9187

Smooth Copy

Diag. Cht. No. 1001-3.

FORM C&GS-504

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

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. PE-80-1-71 Office No. H-9187

LOCALITY

State South Carolina

General locality Coast of S. Carolina

Locality S.E. of Charleston

1971

CHIEF OF PARTY

CDR. Bruce I. Williams

LIBRARY & ARCHIVES

DATE NOV 8 1973

USCOMM-DC 37022-P66

Charts 1001 by M 12-11-73
1110 by M 12-11-73
1111 by M 12-11-73
DS 1007 OW

9187

FORM C&GS-537
(5-66)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.
H-9187

FIELD NO.
PE 80-1-71

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

State SOUTH CAROLINA

General locality ATLANTIC OCEAN

Locality SOUTHEAST OF CHARLESTON

Scale 1:80,000 Date of survey 23 Feb. - 2 apr. 1971

Instructions dated Jan. 15, 1971 Project No. OPR-436-PE-71

Vessel NOAA SHIP PEIRCE

Chief of party CDR. BRUCE I. WILLIAMS

Surveyed by C.E. DAVIS, J.O. ROLLAND, P.S. HUDES, J.L. STOKOE, T.W. RICHARDS
M.R. JOHNSON

Soundings taken by echo sounder, ~~hand lead, pole~~ DE-723 Fathometers

Graphic record scaled by SHIP PERSONNEL

Graphic record checked by SHIP PERSONNEL

Protracted by CALCOMP PLOTTER Automated plot by ATLANTIC MARINE CENTER

Soundings penciled by CALCOMP PLOTTER

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

REMARKS:

Applied to stds 12-4-73
CHB.

USCOMM-DC 37009-P66

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SURVEY PE-80-1-71

NOAA SHIP PEIRCE SCALE 1:80,000

Cdr. Bruce I. Williams CHIEF OF PARTY

A. PROJECT

This survey was accomplished under INSTRUCTIONS, PROJECT OPR-436-PE-71, COAST OF SOUTH CAROLINA AND GEORGIA dated 15 January 1971, CHANGE NO.1 AMENDMENT TO INSTRUCTIONS dated 5 February 1971, and CHANGE NO. 2 AMENDMENT TO INSTRUCTIONS dated 9 February 1971. All previous instructions pertaining to this project are cancelled.

B. AREA SURVEYED

Field work began on 23 February and was completed on 2 April, 1971. The general area is east and southeast of Charleston Harbor out to the 110 fathom curve.

The survey is bounded on the north by surveys H-7188, 1:40,000, 1946-1947, and H-8871, 1:40,000, 1965. It is bounded on the north and east by H-6722, 1:80,000, 1941. It junctions on the western edge with survey H-8932, 1:80,000, 1966. It is bounded on the west by Longitude 79° 35'W and on the east by the 110 fathom curve.

H-9299 (PE 80-1-72) on the S.W

C. SOUNDING VESSEL

All hydrography on this survey was accomplished with the ship PEIRCE.

D. SOUNDING EQUIPMENT

All soundings were observed with Raytheon Fathometer, Model 723, serial number 259. Soundings varied from 10 to 139 fathoms. All soundings were obtained in fathoms. Velocity corrections were obtained by combining leadline comparisons and nansen cast data.

The initial was held at 2 fathoms for all soundings taken.

E. SMOOTH SHEET

All field records will be transmitted to AMC for smooth computer plotting.

F. CONTROL

HI-FIX electronic control on a frequency of 1718.59 kc/s was used for all position information on this survey. Stations were located at ROSE 1971 on Fripps Island and at BEACH 1965 on Folly Island. Station ROSE was pattern one.

HI-FIX calibration was accomplished using three-point sextant fixes. A 1:20,000 calibration sheet covering the outer limits of Charleston Harbor was used for calibrating. The calibration signals used were CHARLESTON LIGHT 1963, ISLE OF PALMS MUNICIPAL WATER TANK 1963, CHARLESTON LIGHTHOUSE 1890, 1963, FOLLY BEACH COAST GUARD LORAN MAST 1956, 1963, and SULLIVANS ISLAND TOWNSHIP COMM WATER TANK 1963.

G. SHORELINE

There is no shoreline to be considered on the survey.

H. CROSSLINES

Crosslines were run at 8% of the total hydrographic mileage. Crosslines were in good agreement generally within one fathom.

I. JUNCTIONS

Junction was made with the surveys listed in section B. Soundings were in good agreement generally to within one fathom.

J. COMPARISON WITH PRIOR SURVEYS

There are no Presurvey Review items or questionable soundings within the limits of this survey.

K. COMPARISON WITH THE CHART

A comparison was made with C&GS Chart 1111, Charleston Light to Cape Kennedy, 13th Edition November 1969.

The majority of the charted soundings north of Latitude 32° 15'N agree with the boat sheet values and none differ by more than four fathoms. South of Latitude 32° 15'N there is considerable dissagreement between the charted soundings and the boat sheet soundings. In this area 20, 30, and 40 fathom soundings are shown to be generally 2 to 5 fathoms shoaler on the boat sheet. Better agreement will be shown after application of the velocity correction to the boat sheet soundings. Fifty fathom and

ABSTRACT OF CORRECTIONS TO DISTANCE MEASUREMENTS

HI-FIX electronic positional control was used throughout this survey. The final calibration corrections were computed on the Hi-speed launch. After calibration #1 only the primary fix was used for final values as the check angle was less than 9 degrees.

Reference is made to the REPORT ON ELECTRONIC CONTROL, OPR-436-PE-71, 1971.

The abstract of HI-FIX corrections and the corrector tape printout follow.

Day #	Time from	Corr. Pat 1	Corr. Pat. 2	Remarks
054	162400	-0.04	-0.04	Calibration #1, Begin cruise # 1
055	032300	-0.04	-0.04	Receiver 207
056	000000	-0.04	-0.04	
	124300	-0.04	+0.96	
	125100	-0.04	-0.04	
057	000000	-0.04	-0.04	
060	150800	+0.08	+0.12	Begin cruise # 2, receiver 202
061	000000	+0.08	+0.12	
062	000000	+0.08	+0.12	
	192700	+0.08	-3.88	
063	165800	+0.08	+0.12	Calibration #2
064	000000	+0.08	+0.12	
	005200	+0.08	+2.12	
	125900	+0.08	+8.12	Calibration #3
068	033300	+0.03	+0.35	Begin cruise # 3, receiver 207
	054900	+0.03	+1.35	
	194100	+0.03	+3.35	
	204500	-1.97	+3.35	
	205300	-1.97	+4.35	
	210100	-1.97	+5.35	
	210900	-1.97	+6.35	
	213100	-1.97	+7.35	
	232900	-6.97	-10.65	
069	000000	-6.97	-10.65	Calibration #4 & 5
	181600	-0.14	+1.37	
	192400	-0.14	+1.07	
	192700	-0.14	+1.37	
	211100	-0.14	+2.37	
070	000000	-0.14	+2.37	
	011200	-0.14	+1.37	
	012000	+1.86	+1.37	
	013600	+0.86	+0.37	
	070600	-0.14	+0.37	Unresolved discrepency between position
	184400	-0.14	-0.63	1194 and 1417 (see lane count 14 at
	200400	-0.14	+0.37	1620 on day 071, lane count shows 48
	225100	-0.14	+1.37	lanes lost whereas a 50 lane correction
	225900	-0.14	+2.37	is being carried)
	233100	-0.14	+3.37	Error is somewhere between lane count
	234700	-0.14	+6.37	13 and 14
	235500	-0.14	+9.37	
	235900	-0.14	+11.37	
071	000000	-0.14	+11.37	
	000800	-0.14	+12.37	
	001600	-0.14	+16.37	
	002400	-0.14	+19.37	
	003200	-0.14	+21.37	
	004000	-0.14	+25.37	
	004800	-0.14	+26.37	
	005800	-0.14	+27.37	
	010400	-0.14	+28.37	

Day #	Time from	Corr. Pat 1	Corr. Pat 2	Remarks
071	064800	-0.14	+29.37	
	075200	-0.14	+31.37	
	080000	-0.14	+32.37	
	080800	-0.14	+33.37	
	081600	-0.14	+35.37	
	082400	-0.14	+37.37	
	083200	-0.14	+38.37	
	084000	-0.14	+39.37	
	084800	-0.14	+41.37	
	085600	-0.14	+43.37	
	090400	-0.14	+45.37	
	091200	-0.14	+46.37	
	092000	-0.14	+47.37	
	093000	-0.14	+50.37	Calibration #6
074	234900	0.00	-0.09	Begin cruise 4, receiver 207
075	000000	0.00	-0.09	
	010400	0.00	-1.09	Calibration #7 & 8
	171000	+0.12	+0.01	
076	111100	0.00	-0.09	
	171200	0.00	-1.09	
	195330	0.00	-0.09	
077	000000	0.00	-0.09	
	033200	-3.00	-0.09	
	223800	-3.00	-1.09	
	234200	-3.00	-0.09	
078	000000	-2.88	+1.01	Receiver 202
	010400	-1.88	+1.01	
	020200	-1.88	+0.01	
082	000800	+0.17	-0.35	Calibration #9 & 10, Begin cruise 5
	045700	-0.83	+9.65	Calibration # 11,
083	045000	+0.21	-0.34	Receiver 207
084	000000	+0.21	-0.34	
085	000000	+0.21	-0.34	
088	095000	-3.07	+1.51	Begin cruise 6, receiver 202
	120500	-6.07	+2.51	
	151500	-7.07	+2.51	
089	153300	-0.01	+0.53	Calibration 12 & 13, receiver 207
090	004000	-0.01	+0.53	
	135100	-4.01	-10.47	
	190500	-5.01	-10.47	

ABSTRACT OF CONSECUTIVE POSITION NUMBERS

DATE -GMT-	DAY #	POSITIONS	REMARKS
23 FEB	054	0001-0026	
24 FEB	055	0027-0174	
25 FEB	056	0175-0339	
26 FEB	057	0340-0414	Trip #1 ends
01 MAR	060	0415-0476	
02 MAR	061	0477-0615	
03 MAR	062	0616-0770	
04 MAR	063	0771-0826	
05 MAR	064	0827-0932	Pos #'s 0933-0945 rejected
		0946-0971	Trip #2 ends
09 MAR	068	0972-1110	
10 MAR	069	1111-1179	
11 MAR	070	1180-1315	
12 MAR	071	1316-1416	Trip #3 ends
15 MAR	074	1417-1418	
16 MAR	075	1419-1452	
17 MAR	076	1453-1537	
18 MAR	077	1538-1712	
19 MAR	078	1713-1729	Trip #4 Ends
23 MAR	082	1731-1757	Pos # 1730 rejected
24 MAR	083	1758-1871	
25 MAR	084	1872-1993	
26 MAR	085	1994-1999	Trip #5 ends
29 MAR	088	2000-2015	
30 MAR	089	2016-2064	
31 MAR	090	2065-2149	Boat sheet complete

ABSTRACT OF HYDROGRAPHIC DATA LOCATED ON THE SURVEY

Position #	Day #	Data
2000	088	fne gy S Sh
2001	088	fne gy S Sh
2002	088	fne gy S Sh
2003	088	crs S Sh
2004	088	fne S Sh
2005	088	fne S Sh
2006	088	fne gn S Sh
2007	088	fne br S Sh
2008	088	fne gy S Sh
2009	088	fne gy S Sh
2010	088	fne gy S Sh
2011	088	fne gy S Sh
2012	088	fne gy S Sh
2013	088	fne br S Sh
2014	088	no sample
2015	088	fne br S Sh
2063	089	fne br S
2064	089	fne br S
2065	090	fne br S
2066	090	gn M S Sh
2067	090	fne gy S
2068	090	fne br S
2069	090	fne gn S
2070	090	fne gn S
2071	090	fne gy S
2072	090	fne gy S
2073	090	fne gy S
2074	090	fne gy S
2075	090	fne gy S
2076	090	fne gy S
2077	090	fne gy S
2078	090	fne gy S
2079	090	fne gy S
2080	090	fne gy S
2081	090	fne br S
2082	090	M
2083	090	fne br S
2084	090	fne br S
2085	090	fne br S
2086	090	M
2087	090	fne br S

Note: All data listed above are bottom samples taken by the ship PEIRCE

CFN3-1
2-18-71

ATLANTIC MARINE CENTER

PROJECTION PARAMETERS

POLYCONIC OR MODIFIED TRANSVERSE MERCATOR

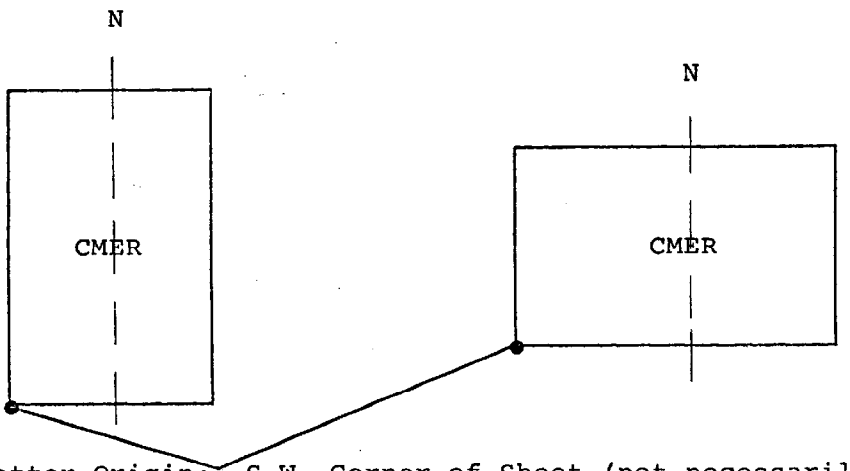
1. Project No. OPR-436-PE-71 ✓ 4. Requested By LT J. Rolland ✓
2. Reg. No. H-9187 5. Ship or Office PEIRCE ✓
3. Field No. PE-80-1-71 ✓ 6. Date Required _____

7. Polyconic [x] ✓ Modified Transverse Mercator [ ]
8. Central Meridian of Projection 79 ✓ ° 15 ✓ ' 00 ✓ "
9. Survey Scale: 1: 80,000 ✓
10. Size of Sheet (check one):

    36 x 54 [ ] 36 x 60 [x] ✓ Other [ ] Specify _____

11. Sheet Orientation (check one):

    NYX = 1 [x] ✓ NYX = Ø [ ]



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

    Latitude N 31 ✓ ° 32 ✓ ' 30 ✓ "

    Longitude W 79 ° 38 ' 00 "

13. G.P.'s of triangulation and/or signals attached [ ]
14. Material Desired: Tracing Paper [ ] Mylar [ ]

    Smooth Sheet [x] Other [ ] Specify _____

15. Remarks: _____

CFN3-2
2-22-71

ATLANTIC MARINE CENTER

ELECTRONIC CONTROL PARAMETERS

1. Project # OPR-436-PE-71 2. Reg. # H-9187 3. Field # PE-80-1-71

4. Type of Control: Hi-Fix (Hi-Fix, Raydist, EPI, etc.)

5. Frequency 1718.590 Kh (for conversion of electronic lanes to meters)

6. Mode of Operation (check one):

Range-Range [x]

Range One (R_1) Station I.D. ROSE 1971

Range Two (R_2) Station I.D. BEACH 1965

Range-Visual [ ]

Lat.	32°	19'	21.894"
Long.	80°	27'	14.800"
Lat.	32°	38'	40.591"
Long.	79°	57'	43.026"

Hyperbolic (3-station) [ ]

Slave One Station I.D. _____

Master Station I.D. _____

Slave Two Station I.D. _____

Hyper-Visual [ ]

Lat.	°	'	"
Long.	°	'	"
Lat.	°	'	"
Long.	°	'	"
Lat.	°	'	"
Long.	°	'	"

7. Location of Survey:

Range-Range [x] Imagine an observer is standing at R_1 Station and looking directly at R_2 (check one):

Survey area is to observer's Right [x] A=Ø

Survey area is to observer's Left [ ] A=1

Hyperbolic [ ] Looking from survey area toward Master Station:

Slave One must be to observer's Left;

Slave Two must be to observer's Right.

8. [ ] This form is submitted as an aid in preparing a boat sheet.

[x] This form applies to all data on this survey.

[ ] This form applies to part of the data on this survey.

Vessel EDP #	From Time	From Day	To Time	To Day	Position Numbers (inclusive)
					to
					to
					to

9. Remarks: _____

ASSIGNMENT OF AIRCRAFT
IN WARNING AREA W-132
6ND-3120-1 (REV. 12/67)

FOR OFFICIAL USE ONLY

DATE
21 - 27 FEB 1971

COMMAND	PURPOSE	OPERATING AREA
MCAS BEAUFORT	AIR TO AIR GUNNERY	16
	NON-FIRING FLIGHT OPERATIONS ABOVE 5,000 FT.	9, 12 & 10A
	NON-FIRING FLIGHT OPERATIONS ABOVE 18,000 FT.	7, 8, 10B, 11, 13 & 14
	NON-FIRING FLIGHT OPERATIONS ABOVE 30,000 FT.	15A, D, G

The above commands are assigned as listed during the period of EXSKED except that no firing exercises will be conducted during the period other commands are cleared to operate as indicated below:

"Daily submarine operations are normally conducted in areas 5A, B, C, D, 6A, B, C, D, E, F, 17A, B, C, D, E, F, G.
All ships operating in the CHASN OPAREA are reminded of the need for accurate navigation particularly those engaged in gunnery exercises, and units operating in the areas adjacent to those assigned for gunnery.
Positive control of aircraft within area W-132 is mandatory."

COMMAND	PURPOSE	AIR SPACE	ALTITUDE	TIME/REMARKS
PATRON SIX TWO ATIA	AIR OPS	W-132	SL - 5,000 FT	211530Z - 211930Z FEB 71

FOR OFFICIAL USE ONLY

ABSTRACT OF STANDARD FORMAT COLUMN HEADINGS

Raw Data Tape

Time	Ind	Sdg	Pos #	Day	Pat 1	Pat 2
000800	3	0280	1731	082	137645	096743

Ind: 3 equals fathoms in units and tenths
Pat 1: 137645 equals 1376.45 lanes

Corrector Tape

162400 7 0110 0001 054 100004 100004

Ind: 7 equals replace original sounding
Pat 1: a 1 in first digit equals negative correction

TC/TI Tape

Time	Ind	TRA	Vel	Day		
162400	0	0001	0001	054	000000	000000

Ind: Not used
TRA: 0001 equals +0.1, 1001 equals -0.1
Vel: 0001 equals velocity table number 1

Velocity Table Tape

Depth	Ind	Corr	Table	Day	Vessel	Survey
000096	0	1002	0001	000	283000	009187

Depth: depth to which correction applies
000096 equals 9.6 fathoms
Ind: not used
Corr: 1002 equals -0.2 fathoms, 0002 equals +0.2 fathoms
Table: Table number
Day: Not used

Tide Tape

Time	Ind	Sdg	Time	Day	Lat.	Long.
000000	0	0108	0000	054	032301	080178

Time: 000000 equals 00 hours 00 minutes 00 seconds
Ind: not used
Sdg: hourly height in feet, 0108 equals 10.8 feet
Time: equals standard meridian of time zone
GMT for Edisto Beach, 75°W for Charleston

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-9187

GEOGRAPHIC NAMES

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	
Atlantic Ocean										1
										2
										3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
					Approved by:					19
					Chas. C. Hamilton					20
					Dec. 13, 1973					21
										22
										23
										24
										25

☆ U.S. G.P.O. 1972-769-565/516 REG.#6

FIG. 19

FORM C&GS-946
(REV. 11-65)
(PRESC. BY HYDROGRAPHIC MANUAL 20-2, 6-94, 7-13)

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

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. H-9187 (PE-80-1-71) OPR 436

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS	1
DESCRIPTIVE REPORT	1	OVERLAYS	1

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	Accordion Folder					
CAHIERS						
VOLUMES	None		2			
BOXES						

T-SHEET PRINTS (List) NA

SPECIAL REPORTS (List)
Electronic Control & Corr. to Echo Soundings Reports

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				2134
POSITIONS CHECKED		173		
POSITIONS REVISED		9		
DEPTH SOUNDINGS REVISED		72		
DEPTH SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS				
JUNCTIONS		6		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		21		
SPECIAL ADJUSTMENTS Pos. Rejection on Day 90		24		
ALL OTHER WORK		157		
TOTALS		208		

	BEGINNING DATE	ENDING DATE
PRE-VERIFICATION BY: Evelyn J. Fields	6/17/73	8/15/73
VERIFICATION BY: Dorothy C. Calland	9/27/73	10/17/73
REVIEW BY	BEGINNING DATE	ENDING DATE

FIG. 18.

DESCRIPTIVE REPORT DATA RECORD			
PART I SMOOTH SHEET PREPARATION		PREPARED BY/OPERATOR	DATE
A. PLOTTER OPERATOR		EDP AMC	
B. DISTORTION MARKS PLOTTED			
C. PROJECTION INTERSECTIONS PLOTTED		EDP AMC	
D. POINTS OF ELECTRONIC CONTROL ARCS PLOTTED		EDP AMC	
E. OVERLAYS PREPARED BY			
1. POSITION NUMBER		EDP AMC	
2. EXCESS SOUNDINGS		EDP AMC	
3. PRELIMINARY SMOOTH PLOT		EDP AMC	
4. LIST OTHERS			
A.			
B.			
F. SOUNDING SELECTION BY		EDP AMC	
G. PLOTTER INPUT	PREPARED	EDP AMC	
H.	CHECKED	EDP AMC	
I. DESCRIPTIVE REPORT ADDENDUMS			
PART II SMOOTH SHEET COMPLETION			
		CARTOGRAPHER	DATE
A. DISTORTION SCALE TICKS IDENTIFIED BY NOTE			
B. PROJECTION INTERSECTIONS VERIFIED BY		Dorothy Calland	9/27/73
C. PROJECTION LINES RULED BY		EDP AMC	9/14/73
D. ELECTRONIC CONTROL ARCS RULED AND LOCATION VERIFIED		EDP AMC	9/14/73
E. OVERLAYS COMPLETED BY			
1. POSITION NUMBER LEADERS ADDED		Evelyn Fields	6/17/73
2. EXCESS SOUNDING OVERLAY COMPARED		Dorothy Calland	9/10/73
3. PRELIMINARY SMOOTH PLOTS COMPARED		Dorothy Calland	10/16/73
4. OTHERS UTILIZED			
A.			
B.			
F. DESCRIPTIVE REPORT ADDENDUM			
G. CONTROL STATIONS VERIFIED		Evelyn Fields	6/20/73
H. POSITIONS MANUALLY PLOTTED		Evelyn Fields	6/20/73
I. MANUAL PLOT VERIFIED		Dorothy Calland	8/15/73
J. SHORELINE APPLIED		None	
K. POSITION DATA (CORRELATION) ADDED		Dorothy Calland	10/11/73
L. NOTES AND DEPTH CURVES ADDED		Dorothy Calland	10/12/73

Fig. 20.

FORM C&GS-946A
(REV. 11-65)
(PRES. BY HYDROGRAPHIC MANUAL, 6-94)

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

VERIFIER'S REPORT

HYDROGRAPHIC SURVEY, H-9187 (PE-80-1-71) OPR-436

INSTRUCTIONS - This form serves to identify items of a check list in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

CL - Check List Items: should be checked as having been completed during the verification processes.

R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R
Note: The verifier should first read the Descriptive Report for general information and problems.		
1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None	X	
2. Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None	X	
3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None	X	
Part II - SHORELINE AND SIGNALS		
4. Source of shoreline signals Remarks Required: -- List all surveys	NA	
a. Give earliest and latest dates of photographs		
b. Field inspection date		
c. Field Edit date		
d. Reviewed-Unreviewed		
5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.	NA	
6. The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None	NA	
7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.	NA	
Part III - JUNCTIONS		
Note: Make a cursory comparison preliminary to inking soundings in area of overlap.		
8. All junctions of contemporary or overlapping sheets were transferred in colored ink and overlapping curves were made identical. Remarks Required: -- None	X	
9. The notation in slanted lettering "JOINS H---- (19)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None	X	

Part III - JUNCTIONS (Continued)	CL	R
10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of Butt junctions and areas which are SUPERSEDED.	X	
Part IV - VOLUMES		
11. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action wa taken and exceptions noted in the volumes. Remarks Required: -- None	NA No Vol	
12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following:	X	
(a) rocks		
(b) line turns		
(c) position values of beginning and ending of lines		
(d) bar check or velocity correctors		
(e) time recording		
(f) notes or markings on fathograms		
(g) was reduction of soundings accurately done?		
(h) was scanning accurate?		
(i) were peaks at uneven intervals missed?		
(j) were stamps completed?		
(k) references to adjacent features		
Part V - PROTRACTING		
13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None	X	
14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None		X
15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None	NA	

USCOMM-DC 36272-P65

Fig. 20 (Cont'd.)
Form 946A (back of form)

Part V - PROTRACTING (Continued)	CL	R
16. The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable replotting or adjustments.	X	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.	X	9/ 20/ 73
Part VI - SOUNDINGS		
18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	X	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	X	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	X	
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	X	
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.	X	
Part VII - CURVES		
23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected.	X	GFT
24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines b. From soundings in orange c. Approximate position of sketched curve is dashed orange d. Approximate position of shoal area not sounded in black dashed Remarks Required: -- None	NA	
25. Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.	X	

Part VIII - AIDS TO NAVIGATION	CL	R
26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.	NA	
27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None	NA	
Part IX - BOATSHEET		
28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None	X	
29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.	NA	
Part X - GENERAL		
30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	X	
31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	X	
32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None	X	
33. The bottom characteristics are adequately shown. Remarks Required: -- None	X	
Part XI - NOTES TO THE REVIEWER 34. Unresolved discrepancies and questionable soundings.	X	
35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.		
36. Supplemental information.		

Verified by Dorothy C. Calland

Date 10-17-73

FORM C&GS-946A (11-65)

USCOMM-DC 36272-P65

Verifier: E. J. Fields June 20,1973

VERIFICATION BRANCH

PLOTTER NOTE TO EDP (AMC)
SURVEY H-9187 (PE-80-1-71)

This branch has completed the verification of the position overlay. There are about seven positional changes and two deletions. The cards for these changes have been punched and accompany this note, however the sign of the pattern two corrector for record numbers 3954-3969 should be changed. to a plus. No cards were made for this correction. All corrections are made in the printout in blue pencil.

After the above corrections have been made please furnish this office with a sounding overlay and an excess overlay.

Evelyn J. Fields

Evelyn J. Fields
Verification Br.

Verifier; Dorothy Calland

Norfolk, Va; AMC
September 6, 1973

VERIFICATION NOTE TO EDP (AMC)
SURVEY H-9187 (PE-80-1-71)
OPR 436

This branch has completed the verification of the preliminary sounding overlay (8/1/73). Day 090 crosslines are not to be plotted on the smooth sheet(position 2088 thru 2149, record 7527 thru 7760). These soundings do not agree with surrounding hydro, no calibration and field notes indicate lane count lost (see abstract under remarks i.e. "Hi-fix stuck before line begins", "Hi-fix may be off","Do not prick or ink" etc.) Bottom samples (positions 2065-2087) of this day were retained. Most of the changes of the preliminary sounding overlay excess soundings (about 155) that touch other soundings or projection lines and plot soundings from those excessed (about 370).

Changes to be made are marked on printout in purple pencil and corrector cards keypunched by this branch accompany this note.

After these changes have been made, please furnish this branch with a smooth sheet, and an excess level 1.

W. L. Jonns

W. L. Jonns
Chief, Verification Branch

VERIFICATION NOTE

H-9175

SOUNDINGS

At the present time a program for editing decimal fathoms is not available. The edit at the North end of the sheet was done manually and, due to the shoalness of the water, some of the decimal fractions were not put in excess even though they touched whole fathom soundings. All can be easily read.

POSITIONS

See the Verifier's Note dated Sept 6, 1973, concerning the rejection of positions on 090 Day.

W.L. Jonns
Chief, Verification Br., AMC

Norfolk, Va.
Nov. 5, 1973

ATLANTIC MARINE CENTER
APPROVAL SHEET
FOR
AUTOMATED SURVEY H-9187

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: Nov. 5, 1973

Signed: W.L. Jonns

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: Nov. 5, 1973

Signed:

Title: Chief, Processing Division

deeper charted soundings are shown to be generally 5 to 20 fathoms shoaler on the boat sheet and in one case a charted 106 fathom sounding is shown on the boat sheet in a 48 fathom area near Latitude 31° 52.5'N and Longitude 79° 22.5'W. Also near Latitude 32° 51'N, Longitude 79° 19'W, a charted 370 fathom sounding was found to be 85 fathoms. It appears that the new 110 fathom curve is displaced approximately 1 mile southeast from its charted position.

106 & 370 fms Not shown on chart 1111 (latest Copy)

L. ADEQUACY OF THE SURVEY

This survey is complete and adequate to supersede prior surveys for charting.

M. AIDS TO NAVIGATION

There are no aids to navigation within the survey area.

N. STATISTICS

Total number of positions	2148
Total nautical miles of sounding line	3027.5
Total square nautical miles surveyed	1025
Nansen casts	3
Bottom samples	41

O. MISCELLANEOUS

H-9187

The survey PE-80-1-71 lies within a naval operations area administered by the OFFICE OF THE COMMANDER, UNITED STATES NAVAL BASE, Charleston, South Carolina. The Charleston Operating Area Coordinator (COAC) assigns ships to various areas for maneuvers and exercises which include mine fields and gunnery. It is recommended that some note or outline of these areas be made on C&GS charts of the area. The Naval Oceanographic Office chart number 11202 contains the limits and numbering scheme for these areas. An example of the weekly Area Assignment Schedule and a part of HO 11202 are included in the appendix to this report.

Coast Pilot 4 Pg. 110 Chart 1239

L 2/2 (73) Authority MCO to delete all references and limits to Navy Operating Areas

NO NOTE will be added

P. RECOMMENDATIONS

It is recommended that the electronic equipment used to control surveys be calibrated each trip before running hydrography.

Q. REFERENCES TO REPORTS

1-Seasons Report, NOAA Ship PEIRCE, 1971
2-REPORT ON ELECTRONIC CONTROL, OPR-436-PE-71
3-REPORT ON CORRECTIONS TO ECHO SOUNDINGS, OPR-436-PE-71

Very Respectfully
John O. Rolland
John O. Rolland
LT., NOAA

Approved and Forwarded
Bruce I. Williams
Bruce I. Williams
CDR., NOAA
Commanding Officer, Ship PEIRCE

APPROVAL SHEET

H-9187

Field work on this survey was under my immediate daily supervision. The boat sheet and all records have been reviewed and approved by me. This survey is complete and adequate to supersede prior surveys for charting.

Bruce I. Williams

Bruce I. Williams
CDR., NOAA
Commanding Officer
NOAA Ship PEIRCE

TIDE NOTE

Not valid. See Tide Note & verification form — AMC

Tidal hourly heights for this survey were obtained from marigrams at the bubbler portable tide gage the PEIRCE established at Edisto Beach, South Carolina (Lat. 32° 30.1'N, Long. 80° 17.8'W).

All times for the gage, hourly height tape, and times of hydrography are on GMT.

The staff reading for the Edisto gage for MLW is 6.2 feet.

The tide tapes are logged in feet and the survey was done in fathoms.

Tide tabulations for the Charleston South Carolina tide gage were requested for the times hydrography was run and no data was available from Edisto Beach. This tape is logged on 75°W time. —> Applied to SS on G.M.T.

See attached memo from Chief, Tides Section for zoning requirements on this survey.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Rockville, Md. 20852

Date: May 18, 1971

Reply to Attn of: C3312-88-NOAAS

Subject: Tide Data

To: Commanding Officer
NOAA Ship PEIRCE

Preliminary determination of MLW at Edisto Beach, S.C., is 6.2 ft. on staff.

Tide tabulations for Charleston, S.C., for requested days from February 22-March 31 are enclosed. For Edisto Beach, use a range factor of 1.1 and -½ hour for time of tide. Note that Charleston data is tabulated in 75°W. time.

Not used gage inop. 4/12 See Tide Note

For the survey area as noted in your memo of April 8, 1971, use a range factor of 0.8 and -1 hour for time of tide with Edisto Beach tabulations. Use 0.9 range factor and -1½ hours with Charleston data.

Martha A. Winn

Martha A. Winn
Chief, Tides Section
Oceanography Division
National Ocean Survey

Enclosures

Norfolk, Virginia
July 13, 1973

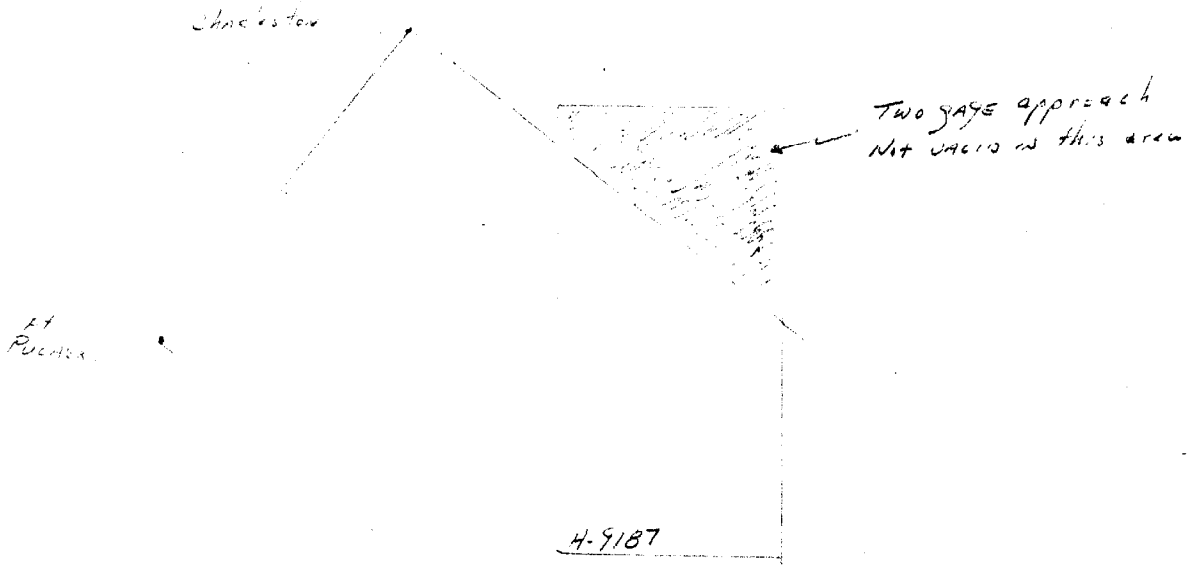
EDP NOTE TO VERIFICATION (AMC)
H-9187 (PE-80-1-71), OPR-436

Enclosed are the hourly heights for Ft. Pulaski, Georgia, and Charleston, South Carolina. The correctors and smooth tides for each gage are given for the first gage for comparison purposes.

After inspection of the location of the gages in respect to the survey, it has been determined that a multiple gage approach would not be valid in this circumstance. Part of the survey lies outside of a perpendicular through the Charleston gage to the line connecting the gages (see sketch).

Consequently, the survey must be zoned into three parts, and either the Ft. Pulaski or Charleston gage applied to the entire survey. Please let us know which gage you wish to use.

Wayne F. Turnacliff
Data Preparation Group



ATLANTIC MARINE CENTER
VERIFICATION OF SMOOTH TIDES

SURVEY H- 9187

PLANE OF REFERENCE MLW OR MLLW
TIME MERIDIAN 00
HEIGHT DATUM ON STAFFS 1. 2.59' 2. 3.31' 3. _____

TIDE STATIONS	POSITION	TYPE GAGE	TIME CORR. H.W.	TIME CORR. L.W.	HEIGHT CORR. * H.W.	HEIGHT CORR. * L.W.
1. Charleston, S. Car.	Ø Y	------	See Tide Note		--------	
2. Ft. Pulaski, Georgia	Ø Y	------	"	"	"	--------
3.	Ø Y					

HOURLY HRIGHTS [*] FROM ROCKVILLE OFFICE [ ] FROM FIELD MARIGRAMS VERIFIED BY: G.F.T.

TIDE ZONING [*] NOT APPLICABLE [*] BY COMPUTER [*] FROM TWO OR MORE GAGES

LIMITS AND DESCRIPTION OF ZONING METHODS

Zone 1, Charleston ---- See Tide Note
Zone 2, Ft. Pulaski ---- " " "
Zone 3, " " Lat. 31-50' to 32-10' -- Range Ratio 0.84'
Zone 4, " " " 31=30 to 31-50 -- " " 0.87

TIDE CORRECTIONS COMPILED [*] BY COMPUTER [ ] MANUALLY VERIFIED BY: B.T.D.
VERIFIED BY: _____

HEIGHT OF MHW ABOVE PLANE OF REFERENCE [ ] Charleston ~~5.6~~ 5.2' RHC
Ft. Pulaski 6.9'

TIDE CORRECTIONS VERIFIED ON SOUNDING PRINTOUT BY: B.T.D.

DATE OF VERIFICATION 7-17-73

*OR RATIO

EXAMINED & APPROVED
W.E. Jonns (for)
Chief, Verification Br., AMC

July 5, 1973

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center

Hourly heights are approved for

Tide Station Used (NOAA form 77-12): Charleston, S.C.
Fort Pulaski, GA

Period: Feb. 23, 1971-April 1971

HYDROGRAPHIC SHEET: H-9187

OPR: 436

Locality: off coast of South Carolina and Georgia

Plane of reference (mean ~~lower~~ low water): Charleston 2.6 ft.
Ft. Pulaski 3.3 ft.

Height of Mean High Water above Plane of Reference is
Charleston 5.2 ft.
Ft. Pulaski 6.9 ft.

Remarks: Zoning: Since the Edisto Beach gage was inoperative, use Charleston and Fort Pulaski with the following corrections:

<u>Charleston, S.C.</u>

Approx lat. 32°38'N-32°30'N
79°38'W-79°15'W

Zone 1

Time	Range
-1 hr. 30 min.	5.4/5.2 = 1.04 ✓

<u>Fort Pulaski, GA</u>

Approx. lat. 32°30'N-32°10'N
long. 79°30'W-79°15'W

Zone 2

Time	Range
-1hr. 30 min.	5.6/6.9 = 0.81 ✓

Increase range ratio 0.2 ft. every 20 minutes lat. south to end of sheet.

NOTE: Multiple gage zoning may be required.

Three [illegible] of [illegible] are [illegible] in this 712, [illegible] [illegible] with Hubbard [illegible] we may choose the [illegible] & best way to apply the tides. WRT

Robert A. Cummings
Chief, Tides Branch

ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS

H-9187

Velocity corrections for PE-80-1-71 were determined by combining leadline comparisons with nansen cast data made three times during the survey. The survey area borders on the Gulf Stream. The area was zoned taking into account the time the hydrography was accomplished, the sea water intake temperatures, and spacing changes observed when entering and leaving the Gulf Stream. The zone descriptions and corresponding information is as follows:

Zone #	Table #	Nansen cast #	Description
1	1	1	generally north of the 20 fathom curve. Dividing line was considered to be 800 lanes on pattern 2.
2	2	3	Generally in the area from 20 to 60 fathoms. This appears to be a transition zone on the edge of the Gulf Stream.
3	3	2	All depths greater than 60 fathoms.

TABLE 1

Depth (to)	Corr.
9.6	-0.2
16.2	0.0
22.8	+0.2
29.4	+0.4
99.9	+0.6

TABLE 2

Depth (to)	Corr.
10.0	-0.2
14.6	0.0
19.2	+0.2
23.8	+0.4
28.4	+0.6
33.0	+0.8
37.5	+1.0
42.2	+1.2
46.7	+1.4
51.3	+1.6
55.8	+1.8
60.4	+2.0
99.9	+2.2

TABLE 3

Depth (to)	Corr.
9.2	-0.2
14.9	0.0
20.5	+0.2
26.2	+0.4
31.8	+0.6
37.4	+0.8
43.1	+1.0
48.8	+1.2
54.5	+1.4
60.1	+1.6
66.0	+1.8
71.5	+2.0
77.2	+2.2
82.8	+2.4
88.4	+2.6
94.0	+2.8
99.8	+3.0
105.2	+3.2
111.0	+3.4
116.6	+3.6
122.2	+3.8
127.9	+4.0
133.5	+4.2
139.1	+4.4
999.9	+4.6

ABSTRACT OF TRA CORRECTORS

The TRA corrector is a combination of various correctors applied to soundings obtained by electronic means and is comprised by the following:

Transducer Draft correction
Phase correction
Settlement & Squat Correction
Initial correction
Instrument error

No draft correction is applied. The draft is incorporated in the velocity correction by use of the leadline comparison.

No phase correction was applied to the TRA.

A settlement & Squat determination run on May 13, 1971 indicated that +0.4 feet should be applied to soundings taken at 2/3 speed and +0.9 feet should be applied to soundings taken at standard speed. Therefore +0.1 fathom is applied in the TRA for all soundings on this survey whether taken at standard or reduced speed.

Fathometer instrument error is incorporated in the leadline comparisons used for velocity corrections.

The initial was maintained at 2 fathoms. An abstract of initial corrections follows.

INITIAL CORRECTIONS SHEET PE-80-1-71

DAY	TIME FROM	CORRECTION
054	162400	0.0
055	032300	0.0
056	000000	0.0
056	210700	-0.1
056	210830	0.0
056	211645	-0.1
056	211805	0.0
056	212205	-0.1
056	212420	0.0
056	212915	-0.1
056	213020	0.0
056	214135	-0.1
056	214205	0.0
056	223645	-0.2
056	223715	0.0
056	231830	-0.1
056	232110	0.0
057	000000	0.0
057	030945	-0.2
057	031130	0.0
057	032215	-0.1
057	032345	0.0
057	032845	-0.1
057	033010	0.0
057	084245	+0.1
057	084600	0.0
057	085400	+0.1
057	085715	0.0
060	150800	0.0
060	161730	+0.1
060	174030	0.0
060	183250	+0.1
060	183330	0.0
060	184640	+0.2
060	184800	0.0
060	191900	-0.1
060	192120	0.0
060	192940	+0.1
060	193340	0.0
061	000000	0.0
061	101215	+0.1
061	101715	0.0
061	122745	-0.1
061	122930	0.0
061	200530	+0.1
061	202200	0.0
061	215800	-0.1

INITIAL CORRECTIONS PE-80-1-71 (CONT'D)

DAY	TIME FROM	CORRECTION
061	220130	0.0
061	222130	-0.1
061	222445	0.0
061	224030	-0.1
061	224830	0.0
062	000000	0.0
062	001100	-0.1
062	001320	0.0
062	013500	-0.1
062	014030	0.0
062	015230	-0.1
062	020805	0.0
062	022300	-0.1
062	022630	0.0
062	024700	-0.1
062	024930	0.0
062	033530	-0.1
062	033700	0.0
062	035930	-0.1
062	040130	0.0
062	043700	-0.1
062	044245	0.0
062	095930	-0.1
062	100330	0.0
062	121100	-0.1
062	121345	0.0
062	132300	-0.1
062	133900	0.0
062	134500	-0.1
062	135300	0.0
062	140100	-0.1
062	140330	0.0
062	142500	-0.1
062	142700	0.0
062	144900	-0.1
062	145300	0.0
062	154600	-0.1
062	154930	0.0
062	162830	-0.1
062	163030	0.0
062	171400	-0.1
062	171630	0.0
062	173730	-0.1
062	173930	0.0
062	190300	-0.1
062	190600	0.0
062	191900	-0.1
062	192100	0.0
062	202900	-0.1
062	203300	0.0

INITIAL CORRECTIONS PE-80-1-71 (CONT'D)

DAY	TIME FROM	CORRECTION
063	000000	0.0
063	171400	-0.1
063	171545	0.0
063	205900	-0.1
063	210500	-0.2
063	210900	0.0
063	212200	-0.1
063	212330	0.0
063	220700	-0.1
063	220900	0.0
064	000000	0.0
064	004400	-0.1
064	004630	0.0
064	005630	+0.2
064	010200	0.0
064	011700	-0.1
064	012200	0.0
064	013630	-0.1
064	014300	0.0
064	014500	-0.1
064	015015	0.0
064	025700	-0.1
064	032500	0.0
064	033300	-0.1
064	033900	0.0
064	034500	-0.1
064	041900	0.0
064	052400	-0.1
064	052715	0.0
068	000000	0.0
068	194700	+0.1
068	201500	0.0
069	000000	0.0
069	211700	-0.1
069	220530	0.0
069	224100	-0.1
069	225300	0.0
070	000000	0.0
070	080400	-0.1
070	084815	0.0
070	174200	-0.1
070	174845	0.0
070	191800	-0.1
070	193400	0.0
070	212100	-0.2
070	220700	0.0
070	225100	-0.1
070	234300	-0.2
071	000000	-0.2
071	005800	0.0

INITIAL CORRECIONS PE-80-1-71 (CONT'D)

DAY	TIME FROM	CORRECTION
071	050000	+0.2
071	050400	0.0
074	000000	0.0
075	000000	0.0
076	000000	0.0
077	000000	0.0
077	094600	-0.2
077	100615	0.0
077	195200	-0.1
077	201800	0.0
077	233400	-0.1
077	235500	0.0
078	000000	0.0
082	000000	0.0
082	000800	-0.1
082	001400	0.0
082	052300	-0.1
082	052515	0.0
083	000000	0.0
083	230200	-0.1
083	233700	0.0
084	000000	0.0
084	105000	-0.1
084	114100	0.0
084	184500	-0.2
084	193500	0.0
084	225200	-0.1
084	232800	0.0
085	000000	0.0
088	000000	0.0
089	000000	0.0
089	190600	-0.1
089	191500	0.0
089	210200	-0.1
089	211100	0.0
089	212400	-0.1
089	212615	0.0
090	000000	0.0
090	140700	-0.1
090	142400	0.0
090	173200	+0.2
090	180215	0.0

Velocity Table Tape
PE-80-1-71

Depth (to)	Corr.	Table #		Vessel	Survey #
000096	0	1002	0001	000 283000	009187
000162	0	0000			
000228	0	0002			
000294	0	0004			
999999	0	0006			
000100	0	1002	0002	000 283000	009187
000146	0	0000			
000192	0	0002			
000238	0	0004			
000284	0	0006			
000330	0	0008			
000375	0	0010			
000422	0	0012			
000467	0	0014			
000513	0	0016			
000558	0	0018			
000604	0	0020			
999999	0	0022			
000092	0	1002	0003	000 283000	009187
000149	0	0000			
000205	0	0002			
000262	0	0004			
000318	0	0006			
000374	0	0008			
000431	0	0010			
000488	0	0012			
000545	0	0014			
000601	0	0016			
000660	0	0018			
000715	0	0020			
000772	0	0022			
000828	0	0024			
000884	0	0026			
000940	0	0028			
000998	0	0030			
001052	0	0032			
001110	0	0034			
001166	0	0036			
001222	0	0038			
001279	0	0040			
001335	0	0042			
001391	0	0044			
999999	0	0046			

TC/TI Tape
OPR-473-PE-71
PE-80-1-71

Time		TRA	Vel Tab	Day #		
162400	0	0001	0001	054	000000	000000
032300	0	0001	0001	055	000000	000000
000000	0	0001	0001	056	000000	000000
044700	0	0001	0002	056	000000	000000
045200	0	0001	0001	056	000000	000000
085300	0	0001	0002	056	000000	000000
092900	0	0001	0001	056	000000	000000
131400	0	0001	0002	056	000000	000000
134400	0	0001	0001	056	000000	000000
171800	0	0001	0002	056	000000	000000
183100	0	0001	0001	056	000000	000000
210700	0	0000				
210830	0	0001				
211645	0	0000				
211805	0	0001				
212205	0	0000				
212420	0	0001				
212915	0	0000				
213020	0	0001				
214135	0	0000				
214205	0	0001				
221700	0	0001	0002	056	000000	000000
223645	0	1001				
223715	0	0001				
224400	0	0001	0001	056	000000	000000
231830	0	0000				
232110	0	0001				
000000	0	0001	0001	057	000000	000000
021100	0	0001	0002	057	000000	000000
030945	0	1001				
031130	0	0001				
032215	0	0000				
032345	0	0001				
032845	0	0000				
033010	0	0001				
040200	0	0001	0001	057	000000	000000
072800	0	0001	0002	057	000000	000000
083800	0	0001	0001	057	000000	000000
084245	0	0002				
084600	0	0001				
085400	0	0002				
085715	0	0001				
150800	0	0001	0001	060	000000	000000
161730	0	0002				
165300	0	0002	0002	060	000000	000000
174030	0	0001	0002	060	000000	000000
183250	0	0002				
183330	0	0001				
184640	0	0003				
184800	0	0001				
191900	0	0000				
192120	0	0001				
192940	0	0002				
193340	0	0001				

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101715 0 0001
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215800 0 0000
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222130 0 0000
222445 0 0001
224030 0 0000
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012300 0 0001 0002 062 000000 000000
013500 0 0000
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015230 0 0000
020805 0 0001
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022630 0 0001
024700 0 0000
024930 0 0001
033530 0 0000
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035930 0 0000
040130 0 0001
043700 0 0000
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122300 0 0000
133400 0 0000 0001 062 000000 000000
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134500 0 0000
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142500 0 0000
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154600 0 0000
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163030 0 0001
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190600 0 0001
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212200 0 0000
212330 0 0001
220700 0 0000
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000000 0 0001 0001 064 000000 000000
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005630 0 0003
010200 0 0001
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033300 0 0000
033900 0 0001
034500 0 0000
041900 0 0001
052400 0 0000
052715 0 0001
033300 0 0001 0001 068 000000 000000
045400 0 0001 0002 068 000000 000000
150400 0 0001 0001 068 000000 000000
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163800 0 0001 0001 068 000000 000000
174800 0 0001 0002 068 000000 000000
194700 0 0002
201500 0 0001
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023900 0 0001 0001 069 000000 000000
184100 0 0001 0002 069 000000 000000
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194600 0 0001 0002 069 000000 000000
211700 0 0000
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224100 0 0000
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071700 0 0001 0002 070 000000 000000
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080400 0 0000
084815 0 0001
174200 0 0000
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050400 0 0001
081900 0 0001 0003 071 000000 000000
090100 0 0001 0002 071 000000 000000
092100 0 0001 0003 071 000000 000000
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234900 0 0001 0001 074 000000 000000
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195900 0 0001 0003 075 000000 000000
111100 0 0001 0002 076 000000 000000
135200 0 0001 0003 076 000000 000000
162500 0 0001 0002 076 000000 000000
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173100 0 0001 0002 076 000000 000000
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033300 0 0001 0001 077 000000 000000
044900 0 0001 0002 077 000000 000000
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100615 0 0001
112700 0 0001 0002 077 000000 000000
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195200 0 0000
200700 0 0000 0002 077 000000 000000
201800 0 0001
233400 0 0000
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060400 0 0001 0003 082 000000 000000
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061500 0 0001 0003 083 000000 000000
112700 0 0001 0002 083 000000 000000
180400 0 0001 0003 083 000000 000000
210100 0 0001 0002 083 000000 000000
230100 0 0001 0003 083 000000 000000
230200 0 0000
233700 0 0001
000000 0 0001 0003 084 000000 000000
055800 0 0001 0002 084 000000 000000
072800 0 0001 0003 084 000000 000000
094800 0 0001 0002 084 000000 000000
105000 0 0000
105700 0 0000 0003 084 000000 000000
114100 0 0001
171900 0 0001 0002 084 000000 000000
182000 0 0001 0003 084 000000 000000
184500 0 1001
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201500 0 0001 0002 084 000000 000000
205600 0 0001 0003 084 000000 000000
223500 0 0001 0002 084 000000 000000
225200 0 0000
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232800 0 0001
000000 0 0001 0003 085 000000 000000
003100 0 0001 0002 085 000000 000000
095000 0 0000 0000 088 000000 000000
153300 0 0001 0001 089 000000 000000
185200 0 0001 0002 089 000000 000000
185600 0 0001 0003 089 000000 000000
190600 0 0000
191500 0 0001
210200 0 0000
211100 0 0001
212400 0 0000
212615 0 0001
230000 0 0000 0000 089 000000 000000
004000 0 0000 0000 090 000000 000000
135100 0 0001 0003 090 000000 000000
140700 0 0000
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151000 0 0001 0002 090 000000 000000
173100 0 0001 0003 090 000000 000000
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180215 0 0001
184200 0 0001 0002 090 000000 000000
201600 0 0001 0001 090 000000 000000
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Corrector Tape
OPR-473-PE-71
PE-80-1-71

Time		Sdg	Pos #	Day #	Pat 1	Pat 2
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164500	7	0120				
032300	7	0112	0027	055	100004	100004
000000	7	0146	0175	056	100004	100004
075900	7	0000				
124300	7	0162	0255	056	100004	000096
125100	7	0198	0256	056	100004	100004
000000	7	0138	0340	057	100004	100004
150800	7	0000	0415	060	000008	000012
000000	7	0290	0477	061	000008	000012
000000	7	0132	0616	062	000008	000012
192700	7	0360	0759	062	000008	100388
165800	7	0136	0771	063	000008	000012
000000	7	0152	0827	064	000008	000012
005200	7	0168	0835	064	000008	000212
125900	7	0190	0946	064	000008	000812
033300	7	0140	0972	068	000003	000035
054900	7	0234	0989	068	000003	000135
194100	7	0360	1092	068	000003	000335
204500	7	0408	1100	068	100197	000335
205300	7	0408	1101	068	100197	000435
210100	7	0400	1102	068	100197	100535
210900	7	0396	1103	068	100197	100635
213100	7	0408	1106	068	100197	100735
232900	7	0408	1107	068	100697	101065
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020000	7	0232				
181600	7	0180	1136	069	100014	000137
192400	7	0188	1145	069	100014	000107
192700	7	0186	1146	069	100014	000137
211100	7	0332	1159	069	100014	000237
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012000	7	0218	1190	070	000186	000137
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070600	7	0192	1194	070	100014	000037
184400	7	0370	1273	070	100014	100063
200400	7	0222	1283	070	100014	000037
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225100	7	0440	1306	070	100014	000137
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002400 7 0530 1319 071 100014 001937
003200 7 0530 1320 071 100014 002137
004000 7 0526 1321 071 100014 002537
004800 7 0518 1322 071 100014 002637
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075200 7 0542 1376 071 100014 003137
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234900 7 0140 1417 074 000000 100009
000000 7 0130 1419 075 000000 100009
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111100 7 0228 1453 076 000000 100009
140500 7 0670
171200 7 0880 1494 076 000000 100109
195330 7 0952 1512 076 000000 100009
000000 7 0412 1538 077 000000 100009
033200 7 0218 1560 077 100300 100009
223800 7 0320 1703 077 100300 100109
234200 7 0590 1711 077 100300 100009
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000800 7 0280 1731 082 000017 100035
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045000 7 0280 1758 083 000021 100034
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173100 7 0000
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190500 7 0410 2129 090 100501 101047
```

CORRECTOR TAPE

✓ TNR OPR 436
PE-80-1-71

IN REPLY ADDRESS NOT THE SIGNER OF THIS LETTER, BUT COMMANDER, U. S. NAVAL BASE, CHARLESTON, S. C.

OFFICE OF THE COMMANDER
UNITED STATES NAVAL BASE
CHARLESTON, S. C.

REFER TO No.
Code NB32
18 FEB 1971

FOR OFFICIAL USE ONLY

From: Charleston Operating Area Coordinator (COAC)
To: Distribution

Subj: Area Assignment Schedule, Charleston Operation Area

Ref: (a) COMEASTSEAFRON 3120.5B of 6 Oct 1967
(b) SOPA (ADMIN) CHASN INST P5400.1C, Chapter 4, Section 4
(c) NWIP 10-1C
(d) CINCLANTFLTINST 03123.1L of 8 Mar 1969

Encl: (1) Subject EXSKED

1. Enclosure (1) is an assignment of Operating Areas to ships and units for the periods indicated and does not constitute authority for movement of units nor for the conduct of exercises and evolutions. Compliance with applicable SOPA and Type Commander Instructions is directed. Reference (a) contains instructions for all ships and units operating in the Charleston Operation Area. Passage to and from exercise areas will be made along the exercise area boundary lines or within the two mile passages of the Charleston Operation Area Extention.

2. Communications will be in accordance with reference (b) and as may be specified by enclosure (1).

3. All notices of cancellation of scheduled events involving services must be made action to servicing activity and information to Charleston Operating Area Coordinator. Request for changes to this schedule, other than cancellation, must be made action to Charleston Operating Area Coordinator and information to the servicing activity.

4. All units receiving services from other commands are invited to send informal comments to the Commanding Officer of those commands as applicable with a copy to Charleston Operating Area Coordinator.

5. The attention of all ships conducting gunnery exercises is invited to Sections 2 and 12 of reference (a)

6. A report of any loss of torpedoes, depth charges or mines will be submitted as soon as possible, including latitude and longitude,

Code NB32
18 FEB 1971

FOR OFFICIAL USE ONLY

to Charleston Operating Area Coordinator and information to Commander Coast Guard District SEVEN and Naval Oceanographic Office, Washington, D. C.

7. Unless otherwise specified, ships will conduct night steaming in the area assigned for the last event of the day until necessary to depart for the area assignment for the first event of the next day. When two or more ships are assigned to the same area, the Officer in Tactical Command should issue instructions for night steaming to insure safety and convenience.

8. Movement Reports are required in accordance with reference (c) and as amplified by reference (d).

J. C. GAMBOA
By direction

DISTRIBUTION:
CINCLANTFLT (2)
COMSERVLANT (1)
COMEASTSEAFRON (1)
COMOPTEVFOR (1)
COMFAIRJAX (2)
COMINELANT (2)
COMSUBFLOT SIX (6)
COMSUBRON FOUR (2)
COMSUBRON EIGHTEEN (2)
COMINERON EIGHT (1)
COMINEDIV FOUR-FOUR (1)
COMINEDIV EIGHT-THREE (1)
COMCRUDESLANT REP CHASN (2)
COMCRUDESLANT REP MAYPORT (5)
COMFLETRAGRU CHASN (2)
MRCC WASH (1)
MRC NORVA (1)
COMNAVSHIPYD CHASN (2)
CO NWS CHASN (2)
CO NAVSCOLSMINEWARFARE (5)
CO FLTRACEN CHASN (2)
CO FLEWEAFAC NAS (1)
CNSYD (Code 298H) (2)
CTG FOUR SIX POINT TWO (1)
SOPA (ADMIN) CHASN (1)
EOD DET MINELANT (1)
FLTCLNOFF MCAS BEAU(1)
20th NORAD FT LEE AFS VA (1)
20th NORAD FT LEE AFS VA (1)
701 RADRON FT FISHER AFS NC (1)
USCGC CAPE MORGAN (1)
USCGC PAPAW (1)
All ships listed on enclosure (1) (2)

EXERCISE SERVICES SCHEDULE AND
OPERATING AREA ASSIGNMENT (EXSKED)
6ND-3120-3(REV. 12 67)

FOR OFFICIAL USE ONLY

DATE
21 - 27 FEB 1971

EVENT	SHIP(S) OR UNIT(S)	EXERCISE(S)	SURFACE AREA	SERVICING UNIT(S)	S 21	M 22	T 23	W 24	T 25	F 26	S 27	REMARKS
1	H. S. PLIAS (M-240)	SHAKEDOWN	2			X	X	X	X			220800R - 251600R FEB 71
2	H.S. ALKION (M-211)	SHAKEDOWN	2			X	X	X	X			220800R - 251600R FEB 71
3	USS ADROIT (MSO-509)	TYT	7A			X #	X	X	X	X		220800R - 261200R FEB 71
4	USS EXPLOIT (MSO-440)	TYT	7A			X	X #	X	X	X		220800R - 261200R FEB 71
5	USS EXULTANT (MSO-441)	MSRFT	7B			X	X	X #				220800R - 242400R FEB 71
6	USS VITAL (MSO-474)	MSRFT	7B			X	X	X				220800R - 242400R FEB 71
7	USS AFFRAY (MSO-511)	REF TRA	3B			X	X	X	X			220800R - 251600R FEB 71
8	USS VIGOR (MSO-473)	ISE	15A,D,G			X	X	X	X #	X		220800R - 261200R FEB 71
9	VENTURE (MSO-496) NFOG	ISE	15A,D,G			X	X	X	X	X #		220800R - 261200R FEB 71

 # - Assigned weathership in accordance with CINCLANTFLT P5400.2 Series. Send reports at the intermediate times of 0300Z, 1500Z when in OPAREA and a special report at any time weather and or sea conditions differ significantly from those forecast.

EXERCISE SERVICES SCHEDULE AND OPERATING AREA ASSIGNMENT (EXSKED)
6ND-3120-3 (REV. 12 67)

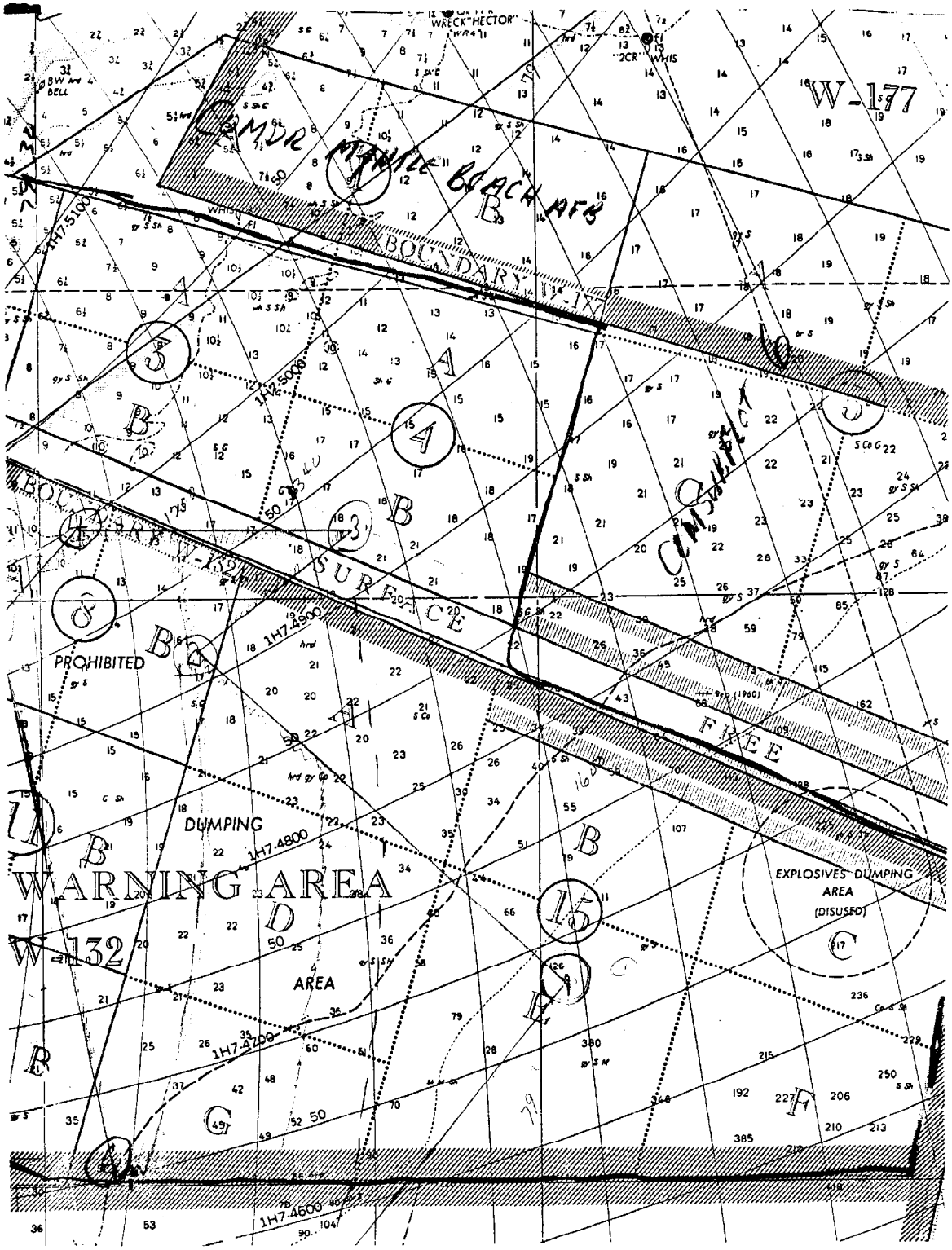
FOR OFFICIAL USE ONLY

DATE
21 - 27 FEB 1971

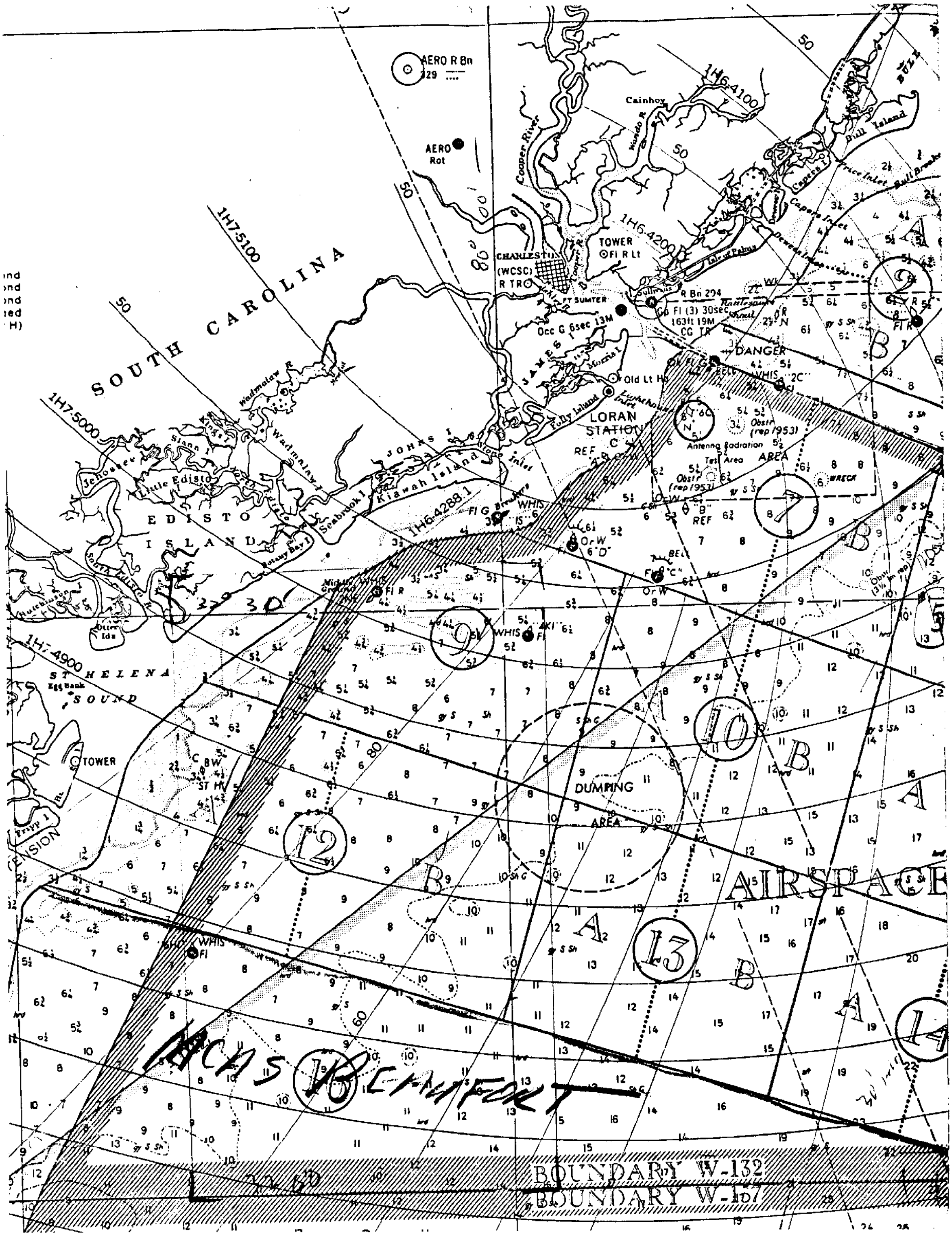
EVENT	SHIP(S) OR UNIT(S)	EXERCISE(S)	SURFACE AREA	SERVICING UNIT(S)	S 21	M 22	T 23	W 24	T 25	F 26	S 27	REMARKS
10	EXULTANT (MSO-441)	MSRFT	15F						X			250000R - 252400R FEB 71
11	USS VITAL (MSO-474)	MSRFT	15F						X			250000R - 252400R Feb 71
12	NOAA PEIRCE (CSS-28)	SURVEY	8A,B 11B 14B			X	X	X	X	X		220800R - 261600R FEB 71
# -	Assigned weathership in accordance with			CINCLANTFLT	5400.2C.	Send reports at the intermediate times of 0300Z, 1500Z when in OPAREA and a special report at any time weather and/or sea conditions differ significantly from those forecast.						

 # - Assigned weathership in accordance with CINCLANTFLT P5400.2 Series. Send reports at the intermediate times of 0300Z, 1500Z when in OPAREA and a special report at any time weather and/or sea conditions differ significantly from those forecast.

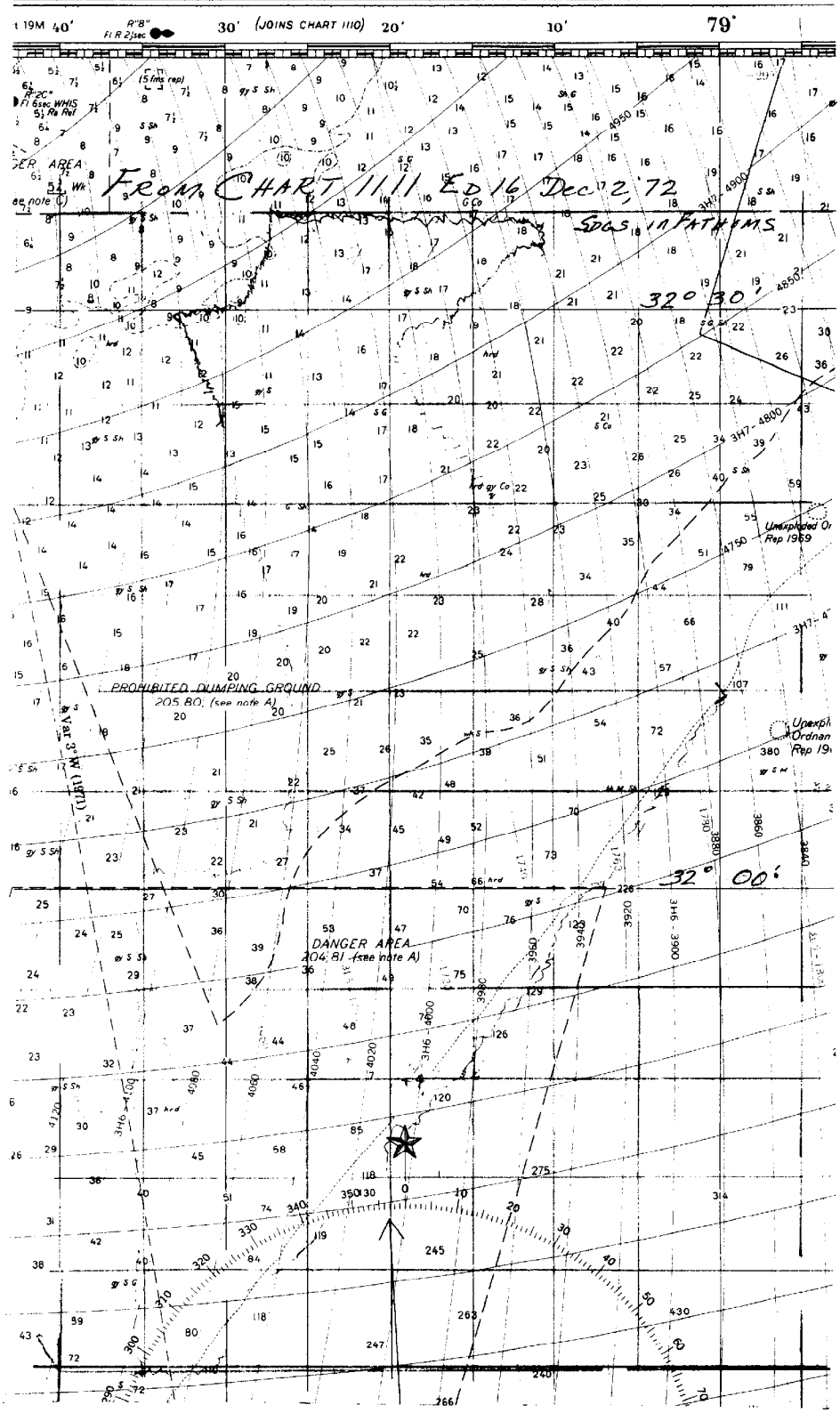
FOR OFFICIAL USE ONLY

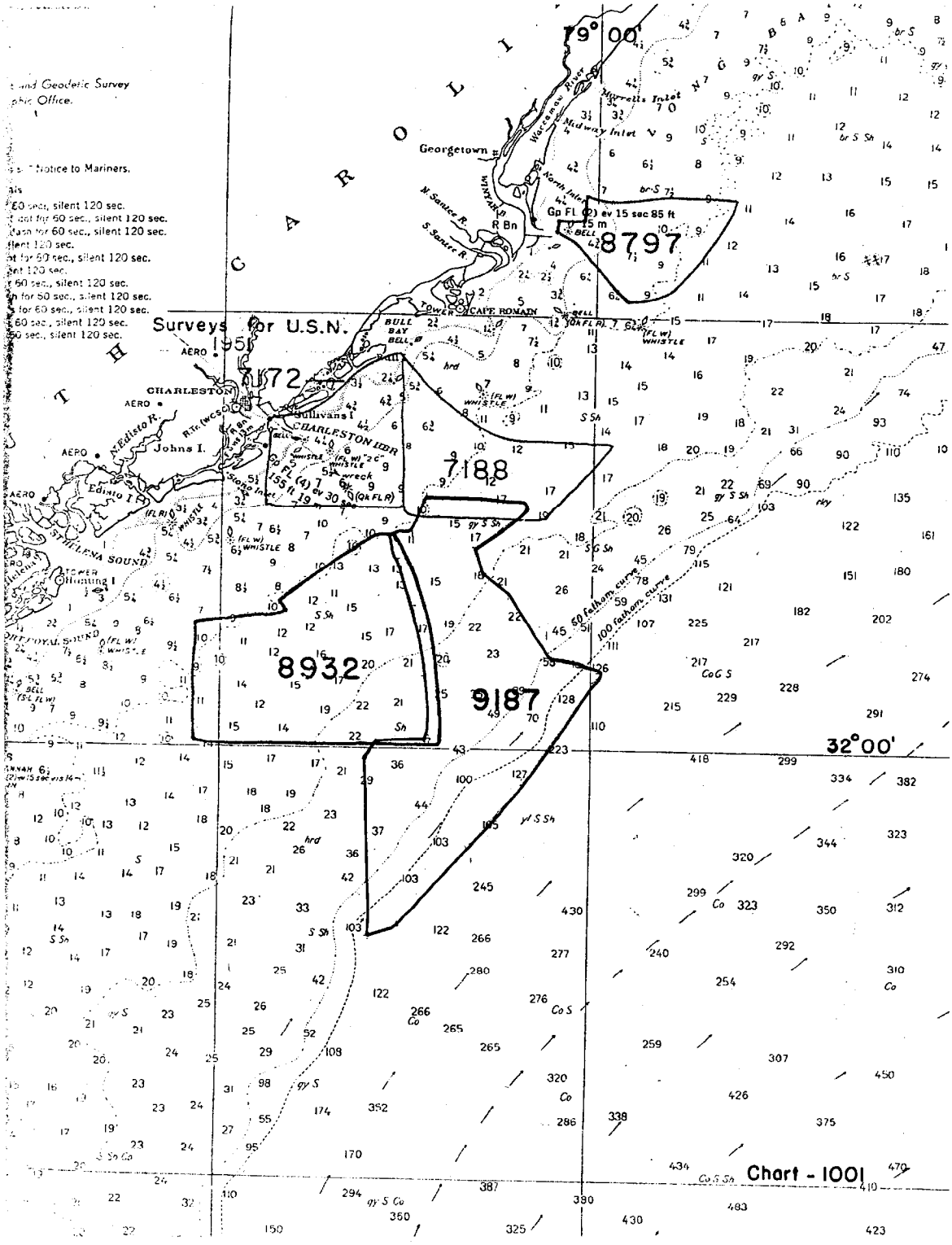

W-177
BOUNDARY LINE
SURFACE
PROHIBITED
DUMPING
AREA
WARNING AREA
W-132
EXPLOSIVES DUMPING
AREA
(DISUSED)
1H7 5100
1H7 5000
1H7 4900
1H7 4800
1H7 4700
1H7 4600
WRECK "HECTOR"
BELL
WHIS
2CR

Characterization of ARCO
C.S. 59710A
New No.
11202



SOUTH CAROLINA
AERO R Bn
AERO Rot
Cooper River
Cainhoy
Bull Island
CHARLESTON
(WCSC)
TOWER
FT SUMTER
JAMES I
Old Lt Ho
Folly Island
LORAN STATION "C"
DANGER
AREA
Antenna Radiation
Test Area
Kiawah Island
Seabrook I
JOHNS I
EDISTO ISLAND
Little Edisto
ST HELENA SOUND
TOWER
1H6-4100
1H6-4200
1H7-5100
1H7-5000
1H7-4900
1H6-4288.1
DUMPING AREA
AIRSPACE
MCAS BEAUFORT
BOUNDARY W-132


30' (JOINS CHART 1110)
20'
10'
79°
From CHART 1111 Ed 16 Dec 2, '72
Soas in Fathoms
32° 30'
32° 00'
PROHIBITED DUMPING GROUND
205 BO. (see note A)
DANGER AREA
204 BI (see note A)
Var 3°W (1971)


79° 00'
32°00'
Georgetown
CHARLESTON
AERO
Surveys for U.S.N.
1951
7172
7188
8797
8932
9187
Chart - 1001

(3-25-63) NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9187 CATEGORY I

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter 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
1110	12-11-73	G Moore	~~Full~~ Part Before ~~After Verification~~ Review Inspection Signed Via
			Drawing No. No Corrs.
1111	12-11-73	G Moore	~~Full~~ Part Before ~~After Verification~~ Review Inspection Signed Via
			Drawing No. No Corr.
1001	12-11-73	G Moore	~~Full~~ Part Before ~~After Verification~~ Review Inspection Signed Via
			Drawing No. None exam thru CHT 1111
1007	12/12/73	D Williams	~~Full~~ Part Before ~~After Verification~~ Review Inspection Signed Via
			Drawing No. 49 x No corr. Exam thru Chts #1110 & 1111
			Adequately
11480 (1111)	7/31/80	Allen Doyle	~~Full Part Before~~ After Verification ~~Review Inspection~~ Signed Via
			Drawing No. 32
~~11009~~	~~6/17/82~~	~~B Fowler~~	
11009	6/17/82	B Fowler	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 48 thru 11480
			~~Adequately~~
11520	11/9/82	Mark Greene	~~Full Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 41 thru 11480
			Adequately
			~~Full Part Before~~ After Verification Review Inspection Signed Via
~~11006~~	~~11-83~~	~~B Fowler~~	Drawing No. ~~49 thru chart 11520~~
411	4-8-92	Ken Fowler	~~Full Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. Adequately Applied - Cat I.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

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