8167

H-8167

Diag. Cht. No. 1203-3.

Form 504

U. S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ST-1154 *Office No.* H-8167

LOCALITY

State Maine

General locality Lower Penobscot Bay

Locality Matinicus Island and Vicinity

1954-59

CHIEF OF PARTY

R. A. Marshall & J. R. Plaggmier

LIBRARY & ARCHIVES

DATE December 18, 1957

USCOMM-DC 5087

8167

Form 537
(Ed. June 1946)

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-8167

Field No. St-1154

State MAINE

General locality LOWER PENOBSCOT BAY

Locality ~~RAGGED ISLAND TO MATINICUS ROCK~~ Matinicus Island and Vicinity

Scale 1:10,000 Date of survey 5/13/54 to 8/27/54-9/25/59

Instructions dated 16 Feb. 1954; 1 Mar. 1954; 16 Mar. 1954 & 25 Mar. 1954

Vessel LAUNCH 101 (SHIP STIRNI) - WAINWRIGHT & HILGARD

Chief of party ROBERT A. MARSHALL & J. R. Plaggmier

Surveyed by D.F. ROMERO

Soundings taken by ~~XXXXXXXX~~ graphic recorder, hand lead, ~~XXX~~

Fathograms scaled by FIELD PARTY

Fathograms checked by NORFOLK DISTRICT OFFICE

Protracted by W.W. FEAZEL

Soundings penciled by W.W. FEAZEL

Soundings in ~~XXXXXX~~ feet at MLW ~~XXXXX~~ and are true depths.

REMARKS: This Survey was smooth plotted in the Hydrographic Section of the Norfolk District Office.

U. S. GOVERNMENT PRINTING OFFICE 16—66520-1

A. PROJECT:

Project CS-265, Revised instructions 22/MEK, S-2-GI, S-2-ST, dated 16 February 1954 superseded all previous instructions for this project. Letter 22/MEK, S-1-GI, S-1-ST, dated 1 March 1954, letter 21-rsc, S-2-ST dated 16 March 1954 and letter 22/MEK, S-1-ST, dated 25 March 1954 with corrections to original instructions.

B. SURVEY LIMITS AND DATES:

This survey surrounds Matinicus and Ragged Islands in Lower Penobscot Bay, Maine. Lat. 43-53.75 N., Long. 68-51.5W, to Lat. 43-53.75 N., Long. 68-52.5 W., to Lat. 43-53.4 N., Long. 68-52.5 W., to Lat 43-52.2 N., Long. 68-55.0W. Thence south to Lat. 43-48.2 N., Long 68-54.7 W., to Lat. 43-48.75N., Long 68-52.5 W. Thence north to Lat. 43-51.2 N., Long. 68-52.3 W., to Lat. 43-51.25 N., Long. 68-51.4 W., and north to Lat. 43-53.75 N., Long. 68-51.5W, are the limits of the survey.

Two small additional areas were included in the survey in order to provide safe margin for the Ship STIRNI to conduct adjacent surveys on sheet H-8168, scale 1:20,000. (1954)

Area one is bounded by Long. 68-53.3 on the east, Lat. 43-47.75 on the north, Long. 68-53.6 on the west, and Lat. 43-47.45 on the south.

Area two surrounds Matinicus Rock and is bounded by Long. 68-50.8 on the east, Lat. 43-47.5 on the north, Long. 68-51.7 on the west, and Lat. 43-46.75 on the south.

Field work began 13 May 1954 and was completed 27 August 1954.

Numerous delays were encountered when surveying this area. The area is relatively exposed, and inclement weather and heavy seas made launch operations feasible only on a limited number of days. Many marginal days were utilized to donduct the survey of H-8168 with the Ship STIRNI. From 14 June to 24 June the launch was broken down with governor trouble, and hydrography could not be conducted.

This survey makes all junctions with H-8168, 1954, scale 1:20,000.

C. VESSEL AND EQUIPMENT:

Motor launch 101 was used for the entire survey with the exception of some rock and shoal investigation on ea and fa days, when a 14 foot aluminum skiff was used. The launch was moored in Matinicus Harbor.

Two 808 fathometers, numbers 151 SPX, and 155 SPX were used. Fathometer 155 SPX gives a stray on the A scale at 46 ft., and a stray on the B scale at 40 ft. No bar checks were obtained during the field season with 151 SPX, so a comparison was made at Little Creek, Virginia, between 151 SPX and 155 SPX to obtain a relative correction. This was recorded in volume XI.

Navigation cost difference between A & B scales on fathometer 155 SPX.

Hand lead soundings were taken when locating reefs, rocks, and shoals dangerous to navigation.

D. TIDE AND CURRENT STATIONS:

All soundings on the boat sheet were reduced to MLW by adding 0.2 to highs and a time correction of 40 minutes (to correct for DST) to values taken from the tide tables for Portland, Maine. A portable tide gage (automatic) was in operation at Lat. 43-51.70 N., Long. 68-52.95 at Matinicus Harbor throughout the survey. The marigrams from this tide station were used for reducing soundings in the sounding volumes, with no time or range corrections.

No current stations were occupied.

E. SMOOTH SHEET:

The smooth sheets ~~will be~~ W45 plotted by the Norfolk Processing Office.

F. CONTROL STATIONS:

Triangulation control is as follows:

NO MAN'S LAND (1913) NHH
JOHN (1913) NHH
MATINICUS ISLAND CONGREGATIONAL CHURCH, CUPOLA (1913) NHH
MATINICUS ROCK LIGHTHOUSE (SOUTH) SH 1859

All control used on this sheet was taken from photogrammetric manuscripts T-11224 (N&S) and T-11225N, all at 1:10,000 scale.

An Officer was assigned from the division of Photogrammetry to work in conjunction with the ship and to supply the control. He recovered photo-hydro stations shown on the manuscript where possible, and supplemented the control where necessary by sextant cuts, orientation of ratio prints under the manuscript, or by radial cuts from the photographs. His knowledge of both hydrography and photogrammetry made this practice quite profitable, and the spacing of control was more than adequate.

Several stations were incorrectly located by the photogrammetrist and were relocated by the hydrographic party.

On Matinicus Rock:

Duo
Ear relocated by photogrammetric means.
Fox

On Wheaton Island:

Man relocated by sextant cuts pg. 45, vol. 4

G. SHORELINE AND TOPOGRAPHY:

The shoreline and topography were located by photogrammetric means, and are shown on manuscripts T-11224 (N&S), 1953, scale 1:10,000. (T-11225 N of T-11224)

In general, agreement between photogrammetric LWL and hydrographic LWL was excellent. The system whereby LW photographs are taken to apply LWL to the manuscript has proved a great boon to the hydrographer and is recommended as standard practice for future years. It is believed that along steep rocky shores of this type, photogrammetric LWL can be used without question even though not verified by the hydrographer.

The hydrographic LWL disagreed with the photogrammetric LWL in two small areas, north of signal Sip and west of signal Put. Upon examination of the photographs, this was found to be due to faulty photo-interpretation of a difficult area. This has not been corrected on the manuscript and hydrographic LWL should be used for the smooth sheet. (shoreline in agreement with T-11224 N (reviewed))

Some LWL soundings could not be taken by normal operation of the launch because the ledges were too steep or too dangerous to negotiate even at high water. In these cases, spot sextant fixes taken from the skiff should be used where available, otherwise the photogrammetric LWL should be used.

Photogrammetric LWL is shown on the boat sheet in blue ink and hydrographic LWL is shown in black ink. The blue ink has faded to illegibility, therefore designation of the LWL has not been completed over the entire boat sheet. The processing office will be in a better position to weigh the relative merits in each case.

H. SOUNDINGS:

Depths were measured by use of the 808 fathometer. Shoals dangerous to navigation were investigated by circling a marker buoy placed at the shoalest sounding. The fathometer was in continuous operation during this time, and notes were made on the fathogram and in the record books. Shoals dangerous to navigation were sounded with a hand lead.

I. CONTROL OF HYDROGRAPHY:

Standard hydrographic sextants were used to obtain three point fixes throughout the survey. A courts three-arm celluloid protractor was used for the inshore plotting and a steel three-arm protractor was used offshore. Extension arms were secured to the celluloid protractor for plotting fixes near Matinicus Rock. During a part of x day, an attempt was made to run arcs on a vertical angle from HWL to Matinicus Rock Lighthouse. However, the changes of launch direction involved were so great and so rapid that this method of control was abandoned as being impractical in this case. Between 31-71X only pos. 33-35x and 40-46x were smooth plotted.

From the beginning of the survey to 116 f, considerable difficulty was encountered in fixing the position of the launch. The control was questioned, the coxwain was questioned, and the anglemen were repeatedly asked to check their angles, all to no avail. At position 116 f, it was discovered that the right angleman had forgotten, or had never known how to

read a sextant properly, though in his own mind he was convinced he did know how. He had been reading the higher degree whenever the minutes on his sextant were more than 30. For example: for 31-42, he would read 32-42 because 42 was more than the 30 minute mark. Unfortunately, the various times his sextant reading had been checked occurred when he read it properly for values under 30 minutes. Angle adjustments by smooth plotter are satisfactory.

Some of the sextant readings in the sounding volumes have been changed (in red pencil), however, it was decided to leave this to the smooth plotter who will be able to make a more careful analysis.

J. ADEQUACY OF SURVEY:

The survey is complete and adequate to supersede prior surveys for charting. Junctions are made in all cases with H-8168, 1954, scale 1:20,000, which surrounds this sheet. In general, depth curves can be drawn without difficulty. In one area, SE of Matinicus Rock, there are differences up to 13 and 14 feet (about 10% of the depth) between soundings of this sheet and those of H-8168. This can be attributed to position displacement due to relatively weak visual fixes and the use of an inclined center object. It is believed that when the sights are corrected for inclination, the horizontal position will improve sufficiently to make the error negligible. Depression angle not furnished. Inclined angle too small to move fixes appreciably.

No holidays exist.

K. CROSSLINES:

Crosslines were run to the extent of 10% of the main scheme of lines. Discrepancies are quite difficult to determine in the rugged bottom. On relatively flat areas discrepancies are negligible.

L. COMPARISON WITH PRIOR SURVEYS:

The survey agrees fairly well with prior survey H-1051, 1866-68, scale 1:20,000, though comparison is difficult because the print of H-1051 is quite difficult to read. See P5 Review

Because of the more intensive type survey possible with an electronic fathometer, several new shoals were discovered. Depths on underwater shoals were deeper in some cases and shallower in otherthan those shown on the prior survey. Many shoals shown on existing chart 322 did not appear on the prior survey, so comparison of specific features will be made under M below.

M. COMPARISON WITH CHART:

The survey was compared with chart 322, scale 1:40,000 (printed 1950, corrected 1954). Topographic changes such as piers, roads, etc., are shown on topographic manuscript T-11224 N&S. Fixes and measurements were made to supplement the manuscript in harbor areas and are shown in large scale drawings in the sounding records. See P6 R

See item 16 in ver. rep. Piers

Specific comparisons are listed below.

Day	Latitude	Longitude	Position No.	Survey Depth	Chart Depth
a.	43-53.68	68-51.91	11n	8.5 ft.	5 ft.
b.	43-52.826	68-52.74	2ea	7.5	6
c.	43-52.83	68-52.83	3ea	8.0	7
d.	43-51.84	68-54.78	7fa	~~7~~ 8.0	~~9~~ 25
e.	43-51.36	68-54.75	66-67u	3.0 130'N E.	3
f.	43-50.85	68-54.50	1fa	7.0	6 (accepted 7ft. Hydro party spent 30 minutes here.
g.	43-49.67	68-54.13	29x	10 ~~11.5~~	8
h.	43-48.88	68-54.37	9fa	9 ~~9.5~~	8
i.	43-48.45	68-53.74	16da	4.5	3
j.	43-48.62	68-53.66	17da	14.0 ~~13.5~~	14
k.	43-48.91	68-53.50	25ca	10.5	8
l.	43-49.17	68-53-24	21ca	3.5	2
m.	43-50.35	68-53.27	~~79~~p 28z	11.0 ~~10.5~~ 100m NW	7 (Falls in comparable depths on H-8167)
n.	43-50.80	68-52.85	26x	15.5	17
o.	43-51.42	68-52.34	24w	12.0 100m E	10
p.	43-51.39	68-51.768	1aa	~~12.5~~ 100m N	13
q.	43-51.92	68-52.72	1v	6.0	4
r.	43-52.19	68-52.56	5v	7.5	7
s.	43-52.55	68-52.55	8v	3.5	3
t.	43-52.67	68-51.91	19aa	26.5	25
u.	43-53.63	68-52.26	8-9ba	14 ~~12.0~~	10
v.	43-53.22	68-51.99	~~41ba~~ 11ea	11 ~~9.5~~	~~26~~ (11ft. sdg. from ~~(2)~~ 8's of H-8167 revise 4 to 8 ft.)
w.	43-53.39	68-52.14	9ea	(9) (11)	(2)
x.	43-52.96	68-52.75	8j	(5) ~~(4.5)~~	(2)
y.	43-51.45	68-54.70	15x, 55ba	(8) ~~(11.5)~~	(9)
z.	43-49.01	68-54.25	18 67ca	(5.5)	(4)
aa.	43-48.99	68-53.50	13 60ca	(7.0)	(6)
ba	43-49.20	68-52.80	7 55ca	(7) ~~(6.5)~~	(5)
ca.	43-49.48	68-52.70	5 53ca	(3) ~~(2.5)~~	(2)
da.	43-50.57	68-52.63	12da	(9) ~~(8.5)~~	(3)
ea.	43-52.05	68-52.53	1j	(10) ~~(9.2)~~	(7)

In general, the shoals investigated during this survey appear to be deeper than those charted, and the rocks higher than those charted. In cases a, b, c, g, l, and q above, the bottom was visible during the investigation and there is reasonable certainty that the highest point was found.

In cases e, h, and W above, the sounding was not thoroughly investigated and it is recommended that the shoaler sounding on the chart or boat sheet be used.

In all other cases, a thorough search was made at each location. In cases f, i, k, m, o, r, s, t, and u, the charted sounding could not be obtained even after considerable time had been spent in investigation. Though it was felt that the investigations were quite adequate to supersede charted soundings, there remains the possibility, in this type of bottom, that a narrow pinnacle had been missed, and it is recommended that the area be wire dragged for positive assurance that the shoalest depth be found.

The rock elevations obtained during during this survey are felt to be more nearly correct than those charted and should supersede them. A striking difference is noted under 12a ("The Hogshead") where the elevation obtained was 5-1/2 ft. higher than charted.

Several offshore reefs are shown by rock awash symbols on the chart when a better depiction would be reef or ledge symbol as shown on the boat sheet.

"Southwest Ledges" should be as shown on manuscript T-11224S except that the various high points should be shown by rock awash symbols. The shapes of "Harbor Ledges", "Mackerel Ledge", "Tuckanuck Ledge" and the ledges south of Ragged Island should be depicted as shown on the boat sheet.

N. DANGERS AND SHOALS:

An important newly found shoal is listed below:

Latitude 43-50.44, Longitude 68-52.50, Position No. 17ca, Least Depth 34.5

Changed to 25 ft. after verification

One sounding obtained (42q, ~~17 ft.~~) could not be verified during two separate investigations of the spot (47 ba and 4 fa). It is recommended that this spot be wire dragged prior to placing this sounding on the chart.

24' sndg at pos 47ba

23' sndg at pos 4fa

No dangers were found of sufficient importance to report to the Coast Guard.

Except for those listed under M, all shoals and bare rocks were found as charted.

Comparison for other shoals not made by mariner

O. COAST PILOT INFORMATION:

During the survey, the STIRNI anchored at latitude 43-51.20, longitude 68-54.60, and at latitude 43-51.75, longitude 68-52.55. Although the holding ground appeared to be satisfactory, neither anchorage is recommended because of the exposed locations and the constant rolling caused by sea swell.

Although not used by the STIRNI during this season, a fairly good anchorage for vessels about 100 ft. in length is located at latitude 43-49.85, longitude 68-52.85. This anchorage is sometimes used by trawling vessels during northerly blows. The depth of water is 70 ft. with flat sand and shell bottom.

at pos. 1'dq. (φ 43°51.75', λ 68°52.94')

A mooring buoy has been placed in Matinicus Harbor by the Coast Guard, and the STIRNI tied up to it during the greatest part of the season. The mooring is a 3 ft. diameter steel ball float secured to a 3 ton concrete weight. Except during easterly weather, the mooring is quite calm. The swinging room at low water is only about 150 feet to the east and west of the mooring. The depth of water is 11 ft. at MLW.

The Coast Guard has also placed a mooring spar in 36 ft. of water NW of Matinicus Rock at latitude 43-47.13, longitude 68-51.45. (Pos. 58 W)

Numerous lobster boats anchor in the upper end of Matinicus Harbor where they are protected from all weathers by a breakwater and a ledge in the center of the harbor. The depth of water is 6 ft. with sand bottom.

Criehaven Harbor also affords anchorage for lobster boats, though not so fine as Matinicus Harbor. There is no protection from NW'ly blows, though otherwise the harbor is good. The bottom slopes gently and has one rock dangerous to navigation. It bares 1-1/2 ft. at MLW and is located at latitude 43-50.06, longitude 68-53.47. (pos. 59a) Rk charted 322 (12/22/60 ET

The narrow passage between Wheaton and Matinicus Islands is extensively used by lobstermen at half tide and above. In attempting this passage in a small boat one should hug the Matinicus I. side (no more than 5 ft. from the shore) as there is a rounded ledge which bares 3-1/2 ft. at MLW almost in mid-channel. pos. 9M

A small marine railway is located on Matinicus Rock, latitude 43-47.07, longitude 68-51.38, for hauling out dingies and lifeboats.

There are facilities for obtaining supplies, gasoline, etc. at Matinicus though there are only 2 ft. of water along the face of the main pier at low tide.

There is a natural passage between Ragged Island and Tenpound Island with a controling depth of 18 ft. at lat 43-50.47, long. 68-53.70.

A fishing and sightseeing boat serves as a ferry for carrying supplies, mail, and passengers from Rockland to Matinicus I. and Criehaven I. Trips are made daily during the summer and twice a week during the remainder of the year.

See TP 68 Revision

P. AIDS TO NAVIGATION:

Floating Aids Light List Name	Latitude	Longitude	Depth of Water	Pos.No.	Date
Zephyr Rock Buoy 1	43-53.71	68-51.92	46.5	67e	5/19/54
Waleback Buoy 3	43-53.06	68-52.85	30.5	32v	7/21/54
Mat.I. Lighted Bell B. 5MI	43-53.09	68-53.2940	69.5	31v	7/21/54
Mackerel Ledge Buoy 5	43-52.07	68-51.70	38.5	1x	7/23/54
Harbor Ledge Bell Buoy	43-51.9932	68-52.77C	49.5	77d	5/18/54
Rag. I. Hbr. Ledges B. 6	43-50.1223	68-54.07	46.0	32aa	8/4/54
SW. Ledges Buoy 4	43-49.1112	68-54.55C	75.0	119f	5/20/54
Mat. Inner Breaker B. 2	43-48.35	68-53.75C	37.0	63n	7/6/54
Mat. South Breaker B.	43-47.4557	68-53.4225	36.0	61y	8/2/54

Zephyr Rock buoy 1 is located 100 meters SW of the charted position, and the light list depth of water is given as 30 ft.

Matinicus Island Lighted Bell Buoy 5MI is located 50 (100) meters south (S.E.) of the charted position.

Mackerel Ledge buoy is located 50 meters north of the charted position. The light list depth of water is given as 30 ft. Several times during the current field season the buoy went completely under water at high tide. The Coast Guard in Rockland was notified that this buoy went under water at high tide, and they replaced it in shoaler water. However, since that time it has again slipped off into deeper water. It is recommended that this buoy be replaced in charted position with a heavier mooring block.

The depth of water at Harbor Ledge bell buoy should be listed as 50 ft. rather than 24 ft.

The depth of water at Ragged Island Harbor Ledges buoy 6 should be listed as 46 ft. rather than 27 ft. Several lobstermen in this area expressed the desire that this buoy be made a bell buoy similar to the one at Matinicus Harbor. Fog prevails in the area and a bell would be of great value to them in returning to Criehaven Harbor, and it is recommended that this bell buoy be placed there.

The ferry which runs from Rockland to Matinicus and Criehaven is a small boat and needs no special route designation on the chart.

According to local information at Matinicus, and CWO Wright, C. O. of Rockland Coast Guard Base, the cable area shown on the chart has not been used for many years. The Coast Guard telephone cable from Two Bush Island to Matinicus Rock comes ashore at the northern end of Matinicus Island, runs the length of the Island with an outlet at Young's store in Matinicus, leaves the Island in the cove west of Curtis Point. The cable crosses Ragged Island from Criehaven Harbor to Seal Cove and comes ashore on Matinicus Rock at signal Gan. The final pole at each crossing was located by sextant cuts on page 38, Vol. XI and are shown on the boat sheet in green.

Q. LANDMARKS FOR CHARTS:

See separate report submitted on form 567.

R. GEOGRAPHIC NAMES:

An inspection of geographic names was made by the photogrammetric party which did the original field inspection. It is worthy of note that the natives invariably refer to Ragged Island as Criehaven Island. noted by 454 L.H

T. BY-PRODUCT INFORMATION:

The geographic configuration of the land and similarily of shoals and land shapes between Matinicus and Ragged Islands is worthy of note here.

During the progress of the work it was noted that almost all islands and shoals in the area run in a NE-SW direction, probably caused by the direction of glacial scour. On Matinicus Rock in particular, there appeared to be an upended layering effect running in the direction of the long axis of the rock.

Upon examination of Matinicus Island and surrounding shoals, and Ragged Island and surrounding shoals, there was noted a striking similarity in general trend of shoreline placement of bays and inlets, location of offlying rocks and shoals and shape of contours.

U. STATISTICS:

No. of Positions-2,~~527~~ 34, Stat. mi. Sdgs. ~~395.1~~ 386.0, No. H.L. Sdgs. ~~154~~ 5, Area (Sq. Stat. Mi.) ~~12.2~~ 15.0

V. TIDE NOTE:

The portable automatic tide gage in Matinicus Harbor, at Lat. 43-51.7, Long. 68-52.9, furnished tidal data for reduction of soundings on the entire sheet. Mean low water is at 1.0 feet on the Matinicus Harbor tide staff. This plane of reference was furnished by the Washington Office. No time or height corrections were applied.

W. ABSTRACT OF VELOCITY CORRECTIONS:

Phase corrections were combined with velocity corrections under the echo correction column in the sounding volumes. Bar checks were taken to 70 feet with fathometer number 155-SPX. Below this, temperature and Salinity measurements were used. No bar checks were obtained with fathometer no. 151-SPX during the field season. A comparative bar check between 151-SPX and 155-SPX was made in Little Creek after the close of the field season, and this relative value was used for velocity corrections to a depth of 25 feet. Below this, Temperature and Salinity values were used.

Fathometer 151-SPX and 155-SPX - Fathoms

From	To	Corr.
0 fms.	4 fms.	0.2 fms.
4	29	0.0
29	48	-0.2

Fathometer 151-SPX - Feet

	From	To	Corr.
A Range	0 Ft.	46.5 Ft.	1.0 Ft.
	46.5	55.0	0.5
B Range	35.0	90.0	0.0
C Range	70.0	89.0	-2.5
	89.0	125.0	-3.0
D Range	105.0	127.0	-5.0
	127.0	160.0	-5.5

Fathometer 155-SPX - Feet

	From	To	Corr.
A&B Range	0	13.0	1.0
	13.0	31.0	0.5
	31.0	38.0	0.0
	38.0	43.0	-0.5
	43.0	61.0	-1.0
	61.0	90.0	-1.5
C Range	70.0	85.0	-1.0
	85.0	125.0	-1.5
D Range	105.0	141.0	0.0
	141.0	160.0	-0.5

Respectfully submitted,

David F. Romero

David F. Romero
Lieutenant (JG), USC&GS

Approved and forwarded

Robert A. Marshall

Robert A. Marshall
Commander, USC&GS
Commanding Ship STIRNI

NORFOLK PROCESSING OFFICE
LIST OF SIGNALS
H-8167

TRIANGULATION STATIONS

CONG CONGREGATIONAL CHURCH CUPOLA, 1913
JOHN JOHN, 1913-34
NO NO MANS LAND, 1913-34
ROK MATINICUS ROCK L.H. (SOUTH), 1859-1944

TOPOGRAPHIC STATIONS

SOURCE T-11224N

(SOUTHGABLE, 1944)

Ace	Add	Alp	Bag	Big	Bus	Car	Cue	Deb	Dog
Eat	Elf	Fez	Foe	Gal	Gam	Gus	His	How	Ida
Ivy	Jim	Jug	Key	Kim	Leg	Let	Lux	Mid	Moo
Net, 1944	Nil	Off	Ohm	Out	Pal	Par	Ply	Put	Quo
Rat	Sip	Sin	Tan	Try	Use	Vim	Wee	Wit	Yak
Yam	Zag	Zip							

SOURCE T-11224S

(CRIEHAVEN BREAKWATER LIGHT, 1944)

(GREEN, 1944)

Ant	Arm	Axe	Bed	Bob	But	Con	Cow	Cre	Cry
Dif	Dip	Duo	Ear	Ebb	Egg	Fly	Fox	Fun	Gad
Gas	Gre	Hat	Her	Hit	Irk	Jay	Ked	Lug	Mar
Rim	Sox	Sue	Top	Tow	Toy	Van	Vex	Wag	Yet
Zoo									

(BELL TOWER ON SCHOOL, 1944)

SOURCE T-11225N

Woo

HYDROGRAPHIC STATIONS

Man Vol. 4, pg. 45

NORFOLK PROCESSING OFFICE
LIST OF STATISTICS
H-8167

VOL. NO.	DAY LTR.	DATE	H.L. SDGS.	POSITIONS	STAT. MI. SDG.
1	a	5/13/54	2	75	12.9
1	b	5/14/54	0	80	9.4
1	c	5/17/54	0	41	7.0
1	d	5/18/54	1	92	14.3
2	e	5/19/54	1	160	35.1
2	f	5/20/54	0	161	35.5
3	g	6/ 3/54	0	74	12.2
3	h	6/ 4/54	0	82	16.9
3	j	6/ 8/54	0	93	17.8
3&4	k	6/ 9/ 54	0	163	31.6
4	l	6/10/54	0	86	16.9
4	m	6/14/54	55	27	0.0
4&5	n	7/ 6/54	3	95	17.2
5	p	7/ 8/54	0	85	17.5
5&6	q	7/ 9/54	0	99	15.6
6	r	7/12/54	0	142	23.7
7	s	7/14/54	0	104	14.6
7&8	t	7/16/54	0	120	18.9
8	u	7/20/54	0	116	12.9
8	v	7/21/54	8	32	1.7
8	w	7/22/54	2	68	7.4
8&9	x	7/23/54	5	108	9.0
9	y	8/ 2/54	0	161	20.8
10	z	8/ 3/54	0	6	0.9
10	aa	8/ 4/54	33	72	6.8
10	ba	8/ 5/54	7	55	5.8
11	ca	8/ 9/54	17	75	2.4
11	da	8/13/54	8	24	1.2
11	ea	8/23/54	9	13	0.0
11	fa	8/27/54	4	20	0.0
11	ga	10/12/54	0	5	0.0
	GRAND TOTAL		155	2534	386.0

SQUARE STAT. MI. HYDROGRAPHY 15.0

NORFOLK PROCESSING OFFICE
ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8167 (Field No. St-1154)

GENERAL

With the exception of the discrepancies listed below and in the body of the report, this appears to be an excellent basic survey.

CONTROL

Corrections were applied, as reccommended by the Hydrographer, to the incorrectly read sextant angles. The correction made positions agree with line and time very well.

Corrections were not applied to the inclined sextant angles observed on Matinicus Rock L.H., as the field party did not record a depression angle.

PIERS Deleted from S.S. Appears on overlay in this Report

With one exception, soundings around piers are being submitted on a seperate overlay. Many of the piers are considered too insignificant to warrant seperate diagrams, or else they could not be reconciled with the shoreline shown on the compilation. Soundings around piers not smooth plotted. Diagrams attached to this Report.

SOUNDINGS

All fathograms were check scanned in the Processing Office and the soundings reduced with templates. Agreement at crossings was excellent in this extremely irregular bottom.

Norfolk, Va.
16 Dec. 1957

Respectfully submitted,
Hugh L. Proffitt
Hugh L. Proffitt
Cartographer.

Init soundings but not piers. add lat. & long of piers. Transfer useful soundings to S.S. Retain tracing in D.R.

R.H. Carstens
12/19/57

OK —
C.F.K

RHC

Form 712
(11-30-55)

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens 14 Jan. 1958

Plane of reference approved in
11 volumes of sounding records for

HYDROGRAPHIC SHEET 8167

Locality Lower Penobscot Bay, Maine

Chief of Party: R. A. Marshall in 1954

Plane of reference is mean low water, reading

1.0 ft. on tide staff at **Matinicus**

11.5 ft. below B.M. 2 (1913)

Height of mean high water above plane of reference is 9.0 ft.

Condition of records satisfactory except as noted below:

Signature

Chief, Tides Branch

Comm-DC 34330

OCT 5 1959

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Ships HILGARD and WAINWRIGHT
102 W. Olney Road
Norfolk, Virginia

1 October 1959

To: The Director
Coast and Geodetic Survey
Department of Commerce
Washington 25, D.C.

Subject: SPECIAL PROJECT 14-59, Matinicus Island, Maine

Special Project 14-59, Matinicus Island, Maine, Instructions dated 27 July 1959, was completed on 25 September 1959.

Hydrography was completed in a routine manner, using visual fixes, from Skiff, using sounding pole. Tide staff was installed and read at half-hour or less, intervals.

Under seperate cover the following data is forwarded:

1. Boat Sheet
2. Sounding volume
3. Report of Tide Gage Installation
4. Level Record
5. Bench Mark Recovery Notes
6. Tide Observations
7. Black-line copy of Photogrammetric Manuscript
8. Office Photographs.

John R. Plaggmier

John R. Plaggmier
Lt. Commander, C&GS
Commanding

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. .8167...

Records accompanying survey:

Boat sheets .1+1; sounding vols. .11+; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 16-Envelopes

special reports, etc. 1-Smooth sheet, 1-Descriptive report.....

and 1-Volume, Phase comparison.....

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

Number of positions on sheet		2534
Number of positions checked		347
Number of positions revised		35
Number of soundings revised (refers to depth only)		389 *
Number of soundings erroneously spaced (Numerous sags respaced to develop hydrography properly)		200
Number of signals erroneously plotted or transferred		—
Topographic details	Time	32 hrs
Junctions	Time	4 hrs
Verification of soundings from graphic record	Time	72 hrs

Verification by Chester F. Kreiss Total time 523 hrs Date Oct 13 1959

Reviewed by [signature] Time 166 Date Sept 29 1960

* 50 sdgs revised because of faulty Fnth corr. Numerous revisions in glass areas

M-2232-1

TWO BUSH I.
TWO BUSH LEDGE
BEACH LEDGES
THE BARREL
E. BLACK LEDGE
W. BLACK LEDGE
Little I.
Burgess Cove
Black Rks
Northeast Pt.
Southwest Pt.
Cato Ledge
Shag Ledge
Pudding I.
Harbor Ledge
Green Ledge
Wilson Head
Brig Ledge
West Pt.
~~Crehaven~~ Criehaven
Inner Breaker

Pasture Cove
Philbrook Cove
Cato Cove
Wilson Cove
Deep Cove
Pond Cove

Old Names

Gil Bach
Sept 1960
Geographic Names Section

GEOGRAPHIC NAMES

Survey No. H-8167

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Maine										1
Gulf of Maine	This area is not part of Penobscot Bay. Title of Chart 322, Approaches to Penobscot Bay, would be correct, but not Lower Penobscot Bay									2
										3
Matinicus Rock										4
South Breaker										5
Southwest Ledges	Old name to be continued, but Coast Pilot has been advised of local usage of Criehaven Island, to use in its text.									6
Ragged Island										7
Camp Cove										8
Seal Cove										9
Criehaven Harbor										10
Harbor Ledges	See section M.									11
Matinicus Roads										12
The Hogshead	See section M.									13
Tenpound Island										14
Matinicus Island										15
Condon Cove	See section P.									16
Curtis Point	See section P.									17
Old Cove										18
Matinicus Harbor	(Tide Station)									19
Wheaton Island										20
Burgess Cove										21
Tuckanuck Ledge	See section M.									22
Mackerel Ledge	"	"	"							23
No Mans Land										24
Zephyr Rk ✓				Names approved 12-30-57. See chart 322 for best placement of names or other names that may be desired. L. Heck						25
Zephyr Ledges ✓										26
Whaleback ✓										27
Portland	(Tide station off sheet).									

M 234

OFFICE OF CARTOGRAPHY

REVIEW SECTION -- NAUTICAL CHART DIVISION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8167 FIELD NO. ST-1154

Maine, Lower Penobscot Bay, Matinicus Island and Vicinity

SURVEYED: Mar. 1954 - Sept. 1959 SCALE: 1:20,000

PROJECT NO. CS-265

SOUNDINGS: 808 Depth Recorder
Hand Lead

CONTROL: Sextant fixes on shore signals

Chief of Party ---------- R. A. Marshall; J. R. Plaggmier
Surveyed by ---------- D. F. Romero
Protracted by ---------- W. W. Feazel
Soundings plotted by -------- W. W. Feazel
Verified and inked by ------- C. K. Kupiec
Reviewed by ---------- I. M. Zeskind DATE 9-29-60
Inspected by ---------- R. H. Carstens

1. Shoreline and Control

The shoreline originates with reviewed air photographic surveys T-11224N and S and T-11225N of 1952-53. Several piers located by the hydrographic party in Matinicus Harbor which were not shown on T-11224N, are shown in red on the present survey. The following discrepancies between the topographic and present hydrographic surveys are noted:

A. The delineation of Harbor Ledges on the present survey in the vicinity of Lat. 43°50.07', Long. 68°53.8' differs from that shown on T-11224S. The present survey delineation of these Ledges is in agreement with that shown on planetable survey T-598 (1864), whereas that shown on T-11224S is in agreement with the Ledges shown on T-8026(1941-44). The hydrography on the present survey discredits the delineation of the Ledges shown on T-11224S and T-8026. It is, therefore, recommended that the ledges be charted as shown on the present survey.

B. The present survey shows the rock awash on the northern portion of Tuckanuck Ledge in Lat. 43°51.70', Long. 68°51.63' to uncover 8 ft. at MLW, whereas airphotographic survey T-11224N (1953) shows it to be awash at MLW. The depth of water over the rock

was determined by the hydrographer from a fix on the Ledge at 1½ ft. above MLW. It is, therefore, recommended that the elevation of the rock awash as determined by the hydrographer be accepted as the correct elevation.

C. The present survey shows the elevation of the bare rock on The Hogshead in Lat. 43°50.55', Long 68°52.62' to be 9 ft. at MHW, whereas airphotographic survey T-11224N shows it to bare 3 ft. at MHW. The elevation of this rock was determined by the hydrographic party by a fix near the rock at approximately high tide. It is, therefore, recommended that the elevation of the rock as determined by the hydrographic party be accepted as the correct elevation.

The source of the control is given in the Descriptive Report.

2. Sounding Line Crossings

Considering the irregularity of the bottom, the sounding line crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated, except close inshore where the foul character of the bottom generally prevented development to the low-water line. The 3-ft., 24-ft. and 36-ft. curves were drawn to better define the bottom configuration.

The bottom is very irregular. Submarine features such as pinnacles, shoals, ledges, reefs and ridges contribute to the bottom irregularity.

4. Junctions with Contemporary Surveys

The junction with H-8168 (1954) which joins the present survey on the north, east, south and west and which surrounds the present hydrography at South Breaker and Matinicus Rock, will be considered in the review of H-8168.

5. Comparison with Prior Surveys

A. H-1051 (1866-67-68), 1:20,000

The present survey falls within the area of H-1051. A comparison between the prior and present surveys reveals, in general, only minor differences of 2-5 ft. in depths. However, in several areas greater differences in depths are noted. An example of

greater differances in depths between the prior and present surveys occurs in Lat. 43°51.35', Long 68°52.59' where a prior depth of 12½ fms. (75 ft.), falls in present depths of 103-104 ft. These differences in depths are caused by errors in protracting, improper spacing of soundings between fixes, and different methods of obtaining depths, - leadline on the prior survey and depth recorder on the present survey. Attention is specifically directed to the following discrepancies in depths between the prior and present survey:

1. The 2-ft. sounding (charted) in Lat. 43°51.87', Long. 68°54.08' originating with H-1051, falls in present depths of 10-11 ft. The sounding was plotted out of position on the prior survey and should actually fall about 110 meters southward where comparable depths are found on the present survey. The sounding should be deleted from the chart.

2. The 10-ft. sounding (charted) in Lat. 43°51.44', Long. 68°52.32' originates with H-1051 and falls on the present survey in depths of 28 ft. The sounding was erroneously plotted on H-1051 and should actually fall about 30 meters westward where comparable depths are found on the present survey.

3. The 21-ft. sounding (charted) in Lat. 43°50.85', Long. 68°54.68' originates with H-1051 where it is misplotted. The sounding should actually fall about 80 meters east southeastward where comparable depths are found on the present survey. The sounding has been carried forward to the present survey.

4. The 15-ft. sounding (charted) in Lat. 43°51.80', Long. 68°54.68' originates with H-1051 and falls on the present survey in depths of 28-31 ft. The sounding was erroneously located on the prior survey and should actually fall about 85 meters northwestward where comparable depths are found on the present survey.

5. The 10-ft. sounding (charted) in Lat. 43°50.28', Long. 68°53.43' originates with H-1051 and falls in present depths of 21-24 ft. The sounding is believed to be erroneously located and should actually fall about 150 meters north northwestward where comparable depths are found on the present survey. The position of a surveying vessel which was used as one of the signals which controlled the sounding line on which the 10-ft. sounding was

located, could not be found in the sounding records and may be in error. The 10-ft. sounding is discredited by present depths and should be deleted from the chart.

6. The 33-ft. sounding (charted) in Lat. 43°50.17', Long. 68°54.20' originates with H-1051 and falls in present depths of 55-59 ft. It is believed that an unreduced 11 fms. was erroneously recorded as 7 fms. on the prior survey. The 33-ft. sounding should be deleted from the chart.

7. The 45-ft. sounding (charted) in Lat. 43°53.03', Long. 68°52.05' originates with H-1051 and falls in present depths of 73 ft. The sounding was erroneously located on the prior survey and should actually fall about 60 meters south southwestward where comparable depths are found on the present survey.

8. The 3-ft. sounding (charted) in Lat. 43°52.20', Long. 68°52.92' from H-3527 WD (1913), falls in present depths of 16 ft. The sounding was plotted out of position on H-3527 WD and should actually fall about 180 meters northwestward where a 5-ft. shoal was located on the present survey. The 3-ft. sounding has been carried forward to the present survey in its correct position.

9. The 14-ft. sounding (charted) in Lat. 43°50.5', Long. 68°53.6' from H-1051 (1866-68) falls in present depths of 21-22 ft. in an area which has deepened 2-8 ft. The charted 14-ft. depth is considered to no longer exist and should, therefore, be deleted from the chart.

10. The 2 rocks awash (charted) on Zephyr Ledges in the vicinity of Lat. 43°53.38', Long. 68°52.05' from H-1051 (1866-68) fall about 25 meters south of their smooth sheet locations which were determined by sextant fixes at low water. Air-photographic survey T-11224N (1952-53) shows the positions of these rocks, which were apparently taken from the boat sheet of the present survey, to be about 30 meters west of the smooth sheet locations. The locations of these rocks should be charted as shown on the smooth sheet and their locations as shown on T-11224N should be disregarded.

A number of soundings and bottom characteristics have been carried forward from the prior survey to the present

survey. With the additions of these soundings and bottom characteristics, the present survey is adequate to supersede the prior survey within the common area.

B. Wire Drag Surveys

H-3025 WD (1909-10-13), 1:20,000
H-3527 WD (1913), 1:20,000
H-3528 WD (1913), 1:20,000

There are no conflicts between the present survey soundings and the effective wire drag depths. Several soundings have been carried forward from the wire-drag surveys to the present survey. Several soundings were revised in position because of misplotting on the wire-drag surveys.

6. Comparison with Chart 322 (Latest print date 10-5-59)

A. Hydrography

The charted hydrography originates principally with the prior surveys previously discussed which need no further consideration, supplemented by soundings from the boat sheet (Bp. 53237) and the smooth sheet of the present survey prior to verification and review. Attention is specifically directed to the following discrepancies:

1. The 3-ft. sounding charted in Lat. 43°51.35', Long. 68°54.85' from H-1051 (1866-67-68) is erroneous. The sounding which is actually 3 fms. falls in comparable depths on the present survey. The 3-ft. sounding should be deleted from the chart.

2. The 3-ft. sounding charted in Lat. 43°52.70', Long. 68°52.56' from 1051 (1866-67-68) is erroneous and should actually be 3 fms. The 3-ft. sounding should be deleted from the chart.

3. The 8-ft. sounding charted in Lat. 43°52.20', Long. 68°52.48' from H-1051 (1866-67-68) is erroneous and should actually be 8 fms. The 8-ft. sounding should be deleted from the chart.

4. The 8-ft. sounding charted in Lat. 43°53.22', Long. 68°51.97' originates with the boat sheet (Bp. 53237) of the present survey. The sounding was revised to 11 ft. during verification and review of the present survey.

5. The 6-ft. sounding charted in Lat. 43°49.18', Long. 68°54.30' from the present survey prior to verification was revised to 11 ft. after verification and review.

6. The rock awash charted in Lat. 43°52.09', Long. 68°54.30' from planetable survey T-958 (1864), was investigated at 1 ft. of tide on the present survey when the bottom was visible and was found to be covered by 3 ft. at MLW. The rock awash symbol on T-958 is believed to represent breakers and the symbol should be deleted from the chart.

7. The rock awash charted in Lat. 43°52.21', Long. 68°54.18' from air photographic survey T-8026 (1941-44), falls in present depths of 9 ft. The feature is not shown on contemporary air-photographic survey T-11224N (1953), the pictures for which were taken at or about MLW. The feature is believed not to exist and should be deleted from the chart.

8. The bare rock charted in Lat. 43°50.13', Long. 68°53.53' from a source not readily ascertainable, falls in present depths of 13 ft. The rock is probably charted out of position and should actually fall further inshore where it forms part of the ledge shown on the present survey. The feature should be deleted from the chart.

9. Where discrepancies in rock awash elevations between the charted and present survey exists, the present survey elevations should be accepted. (See paragraph M of Descriptive Report).

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

B. Aids to Navigation

The present survey positions of aids to navigation are in substantial agreement with the charted positions and adequately mark the features intended, except as follows:

The red and black nun buoy charted in Lat. 43°52.35', Long. 68°52.80' in accordance with HON to M 27, 1957, was added to the chart subsequent to the present survey. It adequately marks the feature intended.

7. Condition of Survey

a. The sounding records and Descriptive Report are generally complete and comprehensive.

b. The smooth plotting was acurately done, except as follows:

1. Approximately 200 soundings were respaced in order to provide a more accurate delineation of the bottom.

2. It was necessary for the verifier to spend considerable time rescanning fathograms whose scanning by the field party and smooth plotter was faulty. Most areas where strays, grass, or kelp appeared on the fathograms required rescanning and evaluation and a significant number of revisions were made in these areas.

3. As indicated in paragraph 1 of this review, a number of discrepancies had to be reconciled between the hydrographic and topographic information.

4. A number of piers in Matinicus Harbor which were located by the hydrographic party could not be reconciled with their topographic locations on T-11224. The topographic locations of these piers were accepted and are shown on the smooth sheet.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work Recommended

The survey is considered basic and no additional field work is recommended.

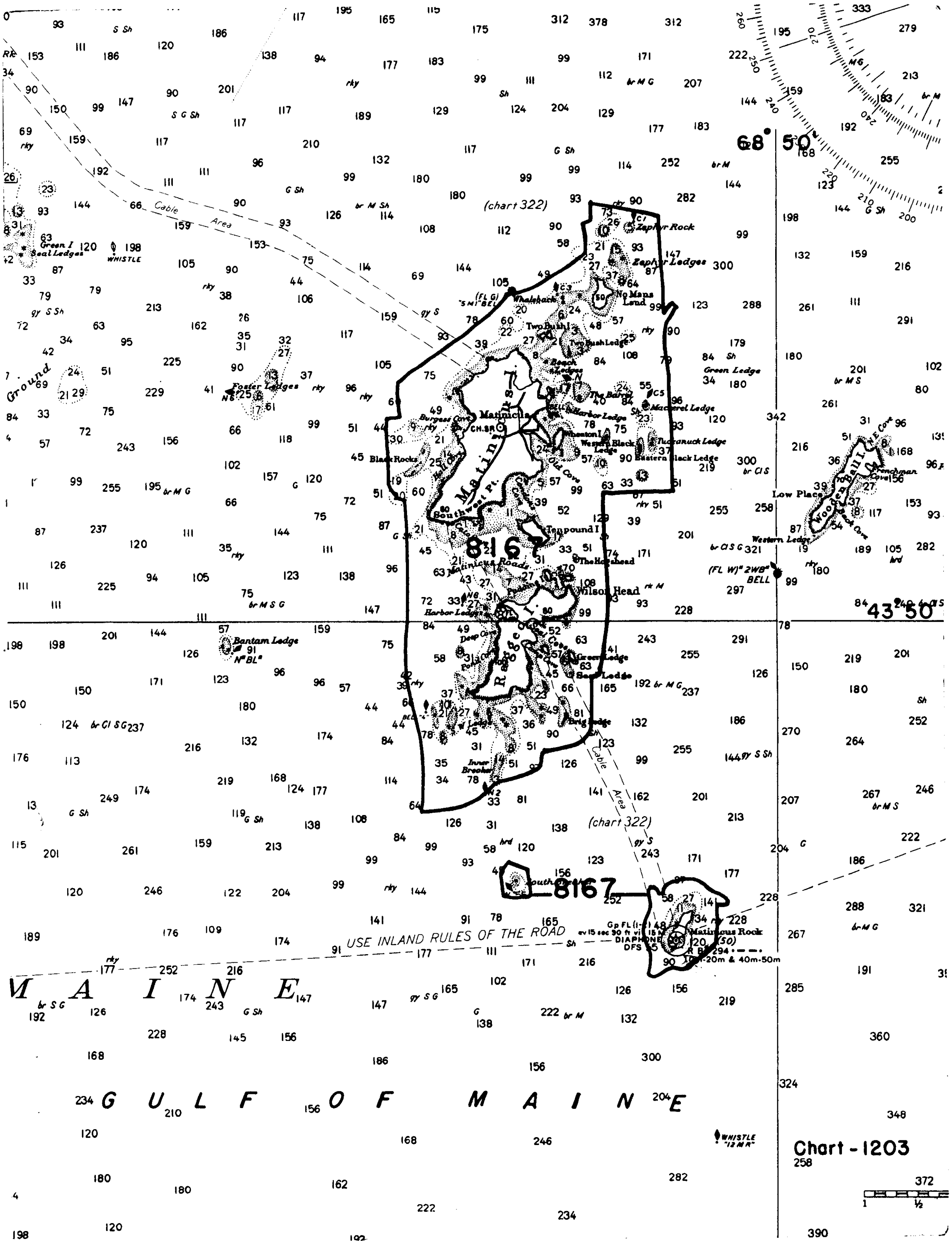
Examined and Approved:

J.E. Waugh 4/25/61
Chief,
Nautical Chart Division

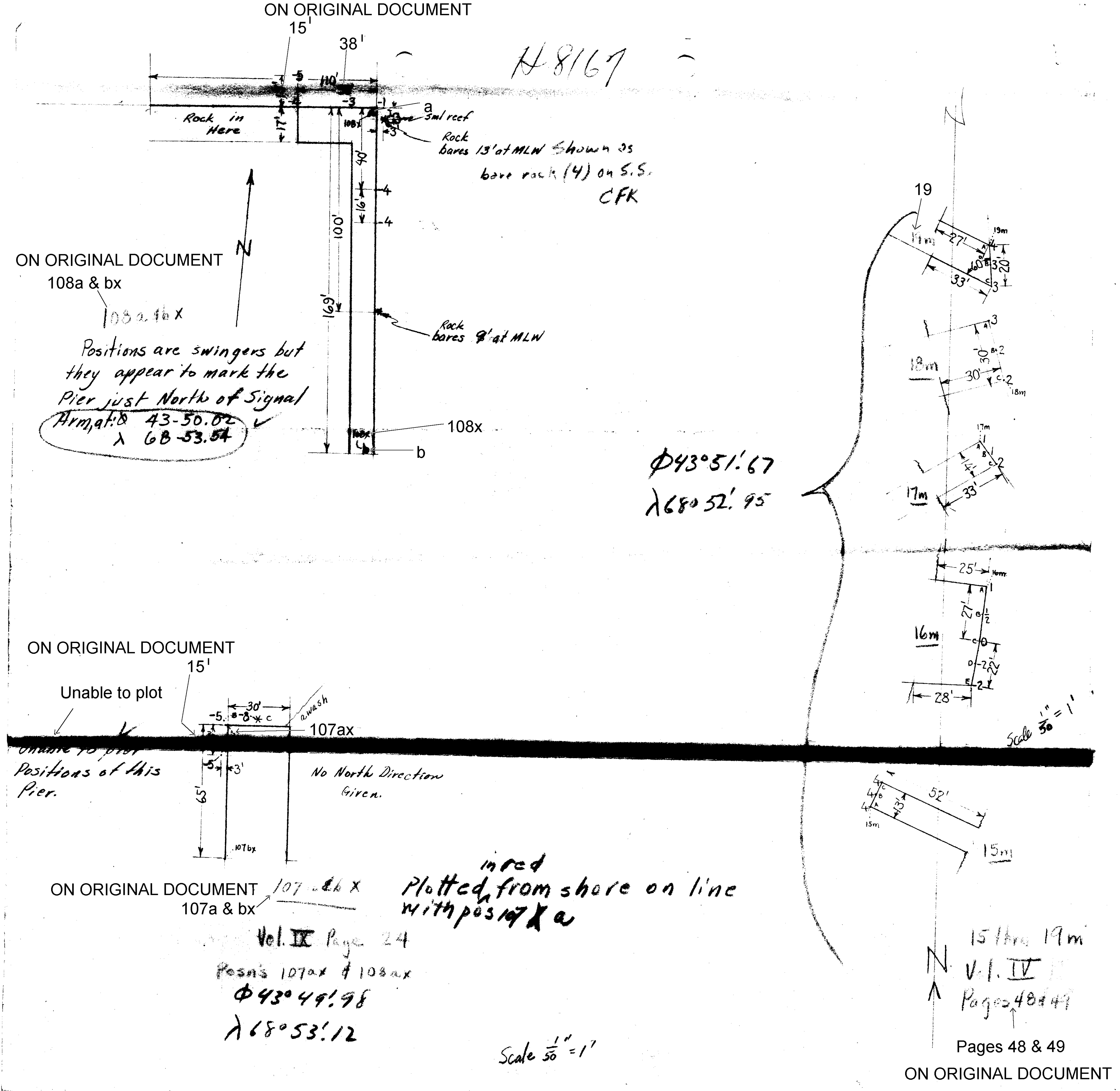
D. J. Carman
Assistant Director,
Office of Cartography

W. Richards
Projects Officer,
Operations Division

K. O. Emery
Assistant Director
Office of Oceanography



(chart 322)
Zephyr Rock
Zephyr Ledges
No Mans Land
Whaleback
Two Bush I.
Two Bush Ledge
Beach Ledges
The Barrel
Mackerel Ledge
Harbor Ledge
Western Black Ledge
Tuckanuck Ledge
Eastern Black Ledge
Matinicus
Burgess Cove
Black Rocks
Old Cove
Southwest Pt.
Tenpound I.
8167
Matinicus Roads
The Hogshead
Wilson Head
Harbor Ledge
Deep Cove
Green Ledge
Seal Ledge
Brig Ledge
Inner Breaker
Cable Area
Green Ledge
Low Place
Wooden Ball I.
Frenchman Cove
Western Ledge
(FL W) "2WB" BELL
Green I
Seal Ledges
WHISTLE
Foster Ledges
Bantam Ledge
Ground
68° 50'
43° 50'
USE INLAND RULES OF THE ROAD
Matinicus Rock
DIAPHONE
M A I N E
G U L F O F M A I N E
WHISTLE "12MR"
Chart - 1203


H 8167
ON ORIGINAL DOCUMENT
15'
38'
110'
a
Sml reef
Rock in Here
17'
Rock bares 13' at MLW Shown as bare rock (4) on S.S.
CFK
40'
16'
100'
169'
N
ON ORIGINAL DOCUMENT
108a & bx
108a.bx
Rock bares 8' at MLW
Positions are swingers but they appear to mark the Pier just North of Signal Arm, at: Φ 43-50.02 λ 68-53.54
108x
b
Φ43°51'.67
λ68°52'.95
19
19m
27'
20'
33'
18m
30'
17m
33'
25'
16m
27'
22'
28'
Scale 1"/50 = 1'
ON ORIGINAL DOCUMENT
15'
Unable to plot
30'
awash
107ax
Unable to plot Positions of this Pier.
5'
3'
65'
107bx
No North Direction Given.
52'
13'
15m
ON ORIGINAL DOCUMENT
107a & bx
107a.bx
Plotted in red from shore on line with pos 107x a
Vol. IX Page 24
Posn's 107ax & 108ax
Φ43°49'.98
λ68°53'.12
Scale 1"/50 = 1'
15 thru 19m
V.I. IV
Pages 48 & 49
N
Pages 48 & 49
ON ORIGINAL DOCUMENT

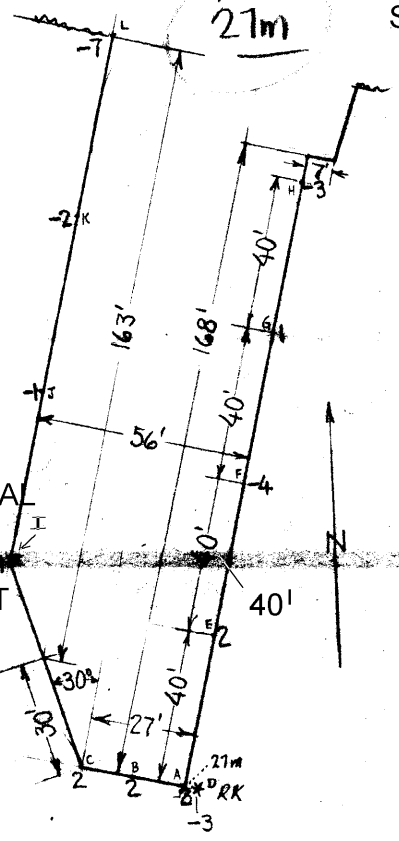
#8167

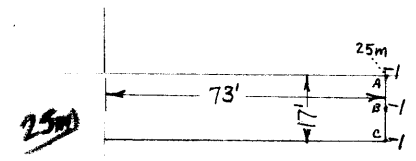
Smooth sheet

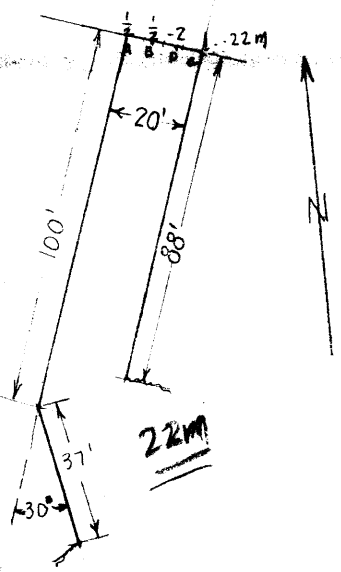
On smooth sheet
Scale $\frac{1}{100}$" = 1'

ON ORIGINAL DOCUMENT

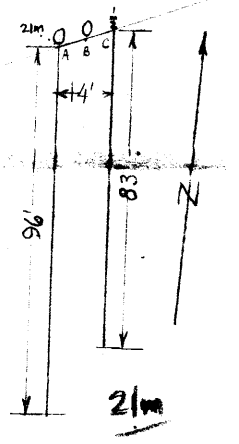
Scale $\frac{1''}{100}$ = 1'

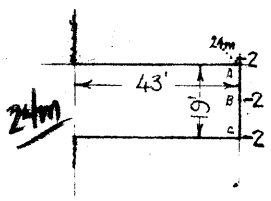






Φ 43° 51' 90
λ 68° 53' 15





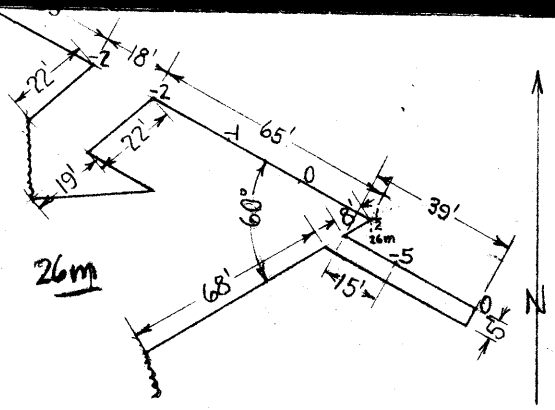
ON ORIGINAL DOCUMENT

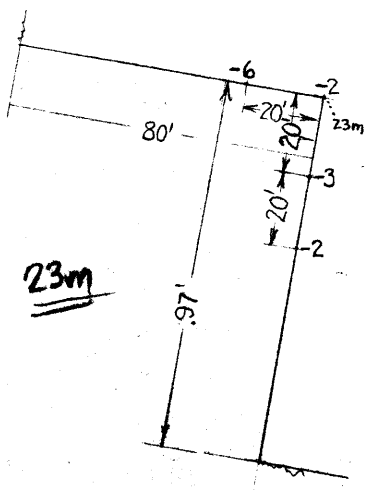
1

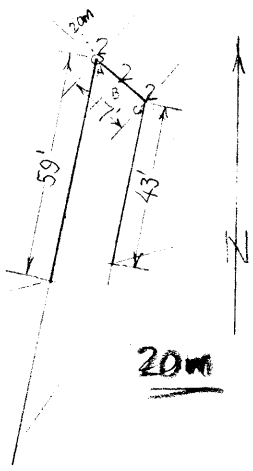
DOCUMENT

5

33' ON ORIGINAL DOCUMENT





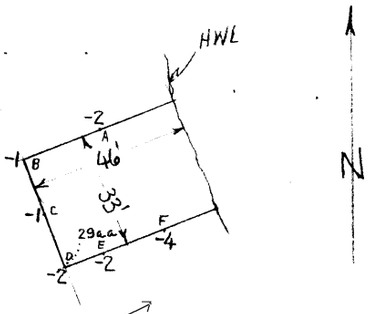


Scale $\frac{1}{50}$" = 1'

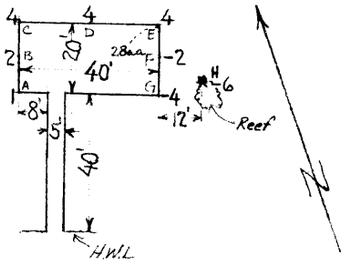
Pages 49, 50, 51
ON ORIGINAL DOCUMENT

H8167

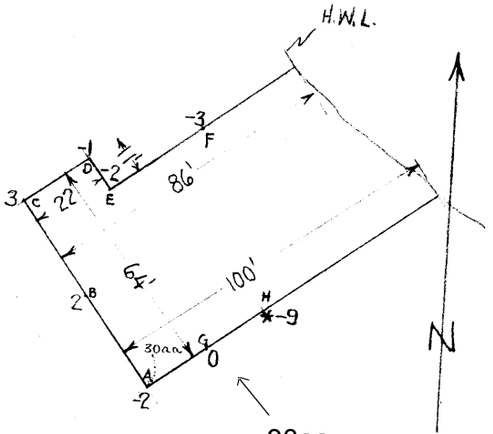
ON ORIGINAL DOCUMENT



29aa

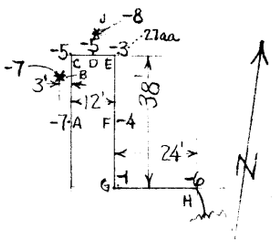


28aa ON ORIGINAL DOCUMENT



30aa

ON ORIGINAL DOCUMENT



27aa

Scale 1/50" = 1'

Piers - Criehaven Harbor

ON ORIGINAL DOCUMENT

Φ 43° 50.02

λ 68° 53.45

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8167

Record of Application to Charts Review 9-29-60

DATE	CHART	CARTOGRAPHER	REMARKS
6/23/58	322	J.T. McGann	Before ~~After~~ Verification and Review
30 June 1958	1203	H. MacEwen	Before [redacted] Verification and Review Partially applied.
7-16-58	71	M. Rogers	Before ~~After~~ Verification and Review Examined thru Drg of chart 1203 - No Corr
12/22/60	322 drg 9	E.E. Thomas	~~Before~~ After Verification and Review (Before Inspection) Completely applied
3-11-61	70	R.E. Elkins	Before ~~After~~ Verification and Review Partly applied before Ver & Rev thru cht 71 drg 12. (Hold for a full application until applied to intermediate scale chts/EEE)
3-17-61	1203 drg 18	R.E. Elkins	~~Before~~ After Verification and Review Fully applied thru chart 322 drg 9.
3-21-61	70	R.E. Elkins	~~Before~~ After Verification and Review Fully applied thru cht 322 drg 9 & cht 1203 #18.
10-12-61	1106	R.E. Elkins	~~Before~~ After Verification and Review Fully applied thru cht 1209 drg 18, and cht 322 drg 9.
9-26-62	71	G.R. Johnson	~~Before~~ After Verification and Review Fully Applied Through Cht 1106 drg # 16
5-8-63	1203 Recon.	M. Rogers	~~Before~~ After Verification and Review thru chart 322.

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.