

8371

Diag. Cht. No. 5902-2.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. WCFP-1657 Office No. H8371

LOCALITY

State Oregon

General locality Oregon Coast

Locality Three Arch Rocks and Southern

Part of Tillamook Bay

1957

CHIEF OF PARTY

A. L. Wardwell

LIBRARY & ARCHIVES

DATE March 12, 1958

8371

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H 8371

Field No. WCFP 1657

State Oregon

General locality Oregon Coast

Locality ~~Oregon Coast around~~ Three Arch Rocks and southern part of  
Tillamook Bay

Scale 1:10,000 Date of survey 22 Aug - 2 Oct 1957

Instructions dated 15 May 1956

Vessel Launch C.S. 160

Chief of party CDR Arthur L. Wardwell

Surveyed by ENS Philip J. Taetz, ENS James K. Richards

Soundings taken by fathometer ~~graphic recorder, hand lead, wire~~

Fathograms scaled by Albert W. Brain, Harry D. Lantzy

Fathograms checked by A.L. Wardwell, P.J. Taetz, J.K. Richards, V. Kiisk

Protracted by ENS Mart Kask

Soundings penciled by ENS Mart Kask

Soundings in ~~fathoms~~ feet at MLW MLLW *and are true depths*

REMARKS:

*Kask*

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SURVEY  
FIELD NO. WCFP 1657 - REGISTRY NO. H-8371

TILLAMOOK BAY, OREGON  
PROJECT 13880

DATE OF SURVEY: 1957  
SCALE: 1:10,000

WEST COAST FIELD PARTY - ARTHUR L. WARDWELL, CHIEF OF PARTY

SURVEYED BY: P.J. TAETZ, J.K. RICHARDS

PROJECT

The work was done in accordance with instructions from the Director for project number 13880 dated 15 May 1956.

SURVEY LIMITS AND DATES

The general locality of the survey is Tillamook Bay, Coast of Oregon.

The limits of the survey enclose Tillamook Bay south of Latitude  $45^{\circ}31.5'$  and an area on the outside coast between Latitudes  $45^{\circ}27.0'$  and  $45^{\circ}29.5'$  extending west to Longitude  $124^{\circ}00.0'$  ✓  
✓

This smooth sheet makes a junction with two 1957 contemporary surveys. Junction on north is made with sheet WCFP 1557 ( registry number H-8370, scale 1:10,000).  
Junction on south is made with sheet WCFP 1757 ( registry number H-8372, scale 1:10,000).

Field work on this sheet begun 22 August 1957 and was completed 2 October 1957.

#### VESSELS AND EQUIPMENT

Launch CS 160 and a skiff were used for all sounding lines. All fathometer soundings were taken aboard the launch with an 808 type fathometer (number 148) with an outboard acoustic unit. All soundings taken from the skiff were pole soundings.

The unreduced depth encountered throughout the area ranged approximately from 3 feet to 100 feet.

#### TIDE AND CURRENT STATIONS

A portable tide gage and staff were attached to the piling of Bay City Cut Light, 1954 (Latitude  $45^{\circ}31.295'$ , Longitude  $123^{\circ}53.944'$ ). The tidal records from this tide gage were used for an area inside Tillamook Bay extending from northern limits of this sheet, south, to an imaginary diagonal line from signal Sir to signal Int.

A portable tide gage and staff were attached to the piling of Dick Point Light, 1954 (Latitude  $45^{\circ}28.882'$ , Longitude  $123^{\circ}54.124'$ ). The tidal records from this tide gage were used for an area inside Tillamook Bay, extending south from an imaginary diagonal line between signals Sir and Int, excluding Hoquarten Slough east of Longitude  $123^{\circ}52.4'$ .

A tide staff was attached to a dock adjacent to the US Highway 101 Bridge crossing Hoquarten Slough north of the City of Tillamook. The geographic ~~position~~ position was scaled from the boat sheet and is: Latitude  $45^{\circ}27.56'$ , Longitude  $123^{\circ}50.59'$ . The staff readings were observed and recorded at 15 minute intervals during the day the hydrography was performed in Hoquarten Slough and its subsidiaries east of Longitude  $123^{\circ}52.4'$  ✓

A portable tide gage and staff were erected along the rock jetty at Barview Oregon (Latitude  $45^{\circ}34.10'$ , Longitude  $123^{\circ}56.55'$ ). The tidal records from this tide gage were used for the outside area around Three Arch Rocks. ✓ *off sheet*

There were no current stations established. ✓

#### SMOOTH SHEET

The projection was ruled by hand at the C&GS Ships Base in Seattle by Ensign Mart Kask. ✓

The shoreline was transferred from advanced blueline photographic manuscripts. ✓

All positions were plotted by the use of the three-arm protractor. ✓

#### CONTROL STATIONS

Nine previously established triangulation stations were used for signals. An additional nine signals were previously established topographic stations. The remainder of the signals were located by photogram<sup>m</sup>etry. ✓

For additional information regarding control stations, see List of Signals Used, attached to this report. ✓

## SHORELINE AND TOPOGRAPHY

All shoreline for this survey was transferred to the boat ✓  
and smooth sheets from advance blueline photographic manuscripts: T-11422, overlay T-11422, T-11423, T-11424, T-11425. *Overlay T-11422 missing HUB-9/22/60*

A discrepancy was found to exist in the topographic outline of Pyramid Rock. A corrected overlay was compiled ✓  
by the Washington office and the corrected delineation is shown on the smooth sheet.

Shoreline, piers, and other detail adjacent to water were not inked on the smooth sheet. All detail in the water area, however, (such as rocks and piles) which originated with the topographic manuscripts were inked on the smooth sheet. All notes referring to detail in the water area whether placed on land or in water area referring to detail in the water area were left in pencil. ✓

Investigation of the northern most rock jetty (Latitude  $45^{\circ}30.85'$ , Longitude  $123^{\circ}54.25'$ ) indicated that the bottom has filled in level with the top of the jetty along the west side. ✓ *Middle Channel Dike*  
Soundings taken on top of the old jetty reveal that the jetty uncovers  $\frac{1}{2}$  foot at MLLW. (noted on smooth sheet as *as wash MLLW.*) ✓

Investigation of the old rock jetty (Latitude  $45^{\circ}30.15'$ , Longitude  $123^{\circ}54.15'$ ) indicates that the jetty uncovers  $\frac{1}{2}$  foot at MLLW. The bottom has filled in level with the top of the jetty on the east side. (noted on smooth sheet as *uncovers 1 ft MLLW*) ✓

Investigation of the Kilchis river jetty indicates that the tops of the pilings uncover  $4\frac{1}{2}$  feet at MLLW. (noted on smooth sheet as *uncovers 5' MLLW.*) ✓

The low water line in Tillamook Bay is adequately defined. On the outside, however, it was impossible in one place to obtain the 6 foot curve because of breakers in rocky area. ✓

## SOUNDINGS

Fathometer 148 was used for most of the soundings during this survey. In shallow waters a sounding pole was used. ✓

Fathometer corrections were obtained by a series of bar checks and phase comparisons, described in a separate fathometer report which will be forwarded to the Director. An abstract of echo corrections is attached to this report.

✓ Attached  
to D.R.

#### CONTROL OF HYDROGRAPHY

For all hydrography in the bay and on the outside, the positions were fixed by sextant angles on previously located objects ashore. ✓

For the lines run in the extreme lower part of the bay (rivers and sloughs), fixes were obtained by marking the time abeam of signals along the shore. ✓

#### ADEQUACY OF SURVEY

Survey sheet No. H-8371 is considered adequate and complete and should supersede prior surveys for charting purposes. No extraordinary submarine features were found. Depth curves can be drawn adequately for the entire area. ✓

#### CROSSLINES

The crosslines run were approximately 6 per cent of the total sounding lines. All crosslines appeared satisfactory. ✓

#### COMPARISON WITH PRIOR SURVEYS

The area inside Tillamook Bay, covered by this survey, was previously surveyed in 1863, registry No. 936, scale 1:10,000. ✓

Due to harbor development projects over the years, the bay area has changed considerably so that the present work is not in *✓ CONCUR* agreement with the survey of 1863.

The area on the coast around Three Arch Rocks was previously surveyed in 1891 (registry No. H-2088~~8~~<sup>9</sup> scale 1:20,000) and 1927 (registry No. 4745, scale 1:20,000). Comparisons of this sheet with these surveys shows very little change. The depth curves have maintained their same relative shape. *see Review (item 5)*

A 25 foot <sup>P</sup> unsupported sounding charted from H-2088a (1891), *delete sdy.* Latitude  $45^{\circ}28.5'$  Longitude  $123^{\circ}59.1'$  in smooth bottom depth of *see review* 45 feet was investigated. Sounding lines were run over the area *item 5* but no unusual shoal sounding was found.

The ~~8~~ foot soundings, east of the rock breakwater connecting ~~Bay City~~<sup>Bay Ocean</sup> Peninsula with the mainland, indicate the remains of the channel which formed when the ocean broke through into the bay. The construction of the breakwater in 1956 sealed off this channel. *✓*

#### COMPARISON WITH CHART

Soundings in the outside coastal area around Three Arch Rocks are in good agreement with Chart 6112 (April 1957, Scale 1:20,000) *✓*

Soundings inside Tillamook Bay are not in good agreement with those shown on Chart 6112. *CONCUR ✓*

Channels inside Tillamook Bay, other than the main channel, have changed considerably from those shown on Chart 6112. On the chart, Kilch~~s~~ River Jetty is shown bordering a channel. On the smooth sheet, however, the jetty is shown to exist in the middle of a shoal area. *CONCUR ✓*



DANGERS AND SHOALS

*See review item 6A for non-charted 6ft sdg. at Lat 45° 27.70, Long 123° 52.75*

There are no newly found dangers or shoals to report within the limits of this survey other than shoaling of some minor channels inside Tillamook Bay.

*reconstruction 41*

AIDS TO NAVIGATION

All fixed aids to navigation on this sheet are triangulation stations. The geographic positions are listed below:

Bay City Cut Light (see 1955 Pacific Coast Light List No. 986) Fl. W., 4s (0.4fl). White platform on dolphin with black band at top. Latitude 45° 31' 17.7" Longitude 123° 53' 56.7"

Cape Meares Light (see 1955 Pacific Coast Light List No. 816) F. W. Alt. R. Fl., 60s. White octagonal pyramidal tower. Latitude 45° 29' 11.9" Longitude 123° 58' 37.4"

*See L. 855 (1954) for seconds in meters*

Dick Point Light (see 1955 Pacific Coast Light List No. 989) Fl. W., 5s (1s fl). White platform on dolphin with red band at top. Latitude 45° 28' 52.9" Longitude 123° 54' 07.5"

Dry Stocking Bar Light (see 1955 Pacific Coast Light List No. 990) Fl. W., 4s (0.4s fl). White platform on dolphin with red band at top. Latitude 45° 28' 03.3" Longitude 123° 52' 40.1"

Long Jetty Crossing Light (see 1955 Pacific Coast Light List No. 988) Fl. G., 5s (1s fl). White platform on dolphin with black band at top. Latitude 45° 29' 56.1" Longitude 123° 53' 59.6"

Middle Channel Dike Light (see 1955 Pacific Coast Light List No. 987) Fl. R., 4s (0.4s fl). White platform on dolphin with red band at top. Latitude 45° 30' 30.9" Longitude 123° 54' 13.7"

There are no floating aids to navigation within the limits of this survey.

## LANDMARKS FOR CHARTS

There are no landmarks within the limits of this survey. ✓

## TABULATION OF APPLICABLE DATA

1. Report on Tide Stations, Tillamook, Dick Point, Bay City, were forwarded to the Director on 16 October 1957.

Report on Tide Station, Barview, was forwarded to the Director on 13 August 1957.

2. Level data for Tide Stations, Tillamook, Dick Point, Bay City, were forwarded to the Director on 16 October 1957.

Level data for installation of Tide Station, Barview, was forwarded to the Director on 13 August 1957. This station was destroyed by rough seas before final levels could be run.

3. Marigrams for Tide Stations, Barview, Bay City, Dick Point, were forwarded to the Director 22 October 1957.

Tides for tide station Tillamook were forwarded to the Director on 16 October 1957.

4. Abstracts of tide reducers are attached to this report.

5. Office photographs will be forwarded to the Director.

6. Photo manuscripts and blue-line prints will be forwarded to the Director. ✓

7. A fathometer report will be sent to the Director. ✓  
Abstract of fathometer corrections are attached to this report.

8. Fathograms will be forwarded to the Director. ✓

9. Sounding volumes will be forwarded to the Director. ✓
10. Boat sheets will be forwarded to the Director. ✓
11. Copies of old surveys will be forwarded to the Director. ✓

Respectfully submitted,

*Mart Kask*

Mart Kask  
Ensign, C&GS

STATISTICS FOR HYDROGRAPHIC SURVEY

FIELD NO. WCFP 1657 - REGISTRY NO. H- 8371

LAUNCH CS 160 - PROJECT 13880

Vol.No.	Day Letter	Date	No.Pos.	H.L.& Pole Sdgs.	Stat.Miles	Method
1	a	22 August	99	0	11.9	L
1 & 2	b	23 "	156	2	17.8	L
2	c	27 "	39	0	5.4	L
2	d	29 "	22	0	3.0	L
2	e	30 "	39	0	7.3	L
2 & 3	f	11 September	92	364	13.6	L
3	g	12 "	72	185	10.9	L
3	h	13 "	75	135	11.0	L
3 & 4	j	23 "	114	22	15.4	L
4	k	24 "	116	66	11.7	L
4	l	25 "	9	9	0.0	W
4 & 5	m	26 "	76	42	8.0	L
5	n	27 "	66	55	6.9	L
5	p	1 October	14	58	0.9	S
5	q	2 "	4	2	0.0	S
			<u>992</u> ✓	<u>940</u>	<u>123.8</u>	

Total area, square statute miles 9.42

L Launch

S Skiff

W Walking shoreline

TIDE NOTE FOR HYDROGRAPHIC SURVEY

Tillamook Bay, Coast of Oregon

Field No. WCFP 1657

RegistryNo. H-8371

A portable tide gage and staff were attached to the piling of Bay City Cut Light, 1954 (Latitude  $45^{\circ}31'17.7''$ , Longitude  $123^{\circ}53'56.7''$ ). The tidal records from this tide gage were used for an area inside Tillamook Bay extending from northern limits of this sheet, south, to an imaginary diagonal line from signal Sir to signal Int.

The MLLW, to which all soundings were referred to, read 3.4 feet on the tide staff.

A portable tide gage and staff were attached to the piling of Dick Point Light, 1954 (Latitude  $45^{\circ}28'52.19''$ , Longitude  $123^{\circ}54'07.5''$ ). The tidal records from this tide gage were used for an area inside Tillamook Bay, extending south from an imaginary diagonal line between signals Sir and Int, excluding Hoquarten Slough east of Longitude  $123^{\circ}52.4'$ .

The MLLW, to which all soundings were referred to, read 4.2 feet on the tide staff.

A tide staff was attached to a dock adjacent to the US Highway 101 Bridge crossing Hoquarten Slough north of the City of Tillamook. The geographical position was scaled from the boat sheet and is: Latitude  $45^{\circ}27.56'$ , Longitude  $123^{\circ}50.59'$ . The staff readings were observed and recorded at 15 minute intervals during the day the hydrography was performed in Hoquarten Slough and its subsidiaries east of Longitude  $123^{\circ}52.4'$ .

The MLLW, to which all soundings were referred to, read 2.4 feet on the tide staff.

A portable tide gage and staff were erected along the rock jetty at Barview, Oregon (Latitude  $45^{\circ}34.10'$ , Longitude  $123^{\circ}56.55'$ ). The tidal records from this tide gage were used for the outside area around Three Arch Rocks.

The MLLW, to which all soundings were referred to, read 4.5 feet on the tide staff.

No corrections to time or height for distance from the gage were applied to the above tides.

COMBINED CORRECTIONS FOR FATHOMETER 148  
 When being used in Launch CS 160, Summer 1957

PROJECTS 13880 & 13930 Tillamook Bay & Netarts Bay

<u>"A" Scale</u>		<u>"B" Scale</u>		<u>"C" Scale</u>	
Fathometer Reading (ft.)	Correction (ft.)	Fathometer Reading (ft.)	Correction (ft.)	Fathometer Reading (ft.)	Correction (ft.)
0.0-13.7	-0.2	35.0-53.2	-0.2	70.0-79.6	+0.2
-35.0	0.0	-64.1	0.0	-86.2	+0.4
-45.8	+0.2	-70.8	+0.2	-91.1	+0.6
-51.2	+0.4	-76.4	+0.4	-95.1	+0.8
-54.4	+0.6	-80.9	+0.6	-98.4	+1.0
-55.0	+0.8	-85.2	+0.8	-101.2	+1.2
		-88.5	+1.0	-103.5	+1.4
		-91.3	+1.2	-120.0	+1.6

H-8370 to H-8372

WCFP 1957

~~20~~  
RECEIVED  
MAIL ROOM

22

MAR 7 9 41 AM

COAST & GEODETIC SURVEY

FATHOMETER REPORT

PROJECTS 13880 & 13930

TILLAMOOK AND NETARTS BAYS, OREGON

EQUIPMENT:

An 800 type fathometer, No. 148, was used for all echo sounding on the two projects. The acoustical unit was mounted on the starboard side of the launch, and the initial was held at 2 feet.

COMPUTATION OF CORRECTIONS:

During the season four bar checks were taken. The bar checks were taken at intervals of five feet, beginning at 5 ft. and ending at 85 ft. A series of leadline comparisons was taken at about 95 ft. and 110 ft.

Separate smooth curves were plotted for "A", "B", and "C" scales using the mean fathometer corrections as the ordinate and true depth as abscissa. The range of the "A" scale curve was from 5 to 55 ft., the "B" scale from 35 to 90 ft., and the "C" scale curve from 70 to 120 ft. Corrections were scaled off the curves to the nearest 0.2 ft. The true depth range for each fathometer correction was then converted to the correct fathometer depth range.

Respectfully Submitted,

*Philip J. Tasts*  
Philip J. Tasts  
Ensign, C&GS

Comdr. A. L. Wardwell  
Chief West Coast Field Party

## LIST OF SIGNALS USED

FIELD NO. WCFF 1657    REGISTRY NO. H- 8371

Hydrographic Name	Origin of Signal
ABE	Manuscript T- 11425
ADD	Manuscript T- 11422
AMY	Manuscript T- 11424
ANN	MIDDLE CHANNEL DIKE LIGHT, 1954
AXE	Manuscript T- 11424
BAG	Manuscript T- 11425
BAR	DRY STOCKING BAR LIGHT, 1954
BED	Manuscript T- 11425
BOX	Manuscript T- 11425
BUS	Manuscript T- 11425
CAB	Manuscript T- 11425
COW	Manuscript T- 11425
CUT	BAY CITY CUT LIGHT, 1954
DICK	DICK POINT LIGHT, 1954
DIP	Manuscript T- 11425
DOG	Manuscript T- 11425
DREE	Manuscript T- 11424 (TOPOGRAPHIC STATION: DREE, 1954)
DUD	Manuscript T- 11422
EGG	Manuscript T- 11425
EGC	Manuscript T- 11425
ERNE	Manuscript T- 11424 (TOPOGRAPHIC STATION: ERNE, 1954)
FAT	Manuscript T- 11425
FTR	Manuscript T- 11425



LIST OF SIGNALS USED

FIELD NO. WCFP 1657    REGISTRY NO. H- 8371

Hydrographic Name	Origin of Signal
FIT	Manuscript T- 11424
FRY	Manuscript T- 11422
FUME	Manuscript T- 11424 (TOPOGRAPHIC STATION: FUME, 1954)
GAB	Manuscript T- 11424
HUG	Manuscript T- 11422
HOT	Manuscript T- 11424 <i>Not found on Registry Copy</i>
ICE	Manuscript T- 11424
INT	See Index, Volume 3
IRK	Manuscript T- 11424 <i>Not found on Registry Copy</i>
JACK	JACK, 1926-1933
JET	LONG JETTY CROSSING LIGHT, 1954
JOY	Manuscript T- 11425
LAM	Manuscript T- 11425 (TOPOGRAPHIC STATION: LAMA, 1954)
LEO	Manuscript T- 11424
LIG	CAPE MEARES LIGHTHOUSE, 1908-1927-1933
LOG	Manuscript T- 11424
MAN	Manuscript T- 11422
MEG	Manuscript T- 11425 (TOPOGRAPHIC STATION: MEGA, 1954)
MID	PYRAMID ROCK, 1908-1934
MOP	Manuscript T- 11425
NOT	Manuscript T- 11424 (TOPOGRAPHIC STATION: KNOT, 1954)

## LIST OF SIGNALS USED

FIELD NO. WCFP 1657    REGISTRY NO. H- 8371

Hydrographic Name	Origin of Signal
NUT	Manuscript T- 11424
OFF	Manuscript T- 11422
ORE	Manuscript T- 11424 (TOPOGRAPHIC STATION: GORE, 1954)
OWL	Manuscript T- 11424
PEP	Manuscript T- 11424
PESO	Manuscript T- 11422 (TOPOGRAPHIC STATION: PESO, 1954)
POW	TILLAMOOK, MTN. STATES POWER CO., STACK, 1941
PRAY	Manuscript T- 11422 (TOPOGRAPHIC STATION: PRAY, 1954)
PUT	Manuscript T- 11422
RAT	Manuscript T- 11424
RIG	Manuscript T- 11422
SIP	Manuscript T- 11422
SIR	Manuscript T- 11422
TIN	Manuscript T- 11424
TIP	Manuscript T- 11424
TOY	Manuscript T- 11424
WOO	Manuscript T- 11422

ABSTRACT OF SMOOTH TIDE REDUCERS

DICK POINT TIDE GAGE

SHEET WOFP 1657 REGISTRY NO. H- 8371

"h" day, 13 Sept.

1426-1440 - 6.0 ft.  
 -1500 - 6.2  
 -1540 - 6.4

"j" day, 23 Sept.

1037-1043 - 4.4  
 -1048 - 4.6  
 -1054 - 4.8  
 -1059 - 5.0  
 -1105 - 5.2  
 -1111 - 5.4  
 -1118 - 5.6  
 -1124 - 5.8  
 -1131 - 6.0  
 -1138 - 6.2  
 -1146 - 6.4  
 -1155 - 6.6  
 -1207 - 6.8  
 -1221 - 7.0  
 -1317 - 7.2  
 -1332 - 7.0  
 -1343 - 6.8  
 -1353 - 6.6  
 -1400 - 6.4  
 -1410 - 6.2  
 -1419 - 6.0  
 -1429 - 5.8  
 -1439 - 5.6  
 -1448 - 5.4  
 -1457 - 5.2  
 -1506 - 5.0  
 -1517 - 4.8  
 -1528 - 4.6

"k" day, 24 Sept.

1053-1058 - 3.6 ft.  
 -1102 - 3.8  
 1255-1345 - 7.6  
 -1358 - 7.4  
 -1410 - 7.2  
 -1420 - 7.0  
 -1429 - 6.8  
 -1437 - 6.6  
 -1444 - 6.4

"m" day, 26 Sept.

1407-1451 - 8.2  
 -1510 - 8.0  
 -1523 - 7.8  
 -1532 - 7.6  
 -1541 - 7.4  
 -1548 - 7.2  
 -1557 - 7.0  
 -1603 - 6.8  
 -1612 - 6.6

"n" day, 27 Sept.

0936-1020 - 2.0  
 -1040 - 2.2

"p" day, 1 Oct.

1000-1015 - 4.0  
 -1034 - 3.8  
 -1054 - 3.6  
 -1100 - 3.4

"k" day, 24 Sept.

1025-1031 - 2.4  
 -1036 - 2.6  
 -1041 - 2.8  
 -1045 - 3.0  
 -1049 - 3.2  
 -1053 - 3.4

ABSTRACT OF SMOOTH TIDE REDUCERS

BAY CITY, OREGON TIDE GAGE

SHEET WCFP 1657 REGISTRY NO. H- 8371

"f" day, 11 Sept.

1313-1327 - 6.2 ft.  
 -1347 - 6.4  
 -1445 - 6.6  
 -1507 - 6.4  
 -1522 - 6.2  
 -1536 - 6.0  
 -1549 - 5.8  
 -1600 - 5.6  
 -1610 - 5.4

"g" day, 12 Sept.

1323-1335 - 6.0  
 -1349 - 6.2  
 -1407 - 6.4  
 -1513 - 6.6  
 -1532 - 6.4  
 -1545 - 6.2  
 -1555 - 6.0  
 -1605 - 5.8

"h" day, 13 Sept.

1312-1321 - 5.2  
 -1331 - 5.4  
 -1342 - 5.6  
 -1354 - 5.8  
 -1406 - 6.0  
 -1420 - 6.2  
 -1438 - 6.4  
 -1600 - 6.6

"j" day, 23 Sept.

1534-1542 - 4.0  
 -1552 - 3.8

"k" day, 24 Sept.

0906-0914 - 2.0 ft.  
 -0921 - 2.2  
 -0928 - 2.4  
 -0935 - 2.6  
 -0942 - 2.8  
 -0949 - 3.0  
 -0956 - 3.2  
 -1004 - 3.4  
 -1010 - 3.6  
 -1017 - 3.8  
 -1023 - 4.0  
 -1029 - 4.2  
 1446-1454 - 6.4  
 -1500 - 6.2  
 -1507 - 6.0  
 -1515 - 5.8  
 -1523 - 5.6  
 -1530 - 5.4  
 -1537 - 5.2  
 -1545 - 5.0

"l" day, 25 Sept.

0904-0915 - 1.4  
 -0924 - 1.6

"m" day, 26 Sept.

1315-1322 - 8.0 ft.  
 -1330 - 8.2  
 -1339 - 8.4  
 -1350 - 8.6  
 -1405 - 8.8  
 -1500 - 9.0  
 -1514 - 8.8  
 -1527 - 8.6  
 -1537 - 8.4  
 -1546 - 8.2  
 -1554 - 8.0  
 -1602 - 7.8  
 -1610 - 7.6

"n" day, 27 Sept.

0900-1010 - 2.8  
 -1027 - 3.0  
 -1040 - 3.2  
 -1050 - 3.4  
 -1059 - 3.6  
 -1108 - 3.8  
 -1116 - 4.0  
 -1124 - 4.2  
 -1132 - 4.4  
 -1140 - 4.6  
 -1147 - 4.8  
 -1155 - 5.0

"q" day, 2 Oct.

0940-0955 - 5.6  
 -1009 - 5.4  
 -1026 - 5.2  
 -1043 - 5.0

ABSTRACT OF SMOOTH TIDE REDUCERS

BARVIEW, OREGON TIDE GAGE

SHEET WCFP 1657 REGISTRY NO. H- 8371

"a" day, 22 Aug.

0915-1100	- 5.2	ft.
-1118	- 5.0	
-1133	- 4.8	
1248-1300	- 3.4	
-1313	- 3.2	
-1327	- 3.0	
-1343	- 2.8	
-1400	- 2.6	
-1420	- 2.4	
-1443	- 2.2	
-1600	- 2.0	

"c" day, 27 Aug.

1243-1400	- 8.2	ft.
-1415	- 8.0	
-1428	- 7.8	
-1437	- 7.6	

"d" day, 29 Aug.

0914-0933	- 0.8	
-0947	- 1.0	
-0958	- 1.2	
-1008	- 1.4	
-1017	- 1.6	

"b" day, 23 Aug.

0929-0942	- 5.6	
-1000	- 5.8	
-1130	- 6.0	
-1148	- 5.8	
-1202	- 5.6	
1236-1246	- 4.8	
-1256	- 4.6	
-1305	- 4.4	
-1315	- 4.2	
-1325	- 4.0	
-1335	- 3.8	
-1346	- 3.6	
-1356	- 3.4	
-1405	- 3.2	
-1414	- 3.0	
-1425	- 2.8	
-1436	- 2.6	
-1447	- 2.4	
-1500	- 2.2	
-1512	- 2.0	

"e" day, 30 Aug.

1247-1254	- 5.0	
-1300	- 5.2	
-1309	- 5.4	
-1318	- 5.6	
-1328	- 5.8	
-1337	- 6.0	
-1346	- 6.2	

APPROVAL SHEET

HYDROGRAPHIC SURVEY WCFP 1657, H- 8371

Survey sheet H- 8371, Tillamook Bay, coast of Oregon, ✓  
is considered complete and adequate and should super<sup>S</sup>ede  
prior surveys for charting purposes.

The Chief of Party, CDR. Arthur L. Wardwell, kept close ✓  
personal supervision over the work.

  
Philip J. Taetz  
Ensign, C&GS  
OinC., West Coast Field Party

DIVISION OF CHARTS

REVIEW SECTION -- NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8371

FIELD NO. WCFP-1657

Oregon - Oregon Coast - Three Arch Rocks and southern part of  
Tillamook Bay

SURVEYED: Aug. - Oct. 1957

SCALE: 1:10,000

PROJECT NO. 13880

SOUNDINGS: 808  
Pole

CONTROL: Sextant fixes  
on shore signals

Chief of Party ----- Arthur L. Wardwell  
Surveyed by ----- Phillip J. Taetz, James K. Richards  
Protracted by ----- Mart Kask  
Soundings plotted by ----- Mart Kask  
Verified and inked by ----- Leroy Hahn - Ernest Thomas  
Reviewed by ----- Herbert W. Burgoyne DATE: 4/28/60  
Inspected by ----- R. H. Carstens

1. Shoreline & Control

The shoreline originates with reviewed air photographic surveys T-11422, T-11423, T-11424 (1952-55) and T-11422 overlay (1956). T-11422 overlay covering the Tillamook Bay break-through is missing. The shoreline as transferred by the smooth plotter from this overlay is shown in red on the present survey. Additional changes in the shoreline were made by the hydrographer at Memaloose Pt. (Lat. 45°28'30, Long. 123°53.40') where artificial changes are taking place.

The jetty at Lat. 45°30.15', Long. 123°54.11', is shown on T-11422 as being a piling jetty. Survey records of H-8371 indicate this jetty is a rock jetty.

The sources of control are given in the Descriptive Report.

2. Sounding Line Crossings

The depth at sounding line crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The standard depth curves are adequately delineated. The 3-foot curve was drawn to portray the shoal areas and better

outline the smaller channels in Tillamook Bay.

This survey covers the southern part of Tillamook Bay, Bay City Channel leading via Hoquarten Slough to the town of Tillamook, and the coastal waters extending from Cape Meares to Three Arch Rocks. The southern section of Tillamook Bay is a succession of sand and mud flats traversed by two main channels. The coastal waters cover an area of sandy bottom interspersed with rock islands.

#### 4. Junctions with Contemporary Surveys

Present survey depths on the north are in adequate agreement with junctional depths on survey H-8370 (1957) and on the south with H-8372 (1957). On the west an adequate butt junction was made with H-4745 (1927).

#### 5. Comparison with Prior Surveys

H-402 (1853) 1:375,000	H-2088a (1891) 1:20,000
H-936 (1866-67) 1:10,000	H-4745 (1927) 1:20,000

The prior surveys listed above cover the area of the present survey. The survey of 1853 is strictly a reconnaissance survey and provides little basis for comparison. In comparing the 1866-1867 surveys with the present survey, many differences are noted in Tillamook Bay because of the dredging, storm action, and man-made features that have taken place over the years. Since the 1891-1927 surveys along the coast, only minor changes have occurred, except inside the 30-foot curve where storm action has shifted the sandy bottom. Three charted rocks awash and two soundings were brought forward on the present survey from H-4745 (1927).

Discussion and disposal of significant features on the prior surveys is given below.

- (1) The 25-foot sounding on H-2088a (Chart 6112) falling in present depths of about 45 feet in Lat.  $45^{\circ}28.89'$ , Long.  $123^{\circ}59.09'$ , should be disregarded. An examination of survey records revealed that a tide reduction error had been made for this particular sounding. The correct sounding should be 44 feet which agrees very well with present survey depths.
- (2) The charted rock awash at Lat.  $45^{\circ}27.88'$ , Long.  $123^{\circ}58.70'$ , originated with H-2088a and is labelled a sunken rock on this prior survey. Examination of the original records failed to reveal any mention of this rock awash. The present survey shows 11 - 12 feet of water in this vicinity. It is recommended this rock awash be deleted from the chart.



The present survey supplemented with 4 rocks awash, 2 prior soundings, and bottom characteristics carried forward from the prior surveys, is adequate to supersede the prior surveys in the common area. Bare rock elevations were carried forward from T-4336 (1927).

6. Comparison with Ch 6112 (latest drawing No. 11, dated July 2, 1959)

A. Hydrography

The charted hydrography originates with previously discussed prior surveys supplemented with Corps of Engineers surveys, and critical soundings selected from the present survey prior to verification and review.

Attention is called to the following pertinent information:

- (1) Several uncharted rocks awash are shown on the present survey between Three Arch Rocks and the mainland.
- (2) The 102-foot elevation at Pillar Rock (Lat.  $45^{\circ}29.4'$ , Long.  $123^{\circ}58.76'$ ) charted from T-11424 (1952-1955) was disproved and removed from T-11424. The prior elevation of 75 feet originating with T-4336 (1927) has been carried forward on the present survey.
- (3) Two adjacent rocks awash appear on T-11424 at Lat.  $45^{\circ}27.78'$ , Long.  $123^{\circ}58.78'$ . The charted westerly rock awash falls on a 12-foot sounding on the present survey. Only the easterly rock awash should be retained for charting purposes.
- (4) All charted piles and dolphins not shown on the present survey are considered nonexistent and should be deleted from the chart. Numerous piles, dolphins, and snags, appearing on the present survey have not been charted.
- (5) The condition of Dick Pt. Dike, Middle Channel Dike, Kilchis River Jetty and the small jetty located at Lat.  $45^{\circ}30.15'$ , Long.  $123^{\circ}54.11'$ , is considered to have changed and these dikes and jetties should be charted as shown on the smooth sheet.

The present survey is adequate to supersede the charted hydrography within the common area.

B. Aids to Navigation

The survey positions of all fixed aids are in close agreement with their charted positions.

7. Condition of Survey

- a. The descriptive report and sounding records are complete and comprehensive.
- b. The survey was smooth plotted accurately and neatly.

8. Compliance with Project Instructions

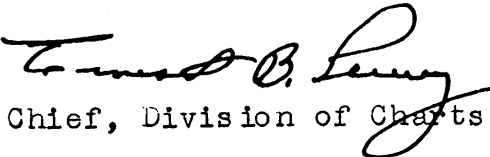
This survey adequately complies with project instructions.

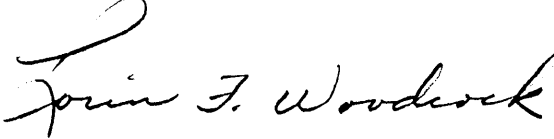
9. Additional Field Work Recommended.

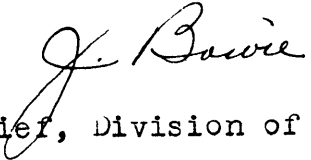
This is a good basic survey and no additional field work is recommended.

Examined and Approved:

  
Chief, Nautical Chart Branch

  
Chief, Division of Charts

  
Chief, Hydrography Branch

  
Chief, Division of Coastal Surveys

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ..8371...

Records accompanying survey:

Boat sheets ~~2 parts~~, sounding vols. .5...; wire drag vols. .9...; bomb vols. ....; graphic recorder rolls ~~6-~~Envelopes special reports, etc. .1-Smooth sheet and 1-Descriptive report.

The following statistics will be submitted with the cartographer's report on the sheet:

	Leroy Hahn	E. Thomas	
Number of positions on sheet	993	-	.....
Number of positions checked	110	14	.....
Number of positions revised	3	1	.....
Number of soundings revised (refers to depth only)	15	8	.....
Number of soundings erroneously spaced	-	-	.....
Number of signals erroneously plotted or transferred	-	-	.....
Topographic details	Time 7 1/2	3 hrs	.....
Junctions	Time -	-	.....
Verification of soundings from graphic record	Time 151 1/2	6 hrs	.....
Verification by <i>Leroy Hahn</i> .....	151	Total	Aug 13 1959
Verification by <i>E. Thomas</i> .....	26	178	Date Sept 10, 1959
Total time	26		
Reviewed by <i>H. W. Burgoyne</i> .....	Time 108	Date	April 28, 1960

ABSTRACT OF SMOOTH TIDE REDUCERS

TILLAMOOK, OREGON TIDE STATION

SHEET WCFP 1657    REGISTRY NO. H- 8371

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"k" day, 24 Sept.

1100-1105	- 2.4	ft.
-1110	- 2.6	
-1115	- 2.8	
-1120	- 3.0	
-1124	- 3.2	
-1128	- 3.4	
-1133	- 3.6	
-1137	- 3.8	
-1141	- 4.0	
-1144	- 4.2	
-1147	- 4.4	
-1151	- 4.6	
-1155	- 4.8	
-1158	- 5.0	
1237-1244	- 6.8	
-1251	- 7.0	
-1300	- 7.2	
-1310	- 7.4	
-1325	- 7.6	

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens

25 April 1958

Plane of reference approved in  
5 volumes of sounding records for

HYDROGRAPHIC SHEET 8371

Locality Tillamook Bay, Oregon

Chief of Party: A. L. Wardwell in 1957

Plane of reference is mean lower low water, reading

4.5 ft. on tide staff at Barview

21.4 ft. below B.M. 1 (1933)


3.4 ft. on tide staff at Bay City  
17.9 ft. below B.M. 1 (1957)

4.2 ft. on tide staff at Dick Point  
13.7 ft. below B.M. 1 (1957)

Height of mean high water above plane of reference is:

Barview 6.8 feet ✓ Dick Point 6.0 feet. ✓  
Bay City 6.5 feet

Condition of records satisfactory except as noted below:

  
Signature

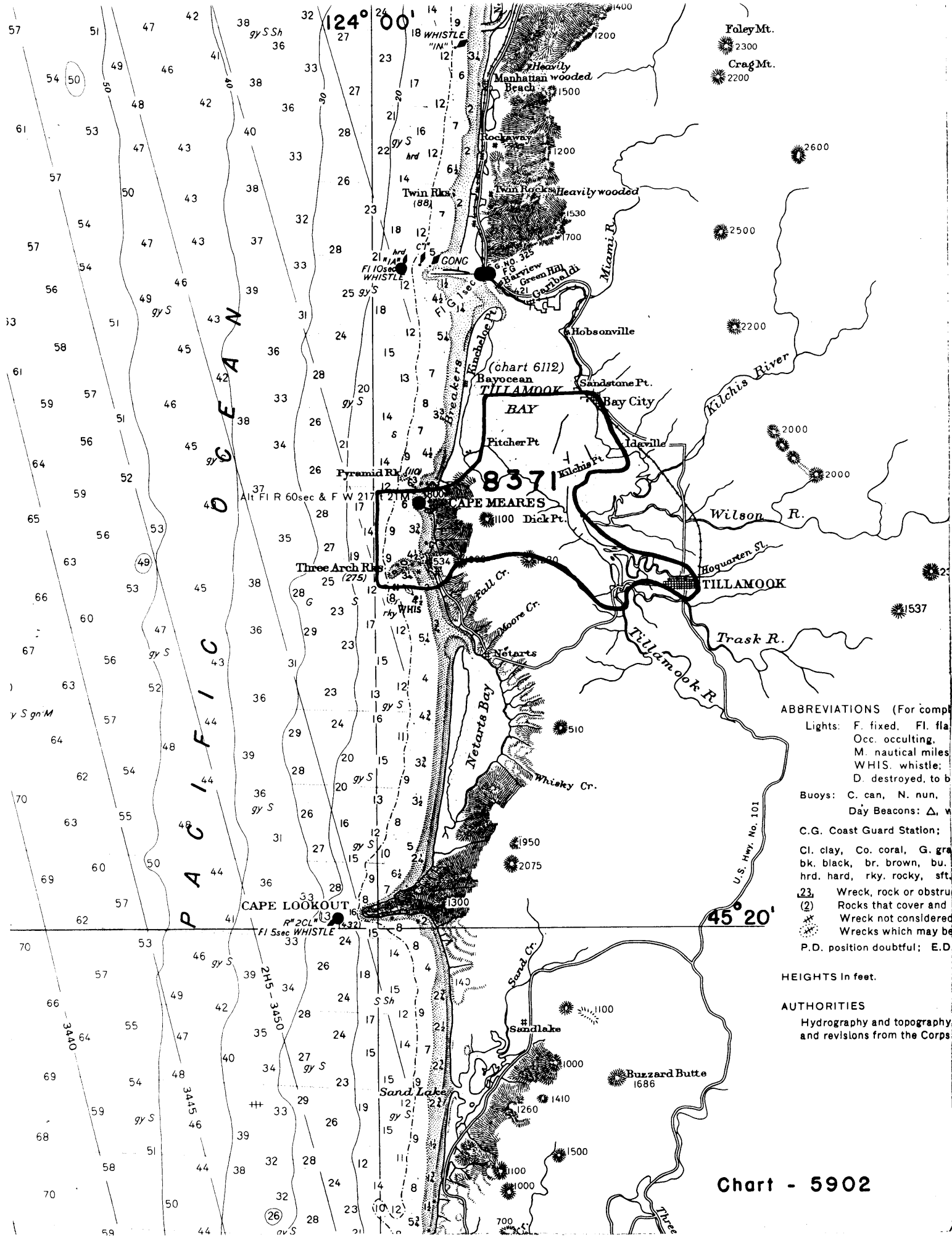
Chief, Tides Branch

GEOGRAPHIC NAMES

Survey No. H-8371

Name on Survey	Source									
	A	B	C	D	E	F	G	H	K	
<u>Oregon</u>			(for title)						EGN	1
<u>Tillamook Bay</u>				"						2
<u>Three Arch Rocks</u>										3
<u>Cape Meares</u>									EGN	4
<u>Pillar Rock</u>										5
<u>Pitcher Point</u>										6
<u>Dick Point</u>										7
<u>Tillamook River</u>										8
<u>Esther Creek</u>										9
<u>Trask River</u>										10
<u>Hoquarten Slough</u>										11
<u>Tillamook</u>										12
<u>Dougherty Slough</u>										13
<u>Dry Stocking Island</u>										14
<u>Wilson River</u>										15
<u>Kilchis Pint</u>										16
<u>Bay City</u>										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

Names approved 4-23-58  
L. Heck



**ABBREVIATIONS (For complete)**

Lights: F. fixed, Fl. flashing, Occ. occulting, M. nautical miles, WHIS. whistle, D. destroyed, to be replaced

Buoys: C. can, N. nun, Day Beacons: Δ, ▽

C.G. Coast Guard Station;

Cl. clay, Co. coral, G. grass, bk. black, br. brown, bu. buoy, hrd. hard, rky. rocky, sft. soft

① Wreck, rock or obstruction

② Rocks that cover and are not considered wrecks

⊕ Wrecks which may be considered wrecks

P.D. position doubtful; E.D. estimated

**HEIGHTS** In feet.

**AUTHORITIES**  
Hydrography and topography, and revisions from the Corps of Engineers

**Chart - 5902**

# NAUTICAL CHARTS BRANCH

SURVEY NO. H-8371

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
6/18/58	5902	Jam	Before After Verification and Review <i>Examined</i>
4/1/59	6112	J. A. McGinnis	Before <del>After</del> Verification and Review <i>Partially applied</i>
10/3/60	6112 <i>Reconst.</i>	Helmer	<del>Before</del> After Verification and Review <i>Fully applied 10/3/60</i>
6/25/76	5902	R. A. Lillis	<i>Fully Applied</i> <del>Before</del> After Verification and Review & Inspec
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
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			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.