★ (5241) **OREGON—Yaquina Bay—Buoy established.**—Yaquina Bay Channel Lighted Bell Buoy 5, painted black, equipped with a radar reflector, and showing a *flashing white* light every *4 seconds* of 120 candlepower, previously temporarily established, has been permanently established in 26 feet of water about 1,640 yards 245°30′ from Yaquina Bay Entrance Range Front Light 8 (44°37.1′ N., 124°03.6′ W. approx.).

(See N.M. 27 (4322) 1966.)

(N.M. 33/66.)

(L.N.M. 43, C.G., Seattle, July 7, 1966.)
C. & G.S. Charts **6055, 6056.**
C.G. Light List, Vol. III, 1965, No. 1348.11.
C. & G.S. Coast Pilot 7, 1963, page 158.

★ (5103) **OREGON—Yaquina Bay—Channel depths amended.**—The following tabulation shows controlling depths at M.L.L.W. in the improved Yaquina Bay Channel from a report by the Corps of Engineers in June 1966.

YAQUINA BAY CHANNEL

Tabulated from surveys by the Corps of Engineers—report of June 1966

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 (nautical miles)	Depth M.L.L.W. (feet)
Entrance Channel to Highway Bridge	18	20	16	5–66	300	1. 34	26–20
Highway Bridge to Turning Basin	20	20	20	5–66	300	0. 83	20

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

(Supersedes N.M. 26(3755) 1965.)

(N.M. 32/66.)

(C. & G.S. CL–733/66.)

C. & G.S. Chart **6055.**

C. & G.S. Coast Pilot 7, 1963, pages 158, **159.**

black conical rock, 180 feet high, marks the extreme western and northern part of the head, and is easily made out from either northward or southward. **Cox Rock,** close to the southern part of the head, is conical and usually white on top with bird droppings.

Heceta Head Light (44°08.3′ N., 124°07.6′ W.), 205 feet above the water, is shown from a 56-foot white conical tower on a bench cut in the high bluff near the western extremity. Because of the high bluff northward of the light, vessels from northward will not make out the tower or buildings until abreast the station.

Heceta Bank, 70 miles north by west of Cape Blanco and 30 miles offshore west of Heceta Head, covers an irregular area about 30 miles long and 10 miles wide. The least depth on the bank is 25 fathoms, but the depths are irregular. Northward and southward of the bank the depths are considerably greater.

For 9 miles from Heceta Head to Cape Perpetua, the coast consists of high broken rocky cliffs, except for the first 2 miles which are composed of much lower sloping sandy cliffs, backed by a strip of clear land. The hills behind reach an elevation of over 800 feet in less than 0.5 mile from the beach, and are heavily wooded.

Tenmile Creek, 5 miles northward of Heceta Head, is marked by a sand beach about 0.3 mile long at its mouth.

Cape Perpetua, 9 miles northward of Heceta Head, consists of two projecting points, the northerly of which is the bolder. It reaches a height of 800 feet a short distance from the beach and 1,000 feet at a distance of 0.8 mile. The rocky cliff forming the face of the northern point is reddish. A few rocks that uncover are close to its face.

Yachats River, navigable only for canoes, breaks through the coast hills immediately northward from Cape Perpetua.

The coast for 2.5 miles northward of Cape Perpetua consists of cliffs, 15 to 30 feet high, with a narrow strip of grassy land 0.2 to 1 mile wide behind them. Thence for 5.5 miles there are low bluffs, with a broad sand beach in front and comparatively low wooded country behind them, to Alsea Bay.

Table Mountain, 11 miles northeastward of the mouth of Alsea Bay, is flat-topped, covered with dead trees, and looks whitish. Another summit is 0.6 mile southwestward of Table Mountain.

Marys Peak, a prominent mountain 24 miles eastward of the entrance to Yaquina Bay, is wooded on its sides but its summit is covered with grass.

Chart 6056.—Alsea Bay is 68 miles northward of Cape Arago. The northern point is low, broad, and sandy, but the southern point is an abrupt sandstone cliff about 100 feet high, covered with trees. The entrance has a shifting bar with a depth of about 6 feet. With a rising tide, the bar fills in with sand and the full effect of the tide cannot be counted on. There is considerable fishing and crabbing in the bay and river, but boats rarely cross the bar. **Waldport,** a mile inside the entrance, is the principal settlement. A small-boat landing, where gasoline, other light fuels, and limited supplies are available, is at the northern tip of the village. The river is navigable for small craft to about 10 miles above the mouth.

The fixed bridge of the Oregon Coast Highway crossing Alsea Bay, a mile inside the entrance, has a clearance of 63 feet.

The 11.5-mile coast between Alsea Bay and Yaquina Bay is nearly straight, and consists of a low sand beach backed by dunes at each end with bluffs up to 100 feet high between; the land behind is low and wooded with areas of burned timber. Rocks covered 2 to 4 fathoms extend almost 2 miles offshore. **Seal Rocks,** abreast the highest part of the bluffs about 5 miles north of Alsea Bay entrance, extend up to 0.5 mile offshore for 2 miles; the tallest is 20 feet high.

Stonewall Bank, 17 miles southwestward of Yaquina Head Light and 14 miles offshore, is 9 miles long in a northerly direction and 2.5 miles wide. There is a least depth of 13 fathoms on the bank.

Yaquina Head, 32.5 miles northward of Heceta Head, is distinguished by two conical hills covered with grass. The outer one is 355 feet high and the inner 390 feet high, with a low saddle between them. The extremity of the point, which projects about a mile from the general trend of the coast, is broken and rocky, but comparatively low. One mile inland from the point, the grass-covered land changes to a dense forest and the hills rise rapidly. Two covered ledges lie northward of the point not over 0.5 mile from the beach. There is a covered rock and considerable kelp about a mile southward of the point. Southward to Yaquina Bay, the coast consists of broken yellow cliffs, bordered on the southern part by broad sand beaches.

Yaquina Head Light (44°40.6′ N., 124°04.7′ W.), 162 feet above the water, is shown from a 93-foot white conical tower on the flat bench projecting at the western extremity of the head; a radiobeacon is at the station. See Appendix for **storm warning display.** A patch of rocks that uncovers is about 1 mile northward from the light.

Yaquina Reef, a ridge of hard sand and rock, covered 5 to 13 feet, 0.7 mile off the entrance, extends parallel with the shore for 1.5 miles. The wreck of the concrete ship JOHN ASPIN uncovers 5½ feet on the reef about 0.5 mile north-northwestward from the outer end of the north jetty. **South Reef,** covered 11 feet, is a southerly continuation of Yaquina Reef, the two being separated by the entrance channel.

Chart 6055.—Yaquina Bay entrance is 4 miles southward of Yaquina Head Light. The bay is a tidal estuary, the harbor itself being merely the widening of **Yaquina River** just inside the entrance.

The northern point of Yaquina Bay entrance is a sandy bluff, 120 feet high. An abandoned lighthouse and a Coast Guard lookout tower are on the high part of the point. When viewed from the northwest, the circular lighthouse tower on the roof of a two-story frame dwelling obscures the lower portion of the lookout tower. The southern entrance point is a low sand beach backed by dunes rising to 150 feet.

★ (3835) **OREGON—Yaquina Bay—Breakwater extension under construction.**—A survey by the Corps of Engineers shows Yaquina Bay north breakwater is being extended southwestward to a point in 44°36'40.9" N., 124°04'55.1" W.

(N.M. 24/66.)

(C. & G.S. BP–68631.)
C. & G.S. Chart **6055.**
C. & G.S. Coast Pilot 7, 1963, page **159.**

★ (5104) **OREGON—Depoe Bay—Controlling depths.**—The Corps of Engineers reports a controlling depth at M.L.L.W. in Depoe Bay as follows:

(*a*) 2 feet for a width of 30 feet or 7 feet for a mid-width of 25 feet in the entrance channel 44°48'34" N., 124°03'40.1" W., in May 1966.

(*b*) 5 feet in the turning basin in January 1966.

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

(See N.M. 15(2271) 1966.)

(N.M. 32/66.)

(C. & G.S. CL–773/66; BP–70029.)
C. & G.S. Chart **6056 (Inset).**
C. & G.S. Coast Pilot 7, 1963, page **159.**

★ (5994) **OREGON—Yaquina Bay—Channel depths amended.**—The Corps of Engineers reports from surveys of May and July, 1966, controlling depths at M.L.L.W. in the improved Yaquina Bay Entrance Channel of 18 feet, 20 feet and 19 feet in the left outside quarter, middle half and right ontside quarter, respectively, from the channel entrance (44°36'36" N., 124°04'51" W.) to the Highway Bridge.

(See N.M. 32(5103) 1966.)

(N.M. 38/66.)

(C. & G.S. CL–990/66.)
C. & G.S. Chart **6055.**
C. & G.S. Coast Pilot 7, 1963, pages 158, **159.**

★ (2271) **OREGON—Depoe Bay—Controlling depth.**—A survey by the Corps of Engineers in January 1966 shows a controlling depth at M.L.L.W. of 5 feet in the basin at Depoe Bay.

[illegible]ox. Position: 44°48'34" N., 124°03'34" W.

[illegible] The 5-foot shoal charted east of the Fixed Bridge in 44°48'36" [illegible]6.5" W. does not exist and should be expunged from the chart.

[illegible] The Corps of Engineers should be consulted for changing conditions subsequent to the above.

(Supersedes N.M. 35(4529) 1963.)

(N.M. 15/66.)

(C. & G.S. BP–69183.)
C. & G.S. Chart **6056.**
C. & G.S. Coast Pilot 7, 1963, page **159.**

★ (7448) **OREGON—Yaquina Bay—Channel depths amended.**—The following tabulation shows controlling depths at M.L.L.W. in the improved Yaquina Bay Channel from a report by the Corps of Engineers.

YAQUINA BAY CHANNEL

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

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 to Highway Bridge	17	20	20	10–66	300	1. 34	26–20
Highway Bridge to Turning Basin	19	20	14	10–66	300	0. 83	20

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

(Supersedes N.M. 32(5103), 38(5994) 1966.)

(N.M. 48/66.)

(C. & G.S. CL–1409/66.)

C. & G.S. Chart **6055.**

C. & G.S. Coast Pilot 7, 1963, page 158, **159.**

★ (2917) **OREGON—Yaquina Bay and Harbor—Controlling depths.**—Surveys by the Corps of Engineers show controlling depths at M.L.L.W. in the improved channel entering Yaquina Bay as follows: In August 1963 and April 1964 a depth of 15 feet for a width of 300 feet or 19 feet for a middle width of 150 feet from the channel entrance (44°36'36" N., 124°04'51.5" W.) to the turning basin, and in April 1964 a depth of 18 feet in the turning basin.

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

(Supersedes N.M. 25(3218) 1963.)

(N.M. 23/64.)

(C. & G.S. CL–617/64.)

C. & G.S. Chart **6055.**

C. & G.S. Coast Pilot 7, 1963, pages 158, **159.**

★ (3755) **OREGON—Yaquina Bay—Channel depths amended.**—The following tabulation shows controlling depths at M.L.L.W. in the improved Yaquina Bay Channel from a report by the Corps of Engineers in May 1965:

YAQUINA BAY CHANNEL

Tabulated from surveys by the Corps of Engineers—report of May 13, 1965

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 (nautical miles)	Depth M.L.L.W. (feet)
Entrance Channel to Highway Bridge	20	20	20	5–65	300	1. 34	26–20
Highway Bridge to Turning Basin	20	20	19	5–65	300	0. 83	20

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

(Supersedes N.M. 23(2917) 1964.)

(N.M. 26/65.)

(C. & G.S. CL–640/65.)

C. & G.S. Chart **6055.**

C. & G.S. Coast Pilot 7, 1963, pages 158, **159.**

The entrance to Yaquina Bay is protected by jetties 330 yards apart at the outer end. A lighted whistle buoy is 1.9 miles southwestward of the entrance. The channels are marked with a lighted range, lights, and buoys.

During the summer, when the swell is approximately parallel with the coast, the bar is comparatively smooth, being partially sheltered by Yaquina Head. In winter, however, the heavy westerly swell makes the bar very rough. A smooth bar and a favorable tide are necessary for large vessels leaving Yaquina Bay. In April 1962, the controlling depths were ~~18 to 16~~ 15 feet from the entrance to the turning basin at McLean Point.

Strangers desiring to enter Yaquina Bay and River should employ a pilot or a man with local knowledge. At the entrance the buoys cannot be relied upon to indicate the best water, and in the river the depths are subject to frequent change.

Vessels anchor in the channel according to draft. A fixed highway bridge across the channel, 0.9 mile above the entrance, has a clearance of 124 feet. A Coast Guard station is on the north side of the bay, 400 yards northeastward of the bridge.

Newport, just inside the northern entrance point, is the principal town on the bay and river. It is principally a summer resort, although the town has considerable fishing and several small fish-processing plants. Lumber, either barged down from upper river mills or delivered by truck, is shipped from the wharves at Newport. The principal wharf for loading lumber is at **McLean Point,** 2 miles above the entrance. A depth of 21 feet can be taken from the turning basin to the lumber terminal.

A controlling depth of about 10 feet is available to a small-boat mooring basin at Newport behind the long breakwater.

Currents.—The current velocity is about 2 knots in Yaquina Bay entrance. Near Newport docks the velocity is about 0.5 knot. Off Yaquina, and 1 mile south of Toledo, the velocities are about 1 to 1.5 knots. For predictions see the Tidal Current Tables.

See Appendix for **storm warning displays.**

Pilotage and towage.—Licensed pilots are available and can be obtained by prior arrangement by radio. Privately owned tugs are berthed in Newport.

Quarantine.—Quarantine regulations are enforced. A U.S. Public Health Service outpatient office is in Newport.

Customs.—Newport is a port of entry.

Supplies.—Gasoline, diesel oil, water, some marine hardware, and groceries can be obtained.

Repairs.—Boats up to 60 feet in length and 7 feet in draft can be hauled out on the marine ways at Yaquina.

Communication is by bus and air. The municipal airport is about 4 miles south of Newport. A good highway extends north and south along the coast and another highway leads to the interior.

Federal project depth in Yaquina River is 10 feet to Toledo; this depth is generally maintained.

Yaquina is a small settlement 3.5 miles above the entrance. A power cable across Yaquina River, 0.5 mile above Yaquina, has a clearance of 77 feet. **Toledo,** 11 miles above the entrance, has large lumber mills. The depths alongside the wharves are 5 to 6 feet. The fixed highway bridge, 0.5 mile above Toledo, has a clearance of 34 feet. A pipeline with a clearance of 62 feet crosses the mouth of **Depot Slough** at Toledo.

Chart 5902.—From Yaquina Head to the mouth of Columbia River, the coast is fairly straight. The headlands are Cape Foulweather, Cascade Head, Cape Lookout, Cape Meares, Cape Falcon, and Tillamook Head. The 30-fathom curve follows the general trend of the coast about 3.5 miles offshore, without indicating the several headlands. When about opposite Tillamook Head, the curve swings west and is about 7.5 miles off the end of Clatsop Spit.

Chart 6056.—From Yaquina Head for 5.5 miles to Cape Foulweather, the coast consists of yellow and white sand stone cliffs, low and broken.

Iron Mountain, 1.5 miles northeastward of Yaquina Head Light, is a 654-foot high hill. The highest third of the hill is bare and composed of a red rock formation; the lower part is thickly wooded.

A low flat rock, 2 feet high, is 0.4 mile offshore 2.8 miles northward of Yaquina Head.

Otter Rock, 11 feet high, is 3.2 miles northward of Yaquina Head and 0.6 mile offshore. **Gull Rock,** 56 feet high, is 1.2 miles north of Otter Rock and 0.4 mile offshore. In line between the two rocks is a kelp field with several rocks, covered or awash. Covered rocks that break are 0.5 to 1 mile northward of Gull Rock.

Cape Foulweather is a prominent headland with about 6 miles of seaward face consisting of rocky cliffs over 60 feet high. The cape is formed by several grass-covered headlands, separated by densely wooded gulches. Near the middle of the cape is a strip of flat land, 0.5 mile long and 0.2 mile wide, bare of trees. The highest point of the cape is near the southern part. A grassy patch is conspicuous on the southwestern slope. About 0.9 mile southeastward of the extreme western point of the cape is a rocky point 445 feet high, and eastward of the point the hills rise to 1,100 feet in 0.6 mile. Dangers extend for nearly 2 miles northward of the northern point of Cape Foulweather and about 600 yards offshore.

The coast highway follows the shoreline closely at Cape Foulweather.

Depoe Bay, 8 miles north of Yaquina Head, has one of the best small-boat shelters along this part of the coast. The bay proper has foul ground on both north and south sides but the channel to the improved inner basin, though narrow, is deep and well marked. The foul areas break in moderate seas and are marked by kelp. Prominent from seaward are the concrete arch bridge over the entrance to the basin and the standpipe on the shoulder of a 500-foot hill 0.2 mile to the northward. A lighted whistle buoy is 1.1 miles westward of the entrance to the bay, and a bell buoy is farther inshore.

The Federal project depth of 8 feet through the 30-foot wide entrance channel to the basin is maintained.

★ (4125) **OREGON—Cape Kiwanda—Nestucca Bay—Buoy established—Buoy discontinued.**—1. Cape Kiwanda Whistle Buoy 2, painted red, has been established in 48 feet of water in (approx.) 45°12.8′ N., 123°59.3′ W., about 200 yards 320° from Haystack Rock. The buoy will be maintained seasonally from May 15 to September 15 annually.

2. Nestucca Bay Approach Buoy NES (45°09.7′ N., 123°59.3′ W. approx.) has been discontinued.

(N.M. 32/64.)

(L.N.M. 37, C.G., Seattle, July 16, 1964.)
C. & G.S. Chart 5902.
C.G. Light List, Vol. III, 1963, page 71.
C. & G.S. Coast Pilot 7, 1963, page 160.

The fixed concrete arched bridge over the entrance is unique in that its width of 30 feet is less than the clearance of 42 feet. The lighted range at the south end of the bridge marks the entrance to the bay on bearing **086°40′**; a fog signal is about 50 yards southwest of the front light. Floodlights about 50 yards seaward of the bridge illuminate the entrance to the inner basin; the power cable has a clearance of 50 feet. The navigator is cautioned against the dangerous surge in the narrow entrance.

A Coast Gnard vessel is stationed in the inner basin; no lookout is maintained, but a siren and telephone are available at the north end of the bridge to summon aid. See Appendix for **storm warning display.**

The town of **Depoe Bay** is on the north side of the basin. The basin has a concrete bulkhead, mooring floats, and a grid that can accommodate any vessel able to enter. Hull and minor repairs can be made; fuel, water, hardware, and other supplies are available in small quantities.

Chart 5902.—From Cape Foulweather for 9.5 miles to the entrance of Siletz Bay, the coast continues as yellow broken bluffs, 40 to 100 feet bigh, bordered by abont 3 miles of sandy beaches. From the northern point of the blnffs to the bay entrance there are sand dunes covered with low brusb.

The entrance to **Siletz Bay** is 15 miles northward of Yaquina Head. The entrance channel is subject to frequent change, and drafts of 4 or 5 feet are considered the deepest that can be safely taken in at high water.

The northern point at the entrance is a low bluff with a narrow sand beach. The southern point is a low sandspit about 250 yards wide. The dunes on the spit are thinly wooded near the shore but become thickly wooded inland. The bay inside the entrance is shoal. Siletz River enters the bay at the southeast end.

Taft, the principal village in the bay, is on the coast highway. Gasoline and other light fuel oils are available by truck delivery. Several stores handle general merchandise. Immediately southward of Taft, a white covered bridge is prominent from seaward.

From the northern point of Siletz Bay the coast extends 7 miles northward to the Salmon River. For 2.5 miles of this stretch to the outlet of **Devils Lake,** the yellow sandstone cliffs are 80 to 100 feet high. The lake is a large body of fresh water, 10 feet above sea level, that empties through a narrow stream. At 0.5 mile west by south of the mouth of the stream is a covered rock that geuerally breaks. For 3 miles northward from the outlet of the lake, the bluffs are 20 to 60 feet high, rising to grassy hills. A broad beach and ledges of rocks are along the shore.

Salmon River empties at the southern extremity of Cascade Head; the entrance is nearly closed by sand bars.

Immediately southward of Salmou River is a rocky cliff whose seaward face is 0.6 mile long. The summit is a dome-shaped butte 510 feet high. From here a rolling grassy plateau with a few trees extends southward and eastward to the river. A rock, 46 feet high, is 700 yards westward of this cliff, and about a mile southward is a covered rock 630 yards off the beach. Immediately southward of and in line with Cascade Head, opposite the mouth of the river, are three grayish rocks about 765 yards offshore. These have heights of 56 feet on the north, 25 feet in the center, and 47 feet on the south.

Cascade Head, 23 miles northward of Yaquina Head, is very jagged and heavily wooded. The face of the cliff is 3 miles loug, in places is over 700 feet high, and is cut hy several deep gorges through which the waters of three creeks are discharged in cascades 60 to 80 feet high. Several rocks are about 0.1 mile offshore.

Two Arches, 30 feet high, is a rock 0.9 mile northward of the southern point of Cascade Head. The arches are visible from northward, the inner being the larger.

From Cascade Head for 9.5 miles to Cape Kiwanda, the coast is a low sand beach with a narrow marsh behind the southern part. Rolling hilltops, occasionally wooded, rise to an elevation of 500 feet behind the beach.

Neskowin Rock, at the high-water line about 0.3 mile northward of the northern extremity of the cliffs marking Cascade Head, rises ahruptly from the sand beach to 113 feet in height. The rock is dark brown and wooded on top.

North of Neskowin Rock the Oregou Coast Highway is about 0.5 mile inlaud. At night the headlights of automobiles traveling this road cause intermittent flashes as they make the turns and might be mistaken for lights of vessels.

Nestucca River empties into **Nestucca Bay** 5.5 miles northward of Cascade Head. The channel over the bar changes frequently in position and depth, and only light-draft vessels having local knowledge are able to cross. A fixed highway bridge at Pacific City has a clearance of 9 feet. The river has many snags which change the depths and shift the channel. A buoy is 0.7 mile westward of the entrance. Even in a moderate sea, tbe bar is extremely dangerous. The point on the south side of the entrance consists of several low-rolling, grassy hillocks, about 400 to 500 feet high, which approach very close to the beacb. The northern point is the southern extremity of the sandspit and dunes that extend to Cape Kiwanda.

Pacific City, a summer resort 3 miles above the entrance to Nestucca Bay, has a general store. Small quantities of oil and gasoline can be had.

Haystack Rock, 327 feet high, 0.5 mile southwestward of Cape Kiwanda and 0.5 mile offshore, is a prominent landmark. The rock is conical and dark for about half its height, and in summer the top is whitened hy bird droppings.

Cape Kiwanda, 33 miles north of Yaquina Head, is a low yellow rocky point, much broken and eroded, that projects about 0.5 mile from the general trend of the coast. Behind the cape are bright sand dunes, 500 feet bigh, which are prominent from seaward.

From Cape Kiwanda the coast extends 7.5 miles in a general northerly direction to Cape Lookout. It is broken about halfway by the entrance to **Sand Lake,** which is shallow and not navigable. The coast consists of sand beaches and dunes until ahout a mile northward of Sand Lake where it changes to vertical sandstone cliffs, 50 to

★ (6416) **OREGON—Tillamook Bay and Bar—Coos Bay—Channel depths amended.**—The Corps of Engineers report the following changes in Sept. 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)
1. Tillamook Bay and Bar:							
Entrance Channel	18	17	17	7–66	200	1. 3	18
Garibaldi Channel	15	14	14	7–66	200	1. 9	18
Turning basin *	(*)	(*)	(*)	------	500	0. 26	18
2. Coos Bay:							
North Bend to Coos Bay	27	29	24	4, 5, 8–66	300	3. 4	30

* Turning basin is not maintained.

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

(See N.M. 48(6946) 1965, 38(5993) 1966.)

(N.M. 41/66.)

(C. & G.S. CL–1150/66.)

C. & G.S. Charts **6112**(1), **5984**(2).

C. & G.S. Coast Pilot 7, 1963, pages **161, 155.**

★(1894) **OREGON—Tillamook Bay—Aids changed.**—The following lights have been changed to daybeacons as indicated:

(*a*) Hobsonville Light (LL **1376**) has been discontinued and replaced by *Hobsonville Daybeacon 1.* The structure consists of a black square daymark with a green reflective border, on a dolphin.

Approx. position: 45°32′47″ N., 123°54′18″ W.

(*b*) Bay City Cut Light (LL **1377**) has been discontinued and replaced by *Bay City Cut Daybeacon A.* The structure consists of a black-and-white checkered square daymark with a white reflective cross, on a dolphin.

Approx. position: 45°31′18″ N., 123°53′56″ W.

(*c*) Middle Channel Dike Light (LL **1378**) has been discontinued and replaced by *Middle Channel Dike Daybeacon B.* The structure consists of a black-and-white checkered square daymark with a white reflective cross, on a dolphin.

Approx. position: 45°30′31″ N., 123°54′14″ W.

(*d*) Long Jetty Crossing Light (LL **1379**) has been discontinued and replaced by *Long Jetty Crossing Daybeacon C.* The structure consists of a black and white checkered square daymark with a white reflective cross, on a dolphin.

Approx. position: 45°29′56″ N., 123°54′00″ W.

(*e*) Dick Point Light (LL **1380**) has been discontinued and replaced by *Dick Point Daybeacon 2.* The structure consists of a red triangular daymark with a white reflective border, on a dolphin.

Approx. position: 45°28′53″ N., 123°54′07″ W.

(*f*) Dry Stocking Bar Light (LL **1381**) has been discontinued and replaced by *Dry Stocking Bar Daybeacon D.* The structure consists of a black and white checkered square daymark with a white reflective cross, on a pile.

Approx. position: 45°28′03″ N., 123°52′40″ W.

(See N.M. 7(1063) 1966.)

(N.M. 13/66.)

(L.N.M. 15, C.G., Seattle, Mar. 2, 1966.)

C. & G.S. Chart **6112.**

C.G. Light List, Vol. III, 1965 (see above) and page **89.**

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

★ (6257) **OREGON—Cape Lookout—Buoy changed.**—Cape Lookout lighted Whistle Buoy 2CL (45°20.3′ N., 124°01.3′ W. approx.) has been changed to show a *flashing white* light every *4 seconds*, flash *0.4 second*, of 170 candlepower.

(N.M. 40/66.)

(L.N.M. 58, C.G., Seattle, Sept. 8, 1966.)
C. & G.S. Chart **5902.**
C.G. Light List, Vol. III, 1966, No. **91.**
C. & G.S. Coast Pilot 7, 1963, page 161.

★ (1063) **OREGON—Tillamook Bay—Aids to be changed.**—About February 23, 1966, the following lights will be changed to daybeacons as indicated:

(*a*) Hobsonville Light (LL 1376) will be discontinued and replaced by *Hobsonville Daybeacon 1.* The structure will consist of a black square daymark with a green reflective border, on a dolphin.

Approx. position: 45°32′47″ N., 123°54′18″ W.

(*b*) Bay City Cut Light (LL 1377), will be discontinued and replaced by *Bay City Cut Daybeacon A.* The structure will consist of a black-and-white checkered square daymark with a white reflective cross, on a dolphin.

Approx. position: 45°31′18″ N., 123°53′56″ W.

(*c*) Middle Channel Dike Light (LL 1378) will be discontinued and replaced by *Middle Channel Dike Daybeacon B.* The structure will consist of a black-and-white checkered square daymark with a white reflective cross, on a dolphin.

Approx. position: 45°30′31″ N., 123°54′14″ W.

(*d*) Long Jetty Crossing Light (LL 1379) will be discontinued and replaced by *Long Jetty Crossing Daybeacon C.* The structure will consist of a black and white checkered square daymark with a white reflective cross, on a dolphin.

Approx. position: 45°29′56″ N., 123°54′00″ W.

(*e*) Dick Point Light (LL 1380) will be discontinued and replaced by *Dick Point Daybeacon 2.* The structure will consist of a red triangular daymark with a red reflective border, on a dolphin.

Approx. position: 45°28′53″ N., 123°54′07″ W.

(*f*) Dry Stocking Bar Light (LL 1381) will be discontinued and replaced by *Dry Stocking Bar Daybeacon D.* The structure will consist of a black and white checkered square daymark with a white reflective cross, on a pile.

Approx. position: 45°28′03″ N., 123°52′40″ W.

(N.M. 7/66.)

(L.N.M. 5, C.G., Seattle, Jan. 21, 1966.)
C. & G.S. Chart 6112.
C.G. Light List, Vol. III, 1965 (see above) and page 89.
C. & G.S. Coast Pilot 7, 1963, page 161.

★ (6946) **OREGON—Tillamook Bay and Bar—Umpqua River—Rogue River—Channel depths amended.**—The Corps of Engineers report the following changes in October 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)
1. **Tillamook** Bay and Bar:							
Entrance Channel	10. 0	13. 0	13. 0	9–65	200	1. 3	18
Gerlbaldi Channel	12. 0	15. 0	12. 0	9–65	200	1. 9	18
Turning basin [a]	(a)	(a)	(a)	------	500	0. 26	18
2. **Umpqua** River:							
Entrance Channel	14. 0	20. 0	23. 0	9–65	------	0. 8	26
Entrance to 3-mile Directional Light	20. 0	19. 0	17. 0	9–65	200	6. 87	22
3. **Rogue River:**							
Entrance Channel	13. 0	9. 0	8. 0	9–65	300	0. 5	13

[a] **Turning** basin is not maintained.

(See N.M. 26(3756), 36(5215) 1965.)

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

(N.M. 48/65.)

(C. & G.S. CL–1499/65.)

C. & G.S. Charts **6112**(1), **6004**(2), **5951**(3).

C. & G.S. Coast Pilot **7, 1963, pages 161, 156, 152.**

★ (3756) **OREGON—Tillamook Bay and Bar—Umpqua River—Channel depths amended.**—The Corps of Engineers report the following changes to May 1965.

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)
1. Tillamook Bay and Bar:							
Entrance Channel	11.0	12.0	12.5	5–65	200	1.3	18
Garibaldi Channel	13.0	13.0	13.0	6–64	200	1.9	18
Turning basin *	(*)	(*)	(*)	------	500	0.26	18
Umpqua River:							
Entrance Channel	18.0	21.0	22.0	4–65	------	0.8	26
Entrance to 3-Mile Directional Light	19.0	19.0	19.0	4–65	200	6.87	22
-Mile Directional Light to Reedsport	9.0	7.0	10.0	4–65	200	2.7	22
eedsport Turning Basin	22.0	18.0	15.0	8–64	600	0.2	22

* Turning basin is not maintained.

(Supersedes N.M. 40(5208), 42(5493) 1964.)

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

(N.M. 26/65.)

(C. & G.S. CL 640/65.)

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

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

100 feet high. These continue to Cape Lookout. The hills and country back of the beach as far as the ridge of Cape Lookout have been burned over except in the gulches, and numerous trunks of whitened trees are still standing.

Cape Lookout, 40 miles northward of Yaquina Head, projects westward for 1.5 miles, forming a narrow rocky promontory 432 feet in height at its seaward extremity. The southern face is nearly straight, and its precipitous cliffs have numerous caves. The northern face is sloping and covered with a thick growth of timber. The ridge that forms the cape runs at about right angles to the coast, reaching an elevation of some 2,000 feet, 3.8 miles inland. The northern face of the cape is smooth and bold for the first mile, and then is much broken and marked by caves and several cascades. Fair shelter in northwesterly winds may be had under the southern side of the cape in 6 to 8 fathoms, sandy bottom. A lighted whistle buoy is about 0.5 mile off the cape.

Northward of Cape Lookout for 4.5 miles, the land falls to a low narrow sandy peninsula, separating Netarts Bay from the ocean. The sand dunes on the peninsula are visible for 10 or 12 miles.

Netarts Bay is a shallow lagoon most of which is bare at low water. The village of **Netarts** is on the north shore a mile inside the entrance. Only light-draft vessels with local knowledge can enter; midchannel buoys mark the best water. A small-boat basin and launching ramp are at Netarts. Small quantities of gasoline, oil, and groceries can be obtained. Bus service is available.

Northward of the entrance to Netarts Bay, for 1.5 miles to the rocks forming the southern part of Cape Meares, the coast is a sandy beach, backed by cliffs 50 to 120 feet high. These cliffs, topped by sand dunes varying in height from 150 to 200 feet, are good landmarks.

Chart 6112.—Cape Meares, 48 miles north of Yaquina Head, is high and rocky, with a 2-mile long seaward face. The northern part is the higher, with nearly vertical cliffs 460 feet high. The western point is narrow, covered with fern and brush, and terminates seaward in a cliff 200 feet high.

Three Arch Rocks are the largest of a cluster extending 350 yards off the southern point of the cape. They range in height from 204 to 275 feet. The largest arch is in the middle of the lowest rock, and is about half the height of the rock above water. These rocks are the favorite resort of sea lions, whose barking can be heard a considerable distance with a favorable wind.

Cape Meares Light (45°29.2′ N., 123°58.6′ W.), 232 feet above the water, is shown from a white masonry building on the summit of the cliff.

Pillar Rock, 102 feet high, is 0.2 mile northwestward of Cape Meares, and 0.4 mile farther northwestward is **Pyramid Rock,** 109 feet high, which leans seaward.

From Cape Meares to Kincheloe Point, the coast is a low partly wooded sandspit, with dunes 40 to 50 feet high. It forms the western shore of Tillamook Bay. A sand dike prevents a break-through north of Cape Meares, at **Pitcher Point.**

Tillamook Bay entrance is 42 miles southward of the Columbia River, 22.5 miles southward of Tillamook Rock Light, and 5 miles northward of Cape Meares Light. The bay has a tidal area of about 13 square miles, most of which, at low tide, presents a succession of sand and mud flats.

Shipments from the bay are farm and dairy products, lumber, and fish. General merchandise is received by rail and truck. Local products usually are shipped by rail or truck, but logs are towed on barges to Columbia River.

Kincheloe Point is low and sandy. The north side of the entrance is the termination of a high wooded ridge extending between the bay and Nehalem River. **Green Hill,** opposite Kincheloe Point, is a 421-foot spur that terminates in a bluff rounded point. The prominent hill is covered by ferns, grass, and dense brush with trees on top.

A Coast Guard station is on the northern shore west of Garibaldi. The lookout tower is on the jetty about 200 yards from its inner end at the foot of a knoll.

The north side of the entrance to Tillamook Bay is protected by an 800-yard jetty, but the outer 300 yards has been beaten down by the sea. A lighted whistle buoy is nearly 0.8 mile westward of the end of the jetty. The channel to Garibaldi is marked by a lighted range, lights, and buoys. The bar sometimes makes out across the range from the northward during the summer or whenever there have been any long periods of northwesterly winds.

In July 1962, the controlling depth was 11 feet in the entrance channel, thence 15 feet to Garibaldi. The channel to the small-boat basin at Garibaldi was dredged to 12 feet.

Several visible and covered rocks are on the northerly side of the dredged entrance channel. **Sow and Pigs,** across the channel from Kincheloe Point and nearly 500 yards off the northern shore, is a small rocky ledge that uncovers about 4 feet. The ledge is dangerous when entering with a flood current, as the current sets toward it.

The current velocity is 3 knots in the entrance to Tillamook Bay. Daily predictions are given in the Tidal Current Tables.

See Appendix for **storm warning display.**

Garibaldi, a lumber and fishing town, is on the northern shore 0.5 mile inside the entrance. A black concrete stack and a silver elevated tank are conspicuous. There are two small canneries and a wharf at Garibaldi. Lumber mills in **Miami Cove,** on the east side of Garibaldi, ship by rail.

A boat basin for commercial and sport fishing is just west of the plywood mill at Garibaldi. Gasoline, diesel oil, water, groceries, and a limited amount of marine hardware can be obtained.

A pilot, or a fisherman having local knowledge, can be obtained. Two commercial towboats take logs out of the bay.

South of Garibaldi, **Bay City Channel** is marked by lights and follows the eastern side of Tillamook Bay to

the southern end where it continues through narrow and crooked **Hoquarten Slough** to Tillamook, 11 miles above Tillamook Bay entrance. The channel has a depth of about 6 feet to Bay City, 4.4 miles above Tillamook Bay entrance, but south of this point depths are less than 3 feet to Tillamook. During freshets, snags are carried into the upper part of the bay where they form a menace to navigation.

Bay City has a small cannery on a wharf which bares at low water. Fishing and crabbing are carried on in the vicinity, but all shipments are made by truck or rail.

Tillamook is noted for the production of cheese. It is the distributing center for a rich farming and dairying section. Some logs are towed to Garibaldi or Miami Cove to make rafts for towing to Aberdeen. Gasoline, diesel oil, water, groceries, and some marine hardware can be obtained. Repair facilities are limited to carpentry work and minor repairs to launch engines.

Chart 5902.—From Tillamook Bay to Nehalem River, the coast is nearly straight for about 5 miles. Several lakes in this stretch are separated from the beach by wooded sand dunes. The heavily wooded hills begin to rise 0.5 mile to 0.8 mile from the beach and in 1 mile reach elevations of 1,000 to 1,600 feet.

Twin Rocks are 700 yards offshore and 2 miles northward of the entrance to Tillamook Bay. Their bases are so close together that they usually look like one rock. The southerly and larger has an arch in it.

Chart 6122.—Nehalem River, 5 miles northward of Tillamook Bay entrance, is tidal for about 10 miles from the entrance. Above this point the river is a mountain stream full of riffles and obstructed by boulders. The river constitutes a natural outlet for an extensive area of heavily timbered country. Lumbering and fishing are the principal industries. Sawmills are located along the lower river.

Nehalem Beach, the northern point at the entrance, is a narrow sandspit, bare of trees, and with dunes of moderate elevation over the northern part. The southern side of the entrance is a low broad sand beach, backed by wooded country rising to elevations of 400 feet.

The entrance is protected by jetties extending 600 yards from the shoreline. A whistle buoy is nearly a mile west of the entrance. The channel is marked by an entrance range and daybeacons.

The depths on the bar and within the bay are not sufficient for coastwise shipping; all lumber is shipped out by rail. The controlling depth is about 7 feet on the bar, and 7 to 8 feet to Wheeler. The channel is changeable.

Gasoline can be obtained in season at the small-boat facility at **Jetty,** on the east side of the river just inside the entrance.

Brighton is a small settlement on the eastern shore, a mile inside the entrance to the river. **Wheeler,** 4.7 miles above the entrance has an abandoned sawmill and wharf in ruins. All traffic is by rail and truck.

Nehalem is a small settlement on the western shore of the river, 6.3 miles above the bridge over the river just below Nehalem has a swing span with a clearance of 21 feet; close south of this bridge is a power cable with a clearance of 48 feet.

Chart 5902.—The coast is low and sandy for about 3 miles northward of Nehalem River entrance, then a dense forest begins which rises gradually to the southern slope of Neahkahnie Mountain. There are grassy hillocks, 40 to 100 feet high, in the vicinity of the beach.

Cape Falcon, 17 miles northward of Cape Meares and 10 miles southward of **Tillamook Rock,** projects about 2 miles from the general trend of the coast. The seaward face, less than 0.5 mile in extent, is very jagged with numerous rocks under the cliffs. The southwestern point of the cape is composed of nearly vertical cliffs, 200 feet high, and is partially timbered. **Falcon Rock,** 0.7 mile westward of the cape, is small and not very conspicuous.

Smuggler Cove, a small bight just southward of Cape Falcon, is an excellent anchorage for small boats. The best anchorage is close to the northern shore in 4 to 5 fathoms, protected from all except southwesterly winds. Care should be taken to avoid two rocks; bare at extreme low water, that are about 150 yards from the north shore of the cove and rise abruptly from deep water.

Neahkahnie Mountain, 2.8 miles inland of Cape Falcon, is a prominent landmark, and the most important feature for locating Nehalem River. The western summit of the double-headed mountain is rounded and 1,900 feet high, but the eastern summit is serrated and divided into three peaks of nearly equal height. The entire southeastern slope is bare of timber but is covered with grass and fern. The seaward face terminates in rocky broken cliffs over 500 feet high, and there are a few rocks about 100 feet from the beach. The two summits are visible from southward; from northward, the western summit hides the eastern and is very conspicuous.

Northeastward of Cape Falcon, and 2 to 3 miles back from the shoreline, is a group of peaks; the highest and most prominent has a rounded summit, with a very gentle slope to the southward and a more marked and abrupt drop to the northward. It is very conspicuous from westward in clear weather.

Arch Cape, rocky and precipitous, projects slightly from the general trend of the coast. It is the termination of a mountain ridge rising to 2,775 feet about 3 miles eastward. The cape is bare of timber on the southern slope for a short distance from the point. A high rock is close to the cape and connected with it at low water. A smaller rock is about 100 yards seaward of the larger. There are several other high rocks in the vicinity of the cape.

Castle Rock derives its name from its remarkable resemblance to a medieval castle with two towers, the taller of which is on the seaward end. It is about 0.8 mile westward of the highest part of Arch Cape, and is the outermost bare rock. The upper part of the rock is covered with bird droppings and shows up very distinctly in sunlight. A rock awash is about 0.9 mile off the cape and 0.4 mile southwest of Castle Rock; another rock, bare at lowest tides, is 0.5 mile offshore and 1 mile south of Castle

C. P. 7

★ (4057) **OREGON—Nehalem River—Coastal warning display station established.**—A seasonal coastal warning display station, for day displays only, has been established in (approximately) 45°39′25″ N., 123°55′44″ W.

(N.M. 28/65.)

(L.N.M. 36, C.G., Seattle, June 15, 1965.)

C. & G.S. Chart **6122.**

C. & G.S. Coast Pilot 7, pages **162, 278.**

Hug Point is a small cliff close to the beach, 1.8 miles northward of Arch Cape; the cliffs in its vicinity are about 180 feet high.

Double Peak, halfway between Cape Falcon and Tillamook Head, is the seaward end of a ridge extending eastward, which reaches a height of 1,050 feet in less than 0.7 mile from the shore. It is heavily wooded and pitches abruptly to the sea, ending in a rocky broken cliff 100 feet high and 0.2 mile long. A rock is close to and abreast of the southern end of the cliff; another rock is close to and abreast the northern end. A ledge, with two rocks that uncover about 4 feet, is about a mile west-southwestward of the highest part of the cliff.

From Double Peak, the coast extends northward for 2.7 miles to the mouth of **Elk Creek**, and then turns sharply northwestward for the same distance to the western point of Tillamook Head. The coast is high and wooded with broken cliffs bordered by numerous rocks, except at **Cannon Beach** at the mouth of Elk Creek.

Haystack Rock, 1.5 miles northward of Double Peak, is the largest of a cluster of rocks stretching out from the low water line to 10 fathoms. A rock awash at low water and surrounded by about 9 fathoms is 0.8 mile southwestward of Haystack Rock.

Tillamook Head, 76 miles north of Yaquina Head, ends in two points which are 0.5 mile apart. The cliffs are 560 feet high at the southern point and 1,000 feet high at the northern point. A pinnacle rock is at the foot of the northern cliffs, and extending offshore from it for 300 yards is a cluster of rocks, 45 to 150 feet high, the outer one being the lowest. The summit of the head is flat and densely wooded, with slightly lower land behind it.

Tillamook Rock, nearly 1.2 miles west of the southern point of Tillamook Head, has an abandoned lighthouse and buildings on it. The western face leans a little seaward. A rock awash is between Tillamook Rock and the nearest part of Tillamook Head. A lighted whistle buoy is 0.5 mile westward of the outer rock.

North of Tillamook Head the coast is a broad sand beach extending for 17 miles to Clatsop Spit, on the south side of the entrance to Columbia River. Low sandy ridges, covered with grass, fern, and brush, extend parallel with and back of the beach. **Necanicum River,** a small stream, empties at the summer resort of **Seaside,** 2.5 miles from the north side of Tillamook Head.

Saddle Mountain, double-headed and 3,283 feet high, is the landfall for the approach to the Columbia River. The mountain is 14 miles east of Tillamook Rock and is visible 50 miles offshore. From northwestward, the mountain appears to be triple-headed; the northeastern peak appears cone-shaped, sharp, and lowest; the middle peak is irregularly cone-shaped; and the southern and highest peak is a flat-topped cone.

★ (4323) **COLUMBIA RIVER—Channel depths amended.**—The following table shows amendments to the depths in the channels on the various bars in the Columbia and Willamette Rivers.

Depths are given at mean lower low water from the entrance to Harrington Point, thence Columbia River datum above that point.

Tabulated from surveys by the Corps of Engineers, Portland, Oreg., June 1, 1966:

Name of channel or range	Controlling depths in channels entering from seaward in feet at mean lower low water: Left outside quarter	Left inside quarter	Right inside quarter	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (nautical miles)	Depth MLLW (feet)
Harrington Point Range	33	35	33. 5	29. 5	5–66	500	2. 3	35
Miller Sands Channel	35	35	35	35	5–66	500	1. 7	35

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

(See N.M. 19 (2982), 23 (3671) 1966.)

(N.M. 27/66.)

(C. & G.S. CL–742/66.)

C. & G.S. Charts 6151, 6152, 6153, 6154, 6155, 6156.

C. & G.S. Coast Pilot 7, 1963, pages 164–173.

★ (3671) **COLUMBIA [redacted]ed.**—The following table shows amendments [redacted] various bars in the Columbia and Willamette [redacted].

Depths are given at me[redacted]ance to Harrington Point, thence Columbia Riv[redacted].

Tabulated from surveys by the Corps of Engineers, Portland, Oreg., May 2, 1966:

Name of channel or range	Controlling depths in channels entering from seaward in feet at mean lower low water: Left outside quarter	Left inside quarter	Right inside quarter	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (nautical miles)	Depth MLLW (feet)
Entrance Main Channel Range	48	47	42	39	3–66	2, 640	2. 6	48
Sand Island Range (Clatsop Split)	40	47	45	43	3–66	2, 640	0. 9	48
Tansy Point Range	35	35	35	35	3–66	500	3. 6	35
Miller Sands Channel	31	32. 5	32	30. 5	4–66	500	1. 7	35
Morgan Bar *	37	39	39	38	4–66	600	2. 1	40
Vancouver Upper Turning Basin	30	30	30	30	4–66	800	. 38	30

* Shown on C. & G.S. Chart 6154 as Morgan Upper Range.

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

(See N.M. 19 (2982) 1966.)

(N.M. 23/66.)

(C. & G.S. CL–601/66.)

C. & G.S. Charts 6151, 6152, 6153, 6154, 6155, 6156.

C. & G.S. Coast Pilot 7, 1963, pages 164–173.

★ (6493) **COLUMBIA RIVER—Channel depths.**—The following table shows the depths in the channels on the various bars in the Columbia and Willamette Rivers.

Depths are given at mean lower low water from the entrance to Harrington Point, thence Columbia River datum above that point.

Tabulated from surveys by the Corps of Engineers, Portland, Oreg., report of Oct. 8, 1965

Name of channel or range	Controlling depths in channels entering from seaward in feet at mean lower low water					Project dimensions		
	Left outside quarter	Left inside quarter	Right inside quarter	Right outside quarter	Date of survey	Width (feet)	Length (nautical miles)	Depth MLLW (feet)
Entrance Main Channel Range	48	47	47	46	8–65	2, 640	2. 6	48
Sand Island Range (Clatsop Split)	47	47	47	47	8–65	2, 640	0. 9	48
Desdemona Channel	35	35	35	35	8–65	500	3. 5	35
Tansy Point Range	35	35	34	35	8–65	500	3. 6	35
Astoria Range	34	34	34	35	8–65	500	2. 5	35
Tongue Point Channel	32	34	34	35	8–65	500	1. 6	35
Harrington Point Range	34	34	34	33	8–65	500	2. 3	35

Name of channel or range	Controlling depths in channels entering from seaward in feet at mean lower low water: Left outside quarter	Left inside quarter	Right inside quarter	Right outside quarter	Date of survey	Project dimensions: Width (feet)	Length (nautical miles)	Depth MLLW (feet)
Miller Sands Channel	35	35	35	35	2–65	500	1. 7	35
Pillar Rock Lower Range	34	35	35	34	8–65	500	2. 6	35
Pillar Rock Upper Range	33	34	34	34	8–65	500	1. 8	35
Skamokawa Channel	35	35	35	34	8–65	500	2. 3	35
Puget Island Range	35	35	35	35	7–65	500	1. 5	35
Wauna Range	35	35	35	35	7–65	500	2. 2	35
Driscoll Range	35	34. 5	34. 5	33	7–65	500	1. 8	35
Westport Channel	35	35	35	35	7–65	500	1. 7	35
Upper Wesport Channel	32	35	35	35	7–65	500	1. 8	35
Eureka Channel	34	34	33	34	8–65	500	2. 3	35
Gull Island Channel	35	35	35	35	8–65	500	1. 0	35
Stella Range	30. 5	33. 5	33. 5	33. 5	7–65	500	2. 5	35
Fisher Island Channel	35	34	34	35	8–65	500	0. 6	35
Walker Island Channel	35	35	35	33	8–65	500	1. 6	35
Barlow Point Channel	34	34	35	35	8–65	500	1. 6	35
Slaughter Channel	32. 5	33	33	29	7–65	500	2. 5	35
Cottonwood Island Lower Range	31	31. 5	31	29. 5	7–65	500	2. 4	35
Cottonwood Island Turn	35	35	34	33	8–65	500	2. 2	35
Cottonwood Island Upper Range	35	35	35	35	8–65	500	1. 3	35
Kalama Lower Range	35	35	35	35	10–65	500	1. 4	35
Kalama Upper Range	32	33	34	34	10–65	500	2. 3	35
Martin Island Channel	35	35	35	35	7–65	500	4. 7	35
Martin Island Range	33	32. 5	32. 5	33. 5	7–65	500	1. 4	35
Upper Martin I. Channel	30. 5	32. 5	32. 5	30	7–65	500	0. 97	35
St. Helens Range	35	35	32	31	9–65	500	2. 2	35
St. Helens Turn	35	35	35	31	9–65	500	1. 7	35
Warrior Rock Range	34	35	35	35	9–65	500	1. 4	35
Henrici Range	33	35	35	35	7–65	500	2. 2	35
Willow Lower Range	37	36	36	28	8–65	600	1. 8	40
Willow Upper Range	35	38	39	38	8–65	600	1. 0	40
Morgan Bar	37	35	35	36	8–65	600	2. 1	40
Vancouver Lower Range	26	28. 5	30	30	7–65	300	1. 0	30
Vancouver Upper Range	30	30	30	29	7–65	300	1. 1	30
Vancouver Upper Channel	29	30	30	30	7–65	300	0. 8	30
Vancouver Lower Turning Basin	30	29. 5	30	29. 5	7–65	800	0. 5	30
Vancouver Upper Turning Basin	30	28	28	24	1–65	800	0. 3	30

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

(Supersedes N.M. 40(5767) 1965.)

(N.M. 45/65.)

(C. & G.S. CL–1405/65.)

C. & G.S. Charts 6151, 6152, 6153, 6154, 6155, 6156.

C. & G.S. Coast Pilot 7, 1963, pages 164–173.

★ (4454) **COLUMBIA RIVER—Channel depths amended.**—The following table shows amendments to the depths in the channels on the various bars in the Columbia and Willamette Rivers.

Depths are given at mean lower low water from the entrance to Harrington Point, thence Columbia River datum above that point.

Tabluated from surveys by the Corps of Engineers, Portland, Oreg., July 1, 1965

Controlling depths in channels entering from seaward in feet at mean lower low water						Project dimensions		
Name of channel or range	Left outside quarter	Left inside quarter	Right inside quarter	Right outside quarter	Date of survey	Width (feet)	Length (nautical miles)	Depth MLLW (feet)
Pillar Rock Lower Range	31	32	32	34	5–65	500	2. 6	35
Pillar Rock Upper Range	32	33	34	35	5–65	500	1. 8	35

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

(See N.M. 27(3915) 1965.)

(N.M. 31/65.)

(C. & G.S. CL–913/65.)

C. & G.S. Chart 6152.

C. & G.S. Coast Pilot 7, 1963, pages **164–173.**

★ (3915) **COLUMBIA RIVER—Channel depths amended.**—The following table shows amendments to the depths in the channels on the various bars in the Columbia and Willamette Rivers.

Depths are given at mean lower low water from the entrance to Harrington Point, thence Columbia River datum above that point.

Tabulated from surveys by the Corps of Engineers, Portland, Oreg., June 4, 1965

Controlling depths in channels entering from seaward in feet at mean lower low water						Project dimensions		
Name of channel or range	Left outside quarter	Left inside quarter	Right inside quarter	Right outside quarter	Date of survey	Width (feet)	Length (nautical miles)	Depth MLLW (feet)
Entrance Main Channel Range	48	47	45	41	5–65	2, 640	2. 6	48
Sand Island Range (Clatsop Split)	45	46	45	45	5–65	2, 640	0. 9	48
Desdemona Channel	35	35	35	35	5–65	500	3. 5	35
Tansy Point Range	35	35	35	35	5–65	500	3. 6	35

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

(See N.M. 23(3311) 1965.)

(N.M. 27/65.)

(C. & G.S. CL–735/65.)

C. & G.S. Charts 6151.

C. & G.S. Coast Pilot 7, 1963, pages 164–173.

★ (735) **COLUMBIA RIVER—Channel depths amended.**—The following table shows the depths in the channels on the various bars in the Columbia and Willamette Rivers.

Depths are given at mean lower low water from the entrance to Harrington Point, thence Columbia River datum above that point.

Tabulated from surveys by the Corps of Engineers, Portland, Oreg., Jan. 4, 1965

Controlling depths in channels entering from seaward in feet at mean lower low water						Project dimensions		
Name of channel or range	Left outside quarter	Left inside quarter	Right inside quarter	Right outside quarter	Date of survey	Width (feet)	Length (nautical miles)	Depth MLW (feet)
Westport Channel	34	35	35	35	12–64	500	1. 7	35
Eureka Channel	35	35	35	35	12–64	500	2. 3	35
Stella Range	35	35	35	35	12–64	500	2. 5	35
Slaughter Channel	35	35	35	35	12–64	500	2. 5	35
Cottonwood Island Lower Range	35	35	35	34	12–64	500	2. 4	35
Cottonwood Island Turn	35	35	35	35	12–64	500	2. 2	35

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

(See N.M. 39(5063), 43(5652), 48(6381) 1964; 1(85) 1965.)

(N.M. 6/65.)

(C. & G.S. CL 56/65.)

C. & G.S. Charts 6152, 6153.

C. & G.S. Coast Pilot 7, 1963, pages 164–173.

★ (6381) **COLUMBIA RIVER—Channel depths amended.**—The following table shows the depths in the channels on the various bars in the Columbia and Willamette Rivers.

Depths are given at mean lower low water from the entrance to Harrington Point, thence Columbia River datum above that point.

Tabulated from surveys by the Corps of Engineers, Portland, Oreg., Nov. 2, 1964

Name of channel or range	Controlling depths in channels entering from seaward in feet at mean lower low water					Project dimensions		
	Left outside quarter	Left inside quarter	Right inside quarter	Right outside quarter	Date of survey	Width (feet)	Length (nautical miles)	Depth MLLW (feet)
Entrance Main Channel Range	48	48	47	45	10–64	2, 640	2. 6	48
Sand Island Range (Clatsop Split)	47	47	46	46	10–64	2, 640	0. 9	48
Desdemona Channel	35	35	35	35	10–64	500	3. 5	35
Tongue Point Channel	35	35	35	35	10–64	500	1. 6	35
Skamokawa Channel	35	34	35	35	10–64	500	2. 3	35
Puget Island Range	35	35	35	35	10–64	500	1. 5	35
Wauna Range	35	35	35	34. 5	10–64	500	2. 2	35
Driscoll Range	34	33	33	32	10–64	500	1. 8	35
Westport Channel	35	35	35	35	10–64	500	1. 7	35
Martin Island Channel	35	35	35	35	10–64	500	4. 7	35

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

(See N.M. 39(5063), 43(5652) 1964.)

(N.M. 48/64.)

(C. & G.S. CL–1472/64.)

C. & G.S. Charts 6151, 6152, 6153, 6154, 6155, 6156.

C. & G.S. Coast Pilot 7, 1963, pages 164–173.

★ (3338) **COLUMBIA RIVER—Channel depths amended.**—table shows the depths in the channels on the various bars in the Willamette Rivers.

Depths are given at mean lower low water from the entrance Point, thence Columbia River datum above that point.

Tabulated from surveys by the Corps of Engineers, Portland, Ore

Name of channel or range	Controlling depths in channels entering from seaward in feet at mean lower low water					Pr
	Left outside quarter	Left inside quarter	Right inside quarter	Right outside quarter	Date of survey	Widt (feet
Entrance Main Channel Range	47	47	44	42	5–64	2, 6
Sand Island Range (Clatsop Split)	45	47	45	43	5–64	2, 6
Desdemona Channel	35	35	35	30	5–64	5

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

(See N.M. 43(5558), 52(6685) 1963; 5(503); 9(1067), 13(159

(C. & G.S. CL–754/64.)

C. & G.S. Charts 6151, 6152, 6153, 6154, 6155, 6156.

C. & G.S. Coast Pilot 7, 1963, pages **164–173.**

10. COLUMBIA RIVER, OREGON AND WASHINGTON

Chart 5022.—Columbia River rises in British Columbia, Canada, through which it flows for some 370 miles before entering the continental United States in northeastern Washington. Thence it flows southerly to its junction with Snake River, from which it curves westerly and forms the boundary between the states of Washington and Oregon for the remainder of its course to the Pacific Ocean. Its entrance is 548 miles north of San Francisco and 145 miles south of the Strait of Juan de Fuca. The length of the river is 647 miles in the United States. Between the Cascade Mountains, the river flows through a canyon averaging about 5 miles in width between high cliffs on each side; of this width, the river occupies about 1 mile, the rest being marsh, low islands, and lowlands. Near the mouth, the river becomes wider, and in some places is 5 miles across.

Columbia and Willamette Rivers are navigable by deep-draft vessels to Portland, Oreg., and Vancouver, Wash.; the Columbia above Vancouver is maintained at a depth of 27 feet to The Dalles Dam, 164 miles above the mouth. From there to Priest Rapids Dam on the Columbia River there are lesser depths, and the tributary Snake River is limited to high-water navigation as far as Lewiston, Idaho.

However, upon completion of the John Day Dam and lock on the Columbia, and the remaining three projected dams and locks on Snake River, slack-water navigation will be available to Lewiston.

The hydroelectric power plants at the dams on the Columbia provide the major supply of electricity for the entire Northwest.

The commerce, both foreign and domestic, is extensive. The exports are principally lumber, grain, flour, fruit, fish, and general merchandise; the imports are coal, fuel oil, cement, manufactures, and general merchandise. There are numerous settlements and landings, but Astoria, on the south bank 12 miles inside the entrance, and Portland, on the Willamette River 9 miles from its junction with the Columbia, are the principal shipping points.

Distances shown in the text as Mile 0.9, Mile 12, etc., are the nautical miles above the mouth of Columbia River. Mile 0.0 is at the junction of the Main Channel Range and a line joining the outer ends of the jetties. The distance to the mouth of the river from a position 0.5 mile west of the Columbia River Lightship is 5.6 miles.

Prominent features. — Columbia River Lightship (46°11.1′ N., 124°11.0′ W.), with red hull and the name COLUMBIA in large white letters on the sides, is 5.3 miles off the entrance and on the entrance range line; the light is 57 feet above the water. A radiobeacon and fog signal are at the lightship. The code flag signal and radio call is NNCR. **Storm warning displays** are made during the daytime.

Mount Saint Helens, nearly 10,000 feet high, cone-shaped and snow-capped, is about 75 miles eastward of the entrance to the river. On a clear day it is visible when looking up the valley from seaward. **Mount Hood** and **Mount Adams** are also lofty snow-covered peaks, visible from parts of Columbia River on a clear day.

Clatsop Spit, on the southern side of the entrance, is a low sand beach, extending about 2.5 miles northwestward from Point Adams. There is a tendency for the shoal northward of the spit to build up to the northwestward due to spring freshets and northwest storms; vessels are cautioned to keep informed as to conditions here.

Point Adams, just inside Clatsop Spit, is a low sandy point covered with fir and undergrowth to the edge of the sand beach and low dunes. The point usually shows well from seaward, particularly if it is hazy inside. A Coast Guard station is on the eastern side of the point at Hammond. The red storm warning lights at the station are obscured from 015° to 180° to prevent possible confusion with aids to navigation by inbound vessels.

Cape Disappointment, the rugged northern point at the Columbia River entrance, is the first major headland along the 20 miles of sand beach north from Tillamook Head. It comprises a group of rounding hills covering an area 2.5 miles long and 1 mile wide, divided by a narrow valley extending north-northwestward. The seaward faces of these hills are precipitous cliffs with jagged, rocky points and small strips of sand beach. **Cape Disappointment Light (46°16.6′ N., 124°03.1′ W.),** 220 feet above the water, is shown from a 53-foot white conical tower on the extreme southeastern point of the cape; a radiobeacon is at the station. A Coast Guard station is at Fort Canby on the eastern side of the cape.

From the southward, Cape Disappointment shows as three low knobs, separated by low flat ridges. North Head Light shows on the western slope of the western knob. From the westward, the cape is not prominent, but in fog, haze, or smoke inside the cape, it stands out clearly. From northwestward, the cape appears as a flat island with a slight depression in the center and a timbered knob at each end. From this direction, a low, flat hill with gently sloping sides between the cape and high ridges eastward appears as an island from a distance.

McKenzie Head, 0.8 mile northwestward of Cape Disappointment Light, is 190 feet high and nearly round. It is covered with grass and fern but is bare of trees.

North Head, the extreme western point of the cape, is 270 feet high, with a very jagged, precipitous cliff, backed by a narrow grassy strip; the higher ground behind it is covered with trees. **North Head Light (46°18.0′ N.,**

124°04.6′ W.), 194 feet above the water, is shown from a 65-foot white conical tower on the western point.

The entrance to Columbia River is marked by two jetties. The south jetty extends 2.7 miles seaward from the northwest end of Clatsop Spit. The north jetty extends 800 yards seaward from the shoreline on the north side of the entrance. Lighted ranges, lights, buoys, and daybeacons mark the channels.

Boundary lines of inland waters.—The line established for the Columbia River is described in **82.125,** Chapter 2.

Channels.—Federal project depths in Columbia River are 48 feet over the bar, thence 35 feet to the Broadway Bridge at Portland, Oreg., 30 feet from the confluence of Willamette and Columbia Rivers to Vancouver, Wash., and thence 27 feet to The Dalles. These depths are maintained. Controlling depths are published in the Notice to Mariners, and additional information can be obtained from the Corps of Engineers, Pittock Block, Portland, Oreg.

Depths.—Minimum depths are given at mean lower low water from the entrance to Harrington Point, thence at Columbia River Datum to Bonneville Dam on the Columbia River, and Willamette Falls Dam near Oregon City on the Willamette River. **Columbia River Datum** is the mean lower low water during lowest river stages. The staff gage at the Columbia River Pilots' Office, at the foot of 14th Street at Astoria, Oreg., is set with zero at mean lower low water. The staff gages located on the bars from Harrington Point to Portland, Oreg., are set with zero at Columbia River Datum.

Anchorages.—Limits and regulations of the anchorage areas in the Columbia River are given in **202.228,** Chapter 2.

Bridges and cables.—Clearances of bridges and cables over Columbia River and its tributaries are at mean lower low water below Harrington Point and at Columbia River Datum above that point. The clearances are referred to normal pool level above the dams on the Columbia River, and above the low water slope on the Willamette River above the locks at Oregon City.

Caution regarding aids to navigation.—During the seasonal high-water conditions, aids to navigation may be destroyed or rendered unreliable. Mariners are warned to exercise caution in navigating the river and to obtain the latest information regarding aids to navigation by local inquiry and through local Notice to Mariners, available upon request to the Commander, 13th Coast Guard District, Seattle, Wash. Every effort is made to restore the aids to operating condition as soon as possible.

Routes, Columbia River approach.—The lights at the entrance and at Willapa Bay 28 miles northward, are distinguishing marks for determining a vessel's position and subsequent shaping of her course.

In thick weather, great caution is essential on the approach from any direction. The currents are variable and uncertain. Velocities of 3 to 3.5 knots have been observed between Blunts Reefs and Swiftsure Bank, and velocities considerable in excess of those amounts have been reported. Under such conditions, vessels should keep outside the 30-fathom curve until the lightship has been made. Care should be taken not to mistake the low sand beach northward of Cape Disappointment for that southward of Point Adams. Nearly all the vessels which have gone ashore attempting the entrance have been wrecked northward of the mouth, in the vicinity of Peacock Spit.

In clear weather, vessels should have no difficulty in entering the river as the aids to navigation are numerous. In thick weather, however, when the aids cannot be seen, strangers should not attempt to enter without a pilot.

Local vessels entering in thick weather and with a rising tide, as a rule, do not attempt to pass beyond Desdemona Sands Light, because of the difficulty under such circumstances of avoiding vessels anchored in the narrow channel above the light.

Strangers should not attempt to run the river at night.

Dredges will usually be found at work in the channels; these dredges should be passed with caution and reduced speed. See **207.670,** Chapter 2, for regulations.

Weather.—An estimate of bar conditions, visibility, and weather, may be obtained by radio from the Coast Guard Cutter at Astoria, or the Point Adams Coast Guard station at Hammond.

Currents.—The currents at the Columbia River Lightship are described in the Tidal Current Tables.

Caution.—The Columbia River bar is reported to be very dangerous because of sudden and unpredictable changes in the currents often accompanied by breakers. It is reported that ebb currents on the northern side of the bar attain velocities of 6 to 8 knots, and that strong northwesterly winds sometimes cause currents that set northward or against the wind in the area outside the jetties.

In the entrance the currents are variable, and at times, reach a velocity of over 5 knots on the ebb; on the flood they seldom exceed a velocity of 4 knots. The current velocity is 3.5 knots, but this tidal current is always modified both as to velocity and time of slack water by the river discharge. On the flood there is a dangerous set toward Clatsop Spit, its direction being approximately east by south; on the ebb the current sets along the line of buoys. Heavy breakers have been reported as far inside the entrance as buoy 12, southward of Sand Island.

See the Tidal Current Tables for daily predictions.

Freshets.—The annual high-water freshet stage on the Columbia occurs in the latter part of May, but on Willamette River the peak-flow period usually begins in mid-December and continues through February, according to measurements taken by the U.S. Geological Survey over the past 70 years. Thus, the Willamette is low or nearly so at the time of the peak flow on the Columbia in late May. This causes the Willamette to apparently change direction under the influence of the stronger flow or "back-up" from the Columbia, which change is apparent at least as far up the Willamette as the city of Portland.

On Columbia River, the freshet flow causes some shoaling in the dredged cuts, but redredging is done to maintain project depths.

Since logging is one of the main industries of the region, free floating logs and submerged deadheads or sinkers

716-810 O-64—12

★ (3508) **COLUMBIA RIVER—Entrance to Harrington Point—Channel depths amended.**—The Corps of Engineers report the following changes—report of May 2, 1966:

Channel name and position	Depth M.L.L.W. (feet)	Width (feet)	Date of Survey
1. Baker Bay West Channel Channel entrance (46°15′55″ N., 124°02′00″ W.) to first turn	7	100 Mid-width	4–66
2. Channel to Chinook (46°15′45″ N., 123°57′35″ W.)	6	150	4–66
3. Skipanon Waterway (46°11′12″ N., 123°54′18″ W.)	8	200	4–66

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

(N.M. 22/66.)

(C. & G.S. CL–565/66.)

C. & G.S. Chart **6151.**

C. & G.S. Coast Pilot 7, 1963, page **166.**

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★ (5047) **COLUMBIA RIVER—Entrance to Harrington Point—Astoria—Sunken rocks.**—Dangerous sunken rocks covered at mean lower low water exist Range Front Light (46°11'25'' N., 123°49'15'' W. approx.). 2,050 yards 323° from Astoria Crossing

(N.M. 35/65.)

(L.N.M. 50, C.G., Seattle, July 29, 1965.)
C. & G.S. Chart 6151.
C. & G.S. Coast Pilot 7, 1963, page 167.

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★ (3916) **COLUMBIA RIVER—Entrance to Harrington Point—Light discontinued.**—Desdemona Sands Light has been discontinued.

Approx. position: 46°13′31″ N., 123°57′14″ W.

Note.—Two piles remain, 14 feet below the surface of the water, in charted position of the light.

(N.M. 27/65.)

(L.N.M. 35, C.G., Seattle, June 10, 1965.)
C. & G.S. Chart **6151.**
C.G. Light List, Vol. III, 1964, No. **1399.**
C. & G.S. Coast Pilot 7, 1963, page **166.**

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★ (2979) **COLUMBIA RIVER—Entrance to Harrington Point—Baker Bay—West Channel—Channel depths amended.**—A survey by the Corps of Engineers in March 1966 shows controlling depths at M.L.L.W. in Baker Bay [illegible] nel of 10 feet in the right outside quarter only from the ch[illegible] (46°15′55″ N., 124°02′00″ W.) to the first turn; thence 9 feet [illegible] 150 feet to Fort Canby.

Note.—(*a*) A shoal, bare at M.L.L.W., has encroached across [illegible] 150 feet of the channel centered about 250 yards southwest of the [illegible] ect depth of 10 feet was available in the southeast quarter of the [illegible] site the shoal and through the remainder of the reach.

(*b*) The Corps of Engineers should be consulted for chan[illegible] subsequent to the above.

(See N.M. 28(4058) 1965.)

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d through the

(C. & G.S. CL–434/66; BP–69356.)
C. & G.S. Chart **6151.**
C. & G.S. Coast Pilot 7, 1963, page **166.**

[illegible]

★ (6258) **COLUMBIA RIVER—Entrance to Harrington Point—Buoy moved.**—Peacock Spit Lighted Buoy 11 (46°15.6′ N., 124°03.0′ W. approx.) has been relocated in 87 feet of water about 2,410 yards 274° from Sand Island Lower Dike Light (46°15.7′ N., 124°00.4′ W. approx.) to mark the route of best water.

(See N.M. 35(5540) 1966.)

(N.M. 40/66.)

★ (6259) **COLUMBIA RIVER—Entrance to Harrington Point—Buoy changed.**—Desdemona Sands Channel Lighted Buoy 22 has been changed to show a *flashing red* light every *4 seconds*, flash *0.4 second*, of 20 candlepower.

Approx. position: 46°13.5′ N., 123°58.4′ W.

(N.M. [illegible])

(L.N.M. 58, C.G., Seattle, Sept. 8, 1966.)
C. & G.S. Chart **6151.**
C.G. Light List, Vol. III, 1966, No. **1398.11.**
C. & G.S. Coast Pilot 7, 1963, page 166.

★ (1201) **COLUMBIA RIVER—Entrance to Harrington Point—Tansy Point—Light moved.**—Tansy Point Range Rear Light (46°11'17'' N., 123°55'45'' W. approx.) has been relocated to a position about 960 yards *264*° from the Front Light. The structure consists of a rectangular fluorescent red-orange daymark on a skeleton tower. No other change.

Note.—The old structure has been removed.

(N.M. 8/66.)

(L.N.M. 6, C.G., Seattle, Jan. 25, 1966.)
C. & G.S. Chart 6151.
C.G. Light List, Vol. III, 1965, No. **1406.**
C. & G.S. Coast Pilot 7, 1963, page 166.

★ (2980) **COLUMBIA RIVER—Entrance to Harrington Point—Light established.**—Desdemona Sands Light, previously reported discontinued, has been reestablished in 10 feet of water about 2,975 yards 183° from Chinook Channel Dike Light (46°15.0' N., 123°57.1' W. approx.). The light, showing *flashing white* every *4 seconds* of 100 candlepower, is exhibited 23 feet above the water from a dolphin with red and white checkered square daymark with a white reflective cross.

(See N.M. 27(3916) 1965.)

(N.M. 19/66.)

(L.N.M. 23, C.G., Seattle, April 14, 1966.)
C. & G.S. Chart **6151.**
C.G. Light List, Vol. III, 1965, No. **1399.**
C. & G.S. Coast Pilot 7, 1963, page **166.**

★ (4058) **COLUMBIA RIVER—Entrance to Harrington Point—Baker Bay West Channel—Controlling depths.**—A survey by the Corps of Engineers in May 1965 shows controlling depths at M.L.L.W. in the Baker Bay West Channel as follows:

(*a*) 2 feet for a middle width of 100 feet from the channel entrance (46°15′55″ N., 124°02′00″ W.) to the first turn.

Note.—A shoal has encroached across the northwest 150 feet of the channel centered about 200 yards southwest of the first turn; project depths were available in the southeast quarter of the channel opposite the shoal and through the remainder of the reach.

(*b*) 9 feet for a width of 150 feet from the first turn to Fort Canby.

(*c*) 9 feet for a width of 150 feet from Fort Canby to the fork at Baker Bay West Channel Light 22.

(*d*) 7 feet for a width of 150 feet in the East fork from Light 22 to the Mooring Basin.

(*e*) 10 feet for a middle width of 100 feet in the West Fork from Light 22 to Ilwaco.

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

(Supersedes N.M. 34 (4402) 1964.)

(N.M. 28/65.)

(C. & G.S. BP–68026–27.)

C. & G.S. Chart **6151.**

C. & G.S. Coast Pilot 7, 1963, page **166.**

★ (5210) **COLUMBIA RIVER—Entrance to Harrington Point—Chinook Channel—Controlling depths.**—Surveys by the Corps of Engineers show controlling depths at M.L.L.W. in Chinook Channel as follows: In June 1964 a depth of 6 feet for a width of 150 feet in the improved channel to Chinook from the channel entrance (46°15′43″ N., 123°57′36″ W.) to the mooring basin; thence in May 1959, a depth of 10 feet in the mooring basin.

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

(Supersedes N.M. 7(860) 1963.)

(N.M. 40/64.)

(C. & G.S. CL–1173/64.)
C. & G.S. Chart 6151.
C. & G.S. Coast Pilot 7, 1963, page 166.

★ (4402) **COLUMBIA RIVER ENTRANCE—Baker Bay West Channel—Controlling depths.**—A survey by the Corps of Engineers in June 1964 shows controlling depths at M.L.L.W. in the Baker Bay West Channel as follows: A depth of 5 feet for a middle width of 150 feet from the channel entrance (46°15′55″ N., 124°02′00″ W.) to the first turn; thence a depth of 9 feet for a width of 150 feet to Fort Canby.

Note.—(*a*) A shoal has encroached across the northwest half of the channel centered about 200 yards southwest of the first turn; project depths were available in the southeast half of the channel through this reach.

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

(See N.M. 39(5018) 1963.)

(C. & G.S. BP–66176.) (N.M. 34/64.)
C. & G.S. Chart 6151.
C. & G.S. Coast Pilot 7, 1963, page 166.

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Page 166.—Line 57/L; read: controlling depth was 9 feet to Fort Canb and thence 7 feet to the port facilities at Ilwaco, in July 1963. The former . . (NM–39/5018/63)

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are a constant source of danger in the Columbia and Willamette Rivers. The danger is increased during spring freshets. **Deadheads** or **sinkers** are logs which have become adrift from rafts or booms. One end of the sinker settles to the bottom while the other floats just awash, rising and falling with the tide.

Ice forms occasionally in both the Willamette and Columbia Rivers, but it is seldom heavy enough to seriously affect navigation.

Pilotage.—Pilotage across the Columbia River bar and up or down the river is not compulsory, but pilots are always available. Vessels requiring a pilot should radio (Code Word) Bar Pilots Astoria, 12 hours prior to arrival, stating expected time of arrival at the Columbia River Lightship in order to be assured of a bar pilot being available.

The Bar Pilots maintain the converted minesweeper, PEACOCK, radio call WA–9403, and the 65-foot boat COLUMBIA, radio call WJ–8200; both operate on 2738 kc. They are equipped to receive and transmit on 2182 kc., and normally guard that frequency.

Pilots are transferred from the pilot boat by means of a pulling boat, and the ship should have a boat rope for the small boat to hang onto, this boat rope to be made fast on deck, about 75 feet on each side of the ladder, with the bight down to the water's edge.

The COLUMBIA normally operates from about May 15 to September 15, and comes directly alongside a ship. To assist the pilot in boarding from the bow, the ship is requested to have approximately 4 knots headway and have the bottom of the pilot ladder 8 feet from the water's edge with the wind and swell either on the ship's bow or quarter, and the ladder clear of the gangway or obstructions.

The bar pilotage ground extends from the uppermost dock or wharf at the port of Astoria to the open sea, at least 10 miles beyond the outermost buoy, and the river pilotage ground extends from the lowermost dock or wharf at the port of Astoria to the head of navigation on the Columbia or Willamette Rivers and their tributaries. The transfer of a bar pilot to a river pilot is made off Astoria. The radio code word for Columbia River Pilots is COLRIP. The whistle signal is one long and three short blasts.

An occulting amber light is maintained by the Columbia Bar Pilots, in cooperation with the Coast Guard, on the outer end of the pier on the west side of Tongue Point. When this light is exhibited it will inform outward bound vessels that desire a bar pilot that the bar is not passable and that the vessel should anchor.

Chart 6151.—Baker Bay is a shoal open bight, eastward of Cape Disappointment, formed by the cape and the recession of the land northward. **Sand Island,** low and flat, is in front of the bay. A Federal project provides for a channel 10 feet deep to the turning basin at Ilwaco. This channel lies westward of Sand Island. The controlling depth is about 6½ feet to Ilwaco. The former channel eastward of Sand Island is no longer maintained. The entrance is subject to continual change. As there is usually a swell here, the channel should be navigated only at high water with local knowledge. The remainder of the bay is covered with shoals and abandoned fish traps.

Ilwaco is the base for a large commercial and sport fishing fleet. Gasoline and diesel fuel are pumped at the basin; ice, water, and other supplies are available. The largest marine railway can haul out boats up to 75 tons for general repairs. The **Port of Ilwaco** administers the docks and facilities of the port.

Desdemona Sands, a shoal area extending from just inside the entrance of Columbia River for about 8 miles southeastward, divides the river into the main channel to the south and a secondary channel to the north. **Desdemona Sands Light (46°13.5′ N., 123°57.2′ W.),** 17 feet above the water, is shown from a white platform on piles on the western end of the shoal; a fog signal is at the light.

Fort Stevens wharf, at Mile 7.3 on the Oregon side, is marked by a light and fog signal on a dolphin off the end. A narrow catwalk connects the light structure with the wharf which is in ruins. The Fort Stevens Boat Haven is at **Hammond,** 0.2 mile southeastward of the wharf. Its entrance is marked by lights on the end of the jetties. Depths inside are about 6 feet.

Warrenton, on the **Skipanon River** at Mile 9.5, is the site of several sawmills, canneries, and fertilizer works. The largest marine ways here can haul out craft up to 110 feet in length; general hull and engine repairs are made. A sizable mooring basin is in the easterly part of the river some 1.4 miles above the entrance. Diesel oil, gasoline, lubricants, ice, and water are available. Depths through the entrance channel are about 15 feet, but only 5 feet in the channel above the railroad bridge.

Above the waterfront area the river is crossed by two drawbridges, the least clearance of which is 10 feet above mean lower low water, and the least width 33 feet. A power cable at the second bridge has a clearance of 68 feet. See **203.740,** Chapter 2, for drawspan regulations.

Scarboro Hill, 820 feet high, is on the Washington side about 7 miles eastward of Cape Disappointment. It is a long, gradually rising ridge, covered with grass, fern, and some trees. A number of conspicuous light-colored buildings of the historical Fort Columbia State Park may be seen near the base of the hill.

A Federal project channel 7 feet deep in 1962 leads from Columbia River just off the eastern end of Sand Island, to a basin at **Chinook,** on the Washington side. A pile-and-timber bulkhead wharf at the town is owned by a packing company, but a portion of the wharf is used as a public landing.

Smith Point, at Mile 11.3 on the Oregon side, is the western termination of a high, wooded ridge; it is the first prominent point on the southern bank southeastward of Point Adams. The ridge culminates in **Coxcomb Hill,** 595 feet high, behind Astoria. The Astor Column on the top of the hill is prominent.

Youngs Bay is a shoal body of water just westward of Smith Point. It receives the waters of **Youngs River** and

★ (6205) **COLUMBIA RIVER—Entrance to Harrington Point—Buoy to be changed.**—About October 25, 1965 Tongue Point Channel Lighted Buoy 47 will be changed to show a *quick flashing white* light of 100 candlepower, without other change.

Approx. position: 46°13'38" N., 123°44'09" W.

(N.M. 43/65.)

(L.N.M. 68, C.G., Seattle, Sept. 30, 1965.)
C. & G.S. Chart 6151.
C.G. Light List, Vol. III, 1965, No. 1422.
C. & G.S. Coast Pilot 7, 1963, page 167.

Page 167.—Line 14/L; insert after:

In 1963, a highway bridge was under construction across Youngs Bay, just downstream from the existing railroad bridge. The highway bridge will have a vertical-lift span across the channel. (CL-602/63)

★ (679) **COLUMBIA RIVER—Entrance to Harrington Point—Astoria—Buoy discontinued—Temporary buoy established.**—Astoria Crossing Lighted Horn Buoy 4 has been replaced by *Astoria Crossing Lighted Bell Buoy 4*, painted red, equipped with a radar reflector, and showing a *flashing white* light every 4 seconds of 120 candlepower, in 9 feet of water about 6,300 yards 213° from Quarantine Light (LL 2045) (46°16'08" N., 123°49'25" W. approx.).

Note.—The fog signal consists of a wave actuated bell.

(N.M. 5/66.)

(L.N.M. 1, C.G., Seattle, Jan. 6, 1966.)
C. & G.S. Chart 6151.
C.G. Light List, Vol. III, 1965 2037.
C. & G.S. Coast Pilot 7, 1963, page 167.

★ (5107) **COLUMBIA RIVER—Entrance to Harrington Point—Buoy changed.**—Tongue Point Channel Lighted Buoy 44 (46°13.1' N., 123°45.3' W. approx.) now shows a *flashing red* light every 4 seconds.

(N.M. 32/66.)

(L.N.M. 45, C.G., Seattle, July 14, 1966.)
C. & G.S. Chart 6151.
C.G. Light List, Vol. III, 1965, No. 1420.
C. & G.S. Coast Pilot 7, 1963, page 167.

★ (6260) **COLUMBIA RIVER—Entrance to Harrington Point—Buoy discontinued.**—Astoria Crossing Buoy ACS (46°12' N., 123°50' W. approx.), previously reported temporarily discontinued, has been permanently discontinued. (Supersedes N.M. 35(5542) 1966.)

(N.M. 40/66.)

(L.N.M. 58, C.G., Seattle, Sept. 8, 1966.)
C. & G.S. Chart 6151.
C.G. Light List, Vol. III, 1966, page 136.
C. & G.S. Coast Pilot 7, 1963, page 167.

Lewis and Clark River. Traffic on the two rivers is confined chiefly to towboats handling log rafts just above the two highway bridges. Small tugs operate to the town of **Olney** on Youngs River at high tide. A powerhouse with a prominent white concrete stack is on the northern shore of the bay, just westward of the highway bridge.

The reported controlling depths are 7 feet to and inside Lewis and Clark River, and about 8 feet in Youngs River to the highway bridge, with deeper water inside.

The railroad swing bridge across Youngs Bay, near the mouth, has a clearance of 17 feet. The highway bascule bridge, 2.1 miles above the mouth, has a clearance of 24 feet. The first of several cables, 0.7 mile above this bridge, has a clearance of 103 feet.

Over Lewis and Clark River, 0.8 mile above the mouth, is a highway bascule bridge with a clearance of 25 feet. The power cable at the bridge and the one 1.8 miles above the mouth have a least clearance of 72 feet. The highway bridge, 4.8 miles above the mouth, has a fixed span 18 feet wide with clearance of 10 feet.

See **203.740,** Chapter 2, for drawspan regulations. Clearances are above **mean lower low water.**

Astoria, at Mile 12 on the Oregon side, extends from Youngs Bay to Tongue Point. It is the principal city on the lower portion of Columbia River. It has connections with the interior by both rail and river steamers; large quantities of grain, lumber, and general merchandise are shipped to both foreign and domestic ports. Oil products are received.

A mooring basin for trolling boats and others is maintained by the Port of Astoria just eastward of its piers at Smith Point. The basin can accommodate about 400 boats. Another small-craft mooring area, known as East End Basin, is at the eastern extremity of the waterfront. It can handle about 100 boats.

Anchorage.—The anchorage areas off Astoria are given in **202.228,** Chapter 2. Harbor regulations prohibit vessels from anchoring more than 1 hour within an area bounded on the south by the Astoria waterfront and on the north by the main channel buoys. Temporary anchorage may be had by vessels of suitable draft just east of buoy 19, northwest of Desdemona Sands Light.

Tides.—The mean range of tide at Astoria is 6.5 feet. The range between mean lower low water and mean higher high water is 8.2 feet. A range of about 12 feet may occur at the time of maximum tides. Daily tide predictions for Astoria (Tongue Point) are given in the Tide Tables.

Currents.—Above Astoria the current velocity is 1 to 3 knots except during the freshet period when the ebb is considerably increased although not enough to seriously affect navigation.

Towage.—Tugs are always available. Barges of several sizes are available at all times. The SALVAGE CHIEF, a 200-foot salvage tug, bases at Astoria.

Quarantine.—Quarantine regulations of the U.S. Public Health Service are enforced. The quarantine officer is stationed in Portland, and he may be requested at Astoria or other ports of call by previous arrangements. An outpatient office of the Public Health Service is at Astoria.

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

Immigration.—There is no office here. Arrangements can be made through the Portland office if required.

Harbor regulations are prescribed by the Port of Astoria Commission. Copies of the complete harbor regulations may be obtained from the harbormaster.

Wharves.—**The Port of Astoria,** a municipal corporation embracing all of Clatsop County, owns a substantial part of the waterfront at Smith Point, and operates a well-equipped modern terminal of three piers. The offices are on Pier 1. Depths alongside range from 20 to 35 feet.

Supplies.—Fuel oils, provisions, and marine hardware are available.

Repairs.—Marine railways here can haul out craft up to 400 tons in weight. There are machine shops and foundries. Complete salvage equipment is available. The Tongue Point naval dock is available in emergencies.

Communication between Astoria and Portland and intermediate points is by railroad, truck, and bus. Astoria is on the Columbia River Highway which extends from Seaside, Oreg., to Astoria, thence along the southern bank of the Columbia.

A Coast Guard cutter is stationed at the port during the greater part of the year.

Point Ellice, on the Washington side 9.5 miles inside the entrance, is the termination of a spur from the mountain ridge back of Scarboro Hill. The point is rounding and rocky, but not high. Two high hillocks lie behind the point. In this area there are many abandoned fish traps and pile structures which extend out into the river.

Megler, a mile northeastward of Point Ellice, is the site of the Oregon State Highway Department ferry landing for the ferries operating to Astoria. In 1962, a fixed highway bridge was under construction between Astoria and Point Ellice; design clearance is 200 feet.

Tongue Point, at Mile 16 on the Oregon side, is a bold, rocky peninsula, 308 feet high, covered with trees and connected with the southern bank by a low, narrow neck; it projects into the river for 0.8 mile. A buoy depot of the Coast Guard is on the western side of the peninsula near its inner end. On the eastern side are the concrete piers of the former naval base. The area adjacent to the piers has a general depth of 20 feet.

Cathlamet Bay lies eastward of Tongue Point and southward of the Main Ship Channel. There are many islands which are covered with tule in the summer, but in the winter they are almost indiscernible. The **John Day Channel** extends between Tongue Point and **John Day Point.** At the junction with the **John Day River,** just northward of the point, the name changes to **South Channel,** which follows the shore closely to and around **Settler Point** to **Svensen.** These channels are buoyed. The Maritime berthing area is on the west shore of Cathlamet Bay southward of Tongue Point; regulations are given in **207.900,** Chapter 2. The power cables across John Day

★ (6204) **COLUMBIA RIVER—Entrance to Harrington Point—Light moved and changed.**—Rocky Point Light has been moved and reestablished on the rock about 2,515 yards 008° from Grays Bay Light (46°16'05'' N., 123°43'50'' W. approx.). The light is now exhibited 15 feet above the water from a white platform on a pile equipped with a white reflector.

(N.M. 43/66.)

(L.N.M. 68, C.G., Seattle, Sept. 30, 1965.)
C. & G.S. Chart **6151.**
C.G. Light List, Vol. III, 1965, No. **2048.**
C. & G.S. Coast Pilot 7, 1963, page 168.

★ (5105) **COLUMBIA RIVER—Baker Bay West Channel—Westport Slough—Channel depths amended.**—The Corps of Engineers report the following changes—report of July 1, 1966:

Channel name and position	Depth M.L.L.W. (feet)	Width (feet)	Date of Survey
1. Baker Bay West Channel: From Fort Canby (46°17'08'' N., 124°03'00'' W.) to Ilwaco.	8	75 (Mid-Width)	6–66
2. Westport Slough: Entrance (46°09'45'' N., 123°23'00'' W.) to end of project.	23	150 (Mid-Width)	6–66

Note.—The Corps of Engineers should be consulted for changing conditions subsequent to the above.
(See N.M. 22 (3508) 1966.)

(C. & G.S. CL–859/66.) (N.M. 32/66.)
C. & G.S. Charts **6151** (1), **6152** (2).
C. & G.S. Coast Pilot 7, 1963, pages 168, 166.

★ (6262) **COLUMBIA RIVER—Harrington Point to Crims Island—Buoy changed.**—Elliot Point Lighted Buoy 13 (46°15.6' N., 123°37.0' W. approx.) has been changed to show a *flashing white* light every *4 seconds*, flash *0.4 second*, of 100 candlepower.

(L.N.M. 58, C.G., Seattle, Sept. 8, 1966.) (N.M. 40/66.)
C. & G.S. Chart **6152.**
C.G. Light List, Vol. III, 1966, No. **1437.**
C. & G.S. Coast Pilot 7, 1963, page 168.

★ (6263) **COLUMBIA RIVER—Crims Island to St. Helens—Buoy changed.**—Cottonwood Island Range Lighted Buoy 29 (46°05.7' N., 122°55.6' W. approx.) has been changed to show a *flashing white* light every *4 seconds*, flash *0.4 second*, of 100 candlepower.

(N.M. 40/66.)

(L.N.M. 58, C.G., Seattle, Sept. 8, 1966.)
C. & G.S. Chart **6153.**
C.G. Light List, Vol. III, 1966, No. **1528.**
C. & G.S. Coast Pilot 7, 1963, page 168.

★ (5927) **COLUMBIA RIVER—Harrington Point to Crims Island—Light established.**—Crown Zellerbach Water Intake Light, showing a *fixed red* light, of 25 candlepower, has been established on the dolphin structure over the end of the river intake pipe at Wauna about 310 yards 319° from Driscoll Rauge Front Light 56 (46°09'04" N., 123°23'35" W. approx.). The light is exhibited 25 feet above the water from a dolphin with a black and white checkerboard daymark.

Note.—The light is privately maintained. (N.M. 41/65.)

(L.N.M. 65, C.G., Seattle, Sept. 20, 1965.)
C. & G.S. Chart 6152.
C.G. Light List, Vol. III, 1964, No. 1649.51.
C. & G.S. Coast Pilot 7, 1963, page 168.

Page 168.—Lines 57–58/L; read: of Westport. In July 1963, the controlling depth was 28 feet to the dock. Above Westport, the . . . (NM–39/5018/63)

Line 45/R; read: Lord Island, has a clearance of 216 feet. (NM–35/4525/63)

Line 52/R; read: clearance of 115 feet. (NM–35/4525/63)

River have a least clearance of 38 feet at mean lower low water; drawbridge regulations are given in **203.745**, Chapter 2.

The eastern part of Cathlamet Bay (Chart 6152) is used mostly for logging operations and log storage.

Grays Bay on the Washington side, extends from **Grays Point** to **Harrington Point** northward of the Main Ship Channel. In the northeastern section of the bay are extensive mud flats. **Deep River** flows into the northern part of the bay. The channel is marked and follows the shore from Grays Point around **Portugese Point** and **Rocky Point.** This river is used only by small pleasnre craft and sport fishermen. Depths of 6 feet are available for about 2 miles above the mouth, above which it is shoal and probably good for no more than 2 feet.

Grays River, entered just eastward of Deep River, is another small stream used only by pleasure craft. Depths are not more than 2 feet, and much of the stream is blocked by snags and sunken logs.

Chart 6152.—Between **Harrington Point,** Mile 20.5, and **Crims Island,** Mile 47.5, Columbia River main channel follows the northern bank to **Three Tree Point,** thence swings around tbe bend, holding to the northeastern shore as far as **Hunting Island,** where it swings along the southerly shore until off the southeastern end of **Puget Island;** thence it follows the nortberly bank from **Cape Horn** past **Abernathy Point** and northward of Crims Island and **Gull Island.**

Currents.—In this section the current velocity is about 1 knot. Because of the river flow, which combines with the current, the upstream flow is weak or nonexistent and the downstream flow attains velocities of 2 to 3 knots.

Local magnetic disturbance.—Differences of as much as 3° from the normal variation have been observed along this section of the river.

Steamboat Slough, northeastward of **Price Island** at Mile 29.3 on the Washington side, is used by fishing boats, tugs, and for log storage. The controlling depth through the slough is about 9 feet.

Elochoman Slough, on the eastern side of Hunting Island at Mile 31.4, is used for log storage and by tugboats. Depths through the slough are 1 to 5 feet.

At Mile 35, a power cable with a clearance of 221 feet crosses the main channel to Puget Island.

Cathlamet Channel joins the main channel at Mile 32.3 on the Washington side. It is used by fishing boats, tugs, log rafts, and barges; and for some log storage above the city of **Cathlamet;** 10 feet can be carried. A fixed highway bridge crosses the channel from Cathlamet to Puget Island; the clearance is 74 feet for the uortherly span. A power cable, 0.5 mile above the bridge, has a clearance of 99 feet.

Westport Slough, at Mile 37.8 on the Oregon side, leads to the dock of an abandoned lumber mill at the village of **Westport.** In January 1963, the controlling depth in the channel to the dock was 23 feet. Ahove Westport, the slough is used for log storage; about 7 feet can be carried to **Kerry,** 2.4 miles above the mouth. A power cable, 1 mile above the mouth, has a clearance of 76 feet. A ferry operates between Westport and **Pancake Point** on Puget Island.

Wallace Slough, at Mile 41 southward of **Wallace Island,** is used by cannery tenders, fishing hoats, and house floats. A depth of 4 or 5 feet can be carried throngh the slough. **Beaver Slough** enters Wallace Slough at the mouth of the canal and is used by fishing boats and float houses. **Clatskanie River** is a tributary of Beaver Slough. A railroad bridge, about 0.6 mile above the mouth, has a clearance of 16 feet; drawspan regulations are given in **203.740,** Chapter 2. At Clatskanie is a wharf and warehonse.

Bradbury Slough, at Mile 47.1 southwestward of Crims Island, has depths of 9 feet as far as the upper end where it shoals to 3 feet. There is extensive log storage along the Crims Island shore.

Chart 6153.—Between Crims Island and Saint Helens, Mile 75, the main channel starts its southeastward swing, passing southerly of **Fisher Island** and northerly of **Walker** and **Lord Islands;** thence, under the Longview fixed bridge, thence westward of **Cottonwood Island,** east of **Sandy Island,** and westward of **Martin** and **Burke Islands.** Numerous jetties along this stretch are usually marked by lights or daybeacons.

Currents.—In this section the current velocity is 0.5 knot. During 6 days of observations taken in June and July there was a continuous dowustream flow varying from 0.5 to 2 knots.

Local magnetic disturbance.—Differences of as much as 8° from the normal variation have been observed along this section of the Columbia River.

Coal Creek Slough, at Mile 49.2 on the Washington side, empties into the river at **Stella.** It is used exclusively for log-raft storage. Depths over the bar are 3 to 4 feet, but deeper water extends nearly 3 miles above the entrance. Power cables over the deeper part of the slough have least clearance of 65 feet.

Fisher Island Slough, uorthward of Fisher Island, is used as the Longview Yacbt Basin, by small fishing vessels, and as log-storage grounds. A depth of 7 feet may be carried through the channel.

A power cable over the main channel at Mile 54.5, at Lord Island, has a clearance of 120 feet.

The channel between Walker Island and the Oregon shore is used for log-raft storage. The shoal area, northward of **Dibblee Point,** limits the maximum depth which may be carried through the entire channel to about 7 feet. This channel is used as a shortcut by river boats during freshets. The power cable south of Lord Island has a clearance of 90 feet.

A large chemical plant is just westward of **Mount Coffin,** Mile 55.4. There is a wharf with a 500-foot face and reported depths of 32 feet alongside. There are dolphins 125 feet from either end of this wharf.

The **Longview Bridge,** at Mile 57.3 between Longview and Rainier, has a fixed span with a clearance of 185 feet. Fog signals are on the two piers of the bridge.

Longview, at Mile 58 on the Washington side, is a

★ (5244) **COLUMBIA RIVER—Willamette River—Light established.**—Willamette River Light 6, showing a *flashing red* light every *4 seconds* of 14 candlepower, with a higher intensity beam showing up channel, has been established about 690 yards 220° from Willamette River Light 4 (45°38′52″ N., 122°46′15″ W. approx.). The light is shown from a red triangular daymark with a reflective border, on a dolphin.

(N.M. 33/66.)

(L.N.M. 47, C.G., Seattle, July 21, 1966.)
C. & G.S. Charts **6155, 6154.**
C.G. Light List, Vol. III, 1965, No. **2069.**
C. & G.S. Pilot 7, 1963, page 169.

★ (3351) **COLUMBIA RIVER—Crims Island to St. Helens—Cowlitz River—Overhead Television Cable established.**—A new overhead television cable has been installed across the Cowlitz River on the existing structures supporting the charted overhead power cable in 46°10′07″ N., 122°54′46″ W. The authorized vertical clearance for this cable is 67 feet.

(N.M. 21/66.)

(C. & G.S. CL–489/66.)
C. & G.S. Chart **6153.**
C. & G.S. Coast Pilot 7, 1962, page **169.**

★ (1064) **COLUMBIA RIVER—Crims Island to St. Helens—Depths.**—Surveys by the Corps of Engineers in October and November 1965 show depths at M.L.L.W. north of Columbia City as follows:

(a) 30 feet in 45°54′13″ N., 122°48′32″ W.
(b) 30 feet in 45°54′28″ N., 122°48′35″ W.
(c) 33 feet in 45°54′51″ N., 122°48′28″ W.

(N.M. 7/66.)

(C. & G.S. BP–68852.)
C. & G.S. Chart **6153.**
C. & G.S. Coast Pilot 7, 1963, page 169.

★ (4560) **COLUMBIA RIVER—Lewis River—Buoys established.**—The following buoys, each a red nun equipped with a red reflector, have been established in 5 feet of water as indicated; distances and bearings from Warrior Rock Range Rear Light (45°51'20" N., 122°46'45" W. approx.):

(*a*) Lewis River Buoy 4 about 438 yards 069°.

(*b*) Lewis River Buoy 6 about 1,490 yards 063°.

(N.M. 35/64.)

(L.N.M. 40, C.G., Seattle, Aug. 6, 1964.)
C. & G.S. Charts **6153, 6154.**
C.G. Light List, Vol. III, 1963, page **144.**
C. & G.S. Coast Pilot 7, 1963, page **169.**

★ (1036) **COLUMBIA RIVER—St. Helens Range—Multnomah Channel—Controlling depth.**—A survey by the Corps of Engineers in November 1964 shows a controlling depth of 26 feet for a width of 300 feet in the improved North Entrance Channel from the junction with St. Helens Range (45°53'07" N., 122°47'55" W.) to a point about 100 yards northwest of St. Helens Channel Light 3.

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

(N.M. 8/65.)

(C. & G.S. BP-66954.)
C. & G.S. Chart 6153.
C. & G.S. Coast Pilot 7, 1963, page 169.

★ (1638) **COLUMBIA RIVER—St. Helens Range—Multnomah Channel—Controlling depth.**—A survey by the Corps of Engineers in January 1966 shows a controlling depth of 25 feet at Columbia River datum for a width of 300 feet in the improved North Entrance Channel from the junction with St. Helens Range (45°53'07" N., 122°47'55" W.) to a point about 100 yards northwest of St. Helens Channel Light 3.

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

(Supersedes N.M. 8(1036) 1965.)

(N.M. 11/66.)

(C. & G.S. BP-69019.)
C. & G.S. Chart 6153.
C. & G.S. Coast Pilot 7, 1963, page 169.

★ (5928) **COLUMBIA RIVER—Saint Helens to Vancouver—Light changed.**—Fales Light 17 has been changed to show only one *quick flashing white* light, of 45 candlepower with higher intensity shown down channel. The light is exhibited 22 feet above the water from a white platform on a pile structure.

Approx. position: 45°46'21" N., 122°45'41" W.

(N.M. 41/65.)

(L.N.M. 65, C.G., Seattle, Sept. 20, 1965.)
C. & G.S. Chart **6154.**
C.G. Light List, Vol. III, 1964, No. **1586.**
C. & G.S. Coast Pilot 7, 1963, page 169.

★ (1035) **COLUMBIA RIVER—Slaughters Channel—Longview channel—Controlling depths.**—A survey by the Corps of Engineers in December 1964 shows controlling depths at Columbia River Datum in the side channel to Longview as follows: A depth of 30 feet for a width of 300 feet from the junction with Slaughters Channel (46°07′52″ N., 122°59′55″ W.) to the turn at Mount Coffin; thence a depth of 25 feet for a width of 250 feet to Longview Port Dock except for a depth of 22 feet on the north edge of the channel about 440 yards 144° from Mount Coffin Light (46°07′42″ N., 122°59′16″ W.)

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

(N.M. 8/65.)

(C. & G.S. BP-67105.)

C. & G.S. Chart **6153.**

C. & G.S. Coast Pilot 7, 1963, pages **168, 169.**

★ (5352) **COLUMBIA RIVER—Lewis River—Buoys established.**—The following buoys have been established in 6 feet of water as indicated; distances and bearings from Warrior Rock Range Rear Light (45°51′20″ N., 122°46′45″ W. approx.):

(*a*) Lewis River Buoy 1, a black can equipped with a white reflector, about 320 yards 195°.

(*b*) Lewis River Buoy 2, a red nun equipped with a red reflector, about 350 yards 172°30′.

(See N.M. 35 (4560) 1964.)

(N.M. 41/64.)

(L.N.M. 46, C.G., Seattle, Sept. 17. 1964.)
C. & G.S. Chart 6154.
C.G. Light List, Vol. III, 1963, page 144.
C. & G.S. Coast Pilot 7, 1963, page 169.

★ (6105) **COLUMBIA RIVER—St. Helens Range—Multnomah Channel—Controlling depth.**—A survey by the Corps of Engineers in September 1964 shows a controlling depth of 24 feet for a width of 300 feet in the improved North Entrance Channel from the junction with St. Helens Range (45°53′07″ N., 122°47′55″ W.) to a point about 100 yards northwest of St. Helens Channel Light 3.

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

(N.M. 46/64.)

(C. & G.S. CL–1393/64.)
C. & G.S. Chart 6153.
C. & G.S. Coast Pilot 7, 1963, page 169.

major lumber port. The Port of Longview Authority manages most of the facilities. The bulkhead frontage includes more than 2,100 feet of modern dockside equipment and facilities, including two gantry cranes; depths of 35 feet are maintained alongside. Four large vessels can be handled alongside at the same time. Diesel and fuel oils, gasoline, lubricants, ice, and water are available in any quantity. Complete facilities are maintained for repair of vessels, except for drydocking. A small-craft boatyard here can haul out boats up to 10 tons. The grain elevator and the stacks and tanks of the mill are conspicuous.

Longview is a customs port of entry.

A Naval Reserve pier is at the west end of the Port of Longview wharf, just east of the bridge.

Cowlitz River flows into Columbia River at Mile 59, just eastward of Longview. Only small craft and pleasure boats ply the river, which has a reported depth of about 4 feet to Kelso, 4.8 miles above the mouth, and about 2 feet above there to **Toledo,** 29.5 miles upstream. The tide varies from 4 feet at the mouth to zero at **Ostrander,** 7.8 miles above the mouth. During ordinary freshets a stage of 20 feet and at extreme floods a stage of 25 feet is reached at Kelso.

Minimum clearance of the drawbridges across Cowlitz River between the mouth and Ostrander is 25 feet; minimum clearance for the fixed bridges is 64 feet. Two power cables near Ostrander have clearance of 72 feet, which is the minimum for such cables across the river. Drawbridge regulations are given in **203.765,** Chapter 2.

At **Kelso** there are several private wharves and one public landing. North of Kelso are log dumps.

Rainier, on the Oregon side opposite Longview, is used for some small-craft commerce. Depths along the waterfront are 20 to 24 feet. Two small boatyards have marine railways: maximum capacity is about 100 tons. Gasoline, ice, lubricants, and water are available; diesel oil is trucked in.

Carrolls Channel, between Cottonwood Island and the Washington shore of Columbia River, is used for log storage and fishing boats. About 13 feet can be carried through the channel.

A State fish hatchery is on **Kalama River** at Mile 63.4. **Kalama,** on the eastern bank about 3 miles above Cottonwood Island, has a fish wharf. Shingle and plywood mills are in operation. Small boats may obtain water and petroleum products by tank truck.

The channel circling the westerly side of **Sandy Island** is used by tugs hauling log rafts and barges; the controlling depth is about 8 feet.

Martin Slough, between Martin Island and Burke Island and the Washington shore, is used in log rafting operations, as is **Burke Slough** between Burke Island and the Washington shore.

Columbia City is a municipality at Mile 73 on the Oregon side. The main channel follows along the waterfront.

Saint Helens, at Mile 75 opposite the mouth of Lewis River, is the site of paper and lumber mills, the products of which are shipped in considerable quantities. During high water, large vessels require the assistance of tugs to be turned in the narrow basin off the dock. Municipal water is available on the dock in any quantity. Fuel for small boats is available at floating marine stations. The main wharf has a face over 1,300 feet long with a reported depth of 30 feet alongside.

Lewis River enters Columbia River at **Austin Point** (Chart 6154), Mile 75.7, on the Washington side. Depths are about 3 feet over the mouth, but just below the first bridge a bar reduces the depth to about 1 foot. Some logging and other traffic moves up to **Woodland,** 5.7 miles above the mouth, at high water. Drawbridge regulations are given in **203.765,** Chapter 2.

The railroad swing bridge, 1.8 miles above the mouth, has a clearance of 28 feet. The other bridges, all fixed, have clearances of 34 feet or more. Several cables cross the river.

Chart 6154.—From Saint Helens, Columbia River follows a southerly course to the mouth of the Willamette River, Mile 88, and then turns southeasterly to Vancouver, Mile 92.

Multnomah Channel is a 19-mile waterway separated from the Columbia River near Saint Helens and from the Willamette River near Portland by **Sauvie Island.** It is used by tows and small river boats during the winter when the main channel is discharging floe ice; logs are stored along the channel. Depths are 20 feet or more at the entrances, but decrease to 8 feet inside. A power cable about midway through the channel has a clearance of 100 feet. A fixed highway bridge near the southern end has a clearance of 78 feet.

Warrior Rock Light 2 (45°50.9′ N., 122°47.2′ W.), is shown from a white pyramidal structure on a stone pier near the northern end of Sauvie Island; a seasonal fog signal is sounded at the light. In thick fog vessels seldom attempt to pass the light; they anchor either above or below the point until the weather clears.

Local magnetic disturbance.—Differences of as much as 6° from the normal variation have been reported between Warrior Rock and the light off **Duck Club,** 1.5 miles southward.

Lake River, the outlet for **Vancouver Lake,** flows northward for 9.5 miles to its junction with Columbia River at the northern end of **Bachelor Island,** Mile 76. The controlling depth is 3 feet to **Ridgefield,** 2.5 miles above the mouth. There are some marginal wharves at Ridgefield; the principal traffic is floated logs. Power cables cross the river at several points.

Chart 6155.—At Mile 88, Columbia River is joined by **Willamette River,** its largest tributary below the Cascade Mountains. The Willamette drains a large territory, and is important as the site of the city of Portland, 9 miles above its mouth.

The Federal project depth in Willamette River is 35 feet to the Broadway Bridge in Portland; between this

span and Ross Island, the Port of Portland maintains the channel at 30 feet. For navigation regulations, see **207.670,** Chapter 2.

Overhead clearances are at Columbia River Datum.

Willamette River Light 44 (45°39.2′ N., 122°45.7′ W.) is shown from a pile structure near the end of the dike extending from **Kelley Point** on the eastern side of the entrance to the river; a seasonal fog signal is sounded at the light.

Columbia Slough, a narrow back channel roughly parallel to Columbia River, empties into the Willamette about 0.4 mile above its mouth. Least depth in the slough is about 4 feet. A dam has been constructed across the slough about 7.3 miles above the mouth, and a cross channel, **Peninsula Drainage Canal** dredged to Columbia River. Navigation consists principally of movements of log rafts to several shingle and lumber mills located on the slough.

The fixed bridges over the slough have least clearance of 27 feet. The least clearance of the power cables is 68 feet, at East St. Johns.

In the vicinity of **Post Office Bar Range,** 2 miles above the mouth of Willamette River, deep-draft vessels favor the west side of the river, while smaller vessels and tows usually hug the eastern side because of lesser current. A power cable with a clearance of 230 feet crosses the river 0.3 mile below the junction with Multnomah Channel. The twin towers supporting the cable are the most conspicuous features in this area.

Portland, on Willamette River about 9 miles from its mouth, is the principal city of the Columbia River system and one of the major ports on the Pacific coast. It has extensive commerce, both foreign and domestic, and is the port of call for many lines of coastwise, intercoastal, and transpacific steamships. The port is served by four transcontinental railroads. There are scores of docks and modern facilities along the 25 miles of deep-water frontage of both sides of the river. The terminal docks are equipped with the latest automated devices for fast handling of general cargo. Rail spurs serve all the big terminals.

The development, use, and administration of the harbor are concentrated in two autonomous commissions. The **Port of Portland Commission,** created by the State in 1891, operates Swan Island Ship Repair Yard and its contiguous expanse of industrial area, dredges the channel between Broadway and Ross Island Bridges, and assists the Corps of Engineers with other dredging in the Willamette and Columbia Rivers. The Port also operates two airports. The **Commission of Public Docks,** an agency of the City of Portland created in 1910, owns and operates most of the commercial docks and facilities. These are grouped in the three major terminals located downstream of Broadway Bridge. The dock commission is responsible for providing rapid-handling facilities at its terminals, as well as other modern equipment, so that the city can accommodate the largest vessels coming up the rivers.

Anchorages.—The anchorage generally used is from the Broadway Bridge downstream to the northern limits of the city, a short distance below municipal terminal No. 4, with depths of 30 to 35 feet.

Bridges.—The minimum clearance of the drawbridges is 26 feet at the Glisan Street vertical-lift bridge, 10.4 miles above the mouth; its raised clearance is 72 feet. The minimum fixed-span clearance is 120 feet at the Ross Island highway bridge. Drawspan regulations are given in **203.750,** Chapter 2. In 1962, a new double-decker fixed highway bridge was under construction 11.2 miles above the moutb, about midway between the Hawthorne and Ross Island bridges. All clearances are at Columbia River Datum.

The river is crossed near the north end of Ross Island by a power cable with clearances of 123 feet over the main channel and 83 feet over the east channel. About 0.4 mile southerly are cables with least clearance of 75 feet.

Ice forms occasionally, but it is seldom heavy enough to seriously affect navigation, although navigation by small vessels and river boats may be difficult.

Towage.—Every type of tugboat service is available here. No lighterage is necessary, but occasionally lumber is transferred by barge from mills to vessels.

Quarantine regulations of the U.S. Public Health Service are enforced. Vessels subject to quarantine usually proceed to their docks for inspection. A quarantine anchorage is just below municipal terminal No. 4 at Portland. Vessels may be deratized at either Astoria or Portland. An outpatient clinic of the Public Health Service is in the city.

Customs.—Portland is the headquarters of the customs collection district and a port of entry; marine documents are issued.

Immigration officials are stationed at Portland.

Harbor regulations.—The regulations are enforced by the harbormaster; copies of the regulations may be obtained from his office at the police harbor-patrol dock, foot of S.W. Clay Street.

Wharves.—There are docks and wharves capable of serving the largest vessels plying the river. Depths alongside the major terminals range from 20 to 35 feet. Storage facilities of all types are here, including a grain elevator with bins of total capacity of over 8,000,000 bushels. Dockside cranes have capacities ranging from 2 to 100 tons, and the barge cranes handle loads of 2 to 75 tons. The bulk unloader at Terminal 4 can move cargo at the rated capacity of 900 tons an hour. There are tanks for storage of molasses and heavier liquids, and the oil companies have their own unloading terminals and tank farms along the northwesterly banks of the river. Ample warehouse space is available at all times.

Supplies.—Fuel oil, gasoline, water, marine hardware, and groceries may be obtained in any quantity.

Repairs of all kinds can be made. The principal marine repair plant, maintained by the Port of Portland, is on Swan Island, on the east side of Willamette River. It is equipped with modern machinery. There are three drydocks here, the largest of which can lift 27,000 tons dead-

weight. It is 600 feet long over the keel blocks, with a depth over the blocks of 32 feet. Width between wings is 112 feet.

One well-equipped firm specializes in marine salvage in Portland. It has a 203-foot 3,600-horsepower converted LSM, equipped with 50-ton winches. Several firms undertake minor salvage work.

Communications.—All commercial methods of communcation are available out of Portland, including several transcontinental railroads. Radiotelephone service is handled through both Portland and Astoria.

Chart 6171.—Navigation of Willamette River above Portland is hazardous due to the rocks, shoaling bars, and strong currents. Local knowledge and midchannel courses are recommended. Federal project depths are 8 feet to Oregon City, thence 6 feet to Santiam River, 5 feet to Albany, and 2½ to 3½ feet to Corvallis, 115 miles above the mouth. These depths are usually maintained.

Below the falls at Oregon City, ordinary fluctuation of stage of water is 15 feet, and extreme fluctuation due to flood conditions is 30 to 50 feet. Above Oregon City, ordinary fluctuation is 12 to 20 feet, and extreme is 20 to 27 feet.

Clearances of bridges and cables are at Columbia River Datum below the Willamette Falls locks and at the low-water slope above the locks.

The river is marked with aids to navigation.

Between Portland and Willamette Falls most of the terminals are privately owned mill wharves and oil-receiving facilities. Above the falls are small privately owned wharves or natural landings.

Sellwood fixed highway bridge, 14.5 miles above the mouth, has a clearance of 74 feet. Near the bridge on the east bank is a marina with docking facilities alongside the permanently moored old San Francisco ferry "Centennial Queen," now renamed "River Queen." Gasoline, oil, water small-craft repairs, and marine hardware are available.

There is a repair yard at **Milwaukie,** 16.2 miles above the mouth, that has a marine railway capable of hauling out craft up to 25 tons for hull and engine repairs.

A fixed railroad bridge, 17.4 miles above the mouth, has a clearance of 74 feet. The channel passes eastward of **Rocky Island,** 1.6 miles above the bridge. **Copeleys Rock,** 150 yards east of the south end of the island, is covered 10 feet and should be avoided.

Oregon City, on the east bank 22.6 miles above the month, is connected with **West Linn** by a fixed highway bridge which has a clearance of 74 feet. A power cable just north of the bridge has a clearance of 77 feet. Gasoline and oil are available at the northern limit of Oregon City.

Willamette Falls Canal, on the west bank 22.8 miles above the mouth, has five locks with a total lift of 50 feet; usable lock dimensions are 175 feet long, 37 feet wide, and 6 feet deep over the miter sills at low water. The least clearance of the power cables and pipeline that cross the canal is 72 feet. Regulations for the use, administration, and navigation of the canal and locks are given in **207.680,** Chapter 2. Upbound vessels may expect a delay through the locks during weekdays because of the downbound traffic from the papermill.

A warehouse and several buildings are on the west bank alongside the canal locks. An 850-foot timber wharf is on the east side of the canal.

A marina, on the east bank opposite **Willamette** and 24.3 miles above the mouth, has an elevator lift for hoisting boats up to 5 tons and 30 feet in length for hull and engine repairs. Gasoline, diesel oil, and water are obtainable.

From the entrance to **Tualatin River,** 24.8 miles above the mouth, for over 4 miles, Willamette River is shallow and winding; buoys and unlighted ranges mark the channel.

Power cables crossing the river at **Rock Island,** 26.1 miles above the mouth, have a least clearance of 123 feet.

Small craft can tie up at **Shanks Landing,** 28.8 miles above the mouth.

Chart 6172.—Walnut Eddy is on the east bank, 29.4 miles above the mouth. Cables with least clearance of 78 feet cross the river at **Buchmans Landing,** 0.4 mile above Walnut Eddy. About 0.7 mile above this landing is the Canby ferry, first of the three electric-powered ferries which carry autos and passengers across this river. A cable with a clearance of 75 feet crosses the river 32.5 miles above the mouth. Near **Wilsonville,** 33.7 miles above the mouth, there are two fixed bridges, highway and railroad, each with a clearance of 74 feet. A small-boat marina here has finger piers; gasoline can be obtained at the float.

At **Butteville,** 37.3 miles above the mouth, there are small-craft moorings. The power cable here has a clearance of 79 feet. The fixed highway bridge, 42.1 miles above the mouth, has a clearance of 68 feet at the main span. At **Newberg,** 43.4 miles above the mouth, there is a small-boat launching ramp, but no facilties. The Newberg highway bridge, has been closed and is scheduled to be removed. Its clearance is 88 feet.

From Newberg to Corvallis, Willamette River is more tortuous and turning, but not considered difficult for the small craft and occasional log-rafting tugs that use this section. The tributary **Yamhill River** empties into Willamette River about 3 miles above Newberg; navigation regulations are given in **207.690,** Chapter 2. Depths in Yamhill River of about 3 feet are reported to **Dayton,** 4 miles above its mouth.

The electric-powered Wheatland ferry crosses Willamette River at a point about 63 miles above the mouth. Vehicles and passengers are carried.

Salem, capital of the State of Oregon, is 73.6 miles above the mouth. Several moorings and docks for log-rafting and small craft are here; a marina just above the bridges has a small and steep marine railway which can handle about 1½ tons, for ordinary repairs. Gasoline, diesel oil, fresh water, and marine hardware are obtainable.

★ (680) **COLUMBIA RIVER—Saint Helens to Vancouver—Buoys equipped with a radar reflector.**—Both of the following buoys have been equipped with a radar reflector:

(*a*) Vancouver Channel Lighted Buoy 47 (LL 1607) (candlepower is now 120).

Approx. position: 45°38.9′ N., 122°44.7′ W.

(*b*) Vancouver Channel Lighted Buoy 51 (LL 1610).

(L.N.M. 2, C.G., Seattle, Jan. 11, 1966.) (N.M. 5/66.)
C. & G.S. Charts 6155, 6154.
C.G. Light List, Vol. III, 1965 (see above).
C. & G.S. Coast Pilot 7, 1963, page 172.

★ (737) **COLUMBIA RIVER—Channel depths amended.**—The following table shows the depths in the channels on the various bars in the Columbia River from Vancouver, Washington, to the Bonneville Lock.

Depths are given at Columbia River datum.

Tabulated from surveys by the Corps of Engineers, Portland, Oreg., Jan. 4, 1965

Name of channel or range	Controlling depths in channels entering from seaward: Left outside quarter	Middle half of channel	Right outside quarter	Date of survey	Width (feet)	Length (naut. miles)	Depth M.L.L.W. (feet)
Government Island Lower Range	12. 5	13. 5	14. 0	11–64	300	1. 0	27
Government Island Middle Range	18. 0	16. 5	16. 0	11–64	300	1. 4	27
Quarry Reef	19. 0	17. 0	16. 0	11–64	300	. 8	27
Government Island Range	22. 0	20. 0	20. 0	11–64	300	1. 1	27
Government Island Upper Range	19. 5	22. 5	25. 0	12–64	300	. 7	27
Lady Island Range	20. 0	20. 0	21. 0	12–64	300	1. 9	27
Lady Island Upper Range	26. 5	27. 0	27. 0	12–64	300	. 5	27
Washougal Lower Range	26. 0	27. 0	27. 0	12–64	300	1. 0	27
Washougal Upper Range	27. 0	27. 0	27. 0	12–64	300	1. 0	27
Gary Island Range	24. 5	24. 0	22. 0	12–64	300	. 8	27

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

(See N.M. 14(1794), 34(4404) 1963; 1(88) 1965.)

(C. & G.S. CL–56/65.) (N.M. 6/65.)
C. & G.S. Chart 6156.
C. & G.S. Coast Pilot 7, 1963, pages 172, 173.

A power cable at the northerly city limits of Salem has a clearance of 86 feet. Minimum clearance of the bridges is 69 feet at the fixed highway bridges, and 42 feet down and 87 feet up at the railroad lift bridge.

At **Independence,** 83 miles above the mouth, there is a small-craft launching ramp, but no facilities.

Near the hamlet of **Buena Vista,** 92 miles above the mouth, the river is crossed by an electric-powered vehicular ferry.

Albany, 104 miles above the mouth, in 1962 had no facilities. Two bridges are here: a railroad swing bridge with clearance of 40 feet, and a fixed highway bridge with a clearance of 55 feet.

Corvallis, 114.4 miles above the month, is the limit of the Federal project of the river. Navigation is possible for another 35 miles to Eugene, but only for small craft in depths of about 2 feet.

There are small-craft finger piers and marginal facilities at Corvallis; gasoline and water are available. A highway bridge has a swing span with a clearance of 35 feet. See **203.755,** Chapter 2, for drawspan regulations.

Chart 6155.—The main channel of the Columbia extends along the Washington shore, northerly of **Hayden** and **Tomahawk Islands,** from the Willamette River entrance to and beyond Vancouver. Overhead clearances are at **Columbia River Datum.** Three bridges cross the main channel between Vancouver and Hayden Island. The railroad swing bridge at Mile 91.8 has a clearance of 39 feet. The Interstate Highway Bridge, Mile 92.5, has twin lift spans with clearances of 39 feet down and 175 feet up. A power cable crossing 0.2 mile eastward has a clearance of 220 feet. See **203.750,** Chapter 2, for drawspan regulations.

North Portland Harbor is that portion of the river channel between the Oregon shore and Hayden Island, the west end being at Mile 89.2. The controlling depth is about 10 feet through this waterway. Two bridges cross North Portland Harbor. The railroad bridge, 2.6 miles east of the westerly entrance, has a swing span with a clearance of 39 feet; see **203.750,** Chapter 2, for drawspan regulations. A fixed highway bridge a mile eastward has clearance of 34 feet.

It is reported that some of the stub piling of a former bridge remains below the water, 0.6 mile eastward of the fixed bridge, off Tomahawk Island.

Vancouver is on the Washington side of the Columbia River at Mile 92. The port is a water outlet for a large lumber-producing section in southwestern Washington, as well as a distributing point for a fair share of the grain produced in the interior of Washington and Oregon. Aluminum, paper products, and canned goods are also shipped.

Anchorages.—No defined areas have been specially designated as anchorage ground. Anchorage may be had near the outer part of the channel providing the center of the fairway is not obstructed.

For quarantine, customs, and **immigration,** see Portland.

Wharves.—There are two public terminals with bulkhead marginal wharves; depths alongside are about 27 feet. Three docks are privately owned, and all are equipped to handle general cargo in the foreign and domestic trade moving through this port. Open storage space totals more than half a million square feet, and covered space is less than half that, but ample for the demand. A large grain elevator is on the waterfront. Rail connections serve most of the facilities.

Supplies.—Fresh water and supplies are available. There are no fueling facilities for large vessels, but gasoline and diesel oil may be obtained.

Repairs.—Small-craft repairs can be made at a floating marina and repair houseboat, about a mile above the Interstate Bridge. A lift device inside the floating machine shop can haul 7 tons. Gasoline, diesel oil, lubricants, water, ice, and some hardware are available.

Chart 6156.—From Vancouver to Bonneville, Mile 126, Columbia River passes through the impressive **Columbia River Gorge,** flanked on each side by railroads and highways. Commerce on the river in this section consists mostly of pleasure craft and barges.

There are more than 35 dike dolphins along this portion, some are marked with lights at their ends. All the dikes are completely covered at higher stages, but bare approximately 6 feet at datum level.

A **measured nautical mile,** on course **107°,** is at **Lieser Point,** 3.6 miles above the Interstate Bridge at Vancouver. Each range is painted yellow with black stripes.

A special small-craft **anchorage area** is between Sand Island and Government Island; limits and regulations are given in **202.1** and **202.128,** Chapter 2.

Camas, at Mile 104.5 on the Washington side, has a large papermill which maintains its own wharf on **Camas Slough,** north of **Lady Island;** least depth in the westerly entrance is about 14 feet; the easterly entrance is foul and bares at low water. Most of the traffic in the slough is for the papermill which barges its products to Portland for reshipment. At high flood stages a current of as much as 5 knots prevails in the slough.

A new fixed highway bridge from the mainland to the east end of Lady Island was under construction in 1962; the design clearance is 32 feet.

Washougal is on the Washington side just eastward of Camas. The channel and turning basin serving the two cities were dredged to 27 feet in 1962, for a length of over 2,000 feet along the waterfront at **Parkersville.** A small-craft basin here can accommodate more than 150 boats at its moorings.

There are four power cables crossing at Ione Reef, south of Lady Island. The least clearance is 133 feet.

The entrance to **Sandy River,** on the Oregon side opposite Camas, bares at low water. The projecting shoal, **Sandy River Bar,** is dangerous to vessels making the turn south of **Ione Reef.** At higher flood stages, passage up Sandy River as far as **Troutdale** is possible.

Local magnetic disturbance.—Differences of as much as 8° from the normal variation have been observed between **Tunnel Point** and **Point Vancouver,** eastward of **Reed Island.**