

9109

Diag. Cht. No. 1266-2.

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT
(HYDROGRAPHIC)

Type of Survey Hydrographic
Field No. 745-20-1-70
Office No. H-9109

LOCALITY

State Alabama
General Locality Mobile Bay
Locality Entrance to Mobile Bay

19 70

CHIEF OF PARTY
B. H. Traugher

LIBRARY & ARCHIVES

DATE 2-11-75

9109

FORM C&GS-537
(5-65)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H- 9109

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

FIELD NO.

745-20-1-70

State Alabama

General locality Mobile Bay
~~Coast of Alabama~~

Locality Entrance to Mobile Bay

Scale 1:20,000

Date of survey 10 Feb thru 7 May 1970

Instructions dated 3 Sept 1969

Project No. OPR 468

Vessel CS-1258

Chief of party LT Brent H Traugber

Surveyed by Lloyd C Gilden

Soundings taken by echo sounder, hand lead, pole

Graphic record scaled by Party Personnel

Graphic record checked by Party Personnel

Protracted by _____ Automated plot by AMC CalcComp 618

Soundings penciled by _____

Soundings in ~~fathoms~~ feet at MLW ~~MLW~~

REMARKS:

DESCRIPTIVE REPORT

to accompany

Hydrographic Survey No. H-9109
(Field No. 745-20-1-70)

OPR 468	Scale 1:20,000
Mobile Bay Entrance	Hydrographic Party 745
LT Brent H Traugher	Officer-in-Charge
Surveyed by:	Lloyd C Gilden

✓A. PROJECT

This survey was authorized by phone as an addition to supplemental Instructions^{*} Project OPR 468, dated 3 September 1969. This work was intended to determine the extent of change in bottom contours of Mobile Bay Entrance caused by Hurricane Camille (August 1969).

*H9109 items for future Pre-Survey Review are listed in OPR 479 dated 1/31/68.

✓B. AREA SURVEYED

The area covered by this survey was the Entrance to Mobile Bay in the vicinity of Dauphin Island, Alabama. The area covers from Latitude 30° 15.00'N, Longitude 88° 08.00'W to Latitude 30° 09.00'N, Longitude 88° 08.00'W. Field work on this survey commenced on 10 February 1970 and ended on 7 May 1970.

✓C. SOUNDING VESSEL

The vessel used for this survey was Launch C.S. 1258. The identifying color is blue.

✓D. SOUNDING EQUIPMENT

Raytheon Graphic Recorder, Model DE723, Serial No. 1998.

✓ D. SOUNDING EQUIPMENT (Con't)

Sounding pole and leadline soundings were also obtained. Corrections to be applied to echo soundings were determined from daily bar checks. "Abstract of Velocity Corrections" are appended to this report. A settlement and squat test proved that their combined effect was less than 0.2 foot and could be neglected.

✓ E. SMOOTH SHEET

This survey will be automated at the Atlantic Marine Center.

✓ F. CONTROL

Horizontal control was by visual three-point sextant fix method. Signals were from four sources; manuscripts, computations by Photo Party 61, triangulation, and hydrographic positions. The Appendix contains a complete list of control used and its quality and source.

Natural signals from Planimetric Manuscripts:

T 10761	Final Review	Feb. 1968
T-10772	Final Review	Feb. 1968
T-10773	Final Review	Feb. 1968
T 10774	Final Review	Feb. 1968

No substandard horizontal control was used.

✓ G. SHORELINE

on the boat sheet
Shoreline for this survey was taken from a blowup of Chart 872-SC. Several changes caused by erosion were noted. The shorelines along Dauphin Island, Mobile Point, and Sand Island were inspected and relocated by sextant fixes where necessary.* All shoreline changes are dashed in red ink.

* See paragraph 4 of Review

✓ H. CROSSLINES

Crosslines were run in approximately 10% of the survey

H. CROSSLINES (Con't)

area and were in good agreement.

I. JUNCTIONS

No junctions were made.

J. COMPARISON WITH PRIOR SURVEYS

No prior surveys were furnished.

K. COMPARISON WITH THE CHART

The survey was compared with Chart 872-80, 5th Ed., 30 August 1969, scale 1:40,000.

<u>Feature</u>	<u>Position</u>	<u>Remarks</u>
Wreck	30° 11.93' 88° 04.01' <i>Revised pos.</i> 30°-11'-55.70"N 88°-04'-00.13"W	This wreck lies in an east-west direction. It bares 15' to 18' at the west end and 6' at the east end. The wreck is approximately 150' long presents no threat to navigation. See Pos. 1228 and 1229. Signal # 19
Wreck	30° 12.81' ^{48.6"} 88° 02.15' ^{09"} <i>Revised pos.</i> 30°-12'-48.87"N 88°-02'-08.56"W	The wreck at this charted position is marked by lighted buoy No. 14. The mast of this wreck bares approximately 25 to 30 feet. See Pos. 559. Signal # 18

OPR 479
PSR item #60

K. COMPARISON WITH THE CHART (Con't)

<u>Feature</u>	<u>Position</u>	<u>Remarks</u>
Sand Island	30° 12.03' 88° 03.97'	The present position of Sand Island was walked and cut-in by sextant fixes. The Island has moved approximately a mile and a half in a northwest direction since 1960. Due to strong currents and winds there will be frequent changes in the area.
	to 30° 13.20' 88° 06.20'	
✓ Wrecks (12 ft rep) → OPR 479 item 59 from NH 40/57	30° 10.90' 88° 03.38'.43 and	This survey was unable to prove or disprove the existence of these wrecks.
✓ (Mast PA) → OPR 479 item 8 DI from NH 16/69	30° 12.00' 88° 01.00'	
Obstruction 12 ft. not charted 16' on Smooth sheet ✓ 11' at 30° 11'-12" N 88° 03'-05" W Pos. 1785 & 1786	30° 11.22' 88° 02.97'	The least depth found on the obstruction southeast of Sand Island Light, was 18' with a leadline. A 30 minute search was made drifting and feeling with the leadline. Strong currents around the Light-house may have eroded away the sand causing the obstruction to settle.

K. COMPARISON WITH THE CHART (Con't)

<u>Feature</u>	<u>Position</u>	<u>Remarks</u>
Pelican Island	30° 13.32' 88° 06.43'	This survey shows 8' and 9' of water over the area where Pelican Island was awash.
Soundings		Due to strong currents in the area, there is poor agreement, mostly in the shallow water. The area is subject to frequent contour changes.

*4 ft & 9 ft
on Smooth Sheet
Pos. 254 & 255.*

L. ADEQUACY OF SURVEY

This survey is complete and adequate for charting. No substandard work exist. Fathometer depths have been checked by leadline at bottom sample locations. Fathometer soundings appear to be accurate. There is a dredged channel maintained by the Corps of Engineers.

(20°-13'-14.81"N., 88°-01'-42.48"W)
A 4 foot sounding or stray was noted ~~two and five seconds~~ ^{1 Minute 45 seconds} out of Position #648. Closely spaced lines from Position #1984 to Position #2046 revealed no 4 foot sounding. An overlay of the development accompanies the boat sheet. *Pos # 1984 - 2046 were not in the immediate area of 4 ft sdg. The 4 ft was not disproven & seems good & reasonable. sdg left on Smooth Sheet. Pos. 1984 - 2046 were destroyed along with overlay.*

M. AIDS TO NAVIGATION

There are 17 floating and 5 fixed aids all maintained by the U.S. Coast Guard. These aid adequately and serve the purpose for which they were intended.

N. STATISTICS

Total Positions	2368
Nautical Miles of Sounding Lines	481.7
Square Nautical Miles	23.5
Bottom Samples	26

Submitted:

Lloyd C Gilden

Lloyd C Gilden
Surveying Technician
Hydrographer, Survey H-9109

Approved & Forwarded

Brent H. Traugher

LT Brent H Traugher
Officer-in-Charge
Hydrographic Field Party 745

Appendix A

LIST OF SIGNALS

Survey H-9109

<u>Number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Source</u>
001	30°-14'-58.912"	88°-08'-07.716"	HERON, 1935- 58 ✓
002	30 -14 -52.984	88 -07 -37.739	Photo Party 61 ✓
003	30 -14 -48.178	88 -07 -05.771	T-10772(Topo) ✓
004	30 -15 -11.958	88 -06 -44.901	DAUPHIN IS., 1958 ✓ WATER TANK, 1958 ✓
005	30 -12 -59.341	88 -06- 03.004	Photo Party 61 ✓
006	30 -12 -09.325	88 -04 -39.610	Photo Party 61 ✓
007	30 -14 -59.635	88 -04 -42.266	DAUPHIN IS., USAF EAST RADAR ✓ DOME, 1960 ✓
008	30 -14 -52.295	88 -04 -29.341	FORT GAINES (USE), 1960 ✓ 1958-60 ✓
009	30 -13 -59.356	88 -06 -40.626	T-10772(Photo) ✓
010	30 -11 -14.8206	88 -03 -02.235	SAND IS. LIGHT- HOUSE, 1958 ✓
011	30 -13 -40.847	88 -01 -26.510	Photo Party 61 ✓
012	30 -14 -32.720	88 -06 -35.611	Vol #1, Pg. 49 ✓ Pos. #111, (Hydro) ✓
013	30 -14 -05.689	88 -04 -41.396	Vol #1, Pg. 23 ✓ Pos. #38, ✓ (Hydro) ✓
014	30 -13 -41.752	88 -01 -02.911	Photo Party 61 ✓
015	30 -13 -38.773	88 -00 -42.937	Photo Party 61 ✓
016	30 -13 -46.580	87 -59 -58.712 54	T-10774(Photo) ✓
017	30 -13 -52.523	87 -58 -15.360	T-10774(Photo) ✓
018	30 -12 -48.883	88 -02 -08.393	T-10773(Photo) ✓ WX(24) ✓
019	30 -11 -36.860 56	88- 04 -00.3925 .130	Vol #6, Pg. 66, ✓ Pos. #1228, ✓ Hydro ✓

55.7

VELOCITY TABLE
VELOCITY CORRECTIONS TO ECHO SOUNDINGS

<u>Depth in Feet</u>		<u>Corrections in Feet</u>
	A-scale	
0.0 to 3.5		-0.6
3.6 4.1		-0.4
4.2 6.1		-0.2
6.2 21.5		0.0
21.6 28.5		/0.2
28.6 35.9		/0.4
36.0 41.5		/0.6
41.6 50.0		/0.8
	B-scale	
40.0 40.9		/0.4
41.0 44.9		/0.6
45.0 & over		/0.8

APPENDIX C

TIDE NOTES

Survey H-9109

Tide Station:	Fort Gains, Dauphin Island, Alabama Lat. $30^{\circ} 15.0'N$ Long. $88^{\circ} 04.5'W$
Time Meridian	90° West
Plane of Reference	Mean low water equals 2.50 on 1970 staff.
Corrections	No time or height correction applied when calculating tide reducers



U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
PHOTO PARTY 61

REPORT ON HYDRO SIGNAL LOCATION
JOB PH- 5704

IN REPLY REFER TO: 21 MARCH 1970

1. LOCALITY: Mobile Bay Entrance, Alabama.
2. FIELD WORK AND COMPUTATIONS BY: Personnel of Photo Party 61.
3. AUTHORIZATION: Blanket verbal instructions from the Chief, Photo Field Survey Branch, received in October 1969. Verbal request from LTJG Brent Traugher, Officer-in-Charge HFP-745, in late January 1970.
4. PURPOSE: To provide support for hydrography made necessary by hurricane Camille.
5. METHOD OF LOCATION: The signals were located by ground field survey methods. Instruments used were a T2 and 300 foot steel tape.
6. DISPOSITION OF DATA: All field records and computations were transmitted to HFP-745 on 22 March 1970.
7. DATES: Field work from 5 Feb. to 18 Feb. 1970.

John C. Vaselenak
Chief, Photo Party 61

Attached: List of Signals.

✓

Oceo Log Sheet M (Substitute)

All samples from area around Mobile Bay entrance.
 Sample Numbers correspond to Position Numbers used on
 Boatsheet Field No. 745-20-1-70.
 Samples #1804 thru 1829 obtained by C&GS Hydrographic
 Party 745 on 16 April, using small grab sampler.
 Sample material from surface of ocean bed (maximum
 sampler penetration 4").

<u>Sampler Number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Field Description</u>	
1804	30° 14.54' N	88° 04.33' W	<i>hd</i> lt br S	(Vol 9 2 85)
1805	14.30'	05.49'	br M	✓
1806	14.30'	06.63'	fne br S	✓
1807	14.46'	07.62'	<i>hd</i> lt br S	✓
1808	13.83'	07.63'	<i>hd</i> lt br S & gy M	✓
1809	13.52'	06.39'	fne br S	✓
1810	13.49'	05.30'	fne br S	✓
1811	13.49'	04.60'	fne br S & gy M	✓
1812	13.47'	03.36'	crs br S	✓
1813	13.44'	02.51'	crs br S	✓
1814	13.86 ^{12.86}	01.01'	fne br S	✓
1815	11.87 ^{11.87}	01.49'	fne br S	✓
1816	10.44'	01.52'	fne br S	✓
1817	09.44'	02.73'	fne br S	✓
1818	10.49'	02.46'	fne br S	✓
1819	11.57'	02.38'	crs br S	✓
1820	12.47'	02.24'	crs br S	✓
1821	12.53'	03.30'	crs br S	✓
1822	12.60'	04.65'	fne br S	✓
1823	11.66'	03.81'	fne br S	✓
1824	11.56'	03.59'	fne br S	✓
1825	09.85'	03.70'	fne br S	✓
1826	10.70'	04.64'	fne br S & M	✓
1827	11.57'	04.65'	fne br S	✓
1828	11.76'	05.44'	fne br S	✓
1829	12.60'	06.34'	fne br S	✓

Verifier: Wm. H. Guy

11 April 1974

VERIFICATION NOTE TO EDP (AMC)
SURVEY H-9109 (745-20-1-70) OPR-468

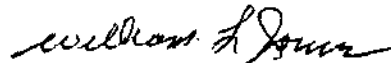
This Office has completed the Verification of the Position overlay.

There are two Positions to be Inserted. 7853 THRU 8002.

There are 68 Position and Record Numbers to be Deleted from this Survey, (Positions 1994 thru 2056, Records ~~7871 thru 7990~~) while investigating a three foot sounding. No sounding of this depth was located after scanning Fathogram. No soundings were recorded during this investigation.

Cards were Key-Punched by Personnel of this Office and accompany this note.

After all corrections have been applied. Please Plot another Position Overlay, as there was an excessive number of Logging and Recording errors.



William L. Jonns
Chief Verification Branch

Verifier: Wm. H. Guy

30 April 1974

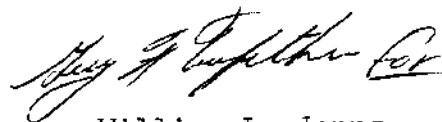
VERIFICATION NOTE TO EDP (AMC)
SURVEY H-9109 (745-20-1-70) OPR-468

This Office has completed the Verification of the Position Overlay for this Survey.

There are three Positions to be Inserted.

Cards were Key-Punched by Personnel of this Office and accompany this Note.

After all corrections have been applied. Please furnish this Office with a Sounding Overlay and Printout. Soundings Plotted Normal and in Color.



William L. Jonns
Chief Verification Branch

Verifier: R. Cram

17 May 1974

VERIFICATION NOTE TO EDP (AMC)

Survey H-9109 (745-20-1-70) OPR-468

This branch has completed the verification of the sounding corrector printout.

One change was found on this survey. The tide on day 085 was logged wrong. The card was cut by this branch and accompanys this note.

Please furnish this office with a sounding overlay and printout.

William L. Jonns

William L. Jonns

Chief, Verification Branch

ATLANTIC MARINE CENTER
 VERIFICATION OF SHOOT TIDES

SURVEY H-9109

PLANE OF REFERENCE MLW ~~OKXXXX~~
 TIME MERIDIAN 90W
 HEIGHT DATUM ON STAFFS 1. 2.5 2. _____ 3. _____

TIDE STATIONS	POSITION	TYPE GAGE	TIME CORR.		HEIGHT CORR. *	
			H.W.	L.W.	H.W.	L.W.

1. Fort Gains, Dauphin Island, Mobile Bay Entrance	ϕ 30° 15.0 λ 88° 04.5	ST				
--	---------------------------------------	----	--	--	--	--

2.	ϕ Y					
----	-------------	--	--	--	--	--

3.	ϕ Y					
----	-------------	--	--	--	--	--

HOURLY HEIGHTS FROM ROCKVILLE OFFICE
 FROM FIELD MARIGRAPHS VERIFIED BY: Rockville

TIDE ZONING NOT APPLICABLE
 BY COMPUTER
 FROM TWO OR MORE GAGES

LIMITS AND DESCRIPTION OF ZONING METHODS

Direct.

TIDE CORRECTIONS COMPILED BY COMPUTER VERIFIED BY: RGC
 MANUALLY VERIFIED BY: _____

HEIGHT OF NEW ABOVE PLANE OF REFERENCE 1.3

TIDE CORRECTIONS VERIFIED ON SOUNDING PRINTOUT BY: RGC

DATE OF VERIFICATION 17 May 1974

*OR RATIO

EXAMINED & APPROVED

PROJECTION PARAMETERS

POLYCONIC OR MODIFIED TRANSVERSE MERCATOR

1. Project No. OPR-468 4. Requested By Verification Branch
 2. Reg. No. H-9109 5. Ship or Office AMC
 3. Field No. AHP 745-20-1-70 6. Date Required _____

7. Polyconic Modified Transverse Mercator

8. Central Meridian of Projection 88° 04' 00"

9. Survey Scale: 1: 20,000

10. Size of Sheet (check one):

36 x 54 36 x 60 Other Specify 36" x 47"

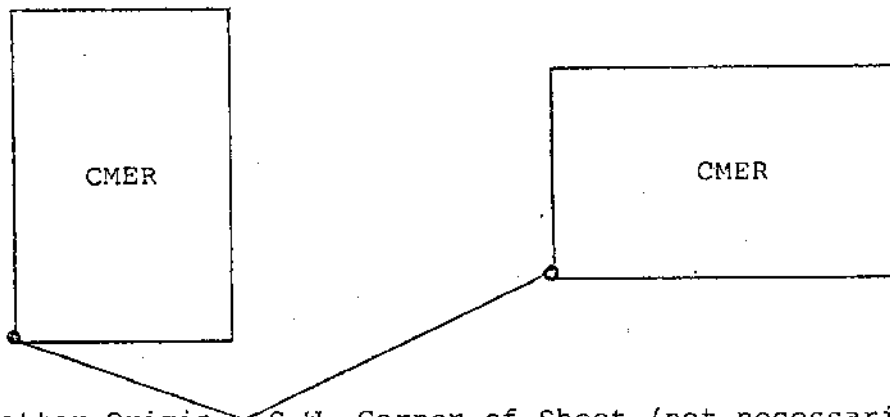
11. Sheet Orientation (check one):

NYX = 1

NYX = \emptyset

N

N



12. Plotter Origin: S.W. Corner of Sheet (not necessarily a grid intersection)

Latitude 30° 07' 00"

Longitude 88° 11' 30"

13. G.P.'s of triangulation and/or signals attached

14. Material Desired: Tracing Paper Mylar

Smooth Sheet Other Specify _____

15. Remarks: _____

VERIFICATION BRANCH
 PLOTTER NOTE TO EDP (AMC)
 SURVEY H-9109) OPR 468
 (745-20-1-70)

This branch has completed the verification of the sounding overlay.

There are

--5-- positions to be inserted

--3-- records to be inserted

--3-- records to be deleted

10-- positions to be changed

123-- soundings to be corrected

70-- soundings to be excessed

53 velocity tab to be changed by EDP- 780 and 790 vess:
 I.D. will have to be reentered.

The MP excess position program is requested for this plot.
 There are about position numbers effected.

Distortion point tick origin shall be 30° 08' 10"
 88° 09' 10"

Sounding orientation is to be normal ~~xxxxxxx~~

Reference station to be plotted is already plotted as a
~~xx~~ signal - see below.

Please use 3-digit signal numbers, attached list shows
 desired signal symbol, color and location of signal numbers.
 Cards have been keypunched for all changes and accompany
 this note.

After all corrections have been applied, please plot the
 smooth sheet with plotter origin same

and size same.

No. 42	TITLE: (AMC)	
Field No. 745-20-1-70	H-9109	
Scale 1:20,000	EDP-AMC	Verified DCC
Projection	EDP-AMC	DCC
Tri. Sta.	EDP-AMC	DCC
Topo Sta.	EDP-AMC	DCC
Hydro. Sta.	EDP-AMC	DCC
Datum. N.A. 1927		
Ref. Sta. Dauphin IS. Water Tank, 1958		
Lat 30° 15' 368.2	m. Adj	
Long 88° 06' 1200.4	XXXXXX	

W. I. Johns
 Chief, Verification

✓

ATLANTIC MARINE CENTER
APPROVAL SHEET
FOR
AUTOMATED SURVEY H- 9109

- A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout has/~~has not~~ been made. A new final sounding printout has/~~has not~~ been made.

Date: Feb 4, 1975

Signed: William L Jones

Title: Chief, Verification Branch

- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic and AMC Manuals. Exceptions are listed in the verifier's report.

Date: _____

Signed: C. O. K. K. K.

Title: Chief, Processing Division

TIDE NOTE FOR HYDROGRAPHIC SHEET

June 3, 1970

~~Nautical Chart Division~~ HFP 745

Plane of reference approved to
~~XXXXXX XXXXXX XXXXXX~~ for Forms 8502

HYDROGRAPHIC SHEET 9109

Locality: Entrance to Mobile Bay

Chief of Party: Year: 1970

Plane of reference is mean low water

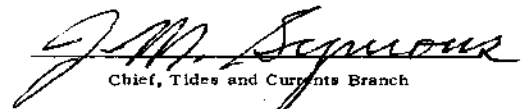
Tide Station Used (Form C&GS-681):

Fort Gaines, Dauphin I., Ala.

Height of Mean High Water above Plane of Reference is as follows:

1.3 feet

Remarks


Chief, Tides and Currents Branch

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-9109 (AHP-745-20-1-70)

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET & PNO	1 ✓	BOAT SHEETS	1
DESCRIPTIVE REPORT	1 ✓	OVERLAYS	5 ✓

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
Accordian ENVELOPES	2		2			
CAHIERS	1 & P/O ✓		1			
VOLUMES	11 ✓					
BOXES			1 ✓			

T-SHEET PRINTS (List)

SPECIAL REPORTS (List)

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				2368
POSITIONS CHECKED		300	178	478
POSITIONS REJECTED			2	2
POSITIONS REVISED		100	2	102
DEPTH SOUNDINGS REVISED		180	14	194
DEPTH SOUNDINGS ERRONEOUSLY SPACED		-	10	10
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		-	-	-
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		12	10	22
JUNCTIONS		0	-	-
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		18	15	33
SPECIAL ADJUSTMENTS			-	-
ALL OTHER WORK		196	151	346
TOTALS		226	176	401
PRE-VERIFICATION BY W. H. Guy, D. C. Galland	BEGINNING DATE 1/1/74	ENDING DATE 9/12/74		
VERIFICATION BY B. J. Stephenson	BEGINNING DATE 10/21/74	ENDING DATE 12/12/74		
REVIEW BY D.E. Neumann	BEGINNING DATE 6-23-75	ENDING DATE 8-04-75		

Census Corp: HK. Myers 5/27/76 4 hrs Carter 2 hrs 6/4/76
U.S. G.P.O. 1972-769-502/459 REG.#6

REGISTRY NO. H-9109

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

REGISTRY NO. H-9109

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE 2/6/80 TIME REQUIRED _____ INITIALS JHE

REMARKS:

H-9109

Items for Future Presurvey Reviews

The following significant features are noted for future investigations:

1. The submerged wrecks at latitude $30^{\circ}12'$, longitude $88^{\circ}01'$ and latitude $30^{\circ}10.9'$, longitude $88^{\circ}03.48'$. ²⁶⁵⁹ ~ 3637
2. The 3-foot sounding located at latitude $30^{\circ}14.54'$, longitude $88^{\circ}03.95'$.
3. The submerged obstructions at latitude $30^{\circ}11.16'$, longitude $88^{\circ}02.98'$ - 3636 carried forward from H-6686 (1941).

<u>Position Index</u>		<u>Bottom Change Index</u>	<u>Use Index</u>	<u>Resurvey Cycle</u>
<u>Lat.</u>	<u>Long.</u>			
300	0881	6	5	10 years
301	0881	6	5	10 years

OFFICE OF MARINE SURVEYS AND MAPS
MARINE SURVEYS DIVISION
MODIFIED HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9109

FIELD NO. 745-20-1-70

Alabama, Gulf of Mexico, Entrance to Mobile Bay

SURVEYED: February 10 - May 7, 1970

SCALE: 1:20,000

PROJECT NO.: OPR-468

SOUNDINGS: DE-723 Depth Recorders
Sounding Pole and Lead Line

CONTROL: Sextant Fixes on
Shore Signals

Chief of Party	B. H. Traugher
Surveyed by	L. C. Gilden
Automated Plot by	Calcomp 618 (AMC)
Verified by	B. J. Stephenson
Reviewed by	D. E. Neumann
	Date: August 4, 1975
Cursory inspection made--survey	G. K. Myers
processing considered complete	May 27, 1976

1. Control and Shoreline

The source of control is adequately described in the Descriptive Report.

The shoreline originates with final reviewed photogrammetric manuscripts T-10761, T-10772, and T-10773 based on 1957 photography and a 1960 field edit. Shoreline in the following areas was revised from hydrographic information to reflect conditions during survey operations:

- A. The shoreline at Mobile Point from T-10773 was revised.
- B. The shoreline at Dauphin Island between longitude $88^{\circ}06'$ and longitude $88^{\circ}08'$ from T-10761 and T-10772 was revised.
- C. The shoreline of Sand Island from T-10772 and T-10773 was revised.
- D. The shoreline in the immediate vicinity of latitude $30^{\circ}11.62'$, longitude $88^{\circ}03.27'$ was added.

2. Hydrography

- A. Depths at crossings are in good agreement.

B. The usual depth curves are adequately delineated. Several dashed curves and the 3-foot depth curve have been added to further emphasize the bottom configuration.

C. The development of bottom configuration and the investigation of least depths are considered adequate.

3. Condition of the Survey

The field work, sounding records, Atlantic Marine Center verification, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual, supplemented by the Instruction Manual for Hydrographic Surveys, except for the following:

A. It was necessary for the reviewer to rescan the fathograms in some areas and select additional soundings to provide a more complete portrayal of the bottom configuration. Also, a few peaks at unequal intervals were added by the reviewer.

B. The tide corrector on day 82 was found to be 1 foot in error. This error does not significantly affect the present hydrography, and therefore, was not corrected during review.

4. Junctions

There are no contemporary surveys that join the present survey. However, a comparison with adjoining charted depths shows good agreement.

5. Comparison with Prior Surveys

A.	H-192	(1847-48)	1:20,000
	H-193	(1848)	1:20,000
	H-261	(1851)	1:20,000
	H-361	(1853)	1:20,000
	H-467	(1855)	1:20,000
	H-2124	(1892)	1:20,000
	H-2939	(1908)	1:20,000
	H-4023	(1917-18)	1:40,000
	H-4171	(1920)	1:80,000
	H-6685	(1941)	1:20,000
	H-6686	(1941)	1:20,000

All or parts of these surveys fall within an area common to the present survey and reviewed surveys H-8526 (1960) and H-8524 (1960). Except as mentioned in part 5B of this review, the above surveys require no further consideration.

B.	H-2124	(1893)	1:20,000
	H-2939	(1908)	1:20,000
	H-4023	(1917-18)	1:20,000
	H-6686	(1941)	1:40,000

These prior surveys taken together cover the entire area of the present survey. Comparison was made in the common area west of latitude $88^{\circ}06.3'$. The remainder of the area was discussed in the reviews of H-8526 (1960) and H-8524 (1960). The comparison revealed good agreement between prior and present depths seaward of the 18-foot depth curve and only a slight displacement of the curves was noted. Pelican Island appearing on H-6686 has disappeared and depths of 4-9 feet presently exist in this area. In addition, some local deepening and shoaling has occurred near shore; however, the character of the bottom has remained basically unchanged.

With the addition of a 12-foot obstruction in latitude $30^{\circ}11.17'$, longitude $88^{\circ}02.98'$ brought forward from H-6686, the present survey is adequate to supersede these prior surveys within the common area. 3.36

C.	H-8526	(1960)	1:10,000
	H-8524	(1960)	1:10,000

The prior surveys taken together fall in a common area of the present survey. A comparison between prior and present depths reveals variable differences of 1-3 feet in lesser depths over most of the area. Along deeper slopes little change has occurred, except in areas affected by maintenance dredging within the Federal Project Channel.

Since 1960 extensive differences in shoreline have occurred in the area of the present survey. The westward end of Sand Island has accreted to a point approximately 2,200 meters northwest of its prior position and the eastward end of the island has eroded about 700 meters northwestward. Mobile Point at the entrance to Mobile Bay has receded as much as 50-60 meters.

Significant bottom changes have primarily occurred in areas near shore. A comparison between prior and present depths reveals a deepening of 1-9 feet due south of Sand Island. On the eastern and western ends of the island variable differences of 4-8 feet are found. Depths have deepened 4-9 feet along Mobile Point and random shoaling and deepening between 4-6 feet has occurred offshore.

Most of the changes in the survey area are attributable to wind and sea conditions, especially after storms.

The present survey is adequate to supersede the prior surveys in the common area.

6. Comparison with Charts 11378 (latest print date September 28, 1974)
11376 (latest print date December 7, 1974)

A. Hydrography

The charted hydrography originates with the previously discussed prior surveys which need no further consideration supplemented by partial application of the boat sheet and verified smooth sheet of the present survey and other sources; i.e., prior and subsequent Corps of Engineers surveys and Notice to Mariners.

Specific mention is made of the following:

(1) The submerged wreck - 12 foot reported charted at latitude 30°10.9', longitude 88°03.43' originating with NM 40/57 was not verified or disproved on the present survey and should be retained on the chart. *Retained 3037*

(2) The sunken wreck, MASTS PA charted at latitude 30°12', longitude 88°01' originating with NM 16/69 was not verified or disproved on the present survey and should be retained on the chart. *Retained 2659*

(3) The 10-foot obstruction charted at latitude 30°11.2', longitude 88°02.95' was erroneously plotted from the boat sheet of the present survey (Bp. 78566) and should be deleted from the chart. *App'd MM 6-3-77*

(4) The 8-foot sounding charted at latitude 30°12.8', longitude 88°06.44' from the boat sheet of the present survey (Bp. 78566) is incorrect and should be deleted from the chart. *18 App'd MM 6-3-77*

(5) The tower charted at latitude 30°11.27', longitude 88°03.02' originates with NM 3/73 subsequent to the date of the present survey. This landmark supersedes the fixed aid appearing on the present survey and should be retained on the chart.

(6) A number of groins in the immediate vicinity of latitude 30°14.58', longitude 88°06.4' have been charted from subsequent 1971 photography (Bp. 81481) and should be retained on the chart.

(7) The following soundings charted subsequent to the date of the present survey from 1970-73 condition and after-dredging Corps of Engineers surveys supersede the survey depths and should be retained on the chart:

<u>Soundings (ft)</u>	<u>Location (lat/long)</u>	<u>Source</u>
✓ 34	30°11.97', 88°02.74'	Bp. 79491
✓ 16	30°11.00', 88°02.65'	Bp. 79491
✓ 41	30°10.63', 88°02.95'	Bp. 86233

<u>Soundings (ft)</u>	<u>Location (lat/long)</u>	<u>Source</u>
✓21	30°09.15', 88°03.25'	Bp. 85231
✓33	30°09.09', 88°03.30'	Bp. 85231
✓42	30°12.81', 88°02.30'	Bp. 86232
✓53	30°13.46', 88°02.11'	Bp. 86232
✓43	30°11.06', 88°02.86'	Bp. 85231

Except as noted above, the present survey is adequate to supersede the charted hydrography within the common area.

B. Topography

The shoreline charted in the area of Dauphin Island originates with 1971 photography subsequent to the date of the present survey and supersedes the present survey information.

C. Controlling Depths

The charted controlling depth note of the Entrance Channel to Mobile Bay is based on data by the U.S. Corps of Engineers subsequent to the date of the present survey information.

D. Aids to Navigation

The charted aids to navigation adequately serve the purpose and mark the features intended within the area of the present survey.

7. Compliance with Instructions

This survey adequately complies with the Project Instructions.

8. Additional Field Work

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

Examined and Approved:

A. J. Patrick
Chief
Marine Surveys Division

R. D. Houtet
Associate Director
Office of Marine Surveys
and Maps

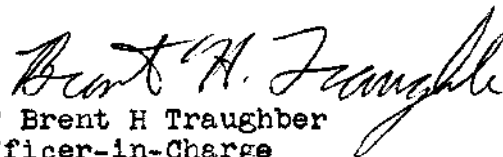
APPROVAL SHEET

Survey H-9109

This survey was accomplished under my overall supervision. The hydrography was done by Lloyd C Gilden, who also wrote the Descriptive Report.

This basic survey is complete and adequate to supersede prior surveys for charting. No substandard work exists.

Approved & Forwarded



LT Brent H Traugber
Officer-in-Charge
Hydrographic Field Party 745

ABSTRACT OF TIDE CORRECTIONS
(See instructions
on reverse side)

U.S. DEPARTMENT OF COMMERCE
NOAA
LIST AND GEODETIC SURVEY

1. HYDRO. SURVEY NO:		2. FIELD NO.		3. SURVEY LOCATION		4. TIME MERIDIAN	
H-9109		745-20-1-70		Entrance to Mobile Bay, Alabama		90 W	
5. NO. DAY YR. OR DAY NO. (Date)	6. POSITION NUMBER	7. TIME		8. TIDE REDUCERS FT.	9. MACHINE ENTRY FMS.	10. TIDE STATION USED (As Form 681)	11. CORRECTION USED ZONE DESIGNATION
		FROM	TO				
2/10/70 41		1100	1400	0.2		Fort Gains, Dauphin Island, Mobile Bay Entrance	
2/11/70 42		1000	1200	0.2			
2/13/70 44		1200	1320	-0.2			
			1450	-0.4			
			1600	-0.6			
2/17/70 48		1000	1200	0.6			
			1430	0.4			
			1545	0.2			
			1600	0.0			
2/18/70 49		1000	1200	0.6			
			1345	0.4			
			1455	0.2			
2/24/70 55		1000	1145	-0.2			
			1300	-0.4			
2/26/70 57		1200	1600	-0.2			
	2/27/70 58		0900	1000	0.2		
				1145	0.0		
3/6/70 65		0900	1315	-0.2			
			1600	-0.4			
			1135	0.2			
			1315	0.0			
			1425	-0.2			
			1600	-0.4			

5. CHECKED

APPROVED

Tides and Currents Branch

6/21/70

INSTRUCTIONS FOR PREPARATION AND SUBMITTAL

The information entered on this form shall be derived from associated tide records and together with those records be forwarded to the Washington Office for administrative approval by Tides and Currents Branch, Marine Data Division, Office of Oceanography.

Instructions by item number.

1. Enter the survey number
2. Enter the field number.
3. Enter the survey locality.
4. Enter the time meridian used.
5. Checked: Enter field approval
Approved: Indicate Washington Office approval.

Instructions by columns (letters):

- a. Enter the day of the year. A coded entry must be identifiable in the Washington Office.
- b. Enter the position number of the sounding line where the reducer is to first apply.
- c. Enter the time in hours and minutes that the reducer listed in "d" is used.
- d. Enter the tide reducer necessary to correct the sounding to the plane of the reference.

The value entered by the field personnel shall be certified by the Washington Office, or corrected and returned to the originator. Only approved information can be entered into the smooth (edited) tape.

- e. Enter the tide value from the previous column (Tide reducer) applied to a tide base of +60.0.

Example:

$$\begin{array}{r} +60.0 \\ - 3.1 \text{ (from column d.)} \\ \hline +56.9 \text{ (into column e.)} \end{array}$$

This summed value shall be punched into the paper tape.

- f. Enter the origin of the tidal record from which the reducers in column "d" were derived. The entry must be identical with the terminology expressed in form 681.
- g. Enter the additional information used to determine the corrections: Ratio of Range, ± time necessary to correct for the gage position, and zone designation.

ABSTRACT OF TIDE CORRECTIONS
(See instruction
n reverse side)

U.S. DEPARTMENT OF COMMERCE
ESSA
AST AND GEODETIC SURVEY

1. HYDRO. SURVEY NO:		2. FIELD NO.		3. SURVEY LOCATION		4. TIME MERIDIAN	
H- 9109		745-20-1-70		Entrance to Mobile Bay, Alabama		90 W	
a. NO. DAY YR. OR DAY NO. (Date)	b. POSITION NUMBER	c. TIME		d. TIDE REDUCERS FT.	e. MACHINE ENTRY FMS. FT.	f. TIDE STATION USED (As Form 681)	g. CORRECTION USED ZONE DESIGNATION
		FROM	TO				
3/9/70 68		1000	1335 1520 1700	-0.4 -0.2 0.0		Fort Gains, Dauphin Island, Mobile Bay Entrance	
3/10/70 69		0800	1055 1310 1600	-0.6 -0.8 -0.6			
3/23/70 82		0900	1300	0.5			
3/25/70 84		0800	0900 1400	-0.6 -0.8			
3/26/70 85		1200	1315 1425 1600 1700	-1.4 -1.2 -1.0 -0.8			
3/27/70 86		1200	1220 1400 1530 1630 1700	-1.0 -1.2 -1.0 -0.8 -0.6			
4/3/70 93		1000	1145 1400 1655 1900	-0.2 -0.4 -0.6 -0.8			
4/6/70 96		0800	1200	-0.8			

NOTE:
-0.5 corrector
applied to 3/23/70
(day 82) by JIM HUBBARD
SEE PRECEDING PAGE
PEN

INSTRUCTIONS FOR PREPARATION AND SUBMITTAL

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4. Enter the time meridian used.
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Approved: Indicate Washington Office approval.

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- c. Enter the time in hours and minutes that the reducer listed in "d" is used.
- d. Enter the tide reducer necessary to correct the sounding to the plane of the reference.

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- e. Enter the tide value from the previous column (Tide reducer) applied to a tide base of +60.0.

Example:

$$\begin{array}{r} +60.0 \\ - 3.1 \text{ (from column d.)} \\ \hline +56.9 \text{ (into column e.)} \end{array}$$

This summed value shall be punched into the paper tape.

- f. Enter the origin of the tidal record from which the reducers in column "d" were derived. The entry must be identical with the terminology expressed in form 681.
- g. Enter the additional information used to determine the corrections: Ratio of Range, ± time necessary to correct for the gage position, and zone designation.

ABSTRACT OF TIDE CORRECTIONS
(See instruction in reverse side)

U.S. DEPARTMENT OF COMMERCE
ESSA
AST AND GEODETIC SURVEY

1. HYDRO. SURVEY NO:		2. FIELD NO.		3. SURVEY LOCATION		4. TIME MERIDIAN	9. CORRECTION USED ZONE DESIGNATION
H- 9109		745-20-1-70		Entrance to Mobile Bay, Alabama			
0. NO. DAY YR. OR DAY NO. (Date)	b. POSITION NUMBER	5. TIME		d. TIDE REDUCERS FT.	8. MACHINE ENTRY FMS.	f. TIDE STATION USED (As Form 681)	
		FROM	TO				
4/7/70 97		0900	1300	-0.8		Fort Gains, Dauphin Island, Mobile Bay Entrance	
			1400	-0.6			
			1450	-0.4			
			1610	-0.2			
			1700	0.0			
4/8/70 98		0800	0830	-0.8			
			1300	-1.0			
4/9/70 99		0800	0900	-1.0			
			1130	-1.2			
			1220	-1.4			
			1400	-1.2			
4/13/70 103		0800	0840	-0.4			
			1000	-0.6			
4/14/70 104		1200	1400	-0.4			
			1700	-0.6			
4/16/70 106		0900	1250	-0.2			
			1500	-0.4			
4/21/70 111		0800	1020	-1.2			
			1215	-1.0			
			1340	-0.8			
			1450	-0.6			
4/24/70 114		0800	1500	-0.4			
			1300	-1.4			

5. CHECKED

APPROVED

and Currents Branch

1/1/1970



INSTRUCTIONS FOR PREPARATION AND SUBMITTAL

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Instructions by item number.

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3. Enter the survey locality.
4. Enter the time meridian used.
5. Checked: Enter field approval
Approved: Indicate Washington Office approval.

Instructions by columns (letters):

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- e. Enter the tide value from the previous column (Tide reducer) applied to a tide base of +60.0.
Example:
$$\begin{array}{r} +60.0 \\ - 3.1 \text{ (from column d.)} \\ \hline +56.9 \text{ (into column e.)} \end{array}$$

This summed value shall be punched into the paper tape.
- f. Enter the origin of the tidal record from which the reducers in column "d" were derived. The entry must be identical with the terminology expressed in form 681.
- g. Enter the additional information used to determine the corrections: Ratio of Range, ± time necessary to correct for the gage position, and zone designation.

ABSTRACT OF TIME CORRECTIONS
(See instruction
n reverse side)

U.S. DEPARTMENT OF COMMERCE
ESSA
LIST AND GEODETIC SURVEY

1. HYDRO. SURVEY NO:		2. FIELD NO.		3. SURVEY LOCATION		4. TIME MERIDIAN	
H. 9109		745-20-1-70		Entrance to Mobile Bay, Alabama		90 W	
5. MO. DAY YR. OR DAY NO. (Date)	6. POSITION NUMBER	7. TIME		8. TIDE REDUCERS FT.	9. MACHINE ENTRY FMS.	10. TIDE STATION USED (As Form 682)	11. CORRECTION USED ZONE DESIGNATION
		FROM	TO				
4/29/70 119		0800	0930	-0.4		Fort Gains, Dauphin Island, Mobile Bay Entrance	
			1100	-0.6			
			1300	-0.8			
			1600	-1.0			
5/5/70 125		0800	1135	-0.8			
			1240	-0.6			
			1335	-0.4			
			1435	-0.2			
5/6/70 126			1538	0.0			
			1633	0.2			
			1700	0.4			
5/7/70 127		0700	0800	-0.6			
			1135	-0.8			
			1200	-0.6			
		0700	0730	-0.6			
			0900	-0.8			
			1100	-1.0			

5. CHECKED

APPROVED

T. R. Rusk

10/1/70



INSTRUCTIONS FOR PREPARATION AND SUBMITTAL

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3. Enter the survey locality.
4. Enter the time meridian used.
5. Checked: Enter field approval
Approved: Indicate Washington Office approval.

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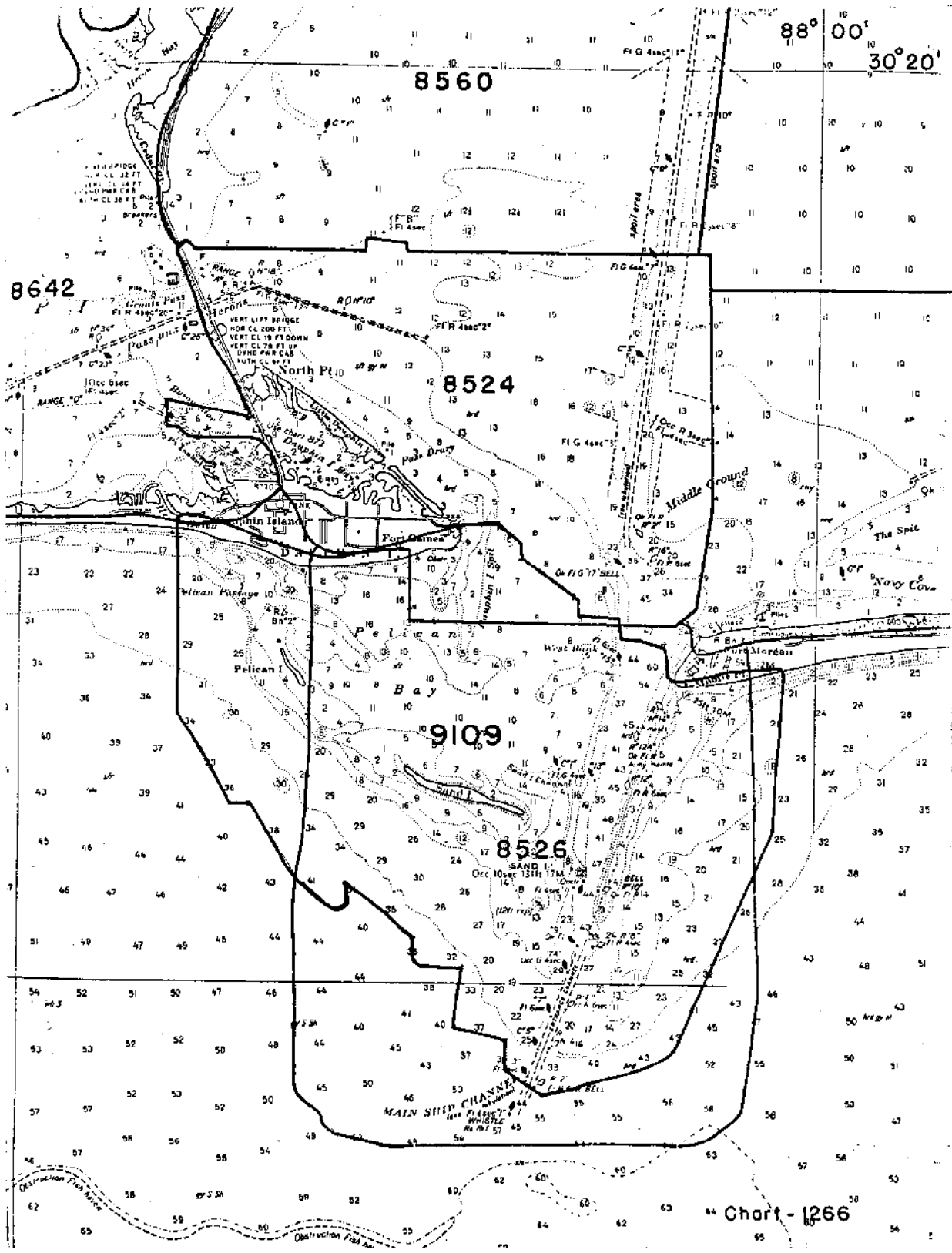
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Example:

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This summed value shall be punched into the paper tape.

- f. Enter the origin of the tidal record from which the reducers in column "d" were derived. The entry must be identical with the terminology expressed in form 681.
- g. Enter the additional information used to determine the corrections: Ratio of Range, ± time necessary to correct for the gage position, and zone designation.



88° 00' 30" 20'

8560

8642

8524

9109

8526

Chart - 1266

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9109

INSTRUCTIONS

- A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
- 1. Enter all information.
- 2. In "Remarks" column cross out words that do not apply.
- 3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
872 (11378)	3/24/75	<i>H. Wylie</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. 11-A <i>EXAM. FOR CRITICAL CORRECTIONS</i>
1266 (11376)	3/24/75	<i>H. Wylie</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. 41 <i>Applied thru ckt. 872 DWG. 11-A</i>
872 (11378)	6-21-77	<i>M. Mahmud</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. 13-B
1266 (11376)	7-22-77	<i>M. Mahmud</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. 43
11360	3/12/85	<i>Caritto</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. 42
11006	3/12/85	<i>Caritto</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. 35 N/C
411	3/12/85	<i>Caritto</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. 59 N/C
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.