The following buoys have been changed as indicated :

(*a*) Arena Cove Lighted Gong Buoy PT.A changed to *Arena Cove Lighted Whistle Buoy PT.A*, without other change.

Approx. position : 38°54.6′ N., 123°43.5′ W.

(*b*) Saunders Reef Lighted Whistle Buoy 2SR changed to *Saunders Reef Lighted Gong Buoy 2SR*, showing *flashing white* every *10 seconds*, flash *1 second*, of 220 candlepower. No other change.

Approx. position : 38°50.8′ N., 123°40.0′ W.

(See N.M. 6(632) 1964.)

(N.M. 14/64.)

(L.N.M. 13, C.G., San Francisco, March 18, 1964.)

C. & G.S. Charts **5502, 5021.**

C.G. Light List, Vol. III, 1963, Nos. **228, 229.**

C. & G.S. Coast Pilot 7, 1963, pages **139, 140.**

miles northwestward of Russian River; it is marked by a buoy.

Fort Ross Reef, 5.7 miles northwestward of Russian River and nearly 1 mile southeastward of Fort Ross Cove, consists of pinnacle rocks 35 feet high, 600 yards offshore, and connected with the beach by a reef which is partially marked by kelp.

Fort Ross Cove, 15.5 miles northward of Bodega Head and 33 miles northward of Point Reyes, affords good shelter in northwesterly weather. The holding ground is poor and the anchorage is constricted by a rock that uncovers in the middle of the cove and a rock about 50 yards northward of it that is covered 14 feet. The cove is divided into two bights, the western one being slightly the larger. The anchorage is suitable for small vessels only, and if used by strangers should be entered with caution.

Fort Ross was first settled by the Russians in 1812, and the old Russian church is still standing. The buildings have been restored and the area is now a State Historical Monument. The landing facilities have been abandoned.

From Fort Ross Cove the coast extends northwestward and is nearly straight. It is bold and wooded to the crests of the hills which closely approach the coast, and is cut by numerous gulches and bordered by many inshore rocks. Several landings, practically all abandoned, are along this stretch of the coast. The 30-fathom curve is at an average distance of 0.7 mile off shore from Fort Ross Cove for 20 miles to near Gualala River.

Salt Point, 5 miles northward of Fort Ross Cove, is 35 feet high, very rocky, and bare of trees; it is bordered by outlying rocks for 200 yards. The 30-fathom curve is less than 0.5 mile off this point.

Fisk Mill Cove, 2.5 miles northward of Salt Point, affords fair shelter for small vessels in northwesterly weather. The bottom is rocky but there are no hidden dangers.

Horseshoe Point, 3 miles northward of Salt Point, is a cliff 180 feet high, with a depression of 60 feet immediately behind it. It is bare of trees; the summit is marked by several projecting rocks.

From Horseshoe Point the coast trends northwestward for 12.5 miles to Gualala River, and consists of cliffs, about 60 feet high, bordered by numerous outlying rocks. The tree line is from 0.1 to 0.5 mile back from the edge of the cliffs.

Fisherman Bay, 26.5 miles northwestward of Bodega Head, is a fair shelter for small craft in northwesterly weather. There are two covered rocks marked by kelp 350 yards off the southern point of the bay. There is a general store at the village of **Stewarts Point** on the north side of the bay.

A 0.5-mile long sand beach backed by prominent high dunes is 33 miles northwestward of Bodega Head.

Gualala Point, 16 miles southeastward of Point Arena and 1 mile southward of Gualala River, is 42 feet high, about 300 yards offshore, and connected with the bluff by a rocky reef covered with sand. Sand dunes extend behind the bluff for 600 yards.

Local magnetic disturbance.—Differences of as much as 8° from normal variation have been reported near Gualala Point; and a difference of as much as 4° near Saunders Reef.

Gualala River intersects the coast 15 miles southeastward of Point Arena. A long sand beach extends a mile southward from the mouth. The mills at **Gualala** and the white hotel building can be seen from the west and southwestward.

Robinson Reef lies northward of the mouth of Gualala River and 1.1 miles northward of Gualala Point. It consists of a cluster of 25 or more visible rocks about 600 yards offshore, with a covered rock 70 yards westnorthwestward of the outer rock.

Bourns Landing is 1.5 miles northwestward of Gualala River. The anchorage here is exposed and can be used only in the summer. Local knowledge is necessary because of several covered rocks in the approaches. Lumber from the Gualala mills was formerly shipped from here.

Havens Anchorage, 12 miles southeastward of Point Arena and 4 miles northwestward of Gualala Point, offers shelter for small vessels from the prevailing northwesterly winds southward of Fish Rocks. The cove is constricted by rocks and ledges extending 250 yards southeastward from the western head. Strangers should approach the anchorage with caution. During the summer the anchorage is used extensively by fishing boats in northwesterly weather.

Fish Rocks, two rocky islets 4.2 miles northwestward of Gualala Point, are connected at low water with the shore and surrounded by numerous smaller rocks. The outer rock is 150 feet high and the inner 100 feet high and 100 yards offshore. A rock 40 feet high lies 175 yards southeastward of the outer rock.

Havens Neck, 145 feet high and prominent, is 0.6 mile northwestward of Fish Rocks. It is bare of trees and connected with the bluffs by a narrow neck.

Gualala Mountain, 5 miles inland northeastward of Havens Neck, is heavily wooded and prominent in clear weather. **Sail Rock,** 44 feet high, is a sharp, pyramidal rock 800 yards offshore, 2.8 miles northwestward of Fish Rocks. From off Point Arena it resembles a small vessel under sail. **Saunders Reef,** 4.5 miles northwestward of Fish Rocks, is 0.5 mile offshore. It shows several rocks that uncover and is well marked by kelp. Foul ground extends between it and the shore. A lighted whistle buoy is 0.4 mile southwestward of the outer rock and 7.5 miles southeastward of Point Arena.

Arena Cove, 2.5 miles southeastward of Point Arena, is a slight indentation affording shelter to small vessels in northwesterly weather. The southern head is a high yellow cliff that under favorable circumstances is visible for a considerable distance. A wharf in fair condition is at the head of the cove with 14 feet at its outer end. Water is piped to the wharf and fuel can be obtained by truck. A fishhouse is near the foot of the wharf. Some groceries may be had. A white lookout tower with a red roof on a steel structure is prominent. A lighted gong

buoy is 0.6 mile southwestward from the end of the wharf. To enter, make the lighted gong buoy, then bring the end of the wharf to bear **074°** and stand in on this course. This leads about 150 feet southward of a rock covered 16 feet that lies 300 yards 264° from the end of the wharf. In thick weather during the summer in approaching the cove from northward or southward, the edge of the kelp may be followed, which will lead to within 300 yards of the lighted gong buoy. The town of **Point Arena** is on the highway a mile east of the landing.

A breaker is reported in a heavy southwesterly swell 0.8 mile west-southwestward of the northern point of Arena Cove, and scattered kelp extends almost out to that position.

Point Arena, 68 miles northwesterly of Point Reyes, consists of a long level plateau, diminishing in height to the end of the 60-foot high point. It is the first prominent point northward of Point Reyes. The point is bare of trees for about a mile from the shore.

Point Arena Light (38°57.3′ N., 123°44.4′ W.), 155 feet above the water, is shown from a 115-foot white cylindrical tower at the extremity of the point; a radiobeacon and fog signal are at the station. A Loran tower is 2 miles southward of the light. A reef that usually shows breakers extends about 0.6 mile northwestward from the extremity of the point.

Arena Rock, 1.4 miles northward of Point Arena Light, is covered 13 feet and shows a breaker except in very smooth weather. A covered rock which rises abruptly from deep water and breaks only in heavy weather is 200 yards northward of Arena Rock.

Caution.—Vessels approaching Point Arena from northward in thick weather are advised to keep outside the 40-fathom curve because Arena Rock is only 0.8 mile inside the 30-fathom curve and shoaling near it is abrupt.

Chart 5602.—From Point Arena the coast extends in a general north-northwesterly direction for 50 miles and then trends northwesterly for nearly 35 miles to Punta Gorda, thence north-northwesterly for 10 miles to Cape Mendocino. The southern portion is less bold and rugged than the northern portion, and the mountains are neither as high nor as close to the coast. The dangers are all included within the 30-fathom curve, and except for Blunts Reef and the other reefs in the vicinity of Cape Mendocino, do not extend more than a mile offshore. Several submarine valleys with depths greater than 50 fathoms come within 0.5 to 2 miles of the shore between Point Delgada and Cape Mendocino; the currents are irregular in this area.

From Cape Mendocino to Trinidad Head the coast trends in a north-northeasterly direction for 40 miles and, with the exception of the rocks off False Cape, the dangers are within 0.5 mile of the shore. The land is generally low with sandy beaches, broken by the mouths of the Eel and Mad Rivers and the entrance to Humboldt Bay. The only marked elevations northward of False Cape are Table Bluff and Buhne Point.

In clear weather the mountains are good landmarks and can frequently be seen when the lower land is obscured by fog or haze.

Between Point Arena and Cuffey Cove, protection from the prevailing northwesterly winds of summer may be had in a few places, but there is none from southward or westward.

From Point Arena the cliffs of the point extend 0.5 mile northeastward to the mouth of **Garcia River,** from which sand dunes and beaches extend northward for 4 miles. Beyond this point for 40 miles to **Ten Mile River Beach** the coast is rugged, with high, bold cliffs bordered by numerous outlying rocks.

Mal Pass is a steep gulch 5.2 miles northward of Point Arena; the bluffs on each side are nearly 280 feet high. **Red Bluff,** 8 miles northward of Point Arena, is a prominent reddish 200-foot high cliff. **Elk Rock,** 8.5 miles northward of Point Arena, is 95 feet high and 0.5 mile offshore.

Chart 5703.—**Nose Rock,** 10.3 miles northward of Point Arena and 0.7 mile offshore from Elk, is 24 feet high. **Casket Rock,** 700 yards northeastward of Nose Rock, is the outermost of three large rocks westward of a 150-foot cliff fronting the village of **Elk.**

Cuffey Cove, 11 miles northward of Point Arena, is a small anchorage affording fair shelter in northwesterly winds. **Cuffey Inlet,** just westward of the cove, is an excellent anchorage for small boats in northerly and westerly weather. Caution is necessary to avoid the many covered and visible rocks in the approaches to the cove and inlet. A small kelp-covered rock that uncovers lies near the center of the entrance to the inlet. The cove is covered with patches of kelp during most of the year.

From Cuffey Cove for 3 miles to **Navarro River,** the coast consists of cliffs 200 feet high, bordered by outlying rocks. Although the mouth of the river is nearly always closed by a bar with only 1 or 2 feet of water over it, there is fair shelter at the entrance from southwesterly winds. **Navarro Head,** 405 feet high, is on the northern bank of the river.

Chart 5711.—Salmon Point, the southern entrance point to **Whitesboro Cove,** 1.2 miles northward of Navarro River, is a treeless cliff 109 feet high. Detached rocks extend westward of the point for 0.2 mile, with **Bull Rock,** a covered ledge, usually showing a breaker 0.5 mile northwesterly of the extremity of the point. In a heavy swell there are breakers showing between it and the visible rocks off the point. Whitesboro Cove is rocky, exposed to northwest and west winds, and is seldom used as an anchorage.

Albion Cove, 16.5 miles northward of Point Arena, affords good shelter in northerly weather. The south point at the entrance rises to a knoll 179 feet high; low rocks extend nearly 500 yards westward of the point. The north point is a rocky islet 80 feet high lying close to the point which has the same elevation; both are bare. Small visible rocks lie 200 yards westward of the islet, and covered rocks, showing breakers in a moderate

★ (1476) **CALIFORNIA—Noyo Anchorage and River—Chart amendment.**—The accompanying reproduction of a portion of C. & G.S. Chart 5703 (Inset) shows recent changes in hydrography by the Corps of Engineers and aids to navigation by the U.S. Coast Guard.

Approx. position: 39°26′ N., 123°49′ W.

(N.M. 11/65.)

(C. & G.S. CL–1770/64; BP–67068–74.)
C. & G.S. Chart **5703 (Inset).**
C. & G.S. Coast Pilot 7, 1963, pages 141–142.

oil wharves: general and marine supplies are available in the village and at Fort Bragg. There are machine shops and machine railways where boats up to 60 feet in length with a draft of 6½ feet can be hauled out.

From Noyo River for 0.7 mile to Fort Bragg, the coast consists of rocky cliffs, 40 to 60 feet high, bordered by rocks and sunken ledges extending 100 to 400 yards offshore.

Fort Bragg, 30 miles northward of Point Arena, is the largest coast town between San Francisco and Eureka. It is located near the head of a cove formerly known as **Soldiers Harbor.** The former loading wharf has been removed: lumber is now shipped out by rail and truck. Groceries can be obtained and minor repairs made.

The cove is contracted by the rocks and ledges extending from both the north and south, leaving only a limited area for small boats to anchor. A rocky reef, partly bare at high water, extends southwestward from the northern head and breaks the force of the swell from northwestward. In westerly weather the cove is wide open. Since Noyo River gives better protection, the cove is seldom used.

From Fort Bragg for 3 miles to Laguna Point, the coast is moderately low and rocky and cut by two small streams: the tree line is within 0.2 mile of the beach.

Laguna Point, 8.5 miles northward of Point Cabrillo, is near the southern end of Ten Mile Beach. It is a small, projecting cliff, 30 feet high, flat-topped, and bare of trees for 600 yards. It is noticeable only when close inshore. A bare reef extends 300 yards northwestward from the point. The cove immediately northward of Laguna Point is exposed and only available for small boats. It affords fair protection in southerly weather and is occasionally used in winter.

Bald Hill, 2.5 miles southeasterly of Laguna Point, is a prominent landmark; its summit and southwestern slope are bare of timber.

Chart 5602.—For 0.5 mile northward of Laguna Point the bluffs are low, thence a straight sand beach extends for 3 miles to the mouth of **Ten Mile River.** The beach is backed by sand dunes for 0.5 mile inland, with the tree line about 1.5 miles from the beach. The concrete highway bridge over Ten Mile River is conspicuous from the westward.

From Ten Mile River the coast extends in a general northwesterly direction for 52 miles to Punta Gorda. This stretch of the coast is particularly hold and rugged, bordered by numerous rocks, and as far as Point Delgada, is heavily timbered. Northward of Point Delgada the tops of the ridges are generally bare or only partly covered with trees and brush. The cliffs along the shore range from 40 to 100 feet in height. The high, rugged mountains in the vicinity of the coast, which reach elevations of 3,000 to 4,000 feet, are prominent.

Kibesillah Rock, 1.2 miles northward of Ten Mile River and 0.4 mile off the line of the cliffs, is the outermost danger for many miles north and south. It is small and washed over almost continuously even in ordinary weather. Other rocks and rocky islets up to 80 feet high are inside of Kibesillah Rock.

Bells Mountain, 4.5 miles northward of Ten Mile River and 0.5 mile inland, is bare on top with a few trees on the oceanside.

Switzer Rock, 5.5 miles northward of Ten Mile River and 600 yards offshore, is small with deep water close around it; every large swell washes over the rock. A covered rock marked by a breaker is 170 yards southeast of Switzer Rock.

Gordon Hill, 6.5 miles northward of Ten Mile River, is bare to the summit and terminates seaward in 60-foot high **Abalone Point** which is bordered by low outlying rocks.

Hardy Rock, 9.5 miles northward of Ten Mile River and 0.4 mile offshore, is a small 47-foot high islet.

From Abalone Point the coast trends northwestward for 4 miles to **Cape Vizcaino,** which is a broad, irregular line of precipitous cliffs, 100 feet high, very broken, and bordered hy low rocks, 200 to 300 yards offshore.

Island Knob, a rocky lime-covered islet, lies close-to and almost connected with Cape Vizcaino. A covered rock marked by a breaker is 275 yards westward of the islet. **Cottaneva Rock,** 20 feet high, is 500 yards southeastward of Island Knob and 275 yards offshore. Several smaller rocks lie inside of it and two others about 160 yards northwestward.

Cahto Peak, 11.5 miles eastward of Cape Viscaino, is prominent in clear weather.

Between Cape Vizcaino and Point Delgada are several small exposed landings available for use only in the summer and in smooth weather. The landings formerly were used to ship ties, tanbark, and shingles which were loaded on vessels by means of wire cables.

Sea Lion Rock, a mile northward of Cape Vizcaino and 500 yards offshore, is 5 feet high and inhabited by sea lions. **Cottaneva Needle,** 0.5 mile north of Sea Lion Rock, is a prominent black pinnacle rock 55 feet high.

Double Cone Rock is 3.5 miles northward of Cape Vizcaino and 300 yards offshore.

Usal Rock, 5 miles northward of Cape Vizcaino, is 45 feet high and black in color. It lies 200 yards off a small point of rocks.

The mouth of **Usal Valley** is about a mile northward of Usal Rock, and is a narrow, steep gulch, in front of which is a small area of flat land with a low beach. A small grassy hillock is just inside the gulch. The view up the valley is open for a very short time while passing.

Big White Rock, 95 feet high, lies 7.7 miles northward of Cape Vizcaino, and 125 yards offshore from the steep cliffs, which are bordered by numerous rocks. The rock is a prominent feature when the higher points of the land are in fog. A whistle buoy is about 0.8 mile westerly of the rock.

Anderson Cliff, 10 miles northward of Cape Vizcaino, is a projecting rocky spur 715 feet high, with one large rock and numerous smaller ones close inshore. **Jackson Pinnacle,** 1.1 miles northward of Anderson Cliff, is a black rock 45 feet high so close to the rocky beach that

from seaward it is hard to distinguish from the bluff behind it. When seen from along shore it is prominent.

Cluster Cone Rock, a prominent 68-foot pinnacle, is the largest and whitest of a small cluster of 6 rocks, 200 yards offshore, lying 12.5 miles northward of Cape Vizcaino.

Morgan Rock, a large white-topped block-shaped rock 57 feet high and 0.5 mile northwestward of Cluster Cone Rock, shows prominently. It is the largest of a group of rocks extending some 200 yards from a high rocky cliff and is particularly valuable as a landmark when higher land is covered by fog.

Bear Harbor Ridge, a detached coastal ridge about a mile northwestward of Cluster Cone Rock, has two peaks, the southern one, 375 feet high, being the higher. It is the most prominent feature in this vicinity when viewed from the northwestward. The seaward face of the ridge is marked by steep, loose slides.

Needle Rock, 46 feet high, is 14.5 miles northward of Cape Vizcaino; the rock blends into the bluff from offshore. A group of old mill buildings, a few houses, and an old landing platform about midway up the flat, mark the abandoned landing.

Small White Rock, 37 feet high, lies 5 miles northward of Cluster Cone Rock and 4 miles southward of Point Delgada. It is close inshore and just outside the low-water beach; once identified, this rock makes a valuable landmark.

From just below Small White Rock to Point Delgada, the country is not timbered but is covered with dense, low brush, which presents a uniform dark green appearance.

A submarine ridge known as **Tolo Bank** extends southward from Point Delgada for about 7 miles. The depths are quite irregular, the least found being 9 fathoms.

Caution.—The area just south of Shelter Cove is subject to slides which might deposit rocks along the shore.

Chart 5773.—Point Delgada, 66 miles northward of Point Arena, and nearly 20 miles southward of Punta Gorda, is a cliff-faced plateau making out about a mile from the general trend of the coast. The seaward face of the plateau is a mile long and bordered by numerous rocks. A lighted whistle buoy is 1.1 miles southwestward from the point and a bell buoy 0.8 mile southeastward from the point. The small white bell tower on the east end of the point is prominent from the anchorage.

On the point is an airplane landing strip. The words SHELTER COVE in large white letters are painted on the slanting roof of a building 100 yards northward of the bell tower. The sign shows well from seaward.

Shelter Cove lies under the southern face of Point Delgada and affords fair shelter in northwesterly weather, but is exposed and dangerous with southerly or westerly winds. There is nearly always a swell running. There are no wharves in the cove. Gasoline and water can be obtained ashore but must be carried down from the plateau.

Shelter Cove is used extensively as an anchorage by a large fishing fleet. A good dirt and gravel road is kept open in all but the worst weather, there are telephone facilities.

The rocks covered 1 to 5 fathoms southward of Point Delgada can be avoided in approaching Shelter Cove by staying over 200 yards southward of the lighted whistle buoy and eastward of the bell buoy.

Chart 5602.—From Point Delgada the coast extends northwestward for 19 miles to Punta Gorda, and is backed by steep mountains covered with chaparral and trees. A sand beach, 0.8 mile northward of Point Delgada, extends northward for 4 miles. **Kaluna Cliff** overlooks the southern end of the sand beach and its steep face, scarred by frequent slides, is a noticeable landmark.

King Peak, 4,090 feet high, the highest of three, is the well-known landfall generally called Three Peaks. It lies 8.5 miles northward of Point Delgada, 2.5 miles from the coast, and in clear weather is visible seaward for about 75 miles.

About 6 miles northward from Point Delgada is the head of **Delgada Canyon,** a submarine valley, the 100-fathom curve lying within 0.5 miles of the beach. This valley extends in a northerly direction with an average width of 1 mile between the 100-fathom curves for 3.5 miles, and then expands, funnel-shaped, for 3 miles more. Over 400 fathoms are found at its mouth and 300 fathoms within 4 miles of the beach. The side slopes are steep.

Big Flat is a narrow strip of low, flat land 7 miles northwestward of Point Delgada. It is 2 miles long and is bordered by sand beaches. A few abandoned ranch houses and barns are at the southern end of the flat. **Shubrick Rock,** low and small, lies 300 yards off the southern end.

About 11.5 miles northwestward of Point Delgada is the head of **Spanish Canyon,** a submarine valley. The 100-fathom curve lies within 2 miles of the shore.

Reynolds Rock, 10 feet high, is 14.5 miles northwestward of Point Delgada. It is 550 yards offshore and when seen from close inshore appears as a double-headed rock over which the swell breaks in nearly all weather.

Rodgers Break, 0.5 mile westward of Reynolds Rock, is covered ½ fathom. This pinnacle rock lies 4 miles southeastward of Gorda Rock and 6.8 miles west-northwestward of Big Flat; it seldom breaks and the top is occasionally seen in a heavy swell. The rock is marked by a lighted whistle buoy. A pinnacle rock covered 3 fathoms lies about 0.5 mile northwestward of Rodgers Break and about the same distance offshore. It probably breaks in very heavy weather. This pinnacle and Rodgers Break are the outermost known dangers in this stretch of the coast.

From Reynolds Rock northwestward to Punta Gorda the shore is bordered by numerous rocks extending about 0.3 mile offshore. The sharp depression in the hills near the coast, caused by the gulch of **Cooskie Creek,** 3.5 miles southward of Punta Gorda, is sometimes useful on dark nights to vessels close inshore in making the point from southward.

Chart 5795.—Punta Gorda is a high, bold, rounding cape, 83 miles northwestward of Point Arena and 11 miles southward of Cape Mendocino. The seaward face rises to about 900 feet, 400 yards back from the beach, and terminates in a spur, 140 feet high, almost overhanging the sea. It is bare of trees except in the gulches. The gray rectangular structure of an abandoned lighthouse, 25 feet high, is southerly of the point. For over 1.5 miles northward and about 2 miles southward of the point, the beach is bordered by numerous rocks and shoals extending in some cases 0.6 mile offshore.

The wind, sea, and currents off Punta Gorda are probably as strong as off any point on the coast; frequent and strong tide rips have been noted. Many times when the weather at Shelter Cove and even at Big Flat is clear and calm and the sea smooth, both the wind and the sea will pick up as Punta Gorda is approached, until just northward of this point where strong breezes to moderate gales will be experienced. At other times clear weather southward of this point will lead to fog northward, or vice versa.

Gorda Rock, 10 feet high and conical in shape, is 0.7 mile southward of Punta Gorda and 0.6 mile offshore. A lighted whistle buoy is 300 yards southwest from the rock.

Conical Rock, 20 feet high, lies 200 yards off the point, and a small, low rock lies 350 yards westward from it; foul ground is between these rocks.

From Punta Gorda to Cape Mendocino the hills back of the coast are lower than those southward; they are bare of trees and bordered by stretches of low, narrow, sandy flats with a narrow, low-water beach. The outlying rocks are not more than 0.7 mile offshore until about 2.5 miles south of Cape Mendocino, where they extend offshore to Blunts Reef, 2.5 miles west of the cape. **Mattole Canyon,** a narrow submarine valley, is 3 miles northward of Punta Gorda where the 100-fathom curve is about a mile from the beach. **Mendocino Canyon** is 4.5 miles southward of Cape Mendocino where the 100-foot curve is abont 2 miles from the beach.

Christmas Rock, covered 1¼ fathoms, is 0.9 mile northwesterly of Punta Gorda.

Mattole River, 2 miles northward of Punta Gorda, is not navigable. The northern 360-foot high head is bare and the southeru head, about the same height, is partly covered with oak trees. A prominent sand dune is on the southern side at the entrance to the valley. Another large sand dune, 3.5 miles to the northward, marks the northern side of **McNutt Gulch** and should not be confused with the one at Mattole River.

Mattole Point is 0.3 mile northward of the river at the base of **Moore Hill.** A rock, 8 feet high, is 0.3 mile northward of Mattole Point and 250 yards off the beach at the head of Mattole Canyon. A rock covered ½ fathom lies 0.4 mile northwest by north of Mattole Point.

Sea Lion Rock, 16 feet high, is the largest of a cluster of small rocks 0.5 mile offshore and nearly 4 miles northwards of Punta Gorda. **The Brothers,** 8 feet high, consist of two small rocks, close together, 800 yards offshore and 0.5 mile northward of Sea Lion Rock. **Mussel Rocks,** 0.9 mile north of The Brothers, form a ledge that projects 400 yards from the shore.

Devils Gate Rock, 20 feet high, lies nearly 2.8 miles southward of Cape Mendocino and 0.5 mile offshore. It is low and pyramidal, with a smaller rock close under the northwestern face. A reef extends 200 yards westward from the rock; numerous rocks lie inshore. A rocky shoal covered 3¾ fathoms lies 1.4 miles westward of Devils Gate Rock.

Steamboat Rock, 30 feet high, lies 1.5 miles southward of Cape Mendocino and 600 yards offshore. The upper part of the rock is white and the lower black, somewhat resembling a steamer with a low black hull and white upper works.

Cape Mendocino, 185 miles north of San Francisco Bay entrance and 367 miles south of Columbia River entrance, is a mountainous headland, the famous landmark of the old Spanish navigators and the galleons from the Indies. The cape is the turning point for nearly all vessels bound northward or southward. In view of the dangers in the vicinity, it should be approached with considerable caution in thick weather; the bottom and the currents are very irregular. It is in the latitude of great climatic change; the winds do not blow home so violently in the hight southward of it, and the amount of rainfall increases rapidly to the northward. Fog is more prevalent southward. The strong northwesterly winds of summer are less violent southward of the cape which forms a parallel lee for vessels working their way northward.

The seaward face of Cape Mendocino is steep, rocky, and water worn toward the shoreline. Northeastward of the light the general appearance is rolling and grass-covered, except in the deep ravines and upon some of the steep hillsides where the northern exposure is covered with forest or brush. For about 3 miles southward of the cape the beach is bordered by numerous rocks and sunken ledges extending in some cases to over 0.5 mile offshore. **Cape Mendocino Light (40°26.4′ N., 124°24.4′ W.),** 422 feet above the water, is shown from a 43-foot white pyramidal tower on one of the western spurs.

Sugar Loaf, 326 feet high, is 250 yards westward of Cape Mendociuo and is connected with it at low water by a narrow neck of rocks and shingle beach. This rock is a prominent feature in making the cape from either northward or southward, but in thick or hazy weather care should be taken to avoid mistaking it for False Cape Rock, which it somewhat resembles, that is in a similar position off False Cape, 4.5 miles northward of Cape Mendocino. False Cape Rock is about 216 feet high and is not so regular in outline as the Sugar Loaf, and from the westward or northwestward, shows two large rocks, 95 and 54 feet high, immediately inside of it, whereas the Sugar Loaf stands solitary and compact. As seen from the southwestward, Sugar Loaf shows a cave on its southwestern face, extending about one-third the height of the rock.

Blunts Reef, 2.9 miles west by north of Cape Mendocino Light, is one of the outermost visible dangers off Cape Mendocino. The reef consists of two small black rocks awash about 230 yards apart. **Blunts Reef Lightship**

★ (5206) **CALIFORNIA—Humboldt Bay—Light moved and changed.**—Humboldt Bay Entrance Light has been moved and reestablished about 30 yards 317° from present charted position and changed to show a *flashing red* light every *4 seconds*, flash *0.4 second*, of 200 candlepower, visible 8 miles. The light is exhibited 57 feet above the water from a white steel column. A fog signal consisting of a *diaphragm horn* sounding *1 blast* every *15 seconds*, blast *1 second*, has been established at the light.

Approx. charted position : 40°45′52″ N., 124°14′31″ W.

(Supersedes N.M. 35(4557) 1964.)

(N.M. 40/64.)

(L.N.M. 48, C.G., San Francisco, Sept. 16, 1964.)

C. & G.S. Charts **5832, 5602.**

C.G. Light List, Vol. III, 1963, No. **734.**

C. & G.S. Coast Pllot 7. 1963. page **145.**

(40°26.4′ N., 124°30.3′ W.), with red hull and the name BLUNTS in large white letters on the sides, is 1.7 miles west-southwestward of the outer rock; the light is 55 feet above the water. The lightship has a fog signal and a radiobeacon. The code flag and radio call is NNCB. **Storm warning displays** are made during the daytime. The currents at the lightship are described in the Tidal Current Tables.

The area as far west as the lightship and for about 4 miles north and south of Cape Mendocino includes dangerous rocks and covered ledges. Vessels should not attempt the passage between Blunts Reef Lightship and the cape under any circumstances. A heavy westerly swell breaks even in 9 to 10 fathoms in this locality.

From Cape Mendocino for 4.5 miles to False Cape, the coast is straight, bold and bordered by a broad low-water beach.

False Cape is a steep, bold headland, rising to a height of over 600 feet in less than 0.2 mile from the beach; it projects slightly from the general trend of the coast. It is covered with grass, but the gulches on its sides are wooded. The base of the cape is bordered by a narrow, low-water beach of shingle and sand. For about a mile on each side of the cape are numerous rocks and ledges, the outermost of which are about a mile from the beach.

False Cape Rock, 216 feet high, lies 0.4 mile westward of the cape; other rocky islets are between it and the shore. It is not as regularly shaped nor as high as the Sugar Loaf off Cape Mendocino, and the top is much flatter. A rock covered 1¾ fathoms lies 0.6 mile westward of False Cape Rock. **Mussel Rock**, 7 feet high, is 0.8 mile northward of False Cape Rock.

Chart 5602.—Northward of False Cape the hills decrease in height; 4 miles beyond the cape is the beginning of a stretch of sand beach and dunes, broken only by Table Bluff and Buhne Point, that extend to Trinidad Head.

Centerville Beach, 4 miles northward of False Cape, is not prominent from seaward. A white cross is on the 120-foot bluff just southward of Centerville Beach. A number of buildings, comprising the U.S. Naval Facility for oceanographic research, are on the bluffs 0.8 mile southward of the village.

Eel River empties 8 miles northward of False Cape. This is a stream of considerable size and is occasionally entered by light-draft vessels, but the channel over the bar is continually shifting. The depth on the bar varies largely with the amount of water in the river, depending upon the character of the winter, and has been at times as much as 14 feet, but generally the depth is about 8 or 9 feet. The river is seldom entered except by fishing boats and other very small craft, and then only by those with local knowledge of the bar.

Eel Canyon is a submarine valley extending in a northwesterly direction. It comes to a head 10 miles northwestward of Cape Mendocino. Vessels are cautioned against mistaking this valley for one of those southward of the cape.

Chart 5832.—Table Bluff, 12 miles northward of False Cape and 4.5 miles southward of Humboldt Bay entrance, is a prominent feature from seaward. The western face is 0.5 mile long, 165 feet high, very steep, and has a narrow sand beach under it. **Table Bluff Light (40°41.7′ N., 124°16.4′ W.),** 176 feet above the water, is shown from a 35-foot white square tower near the extreme western edge of the bluff.

From Table Bluff for 4 miles to Humboldt Bay entrance the coast consists of a narrow sand spit.

Humboldt Bay, 21 miles northward of Cape Mendocino Light, is the first important harbor northward of San Francisco, and is used by vessels drawing up to 30 feet. It can be used as a harbor of refuge in impending bad weather, providing a vessel can get inside before the bar becomes impassable. The bay consists of two shallow basins, South Bay in the southern part and Arcata Bay in the northern part, connected by a narrow channel about 5 miles long.

A large quantity of lumber is shipped to both foreign and domestic ports; some farm and dairy products, livestock, leather, and fish are also shipped, mostly to San Francisco. General merchandise, gasoline, and fuel oil are received.

Prominent features.—Table Bluff Light, 4 miles southward of the entrance, is the best landmark by night. By day the tall stacks and the smoke from the sawmills in the bay can usually be seen. North Spit has clumps of trees along the bay shore near the channel while South Spit is barren. The red bluff at **Buhne Point** on the eastern shore of the bay, a power plant about 0.5 mile eastward, with a stack and large storage tanks nearby, and a lighted radio tower about 0.5 mile farther eastward, are conspicuous in entering the bay. A Coast Guard station is inside the North Spit, 0.5 mile from the southerly end.

The approach to the bay is marked by a lighted whistle buoy and a bell buoy off the entrance, and a radiobeacon, fog signal and approach range lights on the outer end of the North Spit. A light is on the south jetty, 165 yards from the outer end. The entrance channel inside the bar is marked by range lights and lighted buoys.

Note.—The outer range should not normally be used beyond its intersection with the inner range. The inner range should not normally be used seaward of the outer end of the jetties.

Two jetties are at the entrance to the bay, 750 yards apart. The bar northwestward of the south jetty is subject to considerable shifting and shoaling at times, especially during the winter.

In the past **Humboldt Bar** was considered treacherous and dangerous, and many disasters have occurred here. With the present improvements, however, and by employing local pilots, vessels may enter or leave with comparative safety. The strong currents that may be encountered, and the abrupt turn at the outer end of the south jetty are apt to be dangerous for strangers. The bar is the smoothest during the last of the flood current and it is often passable at this time and impassable two

★ (4248) **CALIFORNIA—Humboldt Bay—Arcata Bay—Cable area established.**—A cable area has been established in Arcata Bay north of Gunther Island, enclosed by a line extending from a point on shore in (approximately) 40°49'49'' N., 124°10'14'' W. in a 110° direction for about 900 yards, thence 2,490 yards 138°, thence 490 yards 238° to the shoreline, thence 425 yards 244° along the shoreline, thence 210 yards 004°, thence 390 yards 047°30', thence 2,050 yards 318°30', thence in a 288° direction to the shoreline.

(N.M. 33/64.)

(RS 11024/64.)
C. & G.S. Chart **5832.**
C. & G.S. Coast Pilot 7, 1963, page **146.**

★ (6253) **CALIFORNIA — Humboldt Bay — Fairhaven — Light moved.** — Fairhaven Light (40°47.2' N., 124°11.7' W. approx.) has been relocated on the end of Fairhaven Pier (not charted) about 440 yards 073° from the stack (40°47.2' N., 124°11.9' W. approx.). The light is shown 29 feet above the water and has been equipped with black square daymarks with green reflector.

Note.—The dolphin, from which the light was formerly displayed, remains.

(N.M. 40/66.)

(L.N.M. 61, C.G., San Francisco, Sept. 9, 1966.)
C. & G.S. Chart **5832.**
C.G. Light List, Vol. III, 1966, No. **1220.**
C. & G.S. Coast Pilot 7, 1963, page 146.

hours later, when the ebb current has set in. Caution should also be exercised inside the jetties due to the rapid change in the channel conditions. Deep-draft vessels are usually taken in and out of the bay at high tide if there is any swell on the bar because of the shoaling in the entrance channel.

Boundary lines of inland waters.—The line established for Humboldt Bay is described in **82.129**, Chapter 2.

Channels.—Federal project depths for Humboldt Bay are 40 feet over the bar, thence 40 feet through the entrance, thence 30 feet in Eureka Channel outer reach, and thence 26 feet through the inner reach. Project depths in Samoa Channel are 30 feet, and in Fields Landing Channel, 26 feet. Maintenance dredging is performed regularly.

Arcata Bay is about 3 miles in diameter, with low, marshy shores, cut by many sloughs.

Along the eastern shore of Humboldt Bay, northward to Eureka, are several sawmills, with docks built out to the channel, from which lumber is shipped.

Fairhaven is a small town on the western shore, 2 miles above the entrance. A small boatyard has a marine railway capable of hauling out craft up to 50-ton weight, 65-foot length, and 6-foot draft. A plywood plant, with a concrete stack and tall silver elevated tank, is here.

Eureka, the principal town on the bay, is on the eastern shore, 4 miles northward of the entrance. It handles most of the waterborne traffic of the bay and is the terminus of a railroad from San Francisco, although a branch of the railroad continues to Arcata and Samoa.

Drawbridge regulations for **Eureka Slough,** eastward of Eureka, are given in **203.718,** Chapter 2.

Samoa, on the western shore opposite Eureka, is the terminus of a railroad from Arcata. There are large sawmills, and a considerable amount of lumber is shipped. There is a depth of 23 feet alongside the docks. The high concrete stack is very prominent from offshore. There are three black tanks westward of the stack and two similar tanks to the southward. A privately owned passenger ferry operates between Samoa and Eureka.

Arcata is on the northern shore of the bay. There are no serviceable wharves in the town. The ruins of several old wharves are near the head of Arcata Channel.

South Bay, in the southern part of Humboldt Bay, is about 3 miles long and 2 miles wide. The marked channel on the east side of the bay leads to the lumber terminals at **Fields Landing.** There are depths of 18 to 20 feet alongside the loading wharves. A small boatyard has a marine railway capable of hauling out boats up to 80 feet in length and 100 tons in weight.

Anchorage.—The best anchorage is between **Bucksport** and the light at the southern end of **Gunther Island,** according to draft. Vessels in anchoring must keep clear of the cable crossing the channel just above Fairhaven. It is forbidden to anchor in Eureka Channel longer than 24 hours at a time. If obliged to anchor outside the bar, the best anchorage will be found southward and westward of the lighted whistle buoy in about 90 feet, sand and clay bottom.

Routes.—A pilot should be engaged by strangers if there is any sea on the bar, and by deep-draft vessels. Because the bar is subject to change, the entrance ranges may not always mark the deepest channel.

From southward.—From a position 1.5 miles 260° from Blunts Reef Lightship, steer **356½°** for 5 miles, when Table Bluff Light should bear 048°; thence a **038½°** course made good for 20 miles leads to Humboldt Bay Entrance lighted whistle buoy HB. In thick weather, after passing False Cape Rock, all dangers will be cleared by keeping in a depth of over 15 fathoms until up with the lighted whistle buoy, where anchorage should be made until a pilot is obtained.

From northward.—From a position 3 miles westward of Trinidad Head Light, a **187°** course, made good for 17 miles, leads to Humboldt Bay Entrance lighted whistle buoy HB. On this course Table Bluff Light, 5 miles southward of Humboldt Bay Entrance lighted whistle buoy HB, should be made ahead. In thick weather the depths should not be shoaled to less than 20 fathoms between Turtle Rocks and Trinidad Head and, when southward of the head, the depths should not be shoaled to less than 15 fathoms until up with the lighted whistle buoy, where a vessel should anchor until a pilot is obtained.

From seaward.—In clear weather the high land of Cape Mendocino and Punta Gorda southward, and Trinidad Head northward of the entrance, are good landmarks. At night, the lights are a good guide. In thick weather soundings should be taken frequently, and upon getting depths of 30 fathoms or less great caution must be exercised until sure of the vessel's position, when the course should be shaped for the lighted whistle buoy.

Sailing craft during the prevailing northwesterly winds of summer should try to make the land in the vicinity of Trinidad Head; this gives a fair slant for the entrance and is an additional precaution against the irregular southerly set of the current. In thick weather soundings should be taken constantly when inside of 50 fathoms. Making the land northward of the entrance avoids the irregular bottom and dangerous currents in the vicinity of Cape Mendocino.

From the Humboldt Bay Entrance lighted whistle buoy HB, Humboldt Bay Approach Range, course **105°,** and Humboldt Bay Entrance Range, course **140°,** leads into the bay. The entrance range parallels the south jetty and is only about 150 yards from it. The turn from the approach to the entrance range, 200 yards off the outer end of the south jetty, is rather abrupt and is difficult under certain conditions of wind, sea, and current. Inside the bay the channels are well marked by navigational aids.

Tides.—The mean range of tide at Eureka is 4.8 feet. The range between mean lower low water and mean higher high water is 6.7 feet. A range of about 11 feet may occur at the time of maximum tides. Daily predictions for Humboldt Bay (South Jetty) are given in the Tide Tables.

Currents.—The tidal currents follow the general direction of the channels. In the main channel, the velocity

is less than 2 knots, and does not exceed 3 knots. Between the jetties, the velocity is about 2 knots, with a maximum of about 4 knots. Current predictions are given in the Tidal Current Tables.

See Appendix for **storm warning displays.**

Pilotage.—Vessels requiring a pilot should wire 24 hours in advance, cable address "Humbar." Ladder should be rigged 6 feet from the water as pilots board from a tug or launch.

Tugboats are available.

Quarantine.—Regulations of the U.S. Public Health Service are enforced. An outpatient office of the Public Health Service is in the city.

Customs.—Eureka is a port of entry; marine documents are issued.

Harbor regulations are prescribed by the State and city Board of Harbor Commissioners. A wharfinger, located at the Eureka Boat Basin, foot of Commercial Street, has jurisdiction over fishing and pleasure craft using the facilities at the city-owned boat basin.

Supplies.—Fuel oils, groceries, water, and marine hardware can be obtained at Eureka.

Repairs.—Minor repairs to machinery and to woodwork above water can be made. The largest of two marine railways in the bay can haul out boats up to 100 tons.

Chart 5602.—Northward of the entrance to Humboldt Bay, the coast consists of sand dunes partly covered with timber for 11 miles to the mouth of **Mad River.** The first 7 miles forms the western shore of Humboldt Bay and then the land behind the dunes is low and marshy as far as the river.

From the mouth of Mad River, the sand dunes varying in height from 20 to 60 feet, continue for 5.5 miles to **Little River,** a small shallow stream. The northern point at the mouth of the stream is rocky, and from this point the coast consists of rocky cliffs extending beyond Trinidad Head.

Chart 5846.—Little River Rock, 126 feet high, is 0.8 mile northwestward of the mouth of Little River, and 0.3 mile offshore. Several rocks and foul ground are between it and the beach, and a rock 4 feet high is about 100 yards northwestward.

From Little River Rock to Trinidad Head the shore is bordered by numerous rocks and ledges extending 0.3 mile offshore.

Pilot Rock, 93 feet high, is 0.5 mile southward of Trinidad Head. It is of small extent, conical, and whitish in color, rising abruptly from depths of 48 to 50 feet on all sides. Pilot Rock is marked on its western side by a gong buoy.

Trinidad Head is nearly 39 miles north-northeast of Cape Mendocino and 17.5 miles northward of the entrance to Humboldt Bay. It rises to a height of 380 feet. The sides are steep and covered with chaparral. From northward or southward the head is generally raised as a dark, round-topped island. Near the northern end it is joined to the mainland by a narrow neck, from the southern side of which **Little Head,** a rocky knoll 125 feet high, projects into Trinidad Harbor. The white cross 200 yards northward of the southern point of Trinidad Head is fairly prominent.

Trinidad Head Light (41°03.1′ N., 124°09.0′ W.), 196 feet above the water, is shown from a 25-foot white pyramidal tower near the southwest side of the head; a fog signal is near the light. A lighted whistle buoy is 1 mile west of the head.

Trinidad Harbor, a small cove eastward of Trinidad Head, affords shelter in northwesterly weather but is dangerous in westerly or southerly weather. The cove is small and is further contracted by several rocks, and as a rule, there is always a swell even in northerly weather. It is used by fishing boats to a considerable extent during the summer even though the holding ground is only fair. A wharf with a fishhouse is in the bight west of Little Head. Fish are unloaded at the wharf and are trucked to Eureka and San Francisco. Some groceries may be obtained at **Trinidad,** a village on the north shore of the cove.

Prisoner Rock, 220 yards east of Trinidad Head, is 42 feet high and the most prominent of the rocks in the cove. It consists of two rocks so close together that they are usually taken for one. From southward they resemble an animal lying down with its head toward the west. A rock covered 7 feet is 150 yards north-northwestward from them.

Flat Rock, low and small, lies 350 yards northeastward from Prisoner Rock; a rock covered 5 feet lies 150 yards southeastward from it. A bell buoy is 175 yards west of a rock covered 9 feet which lies 400 yards southeastward of Prisoner Rock.

The best anchorage is in 42 feet, muddy bottom, about halfway between Prisoner Rock and Trinidad Head, with Flat Rock, bearing 073°, just open southward of Prisoner Rock.

Blank Rock, 111 feet high, lies 0.3 mile westward of Trinidad Head. Foul ground is between it and the head. A smaller rock is 150 yards northward of Blank Rock. A rock awash and a ledge covered 15 feet are 275 yards southeastward of Blank Rock.

Off-Trinidad Rock, 72 feet high, lies 0.3 mile northwestward of Blank Rock. It is considerably larger than Blank Rock, with two rocky heads of about the same height. A covered rock lies 300 yards off its southwestern face, and numerous ledges extend southeastward toward the head.

Chart 5702.—From Trinidad Head for 5.5 miles to Rocky Point, the coast is rocky, with numerous outlying islets and ledges extending as much as 1.2 miles offshore and cliffs reaching elevations of over 100 feet. The mountains back of Trinidad Head are good landmarks for vessels approaching from seaward. Northward of Rocky Point, the beach is low and sandy, with several lagoons behind it, for nearly 11 miles to the southern end of the Gold Bluffs. From this point to Point St. George, the coast is rocky, the cliffs being from 100 to 500 feet in height and bordered by numerous rocks. The Klamath River breaks through the cliffs 16 miles southward of

Point St. George. From Point St. George for 65 miles to Cape Blanco, the coast trends in a general northwesterly direction with a shallow bight known as Pelican Bay immediately northward of Point St. George. The beach is fringed by numerous rocks and ledges, but, with the exception of Rogue River and Orford Reefs, these in general do not extend over a mile from shore. The 30-fathom curve follows the general trend of the coast, and in thick weather may be considered as the limit inside of which it is unsafe to approach, but in the vicinity of Rogue River and Orford Reefs, the depths should not be shoaled to less than 50 fathoms.

Green Rock, 108 feet high and of small extent, lies 1.5 miles northward of Trinidad Head aud nearly 600 yards offshore. The top is covered with grass. Numerous rocks lie inshore, and a rock awash lies 700 yards westward of it. A rock covered 3 fathoms lies 0.5 mile westward of Green Rock. It seldom breaks and rises abruptly from 15 fathoms. Two covered rocks lie 0.5 and 0.8 mile northeast by north of Green Rock.

White Rock, 118 feet high, lies 1.9 miles northward of Trinidad Head. It is of small extent and is 250 yards off a wooded projecting head about the same height. Another rocky islet 129 feet high is 1 mile northward of White Rock.

Cone Rock, 17 feet high, is 3.8 miles northward of Trinidad Head and over a mile offshore. It is conical in shape and of small extent. A smaller rock, 15 feet high, lies 0.5 mile eastward.

Turtle Rocks, two rocks of small extent 20 and 29 feet high, are 1.5 miles northward of Cone Rock and abreast of Rocky Point. Eastward of Turtle Rocks the ground is foul, with two breakers 600 and 800 yards from the outer rock and numerous visible rocks extending to the beach. A bell buoy is 0.5 mile westward of Turtle Rocks.

Rocky Point, 5.5 miles northward of Trinidad Head, is a hold feature with cliffs about 200 feet high, bordered by numerous rocks and ledges extending 200 to 300 yards offshore. The point is covered with oak and scruh pine for 0.5 mile back to the redwood forest; through this oak growth two rocky pinnacles about 250 feet high are visible.

Rodgers Peak, 6.3 miles northeastward of Rocky Point, is heavily wooded and easily identified.

Northward of Rocky Point the cliffs are succeeded by a low sandy beach for 4.5 miles to the north end of **Big Lagoon,** which is immediately behind the sand beach. Above Big Lagoon the cliff formation is resumed and extends 2 miles to **Stone Lagoon.**

Sharp Point, 6.2 miles northward of Rocky Point, is a sharp-pointed conical rock cliff about 400 feet high. Its light-gray color makes it readily distinguishable for a distance of 15 miles in clear weather from any direction. The beach in this area is hordered by numerous rocks extending about 0.8 mile offshore.

Gold Bluffs, a 9-mile stretch of gravel and sand 100 to 500 feet high, begin ahout 9 miles northward of Rocky Point. The southern part is comparatively low and bordered by several outlying rocks; in about the middle the bluffs are broken by two valleys.

Mussel Point, 11.2 miles northward of Rocky Point, is a light gray cliff about 300 feet high, with a small, flat top distinguishable at 10 to 12 miles in clear weather.

Redding Rock, 94 feet high and of small extent, is 4.5 miles offshore west of Mussel Point. It is dark for about one-third the height and white above with a cleft on the southern face. It rises abruptly from depths of 20 fathoms and can be approached close-to with safety. It is marked by a white 18-foot square pyramidal skeleton tower on a house. A lighted whistle buoy is 400 yards southwestward of the tower.

Northward of Gold Bluffs the coast becomes rocky, irregular, and broken, the bold cliffs being bordered by many rocks.

A yellow clay slide extending from the top of a 900-foot slope to the beach is 9 miles northward of Mussel Point. It is sharp at the top, broad at the base, and the highest and most prominent of the bluffs in that vicinity. It may be seen in clear weather for a distance of 15 to 18 miles.

Split Rock is a slightly projecting head 3.5 miles northward of the northern end of Gold Bluffs; it is named on account of the cut on the northern face.

High Bluff is a slightly projecting head 0.8 mile northward of Split Rock. It is prominent because of an enormous split or chasm on its northern face; at the southern edge of the cut the bluff is 340 feet high.

White Rock, 107 feet high, lies 600 yards northward of High Bluff and 300 yards offshore. Numerous rocks, covered and visible, lie between it and the beach. Its southern face is very precipitous and its western face is steep, sloping northward. It can be distinguished by its color for several miles.

Flint Rock Head, 177 feet high, is a detached rocky head connected with the cliffs by a low sandspit. It is at the southern end of the Klamath River sand beach, 1.8 miles northward of Split Rock. Its southwest face is precipitous. A rock awash lies 0.6 mile northwest from Flint Rock Head and 0.5 mile offshore.

Klamath River mouth is 16 miles southward of Point St. George and 30 miles northward of Trinidad Head. It is a large river draining an extensive mountainous area. The pilings formerly reinforcing the sand spit are practically covered. Local boats carry 2 to 3 feet into the river. The har changes frequently and local knowledge is essential to make the entrance. The entrance is seldom used, but there are milling operations and small-boat traffic on the river. There are several small wharves and float landings where sport fishing boats berth. Gasoline and water are availahle.

The coast highway crosses the river at **Klamath,** a small town 2 miles inland. **Requa,** a small village on the north shore of the river just inside the mouth, has a hotel and landings for sport fishing boats.

Red Mountain, 8 miles eastward of the mouth of Klamath River, is visible for about 60 miles in clear weather.

From the mouth of the Klamath River the coast curves northwestward for 3 miles to the mouth of **Wilson Creek.** The cliffs are high, irregular, and jagged, and the hills

★ (2804) **CALIFORNIA — Crescent City Harbor — Landmark.**—A tower (abandoned lighthouse) exists on an islet south of Battery Point in 41°44'39.24" [illegible] 06.73" W. This is a conspicuous landmark and should be inserted on [illegible] Charts.
(See N.M. 36(5214) 1965.)

(N.M. 18/66.)

(C. & G.S.)
C. & G.S. Charts 5895 (and Inset), 5702.
C. & G.S. Coast Pilot 7, 1963, page 149.

★ (3849) **CALIFORNIA—Crescent City Harbor—Coastal warning display station established.**—The U.S. Weather Bureau advises that a coastal warning display station for day displays only has been established at Crescent City, Calif., in 41°44.6' N., 124°10.8' W.

(N.M. 30/64.)

(L.N.M. 35, C.G., San Francisco, June 30, 1964.)
C. & G.S. Chart 5895.
C. & G.S. Coast Pilot 7, 1963, pages 149, 278.

★ (5239) **CALIFORNIA—Crescent City Harbor—Buoy to be changed.**—About August 17, 1966, Crescent City Harbor Lighted Whistle Buoy 4 (41°43'35" N., 124°11'19" W. approx.) will be changed to show a *flashing red* light every *4 seconds*.

(N.M. 33/66.)

(L.N.M. 43, C.G., San Francisco, July 21, 1966.)
C. & G.S. Chart 5895.
C.G. Light List, Vol. III, 1965, No. 1235.
C. & G.S. Coast Pilot 7, 1963, page 149.

★ (5214) **CALIFORNIA—Crescent City Harbor—Light changed—Light discontinued.**—1. Crescent City Outer Breakwater Light (LL **70.11/1236**) has been changed to show *flashing white* every *5 seconds*, of 30,000 candlepower, visible 15 miles (geographic range 13 miles), No other change.

Approx. position: 41°44'12'' N., 124°11'23'' W.

2. Crescent City Light (LL **70**) has been discontinued.

Approx. position: 41°44'39'' N., 124°12'07'' W.

(See N.M. 18(2231), 28(3594) 1964; 30(4328) 1965.)

(N.M. 36/65.)

(L.N.M. 40, C.G., San Francisco, Aug. 11, 1965.)

C. & G.S. Charts **5895** (and **Inset**), **5702, 5021, 5002, 5052.**

C.G. Light List, Vol. III, 1964 (see above).

C. & G.S. Coast Pilot 7, 1963, page **149.**

above are covered with grass and chaparral. Numerous rocks extend about 300 yards offshore.

A covered rock 0.6 mile offshore is 1.4 miles northwestward of the mouth of Klamath River. A rock, 37 feet high, is 1 mile offshore, 2.6 miles northwestward of the mouth of Klamath River and about 1.5 miles southward of Wilson Creek.

False Klamath Rock, 203 feet high, reddish, and round-topped, is the most prominent rock on this part of the coast. It lies 650 yards westward of the southern point of the small cove into which Wilson Creek empties. **Wilson Rock,** covered 2½ feet, is 0.5 mile west of False Klamath Rock. A rock awash is 0.9 mile northwestward of False Klamath Rock. Numerous covered rocks lie eastward and northeastward of the line from this rock to another rock, 37 feet high, southward of False Klamath Rock.

From False Klamath Rock for 7 miles northward the coast consists of bold rocky cliffs, much broken and bordered by numerous covered and exposed rocks. Beyond these, extending 3 miles to Crescent City, is a broad sand beach backed by flat cultivated land.

Midway Point, 4 miles northward of False Klamath Rock, is bold, rising to a height of 820 feet 800 yards from the beach.

Sister Rocks, a cluster of prominent rocks, 0.5 mile westward of Midway Point, consist of three large and several smaller rocks covering a limited area; the outer one is 69 feet and the inner one 72 feet high.

Chart 5895.—Crescent City Harbor, midway between San Francisco Bay and the entrance to Columbia River, is protected by breakwaters and used by vessels drawing up to 23 feet. Lumber is shipped out, and gasoline and fuel oil are shipped in. Commercial and sport fishing boats operate out of the harbor. **Crescent City** is on the northern side.

Crescent City Light (41°44.7′ N., 124°12.1′ W.), 77 feet above the water, is shown from a 45-foot white tower on a building located on a small islet 200 yards southward of **Battery Point. Round Rock,** 550 yards southward of the west breakwater light, is 45 feet high with deep water close-to. The entrance to the harbor is marked by navigational aids.

Boundary lines of inland waters.—The line established for Crescent City Harbor is described in **82.127,** Chapter 2.

Depths of 20 to 23 feet can be taken into the outer part of the harbor, thence 12 to 18 feet to the lumber wharf on the west side of the harbor, and 10 to 15 feet to Fishboat Harbor in the eastern part.

The west breakwater gives good protection from northwest winds for vessels anchored in the outer harbor, but the harbor is open to the southward. Fishboat Harbor provides excellent anchorage for small craft.

Vessels anchored in the harbor should take precaution against a local southeasterly wind known as the **kick back** or **back draft,** which frequently blows with considerable violence at night. This wind follows only periods of strong northwesterly winds outside. It usually starts about 9:30 p.m. and dies about midnight.

Caution should be exercised in approaching Crescent City Harbor because of the many rocks and shoals. **Chase Ledge,** covered 21 feet, lies 0.9 mile southward of Round Rock. **Mussel Rock,** only a few feet high, is 0.6 mile southeastward of Round Rock; a rock covered 7 feet, 700 yards to the southward, breaks only in a heavy swell. Other covered rocks extend northward to Whaler Island. Foul ground with many bare and covered rocks extends nearly a mile offshore along the low but rocky coast northwestward of Crescent City Harbor for 3.5 miles to Point St. George. This area should be avoided.

There are three privately owned wharves in the western part of the harbor. The westerly wharf is used for shipping lumber; the other two are in ruins.

Fishboat Harbor is formed by the inner breakwater extending northwestward from **Whaler Island** and the sand barrier from that island to the eastern shore. Citizens Dock extends out to a depth of 13 feet. Lumber is shipped from the head of the wharf, and fishing boats use a spur built out near the end. Water is piped to the wharf; gasoline and diesel oil are pumped.

Crescent City Harbor has no facilities for hauling out vessels. Some local boats are beached for minor repairs. Pilots are not available, although tugboats operate from the harbor.

Castle Rock, 2.3 miles northwestward of Crescent City Light and 0.5 mile southward of the southern point of Point St. George, has a rather flat top with a small knob near the eastern edge.

Point St. George is low, with several irregular and rocky hillocks near the beach. The seaward face is about a mile long in a northwesterly direction, with sand dunes and low land immediately behind it. The tree line is about 0.6 mile inland, with a few trees near the southern end of the point. Numerous conspicuous rocks fringe the point up to 0.5 mile offshore. **Brown Rock,** 28 feet high, is near the outer end of the exposed rocks extending northwestward from the point.

St. George Channel, over a mile wide, is clear between the visible rocks fringing Point St. George and the easternmost rocks of St. George Reef. It is frequently used in clear weather by coastwise vessels.

St. George Reef is composed of rocks and covered ledges extending 6.5 miles northwestward and westward from Point St. George. Nine visible rocks are in the group.

St. George Reef Light (41°50.2′ N., 124°22.5′ W.), 146 feet above the water, is shown from a gray tower on a pier on **Northwest Seal Rock,** the outermost rock; a radiobeacon and a fog signal are at the station.

Star Rock, the southeasternmost rock of the group, is 64 feet high. It is 1.7 miles westward of the southwestern tip of Point St. George. Between Star and Northwest Seal Rocks are three rocks, **Hump, Whale,** and **Southwest Seal,** almost in line, varying in height from 18 to 45 feet. Southward of these visible rocks are two covered ledges. **Mansfield Break,** and **Jonathan Rock.** The latter is 2.5

miles northwestward of Star Rock and 3.2 miles southeastward of Northwest Seal Rock. It breaks only in a heavy swell, and not continuously then; deep water surrounds it. Mansfield Break lies 2.3 miles south by east of Northwest Seal Rock and nearly 3.5 miles northwestward of Star Rock. It is about 100 yards in extent with 20 fathoms close-to and around it.

Great Break, 0.5 mile southeastward of Southwest Seal Rock, is about 150 yards in extent. A covered ledge that breaks at low water is 125 yards southwestward of Southwest Seal Rock.

Dragon Channel, which leads northward of Jonathan Rock and between Mansfield Break and Great Break, is not recommended.

East and **Long Rocks** are 2.1 and 1.6 miles, respectively, northward of Star Rock. On this line and 1 mile northward from Star Rock is a rock visible at lowest tides; 0.3 mile southeastward from this rock is a rocky patch covered 15 feet in which a rock covered 5 feet has been reported.

Flat Rock lies nearly midway between Long and Whale Rocks, and about 0.6 mile from the former. **Mussel Rock** is nearly 0.5 mile west by north of Long Rock; a covered ledge showing a breaker is 200 yards northward of the rock. A covered rock that breaks in moderate swells is 330 yards northeastward of Hump Rock.

All the rocks of St. George Reef rise abruptly; when in the vicinity soundings give no warning of their presence. In thick weather the greatest caution should be observed and the reef given a wide berth.

Chart 5702.—For about 10 miles northward of Point St. George, the shores of **Pelican Bay** are composed of sand dunes, with a broad beach extending to the mouth of **Smith River. Lake Talawa** and **Lake Earl** are surrounded by low marshly land behind this stretch of dunes.

A small rock about 10 feet high is 1.8 miles southward of the mouth of Smith River and nearly 0.5 mile offshore. A cluster of three low rocks is nearly a mile offshore and 0.9 mile north-northeastward of the 10-foot rock.

Chart 5896.—From Smith River for 3.2 miles to the California-Oregon boundary, the coast is composed of low rocky cliffs, bordered by numerous rocks and ledges, covered and awash, and backed by a low narrow tableland. Several prominent rocky knolls rise from 100 to 200 feet above this tableland.

Pyramid Point, a rocky knoll 213 feet high, marks the northern point of Smith River.

Prince Island, of small extent and 171 feet high, lies 0.1 mile offshore abreast Pyramid Point. **Hunter Rock,** 177 feet high, double-headed and somewhat smaller, is 0.3 mile northward of Prince Island. Several other smaller rocks are in the vicinity.

Cone Rock, 1.3 miles northward of Prince Island and 0.6 mile offshore, is the most prominent of the visible dangers in this vicinity. It is 68 feet high and of small extent.

9. CHETCO RIVER TO COLUMBIA RIVER, OREGON

Chart 5896.—From the California-Oregon boundary for 3.8 miles to Chetco River, the coast is composed of low rocky cliffs, bordered by numerous rocks and ledges, covered and awash, and backed by a low narrow tableland. Several prominent rocky knolls rise from 100 to 200 feet above this tableland. Due to the numerous dangers, the coast should not be approached closer than 1.5 miles.

Chetco Cove, 15.5 miles northward of Point St. George, affords some protection from northwesterly winds, but is exposed in southerly weather. There are numerous visible and covered rocks fringing the shore of the cove and its approaches. The entrance to **Chetco River** is protected by two stone jetties and navigational aids mark a channel to **Brookings** basin, 500 yards above the mouth. In 1962 the controlling depth was 5 feet on the range line to the basin, thence about 2 feet to the highway bridge 0.6 mile above the mouth. With local knowledge, 6 feet or better can be taken to the docks in the basin. The highway fixed bridge has a clearance of 23 feet.

Lumber is shipped out of Brookings basin and some fish are brought in by local fishermen. Gasoline, water, lubricants, and some marine hardware and groceries are available; there are no repair facilities. See Appendix for **storm warning display.**

From Chetco Cove for 4.5 miles to Cape Ferrelo, the coast is composed of high broken cliffs, bordered by numerous rocky islets and ledges extending, in some cases, over 0.5 mile offshore.

Goat Island, 17.5 miles northward of Point St. George and 500 yards offshore, has deep water off its western and southwestern faces, but rocks and foul ground extend 200 yards southward from the southeastern point. The island is readily identified; its profile closely resembles that of Prince Island off Pyramid Point.

Cape Ferrelo, 20 miles northward of Point St. George, is the prominent headland northward of St. George Reef and, though not projecting seaward to any extent, is conspicuous because of its bold, rugged face. Several rocks and islets lie up to 0.5 mile directly off the cape.

From Cape Ferrelo for 9.5 miles to Crook Point, the coast is very rugged and rocky, with several large and prominent islets and reefs extending well offshore. In some cases, these form anchorages for small vessels in northerly weather.

Whalehead Island, the outer of two rocky islets 2.3 miles northward of Cape Ferrelo, is 107 feet high. The inner of the two islets is 128 feet high. A rock awash lies 800 yards southward of the highest point of the island.

A rugged cliff from 200 to 300 feet high is 3.3 miles northward of Cape Ferrelo. The face is about a mile in length, and behind it rises a treeless triple-headed hill to heights of 700 to 800 feet.

Leaning Rock, 49 feet high, lies 0.5 mile offshore and 3.5 miles northward of Whalehead Island. It has a perpendicular face on its northwestern side and slopes gradually southeastward. Several other rocks are in its vicinity.

Between Whalehead Island and Crook Point are two prominent grassy areas in the forest near the crest of the hills about 2 miles apart and situated at an elevation of nearly 2,000 feet; the southern one is known as **Rocky Prairie.**

Yellow Rock, 84 feet high, lies 4.5 miles northward of Whale head Island and 0.5 mile offshore. The rock is yellowish in color and can be recognized from 4 miles offshore.

Bosley Butte, 8.5 miles northeastward of Cape Ferrelo, shows above the coast ridges from the westward and northwestward as flat-topped with two summits separated by a slight depression. The northeasterly summit is rounded and somewhat larger, but is slightly lower than the eastern summit.

Mack Arch is a double-headed, rocky islet 0.8 mile offshore, 1.5 miles southward of Crook Point and 8 miles northward of Cape Ferrelo. The western head is 231 feet high and the eastern a little lower; both are black to near the summits which are generally white from bird droppings. The arch, about 100 feet high, is under the eastern summit and shows prominently from southward. A rock awash lies 125 yards southward of the eastern point.

The bight to the east-southeastward of Mack Arch has been used as a temporary anchorage during moderate northwesterly weather. The rocks and reefs break the swell. In approaching the anchorage, pass to the southward of Mack Arch about midway between it and Yellow Rock. Anchor in 11 fathoms, sand bottom, with Mack Arch bearing 296° and Yellow Rock bearing 155°. No breakers have been observed, but caution should be exercised as the place has not been closely surveyed.

Mack Reef extends from Mack Arch to Crook Point and comprises many rocks, visible or sunken, varying in height from awash to 125 feet. From southward these rocks stand out conspicuously when seen against the white sand dunes northward of Crook Point. Mack Arch, on account of its size and height, is the most prominent.

Mack Arch Cove lies immediately eastward of Mack Reef and affords fair shelter in northwesterly weather in 6 to 7 fathoms, sandy bottom. In entering from southward, pass eastward of Mack Arch, giving it a berth of about 150 yards, but taking care to avoid the rock 125

★ (126) **OREGON—[illegible] River—Channel [illegible]**—The following table shows the depths at m[illegible] lower low water in the [illegible]roved channel in Rogue River:

ROGUE RIVER CHANNEL DEPTHS

Tabulated from surveys by the Corps of Engineers—Report of Dec. 3, 1965

Name of channel	Controlling depths in channels entering from seaward in feet at Mean Lower Low Water: Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (naut. miles)	Depth M.L.L.W. (feet)
Entrance Channel	8. 0	10. 0	9. 0	9–65	300	0. 5	13
Entrance to Basin	13. 0	9. 0	1. 0	9–65	300	0. 3	13
Basin	12. 0	13. 0	7. 0	11–65	500	0. 1	13

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(Supersedes N.M. 44(5810) 1964.)

(N.M. 1/66.)

(C. & G.S. CL–1700/65.)

C. & G.S. Chart **5951.**

C. & G.S. Coast Pilot 7, 1963, page **152.**

★ (6102) **OREGON—Rogue River—Channel depths amended.**—The Corps of Engineers report in October 1964 the following changes:

Controlling depths in channels entering from seaward in feet at Mean Lower Low Water					Project dimensions		
Name of channel	Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Width (feet)	Length (naut. miles)	Depth M.L.L.W. (feet)
Entrance Channel	9. 0	8. 5	7. 5	10–64	300	0. 5	13

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(See N.M. 44 (5S10 1964.)

(N.M. 46/64.)

C. & G.S. CL–1393/64.)

C. & G.S. Chart **5951.**

C. & G.S. Coast Pilot 7, 1963, page **152.**

★ (5810) **OREGON—Rogue River—Channel depths.**—The following table shows the depths at mean lower low water in the improved channel in Rogue River:

ROGUE RIVER CHANNEL DEPTHS

Tabulated from surveys by the Corps of Engineers—Report of Sept. 1964

Controlling depths in channels entering from seaward in feet at Mean Lower Low Water					Project dimensions		
Name of channel	Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Width (feet)	Length (naut. miles)	Depth M.L.L.W. (feet)
Entrance Channel.	1.0	3.0	2.0	9–64	300	0. 5	13
Entrance to Basin.[a]	Bare at M.L.L.W.	Bare at M.L.L.W.	Bare at M.L.L.W.	5–64	300	0. 3	13
Basin	13.0	10.0	10.0	5–64	500	0. 1	13

[a] Meandering channel 100 feet wide by 8 feet deep from entrance to basin.

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(Supersedes N.M. 28 (3595) 1964.)

(N.M. 44/64.)

(C. & G.S. CL–1298/64.)

C. & G.S. Chart **5951.**

C. & G.S. Coast Pilot 7, 1963, page **152.**

★ (3595) **OREGON—Rogue River—Channel depths.**—The following table shows the depths at mean lower low water in the improved channel in Rogue River.

ROGUE RIVER CHANNEL DEPTHS

Tabulated from surveys by the Corps of Engineers—Report of June 1964

Name of channel	Controlling depths in channels entering from seaward in feet at Mean Lower Low Water				Project dimensions		
	Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Width (feet)	Length (naut. miles)	Depth M.L.L.W. (feet)
Entrance Channel	11.0	11.0	10.0	5–64	300	0. 5	13
Entrance to Basin *	Bare at M.L.L.W.	Bare at M.L.L.W.	Bare at M.L.L.W.	5–64	300	0. 3	13
Basin	13. 0	10. 0	10. 0	5–64	500	0. 1	13

* Meandering channel 100 feet wide by 8 feet deep from entrance to basin.

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(See N.M. 40(5130), 1963.)

(N.M. 28/64.)

(C. & G.S. CL–821/64.)

C. & G.S. Cbart **5951.**

C. & G.S. Coast Pilot 7, 1963, page **152.**

yards southward of its eastern point. Then bring the 125-foot rock, the highest of the northern part of the reef, to bear 352° and steer for it on that bearing until up to the anchorage abreast the group of rocks 0.5 mile northward of Mack Arch.

Crook Point is moderately low, but terminates seaward in a rocky knoll 175 feet high, with a slight depression immediately behind it. The rocks close to the point often show up during moderately thick weather, several being of very noticeable pinnacle formation.

From the vicinity of Crook Point to the mouth of the **Pistol River** are sand dunes which show up prominently in clear weather and distinctly mark this section. In thick weather these dunes cannot be readily distinguished. From the mouth of the river to Cape Sebastian are numerous rocks and rocky islets extending 0.3 mile offshore, reaching in some cases a height of 150 feet. The Pistol River bar opens in the rainy season; its location varies from year to year.

Hunters Cove, a small, contracted anchorage under the southeastern face of Cape Sebastian, is formed partly by the cape and partly by **Hunters Island** in the entrance. The island is 0.2 mile in extent, rocky, flat-topped, and 113 feet high. Shoal water extends from it eastward to the beach. The cove is used occasionally by launches and small craft. During strong northwesterly weather the sea at the entrance is rather lumpy for small boats. With moderate southwesterly weather a heavy sea piles up across the entrance between the cape and Hunters Island.

Chart 5951.—Cape Sebastian, 33.5 miles northward of Point St. George, is conspicuous from either northward or southward. It is the seaward termination of a ridge transverse to the coast, and rises abruptly from seaward to a height of 694 feet, with a depression behind it, and then more gradually to a height of about 2,000 feet. The seaward face is precipitous and broken, and has a few trees; southward the lower part is grass covered. A rock covered 1¾ fathoms that seldom breaks is 0.5 mile offshore, 0.9 mile northwestward of the western extremity of the cape.

From Cape Sebastian for 6 miles to the mouth of Rogue River, the coast is considerably broken, quite rugged, low in the vicinity of the beach, and has a few outlying rocks.

The outer of three exposed rocks off the entrance to **Hunter Creek,** 3.7 miles northward of Cape Sebastian, lies nearly 0.5 mile offshore.

Rogue River, 6 miles northward of Cape Sebastian, is an important sport-fishing stream. Lumber is shipped from **Gold Beach** on the south side of the river near the mouth. **Wedderburn,** on the opposite side of the river from Gold Beach, has several float landings with depths up to 5 feet alongside.

The entrance to Rogue River is protected by stone jetties; buoys mark the approach. In June 1962, the controlling depth in the dredged channel to Gold Beach was 8 to 13 feet with local knowledge. Gasoline and some marine hardware and groceries are available.

A concrete arch highway bridge across Rogue River, 0.8 mile above the mouth, has a fixed span with a clearance of 30 feet. The bridge is prominent when off the mouth of the river. Special logging regulations are given in **207.655,** Chapter 2.

The northern head at Rogue River entrance that reaches a height of 700 feet a mile northward of the river, the marked depression in the coast range made by the river valley, and the rocks of Rogue River Reef are prominent from seaward.

Rogue River Reef, extending over 4 miles northwestward from Rogue River entrance, includes many visible and covered rocks; because of the broken bottom vessels should stay over 5 miles offshore when passing this area. A 0.5-mile wide channel separates the reef from the beach, but it is not safe to use without local knowledge. **Northwest Rock,** 4 miles northwestward of Rogue River entrance, is the outermost visible rock of the reef. A rock, covered 2½ fathoms, is 0.3 mile westward of Northwest Rock. **Needle Rock,** 1.1 miles southeastward of Northwest Rock, is the most prominent of the rocks in the reef; the needle is on the southern side.

Northward of Rogue River the coast trends northerly for 10 miles and then northwestward to Cape Blanco. The mountains are high, irregular, dark, and covered with chaparral. The beach is bordered by numerous rocks for 5 miles, then is comparatively clear with the exception of Orford and Blanco Reefs.

A group of covered and visible rocks, 1 mile long and 0.5 mile wide, lies 5 miles northward of Rogue River and nearly 2 miles offshore; these rise abruptly from 12 fathoms. **North Rock,** 7 feet high, is the largest and is nearest the beach. A rock, covered 1¼ fathoms, lies about 0.6 mile northwestward of North Rock.

The channel between Rogue River Reef and the mainland, and North Rock and the mainland, is sometimes used by coastwise freighters in clear weather. This channel should not be attempted by strangers.

Brushy Bald Mountain, nearly 9 miles northeastward of Rogue River entrance and 3 miles inland, shows up in hazy weather as a flat rounded peak, with a gentle slope from a westerly and southerly direction.

Sisters Rocks are a group of three rocky islets 10.5 miles northward of Rogue River entrance. The smallest, 0.8 mile offshore, is the outermost. There is fairly smooth water in northwesterly weather under the lee of the largest islet.

Colebrooke Butte, 2 miles eastward of Sisters Rocks, appears from the westward as a cone with gentle sloping sides. The upper part usually shows against the skyline and is readily recognized. From the southward, it shows as a rounded peak which resembles Brushy Bald Mountain, though it is somewhat lower. The northern part of the summit is tree-covered and dark green, and the southern part is grass- and brush-covered and light green. The slopes are timbered except for the lower part of the seaward slope which is bare and brown.

Lookout Rock, 2.3 miles northward of Sisters Rocks, is a prominent projecting cliff, with a marked depression behind it. The seaward face is precipitous.

Bald Mountain, 3.2 miles northeastward of Lookout Rock, appears from offshore as an irregular knob at the

northwesterly end of a long ridge. **Rocky Peak,** on the southeastern end of the ridge, is a sharp conical peak. From a southwesterly direction, three peaks or knobs show; from a north-northwesterly direction, two peaks show almost in range. These peaks were used by the early navigators as a landfall for Port Orford in coming from the northward.

Prominent **Humbug Mountain,** 3.3 miles northward of Lookout Rock and 4 miles southward of Port Orford, is conical in shape, and its seaward face is steep and rugged.

Chart 5952.—Island Rock, 1.3 miles off the seaward face of Humbug Mountain, is flat on top. A needle rock is 200 yards off its northwestern end. These rocks are prominent when approaching Port Orford from southward. Except for two small rocky patches, covered 6¾ and 10 fathoms, within 0.5 mile of the north end of Island Rock, there is deep water aronnd these islands and between them and the heach.

Redfish Rocks are a group of islets covering an area 0.5 mile square, lying 2 miles northward of Island Rock and nearly 1 mile offshore. They are six in number and range from 10 to 140 feet in height. Many covered rocks lie within this area.

Port Orford, 6.5 miles southward of Cape Blanco and 19 miles northward of Rogue River, is a cove that affords good shelter in northwesterly weather, but is exposed and dangerous in southerly weather. It is easy of access and is probably the best natural northwesterly lee northward of Point Reyes.

The town of **Port Orford,** on the north side of the cove, is the home of the famous yellow cedar. Some lumber is shipped out, but most of it is trucked to Coos Bay.

The Heads, forming the western point of the cove, appear from southward as a long ridge with three knobs. The inner two are slightly higher and covered with trees. **Tichenor Rock** lies 175 yards southward of The Heads. The white Coast Guard lookout tower on The Heads is prominent from southward and is reported to be mistaken at times during the day for Cape Blanco Light tower. The white tank on the summit of The Heads shows just clear of the nearby trees; it also resembles Cape Blanco Light tower when observed from far offshore.

Klooqueh Rock, 0.3 mile off the northwestern face of The Heads, is black and conical in shape. It is prominent, especially when coming from the northwest inside Orford Reef. Rocky ledges are between this rock and shore.

Anchorage may be had in about the center of Port Orford in 6 to 10 fathoms, sand bottom. A bell buoy is 0.5 mile southward of Tichenor Rock. Small craft may anchor closer to The Heads where better protection is afforded against the northwesterly winds which sweep with considerable force through the depression at the head of the cove.

Battle Rock, in the northern part of the cove close to shore, is high, narrow, and black; it is detached only at extreme high tides. Visible and covered rocks extend up to 0.5 mile from shore around the cove, but a passage with 2½ to 5 fathoms is available through the center of the cove to the wharf easterly of **Graveyard Point.** A rock, covered 5 feet, and usually marked by kelp, is 55 yards eastward of the wharf.

Depths of 15 feet are alongside the outer eastern face of the wharf; depths are shoaler inshore. Gasoline, diesel oil, and water are piped to the wharf; fishing boats are lifted to cradles on the wharf by a 15-ton hoist. Some groceries are available in town; marine hardware can be ordered from Coos Bay, 51 miles by highway.

From The Heads for 6.5 miles to Cape Blanco, the coast extends in a general north-northwesterly direction. Northward of The Heads the shore is a narrow sand ridge, rising at one point to 160 feet, covered with grass, fern, and brush, and ending abruptly nearly 3 miles from The Heads at the edge of the Elk River Valley. Northward of this point are sand dunes extending to the mouth of **Elk River,** a small, unimportant stream. Beyond the mouth of Elk River to Cape Blanco, the coast consists of vertical cliffs, wooded to the edge, and in some places over 150 feet high.

Orford Reef, from 2 to 5 miles offshore between The Heads and Cape Blanco, is composed of a group of irregular rocks up to 149 feet high and ledges, many of which are awash or show a break. Kelp extends from Orford Reef to within 1.3 miles of the shore. A lighted whistle buoy, 6.5 miles southwestward of Cape Blanco, is the guide for clearing this reef.

Fox Rock and **Southeast Black Rock,** 1.3 miles apart, almost 5 miles southwestward of Cape Blanco, are the southernmost rocks of Orford Reef; they usually show a heavy break. **Northwest Rock,** 3 miles southwestward of Cape Blanco, is the northernmost visible rock of Orford Reef, although several rocks, covered 5 fathoms, are 1.2 miles northeastward of Northwest Rock.

Blanco Reef, extending 1.5 miles southwestward from Cape Blanco, consists of numerous rocks and ledges, some of which are marked by kelp. **Black Rock,** 1.2 miles southwestward of Cape Blanco Light, is the southernmost visible rock of Blanco Reef. **Pyramid Rock,** 1 mile westward of the light, is the northernmost visible rock of the reef, although a rocky patch uncovers about 3 feet 0.4 mile to the northward. Rocky patches, covered ½ to 6 fathoms, extend from 0.5 mile southwestward of Black Rock to 0.4 mile westward of Pyramid Rock.

In clear weather small vessels with local knowledge sometimes use the passage inside Orford Reef and between Orford Reef and Blanco Reef.

Cape Blanco projects about 1.5 miles from the general trend of the coast. It is a small bare tableland, terminating seaward in a cliff 225 feet high, with low land behind it. A large high rock lies close under the southern side of the cape. From seaward the cape is not prominent, hut from northward or southward, it appears like a moderately low bluff islet. The group of buildings at Cape Blanco is very prominent.

Cape Blanco Light (42°50.2′ N., 124°33.8′ W.), 245 feet above the water, is shown from a 59-foot white conical tower near the center of the flat part of the cape;

★ (3991) **OREGON—Port Orford—Coastal warning display station established.**—The U.S. Weather Bureau advises that a daytime storm warning display station has been established ou the dock at Port Orford in (approx.) 42°44′28″ N., 124°29′52″ W. C. P. 7

(N.M. 25/66.)

(L.N.M. 24 C.G., Seattle, May 27, 1966.)
C. & G.S. Chart 5952.
C. & G.S. Coast Pilot 7, 1963, pages 153, 278.

★ (8095) **OREGON—Coquille River—Channel depths amended.**—The following tabulation shows controlling depths at M.L.L.W. in the improved Coquille River Channel from surveys by the Corps of Engineers to Nov. 1966:

COQUILLE RIVER CHANNEL

Controlling depths in channels entering from seaward in feet at Mean Lower Low Water					Project dimensions		
Name of channel	Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Width (feet)	Length (nautical miles)	Depth M.L.L.W. (feet)
Entrance Channel *	8. 0	9. 0	11. 0	9–66	------	0. 24	13
Entrance Channel to Port Dock (43°07′16.5″ N., 124°24′46.1″ W.)	10. 0	10. 0	7. 0	11–66	200	0. 72	13
Thence to end of project	11. 0	13. 0	13. 0	11–66	150	0. 38	13

* The entrance channel is subject to frequent changes and the deepest water is not always on the range.

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(Supersedes N.M. 44(6899) 1966.)

(N.M. 53/66.)

(C. & G.S. CL–1570/66.)

C. & G.S. Chart **5971.**

C. & G.S. Coast Pilot 7, 1963, page **154.**

★ (6899) **OREGON—Coquille River—Channel depths amended.**—The following tabulation shows controlling depths at M.L.L.W. in the improved Coquille River Channel from a survey by the Corps of Engineers in Sept. 1966:

COQUILLE RIVER CHANNEL

Name of channel	Controlling depths in channels entering from seaward in feet at Mean Lower Low Water: Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (nautical miles)	Depth M.L.L.W. (feet)
Entrance Channel *	8. 0	9. 0	11. 0	9–66	------	0. 24	13
Entrance Channel to Port Dock (43°07′16.5″ N., 124°24′46.1″ W.)	12. 0	12. 0	12. 0	9–66	200	0. 72	13
Thence to end of project	12. 0	13. 0	13. 0	9–66	150	0. 38	12

* The entrance channel is subject to frequent changes and the deepest water is not always on the range.

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(Supersedes N.M. 44(6351) 1965; 23(3669) 1966.)

(N.M. 44/66.)

(C. & G.S. CL–1263/66.)

C. & G.S. Chart 5971.

C. & G.S. Coast Pilot 7, 1963, page 154.

★ (3669) **OREGON—Coquille River Entrance—Controlling depths.**—A vey by the Corps of Engineers in April 1966 shows controlling depths at M.L. in Coquille River Entrance Channel of 9 feet, 10 feet and 13 feet in the left side quarter, middle half and right outside quarter, respectively.

Approx. position, channel entrance: 43°07′31″ N., 124°26′04″ W.

(See N.M. 44 (6351) 1965.)

(C. & G.S. CL–565/66.)

C. & G.S. Chart **5971.**

C. & G.S. Coast Pilot 7, 1963, page **154.**

★ (6351) **OREGON—Coquille River—Channel depths amended.**—The following tabulation shows controlling depths at M.L.L.W. in the improved Coquille River Channel from a survey by the Corps of Engineers in Sept. 1965:

COQUILLE RIVER CHANNEL

Tabulated from surveys by the Corps of Engineers—survey of Sept. 13, 1965

Controlling depths in channels entering from seaward in feet at Mean Lower Low Water					Project dimensions		
Name of channel	Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Width (feet)	Length (nautical miles)	Depth M.L.L.W. (feet)
Entrance Channel [a]	9. 0	11. 0	10. 0	9–65	-----	0. 24	13
Entrance Channel to Port Dock (43°07′16.5″ N., 124°24′46.1″ W.)	11. 0	11. 0	11. 0	9–65	200	0. 72	13
Thence to end of project	11. 0	13. 0	13. 0	9–65	150	0. 38	

[a] The entrance channel is subject to frequent changes and the deepest wa is not always on the range.

Note.—The Corps of Engineers should be consulted for changing conditio subsequent to the above.

(Supersedes N.M. 38(5525) 1965.)

(N.M. 44/65.)

(C. & G.S. BP–68420.)
C. & G.S. Chart 5971.
C. & G.S. Coast Pilot 7, 1963, page 154.

★ (6352) **OREGON—Coquille River—Depths.**—A survey by the Corps Engineers in September 1965 shows depths at M.L.L.W. in Coquille River follows:

(*a*) A depth of 6 feet on the north edge of the improved entrance channel 43°07′27.2″ N., 124°25′43.1″ W.

Note.—The 10 foot depth charted about 35 yards northwestward should expunged.

(*b*) A depth of 15 feet about 25 feet off the face of the wharf in 43°07′26.4 N., 124°24′28.4″ W.

(N.M. 44/65.)

(C. & G.S. BP–68420.)
C. & G.S. Chart 5971.
C. & G.S. Coast Pilot 7, 1963, page 154.

★ (5525) **OREGON—Coquille River—Channel depths amended.**—The following tabulation shows controlling depths at M.L.L.W. in the improved Coquille River Channel from a report by the Corps of Engineers in July 1965:

COQUILLE RIVER CHANNEL

Tabulated from surveys by the Corps of Engineers—report of July 30, 1965

Controlling depths in channels entering from seaward in feet at Mean Lower Low Water					Project dimensions		
Name of channel	Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Width (feet)	Length (nautical miles)	Depth M.L.L.W. (feet)
Entrance Channel *	7. 0	10. 0	9. 0	7–65	-----	0. 24	13
Entrance Channel to Port Dock (43°07′16.5″ N., 124°24′46.1″ W.)	11. 0	11. 0	11. 0	4–65	200	0. 72	13
Thence to end of project	12. 0	13. 0	13. 0	4–65	150	0. 38	13

* The entrance channel is subject to frequent changes and the deepest water is not always on the range.

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(Supersedes N.M. 26(3752) 1965.)

(N.M. 38/65.)

(C. & G.S. CL–1199/65.)

C. & G.S Chart **5971.**

C. & G.S. Coast Pilot 7, 1963, page **154.**

★ (3752) **OREGON—Coquille River—Channel depths amended.**—The following tabulation shows controlling depths at M.L.L.W. in the improved Coquille River Channel from a report by the Corps of Engineers in April 1965:

COQUILLE RIVER CHANNEL

Tabulated from surveys by the Corps of Engineers—report of April 21, 1965

Controlling depths in channels entering from seaward in feet at Mean Lower Low Water					Project dimensions		
Name of channel	Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Width (feet)	Length (nautical miles)	Depth M.L.L.W (feet)
[a] Channel Entrance to Port Dock (43°07′16.5″ N., 124°24′46.1″ W.)	11. 0	11. 0	11. 0	4–65	200	0. 95	**13**
Thence to end of project	12. 0	13. 0	13. 0	4–65	150	0. 38	**13**

[a] The entrance channel is subject to frequent changes and the deepest water is not always on the range.

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(Supersedes N.M. 27(3449) 1964.)

(N.M. 26/65.)

(C. & G.S. CL–598/65.)

C. & G.S. Chart **5971.**

C. & G.S. Coast Pilot **7**, 1963, page **154.**

a radiobeacon is at the station. The tank and lookout tower at The Heads should not be mistaken for the light tower.

Numerous covered and visible rocks extend 0.5 mile or more northwestward from the cape.

Gull Rock, 1 mile northward of Cape Blanco Light, is surrounded by covered rocks. Its seaward face is black and rugged, and the summit has two knobs, the higher being to the southward. A rocky patch, covered 3 fathoms, lies 0.5 mile westward of Gull Rock.

Castle Rock, 1.5 miles northeastward of Cape Blanco Light and 300 yards off the mouth of **Sixes River,** rises abruptly from the sea and is readily made out 10 miles to seaward. Many low rocks and ledges are within 400 yards. Several rocky islets are to the west and northwest.

Blacklock Point is a precipitous rocky point 2.5 miles northward of Cape Blanco. The cliff is 157 feet high. A sharp high point, bordered by rocks, stretches out nearly 300 yards. A narrow curved line of rocks extends 0.8 mile west-southwestward from the point. A rock that breaks in heavy weather is 1 mile northwestward of the point. Rocky patches, covered 4 fathoms, are within 1.3 miles of the point in a westerly and northwesterly direction.

Chart 5802.—From Cape Blanco for 112 miles to Yaquina Head, the coast is remarkably straight and trends in a north by east direction. It differs considerably from the coast to the southward. The coastal mountains are much lower, the difference being more marked because of the high mountains inland. The shore consists of high yellow sand dunes and cliffs broken by bold rocky headlands of moderate height and backed by low pine-covered hills. There are few outlying dangers, the outermost being Blacklock Point, Coquille Rock, and Cape Arago.

From Blacklock Point the shore continues rocky with cliffs gradually decreasing in height for 1.5 miles northward, thence for about 11 miles the shore is a broad sandy beach backed by dunes and long narrow lakes. The tree line is at an average distance of 0.2 mile from the sea. From the end of the sand beach for 2 miles to the mouth of Coquille River, the shore again consists of rocky cliffs, 40 to 80 feet high, with several outlying rocks as much as 0.5 mile from shore. Covered dangers extend 1.6 miles westward from Coquille Point. The land directly behind this stretch of coast is comparatively flat and wooded, rising to heights of 1,000 feet in 2.5 to 3 miles.

Chart 5971.—Coquille River, 18 miles northward of Cape Blanco, is used for the shipment of lumber, railroad ties, and logs. The principal port is **Bandon,** on the southern bank of the river, 0.8 mile above the entrance.

Coquille Point is 0.6 mile southward of Coquille River entrance. Several rocky islets extend 0.5 mile off the point and rocks showing breakers in any swell extend 1.2 miles westward and a mile northwestward of the point. **Coquille Rock,** 1.6 miles northwestward of the point, is covered 28 feet and breaks in heavy weather.

A long, low area of shifting dunes is northward of the Coquille River entrance. The conical tower and dwelling of an abandoned lighthouse is near the inner end of the north jetty.

The entrance to Coquille River is protected by jetties; a marked dredged channel leads to the port facilities at Bandon. In April 1962, the controlling depth was 11½ feet to Bandon. The channel is subject to frequent change, and the deepest water is not always on the entrance range. Local knowledge is essential when the bar is rough. The reported depth above Bandon is about 6 feet to Coquille, 21 miles above the entrance.

The 375-foot long port dock at Bandon has a reported depth of 15 feet alongside the face. Lumber vessels occasionally load up to drafts of about 14 feet and then proceed to Coos Bay to finish loading. A small-craft basin has moorings for 150 boats.

Some groceries and marine hardware are available in Bandon. Water is piped to the wharves, but gasoline and diesel oil must be delivered by truck. There is a machine shop in Bandon; small boats have to go to Prosper for hauling out.

Coquille River, above Bandon, is used occasionally for rafting logs between the mills on the river and the railroad at Coquille. A highway bridge, 3 miles above the entrance, has a lift span with clearances of 28 feet down and 74 feet up; a power cable east of the bridge has a clearance of 72 feet. Special regulations for logging operations on the North Fork of Coquille River are given in **207.660,** Chapter 2.

Prosper, 4 miles above Coquille River entrance, is a deserted area of old piling and ruined lumber docks. A marine railway can haul out boats up to 45 feet in length and 10 tons.

A power cable across Coquille River, 18.5 miles above the entrance, has a clearance of 72 feet.

Coquille, 21 miles above the entrance, is the distributing center for several agricultural communities of the river valley and has railway connections with the interior.

Chart 5802.—Northward of the entrance to the Coquille River the sand dunes extend for about 4 miles and are then succeeded by cliffs. **Fivemile Point,** 6 miles northward of the river entrance, is a rocky cliff 60 feet high with a cluster of rocks, 10 to 40 feet high, extending more than 0.3 mile offshore.

Northward of Fivemile Point the coast consists of cliffs, 40 to 80 feet high, which rise to heights of 100 to 250 feet 2 miles southward of Cape Arago and are cut by deep gulches, named the **Seven Devils.** Numerous rocks of varying shapes and sizes border the beach.

South Cove, immediately under the southern point of Cape Arago, can be used as an anchorage in summer by small vessels with local knowledge.

Cape Arago, 29 miles northward of Cape Blanco, is an irregular jagged point projecting about a mile from the general trend of the coast. There are no high mountains immediately behind the cape, and it is conspicuous only when the mountains in the interior are obscured. The seaward face of the cape, 2.5 miles long in a northerly direction, is a narrow sparsely wooded tableland 50 feet high, with rugged and broken cliffs and outlying rocks

CAPE ARAGO LIGHT Gp. Fl. W., 20s 0.3s fl., 3.7s ec. 0.3s fl., 3.7s ec. 0.3s fl., 11.7s ec. 3 flashes.	2.5 miles north of cape and off south entrance to Coos Bay. 43 20.5 124 22.5	21 600, 000	16	White octagonal tower attached to building. 44 100	Not visible eastward of 035° and 249°. Light is displayed from 1 hour before sunset to 1 hour after sunrise. RADIOBEACON: Antenna 55 feet 166° from light tower. See p. XVII for method operation. HORN, diaphragm; 2 blasts ev 30s (1.5s bl-1.5s si-1.5s bl-25.5s si). Coast Guard station inside Coos Head, south side of entrance to bay. 1866–1934 40/66.

★ (7446) **OREGON—Coos Bay and Isthmus Slough—Channel depths amended.**—Surveys by the Corps of Engineers show the following:

COOS BAY AND ISTHMUS SLOUGH CHANNEL DEPTHS

Tabulated from surveys by the Corps of Engineers—report of Nov. 1, 1966

Name of channel	Controlling depths in channels entering from seaward in feet at mean lower low water: Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (nautical miles)	Depth M.L.L.W. (feet)
Entrance Channel	30.0	30.0	25.0	9–66	------	1.5	40–30
Thence to North **Bend**	24.0	27.0	25.0	9, 10–66	300	8.5	30
North Bend to Coos Bay	22.0	26.0	24.0	4, 5, 6, 8, 10–66	300	3.4	30
Coos Bay to Isthmus Slough	30.0	30.0	28.0	5–66	300	.6	30
Isthmus Slough	a11.5	a14.0	a9.0	6–58; 2–61	150	1.9	22

a With local knowledge a depth of 20 feet was available through this reach.

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(N.M. 48/66.)

(C. & G.S. CL–1409/66.)

C. & G.S. Chart **5984.**

C. & G.S. Coast Pilot 7, 1963, pages **155,** 156.

★ (5100) **OREGON—Coos Bay and Isthmus Slough—Channel depths amended.**—Surveys by the Corps of Engineers show the following changes to May 1966:

Name of channel	Controlling depths in channels entering from seaward in feet at mean lower low water: Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (nautical miles)	Depth M.L.L.W. (feet)
Entrance Channel	28. 0	30. 0	30. 0	5–66	------	1. 5	40–30
Thence to North Bend	26. 0	28. 0	26. 0	4, 5–66	300	8. 5	30
North Bend to Coos Bay	21. 0	28. 0	23. 0	4–65; 4–66	300	3. 4	30
Coos Bay to Isthmus Slough	30. 0	30. 0	30. 0	5–66	300	. 6	30
Isthmus Slough	[2] 11. 5	[2] 14. 0	[2] 9. 0	6–58; 2–61	150	1. 9	22

[2] With local knowledge a depth of 20 feet was available through this reach.

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(Supersedes N.M. 18(2805), 22(3507) 1966.)

(N.M. 32/66.)

(C. & G.S. CL–859/66; BP–69336.)

C. & G.S. Chart **5984.**

C. & G.S. Coast Pilot 7, 1963, pages **155,** 156.

★ (6255) C
Whistle Buoy
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(L.N.M. 58,
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★ (6256)
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★ (6900) **OREGON—Coos Bay—Channel depths amended.**—Surveys by the Corps of Engineers show the following changes to Oct. 1, 1966:

Name of channel	Controlling depths in channels entering from seaward in feet at Mean Lower Low Water: Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (nautical miles)	Depth M.L.L.W. (feet)
Entrance Channel to North Bend	26. 0	30. 0	25. 0	4, 5, 9–66	300	8. 5	30

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(See N.M. 41(6416) 1966.)

(N.M. 44/66.)

(C. & G.S. CL–1263/66.)

C. & G.S. Chart **5984.**

C. & G.S. Coast Pilot 7, 1963, pages **155,** 156.

★ (3507) **OREGON—Coos Bay and Isthmus Slough—Channel depths amended.**—Surveys by the Corps of Engineers show the following changes to April 1966:

Name of channel	Controlling depths in channels entering from seaward in feet at Mean Lower Low Water: Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (nautical miles)	Depth M.L.L.W. (feet)
[illegible] channel to [illegible]nd	26. 0	28. 0	24. 0	9–65; 4–66	300	8. 5	30
[illegible] to Coos Bay	21. 0	28. 0	23. 0	4–65; 4–66	300	3. 4	30

Note.—[illegible]e Corps of Engineers should be consulted for changing conditions [illegible]bsequent to the above.
(See N.M. 18(2805) 1966.)

(N.M. 22/66.)

(C. & G.S. CL–565/66.)
C. & G.S. Chart 5984.
C. & G.S. Coast Pilot 7, 1963, pages 155, 156.

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★ (6255) **OREGON—Coos Bay—Buoy changed.**—Guano Rock Lighted Whistle Buoy 4 (43°21.2′ N., 124°20.3′ W. approx.) has been changed to show a *flashing red* light every *4 seconds*, flash *0.4 second*.

(N.M. 40/66.)

(L.N.M. 58, C.G., Seattle, Sept. 8, 1966.)
C. & G.S. Chart 5984.
C.G. Light List, Vol. III, 1966, No. 1259.
C. & G.S. Coast Pilot 7, 1963, page 155.

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★ (5993) **OREGON—Coos Bay and Isthmus Slough—Channel depths amended.**—Surveys by the Corps of Engineers show the following changes to [illegible]g. 1, 1966:

Name of channel	Controlling depths in channels entering from seaward in feet at Mean Lower Low Water: Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (nautical miles)	Depth M.L.L.W. (feet)
orth Bend to Coos Bay	23. 0	25. 0	18. 0	4–66	300	3. 4	30

Note.—The Corps of Engineers should be consulted for changing conditions [illegible]bsequent to the above.
(See N.M. 32(5100) 1966.)

(N.M. 38/66.)

(C. & G.S. CL–990/66.)
C. & G.S. Chart 5984.
C. & G.S. Coast Pilot 7, 1963, pages 155, 156.

★ (2805) **OREGON—Coos Bay and Isthmus Slough—Channel depths amended.**—Surveys by the Corps of Engineers show the following changes to March 1966:

Channel	Controlling depths in channels entering from seaward in feet at mean lower low water: Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (nautical miles)	Depth M.L.L.W. (feet)
Entrance Channel	30. 0	29. 0	30. 0	8, 9–65	------	1. 5	40–30
Empire to North Bend	27. 0	27. 0	24. 0	8, 9–65	300	8. 5	30
North Bend to Coos Bay	21. 0	30. 0	25. 0	4, 5, 9–65	300	3. 4	30
Coos Bay to Isthmus Slough	24. 0	25. 0	a20. 0	3–66	300	. 6	30
Isthmus Slough	b11. 5	b14. 0	b 9. 0	6–58; 2–61	150	1. 9	22

a The quarter has shoaled from Isthmus Slough Light 43 northward for about 100 yards; a depth of 25.0 feet was available in the remainder of the quarter. With local knowledge a depth of 20 feet was available through this reach.

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(Supersedes N.M. 26(3753) 1965.)

(N.M. 18/66.)

(C. & G.S. CL–424/66; BP–69336.)

C. & G.S. Chart **5984.**

C. & G.S. Coast Pilot 7, 1963, pages **155, 156.**

★ (6256) **OREGON—Coos Bay—Buoy moved.**—Coos Bay Lighted Buoy 12 (43°23.0′ N., 124°17.4′ W. approx.) has been relocated in 30 feet of water about 350 yards 036° from Sitka Dock Light (43°22.6′ N., 124°17.8′ W. approx.).

(N.M. 40/66.)

(L.N.M. 58, C.G., Seattle, Sept. 8, 1966.)

C. & G.S. Chart **5984.**

C.G. Light List, Vol. III, 1966, No. **1270.**

C. & G.S. Coast Pilot 7, 1963, page 155.

★ (5099) **OREGON—Coos Bay—Controlling depth.**—The Corps of Engineers reports in June 1966 a controlling depth at M.L.L.W. of 30 feet for a width of 600 feet in the improved Upper Turning Basin at 43°21′42″ N., 124°12′24″ W.

(Supersedes N.M. 11 (1636) 1966.)

(N.M. 32/66.)

(C. & G.S. CL–733/66.)

C. & G.S. Chart **5984.**

C. & G.S. Coast Pilot 7, 1963, page 155.

★ (3753) **OREGON—Coos Bay and Isthmus Slough—Channel depths amended.**—Surveys by the Corps of Engineers show the following changes to May 1965.

Controlling depths in channels entering from seaward in feet at mean lower low water					Project dimensions		
Name of channel	Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Width (feet)	Length (nautical miles)	Depth M.L.L.W. (feet)
Entrance Channel	29. 0	30. 0	28. 0	4–65	------	1. 5	40–30
Thence to North Bend	26. 5	29. 0	25. 0	3, 4–65	300	8. 5	30
North Bend to Coos Bay	21. 0	30. 0	25. 0	3, 4, 5–65	300	3. 4	30
Coos Bay to Isthmus Slough	25. 0	26. 5	25 0	5–65	300	0. 6	30
Isthmus Slough	[a] 11. 5	[a] 14. 0	[a] 9. 0	6–58; 2–61	150	1. 9	22

[a] With local knowledge a depth of 20 feet was available through this reach.

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(Supersedes N.M. 46(6103)1964.)

(N.M. 26/65.)

(C. & G.S. CL–680/65.)

C. & G.S. Chart **5984.**

C. & G.S. Coast Pilot 7, 1963, pages **155,** 156.

of the same height as the cliff. Immediately off the cape are reefs extending northwestward for about a mile. A small cove near the northern end, inside the reefs, is sometimes used by small boats with local knowledge.

Chart 5984.—Cape Arago Light (43°20.5′ N., 124°22.5′ W.), 100 feet above the water, is shown from a 44-foot white octagonal tower attached to a building on a rocky, partially wooded island close inshore, 2.5 miles northward of the cape. A radiobeacon and fog signal are at the station. See Appendix for **storm warning display.**

Baltimore Rock, 0.6 mile northwestward of Cape Arago Light, is covered 11 feet and usually breaks. It is the outermost rock of a covered ledge extending northwestward from the lighthouse island. A bell buoy is 450 yards northward of the rock.

Coos Head, 229 feet high, 1.8 miles east-northeastward of Cape Arago Light, is on the south side of the entrance to Coos Bay. The cliffs are about 100 feet high and terminate in several small rocky points with sand beaches between them. A Coast Guard station is on the southern point at the entrance 0.3 mile eastward of Coos Head. The buildings of the U.S. Naval facility for oceanographic research are conspicuous on the bluffs just southwestward of Coos Head.

Coos Bay, 33 miles northward of Cape Blanco, is used as a harbor of refuge and can be entered at any time except in extreme weather. From the entrance, the bay extends northeastward for 7 miles with widths of 0.3 to 1 mile, then bends southeastward for 4 miles into a shallow basin over 1.5 miles wide, surrounded by marshland and intersected by several sloughs.

Prominent features.—Coos Head, Umpqua River Light, and Cape Arago Light are good guides to the entrance. The sand dunes northward toward Umpqua River are prominent. The entrance to the bay has two jetties extending about 1,200 yards seaward from the shoreline. A lighted whistle buoy is 1.8 miles west-northwestward of the entrance. The channels are marked with lighted ranges, lights, buoys, and daybeacons.

Channels.—In 1962 the controlling depths in the dredged channels were: 30 feet on the bar, thence 26 feet to the turning basin at the city of Coos Bay; 20 feet in the Isthmus Slough to Millington with local knowledge; and 9 feet to the small-boat basin north of Charleston.

Anchorage can be had almost anywhere in the bay below the railroad bridge, depending upon the draft. Outside the bay vessels have ridden out southeasterly gales by anchoring close to Cape Arago in 30 to 36 feet, but this is dangerous if the wind shifts to the southwest.

Dangers.—Guano Rock, on the southern side of the entrance channel and 280 yards northwestward of Coos Head, uncovers only at extreme low water.

A submerged jetty extends 500 yards off the east shore of Coos Bay just inside the entrance, 0.8 mile northeastward of Coos Head. In entering with a strong northwesterly wind, large vessels have difficulty in making the turn and may find themselves being set toward the submerged jetty.

Bridges.—A railroad bridge across Coos Bay, 7.5 miles above the entrance, has a swing span with a clearance of 12 feet. A fixed highway bridge, 8.1 miles above the entrance, has a clearance of 123 feet across the main channel. A power cable, 100 yards westward of the fixed bridge, has a clearance of 167 feet.

Drawspan regulations for bridges in Coos Bay are given in **203.720,** Chapter 2.

Tides.—The mean range of tide at Coos Bay is 5.6 feet. The range between mean lower low water and mean higher high water is 7.3 feet. A range of about 12 feet may occur at the time of maximum tides.

Currents.—A short series of current observations in the entrance taken during the month of September indicated a velocity of about 2 knots. The greatest observed ebb velocity was a little over 3 knots. Predictions for the entrance may be obtained from the Tidal Current Tables. During long runouts an ebb current of 5 knots has been reported at Guano Rock.

See Appendix for **storm warning displays.**

Routes.—Vessels should make sure of the entrance range before standing close in. There is usually a current sweeping either northward or southward just off the jetties, and this current should be guarded against. The entrance ranges should be watched carefully until clear of all dangers. The southerly current is often encountered during the summer. With strong southerly winds during the winter, the current sometimes sets to the northward.

Approaching from any direction in thick weather, great caution is essential. The currents are variable and uncertain. Velocities of 3 to 3.5 knots have been observed offshore between Blunts Reef and Swiftsure Bank, and greater velocities have been reported. The most favorable time for crossing the bar is on the last of the flood current, and occasionally it is passable only at this time.

Pilotage.—Pilots are available and can be called by radio, directed to the Coos Bay Pilots' Association.

Quarantine regulations of the U.S. Public Health Service are enforced. Vessels with communicable diseases on board should not pass Empire until the quarantine officer has been notified and permission granted. An outpatient office is in Coos Bay.

Customs.—Coos Bay is the port of entry for southern Oregon; marine documents are issued. Vessels subject to customs usually proceed to the dock.

Supplies.—Fuel oils, water, marine hardware, and groceries can be obtained at Coos Bay and North Bend.

Repairs.—Machine shops are available. There are several marine ways in the area, the largest of which has a capacity of 300 tons and can haul out boats up to 125 feet in length and 10 feet in draft.

Communication is by rail, truck, bus, and air. No passenger vessels enter the port, although a few passen-

★ (8096) **OREGON—Umpqua River—Channel depths amended.**—The Corps of Engineers report the following changes—report of Dec. 1, 1966:

Name of channel	Controlling depths in channels entering from seaward in feet at Mean Lower Low Water: Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (naut. miles)	Depth M.L.L.W. (feet)
Umpqua River:							
Entrance Channel	16. 0	21. 0	22. 0	10-66	------	0. 8	26
Entrance to 3-Mile Directional Light	20. 0	19. 0	19. 0	10–66	200	6. 87	22

(See N.M. 32(5102) 1966.)

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(N.M. 53/66.)

(C. & G.S. CL–1570/66.)

C. & G.S. Charts **6004.**

C. & G.S. Coast Pilot 7, 1963, pages **155, 156.**

★ (5208) **OREGON—Tillamook Bay and Bar—Umpqua River—Channel depths amended.**—The Corps of Engineers report the following changes on September 4, 1964:

Name of channel	Controlling depths in channels entering from seaward in feet at Mean Lower Low Water: Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (naut. miles)	Depth M.L.L.W. (feet)
1. Tillamook Bay and Bar:							
Entrance Channel	13. 0	15. 0	16. 0	6–64	200	1. 3	18
Garibaldi Channel	13. 0	13. 0	13. 0	6–64	200	1. 9	18
Turning basin [a]	([a])	([a])	([a])	------	500	0. 26	18
2. Umpqua River:							
Entrance Channel	24. 0	23. 0	21. 0	8–64	------	0. 8	26
Entrance to 3-Mile Directional Light	21. 0	21. 0	21. 0	8–64	200	6. 87	22
3-Mile Directional Light to Reedsport	17. 0	16. 0	19. 0	8–64	200	2. 7	22
Reedsport Turning Basin	22. 0	22. 0	16. 0	8–64	600	0. 2	22

[a] Turning basin is not maintained.

(Supersedes N.M. 25(3219) 1963.)

(See N.M. 25(3217); 40(5130) 1963.)

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(N.M. 40/64.)

(C. & G.S. CL–1173/64.)

C. & G.S. Charts **6112**(1), **6004**(2).

C. & G.S. Coast Pilot 7, 1963, pages **161, 156.**

★ (5102) **OREGON—Umpqua River—Channel depths amended.**—A report by the Corps of Engineers in June 1966 shows the following changes:

UMPQUA RIVER CHANNEL DEPTHS

Tabulated from surveys by the Corps of Engineers—surveys of May 1966

Controlling depths in channels entering from seaward in feet at mean lower low water					Project dimension		
Name of channel	Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Width (feet)	Length (nautical miles)	Depth M.L.L.W. (feet)
Entrance Channel	15	17	19	5–66	------	0. 8	26
Entrance to 3-Mile Directional Light	22	22	22	5–66	200	6. 87	22
3-Mile Directional Light to Reedsport	13	14	13	5–66	200	2. 7	22
Reedsport Turning Basin	22	22	21	5–66	600	0. 2	22

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(See N.M. 50(7299) 1965.)

(N.M. 32/66.)

(C. & G.S. CL–733/66.)

C. & G.S. Chart **6004.**

C. & G.S. Coast Pilot 7, 1963, page 156.

★ (937) **OREGON—Umpqua River—Gardiner—Light established.**—Gardiner Paper Mill Dock Light showing *flashing white* every *5 seconds*, flash *0.5 second*, of 90 candlepower, has been established in 13 feet of water, off the southeast end of an oil dock, in (approximately) 43°44′29.5″ N., 124°07′11″ W. The light is exhibited 13 feet above the water from a 19-pile dolphin painted black.

Note.—The above light is privately maintained by the International Paper Company, Gardiner Paper Mill, Gardiner, Oregon.

(N.M. 8/64.)

(L.N.M. 6, C.G., Seattle, Jan. 31, 1964.)
C. & G.S. Chart **6004.**
C.G. Light List, Vol. III, 1963, No. **942.5.**
C. & G.S. Coast Pilot 7, 1963, page **156.**

gers occasionally are carried on lumber ships. There is also considerable local traffic in smaller vessels to points north and south.

South Slough, shoal and navigable only by small boats, extends 4 miles southward from its junction with Coos Bay near the entrance.

A small-boat basin, operated by the port of Coos Bay, is 0.3 mile northward of **Charleston,** across the slough from **Barview.** The basin is used by commercial and sport fishermen; water aud electricity are obtainable at the floats, and launching ramps for small boats are available.

The highway bridge over South Slough, 0.5 mile southward of the entrance, has a swing span with a clearance of 10 feet. A power cable southward of the bridge has a clearance of 76 feet.

The western shore of Coos Bay as far as the bend is formed by a sandspit covered with dunes, partly wooded, and in some places as much as 90 feet bigh. On the eastern shore and above the bend are low rolling hills covered with timber.

Empire is on the eastern shore of the bay, 4 miles above the entrance. The sawmill wharf has a 300-foot berthing space with 17 feet alongside. There are several prominent oil tanks. A private dock, westward of the tanks, has loading facilities for lumber and oil. At the pulp mill, 1.5 miles below Empire, a trestle leads to a loading wharf with a frontage of 500 feet and 20 feet alongside. The southward corner of the wharf is marked by a light. The pilot boat is usually berthed here.

Haynes Inlet and North Slough, which join the bay through a common entrance on the northern side, are navigated by small boats. A causeway with a fixed bridge having a clearance of 18 feet joins the state highway fixed bridge over Haynes Inlet; the latter has a clearance of 29 feet. The power cable over the common entrance of the two streams has a clearance of 67 feet.

Coos Bay and North Bend form practically one continuous city extending along the shore from North Point to the mouth of Coalbank Slough. The waterfront between these two towns is called **The Strip** locally. Oil docks and lumber mills are along the waterfront.

North Bend, 9.5 miles above the entrance, is a prosperous town with sawmills and factories. Considerable lumber is shipped from here.

Coos Bay, 12 miles above the entrance, is tbe principal city in the bay. It is the distributing center for a considerable section of the country devoted to lumbering, dairying, and agriculture. There are ample wharfage facilities with depths of 9 to 30 feet.

Three sloughs empty into Coos Bay between the city of Coos Bay and Coos River. **Coalbank Slough** is unused. **Isthmus Slough** is used for logging operations to **Millington.** The highway bridge across the slough has a bascule span with a clearance of 18 feet. The power cable, 0.9 mile south of the bridge, has a clearance of 150 feet. **Catching Slough** is navigable for several miles by light-draft vessels and is used mainly for logging operations. The highway bridge across the mouth has a 50-foot swing span with a clearance of 11 feet. The power cables for 1.5 miles below the bridge have a least clearance of 58 feet; other cables upstream have a least clearance of 12 feet.

Coos River empties through two channels into the bay at its head. The northern unmarked channel follows the eastern side of the bay and empties abreast of North Bend. **Marshfield Channel,** marked by a lighted range and lights, crosses the flats and empties abreast the city of Coos Bay.

Coos River divides at a point 3.2 miles above **Graveyard Point** into **South Fork** and **Millicoma River.** A highway bridge across the river, 0.9 mile above Graveyard Point, has a lift span with clearances of 28 feet down and 54 feet up. **Allegany,** 7.5 miles above the confluence, is the head of navigation on Millicoma River. **Dellwood,** 8.2 miles above the confluence, is tbe head of navigation on Soutb Fork.

The controlling depth in Coos River is about 4 feet to the junction of Millicoma River and Sonth Fork, tbence 2 to 3 feet to the head of navigation on each waterway.

A fixed highway bridge across Sonth Fork, 0.7 mile above the confluence, bas a clearance of 39 feet. Special regulations for logging in the tidal section of South Fork are given in **207.663,** Chapter 2.

Chart 5802.—From Coos Bay for 19.5 miles to Umpqua River, the coast consists of sand beaches and dunes backed by moderately low hills. The mouth of **Tenmile Creek** is 13.7 miles northward of Coos Head.

Chart 6004.—Umpqua River is entered 20 miles northward of Cape Arago Light. Considerable lumber, sand, gravel, crushed rock, fish, and farm and dairy produce are shipped, and general merchandise is received. The port of entry is at Coos Bay.

The southern point at the entrance to the river is marked by sand dunes, partly covered with trees, that reach elevations of 300 feet. About a mile below the entrance is a bright bare spot in the dunes that shows prominently among the trees. Shifting sand dunes about 100 feet high are on the spit on the north side of the entrance.

Umpqua River Light (43°39.8′ N., 124°11.9′ W.), 165 feet above the water, is shown from a 65-foot white conical tower on the southern entrance point. Trees surround the light, but the lantern shows over the tops. A Coast Guard station is near the light.

The entrance to the river is protected by jetties. The south jetty extends 1,200 yards seaward from the shoreline. About 350 yards of the outer end is submerged; a seasonal gong buoy is 400 yards off the end. The north jetty extends 1,100 yards seaward from the shoreline. A lighted whistle buoy is 0.8 mile westward of the end of the north jetty. The channels are marked with lighted ranges, lights, and buoys. The channel over the bar is reported to be shoalest usually during September. Later in the season, the river cuts a deeper channel through the bar.

A Federal project provides for depths of 26 feet through the entrance and thence 22 feet to Gardiner and Reedsport, but depths over the bar are nsually about 21 feet, and the

★ (1062) **OREGON—Umpqua River—Salmon Harbor—Fog signal changed.**—The fog signal at Salmon Harbor Entrance Light 2 has been changed to seasonal operation. The fog signal was temporarily discontinued on January 26, 1966, and will be placed in operation during the period of April 30 through November 1 each year henceforth.

Approx. position: 43°41.1′ N., 124°10.8′ W.

(See N.M. 20(2845) 1965.)

(N.M. 7/66.)

(L.N.M. 4, C.G., Seattle, Jan. 18, 1966.)
C. & G.S. Chart **6004.**
C.G. Light List, Vol. III, 1965, No. **1318.**
C. & G.S. Coast Pilot 7, 1963, page 157.

★ (6203) **OREGON—Siuslaw River—Daybeacon changed and renumbered.**—Siuslaw River Channel Daybeacon 16 has been renumbered *15*. The daybeacon now consists of a black square daymark on a pile equipped with a green reflector.

Approx. position: 43°58′55″ N., 124°07′27″ W.

(N.M. 43/65.)

(L.N.M. 68, C.G., Seattle, Sept. 30, 1965.)
C. & G.S. Chart **6023.**
C.G. Light List, Vol. III, 1965, page **86.**
C. & G.S. Coast Pilot 7, 1963, page 157.

★ (5209) **OREGON—Siuslaw River—Controlling depths amended.**—Surveys by the Corps of Engineers show controlling depths at M.L.L.W. in the improved channel entering the Siuslaw River as follows: In August 1964 a depth of 12 feet for a width of 200 feet from the channel entrance to a point in 44°01′05″ N., 124°08′06″ W.

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(See N.M. 43(5535) 1963.)

(N.M. 40/64.)

(C. & G.S. CL–821/64.)
C. & G.S. Chart **6023.**
C. & G.S. Coast Pilot 7, 1963, page **157.**

★ (6244) **OREGON—Siuslaw River—Controlling depths amended.**—Surveys by the Corps of Engineers show controlling depths at M.L.L.W. in the improved channel in Siuslaw River as follows: In October 1964 a depth of 7 feet for a width of 150 feet from a point in 43°57′55.5″ N., 124°06′20″ W. to the end of the project.

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(See N.M. 43(5535) 1963, 40(5209) 1964.)

(N.M. 47/64.)

(C. & G.S. CL 1393/64.)
C. & G.S. Chart **6023.**
C. & G.S. Coast Pilot 7, 1963, page **157.**

★ (3597) **OREGON—Siuslaw River—Controlling depths.**—Surveys by the Corps of Engineers show controlling depths at M.L.L.W. in the improved channel entering the Siuslaw River as follows: In May 1964 a depth of 8 feet for a width of 300 feet from the channel entrance to a point in 44°01′05″ N., 124°08′06″ W.; thence in September 1962 and May 1964 a depth of 12 feet for a width of 200 feet to Daybeacon 12; thence in March 1964 a depth of 9½ feet for a width of 200 feet to the turning basin; thence a depth of 9 feet for a width of 200 feet in the turning basin and a depth of 9 feet for a width of 150 feet to the end of the project.

(Supersedes N.M. 23(2916) 1964.)

Note.—(*a*) A depth of 14 feet was available in the northwest half of the basin.

(*b*) The Corps of Engineers shonld be consulted for changing conditions subsequent to the above.

(N.M. 28/64.)

(C. & G.S. CL–821/64.)

C. & G.S. Chart **6023.**

C. & G.S. Coast Pilot 7, 1963, page **157.**

controlling depths thence to Gardiner and Reedsport are usually not over 15 feet.

See Appendix for **storm warning displays.**

Pilotage and towage.—Pilots can be arranged for by radio. There are several diesel tugs available for work on the bar.

Supplies.—Groceries, water, gasoline, and fuel oil for launches may be obtained at Reedsport.

Repairs.—A repair yard at Reedsport can hoist craft up to 250 tons, provided the length is not over 99 feet; general repairs are made to hulls and machinery. The shop can machine shafts up to 28 inches in diameter and 8 feet in length. In 1962, this firm was completing a drydock across the river.

Winchester Bay, locally referred to as "Salmon Harbor," is a small cove on the eastern bank of Umpqua River, 1.5 miles above the entrance. **Ork Reef,** a patch of rocks and sand covered 3½ feet, is near the northern end of the bay. A breakwater on the western side of the bay makes it an excellent harbor for small craft. The controlling depth in the entrance channel is about 10 feet; the north side of the entrance channel has shoaled to less than 6 feet. A fish wharf with a cold storage and ice plant on the outer end is here. Float landings are available for commercial and sport fishing. Water, electricity, gasoline, and fuel are available, as well as launching ramps for small boats. The village of Winchester Bay is a fishing resort.

Gardiner, on the northeastern bank of the river, 8.5 miles inside the entrance, is the site of a large lumbermill. In 1962, construction was underway on a large papermill at Gardiner, including a dredged channel alongside the property.

Reedsport, on the southwestern bank of the river, 10 miles inside the entrance, is a station on the railroad and the principal town on the lower river. Considerable lumber is shipped by the two sawmills. The port wharf has 23 feet alongside the loading face. Lumber vessels load to a maximum draft of 18½ feet.

The highway bridge, crossing the river at the lower end of the turning basin at Reedsport, has a swing span with a clearance of 29 feet. Just west of the bridge is a power cable with a clearance of 152 feet; the least clearance of cables above the highway bridge is 95 feet. The railroad bridge, 500 yards above the highway bridge, has a swing span with a clearance of 16 feet. Drawspan regulations for these bridges are given in **203.725,** Chapter 2.

A cutoff channel 2 to 4 feet deep, marked by two lights across the flats northwesterly from Bolon Island, is a nearly straight passage between Reedsport and Gardiner. A lumber dock is on the southwest end of **Bolon Island.**

At high tide Umpqua River is navigable by vessels of 6-foot draft to **Scottsburg,** 14.8 miles above Reedsport.

Scholfield Creek enters Umpqua River northward of Reedsport. A fixed highway bridge with a clearance of 20 feet crosses the creek 0.9 mile above the mouth. A fixed railroad bridge with a 30-foot span clearance of 16 feet crosses the creek 2 miles above the mouth.

Smith River enters Umpqua River from the northeastward at Reedsport. The controlling depth is about 5 feet for 5 miles above the mouth, thence 2 feet to **Sulphur Springs Landing,** 18 miles above the mouth. The highway bridge, 2.5 miles above the mouth, has a retractile span with a clearance of 22 feet.

Chart 5802.—From Umpqua River for 21 miles to Siuslaw River, the coast is straight and consists of sand dunes broken only by the mouths of **Threemile Creek, Tahkenitch Creek, Siltcoos River,** and the stream from **Cleawox Lake.**

Chart 6023.—Siuslaw River is entered 42 miles northward of Cape Arago Light and 7.5 miles southward of Heceta Head Light. The river has some logging operations and finished lumber is barged to Pacific ports. The port of entry is at Coos Bay.

Cannery Hill, on the east side of Siuslaw River 1 mile above the entrance, is wooded and prominent from offshore. The entrance to the river is protected by jetties and navigational aids mark the channel to a mile above Florence. In 1962 the controlling depth was 11 feet over the bar, thence 8 feet to Cushman, 6.5 miles above the mouth. The bar is narrow and the depths vary greatly because of storms and freshets.

Light-draft vessels can go to **Mapleton,** 17 miles above the mouth, but the channel is narrow and crooked.

Florence is a small town on the northern bank of the river 4 miles inside the entrance. Pilots and tugs are available. There are a port dock and a fish dock; fish are shipped by truck. Gasoline, oil, water, and some groceries are obtainable. Minor repairs can be made. See Appendix for **storm warning display.**

Just east of the port dock is a small-boat basin locally known as Holiday Harbor. Launching ramps and moorage are available for pleasure craft. Electricity, water, gasoline, and fuel can be obtained.

Glenada is a small town on the southern bank of the river opposite Florence. The river is crossed here by a double-leaf bascule highway bridge with a clearance of 17 feet. A power cable with a clearance of 88 feet crosses the river 1 mile above the bridge.

Cushman, on the northern bank of the river, 2.5 miles above Florence, has lumber and shingle mills. The products from these mills are shipped by rail and barge. The marine ways here can handle craft up to 25 tons. The railroad bridge across the river, 1 mile above Cushman, has a swing span with a clearance of 15 feet.

Operating regulations for bridges on the Siuslaw River are given in **203.730,** Chapter 2.

Chart 5802.—From Siuslaw River for 7.5 miles to Heceta Head, the coast is composed of sand dunes that are quite conspicuous in contrast with the dark trees partly covering them.

Heceta Head, 28.5 miles northward of Umpqua River Light, has a seaward face 2.5 miles long with nearly vertical cliffs 100 to 200 feet high. The summit of the head, which reaches an elevation of 1,000 feet in 0.5 mile from the cliffs, is covered with grass and a few pines. A sharp

★ (7869) **OREGON—Yaquina Bay—Storm warning display station information.**—1. The storm warning display station at Yaquina Head Light (**44°40.6'** N., 124°04.7' W. approx.) has been discontinued.

2. A day and night storm warning display station has been established at the lookout tower in (approx.) 44°37'27'' N., 124°03'42'' W.

(N.M. 51/66.)

(L.N.M. 71, 72, C.G., Seattle, Nov. 25, Dec. 1, 1966.)
C. & G.S. Charts **6055, 6056, 5802, 5902.**
C.G. Light List, Vol. III, 1966, Nos. **89, 1344.**
C. & G.S. Coast Pilot 7, 1963, pages **158, 278.**

★ (6068) **OREGON—Stonewall Bank—Buoy moved.**—Oregon State University advises that the oceanographic instruments previously temporarily placed in 44°29' N., 124°27' W. have been relocated in 44°29'09'' N., 124°26'05'' W. The lighted buoy, painted red, equipped with a radar reflector, and showing a *flashing white* light, has been relocated to mark the new position. Mariners are requested to keep clear of the buoy and instruments and not to approach closer than one-half mile.

(Supersedes N.M. 39(5638) 1965.)

(N.M. 42/65.)

(L.N.M. 67, C.G., Seattle, Sept. 28, 1965.)
C. & G.S. Charts 6056, 5802, 5022, 5052.
C. & G.S. Coast Pilot 7, 1963, page 158.

★ (5240) **OREGON—Yaquina Bay—Buoy changed.**—Yaquina Bay Entrance Lighted Bell Buoy 1 (44°36'17" N., 124°05'48" W. approx.) has been changed to show a *flashing white* light every *4 seconds* of 120 candlepower.

(N.M. 33/66)

(L.N.M. 47, C.G., Seattle, July 21, 1966.)
C. & G.S. Charts **6055, 6056, 5802.**
C.G. Light List, Vol. III, 1965, No. **1346.**
C. & G.S. Coast Pilot 7, 1963, page 158.