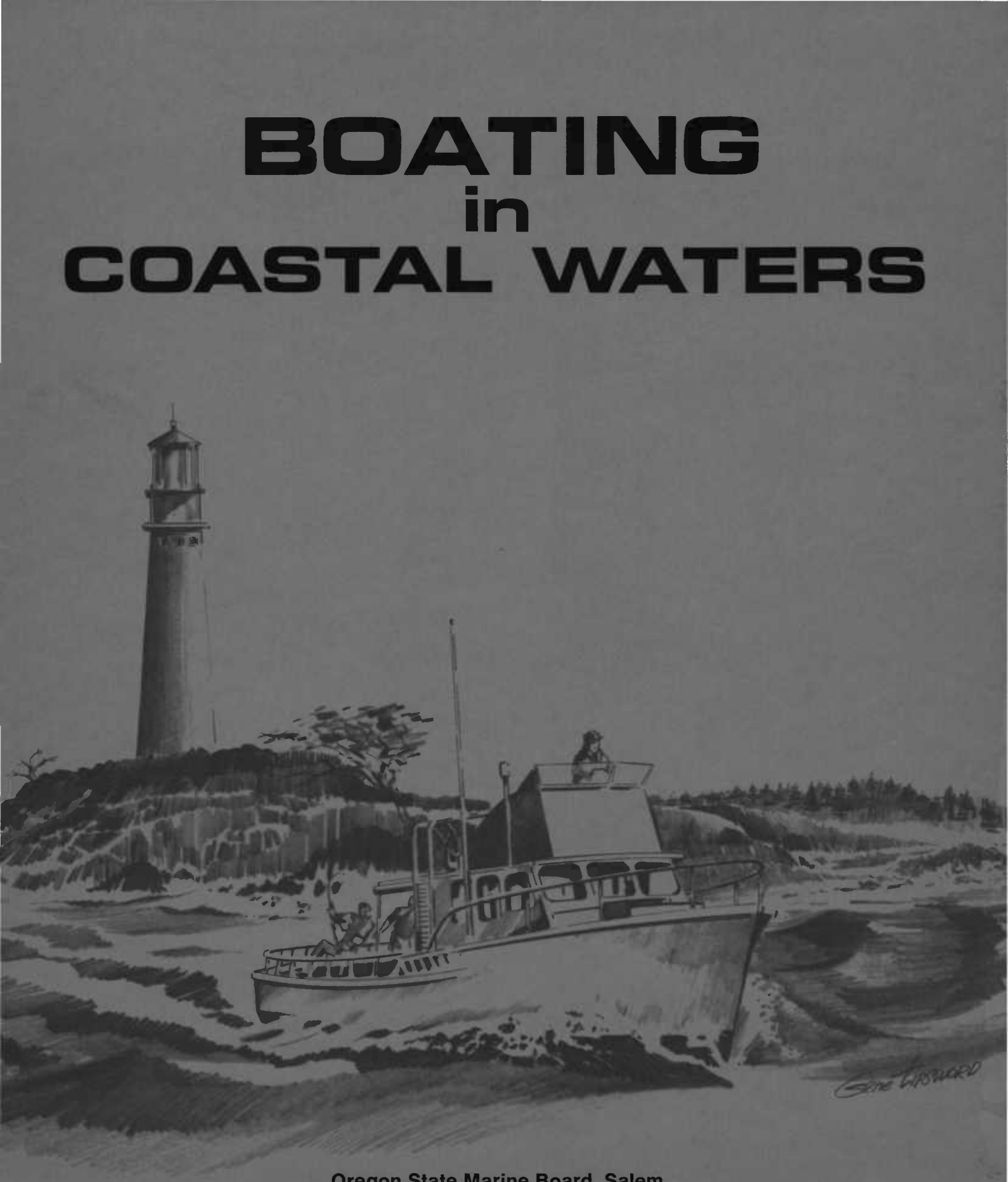
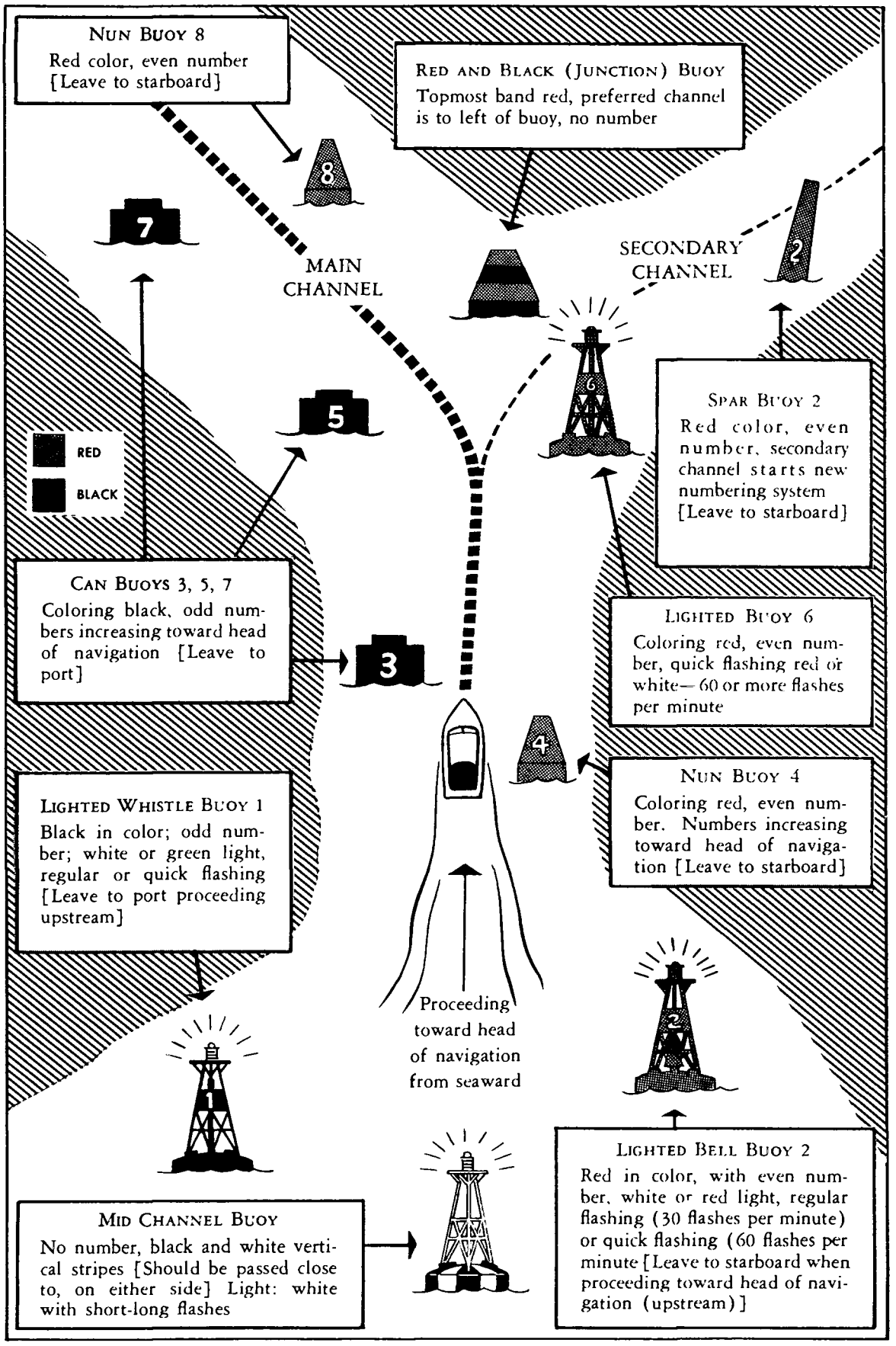
BOATING in COASTAL WATERS



Oregon State Marine Board, Salem
Oregon State University Extension Service,
Sea Grant Marine Advisory Program, Corvallis


NUN BUOY 8
Red color, even number [Leave to starboard]
RED AND BLACK (JUNCTION) BUOY
Topmost band red, preferred channel is to left of buoy, no number
MAIN CHANNEL
SECONDARY CHANNEL
SPAR BUOY 2
Red color, even number, secondary channel starts new numbering system [Leave to starboard]
RED
BLACK
CAN BUOYS 3, 5, 7
Coloring black, odd numbers increasing toward head of navigation [Leave to port]
LIGHTED BUOY 6
Coloring red, even number, quick flashing red or white— 60 or more flashes per minute
NUN BUOY 4
Coloring red, even number. Numbers increasing toward head of navigation [Leave to starboard]
LIGHTED WHISTLE BUOY 1
Black in color; odd number; white or green light, regular or quick flashing [Leave to port proceeding upstream]
Proceeding toward head of navigation from seaward
LIGHTED BELL BUOY 2
Red in color, with even number, white or red light, regular flashing (30 flashes per minute) or quick flashing (60 flashes per minute [Leave to starboard when proceeding toward head of navigation (upstream)]
MID CHANNEL BUOY
No number, black and white vertical stripes [Should be passed close to, on either side] Light: white with short-long flashes

Boating in Coastal Waters

Revised Edition 1976

Oregon State Marine Board
Salem 97310

Oregon State University Extension Service
Sea Grant Marine Advisory Program
Corvallis 97331

Salem, Oregon
April 1, 1976

TO THE BOATERS OF OREGON:

Boating in Coastal Waters is your guide to safe boating operations along Oregon's uniquely beautiful, but often hazardous, coastline.

Persons new to boating in the Pacific Ocean are usually unaware of the dangers which most Oregon coastal harbor entrances present. A combination of sand shoals (bars), river and tidal currents, ocean swells and winds create hazards of immense proportions to vessels of all sizes. Even in fair weather, dangers lurk on an ebb tide. Boaters must always be mindful that weather and sea conditions can change quickly on the open ocean and entrance bars. Good seamanship is not just desirable when boating the Oregon coast—*it's* a *necessity!*

The North Pacific Coast is not a place for the novice to test his skills. New boaters should first avail themselves of free boating safety courses offered by the U. S. Power Squadron and U. S. Coast Guard Auxiliary. As an introduction to safety afloat, the Oregon State Marine Board's "Better Boating Course" is also available. Short courses on navigation and other practical marine skills are offered by the Marine Advisory Program of Oregon State University's Extension Service. Practical experience gained by accompanying a knowledgeable boater will help provide the additional expertise needed to boat the Oregon coast and inlets more safely.

This manual will help round out your knowledge. We hope you read it and respect the information it provides. Smooth sailing—and remember

SAFE BOATING IS *NO* ACCIDENT!

ROBERT W. STRAUB
Governor

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Coastal Bars, Bays, and Rivers

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ACKNOWLEDGMENT

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Extension Service, Oregon State University, Corvallis, Joseph R. Cox, director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.

Extension's Marine Advisory Program is supported by the Sea Grant Program, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

GOING SOMEWHERE?

Leave a float plan with a friend, relative or marina operator. Should disaster strike, a few minutes could mean a lifetime of difference. Here's a sample plan:

Name of boat operator_____
Home phone number_____Business phone number_____

Boat type_____Color of hull_____
Color of trim_____Registration number_____
Name_____Make_____Length_____Other_____

Engine: Type_____Horsepower____Normal fuel (gallons)_____

Number of persons aboard (including operator)_____
Name Age Address/Phone Number

_____

_____

Survival Equipment:
Lifejackets (number)____flares_____mirror_____
Flashlight_____food_____paddles_____
Water_____cushions_____

Radio_____Frequencies_____

Itinerary:
Depart_____from_____on_____(time, date)
Going to_____or_____
Expect to return by_____(time, date) and in no event later than_____

Other Information_____

Auto license number_____Trailer license number_____

If not returned by_____call the Coast Guard or local authority at_____

**Upon your return, notify the person to whom the float plan was given.*
**If you were reported to the Coast Guard as overdue, notify them of your arrival.*

These forms are available from the State Marine Board.

STORM SIGNALS

Certain locations along the Oregon Coast, such as Coast Guard Stations, marinas, public piers, and other points, display storm signals. These warning signals indicate a **prediction** of potentially dangerous wind or, in the case of small craft warnings, **winds and seas** dangerous to smaller vessels. Boaters should be familiar with these signals and heed their warnings. Remember, these warning signals are for forecasting wind, as it may be calm at the time signals are hoisted. On the other hand, the boater must realize the wind might be blowing or the seas rough enough to make boating dangerous even with no warnings up and blue skies overhead.

Safe boaters make it **an unbreakable rule** to stay ashore voluntarily when storm signals are up or high winds or rough seas are present. The Coast Guard is empowered to prevent small craft from leaving protected waters when sea conditions are dangerous or storm signals are displayed. This service can and does tow in boaters who refuse to heed their warnings.

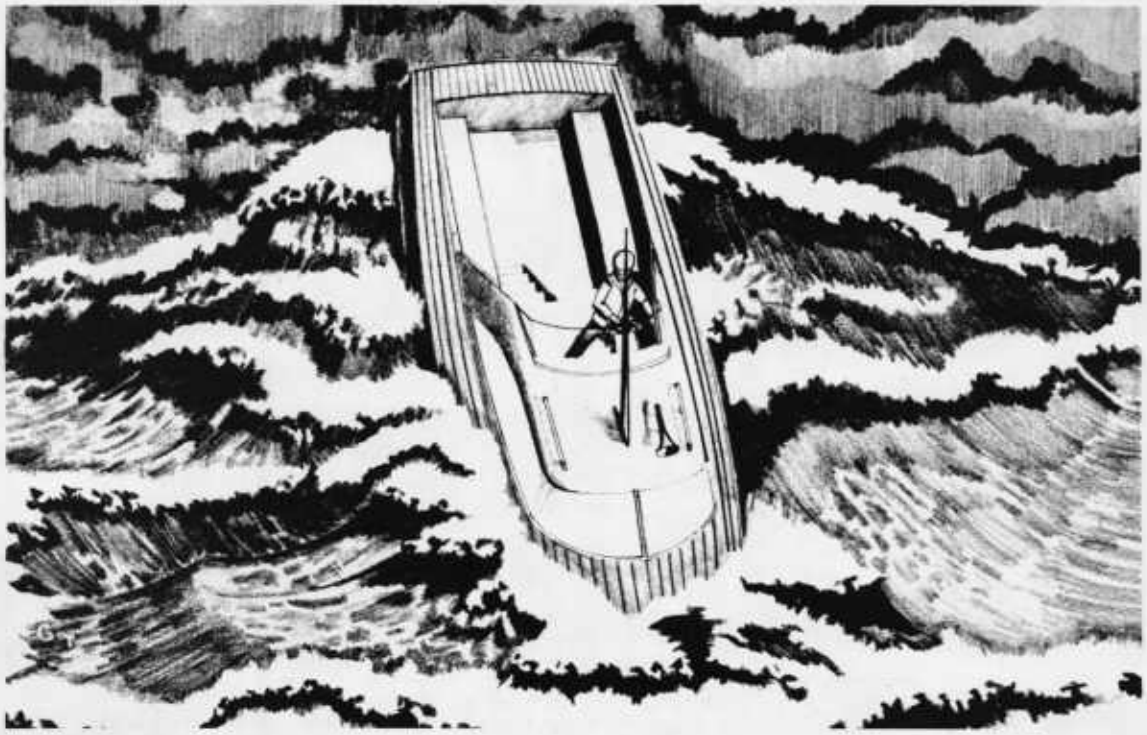
STORM WARNINGS

These warnings cover a wide range of wind speeds and/or sea conditions. Also, "small craft" includes boats of many designs and sizes. Mariners should regard the storm warnings as signals that wind and/or sea conditions may be dangerous or as a forecast of potentially dangerous conditions. More detailed information may be obtained by telephone or by listening to local radio stations, Coast Guard radio, or the Weather Service VHF/FM broadcasts. The Weather Service broadcasts on frequencies of 162.400 and 162.550 MHz with transmitters at Astoria, Newport, Coos Bay, and Brookings.

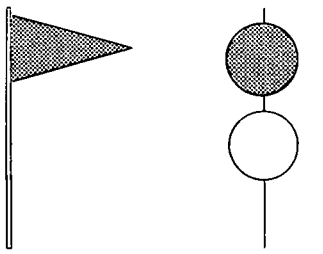
Storm Warning Display Stations

Washington Stations	
Ilwaco	D
Cape Disappointment	D
Oregon Stations	
Columbia River LV (CG)	D
Nehalem River (CG)*	D
Tillamook Bay Lookout Tower (CG)	D
Tillamook Bay STA (CG)*	D
Depoe Bay STA (CG)	D
Yaquina Bay STA (CG)	D&N
Florence (CG)	D
Umpqua River STA (CG)	D
Umpqua River Lookout Tower (CG)	D
Coos Bay STA (CG)	D&N
Coquille River STA (CG)*	D
Port Orford	D
Wedderburn (CG)*	D
Chetco River STA (CG)	D

(D, day displays; D&N, day and night displays; CG, Coast Guard; LV, light vessel; STA, Station; * seasonal displays only.)



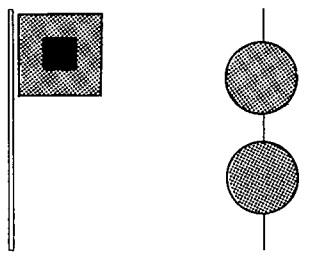
SMALL CRAFT



DAYTIME SIGNAL NIGHT SIGNAL

One RED pennant displayed by day and a RED light over a WHITE light at night to indicate winds as high as 33 knots (38 m.p.h.) and/or sea conditions considered dangerous to small craft operations are forecast for the area.

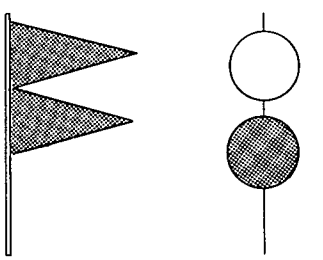
STORM



DAYTIME SIGNAL NIGHT SIGNAL

A single square RED flag with a BLACK center displayed during daytime and two RED lights at night to indicate that winds 48 knots (55 m.p.h.) and above are forecast for the area. If the winds are associated with a tropical cyclone (hurricane), the "Storm Warning" display indicates winds 48 to 63 knots (55 to 73 m.p.h.) are forecast.

GALE



DAYTIME SIGNAL NIGHT SIGNAL

Two RED pennants displayed by day and a WHITE light above a RED light at night to indicate winds within the range 34 to 47 knots (39 to 54 m.p.h.) are forecast for the area.

BLACK RED

AIDS TO NAVIGATION

Oregon coastal waters are marked for safe navigation by the lateral system of buoyage. This system employs a simple arrangement of colors, shapes, numbers, and light characteristics to reveal the side on which a buoy should be passed when proceeding in a given direction. The expression "red right returning" has long been a saying of seafaring men to remind them that red buoys should be on the starboard (right) side when traveling from the open sea into bays (upstream). Likewise, black buoys are on the port (left) side.

Conversely, when proceeding toward the sea (downstream), red buoys are to port (left side) and black buoys are to starboard (right side). These buoys—their numbers, colors, and characteristics—are plotted on all nautical charts. (See the inside front cover.)

Buoys should not be considered as immovable objects. They are occasionally missing, adrift, or off the charted position due to heavy storms, unusual tides, or collisions. Also, many buoys are shown on charts but are in position only in the summer. The Coast Guard removes them in the fall because winter storms would move them out of position or carry them away. Off Newport, for example, buoys # 2 and #3 are gone in winter, and buoy #6 has been eliminated altogether.

Whistles, bells, and gongs, which are attached to some buoys, are activated by the action of the sea, so when the sea is calm, they may sound irregularly.

Buoys are anchored by a scope of chain that allows the buoy to move with the wind and current for a considerable distance. Keep well clear when passing and never moor to them; it is a punishable Federal offense.

To help boat operators navigate within channels, range markers have been erected in many rivers and bays. These consist of widely separated, brightly painted pairs of targets, or markers. Usually range markers are international orange and white in color and rectangular or diamond-shaped. They are mounted on skeleton towers or on pilings, and may be in the water or onshore. Consult the appropriate navigation chart for locations of range markers. Steering a course that keeps the two range markers in line while operating within a channel marked by buoys will keep the boat within the channel.

CHARTS FOR COASTAL WATERS

Charts of the Pacific Coast are available from the U.S. Department of Commerce's National Ocean Survey. *Nautical Chart Catalog 2, United States Pacific Coast Including Hawaii, Guam and Samoa Islands,* lists all charts produced for the West Coast by the National Ocean Survey. Copies of the catalog are available free from: Distribution Division (C44), Na-

tional Ocean Survey, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Riverdale, MD 20840.

Charts and related publications of the National Ocean Survey can also be purchased in Oregon from the authorized National Chart Agents listed below:

Astoria	[1] Englund Marine Supply Co., Foot of 15th St.
Brookings	Loring's Lighthouse Sporting Goods, 554 Chetco Ave.
Charleston	Hanson's Landing (off Coos Bay Bar)
Coos Bay	Independent Stevedore Co., Inc., 275 N. Bayshore
Garibaldi	D & D Charters, Marine Supplies and Tackle, Garibaldi Boat Basin
Newport	Oregon State University, Marine Science Center, Public Wing
	Schiewe Marine Supply, 663 S.W. Bay Blvd.
North Bend	Oregon-Pacific Co., Inc., 1760 Sheridan St.
Portland	Columbia Marine Electronics, 2901 N.E. Marine Drive
	82nd Marine, 2815 S.E. 82nd Ave.
	[2] Northwest Instrument Co., 1130 N. Jantzen Ave.
	[1] Portland Precision Instrument & Repair Co., 2422 S.E. Hawthorne Blvd.
	Progress Electronics Co. of Oregon, 5160 N. Lagoon Ave.
	Rodgers Marine Electronics, 3445 N.E. Marine Drive
	The Crow's Nest, 521 S.W. 10th
	Captain's of Portland, 832 S.W. 4th Ave.
Springfield	Emerald Stationery & Office Supply, 1401 Market St.

U.S. COAST GUARD STATIONS

Location	*Telephone*
Tillamook Bay—Garibaldi	322-3246 or 322-2531
Nehalem River Patrol—Nehalem River Entrance[3]	368-5176
Depoe Bay—Depoe Bay	765-2281
Siletz River Patrol—Lincoln City	996-2000
Yaquina Bay—Newport	265-5381
Siuslaw River—Florence	997-3631
Umpqua River—Winchester Bay	271-2138
Coos Bay—Charleston	888-3266
Coquille River—Bandon[3]	347-2131
Rogue River Patrol—Wedderburn	247-9232
Chetco River—Harbor	469-2242
Cape Disappointment—Ilwaco, Washington	642-2381 or 642-2382

[1] Agents handle U.S. Coast Guard Publications.

[2] Agents handle certain Defense Mapping Agency Hydrographic Center Publications.

[3] Summer months only.

U.S. COAST GUARD AUXILIARY PATROLS

A nationwide association of boaters, the United States Coast Guard Auxiliary is a nonmilitary organization administered by the Coast Guard, and its main purpose is the promotion of safe boating. Auxiliary members include yachtsmen, commercial fishermen, and others experienced in handling small vessels and knowledgeable in small boat safety.

During boating season Auxiliary patrols supplement and assist the regular Coast Guard. Auxiliary vessels are readily identified by a blue and white flag or a large placard bearing the words "U.S. Coast Guard Auxiliary."

These vessels are in constant communication with the regular Coast Guard patrol boats and lookout towers. By hailing these vessels, boat operators may obtain information regarding bar conditions, tides, weather, etc. The regular Coast Guard often relies on Auxiliary vessels to assist in the dissemination of weather reports, bar and sea conditions, and other vital reports. When hailed by a Coast Guard Auxiliary boat, a boater should heave to and heed the information. In the event of trouble, Coast Guard Auxiliary vessels will stand by to give assistance.

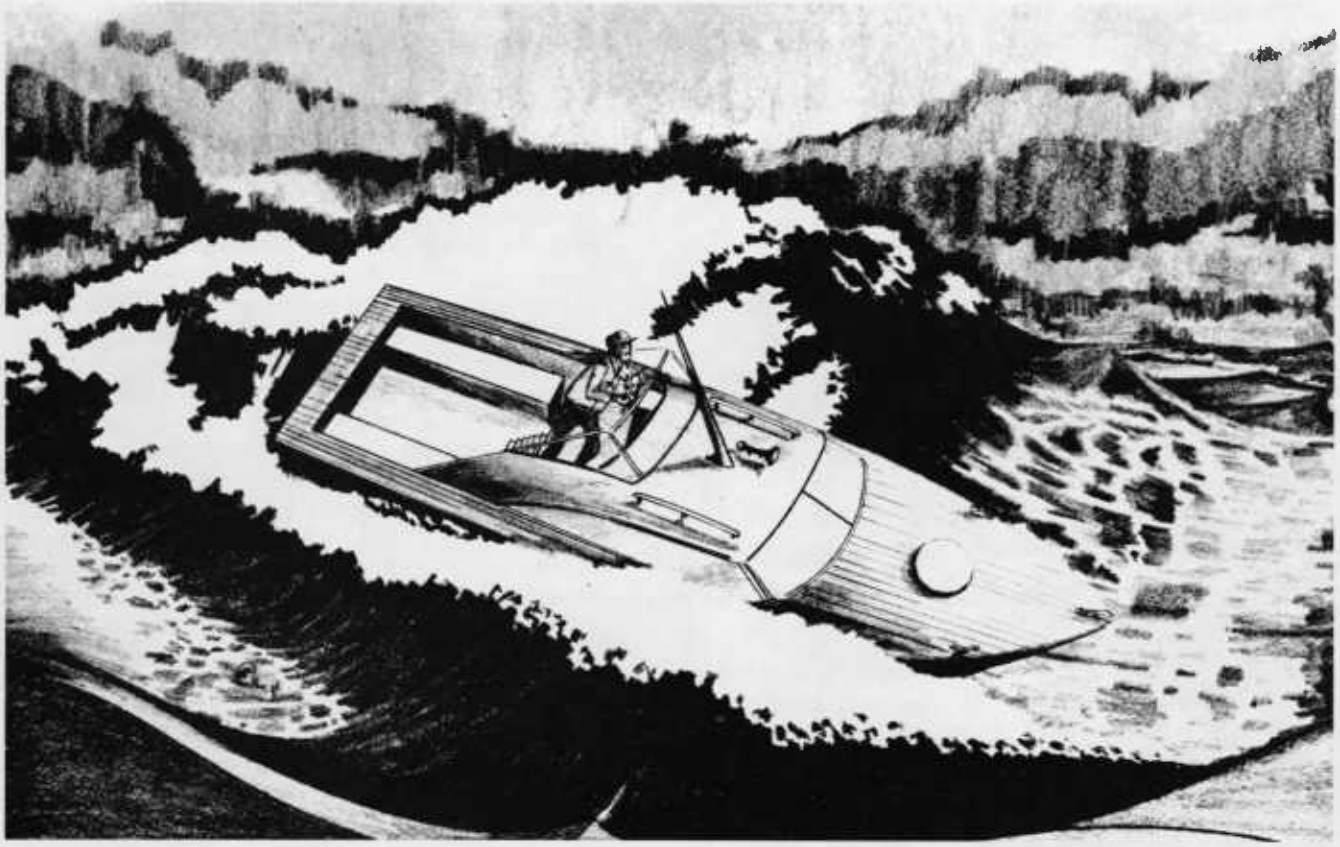
CROSSING THE BAR

The principal objective of recreational boating is pleasure. Boats provide safe, pleasurable recreation when operated within their limitations. Stability is a vital factor for boats crusing in coastal waters, and stability can be aided by proper loading. An improperly loaded or overloaded craft loses its stability, and is very susceptible to capsizing. Overloading increases the risk of seas breaking aboard. It is extremely important that boats operating along the coast have adequate freeboard.

Most boating accidents and fatalities on the coastal bars result from capsizing. A boat is much more apt to capsize when crossing in as the seas are on the stern, when the operator does not have as much control of the steerage. When looking at the bar from seaward, one does not see the front of the seas or breakers; consequently, the bar may be much rougher than it appears.

When there is the least uncertainty about bar conditions, boaters should take every precaution to avoid trouble. Radio the Coast Guard or raise another boat operator who can tell what the bar condition is. If necessary, circle the sea buoy, but **make every effort to avoid difficulty.**

If one is unexpectedly caught on a rough bar when running in, **it is imperative to keep the boat square before the seas.** Keep the boat on the back of a swell. Ride the swell and keep clear of the following wave. Preservation of the boat's stability is most important at this time, and a sudden shift of the passengers' weight in a small boat could prove dangerous. In fact, in a small boat the stability will be



vastly improved if the passengers lie down in the bottom of the boat as near the center line as possible. Make sure that everyone aboard is wearing a personal flotation device (PFD) before crossing.

Most boating accidents on the coastal bars are caused by the boat operators allowing seas to catch their boats from the side, a situation called "broaching," which can result in capsizing. (For advice on what to do if in danger of capsizing, see page 10). To prevent broaching, the operator must keep the boat square before the seas. The illustration above shows a boat broaching.

TIDES

Along the coast of the Pacific Northwest there are roughly two tides each day. **Tides** are the **vertical** rise and fall of the water, and a **tidal current** is the **horizontal** flow.

The movement toward shore or upstream is the **flood** tide, and movement away from shore or downstream is the **ebb** tide. The period between the tide change is called **slack** water. Tidal currents may gain tremendous velocity, particularly when the **ebb** current is reinforced by a river run-off during a high-low series.

Considered one of the greatest risks a boater could encounter is the craft's being caught in a shallow river entrance to the Pacific Ocean, known as a bar, at the time a swift ebb current meets incoming westerly waves. Such conditions result in the two opposing forces meeting to pile up water and waves break with tremendous force. Even on days when the sea is relatively calm, a fast-moving ebb has the potential to create a bar situation which could be too rough for small craft.

Boaters must always be conscious of the stage of the tide. Except on some few days when there is unusual calm or unless observation shows that the bar is down, cross from harbor to ocean on the slack or the flood tide, when the sea is calmest.

Veteran seamen advise all boat operators, if they are still inside the bar when heavy sea conditions exist, to remain there. If a boater is trapped outside a rough bar on an ebb tide, it is wise to lay-to and wait until the flood tide or in-flowing current is the dominant factor. If trapped outside a rough bar with a southwester developing 40-knot or better winds, it becomes a matter of judgment and experience deciding whether to stay at sea with a sea anchor or risk crossing the bar. If possible, run to another port having more favorable bar conditions. Neah Bay has no bar.

In many of the river entrances there are shallows called sands, shoals, spits, or floats, on which waves build to the point that they become extremely dangerous to small boats. These areas should be always avoided.

TERMINATION OF USE ON COASTAL BARS

Federal law now designates certain "Regulated Boating Areas" in the following Oregon bars and channel entrances:

Columbia River	Siletz Bay	Umpqua River
Nehalem River	Depoe Bay	Coos Bay Bar
Tillamook Bay	Yaquina Bay	Coquille River
Netarts Bay	Siuslaw River	Rogue River
		Chetco River

These areas are within the limits of the shaded area on the bar charts in this manual. Check with local Coast Guard Stations for specific areas.

The regulation states: "The use of individual recreational boats can be terminated on the above-named bars or entrances when rough seas create a hazardous condition." The regulation will be enforced by specially trained Coast Guard Boarding Officers.

CAPSIZING

One of the most basic precautions for all boaters is to wear a Coast Guard-approved PFD in any time of danger. Without a PFD, chances for surviving a sinking or capsizing in the cold waters off the Oregon coast are greatly reduced. If the boat capsizes, keep all persons together in one group, to help one another and to improve chances for rescue. It is far easier and quicker to locate and rescue a group than to find scattered individuals. Also, in a group, each person can help others stay afloat longer.

A second, all-important lifesaving rule is **stay with the boat** as long as it remains afloat. Most pleasure craft have built-in flotation that will keep them from sinking. Chances of being found and rescued are increased immensely by clinging to the easy-to-spot boat.

There is no substitute so effective as flares for signalling for aid at sea. If the boat is equipped with flares, use them to attract attention. If there is any warning that danger is imminent, before any emergency happens get all passengers into PFD's and out of the cabin so that they will float free should the boat capsize. When a boat capsizes, anyone inside is thrown into total darkness. Anyone trapped inside the cabin of a capsized boat should remove his or her PFD and try to swim out the cabin door. Cutting a hole through the hull can sink a capsized boat. Unless the hull has built-in flotation, cutting a hole for escape will release any air trapped inside and the boat will sink. Although this is a critical time, it is absolutely vital to keep calm. Above all, keep from panicking.

FOG

Fog is often encountered in coastal waters and is usually thick enough to hide all landmarks and other aids to navigation. When cruising or fishing along the coast or harbor entrance, make frequent observations of location so, at the first signs of fog, it will be possible to proceed to a sea buoy or, if practical, return to harbor.

A good, properly aligned compass is one of the essential items for a vessel's operation along the coast. A vessel attempting to run in the fog without steering by a compass course would wander aimlessly. Upon departure and return to the harbor, the compass course and the time required to run between buoys should be recorded for reference. One must remember that the area surrounding the compass should be clear of iron or other ferrous metal objects at all times, as they will cause compass errors.

In addition to the tidal currents, there are currents which run along the beaches north and south. These are sometimes referred to as the "southerly set" or "northerly set." Careful operations are necessary to assure that these currents do not carry the boat off course or further from the harbor entrance than would normally be expected.

Boat operation during fog requires the vessel to proceed at a slow speed and to keep a sharp lookout; stop occasionally and listen for other vessels, buoys, and the surf. If an operator is lost or is unsure of his or her whereabouts, it would be wise to anchor and wait for the fog to lift or help to arrive. An inexpensive radar reflector or a metal object placed above the cabin on a light standard, or fixed as high as possible, will assist the Coast Guard in radar search—and help keep a boat from being run down!

As a reminder, Rules of the Road require power boats operating under adverse conditions of reduced visibility to sound their whistles or horns: one prolonged blast of 4 to 6 seconds' duration at intervals of not more than 1 minute. A ship at anchor must ring its bell rapidly for 5 seconds every minute.

CALLING FOR ASSISTANCE

Rendering assistance to mariners is one of the primary functions of the Coast Guard. A boat in distress can signal for assistance by:

1. Firing a gun or other explosive device into the air at about one-minute intervals.
2. Continuous sounding of any fog-signal apparatus.
3. Shooting flares or rockets skyward.
4. Sending a message by radio-telephone.
5. Waving both arms from alongside the body to over the head in an up-and-down motion.
6. Waving side to side over the head any orange-red flag or any garment of any size which can be attached to a fishing pole or long rod.
7. Tying a 72-inch fluorescent, orange-red cloth inscribed with an 18-inch black circle and an 18-inch black square, 18 inches apart on the

major axis of the flag. This type of signal is to be tied to a hatch or cabin top for ready spotting by aircraft.

8. SOS by spotlight.

All Coast Guard Stations are constantly on the alert for vessels which might be in distress. If a vessel is seen displaying or showing any unusual signal or acting in an unusual manner, the Coast Guard will always check to determine if help is needed.

When a boat operator arrives at a harbor where a Coast Guard Station is located and, after surveying the bar, notices it is too rough to make an attempt to cross into port, it is suggested that the operator contact a Coast Guard patrol vessel by using any of the standard distress signals to attract attention or by circling one of the buoys.

DANGERS NEAR LARGE VESSELS

Large commercial ships frequently enter and leave the Columbia River, Yaquina Bay, and Coos Bay; and ocean-going tugs and barges make use of a number of the smaller ports. The size of these ships prevents their quick and easy maneuverability. Due to their deep draft, they must stay within the dredged ship channel.

Accordingly, within channels the nautical Rules of the Road give deep-draft ships the right of way **under all circumstances.** When underway, such huge ships cannot stop readily because of their tonnage. Their momentum through the water will carry them forward for a great distance despite engines being stopped or reversed. Common sense, courtesy, and the **law** (the Rules of the Road) require that small boaters let these vessels have a wide berth.

Boaters must realize there is a blind spot in the pilot's line of view from the bridge to the ship's bow. If a ship is bearing down on a smaller craft, the prudent boat operator will alter course promptly in order that the pilot will know his or her intentions. Remember, once the large vessel is on the bar or within the bay or river, it will have to remain in the confines of the channel or run aground.

Boaters should remember that if they are drifting off a harbor entrance and a large freighter or tanker is coming toward them, they should get underway immediately and clear the channel. In many ship-small boat collisions, it was found that the smaller craft's engine was slow to start, resulting in a disaster which could have been avoided.

RECOMMENDED SAFETY EQUIPMENT

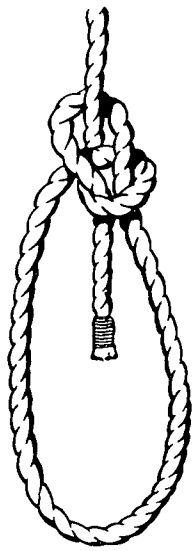
In addition to the safety equipment required by law (see the *Oregon Boaters Handbook,* latest edition, published by the Oregon State Marine Board), the prudent boater is urged to carry the extra gear listed below:

1. Anchor with suitable line for anchoring.
2. Distress signals such as flares, any size orange-red flag, and/or other similar devices.
3. Flashlight with extra batteries.
4. First aid kit.
5. Local navigation charts by the National Ocean Survey.
6. Emergency rations and drinking water.
7. Reliable and accurate compass.
8. Spare engine parts and tools.
9. Bucket for bailing.

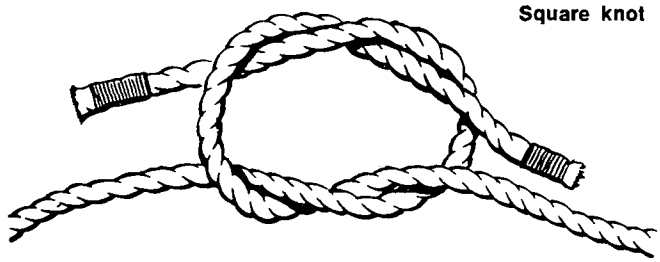
Any new line ½-inch in diameter will hold most small boats except in severe storms—provided there is a short length of chain ahead of the anchor. The length of the anchor line should be from 5 to 7 times the depth of the water in which the boat will be anchored. Ten to 12 feet of chain should be shackled to

the anchor and fastened with a swivel to the anchor line. The long length of rope and the weight of the length of chain permit the anchor to lie flat on the bottom and the flukes to dig into the bottom to hold the boat. In severe storms, do not rely on any anchor and line to hold.

Another good practice of careful boaters is to equip their craft with a sturdy solid towing bitt located near the bow. Fastenings for the towing bitt should go through a metal plate attached to the inside of the hull to prevent the bitt from pulling out, in the event the craft is taken under tow during an emergency. Small bow rings, standard on many modern trailer boats, are not strong enough for towing at sea. They frequently break under stress, with disastrous results.



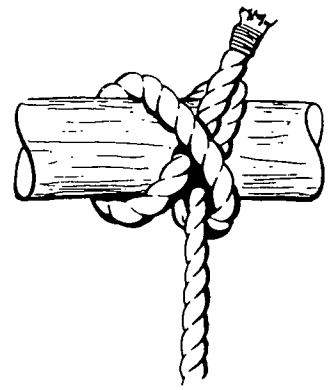
Bowline



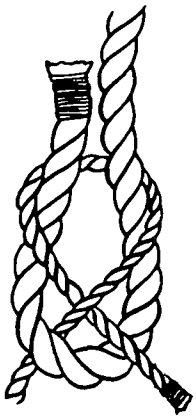
Square knot

KNOTS TO KNOW

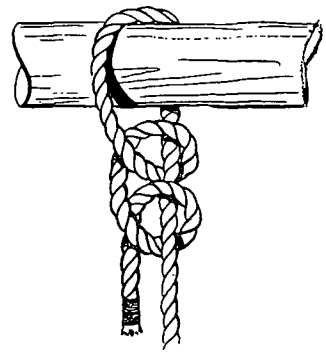
Knowing how and when to tie a few basic knots is indispensable for safe boating. Practice tying at least those shown here. The Coast Guard recommends knowing how to tie a **bowline** quickly in case the boater ever has to be towed to safety. It is a reliable knot for tying a line to any hardware eye or shackle. Use the **square knot** for tying together two lines of the same diameter. Beware of mistakes when tying the square knot; it is all too easy mistakenly to tie the treacherous granny knot when attempting a square knot. For connecting two lines of different size, use the **becket bend.** (The square knot will not hold with lines of different size.) A good knot—actually a hitch rather than a knot—for quickly securing a line to any vertical pole or post is the **clove hitch.** Use it only for a temporary tie-down. A second easy and reliable hitch for the same usage is the "turn" with **2 half hitches.** Finally, be able to **wrap a line about a cleat properly** so that the line will hold yet be easily unfastened using the free end of the line.



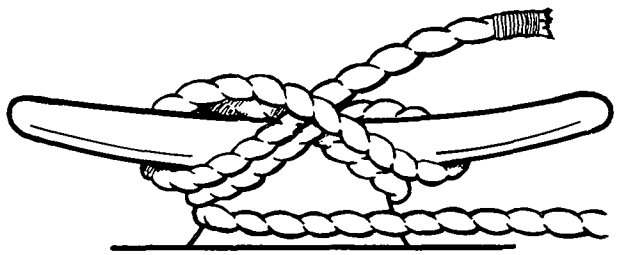
Clove hitch



Beckel bend



Two half hitches



Correct method of making fast to a cleat

COASTAL BARS, BAYS, AND RIVERS

Each bar, bay, or river entrance on the Oregon coast presents its own set of challenges. The following pages present information on these waters that every boater should know before operating here. The descriptions are illustrated with aerial views of the channel entrances and annotated charts. Danger areas are represented on the charts by shading. In addition to buoys, aids to navigation in many of these channels include pairs of range markers. Steering a course to keep pairs of range markers in line will keep the boat within the channel.

COLUMBIA RIVER (See pages 14-15)

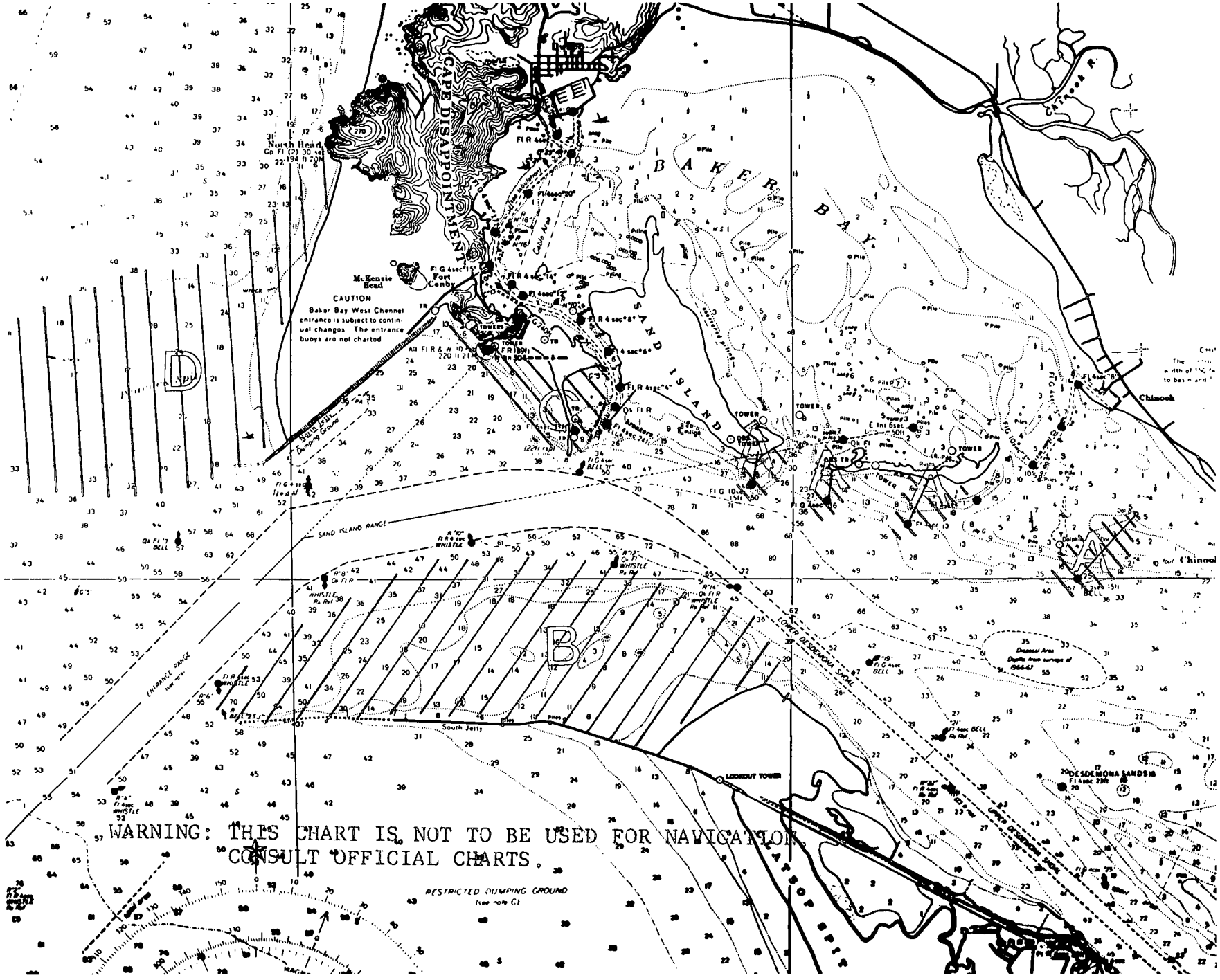
Danger Areas

A. Chinook Spur, Upper, Lower, and Middle Sand Island Spurs are built on two rows of staggered pilings. Currents flowing through these pilings attain a velocity of up to 5 knots. A boat which becomes disabled or is maneuvered in such a way that it comes in contact with any of these spurs is almost sure to suffer damage. Even large boats have been capsized in these areas. Give these spurs a wide berth and never get close to them on the up-current side.

B. Clatsop Spit is the unpredictable area of the river entrance. During flood currents and slacks it may be relatively calm, with only a gentle swell breaking far in on the spit. Yet 5 or 10 minutes later when the current has started to ebb, it can become extremely treacherous, with breakers extending far out toward the channel. Boaters should remain north of the red buoys in this area, particularly just before or during the ebb. Peacock and Clatsop Spits are called the graveyard of the Pacific for good reason.

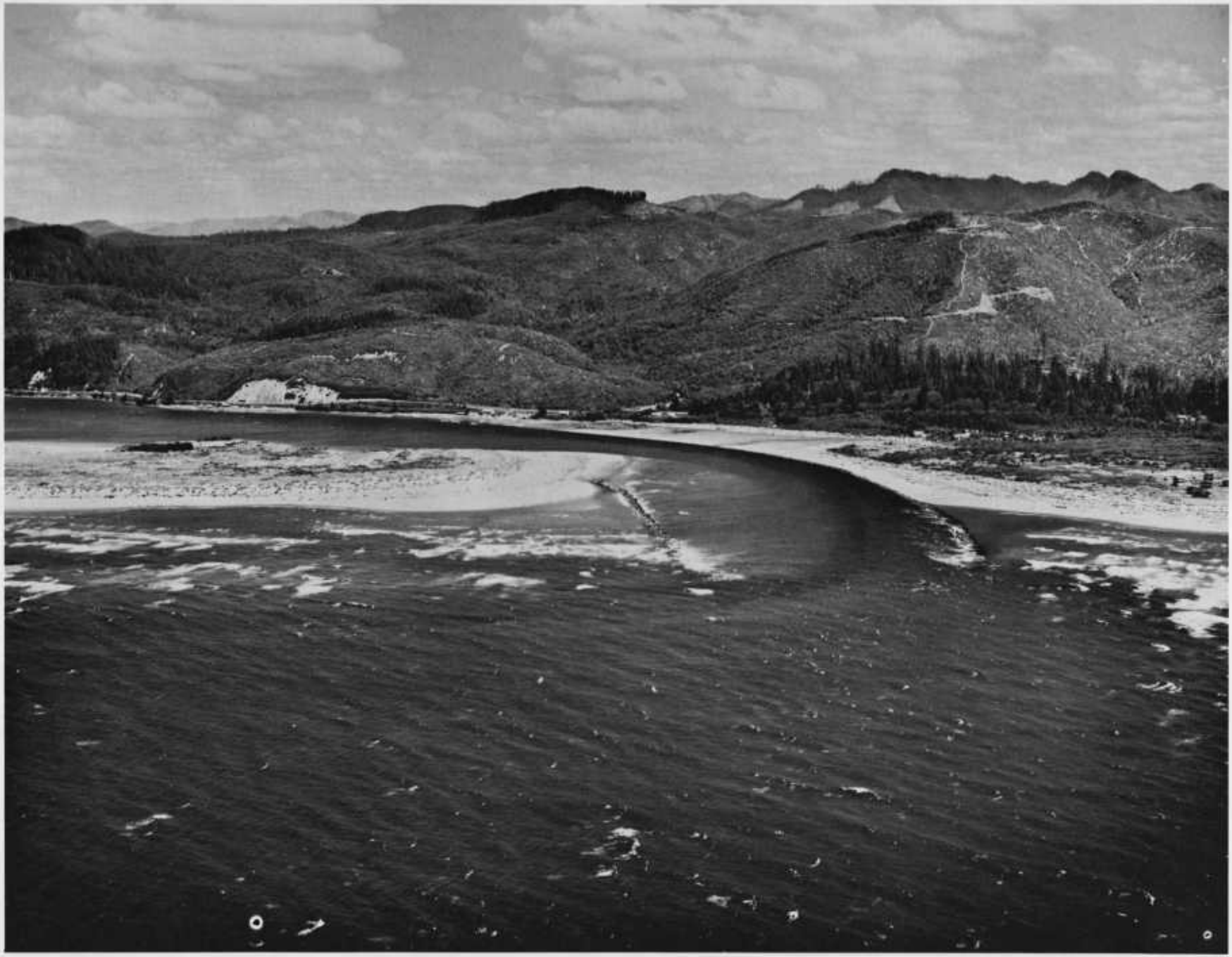
C. Jetty A, which is southeast of Cape Disappointment, presents a particular danger when the current is ebbing. Water flowing out of the river is deflected by the jetty, and frequently the current reaches 8 knots. This often causes waves up to 8 feet high. Boats proceeding into Baker Bay west channel make very little speed against the swift current and are exposed to the rough water for long periods of time. The shallow, sandy area should be avoided by small craft when heavy seas are running because of the surf which breaks on the beach.

D. Peacock Spit. The gentle swell encountered in the channel is somehow magnified here and the breakers are heavy in any type of current. Sports craft leaving the river should **never** be on the north side of the black buoys. When rounding Peacock Spit, even on a calm summer day, one should give the breakers at least a half-mile clearance. Many times on these same summer days "sneakers," unusually large swells coming in from the sea, suddenly commence breaking ¼ to ½ mile outside the usual break on the end of the north jetty.


CAPE DISAPPOINTMENT
BAKER BAY
SAND ISLAND
North Head
McKenzie Head
Fort Canby
CAUTION
Baker Bay West Channel entrance is subject to continual changes. The entrance buoys are not charted
Chinook R.
Chinook
SAND ISLAND RANGE
ENTRANCE RANGE
LOWER DESDEMONA SHOAL
South Jetty
LOOKOUT TOWER
DESDEMONA SANDS
WARNING: THIS CHART IS NOT TO BE USED FOR NAVIGATION.
CONSULT OFFICIAL CHARTS.
RESTRICTED DUMPING GROUND
(see note C)

NECANICUM RIVER

Dangerous—not suitable for crossings



NEHALEM RIVER (See pages 18-19)

NEHALEM RIVER

Danger Areas

A. Crab Rock. Crab Rock is located about 150 yards southwest of Jetty Fisheries Resort docks and is a hazard to small boats when it is covered by water. There is a red buoy just westward of the rock. Stay to the right of this buoy when outbound and to the left when inbound.

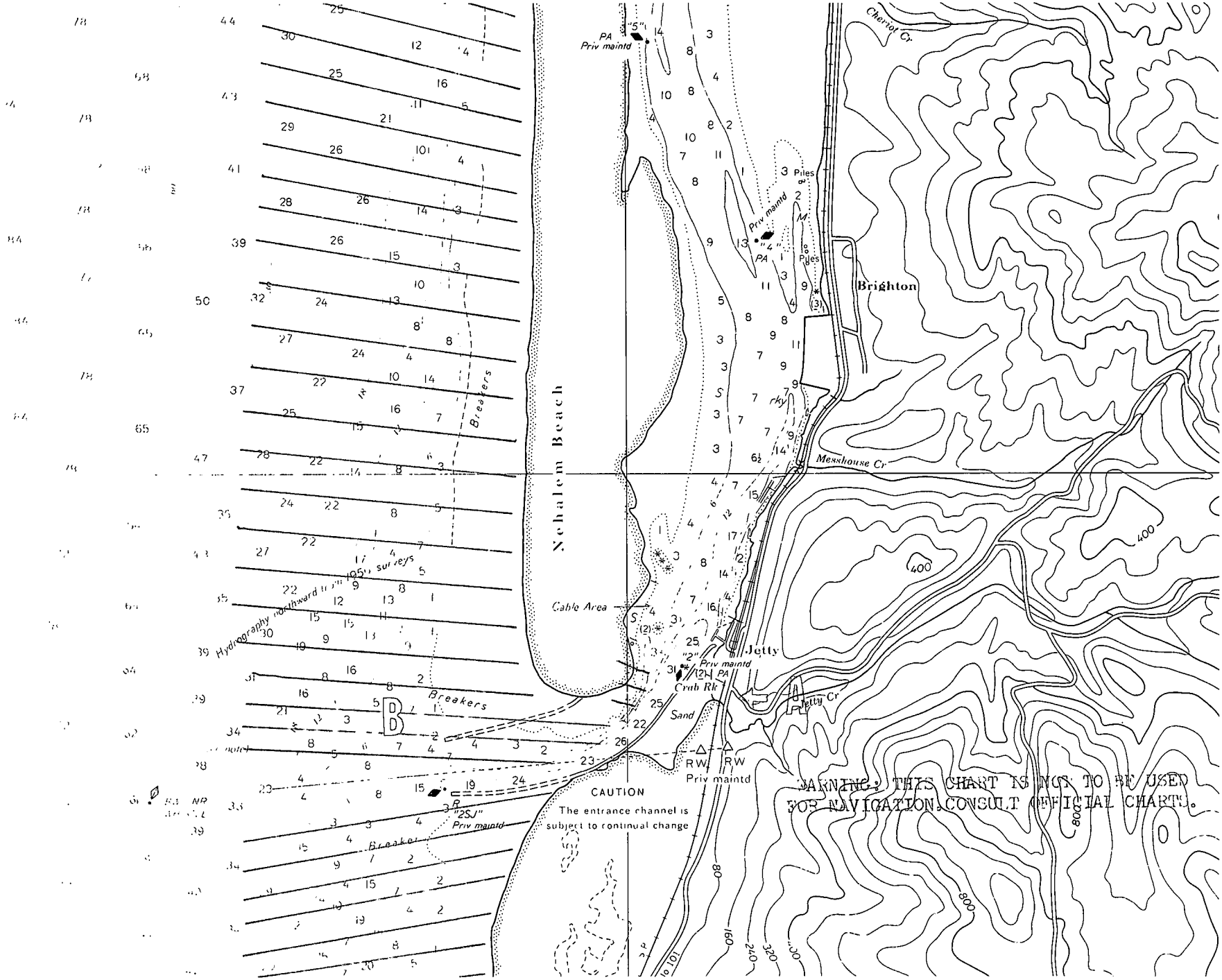
B. Bar area. The entire area between the beach and the 30-foot curve is bar area and breaks on the ebbing current. The safest channel across the bar is subject to frequent change. Boats proceeding out should stop just inside the entrance and carefully evaluate the bar. If a decision is made to cross, pick the calmest area and proceed, but do not attempt to turn around if the bar is breaking.

Entrance

The Nehalem River entrance lies between two deteriorated and partially sunken jetties. The best water is close to the south jetty. The channel seaward of the jetties is continually shifting, and local knowledge is needed to cross it safely. The range markers, therefore, do not necessarily show the exact channel.

Jetties

The north and south jetties are in poor shape, and at high tide most of the rocks are under water. During the boating season, a red buoy is placed off the seaward end of the south jetty. You should always **stay to the north** of this buoy when traversing the area, taking care not to run upon the sunken jetty.


Nehalem Beach
Brighton
Chariot Cr
Messhouse Cr
Jetty
Jetty Cr
Crab Rk
Sand
Cable Area
Breakers
Hydrography northward to "195" surveys
CAUTION
The entrance channel is subject to continual change
WARNING: THIS CHART IS NOT TO BE USED FOR NAVIGATION. CONSULT OFFICIAL CHARTS.
Priv maintd
PA
Piles
RW
"2"
"4"
"5"
"2SJ"
400
800

TILLAMOOK BAY

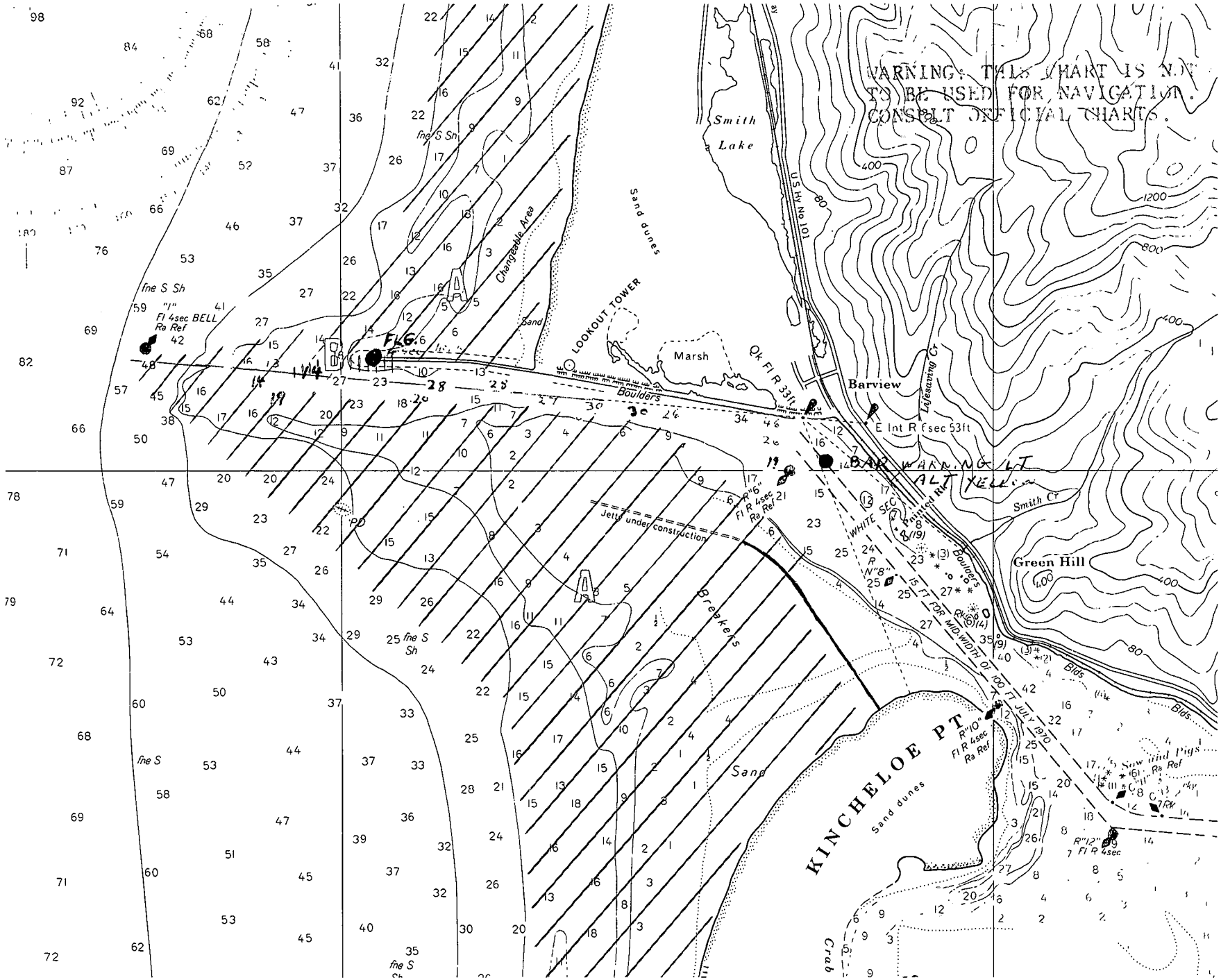
Danger Areas

A. Bar area. The entire area between the beach and the 20-foot curve is **bar area** and breaks on the ebbing current. The water runs out from 4 to 6 knots on the average and is very strong. Boats proceeding out should stop in the channel east of the seaward end of the breakwater and carefully evaluate the bar. If a decision is made to cross, proceed out—but do not attempt to turn around if the bar is breaking.

B. North jetty. About 300 yards of the outer end of the north jetty is submerged. This area and the portion of the channel just south of it are extremely dangerous. Avoid the sunken jetty and use caution in the channel south of it.

Channel

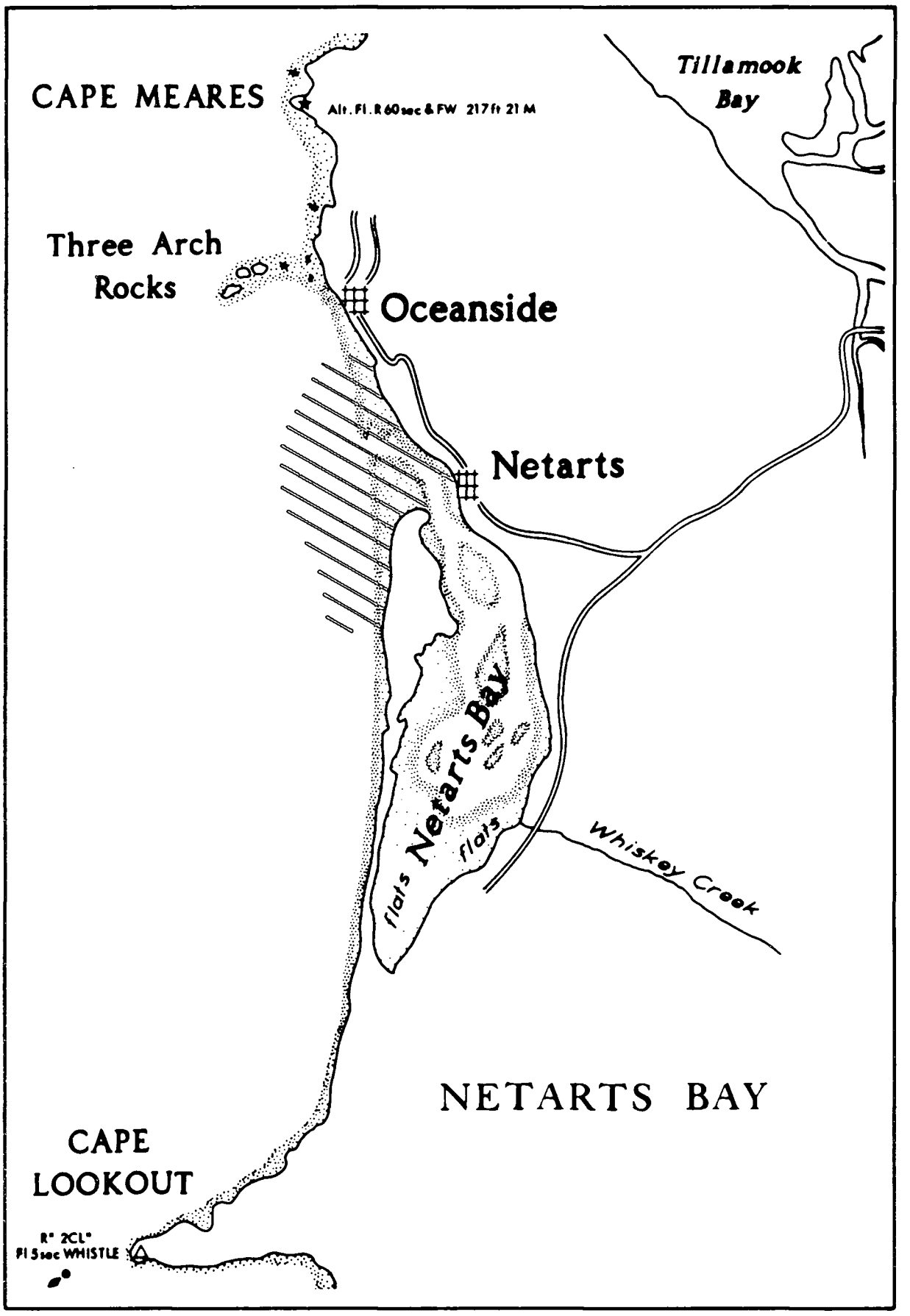
Tillamook Bay channel lies just south of the north jetty. Navigate with extreme caution. This channel changes constantly because of continual natural silting and scouring. Obtain up-to-date information on channel conditions from the Coast Guard or other authoritative local sources. Do not rely on the range markers without first inquiring whether they mark the present channel location. Navigation charts on sale at the time of publication of this manual show an extension of the south jetty under construction. This construction has now been completed.

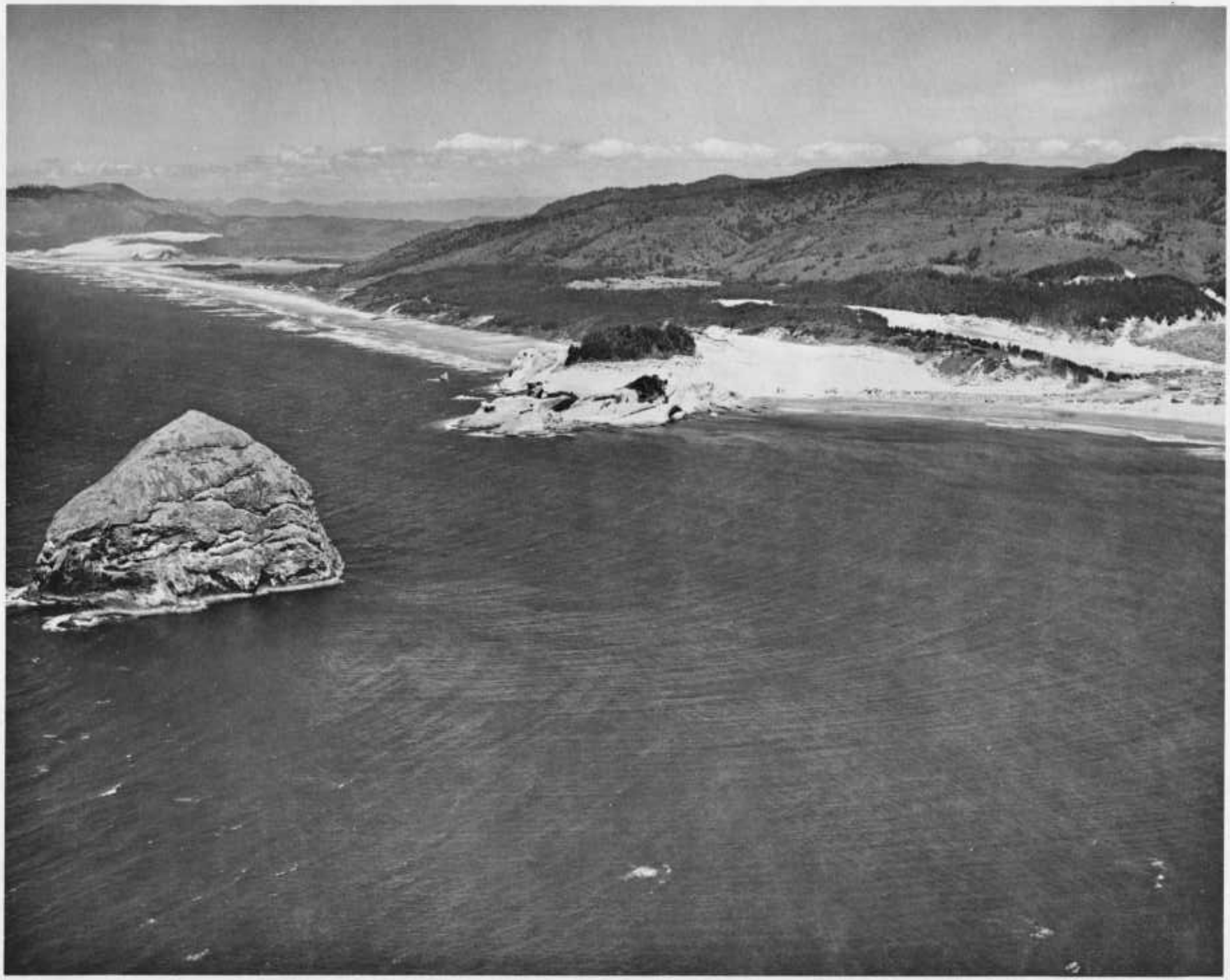

WARNING: THIS CHART IS NOT TO BE USED FOR NAVIGATION. CONSULT OFFICIAL CHARTS.
Smith Lake
U.S. Hy No 101
Sand dunes
Changeable Area
LOOKOUT TOWER
Marsh
Boulders
Barview
Lifesaving Ct
E Int R 5sec 53ft
BAR WARNING LT
ALT YELLOW
Smith Cr
Green Hill
Jetty under construction
Breakers
KINCHELOE PT
Sand dunes
Sand
Crab
Blds
WHITE SEC
Painted Rk
Boulders
FLG
fne S Sh
fne S
Fl 4sec BELL
Ra Ref
Fl R 4sec
Ra Ref
R"6"
R"10"
R"12"
R"8"
Rk
JULY 1970

NETARTS BAY

Netarts Bay is shallow with numerous sand bars which are exposed at low water. There are no jetties at this entrance. Very few boats cross the bar and they cross only when the most favorable conditions exist.

There is considerable sport fishing and crabbing inside the bay. Boats fishing inside the bay should exercise caution on the ebb tide when near the bar, as the strong current can pull a small boat out over the bar and into the surf.

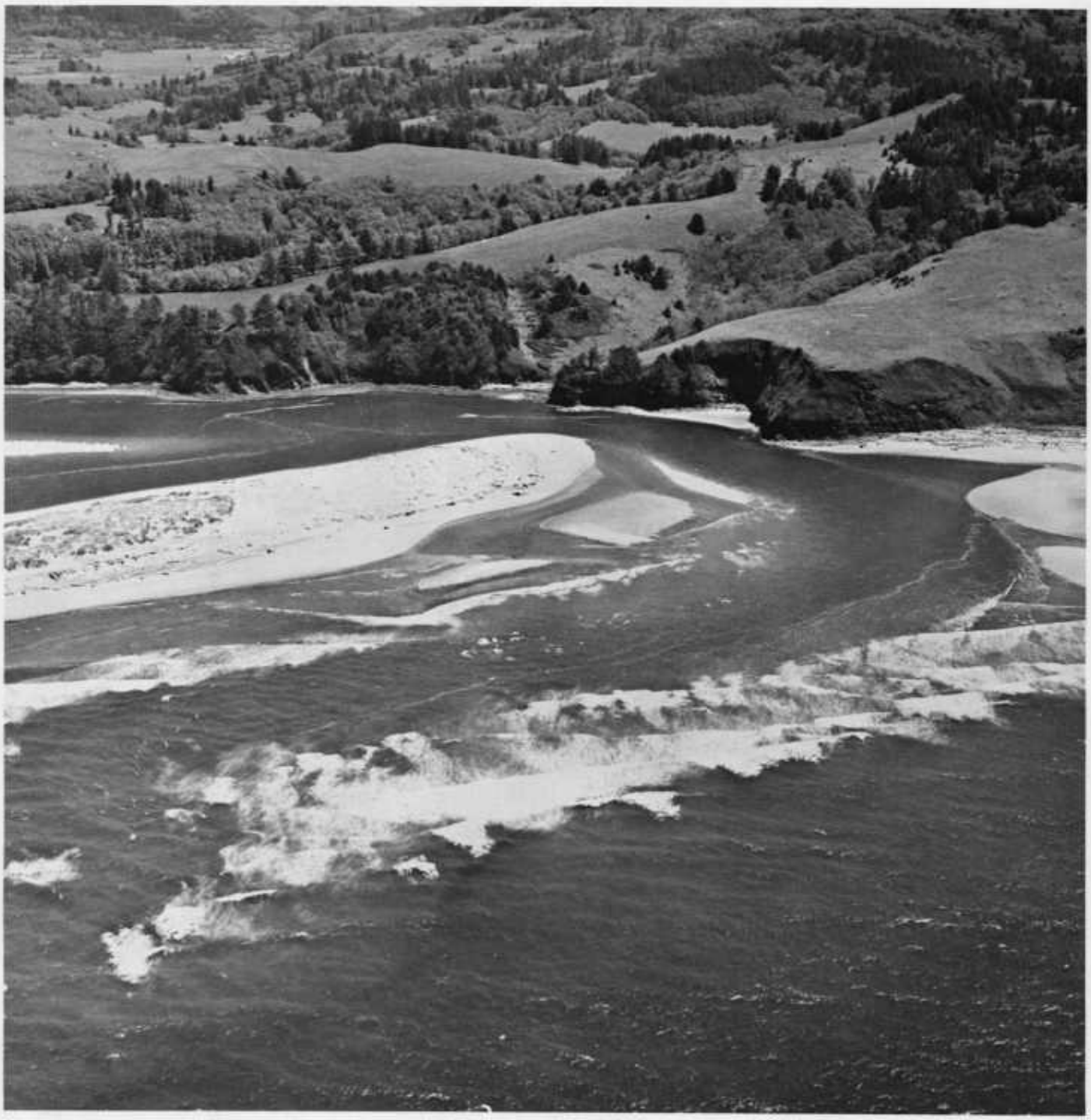

CAPE MEARES
Alt. Fl. R 60sec & FW 217ft 21 M
Tillamook Bay
Three Arch Rocks
Oceanside
Netarts
Netarts Bay
flats
flats
Whiskey Creek
NETARTS BAY
CAPE LOOKOUT
R* 2CL*
Fl 5sec WHISTLE



CAPE KIWANDA

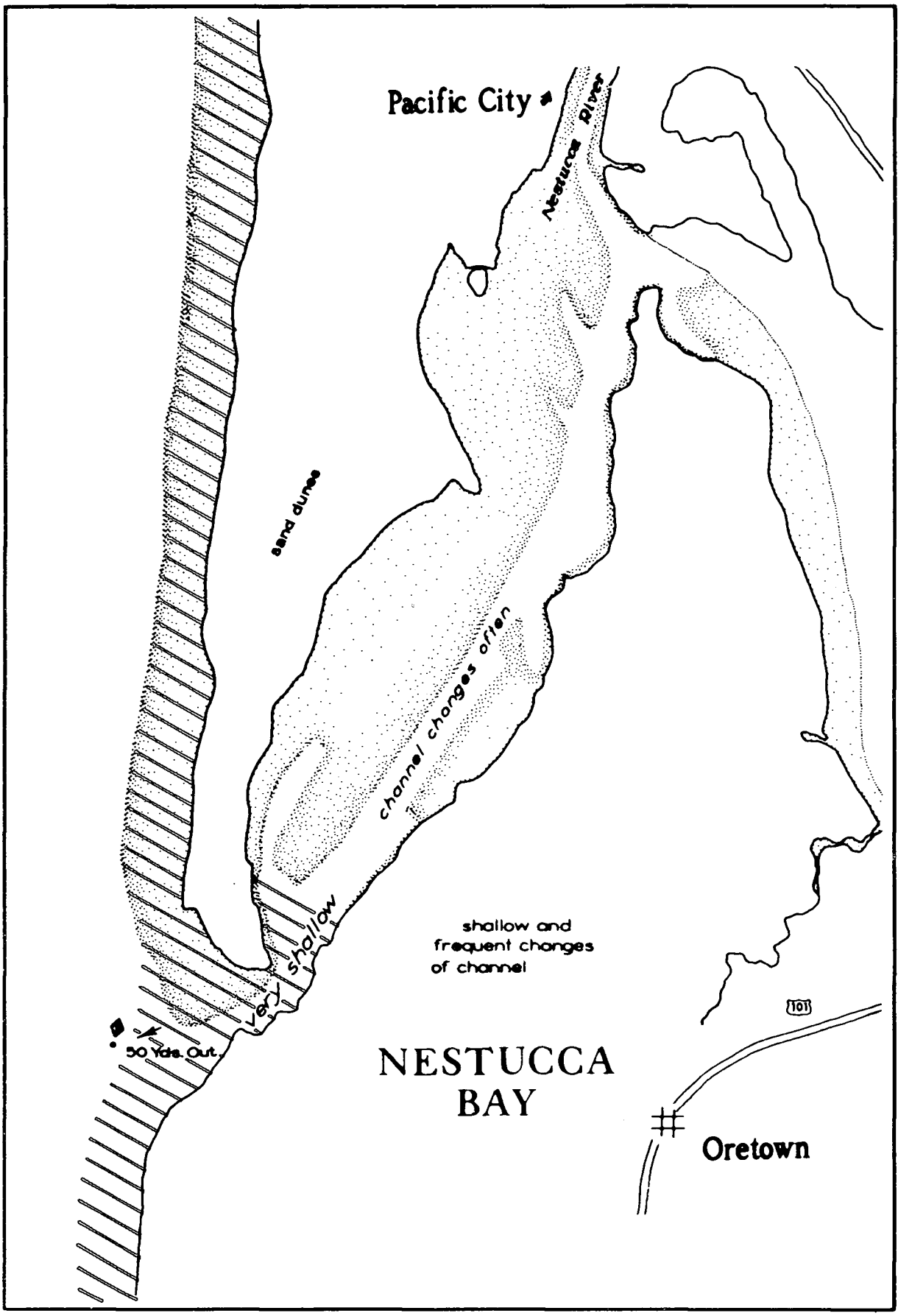
One of the great attractions at Cape Kiwanda is dory fishing, with the dories being launched and landed through the surf. It has been found by dory fishermen that spectators can create a serious problem, as they crowd around on the beach to watch the dories land.

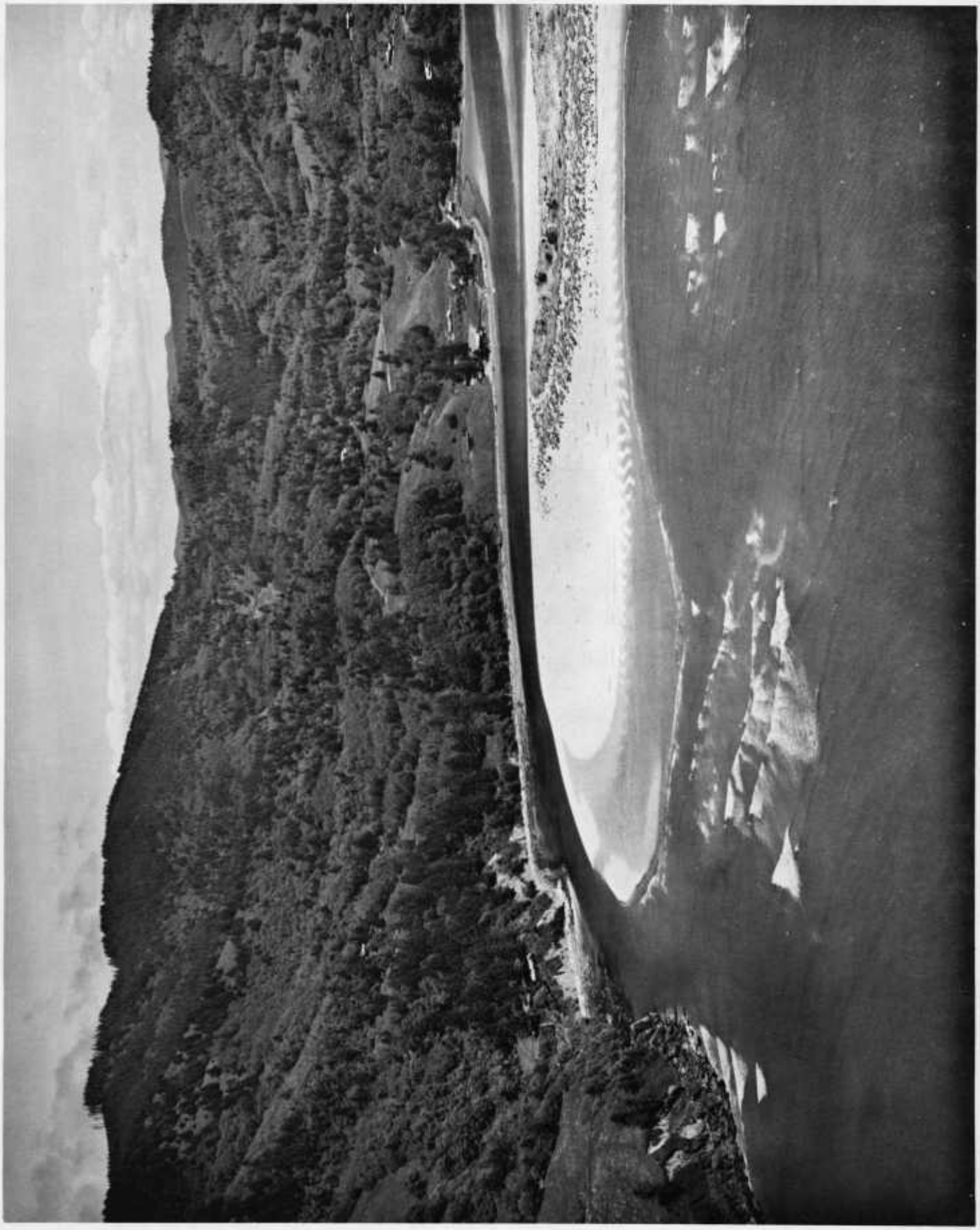
Spectators, for their own protection, are requested to allow the dories considerable amount of room for landing, as the surf moves the dories up on the beach, and it is at this point that dorymen have very little control over their craft.



NESTUCCA BAY

Entrance to Nestucca Bay is used rather infrequently due to the continual shifting of sand bars and shoaling. To the north of the entrance is Cape Kiwanda, giving protection from northwesterly winds, which are predominant during the summer months.


Pacific City
Nestucca River
sand dunes
channel changes often
very shallow
shallow and
frequent changes
of channel
50 Yds. Out
NESTUCCA
BAY
101
Oretown

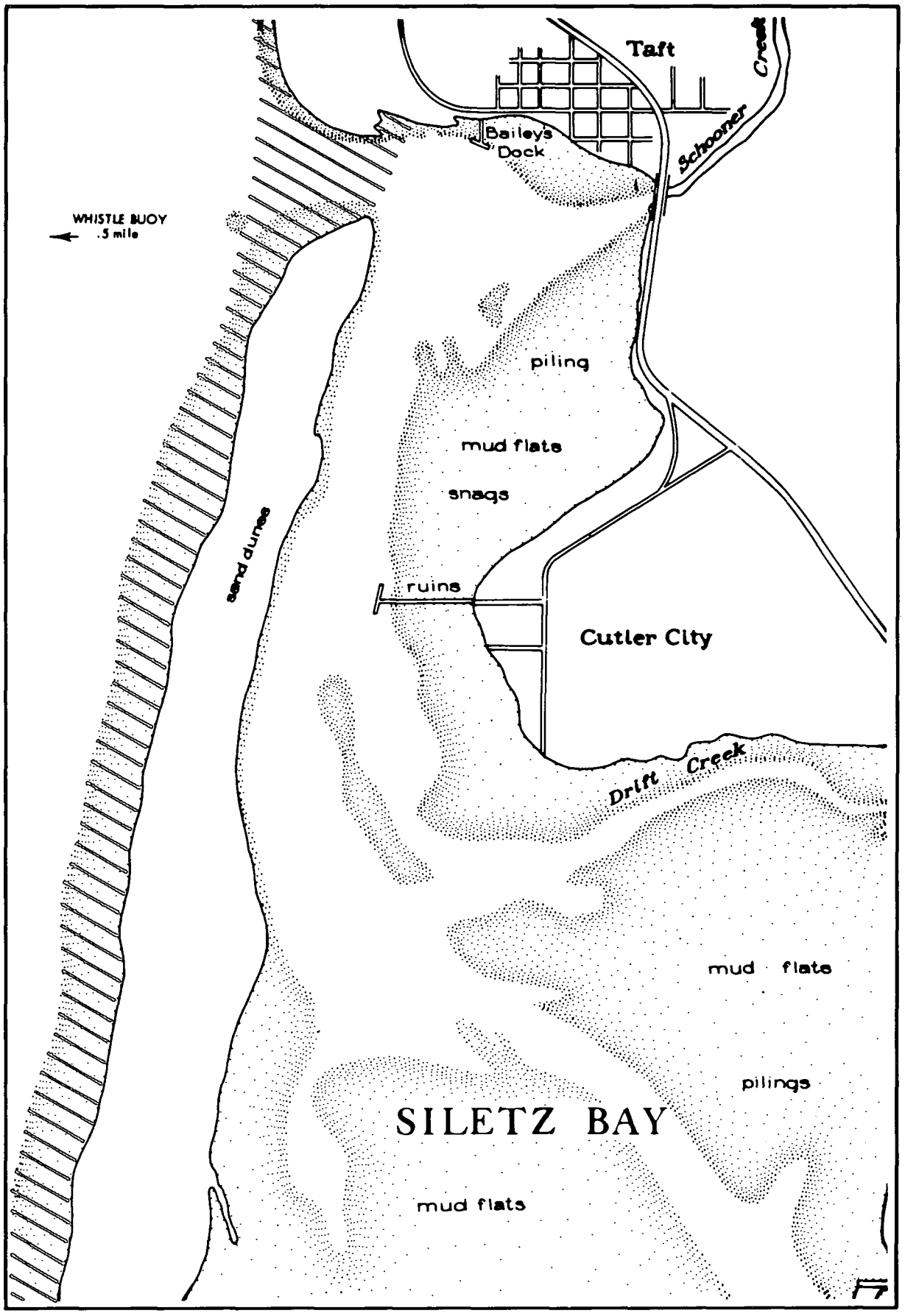


SALMON RIVER

Dangerous—not suitable for bar crossings

SILETZ BAY

The majority of the boat traffic is concentrated on the river or in the bay channels at Siletz Bay. Since there are no jetties at the bay's entrance, and because of the shallow channel, there is usually surf. On a strong ebb tide, the current reaches 5 to 7 knots at the entrance, which is force enough to pull an underpowered boat, or a vessel having engine failure, out over the bar into the ocean.


Taft
Schooner Creek
Bailey's Dock
WHISTLE BUOY
.5 mile
piling
mud flats
snags
sand dunes
ruins
Cutler City
Drift Creek
mud flats
pilings
SILETZ BAY
mud flats

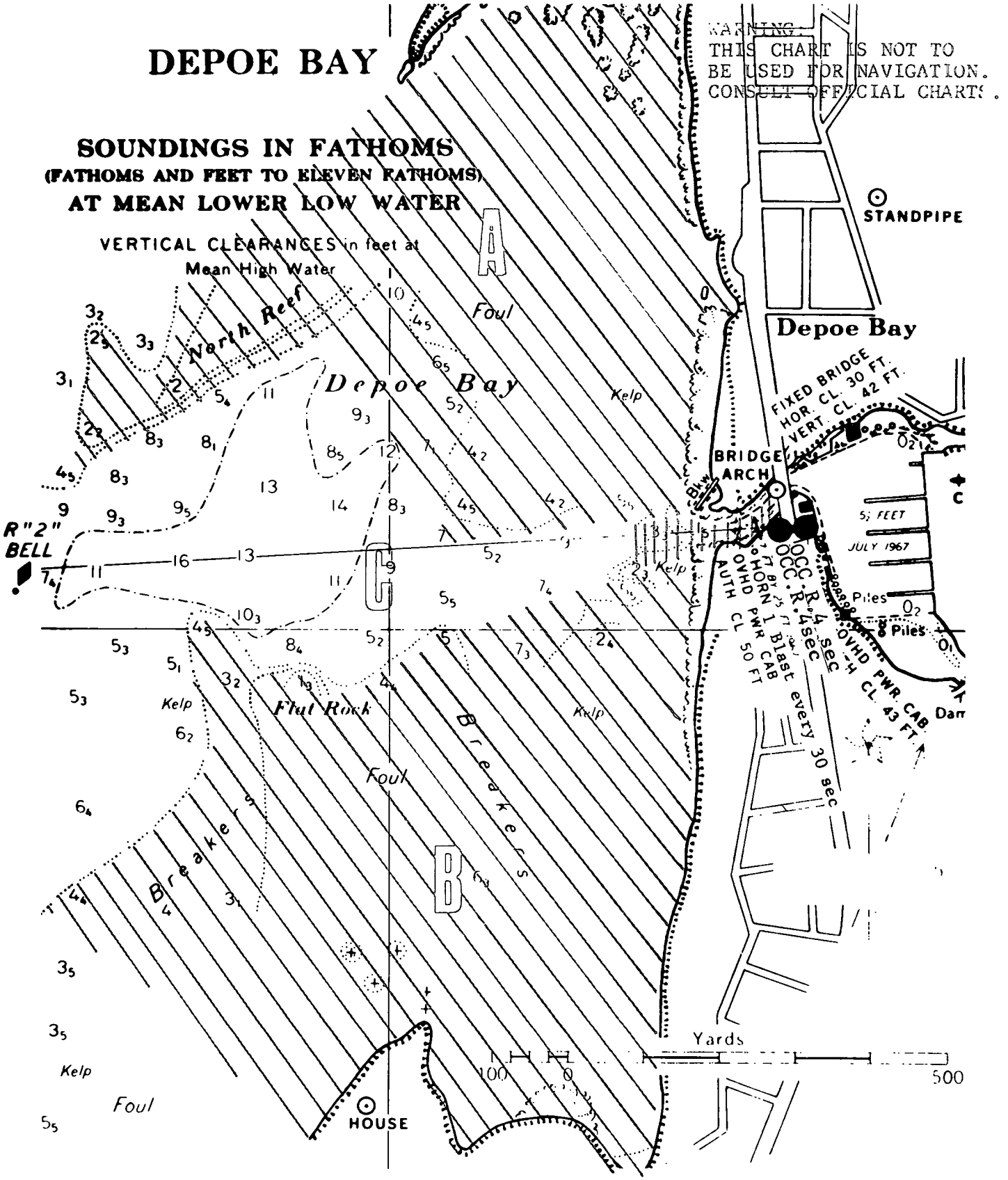
DEPOE BAY

Danger Areas

A. North Reef. Once a boat has cleared the entrance, any waters to the north are hazardous until the red gong buoy is reached. The seas break from the northwest and southwest at the same time, so this area must be avoided at all times.

B. South Reef. Better known as Flat Rock, this area lies just south of the channel. Breakers are almost always present in this area. Boats coming from the south should never use this area as a short cut to the channel. This area should be avoided by boats at all times.

C. Channel from red bell buoy in (approximately 1000 yards). The passage into and out of Depoe Bay is unusually short and difficult. The Coast Guard recommends studying it before attempting to operate a boat in it. They also recommend knowing what a drogue is and how to use one. Because the North and South Reefs are so close to the channel, this area sometimes becomes very hazardous. During adverse conditions, breakers from the North Reef will cross the channel and run into the entrance. When this condition exists, it is better to stand by at the entrance buoy until the Coast Guard advises it is safe to enter, or is there to escort boats in. An important rule at Depoe Bay: **Never fish between the entrance and the red gong buoy.**


DEPOE BAY
WARNING:
THIS CHART IS NOT TO
BE USED FOR NAVIGATION.
CONSULT OFFICIAL CHARTS.
SOUNDINGS IN FATHOMS
(FATHOMS AND FEET TO ELEVEN FATHOMS)
AT MEAN LOWER LOW WATER
VERTICAL CLEARANCES in feet at
Mean High Water
STANDPIPE
Depoe Bay
North Reef
Depoe Bay
Foul
Kelp
FIXED BRIDGE
HOR. CL. 30 FT.
VERT. CL. 42 FT.
BRIDGE
ARCH
R "2"
BELL
Flat Rock
Breakers
Foul
Kelp
HOUSE
JULY 1967
Piles
Dam
Yards
100
0
500

YAQUINA BAY

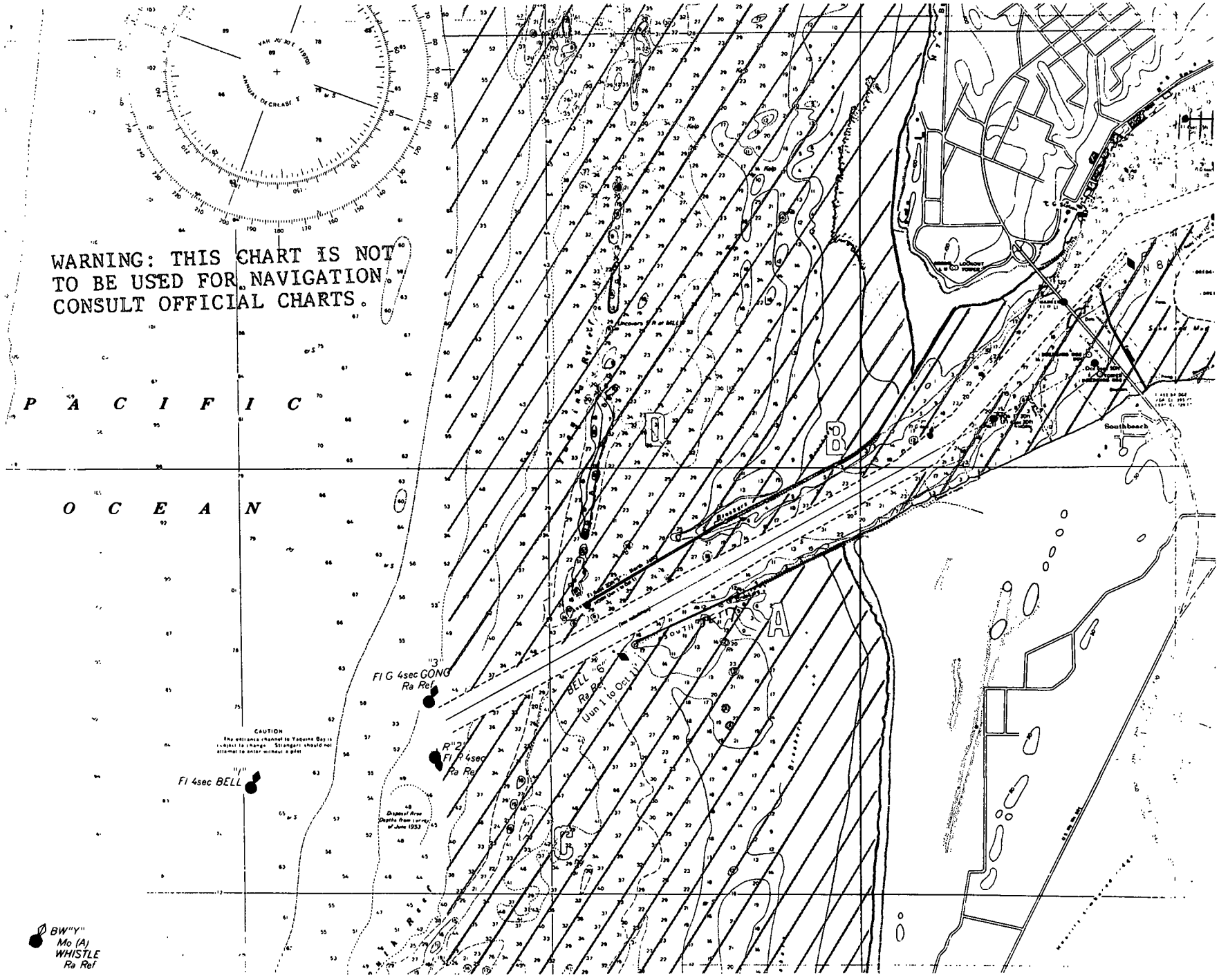
Danger Areas

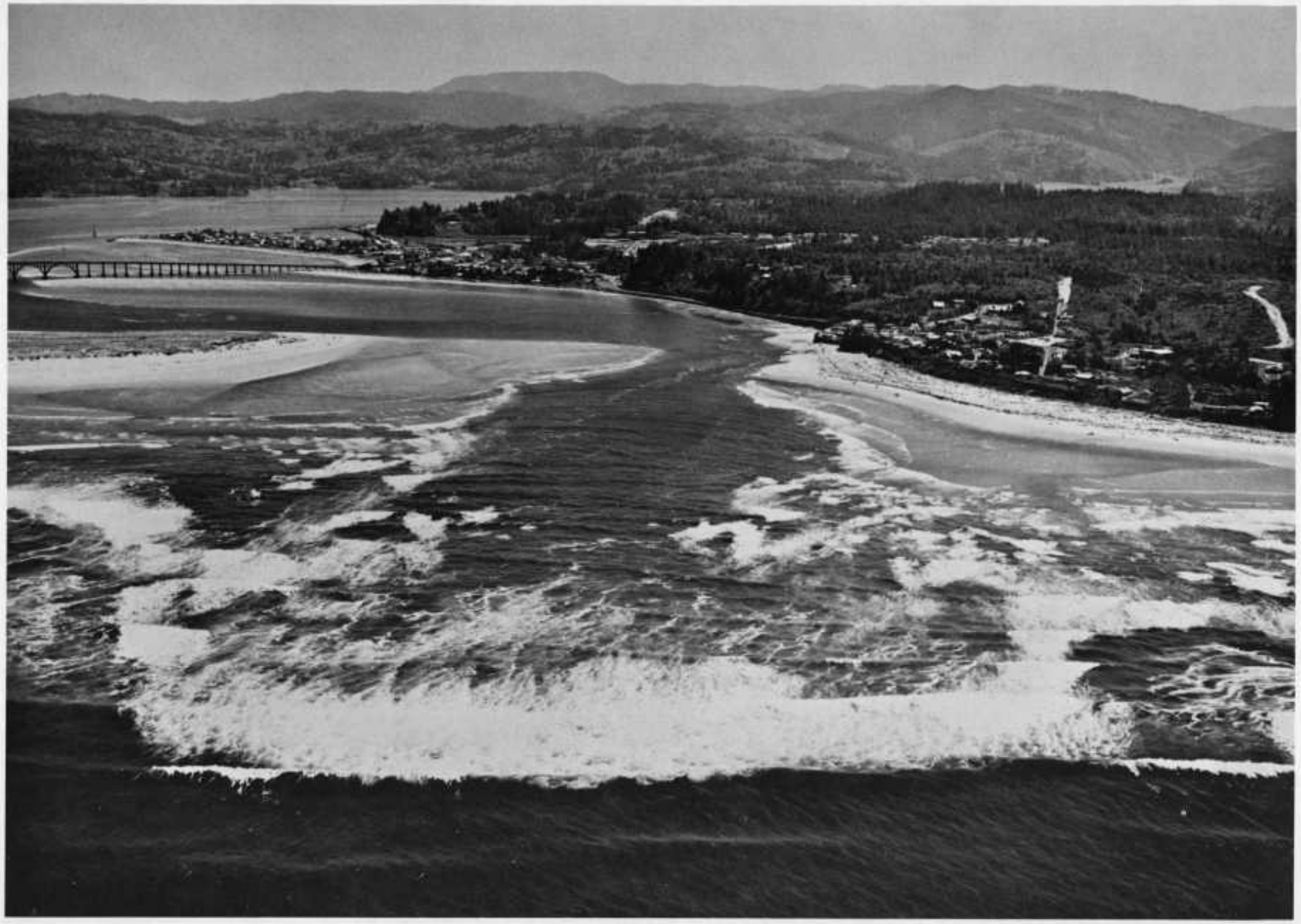
A. South jetty. There are submerged rocks along the length of the jetty; do not hug the jetty on either side. Boaters should remain in the channel entering and leaving the river so that if their engines should fail, they will have time to anchor before the current or wind sweeps them onto the rocks.

B. North jetty. This jetty affords excellent protection from northerly winds. However, the same caution should be exercised in running close to it as with the south jetty. On an ebb tide stay well clear, up to the end of the north jetty, as there is danger of being swept into the breakers at the extreme end. Remain in the channel outbound until buoy #3 has been passed, at the south end of Yaquina Reef. This applies to entering the river as well as leaving.

C. South Reef. This reef can be considered an extension of Yaquina Reef and is equally dangerous due to the same surf conditions as those encountered on Yaquina Reef. When going south, continue out the channel to the lighted bell buoy #1 before turning south.

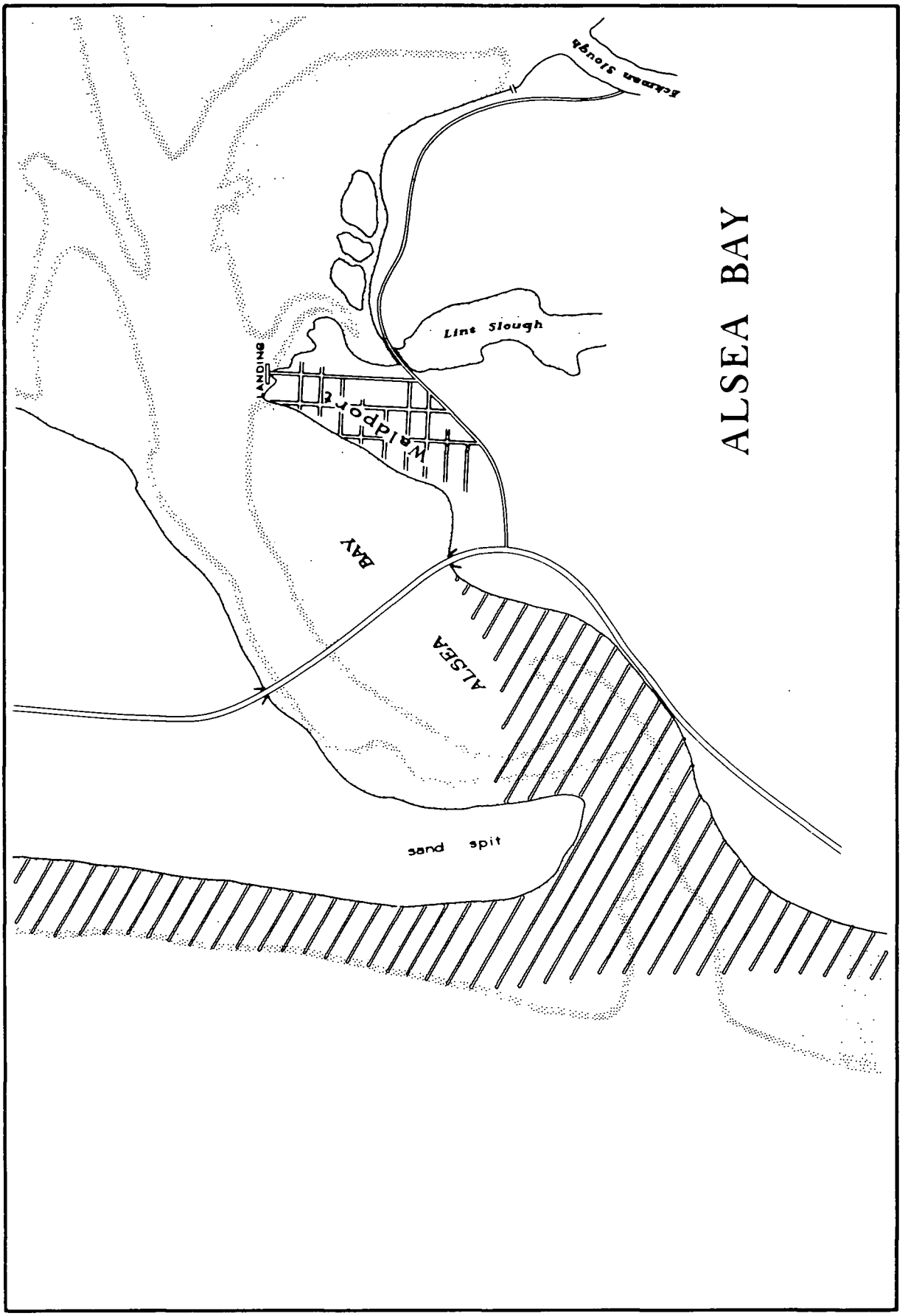
D. Yaquina Reef. This reef is always extremely dangerous, even when the winds are light and few breakers are seen. A large swell coming from seaward can cause a tremendous breaker on this reef with little or no warning, even when the sea is otherwise calm. Never fish close to the reef, and do not turn north between the end of the north jetty and buoy #3.


WARNING: THIS CHART IS NOT TO BE USED FOR NAVIGATION. CONSULT OFFICIAL CHARTS.
P A C I F I C
O C E A N
Fl G 4sec GONG
Ra Ref
"3"
R"2"
Fl R 4sec
Ra Ref
Fl 4sec BELL
BELL "6"
Ra Ref
(Jun 1 to Oct 1)
CAUTION
Disposal Area
Depths from survey of June 1953
Southbeach
BW"Y"
Mo (A)
WHISTLE
Ra Ref



ALSEA BAY

There are no jetties at Alsea Bay, and with the bar shifting frequently the entrance is not stable.


ALSEA BAY
Lint Slough
Waldport
LANDING
BAY
ALSEA
sand spit

SIUSLAW RIVER

Danger Areas

A. Shoal water, northeast side of channel, has a depth of 2½ to 3 feet of water at high tide.

B. Shoal water, south side of channel, extends from #7 buoy, well inside the bar, all the way out to the south of #5 buoy **(gong).** Breakers in this area are common, even with a small swell running.

C. Outer end of south jetty. Breakers are almost always present in this area. When the seas are from the southwest or west, breakers may extend out past the gong buoy.

D. Outer end of north jetty. Breakers are almost always present in this area. When the seas are from the west, the breakers may extend all the way out to the gong buoy.

Channel

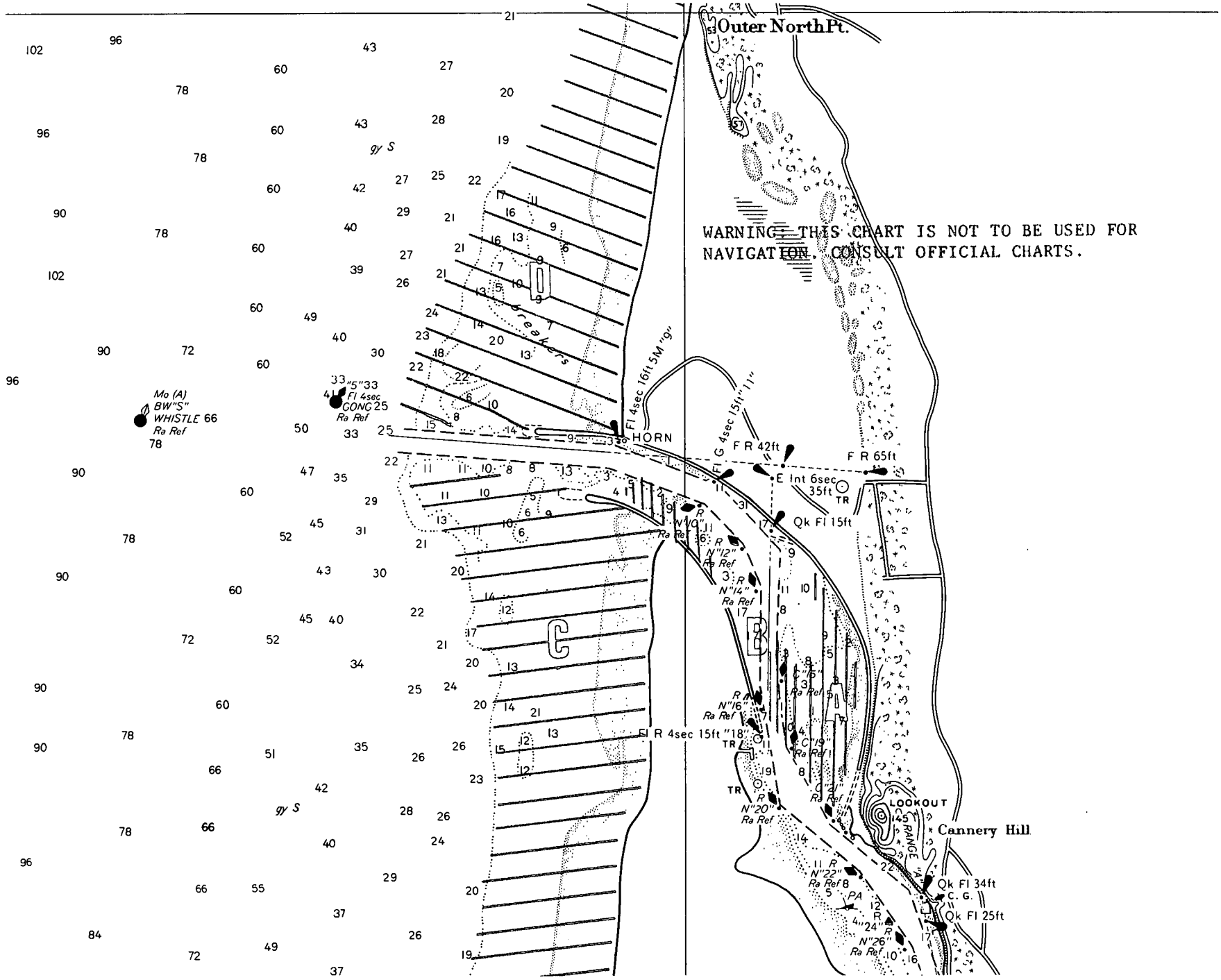
Siuslaw River channel lies along the northern half of the river entrance. Water depth ranges from 6 to 20 feet. Boaters are urged to stay in this channel, as breakers are prevalent on the south side.

Bar

The Siuslaw River bar has a very narrow channel extending out past the jetties. Unlike larger bars on the Oregon coast, the Siuslaw River bar may be rendered impassable for small boats by a moderate swell, particularly at ebb tide. Boaters should use extreme caution when operating near this bar.

Bridge

Clearance beneath the Siuslaw River bridge is low. Use caution when crossing under the bridge on the flood tide, to avoid damaging superstructure such as antennas and troll poles.


Outer North Pt.
WARNING: THIS CHART IS NOT TO BE USED FOR NAVIGATION. CONSULT OFFICIAL CHARTS.
Mo (A) BW"S" WHISTLE Ra Ref
Fl 4sec CONG Ra Ref
HORN
Fl 4sec 16ft 5M "9"
Fl G 4sec 15ft "11"
F R 42ft
F R 65ft
E Int 6sec 35ft
TR
Qk Fl 15ft
Fl R 4sec 15ft "18"
LOOKOUT
RANGE "A"
Cannery Hill
Qk Fl 34ft
C. G.
Qk Fl 25ft
gy S
breakers

UMPQUA RIVER

Danger Areas

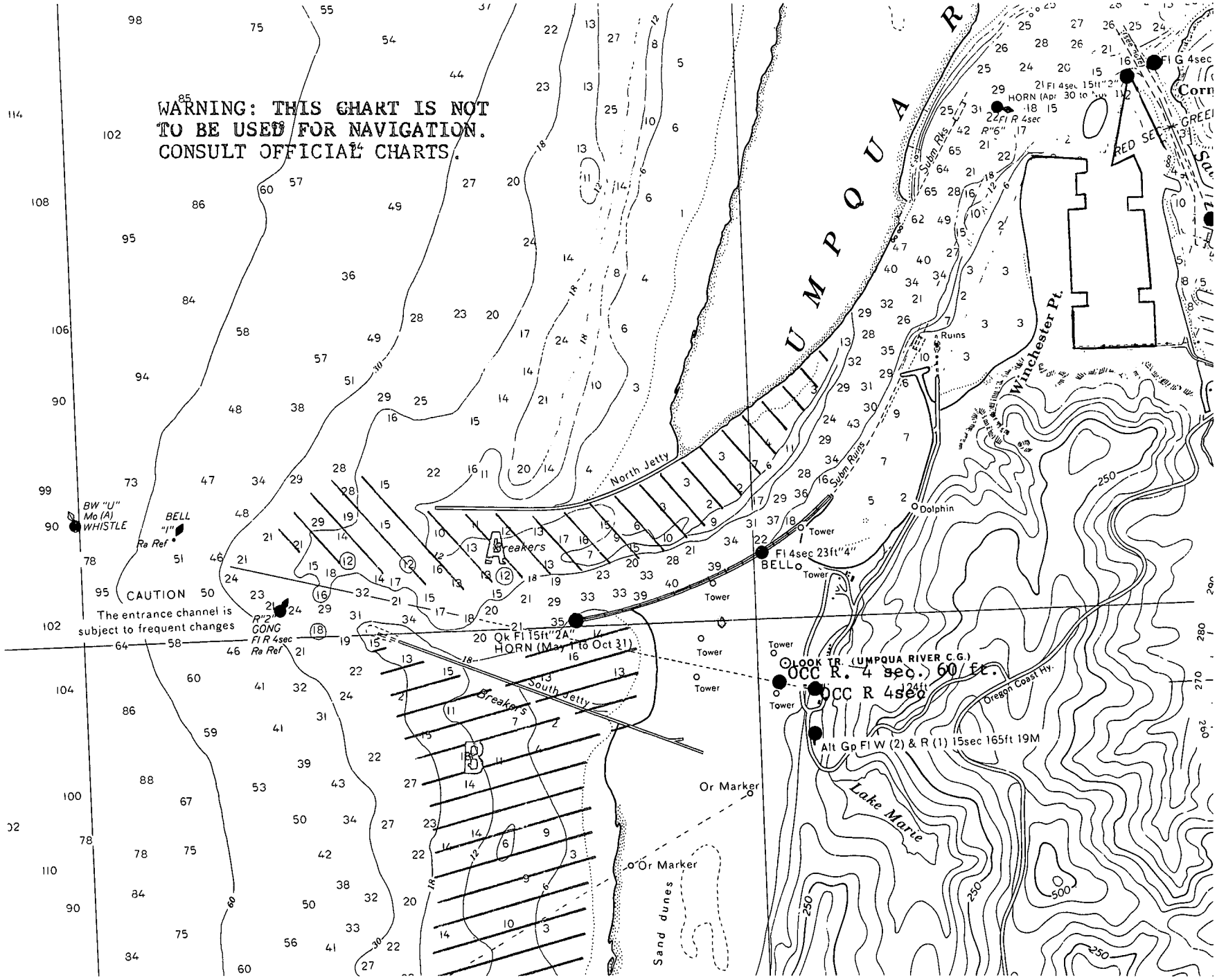
A. Middle Ground and North Spit. The North Spit is to the right when proceeding down the Umpqua River, starting from the first rock spar jetty and long pier on the east side of the channel. The North Spit has small breakers when a swell is running, and gets rougher as one proceeds along the north jetty. The North Spit is very dangerous because large breakers may come into this area from the Middle Ground. The North Spit meets the Middle Ground at the outer end of the training jetty. The Middle Ground area extends from the north jetty to the black bell buoy. This area is dangerous because a little swell can create large breakers which may capsize a vessel. Boaters should not linger near the mouth of the river during ebb tide, for if their power fails, their boats could be carried out to sea before an anchor would be effective or oars put to work.

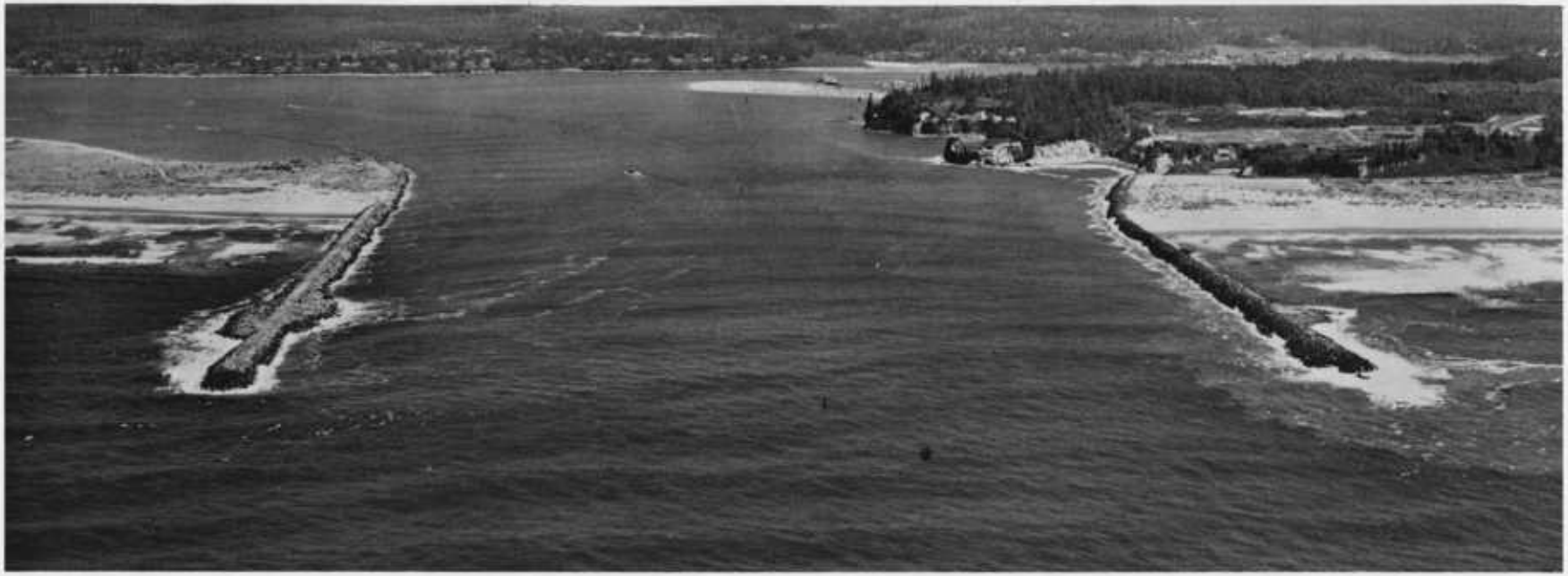
B. South jetty and training jetty cove. There are submerged rocks off the outer end of the training jetty and the cove between the training jetty and the south jetty. Boats approaching the beach in a fog have inadvertently entered this dangerous area. There are a foghorn and a light at the end of the training jetty. The area south of the south jetty can be very dangerous. Whenever breakers are observed, boaters should avoid this area.

C. Leaving Salmon Harbor. When leaving Salmon Harbor, boaters should remain in the main channel until clear of the end of the sea wall, which extends out to #2 fog signal and light.

Range Markers

The range marker consists of a red rectangular shape with a white vertical stripe mounted on a skeleton tower. By steering a course which keeps the two range markers in line, boaters will remain within the channel.


WARNING: THIS CHART IS NOT TO BE USED FOR NAVIGATION. CONSULT OFFICIAL CHARTS.
UMPQUA R
North Jetty
South Jetty
Breakers
Breakers
Winchester Pt.
Ruins
Subm Ruins
Subm Rks
Dolphin
Tower
Fl 4sec 23ft"4"
BELL
Qk Fl 15ft"2A"
HORN (May 1 to Oct 31)
BW "U"
Mo (A)
WHISTLE
BELL
"1"
Ra Ref
CAUTION
The entrance channel is subject to frequent changes
R"2"
GONG
Fl R 4sec
Ra Ref
Fl G 4sec
Fl R 4sec
R"6"
HORN (Apr 30 to
Lookout Tr. (Umpqua River C.G.)
OCC R. 4 sec.) 60 ft.
OCC R 4sec
Alt Gp Fl W (2) & R (1) 15sec 165ft 19M
Oregon Coast Hy.
Lake Marie
Or Marker
Or Marker
Sand dunes
Corn
GREEN
RED SEC



COOS BAY

Danger Areas

A. Sand spit, South Slough. When leaving the boat basin, South Slough sand spit is on the left. This area extends approximately 20 yards past South Slough marker #2 and can be crossed only at high water in a small boat, using extreme caution.

B. Submerged jetty. Proceeding out from the boat basin in South Slough channel, when directly between South Slough light #2 and unlighted can buoy #1, directly ahead will be a steel I-beam marking the end of the submerged jetty. Stay to the left of this I-beam at all times. This submerged jetty is visible at low water.

C. Sand spit, North Beach. This area is dangerous because of the shoal waters, submerged jetties, and (occasionally, on a strong ebb) heavy breakers.

D. South jetty, Guano Rock area. This is a very dangerous area because shoals extending out from the south jetty cause the seas to break from the entrance channel to the south jetty extending to Guano Rock. Care must be exercised, especially on ebb tides and when there is a northwest wind.

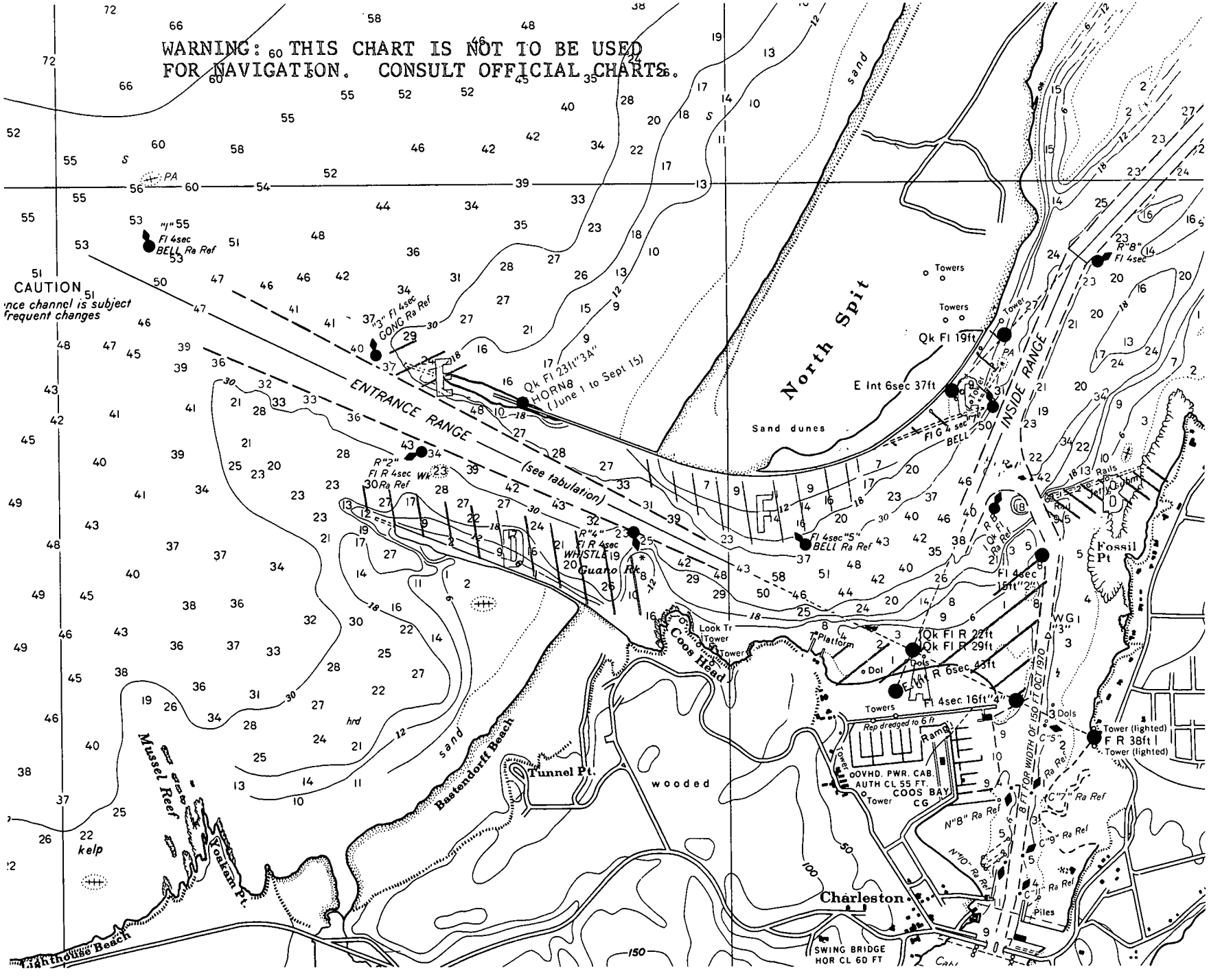
E. North jetty, submerged. The outward end of the north jetty is submerged from the visible jetty out to entrance buoy #3. Because of the submerged jetty, there are breakers in this area most of the time. When crossing the bar, on the way out stay well to the left of entrance buoy #3.

F. The area north of buoy #5 can be very dangerous when there are large swells, or during the ebb tide. Breakers may be encountered in this area and should be avoided during ebb tide.

Guano Rock

Guano Rock is approximately 100 yards south of entrance buoy #4. This can be a dangerous area on a strong ebb tide because of occasional breakers over this rock. Guano Rock has approximately 8 to 10 feet of water over it at low water.

WARNING: THIS CHART IS NOT TO BE USED FOR NAVIGATION. CONSULT OFFICIAL CHARTS.



COQUILLE RIVER

Danger Areas

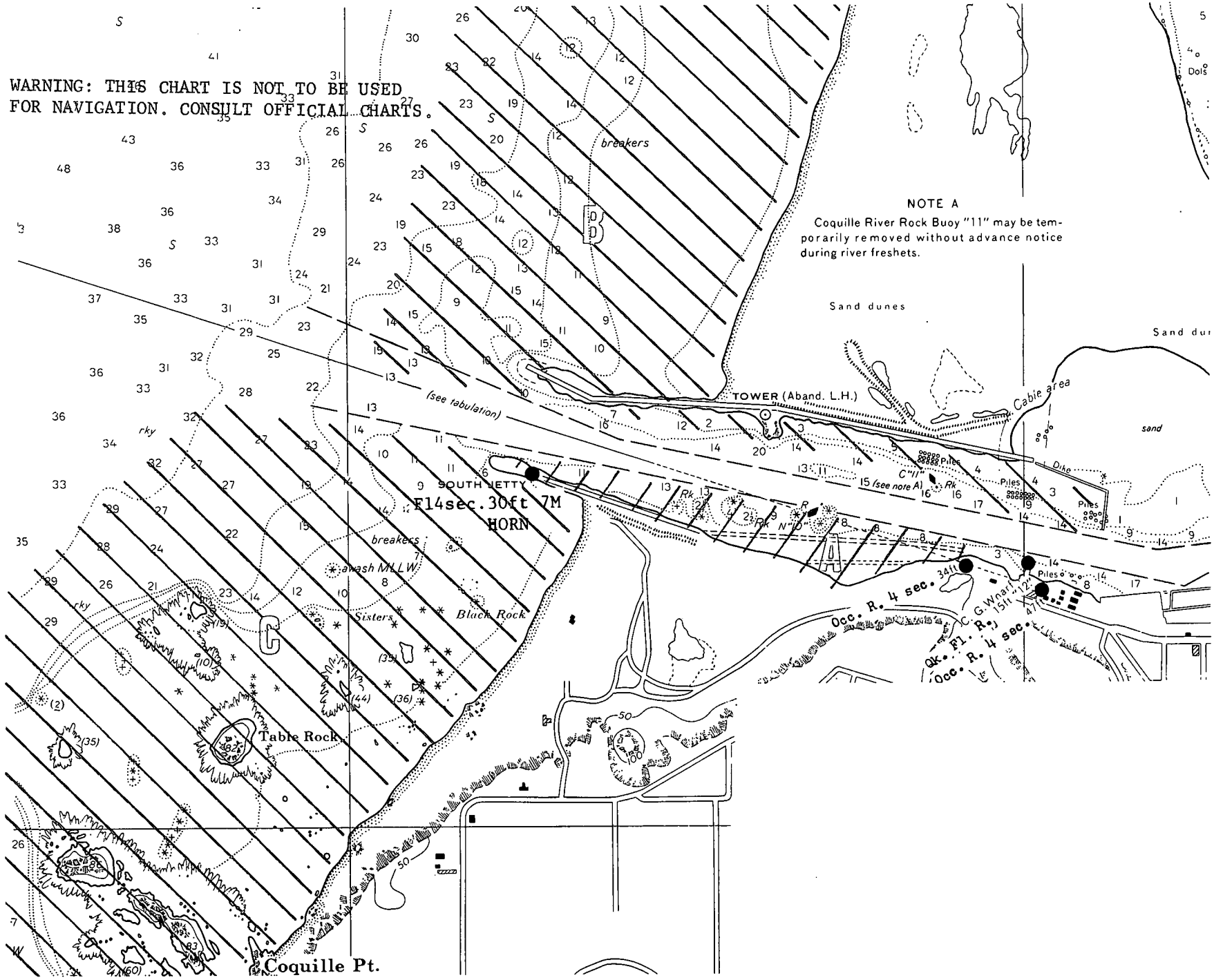
A. South jetty. It is always dangerous to get too close to the end of a jetty. An unexpected breaker could carry a small boat onto the end of the jetty with great force. The inside of the south jetty is a dangerous area, and boaters should remain clear. The prevailing northwest wind could set a powerless boat onto the jetty.

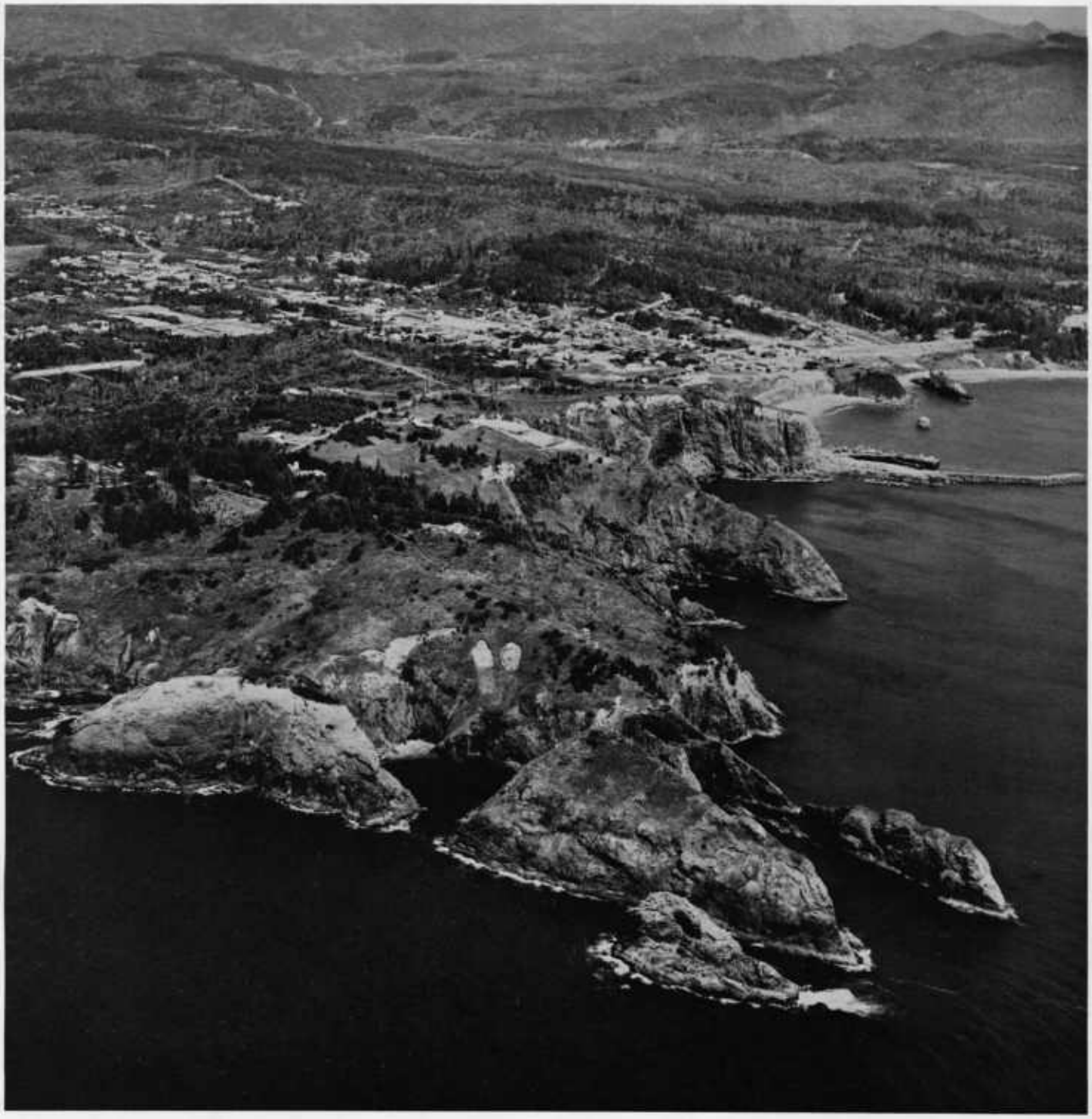
B. North jetty. Stay clear of the end of this jetty, as the sea breaks almost continuously in this area. A shallow area with partially submerged rocks extends from the abandoned lighthouse to the end of the jetty. The large swells that occur in this area could put a boat onto these rocks.

C. South side of Coquille River entrance. The area to the south of the entrance can be very dangerous. There are several rocks just below the surface that cannot be seen except during heavy seas. There is a prevailing northwest wind during the summer months; also, the sea currents run to the south. These two conditions may cause a powerless boat in this area to drift onto these rocks.

Range Markers

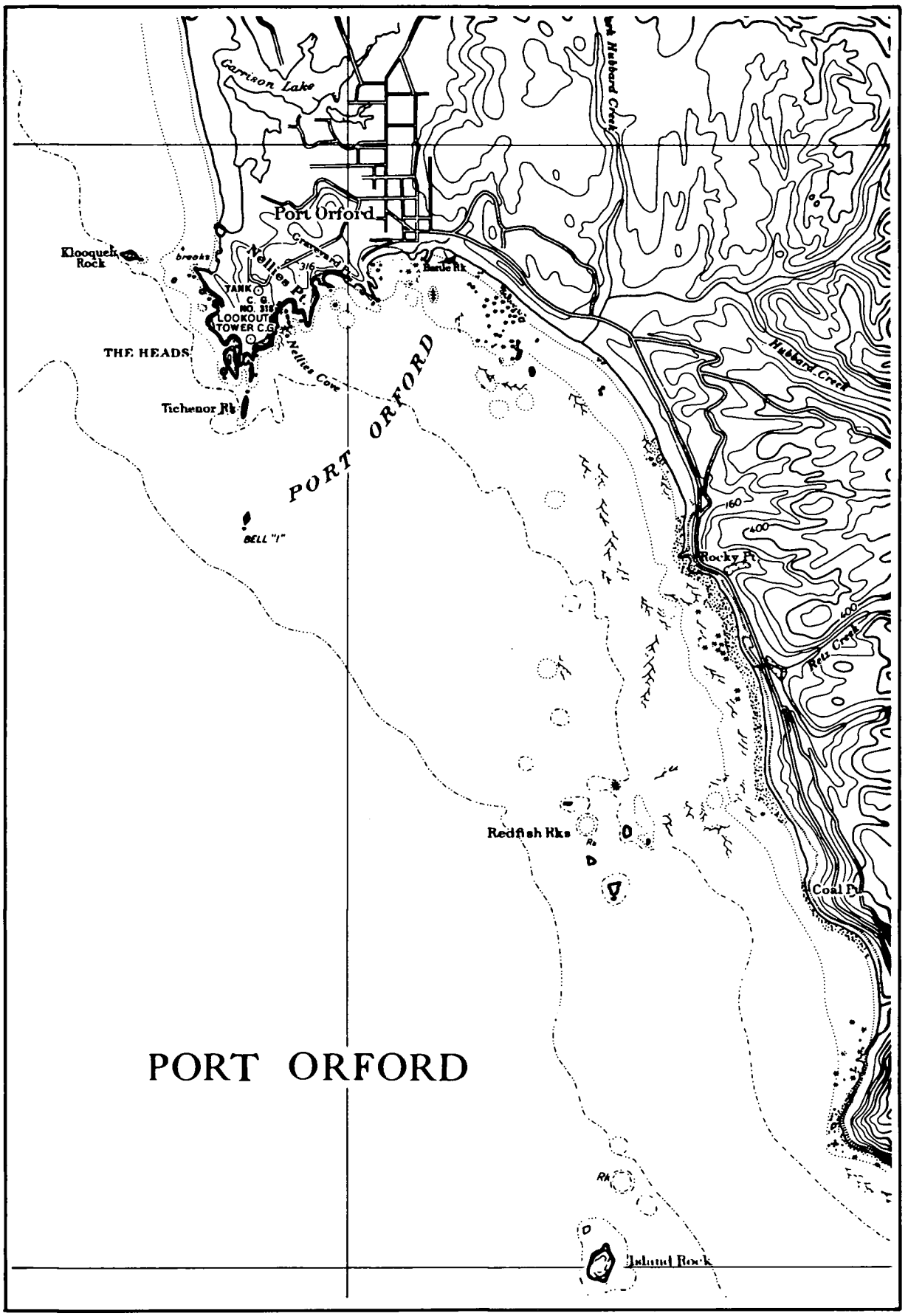
The front range marker consists of a white square daymark with a red triangle on a skeleton tower. The rear range marker consists of a white square daymark with a red inverted triangle on a skeleton tower. By steering a course which keeps the two range markers in line, boaters will remain within the channel.


WARNING: THIS CHART IS NOT TO BE USED
FOR NAVIGATION. CONSULT OFFICIAL CHARTS.
NOTE A
Coquille River Rock Buoy "11" may be temporarily removed without advance notice during river freshets.
breakers
Sand dunes
Sand dun
TOWER (Aband. L.H.)
Cable area
sand
(see tabulation)
SOUTH JETTY
F14sec.30ft 7M
HORN
breakers
awash MLLW
Sisters
Black Rock
Table Rock
Coquille Pt.
Piles
Dike
C"11"
15 (see note A)
Occ. R. 4 sec.
Qk. Fl. R.
G. Wharf
15ft
Dols



PORT ORFORD

There is no bar at Port Orford; departure from and entrance to the harbor are direct with the ocean. The harbor (at the right in the photo above) is protected from the northwest winds which prevail during the summer months, but is exposed to southerly winds, which can cause unfavorable harbor conditions.


Garrison Lake
Port Orford
Hubbard Creek
Klooquch Rock
Nellies Pt
Grassy Pt
316
Barde Rk
TANK
C. G.
NO. 316
LOOKOUT
TOWER C.G.
THE HEADS
Nellies Cove
Tichenor Rk
PORT ORFORD
BELL "1"
160
400
Rocky Pt
Hubbard Creek
Rock Creek
Redfish Rks
Coal Pt
Island Rock

PORT ORFORD

ROGUE RIVER

Danger Areas

A. Shoal water, south side. Along the south side of the Rogue River channel are shoal water and gravel bars. This shoal water breaks to a height of 6 feet when a swell is running. Many boaters fishing inside the river, trolling between the jetties, find themselves set into this dangerous area by northwest winds. If a vessel breaks down in the channel and is not anchored, the northwest wind and ebb tide will set it into this dangerous area in a matter of a few minutes.

B. Outer end, north jetty. Breakers are almost always present in this area because of shoal water. When the sea is running from the west or southwest, it is particularly dangerous.

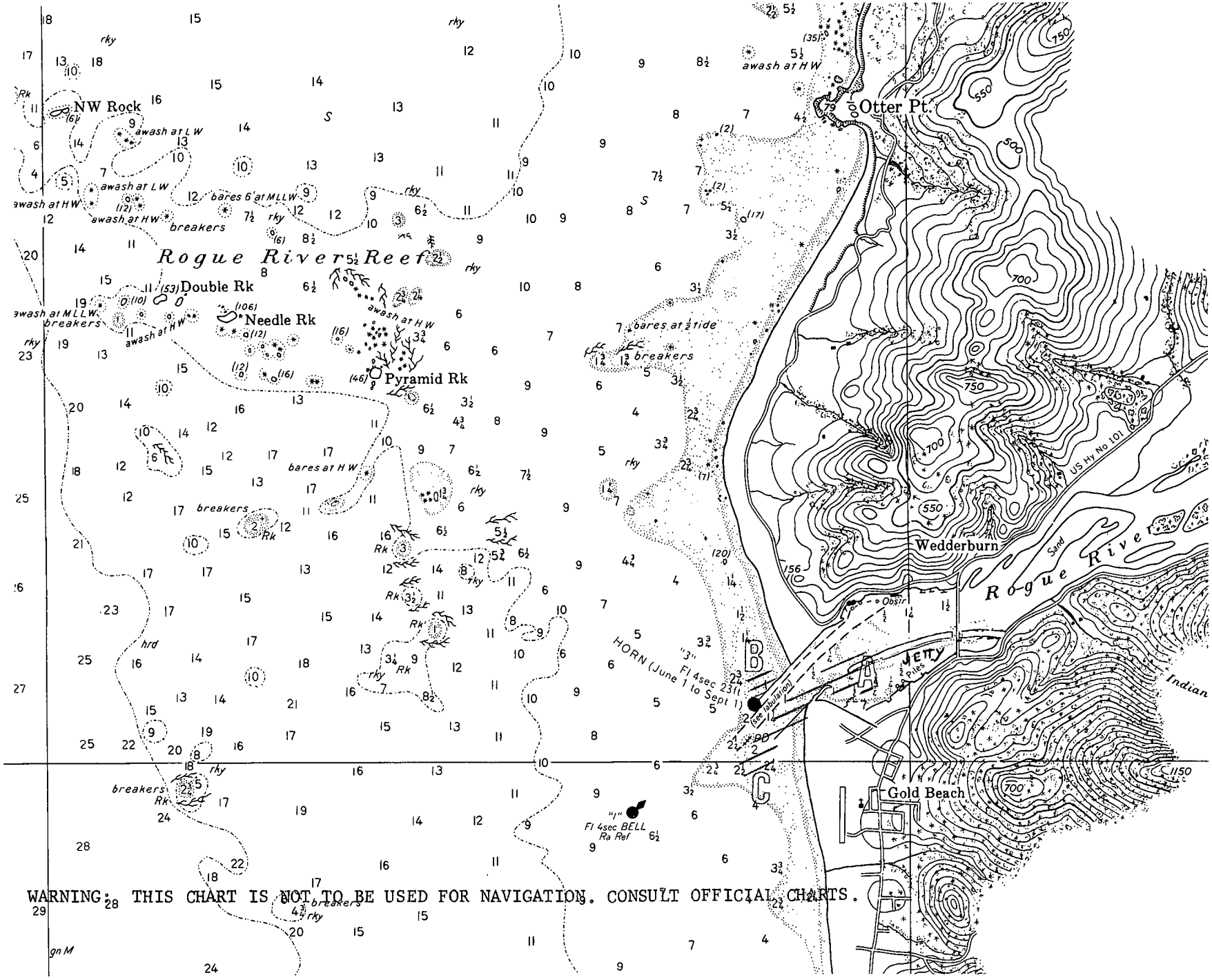
C. Outer end, south jetty. Breakers are almost always present in this area. Even when it appears to be calm, there may be occasional breakers 1,000 feet outside the south jetty. When the sea is running from the west or southwest, this area is very dangerous.

Channel

Rogue River channel lies along the north jetty. Under existing conditions a channel 13 feet deep and 300 feet wide, extending from the ocean to the inner end of the north jetty, is provided. Boaters are urged to use and stay within this channel.

Fishing Inside the Channel

During recent years small boats, which do not usually go out into the ocean, fish just inside the bar and troll in an area between the north and south jetties. Frequently there are a great number of boats in this area, and these boats tend to crowd each other. Because trolling is the method of fishing most frequently used, lines are sometimes accidentally caught in boat propellers. Should this happen, the disabled boat should immediately anchor or call for aid. A northwest wind or ebb tide could set a boat into a dangerous area in a matter of minutes.



WARNING: THIS CHART IS NOT TO BE USED FOR NAVIGATION. CONSULT OFFICIAL CHARTS.

Photo and chart do not show the new south boat basin, completed in 1975-1976.

CHETCO RIVER

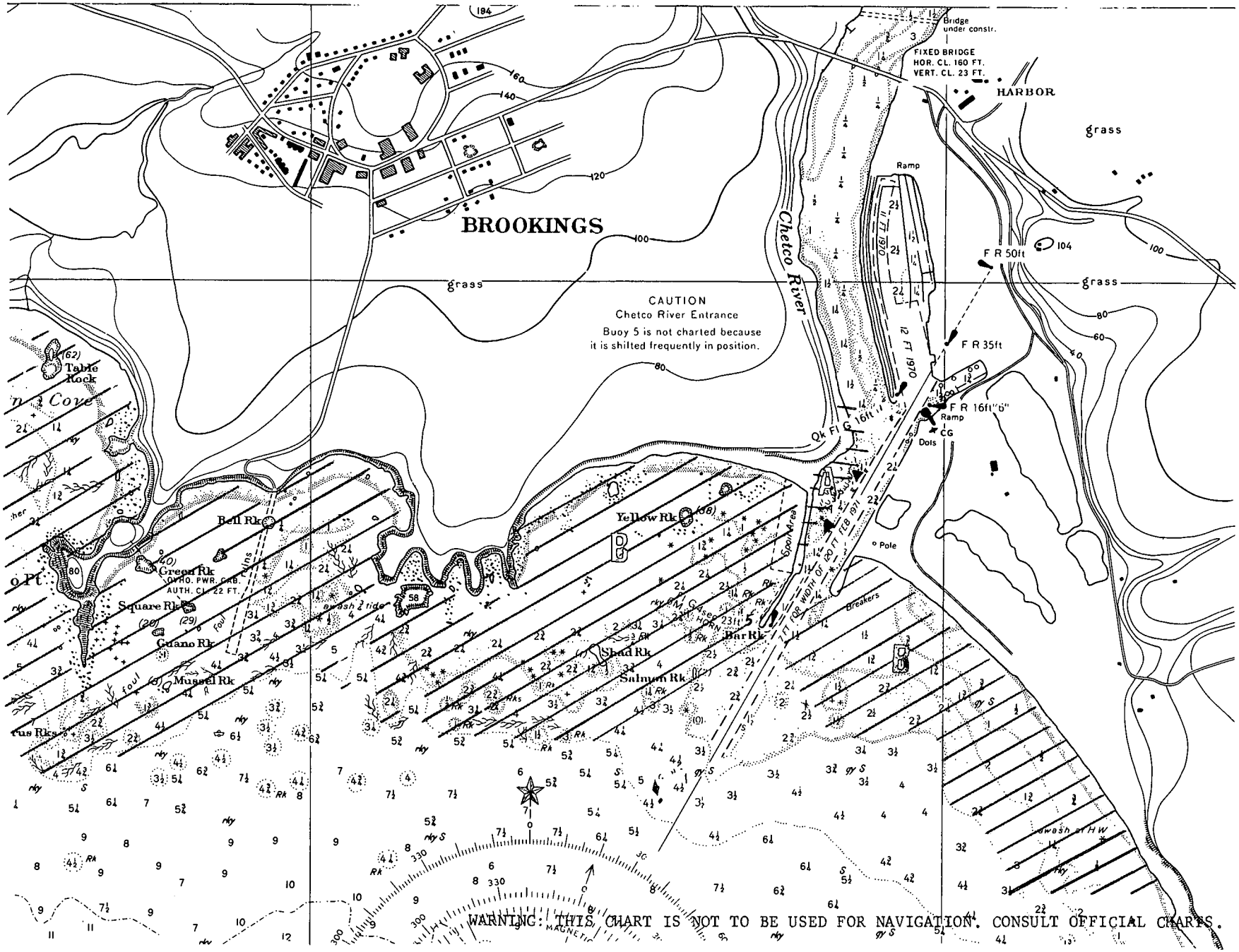
Danger Areas

A. West jetty rock area. This area is dangerous because of many rocks and shoaling. At high tide the rocks are covered by water, and the area appears to be navigable but is extremely dangerous. This area is to be avoided at all times.

B. Jetties and shoal areas. These areas are extremely dangerous at all times because of submerged rocks and breakers. Two rocks in this area may be seen at low tide. Avoid this area at all times.

Range Markers

The range marker consists of a white square shape with a red vertical stripe mounted on a skeleton tower. By steering a course which keeps the two range markers in line, boaters will remain within the channel.



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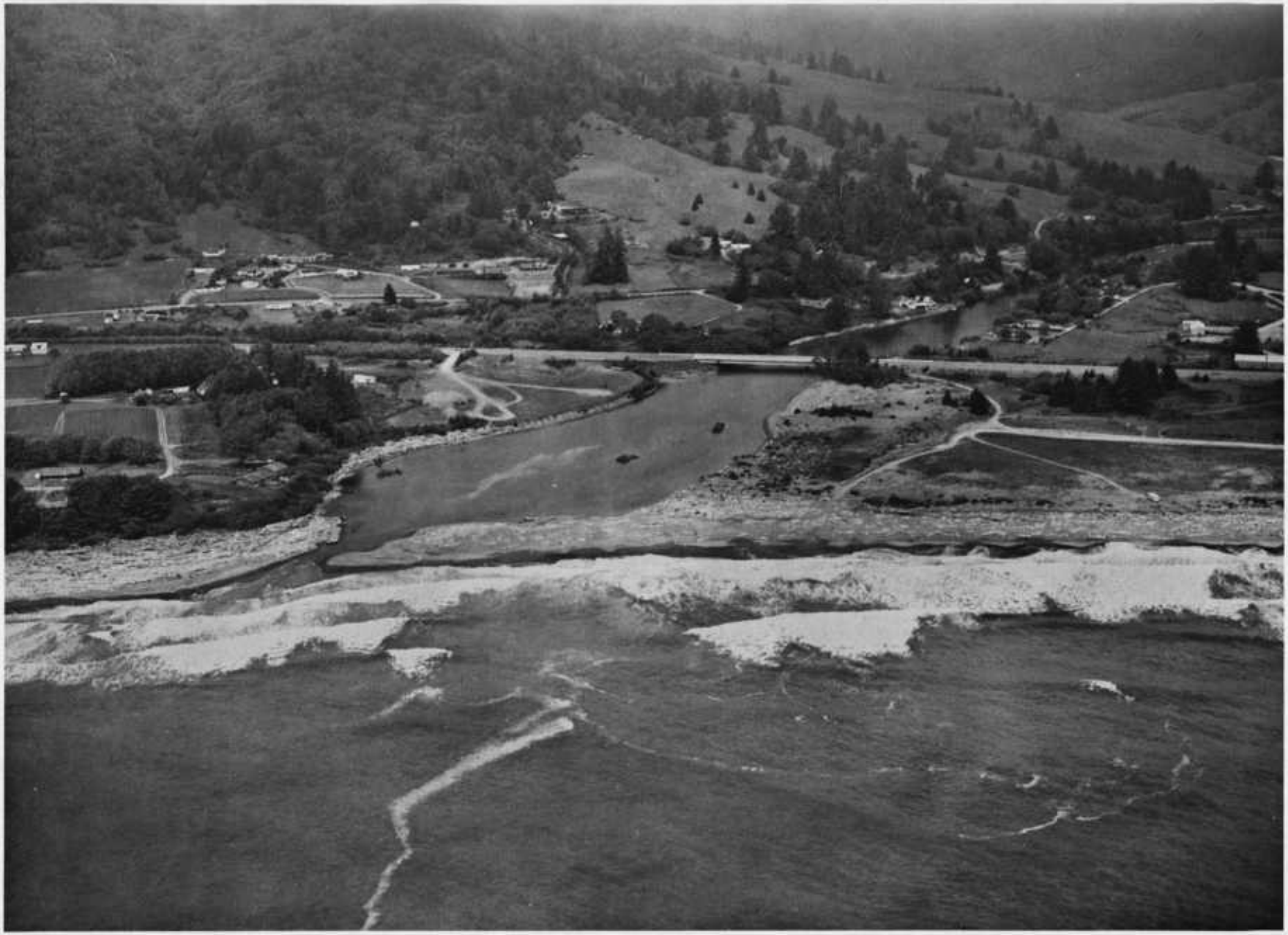

WINCHUCK RIVER

Dangerous—not suitable for bar crossings

SUGGESTIONS FOR FURTHER READING

Chapman, Charles F., *Piloting, Seamanship and Small Boat Handling,* latest edition (New York: Hearst Corporation, Motor Boating and Sailing Division, 1974 [or later]).

Crawford, William P., *Mariner's Notebook, A Guide to Boating Fundamentals,* latest edition (San Francisco: Miller Freeman Publications, Book Division, 1971 [or later]).

Metcalf, Philip, and Gene Itzen, eds., *A Bar Guide of the North Pacific Coast* (Astoria, Ore.: Clatsop Community College, Maritime Sciences Division, 1976).

Nautical Chart Catalog 2, United States Pacific Coast Including Hawaii, Guam and Samoa Islands, latest edition (Riverdale, Md.: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Survey, 1975 [or later]). Free from NOS and NOS agents: see pages 7-8, above.

Oregon Boating Guide [map], latest edition (Salem: Oregon State Highway Division and Oregon State Marine Board, with the cooperation of Oregon Department of Fish and Wildlife, 1976 [or later]).

Oregon Boaters Handbook, latest edition (Salem: Oregon State Marine Board, 1976 [or later]).

U.S. Coast Pilot 7, California, Oregon, Washington and Hawaii, latest edition (Washington: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Survey, 1975 [or later]). For sale by NOS and NOS agents; see pages 7-8, above.

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