

9633

Diag. Cht. Nos. 1245 & 1246.

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. AHP-10-2-76
Office No. H-9633

LOCALITY

State Florida
General Locality ... Banana River
Locality .. Vicinity of Thousand Islands

11477

1976-77

CHIEF OF PARTY

W. R. Daniels

LIBRARY & ARCHIVES

DATE July 23, 1979

★ U.S. GOV. PRINTING OFFICE: 1976-869-441

AREA 3

charts

11476
11484 Applied
11485 - B Applied

HYDROGRAPHIC TITLE SHEET

H-9633

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.

AHP-10-2-76

State Florida

General locality Banana River

Locality Vicinity of
Thousand Islands

Scale 1:10,000

Date of survey ¹⁷⁷ 25 June 1976 - 1 April 1977

Instructions dated 6 Oct 1975

Project No. OPR-499

Vessel Launches 1277, 1278, and Boston Whaler, 1279

Chief of party LCDR. William Daniels

Surveyed by Personnel, NOAA Launch 1277

Soundings taken by echo sounder, ~~hand lead~~, pole Raytheon fathometers: s/n 1904, 5497, 5458, 5938

Graphic record scaled by Personnel of NOAA Launch 1277

Graphic record checked by Personnel of NOAA Launch 1277

Protracted by N/A

Automated plot by XYNETICS - 1201 PLOTTER (A/C)
~~Complot plotter, PDP-3~~

Verification by R.R. Hill

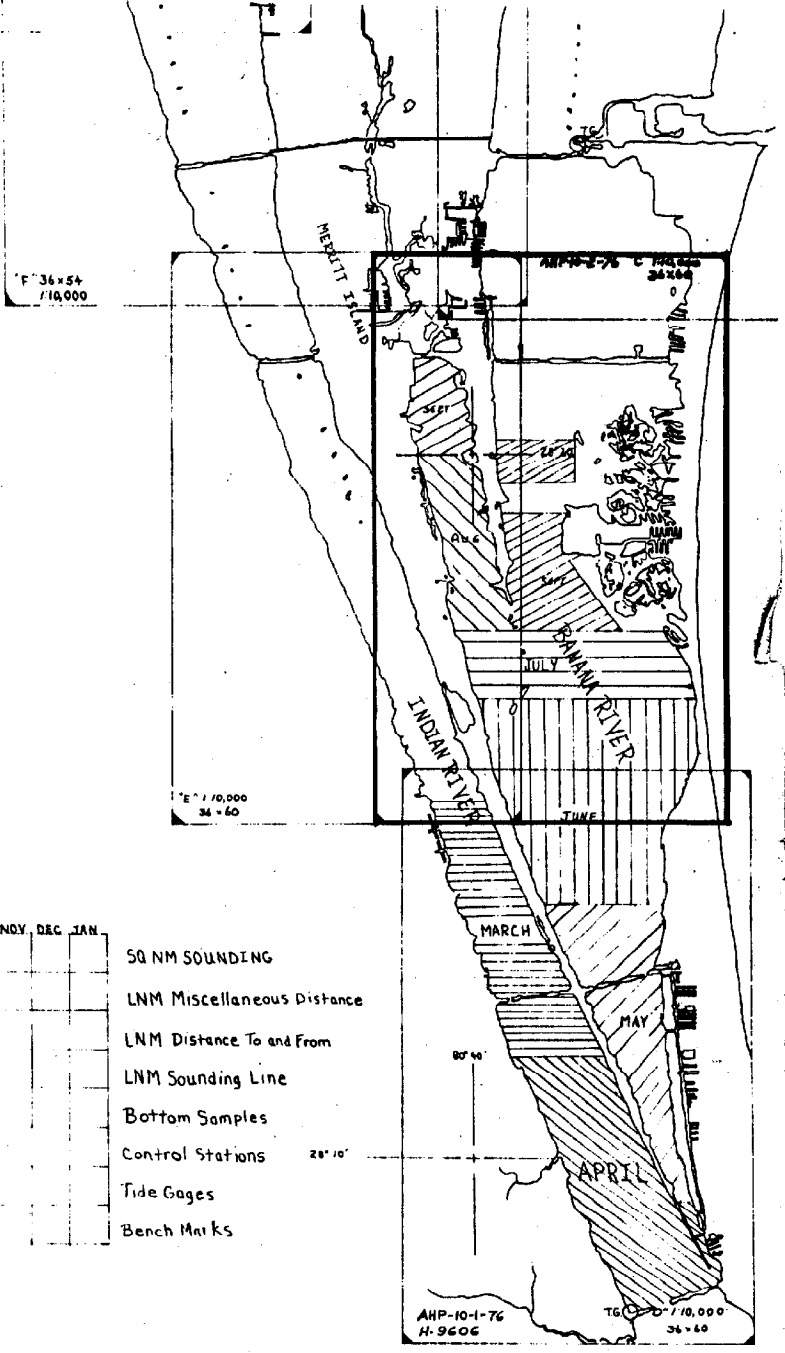
Soundings in ~~fathoms~~ feet at Low Water Datum
~~MLW~~

REMARKS: This survey is complete and adequate to supersede prior surveys.

Time meridian: 0° (GMT)

Applied to stds 6/25/80
[Signature]

(1)



LEGEND

FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.
	3.6	5.2	7.3	5.9	2.9	1.9	2.5				
	33.5	32.5	18.7	5.76	16.8	20.9	12.9				
	117.9	44.1	43.4	6.53	7.1	10.3	5.123				
	91.3	138.9	77.3	15.93	8.1	4.4	5.65	0			
	11	18	8	12	11	11	10				
	11	13	14	14	5	9	9				
3	0	0	0	0	0	0	0				
15	0	0	0	0	0	0	0				

- SQ NM SOUNDING
- LN M Miscellaneous Distance
- LN M Distance To and From
- LN M Sounding Line
- Bottom Samples
- Control Stations 28° 10'
- Tide Gages
- Bench Marks

DESCRIPTIVE REPORT
to accompany
Hydrographic Survey H-9633 (AHP-10-2-76)

Scale: 1:10,000
Lt. Cdr. William R. Daniels

NOAA Launch 1277
Chief of Party

A. PROJECT

This hydrographic survey was conducted in accordance with PROJECT INSTRUCTIONS, OPR-499-AHP-76, Banana and Indian Rivers, Florida, dated 1 October, 1975, with the following supplements to instructions: Change No. 1, dated Jan., 1976.

B. AREA SURVEYED

The area covered by this survey was bounded on the east by the shoreline of Cocoa Beach, Florida, and on the west by the shoreline of Merrit Island, Florida. The southern limit of this survey was latitude 28°15.1'N, with the northern limits at latitude 28°22.5'N. Also included in the area of this survey, is the area of Newfound Harbor on Merrit Island, Florida, as per PROJECT INSTRUCTIONS. The survey commenced on 25 June (J.D. 177), 1976 and ended on 1 April (J.D. 091), 1977.

C. SOUNDING VESSELS

HSB Launches 1277, 1278 and the Boston Whaler (1279) were used to obtain the soundings for this survey. Launch 1277 was equipped with a 723 Raytheon fathometer, 1278 and the Boston Whaler (1279) used a portable 719B Raytheon fathometer, while sounding poles were used in shoal areas by the walking teams (1276), or where the fathometer measurements could not be taken. The poles were measured with a tape before and after the survey and found to be accurate. All vessels were used in obtaining bottom samples.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Sounding equipment operated well during the survey, with a few minor problems. The Raytheon fathometer, model DE-723D serial number 1904, on Launch 1277, operated well in depths greater than 4 ft., but could not adequately sound in the shoaler areas. Pole soundings were usually obtained for soundings between 0 and 4 ft. when using 1277.

Launch 1278 and the Boston Whaler 1279, obtained soundings by using either a sounding pole or the Raytheon fathometer, Model DE-719B. The 719B is especially designed for shallow

water sounding and is extremely portable. On 1278, the 719B was connected to a permanently mounted transducer, capable of obtaining sounding greater than 1.5 ft. When used on the Boston Whaler, the 719B was used with a portable transducer, which when attached to the gunwale by clamps, was capable of sounding as shoal as the machine's initial, 1 foot.

The 719B fathometers worked well, but had several problems. The first unit, s/n 5497, was found to have inconsistent chart speeds. A replacement, used only for one day (17 Jan. J.D. 017., 1977) had the same chart speed problems along with an inadequate trace, therefore the 5497 unit was used until another issue of the same model could be attained. Serial number, 5458, was in use on J.D. 028, and operated well for the remainder of the survey.

Launch 1277 obtained soundings in the deeper open water areas and in the primary navigation channels. Launch 1278 was used in shoaler waters and in the smaller marked canals which existed on housing development boundaries. The Boston Whaler 1279, was used in areas with minimum depth for vessel operation. Walking hydro parties were needed and used in areas too shallow for vessel operation.

Technicians monitored the fathometers continuously during the operations and kept the initial value on the analog trace at zero. In respect to operations involving Launch 1277, fathograms were scanned after hydrography, and the analog trace was compared with the digitized value. When scanning showed that the digitized value was undoubtedly in error, a depth was determined from the analog trace. On Launch 1278 and the Boston Whaler (1279), fix marks were made manually, and depth was determined from the analog trace and recorded in the sounding volumes.

Stylus arm length checks were made routinely with the Raytheon model 723, by switching from scale A to F, and noting the 240 ft. trace. The Raytheon DE-719B models were checked by adjusting the Cal Zero control knob until the calibrate zero line fell directly on the chart paper zero line, and by adjusting the potentiometer R210, along with the speed of sound knob, until the second calibrate pulse falls on the chart paper "calibrate" line, chart paper.

The sounding poles were checked periodically by tape measurements and found to be correct at all times. The Boston Whaler, 1279, surveyed at very slow speeds, thus its settlement and squat was determined to be negligible. Settlement and squat for launches 1277 and 1278 were determined as outlined in section 4.9.4.2 of the ^{Provisional} Revised Hydrographic Manual. The graphs and settlement and squat corrector abstracts are included with this report in the separates following the text.

Daily TRA correctors were determined as outlined in section 4.9.4.1 of the ~~Revised~~ Hydrographic Manual. Daily TRA corrections were changed to reflect gain/loss of fuel load.

E. HYDROGRAPHIC SHEETS

The Transverse Mercator Projection and soundings were plotted by Hydro-Field Party 1277 personnel, using Launch 1277's PDP8/e hydroplot system. This system was used in gathering and plotting the data used in this survey.

The central meridian for the project was 80°38'30"W and the control latitude was 3111000 meters north of latitude zero. Rough plots were made daily and the final plot was constructed after the work was completed. No discernable distortion could be detected in the mylar boatsheet during the period of final plot. All data was transferred to the Atlantic Marine Center for verification.

In addition to the three 1:10,000 scale smooth main scheme field sheets, one 1:10,000 channel overlay is submitted with this report. Velocity correctors, tide correctors, and TC/TI corrections were not applied to the smooth field sheets.

F. CONTROL STATIONS

Control stations Trail, 1976, Ditch, 1976; DBN #9, 1976; Bolt, 1976; Patrick, 1976; New Sail, 1976; Crab, 1976; DBN #11, 1976; New Brady, 1976; Dog, 1976; Sand, 1976; Muck, 1976; Port, 1976; Shack, 1976; Green, 1976; Penneys 2, 1976; Breezy 2, 1976; Ski, 1976; Crust, 1976; Stake 2, 1976; Pool, 1976; Pirate, 1976; DBN #23, 1976; Crooked Tree, 1976; Wall, 1976; Pole, 1976; Stuck, 1976; DBN #100, 1976; Tank 1, 1976; Tank 2, 1976; Mound, 1976; DBN #28, 1976; Hospital 1, 1976; Hospital 2, 1976; Trailer, 1976; Turtle, 1976; DBN #16, 1976; Italian, 1977; Russian, 1977; Limb, 1977; Trap, 1977; Crack, 1977; Caesar, 1977; Drip, 1977; Dry, 1977; Picnic, 1977; Perch, 1977; Ping, 1977; Pong, 1977; Ballon, 1977; and Crop, 1977 were established or verified by Photo Party 61, Coastal Mapping Division, Atlantic Marine Center. Refer to Horizontal Control Report, OPR-499, Banana and Indian Rivers, Florida, for surveying methods, geodetic abstracts and computations.

Control stations Fort (ECC), 1976; Shack (ECC), 1976; Breezy (ECC), 1977; Tree (ECC), 1976; Crooked Tree (ECC), 1977; Algae (ECC), 1976 and Crack (ECC), 1977 were established by launch personnel using a steel tape measure, sextant, and Program RK407. Printouts of RK407 are included in this report.

G. HYDROGRAPHIC POSITION CONTROL

Del Norte positioning equipment, which operates in a Range-Range mode; Range/Azimuth, using a Del Norte unit with a

Wild T-2 and Kern theodolites; and See Boatsheet methods were used to control the hydrography on sheet AHP-10-2-76. Fifty-five control networks were used on this sheet for the control stations used. All shore stations were located at or eccentric to established third-order triangulation, intersection or traverse stations.

Whenever possible, calibration was established twice daily by positioning the launch at known third order traverse or intersection stations, or when necessary, three-point sextant calibrations were used. Del Norte ranges were compared to range calculated by the PDP8/e computer using program RK300 or RK407. Refer to daily raw data printouts or sounding volumes for calibration data, and see appendix for abstract of electronic correctors.

Two different sets of Del Norte equipment were used during this survey. On 4 February 1977, master unit, s/n 159; DMU, s/n 182 and remotes, s/n 180 and 216, were sent in for modification and preventive maintenance at the Del Norte Company. New master and remotes were received on JD 045, 14 February 1977. (DMU, s/n 189; master, s/n 246; and remotes, s/n 245 and 247). On a few occasions during the first several days of use with the new system, calibrations were not taken due to the lack of calibration points or enough visual signals for sextant checks. (This area includes a Thousand Islands vicinity on the east side of the Banana River.) The mean of calibrations for the units used from JD 046-061 were taken immediately before to immediately after the days when calibrations could not be obtained and annotated in the sounding volumes.

A maximum difference of 6 meters between morning and evening calibrations was observed, with the mean standard deviations of calibrations throughout the project ranged between 1.80 and 1.04 meters for the first set of Del Norte equipment. In respect to the second set of equipment, a maximum difference of 4 meters between morning and evening calibrations were observed, and the mean standard deviations of calibrations throughout the time of use involving these units, ranged between 3.58 and 2.12 meters. Calibration distances varied between 4194 and 130 meters. A Del Norte distance correction graph shows a maximum correction of 3.5 meters for calibration distances between 234 and 5000 meters; however, launch personnel observed fluctuating corrections of up to 12 meters predominately for calibration distance between 2500 and 4700 meters, indicating the possibility of spikes in the distance correction graph, local RF interference from Patrick Air Force Base and/or the Eastern Test Range, or varying weather conditions affecting accuracy. In general, the performance of the Del Norte equipment was very good and time and course interpolation of erroneous positions was minimal.

The following is a summary of equipment utilization during the project. Refer to the enclosed signal list for shore station names and locations:

Shore Stations

<u>Signal #</u>	<u>S/N</u>	<u>Julian Days Used</u>
094	180	177, 180, 205, 208-211, 217-219, 233, 224, 264
094	216	189, 190, 191, 243
096	216	177, 180, 191, 194, 208-211, 217-219, 223, 225, 264, 265, 317, 342, 015, 016, 021
100	180	181, 182
102	180	189-191, 194
102	216	181, 182
104	180	265, 342, 015, 016, 021
106	180	211, 243, 317, 348
106	216	321, 007
110	180	321
110	216	211, 243, 348, 324
113	216	024
114	180	007
114	216	229, 322, 324
116	180	024
118	180	225, 229, 322, 324
120	180	007, 010
120	216	225, 010, 011, 025
123	216	259, 260, 261, 024, 025
123	180	025
124	180	259-261, 025
126	180	010, 011, 025
126	216	007
140	216	271, 272, 288
142	180	271, 272
142	216	027, 028
147	180	288
150	180	273, 278, 279, 282, 027, 028, 033
150	216	029
154	216	280, 281, 028, 033
154	180	029
156	216	288
158	216	289
164	216	306, 309
168	180	289
174	180	306, 309
096	245	047, 069
100	245	091
104	247	047, 069, 091

114	245	082
120	247	082
123	245	082
130	247	083
131	245	073
132	245	083
132	247	073
136	247	090
142	245	054, 084
142	247	061
149	247	056
150	247	046, 053, 054, 084, 049
150	245	061
154	245	046, 049, 053, 056, 075
156	245	056
156	247	075
164	245	076, 085, 088, 089
170	245	088
172	247	088
174	247	076, 085, 088, 089
202	245	060
208	245	062
210	247	062
214	247	087
215	247	087
216	245	087
218	247	087
246	245	081
248	245	082
250	245	083, 090

For machine plotting and format clarity purposes, "see boatsheet" fixes were initially hand plotted on mylar field sheets, X and Y coordinates were then scaled off the field sheets using a millimeter scale, converted to Range-Range mode using program RK300, and the calculated ranged edited onto the master tapes. All soundings between these calculated fixes were interpolated by time and course.

In some areas ^{where depths} ~~that~~ were too shallow for the boats, and yet, too large for "see boatsheet" control, a raft, consisting of five inner tubes and a piece of plywood secured to the tubes, was employed to float the electronic positioning equipment. (See photo of the raft, 1976, in the separates following the text.) The Del Norte master was attached to a 2" pipe, that stood approximately 4 ft. off the deck of the raft. With the DMU fastened down, the electronic patterns were manually copied into sounding volumes as was done using the Launch 1278 and the Boston Whaler, 1279.

H. SHORELINE

Shoreline and topographic details were transferred from ortho photo maps TP-00137 thru TP-00140. Shoreline details were verified by field edit in 1971. Minor changes to the shoreline and new construction are sketched in red ink on the smooth field sheets. The following changes were noted as the hydrography was completed:

At the head of Newfound Harbor, a new roadway has cut into the harbor area from 28°21'40.5"N, 080°41'04.5"W to 28°22'03"N, 080°40'57"W. Sounding lines were run up to approximately 10 meters from shore.

The marina located at 28°20'50", 080°39'41" has enlarged their area as indicated on the smooth sheet. ✓

On the east side of the Banana River, from 28°21'04", 080°36'47" to 28°21'08.5", 080°36'56.5" has been filled in, and the shoreline has changed as sketched. Also, north of this point, another area has been filled in; from 28°22'02"N, 080°36'54" to 28°22'05.5", 080°36'51". ✓

The MLW line was not delineated by hydrography due to the very small periodic tidal range (less than 0.2 ft.); however, the 3-foot curve was defined in most areas and the 6-foot curve was defined in all areas except the adjacent canals. ✓

I. CROSSLINES

Crosslines totaled 41.3 nautical miles or 9.9% of the main scheme soundings. All crosslines compared to main scheme, agreed to the nearest foot.

J. JUNCTIONS

As per PROJECT INSTRUCTIONS, junctions with prior surveys were not required. Junctions were made with the contemporary survey AHP-10-1-76, (H-9606) to the south. Soundings agreed to within one foot. ✓

K. COMPARISONS WITH PRIOR SURVEYS

Comparison with the prior U.S. Coast Survey surveys H-1380, 1876-1877, scale 1:20,000 and H-1415b, 1878, scale 1:20,000, shows general agreement within 2 feet, except in a few cases.

Prior survey H-1380 does not show the existence of the two large islands on the west side of the Banana River from 28°16.3'N to 28°16.7'N. Instead a depth of four feet was ob-

tained where one of the islands is now located (28°16.4'N, *Concur* ✓
080°39.3'W.)

At 28°15.9'N, 080°36.8'W, the prior survey H-1380 shows
a depth of 4 feet; at 28°15.2'N, 080°36.8'W and 28°15.7'N
080°36.6'W it has the depths of 2 feet, whereas the *Present* ✓
~~contem-~~
~~porary~~ survey found these areas to have a depth of 9 feet. *Concur*

At the west end of the Minuteman Causeway in Cocoa Beach, ✓
the area has been filled. At the time of the prior survey
H-1380, it had depths of 1-3 ft. *Concur*

The contemporary shoreline shows extensive changes on the
east side of the Banana River, at the head of Newfound Harbor,
and in the northern area of the survey; north of the 520 Cause-
way on both sides of the Banana River.

Presurvey review items were investigated with the follow-
ing results:

- #1. Shoaling reported in or near the marked Banana River
Channel in the following charted locations:
28°17.2', 80°39.2' -- This was found to be the SE *2 to 3 depths*
✓ corner of a shoal extending from George Island; *on present survey*
eastern - 80°39'10"W and the western edge is 80°39'46"W,
with least depths of 2 feet.
Concur - Recommend entire shoal be charted
28°17.59', 80°38.91' -- Shoaling was found to exist *Least*
just east of Daybeacon #12, at the edge of the channel. *depth*
The most northern extension was to 28°17'42", *in area*
✓ 080°39'00". Southern limit was 28°17'32"N, 80°38'54"W *1 ft.*
and bound on the west by the channel (80°39'00"W). *Oyster bar*
Least depths obtained were 2.8 ft. by sounding pole *exists at*
(last sounding out of position #1674 and position *210m*
#1675). *Concur - Recommend shoal be charted* *N.E. of this.*
- 28°18.15', 80°39.17' -- Shoaling was verified at the *least*
edge of the channel on the east side from 28°18'13", *depth*
✓ 80°39'08.5" northward to 28°18'12", 80°39'10". A *3 ft.*
least depth of 2.2 ft. on the fathogram (3.9 ft.
with draft added), was obtained. (The insert between
the 4th and 5th sounding out of position #1859).
3ft least depth - Recommend shoal be charted
- 28°18.63', 80°39.28' -- Shoaling was not found in this
vicinity. Sounding lines were run at 100 meter spacing
for main scheme with 50 meter spacing perpendicular
to the channel which also covered this area. Since a
✓ depth of 6 ft., that equal to the surrounding area,
it is recommended that this report of shoaling should
be deleted from the chart. *Chart depths as shown on*
Concur present survey
JPS

- #6. Visible wreck charted at 28°19.36', 80°39.5'. It is recommended to retain this wreck on the chart at 28°19.36', 80°39.5'. Detached position #2517 is a visible wreck, an old barge, partly on the beach with the end in the water at position #2517. Steel hull, bares 3 ft. *Concur (4)* *See Q.C. Report, Item 3.d.*
- #3. Visible wreck charted a 28°19.8', 80°38.8'. Recommend retention of this wreck at 28°19.87'N, 080°38.7'W. Position #2062 is the wreck with a hull of wood and metal, 35 ft. long, bares 1 ft., sitting in 2.5 ft. of water. *Concur (2)*
- #4. 3-foot reported dangerous shoal, position approximate at 28°19.9', 080°39.19'W. At this location, there was no indication of shoaling, depths were found to be 5.6 ft. However, west of this point a ~~3-foot~~ shoal was located. It is on the east side of the channel with the following limits: southern, 28°19'54"N, northern, 28°19'57"N, eastern 80°39'14"W, and western 80°39'16"W. The least depth obtained by sounding pole was 2 ~~X~~ feet, (3rd sounding out of position #2204.) It is recommended that this shoal be charted. *Concur*
- #5. Submerged stake charted at 28°20.58', 80°39.63'. This iron stake was verified to exist at ~~28°19'21"N, 80°39'48"W~~, ^{28°20'38"}80°39'48"W, baring 6 inches. (Detached position #2562). *iron stake (1)* *Concur*
- Sign, No source, charted at 28°21', 80°39.3' was verified. Position #2242 is the location of wood sign, "Gas and Repairs", bares 7 ft., at 28°20'58", 80°39'08". ~~Retention of this sign on the chart is recommended.~~ *Concur*
Chart sign as shown on the present survey.
- Ruins, No source, charted at 28°19.26', 80°38.63' was not found. This area has been dredged with a depth of 15 ft. Sounding lines were 100 meter main scheme with a 50 meter split in this area. There were no indications of any ruins, thus it is recommended that this be deleted from the chart. *Concur*
- Spoil bank, from L-423(1966) charted at 28°19.0'N, 80°38.75'W, according to sheet 1 of 3 of the presurvey review. This bank was not found. This is a dredged channel area with the depth of 18 ft. in this location. It is recommended that this spoil bank not be placed on the chart. *Concur*

✓ #8. Spoil reported 1966, charted at 28°21.55', 80°38.94'. A shoal extending from the 520 Causeway ^{bridge} northward into the channel, with depths of 5 and 6 feet was verified. ~~The northern extension is to 28°21'50"N, 80°38'56"W, with its eastern edge at 80°38'56"W and its western limit 80°39'01".~~ The least depth found was 4.9 feet (insert between the first and second out of position #2819). ~~Retention of this shoal is recommended.~~ *Chart area as shown on present survey. Concur*
7.F.S. 85

Marker, from L-1793/72, charted at 28°21.8'N, 80°38.35'W, was verified. Detached position #2766 is the 6 inch diameter, wood pile, located at 28°21'43" and 80°38'53". The pile bares 7 feet above the water surface. It is recommended that this pile be ~~kept on the chart.~~ *Concur charted as shown on the present survey.*

✓ #11. Spoil, reported 1966, charted at 28°21.69', 80°37.2'. This location is the center of a shallow area north of the 520 Causeway and just south of a dredge channel. The entire area has a ^{general} depth of 2 feet, which does not appear to be a spoil area. North of this vicinity at the south edge of the channel a spoil area does exist. ✓ The spoil area runs east and west from 80°37'02" to 80°37'19" at latitude 28°21'47". The least depth was found to be 1.0 foot by sounding pole (position #5337 and #5720). This spoil bank is recommended to be charted. *Least depth in area 1/2 ft. - chart area Concur as shown on the present survey.*

✓ #20. Obstructions reported, position approximate, at 28°15.72', 80°39.49' and 28°15.31', 80°39.29'. These obstructions were searched for and not found. The only obstruction in this vicinity was located at 28°15'37"N, 80°39'37"W, in 1.5 feet of water. Position #2938 marks a metal obstruction, 3' X 9", which bares 1.5 ft. (2) It is recommended that these other obstructions be deleted from the chart and this new one be added. *Concur*

✓ #23. Stakes reported, charted at 28°20.0', 80°40.85'. These stakes were not found, however, the area was not completely investigated. This area has a depth of water less than one foot, which made it impossible for a boat to get in this vicinity. The area was observed from approximately 200 meters away, and nothing could be seen. Since the location for these stakes is in such extremely shallow water, it appears that they are not hazards to navigation, plus the fact that they could not be seen, it is recommended that these stakes be removed from the chart. *Concur*
A pipe, approx. 2 ft at LWD, was located 220 meters S.E. of the charted obstr., on the present survey.

- #22. Visible wreck, charted at 28°20.61', 80°40.1'. This wreck ~~was not found~~, however, this location is the center of an area with pipes and piles. Detached position #3319 is a wood 2"x4" ~~pile~~ ^{stake}, bares four feet, ^{at LWD} (28°20'36", 80°40'06"); position #3320 is a 1/2" diameter steel rod, bares 2" ⁽²⁾ (28°20'36", 80°40'07"), and position #3321 is a 2" diameter steel pipe, bares 1/2', (28°20'37", 80°40'07"). The visible wreck is recommended to be deleted and the pipes and pile be added to the chart. Concur ✓
- #27. Shoal reported, depth 1-foot, at 28°20.85', 80°40.3'. ^{Least} A least depth of 1.9 feet was obtained in this area ^{Depth} (position #3982, fifth sounding out). This is at the ^{in area} SW corner of a dredge hole located in a shallow area. ^{is 1 ft.} When compared to the surrounding depths (except for the deep hole), this does not appear to be a shoal. It is recommended that this shoal be deleted and the deep be added. ^{Chart depths as shown on the present survey. 785} Concur
- #24. Spoil reported, 1966, charted at 28°20.8', 80°40.75'. This shoal was searched for and not found. Sounding lines were run at 50 meter spacing with least depths of ~~3~~ ft. Deletion of the shoal from the chart is recommended. ^{Chart depths as shown on the present survey} Concur
- #25. Obstructions reported, charted at 28°21.21', 80°40.28' and 28°21.4', 80°40.76'. The first obstruction was searched for and not found. It is recommended that this one be deleted from the chart. Position #1543 ^{is the location of a 4 ft. x 9 ft. wood and metal obstruction (2) 28°21'24"N, 80°40'45"W} be retained on the chart. ^{Possible remains of dredge scoop.} Concur
- #26. Piles awash, reported, position approximate, at 28°21.89', 80°40.95'. These piles were searched for and not found. Sounding lines were run with 100 meter spacing. The depth of the area was found to be 2 ft. This vicinity was searched on three different days, nothing was found. These piles are recommended to be deleted from the chart. Concur ✓

L. COMPARISON WITH THE CHART

This survey was compared with Chart 11476 (9th ed., Dec. 13/75), scale 1:80,000 and Chart 11485 (12th ed., Aug 17/74), scale 1:40,000. Soundings from these surveys were in general agreement within 3 ft., with a few discrepancies.

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Chart 114~~85~~⁷⁶ has a 1 ft. sounding at 28°18'51"N, 80°40'10"W, where the contemporary ^{survey} has 1/8 ft.; at 28°18'20"N, 80°39'16"W, a 10 ft. sounding in ~~4~~⁵ ft., 28°20'00", 80°38'41", 5 ft. in 1 foot; 28°21'21", 80°40'49", 3 ft. in ~~8~~⁸ feet; 28°20'29", 80°38'13", 2 ft. in 8 ft; 28°21'06", 80°37'01", 5 ft. in 1 foot; 28°21'21", 80°37'18", 7 ft. in 2 ft., and at 28°21'42", 80°38'54", a 3-foot sounding in 8 feet. These discrepancies are caused by either the error when transferring from a 1:80,000 scale chart to a 1:10,000 sheet or because of dredging.

The contemporary survey sounding shows the existence of a number of deep holes:

<u>Latitude</u>	<u>Longitude</u>	<u>Depth of Hole</u>	<u>Previous Depth</u>
28/20/11	80/40/02	23 ft.	1 ft.
28/20/30	80/40/43	13	5
28/20/21	80/40/41	20	5
28/20/53	80/40/15	18	2
28/21/25	80/40/52	29	4
28/21/34	80/40/56	25	3
28/21/48	80/40/36	23	3
28/21/03	80/40/51	14	4
28/22/03	80/39/04	14	5
28/21/11	80/39/13 ^{40/50}	18	5
28/21/12	80/39/13	20	5

PSR items 37-38

Markers reported at 28°17.0'N, 80°36.7'W and 28°17.2'N, 80°36.95'W on Chart 11476 were verified by the detached positions #3066-3069, #3071-3074, #3107-3110, #3567-3568 and #789-790. *Positions 3567-3568 & 789-790*
 The reported stakes at 28°17.5'N, 80°37.3'W were found to be a duck blind in ruins. (Position #5073). Retention of these features is recommended. *Chart duck blind ruins as shown on the present survey*
verify markers, but not their positions 1971 Topo positions are shown on the smooth sheet

M. ADEQUACY OF SURVEY

AHP-10-2-76 (H-9633) is a thorough survey of the area covered by the limits of this boatsheet. The Banana River Channel was developed by using 25 meter spacing sounding lines parallel to the channel's axis, with east-west main scheme lines at 50 meter spacing. Shoal areas were developed by using NOS Launch 1278, the Boston Whaler 1279, and walking teams (1276).

This survey is complete and adequate to supersede prior surveys for charting. All fathogram field survey records were scanned and checked for peaks and deeps, and appropriate changes were made to the original records where necessary.

N. AIDS TO NAVIGATION

Comparison of the aids to navigation to the Light List, Volume II, 1976, showed the following discrepancies. Daybeacons 12, 14, 24 and 28 were described to be "pointers on piles". At the time of this survey, these were found to be red triangles. Daybeacon 17 and 25 were found to be black squares instead of a pointer on pile and daymark on pile, ~~respectfully, respectively.~~ *Dbn 17 is black with a yellow border*
Dbn 25 is black with a green border

Several of the daybeacons marking the Banana River Channel do not adequately mark the channel. Daybeacon #14, 15, 21 and 22 all were found to be actually in the center of the channel and not on the edge. It is suggested that the following daybeacons be moved from their current location to the following positions:

<u>DBN</u>	<u>Latitude</u>	<u>Longitude</u>
14	28/17/42	80/39/00
15	28/18/10	80/39/12
21	28/18/56	80/39/13
22	28/19/08	80/39/10
27	28/21/00	80/39/06
28	28/21/51	80/38/56

It is also recommended that additional markers be established at the following locations: 28°17'54", 80°39'03", marking a *Several* 3-ft. shoal; 28°18'16", 80°39'09", marking a 2-ft. shoal oyster *of these* bed; establish a maintained daybeacon where a private marker *shoals are* (#18) now exists at 28°18'32.5", 80°39'12", marking a 2-ft. *apparently* shoal; 28°19'00", 80°39'09", at a 2-ft. *spoil banks* shoal; 28°19'36", 80°39'10.5", marking a 3-ft. *as such are* shoal; 28°20'28", 80°39'11", *subject to* marking a 3-ft. shoal and at 28°21'33", 80°38'50", marking a *continual* 3-ft. shoal. The NOAA Form 76-40 Landmarks for Charts, include *change* only, *day beacons* these maintained by the Coast Guard, are included in the *in size* separates following the text. *See RC Report regarding landmarks.* *position & depth*

Throughout the Thousand Island area, both north and south of the Minuteman Causeway, are many private daymarkers defining the maze of narrow canals that were dredged in these areas. *See RC Report* Due to the amount of time available, it was impossible to establish the positions for these or stay up with the changes due to additions and deletions of the markers. It is recommended that the Public Works Dept., City of Cocoa Beach, be contacted for the location and status of these markers. The City is responsible for the maintenance of the markers. *quality not quantity?*

O. STATISTICS

This survey contains 510.7 nautical miles of sounding lines covering 23.2 square nautical miles. This data was obtained by the following launches and walking teams:

<u>Vessel</u>	<u>Nautical Miles</u>	<u># Positions</u>	<u># B.S.</u>
1277	332.5	2,814	55
1278	92.2	1,428	9
1279	72.7	815	7
1276	13.3	465	4

Refer to the Abstract of Positions in the separates following the text for further information concerning statistics.

P. MISCELLANEOUS

Velocity corrections have not been applied to soundings on the field sheets due to the large number of pole soundings and the inability to use TC/TI tapes with the offline plot RK211. Predicted tides were not applied due to a periodic tidal range of less than 0.2 feet, however launch personnel observed non-periodic water level changes of up to 1.5 feet within the project area.

Electronic positioning lattices were not drawn on the smooth field sheets due to the number of different networks used. There were approximately fifty-five different positioning networks used on this survey.

The sounding volumes were not used for only one vessel per volume, nor were days of hydrography kept in consecutive order in the volumes. Vessels were changed, on several occasions, in the middle of the day, depending on the area being surveyed at that time, with the data from both vessels recorded in the same volume. If this had not been the case, three times as many sounding volumes would have been needed. It was also impractical to carry all these different volumes every day. An index to the particular vessel (s) which were used on each day and the positions obtained by the vessel, can be found on page 2 of each sounding volume (except Vol. 1, which is an index to all detached positions). Usually the volumes were kept in the office for processing the day immediately following those in which hydrography was obtained. Different volumes were rotated every day, in order to keep processing up to date, subsequently, days were not kept in chronological order. *Day 343 was not recorded in a sounding volume.*

Accordian files were kept such that days of hydrography are in consecutive order of all vessels used and not with separate accordian files for the individual vessels.

Surveying the extreme shoal area located at latitude 28°20'20", longitude 80°38'45" northeast to latitude 28°21'20", longitude 80°38'00" was obtained by walking the area, using a sounding pole for depths, and floating the electronic positioning equipment on a raft (1276). Refer to the picture in the separates following the text for more information on 1276. North-south lines were walked with the aid of a hand compass and spacing obtained by pacing off the distances (approximately 100 paces between soundings.)

"See Boatsheet" methods were used as control for positioning in the small channels and canals on this survey. For machine plotting and format clarity, positions were plotted on paper T-sheets while in the field, transferred to mylar boatsheets where X and Y values were scaled off and converted to electronic patterns using program RK300.

During the time of hydrography on AHP-10-2-76, the following information was obtained concerning the physical features and the area covered by the survey:

Clearance for the bridge at the head of Newfound Harbor (the 520 Causeway) was 7.2 feet on JD 025 at 1930 (z). The clearance for the 520 Causeway bridge on the west side of the Banana River, on JD 091 at 1700(z) was 3.5 feet, and a clearance of 3.5 feet was also obtained for the east side bridge on JD 084, 1850z.

A cable crossing was noted at the head of Newfound Harbor at latitude 28°21'26"N from longitude 80°40'40" west to 80°40'51".
CABLE WAS TRANSFERRED TO SMOOTH SHEET FROM THE ORIGINAL BOATSHEET

A ski course exists just south of the 520 Causeway in Newfound Harbor, from 28°21'24", 80°40'30" west to 28°21'42", 80°40'51" south to 28°21'28", 80°40'45", just west of Kiwanis Island, at the head of Newfound Harbor.

The shoal area just west of the Cape Canaveral Hospital and just north of the 520 Causeway in the Banana River, was either awash or above water at the time of hydro, consequently, no soundings were obtained in this area.
*where is the hospital?
noted as shallow on the smooth sheet*

An area foul with oysters was located at latitude 28°21'59"N, longitude 80°37'06"W.

The sand bar just north of the 520 Causeway from 28°21'31", 80°37'00" west to 28°21'30.5", 80°37'14" was mostly awash at the time of survey. One sounding line was able to pass through it at the only break in the bar. - *Shoreline here was transferred from TP-00138 (1969-71) & was revised in red ink to show the passage indicated by the lone sounding line addressed above.*

FPS

Another sand bar was located at 28°20'19", 80°37'05" and is sketched on the boatsheet in red ink as it appeared at the time of hydrography. - Shown in black ink on the smooth sheet

Q. RECOMMENDATIONS

Due to consumer enthusiasm and desire for a larger scale chart of the Banana River, it is recommended that this project be given the highest priority for verification and the earliest possible edition date for chart production.

R. AUTOMATED DATA PROCESSING

Data acquisition and processing was accomplished as per instructions in the Provisional Hydro Manual and the AMC manual. Sounding and position data were obtained by both the Hydrolog/hydroplot system utilizing computer program RK111 and manually recording in sounding volumes with all data transferred to master tapes using a manual logger, AM602 (Elinore) and RK330 (Reformat and Data Check).

For each master tape there is a corresponding corrector tape which includes the vessel's TRA and the Del Norte daily electronic correctors, along with all depth corrections including missed depths, peaks, deeps and time and course corrections for Del Norte busts.

Computer programs used during this survey are included in the following list of programs:

<u>Program</u>	<u>Name</u>	<u>Version Date</u>
RK111	Range-Range Real Time Hydroplot	1/30/76
RK201	Grid, Signal, & Lattice Plot	4/18/75
RK211	Range-Range Non Real Time Plot	1/15/76
RK212	Visual Station Table Load	4/01/74
RK216	Range/Azimuth Non Real Time Plot	2/05/76
RK300	Utility	2/05/76
RK330	Reformat and Data Check	5/04/76
PM360	Electronic Corrector Abstract	3/21/74
AM401	Mercator Conversion	4/01/73
RK407	Geodetic Direct/Inverse	10/23/75
AM602	Elinore	5/21/75

Several Problems were encountered when using the Range/Azimuth Non Real time program RK216. On a couple occasions, angles were taken on a line that went through the zero azimuth. This resulted in the data plotting out of position, requiring these positions to be plotted either by time and course or logged as inserts between good positions in order that they would be plotted in the correct locations. These problems occurred on JD 060 and 087.

S. REFERENCES TO REPORTS

Horizontal Control Report OPR-499, Banana and Indian Rivers,
Florida, 1976

Supplemental Report to Horizontal Control Report, OPR-499,
Banana and Indian Rivers, Florida, March, 1977.

Descriptive Report OPR-499, Banana and Indian Rivers, Florida,
H-9606, AHP-10-1-76.

Respectfully submitted,

Robert Lewis
Per/ Kathryn Andreen
Lt(jg)., NOAA
OIC, Launch 1277

**Signal List
AHP-10-2-76
H-9633**

094	3	28	16	00099	080	39	44359	254	0000	000000	Trail, 1976*
096	4	28	16	12528	080	36	30017	254	0000	000000	Ditch, 1976*
098	6	28	14	17720	080	37	34926	243	0000	000000	DBN #9, 1976* <i>off sheet</i>
100	3	28	14	12681	080	39	06953	254	0000	000000	Beit, 1976* <i>off sheet</i>
102	4	28	14	47748	080	37	00006	254	0000	000000	Patrick, 1976*
104	5	28	16	43267	080	39	09133	254	0000	000000	New Sail, 1976*
106	3	28	17	12611	080	40	07239	254	0000	000000	Crab, 1976*
108	6	28	17	30673	080	38	59785	254	0000	000000	DBN #11, 1976*
110	1	28	17	43048	080	39	25242	254	0000	000000	New Brady, 1976*
113	4	28	18	11792	080	39	44436	254	0000	000000	Fort (ecc), 1976
114	3	28	18	16785	080	40	19671	254	0000	000000	Dog, 1976*
116	4	28	19	12827	080	39	53044	254	0000	000000	Sand, 1976*
118	3	28	18	55478	080	40	30790	254	0000	000000	Muck, 1976*
120	3	28	20	05165	080	40	52268	254	0000	000000	Port, 1976*
122	6	28	20	02381	080	40	11424	254	0000	000000	Shack, 1976*
123	2	28	20	02984	080	40	11706	254	0000	000000	Shack (Ecc), 1976
124	2	28	21	19719	080	40	19564	254	0000	000000	Green, 1976*
126	3	28	21	04293	080	40	56103	254	0000	000000	Pennys 2, 1976*
128	3	28	21	24327	080	40	51748	243	0000	000000	Palm, 1976*
130	5	28	21	39641	080	41	01524	254	0000	000000	Breezy 2, 1976*
131	3	28	21	39373	080	41	01337	254	0000	000000	Breezy (Ecc), 1977
132	2	28	21	43283	080	40	50343	254	0000	000000	Ski, 1976*
134	7	28	21	54861	080	40	48614	254	0000	000000	Crust, 1976*
136	3	28	22	01079	080	40	58791	254	0000	000000	Stanke 2, 1976*
138	3	28	22	02303	080	41	07768	243	0000	000000	Gravel, 1976*
140	7	28	19	17154	080	38	33589	254	0000	000000	Pool, 1976*
142	3	28	19	25941	080	39	26967	254	0000	000000	Pirate, 1976*
144	2	28	19	38597	080	39	15372	243	0000	000000	DBN #23, 1976*
147	2	28	20	20227	080	38	26282	254	0000	000000	Tree (Ecc), 1976
148	7	28	20	23251	080	38	22642	254	0000	000000	Crooked Tree, 1976*
149	3	28	20	23504	080	38	22634	254	0000	000000	Crooked Tree (ecc), 1976
150	3	28	20	24377	080	39	38429	254	0000	000000	Wall, 1976*
154	1	28	21	25011	080	38	08502	254	0000	000000	Pole, 1976*
156	4	28	21	15000	080	36	49167	254	0000	000000	Stuck, 1976*
157	4	28	21	03865	080	38	21325	243	0000	000000	DBN #100, 1976*
158	4	28	21	36710	080	39	13196	254	0000	000000	Tank 1, 1976*
160	4	28	21	36679	080	39	18377	254	0000	000000	Tank 2, 1976*
162	4	28	21	57383	080	39	45650	243	0000	000000	Algae, 1976*

*Third Order Station Located by Photo Party 61

Signal List Con't

163	4	28	21	57356	080	39	45387	254	0000	000000	Algae (Ecc), 1976
164	4	28	22	57900	080	39	41581	254	0000	000000	Mound, 1976* <i>off sheet</i>
166	4	28	21	52345	080	38	57224	243	0000	000000	DBN #28, 1976*
168	4	28	21	38161	080	37	27082	254	0000	000000	Hospital 1, 1976*
170	4	28	21	38083	080	37	21102	254	0000	000000	Hospital 2, 1976*
172	4	28	21	54980	080	36	54554	254	0000	000000	Trailer, 1976*
174	4	28	23	29638	080	37	09381	254	0000	000000	Turtle, 1976* <i>off sheet</i>
176	4	28	21	47781	080	37	14007	243	0000	000000	DBN #16, 1976*
202	1	28	18	28731	080	37	26383	254	0000	000000	Italian, 1977*
204	1	28	18	47579	080	37	44091	254	0000	000000	Russian, 1977*
206	1	28	18	38663	080	38	09502	243	0000	000000	French, 1977*
208	2	28	19	59531	080	37	40092	254	0000	000000	Limb, 1977*
210	6	28	19	52739	080	37	49501	254	0000	000000	Trap, 1977*
212	7	28	17	38241	080	36	59681	243	0000	000000	Beagle, 1977*
214	2	28	17	54119	080	36	50081	254	0000	000000	Crack, 1977*
215	4	28	17	54164	080	36	50537	254	0000	000000	Crack, (Ecc), 1977
216	0	28	17	54953	080	36	58549	254	0000	000000	Caesar, 1977*
218	4	28	18	13980	080	36	43844	254	0000	000000	Drip, 1977*
220	2	28	18	25806	080	36	55572	254	0000	000000	Dry, 1977*
222	2	28	18	24505	080	37	05524	243	0000	000000	Wet, 1977*
224	4	28	18	34441	080	36	52991	254	0000	000000	Picnic, 1977*
226	0	28	18	37980	080	37	01371	243	0000	000000	Slip, 1977*
228	4	28	18	35550	080	37	03257	243	0000	000000	Pot, 1977*
230	4	28	18	44952	080	37	59369	243	0000	000000	Poison, 1977*
232	3	28	18	29721	080	39	24262	243	0000	000000	Pine, 1977*
234	4	28	18	56624	080	37	12749	243	0000	000000	Worm, 1977*
236	3	28	20	01121	080	37	58649	243	0000	000000	Branch, 1977*
238	4	28	20	29165	080	37	07744	243	0000	000000	Babe, 1977*
240	5	28	20	20230	080	37	02451	243	0000	000000	Jive, 1977*
242	0	28	19	34343	080	37	39180	254	0000	000000	Perch, 1977*
244	0	28	19	30362	080	37	22877	243	0000	000000	Bass, 1977*
246	4	28	21	40546	080	40	43768	254	0000	000000	Ping, 1977*
248	3	28	21	26949	080	40	42075	254	0000	000000	Pong, 1977*
250	4	28	21	56657	080	40	30649	254	0000	000000	Balloon, 1977*
252	3	28	22	04340	080	40	58121	243	0000	000000	Chop, 1977*

*Third Order Station Located by Photo Party 61

FIELD TIDE NOTE

Predicted tide correctors were not applied to the sounding data due to a periodic tidal range of less than 0.2 feet. It should be noted that launch personnel observed non-periodic water level changes of up to 1.5 feet within the project area.

Three ADR tide gages were installed within the project area. Two gages remained in operation during the survey AHP-10-2-76, the third gage located in Eau-Gallie, was removed on 23 Sept., 1977 due to continuous vandalism.

<u>Site & Number</u>	<u>Location</u>	<u>Period</u>
Cape Canaveral (port Locks) Gage No. 872-1609	Lat. 28° 24.5'N Long. 80° 38.3'W	9 March 1976 - 2 April 1977
Titusville No. 872-1456	Lat. 28° 37.2'N Long. 80° 48.0'W	8 March 1976 - End of Survey
Eau-Gallie No. 872-1808	Lat. 28° 08.0'N Long. 80° 37.5'W	9 March 1976 - 23 Sept 1976

All gage values were set 10 ft. higher than the staff values, with the time set at GMT. Tide observations for the Cape Canaveral gage were made by personnel of NOAA Launch 1277 and Photo Party 61. A tide observer was contracted to monitor the Titusville gage. All records were sent to Rockville, through the Chief, HSB, AMC.

All gages operated well during the period of operations, with only minor problems such as dead batteries. Gages were leveled at time of installation and when they were removed or at the end of the survey.



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY

August 5, 1977

TO: Chief, Tides Branch, C331
FROM: *W. R. Daniels*
William R. Daniels
Chief, Hydrographic Surveys Branch, CAM11
SUBJECT: Request for Tide Data

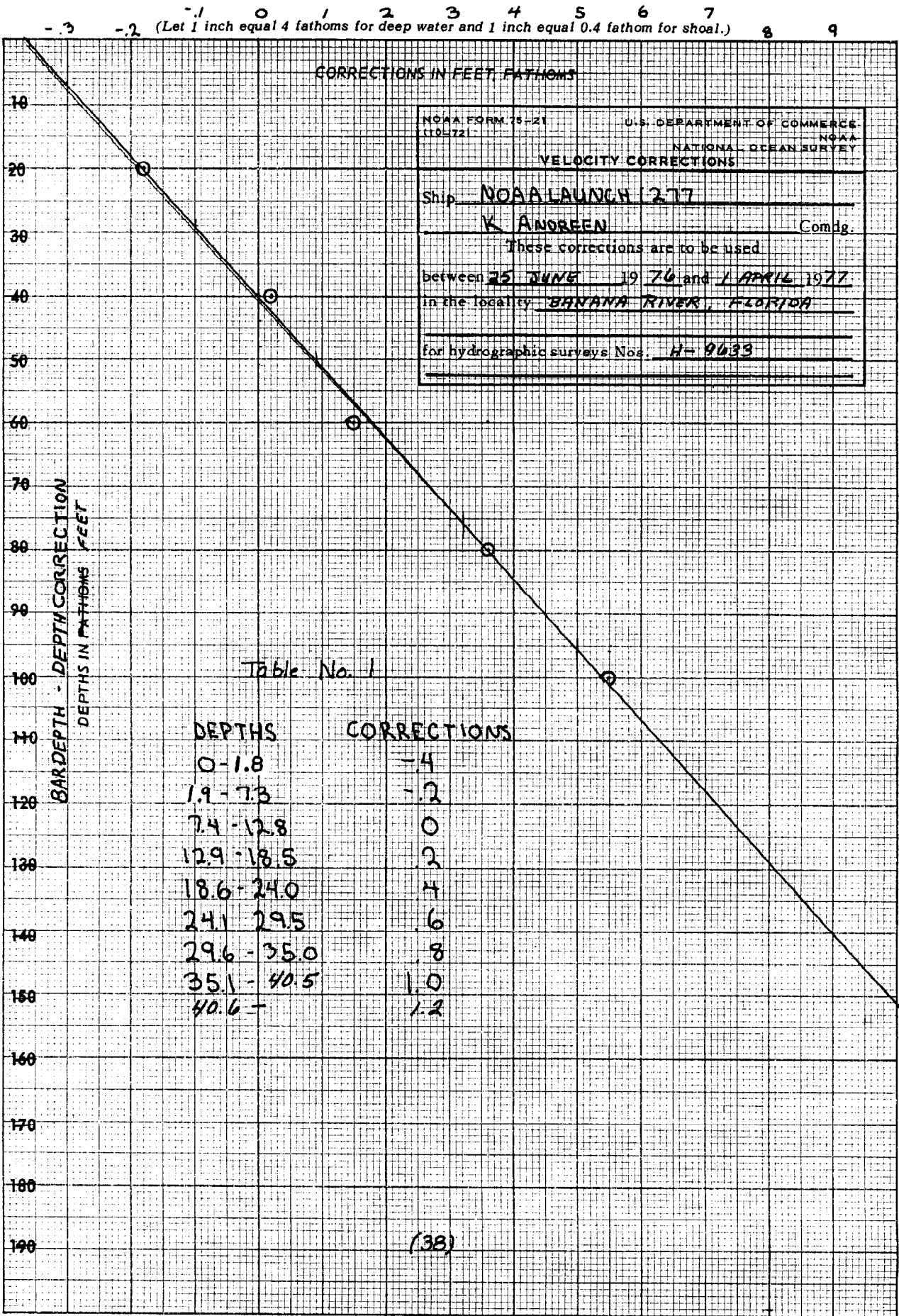
Please provide smooth tide correctors and zoning information to AMC Processing Division - CAM3 for Survey H-9633 (AHP 10-2-76), Project OPR-499-AHP-76.

See enclosed copy of "Field Tide Note" for gages installed and operated in Survey area.

The following times of hydrography include two hours before and after actual times:

<u>Julian Day 1976</u>	<u>Hydro Begins (GMT)</u>	<u>Hydro Ends (GMT)</u>
181	1400	2200
182	1300	2100
189	1600	2100
190	1300	2100
191	1300	2100
194	1500	2200
205	1100	2100
208	1600	2100
209	1400	2000
210	1500	2100
211	1100	2000
217	1400	2100
218	1500	2100
219	1400	2000
223	1400	2000
225	1300	2100



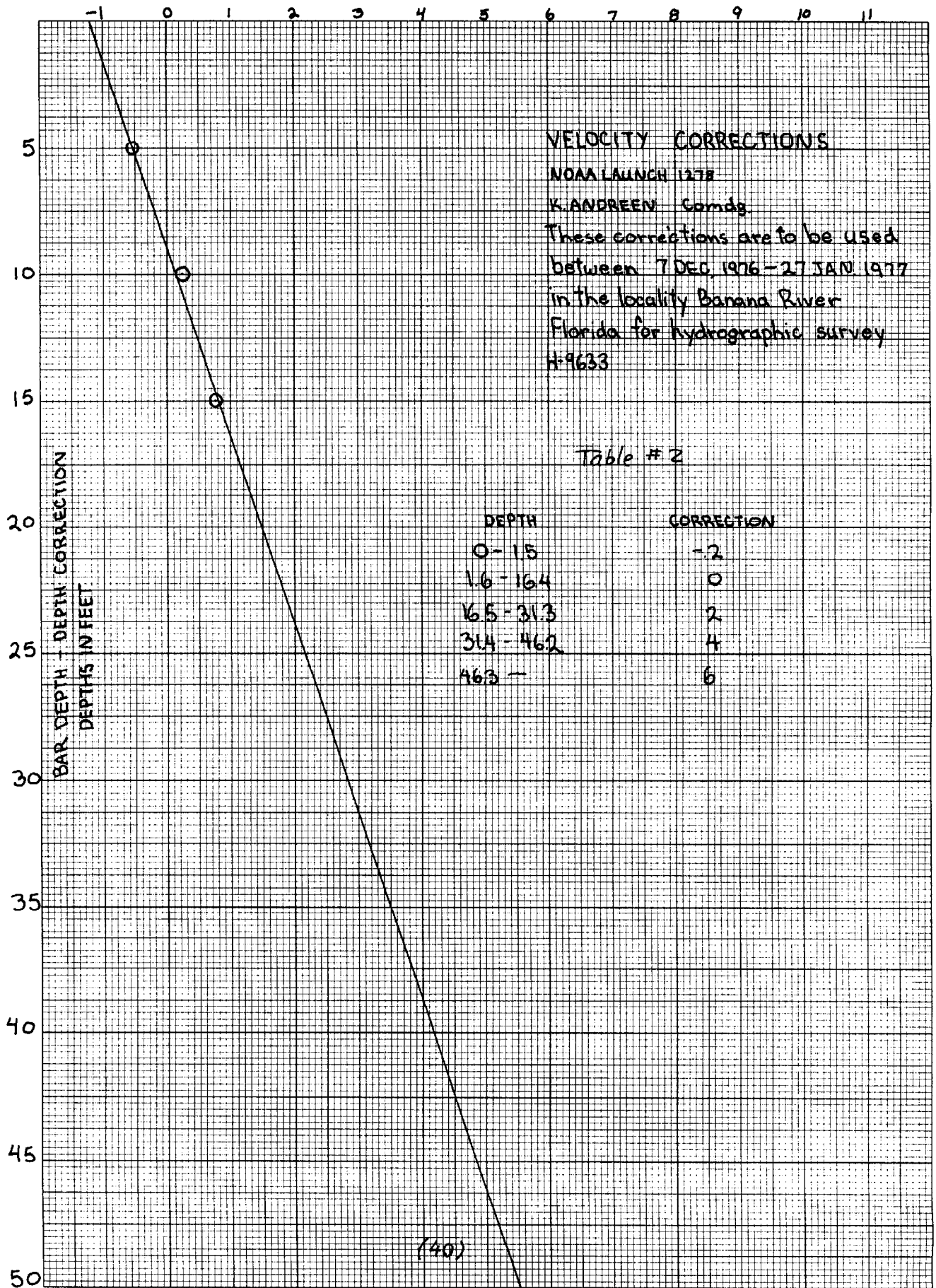


K&S 20 X 20 TO THE INCH 46 1240
 7 X 10 INCHES
 MADE IN U.S.A.
 KEUFFEL & ESSER CO.

BARDEPTH - DEPTH CORRECTION
 DEPTHS IN FATHOMS FEET
 (For deep water add a 0 to these figures)

EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO. 341-20 DIETZGEN GRAPH PAPER
20 X 20 PER INCH

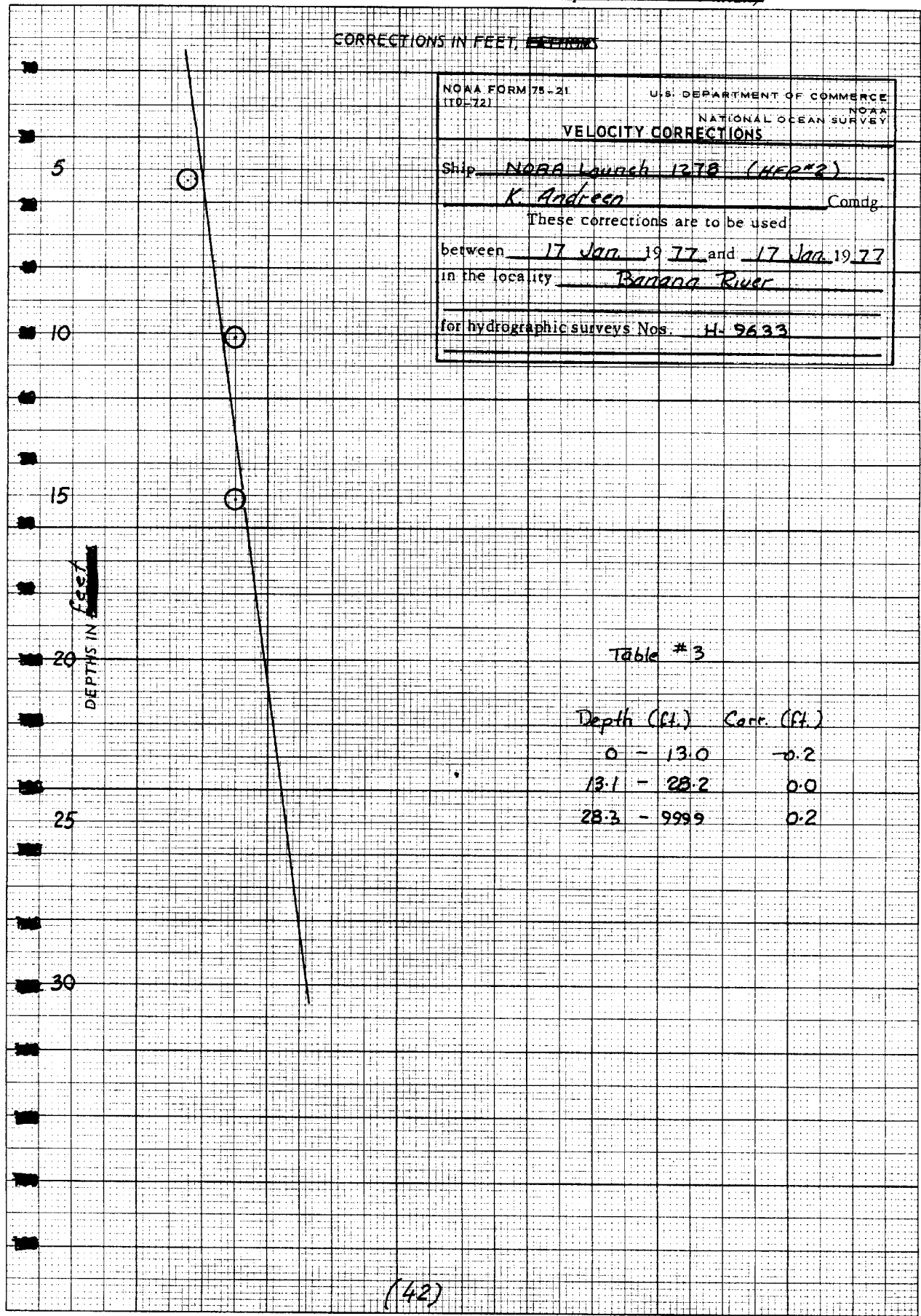


(-) (+)
 -3 -2 -1 0 1 2 3

#3

~~1 foot = 1 inch equal 6 fathoms for deep water and 1 inch equal 0.4 fathoms for shallow water~~

CORRECTIONS IN FEET



NOAA FORM 75-21 (10-72)	U.S. DEPARTMENT OF COMMERCE NOAA NATIONAL OCEAN SURVEY
VELOCITY CORRECTIONS	
Ship <u>NOAA Launch 1278 (HEP#2)</u>	
Comdg. <u>K. Andreen</u>	
These corrections are to be used	
between <u>17 Jan. 1977</u> and <u>17 Jan. 1977</u>	
in the locality <u>Banana River</u>	
for hydrographic surveys Nos. <u>H-9433</u>	

(For deep water add a 0 to these figures)

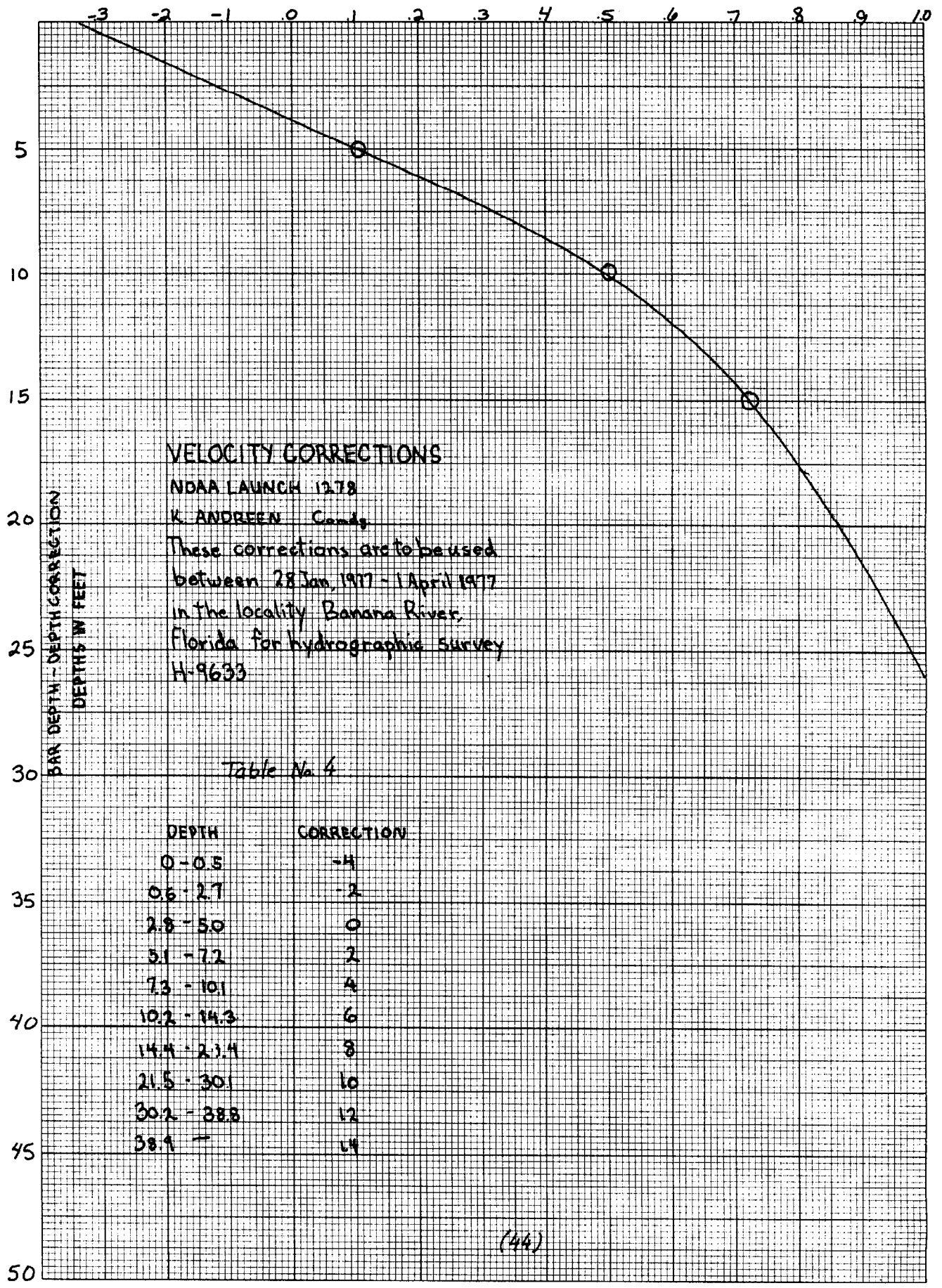
Table #3

Depth (ft.)	Corr. (ft.)
0 - 13.0	-0.2
13.1 - 28.2	0.0
28.3 - 9999	0.2

46 1240

20 X 20 TO THE INCH • 7 X 10 INCHES
 KEUFFEL & ESSER CO. MADE IN U.S.A.

(42)



BAR DEPTH - DEPTH CORRECTIONS
DEPTHS IN FEET

BAR DEPTH	DEPTH CORRECTION (FO)
0.0 - 1.9	0
2.0 - 3.9	0.1
4.0 - 5.9	0.2
6.0 - 7.9	0.3
8.0 - 9.9	0.4
10.0 - 11.9	0.5
12.0 - 13.9	0.6
14.0 - 15.9	0.7
16.0 - 17.9	0.8
18.0 - 19.9	0.9
20.0 - 21.9	1.0
22.0 - 23.9	1.1
24.0 - 25.9	1.2
26.0 - 27.9	1.3
28.0 - 29.9	1.4
30.0 - 31.9	1.5
32.0 - 33.9	1.6
34.0 - 35.9	1.7
36.0 - 37.9	1.8
38.0 - 39.9	1.9
40.0 - 41.9	2.0
42.0 - 43.9	2.1
44.0 - 45.9	2.2
46.0 - 47.9	2.3
48.0 - 49.9	2.4
50.0 - 51.9	2.5
52.0 - 53.9	2.6
54.0 - 55.9	2.7
56.0 - 57.9	2.8
58.0 - 59.9	2.9
60.0 - 61.9	3.0
62.0 - 63.9	3.1
64.0 - 65.9	3.2
66.0 - 67.9	3.3
68.0 - 69.9	3.4
70.0 - 71.9	3.5
72.0 - 73.9	3.6
74.0 - 75.9	3.7
76.0 - 77.9	3.8
78.0 - 79.9	3.9
80.0 - 81.9	4.0
82.0 - 83.9	4.1
84.0 - 85.9	4.2
86.0 - 87.9	4.3
88.0 - 89.9	4.4
90.0 - 91.9	4.5
92.0 - 93.9	4.6
94.0 - 95.9	4.7
96.0 - 97.9	4.8
98.0 - 99.9	4.9
100.0 - 101.9	5.0

Table #5

DEPTH CORRECTIONS

VELOCITY CORRECTIONS

NOAA LAUNCH 1279

S. ANDRIEEN Comdy

These corrections are to be used

between 28 JAN 1977 - 1 APRIL 1977

in the locality Banana River

Florida for hydrographic survey

H-9633

VELOCITY TABLES

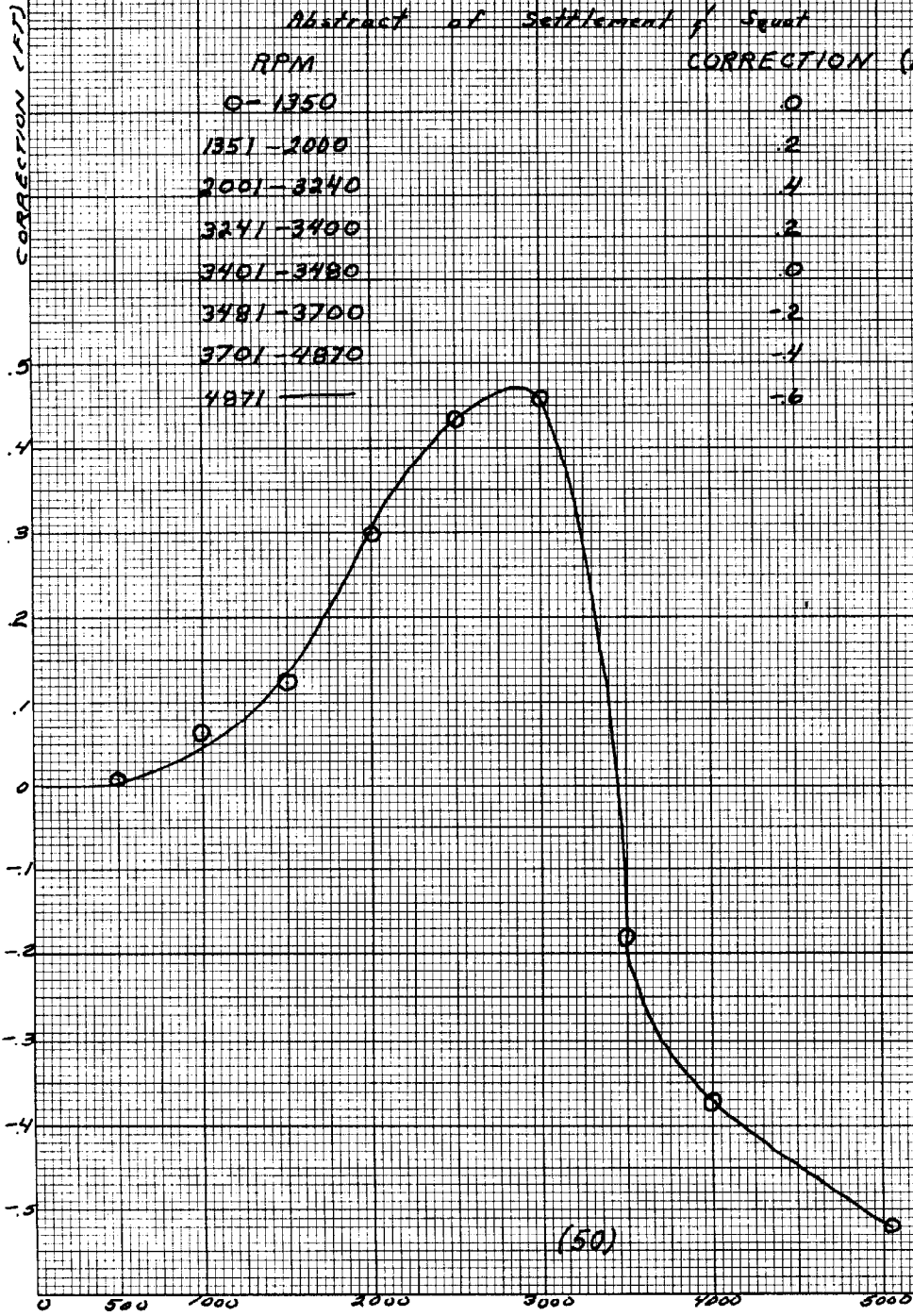
H-9633 (AHP-10-2-76)

000018	1	0004	0001	000	127700	009633
000073	1	0002				
000128	0	0000				
000185	0	0002				
000240	0	0004				
000295	0	0006				
000350	0	0008				
000405	0	0010				
999999	0	0012				
000015	1	0002	0002	000	127800	009633
000164	0	0000				
000313	0	0002				
000462	0	0004				
999999	0	0006				
000130	1	0002	0003	000	127800	009633
000282	0	0000				
999999	0	0002				
000005	1	0004	0004	000	127800	009633
000027	1	0002				
000050	0	0000				
000072	0	0002				
000101	0	0004				
000143	0	0006				
000214	0	0008				
000301	0	0010				
000388	0	0012				
999999	0	0014				
000019	0	0000	0005	000	127900	009633
000050	0	0002				
000081	0	0004				
000112	0	0006				
000145	0	0008				
000177	0	0010				
000208	0	0012				
000240	0	0014				
000273	0	0016				
000304	0	0018				
999999	0	0020				

SETTLEMENT & SQUAT
 LAUNCH 127B
 DEC. 10, 1976

Abstract of Settlement & Squat

RPM	CORRECTION (FT)
0-1350	0
1351-2000	2
2001-3240	4
3241-3400	2
3401-3480	0
3481-3700	-2
3701-4870	-4
4871 —	-6



(50)

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	LT J.G. DEBRA ASTLE
POSITIONS DETERMINED AND/OR VERIFIED	LT J.G. DEBRA ASTLE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'
 (Consult Photogrammetric Instructions No. 64)

OFFICE
 I. OFFICE IDENTIFIED AND LOCATED OBJECTS
 Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.
 EXAMPLE: 75E(C)6042
 8-12-75

FIELD
 I. NEW POSITION DETERMINED OR VERIFIED
 Enter the applicable data by symbols as follows:
 F - Field
 L - Located
 V - Verified
 1 - Triangulation
 2 - Traverse
 3 - Intersection
 4 - Resection
 5 - Field identified
 6 - Theodolite
 7 - Planetable
 8 - Sextant
 A. Field positions* require entry of method of location and date of field work.
 EXAMPLE: F-2-6-L
 8-12-75
 *FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)
 B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.
 EXAMPLE: P-8-V
 8-12-75
 74L(C)2982

II. TRIANGULATION STATION RECOVERED
 When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.
 EXAMPLE: Triang. Rec.
 8-12-75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH
 Enter 'V-Vis.' and date.
 EXAMPLE: V-Vis.
 8-12-75

**PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

Replaces C&GS Form 367.

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

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

ORIGINATING ACTIVITY

HYDROGRAPHIC PARTY

GEODETIC PARTY

PHOTO FIELD PARTY

COMPILATION ACTIVITY

FINAL REVIEWER

QUALITY CONTROL & REVIEW GRP.

COAST PILOT BRANCH

(See reverse for responsible personnel)

REPORTING UNIT
(If field Party, Ship or Office)

NOAA LAUNCH 1277 FLORIDA

LOCALITY

BADANA RIVER

DATE

8 MAR 77

STATE

FLORIDA

DATUM

DA

CHARTING NAME

499

DESCRIPTION

(Record reason for deletion of landmark or aid to navigation.
Show triangulation station names, where applicable, in parentheses)

DAYBEACON # 11

CHARTING NAME

499

DESCRIPTION

(Record reason for deletion of landmark or aid to navigation.
Show triangulation station names, where applicable, in parentheses)

DAYBEACON # 11

REPORTING UNIT
(If field Party, Ship or Office)

NOAA LAUNCH 1277 FLORIDA

LOCALITY

BADANA RIVER

DATE

8 MAR 77

STATE

FLORIDA

DATUM

DA

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION		LONGITUDE		METHOD AND DATE OF LOCATION (See instructions on reverse side)	CHARTS AFFECTED
		LATITUDE ° / ' / D.M. Meters	LONGITUDE ° / ' / D.P. Meters	LATITUDE ° / ' / D.M. Meters	LONGITUDE ° / ' / D.P. Meters		
DBN 11	BLACK SQUARE GREEN BORDER DAYBEACON # 12	28 17	80 38	59 785		F-3-6-1 3-76	
DBN 12	RED TRIANGLE MAROON BORDER DAYBEACON # 14	28 17	80 38	59 830		F-3-6-1 3-77	
DBN 14	RED TRIANGLE MAROON BORDER DAYBEACON # 15	28 17	80 39	02 177		F-3-6-1 3-77	
DBN 15	BLACK SQUARE GREEN BORDER DAYBEACON # 17	28 18	80 39	11 832		F-3-6-1 3-77	
DBN 17	BLACK SQUARE YELLOW BORDER DAYBEACON # 19	28 18	80 39	13 653		F-3-6-1 3-77	
DBN 19	BLACK POINTER GREEN REFLECTOR DAYBEACON # 20	28 18	80 39	10 202		F-3-6-1 3-77	
DBN 20	RED POINTER MAROON REFLECTOR DAYBEACON # 21	28 18	80 39	11 534		F-3-6-1 3-77	
DBN 21	BLACK POINTER GREEN REFLECTOR DAYBEACON # 22	28 18	80 39	12 225		F-3-6-1 3-77	
DBN 22	RED POINTER MAROON REFLECTOR DAYBEACON # 23	28 19	80 39	13 137		F-3-6-1 3-77	
DBN 23	BLACK POINTER GREEN REFLECTOR	28 19	80 39	15 372		F-3-6-1 3-76	

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	L. J. G. DEBRA ASTLE
POSITIONS DETERMINED AND/OR VERIFIED	L. J. G. DEBRA ASTLE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	

ORIGINATOR

PHOTO FIELD PARTY
 HYDROGRAPHIC PARTY
 GEODETIC PARTY
 OTHER (Specify)

FIELD ACTIVITY REPRESENTATIVE
 OFFICE ACTIVITY REPRESENTATIVE
 REVIEWER
 QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'
 (Consult Photogrammetric Instructions No. 64.)

OFFICE	FIELD (Cont'd)
<p>I. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75</p>	<p>B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982</p>
<p>FIELD</p> <p>I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection</p> <p>A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75</p> <p>**FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.</p>	<p>II. TRIANGULATION STATION RECOVERED When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75</p> <p>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75</p> <p>**PHOTOGAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.</p>

APPROVAL SHEET

SURVEY H-9633 (AHP-10-2-76)

The hydrographic records transmitted with this report are complete and adequate.

No direct supervision was given by me during field work and the field sheet was examined only during routine field inspection of the hydro party.

This survey is complete and adequate with no additional field work recommended.



William R. Daniels
LCDR., NOAA
Chief, HSB

September 13, 1977

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): 872-1609 Port Canaveral Locks

Period: June 25, 1976 - April 1, 1977

HYDROGRAPHIC SHEET: H-9633

OPR: 499

Locality: Banana River, Florida

(low water datum*)

Plane of reference (~~mean lower low water~~): 2.46 feet

Height of Mean High Water above Plane of Reference is

Remarks: *Low water datum is 1/2 foot below mean water level.

Zone direct.

*Notes: 872-1456 Titusville, FL used for redubers on Oct. 14-15, 1976.
Telcom Wilbur Hill on 9/17/76. - BS
No zoning to be used. LWD = 2.32 on 1976 staff*

James R. Hubbard
for Chief, Tides Branch

GEOGRAPHIC NAMES

Name on Survey	Source of Name											
	A	B	C	D	E	F	G	H	I	J	K	
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	RAND McNALLY ATLAS	U.S. LIGHT LIST				
ANGEL CITY ✓												1
BANANA RIVER ✓												2
BANANA RIVER MARINE SERVICE ✓												3
BIG ISLAND ✓												4
BRADY ISLAND ✓												5
BUCK POINT ✓												6
CAPE CANAVERAL (P pl) ✓												7
CATFISH CREEK ✓												8
COCOA BEACH ✓												9
CRANE CREEK ✓												10
FAIRYLAND ✓												11
FLOWING WELL CREEK ✓												12
FOUR ISLANDS ✓												13
GEORGE ISLAND ✓												14
HALL ISLAND ✓												15
HORTI POINT ✓												16
HOUSEBOAT CUT ✓												17
JONES CREEK ✓												18
KIWANIS ISLAND ✓												19
LOTUS ✓												20
MC CLINTOCK POINT ✓												21
MERRITT ISLAND ✓												22
MERRITT ISLAND (Ppl) ✓												23
MERRITT ISLAND AIRPORT ✓												24
NEWFOUND HARBOR ✓												25

GEOGRAPHIC NAMES

Name on Survey	Source of Name									
	A	B	C	D	E	F	G	H	K	
	ON CHART NO.	ON PREVIOUS SURVEY NO.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND McNALLY ATLAS	U.S. LIGHT LIST		
FULLMAN POINT ✓										1
SHELL POINT ✓										2
SHORTYS BANKS ✓										3
SHORTYS POCKET ✓										4
SOUTH COCOA BEACH ✓										5
SPRIG CRICK POINT ✓										6
THOUSAND ISLANDS ✓										7
PATRICK AIR FORCE BASE ✓										8
										9
										10
										11
										12
										13
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										22
										23
										24
										25

Approved:

Chas E. Harrison
Chief Geographer - C3x3

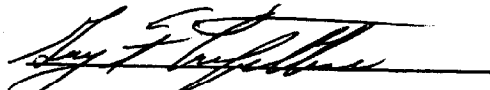
5 Nov 1979

APPROVAL SHEET
FOR
SURVEY H-9633

- 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.
- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the Verifier's Report.

Date: 7/6/79

Signed:



Title: Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		10	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		3	
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
Accordian ENVELOPES	5 - with printouts					1 - misc. data.
CAHIERS						
VOLUMES	12					
BOXES			1 - Smooth			

T-SHEET PRINTS (List) TP-00137, TP-00138, TP-00139 and TP-00140 not received 7/23/79

SPECIAL REPORTS (List) Horizontal Control Report - OPR-499-1976 & 1977

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	PRE-VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			5597
POSITIONS CHECKED		650	
POSITIONS REVISED		50	
SOUNDINGS REVISED		150	
SOUNDINGS ERRONEOUSLY SPACED		75	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)			
VERIFICATION OF CONTROL		24	
VERIFICATION OF POSITIONS		65	
VERIFICATION OF SOUNDINGS	3	75	
COMPILATION OF SMOOTH SHEET		60	
APPLICATION OF TOPOGRAPHY		70	
APPLICATION OF PHOTOBATHYMETRY		70	
JUNCTIONS		8	
COMPARISON WITH PRIOR SURVEYS & CHARTS		24	
VERIFIER'S REPORT		16	
OTHER		221	
TOTALS	3	563	566

Pre-Verification by J. Bradford, F. Lamison, S. Kelly	Beginning Date 08/01/77	Ending Date 05/01/78
Verification by R. Hill	Beginning Date 01/01/79	Ending Date 06/01/79
Verification Check by B.J. Stephenson	Time (Hours) 8	Date 06/25/79
Marine Center Inspection by Hydrographic Inspection Team (AMC)	Time (Hours) 8	Date 06/29/79
Quality Control Inspection by F.P. Saultsbury	Time (Hours) 2.36	Date 10-24-79
Requirements Evaluation by J. Baumgardner	Time (Hours) 6	Date 4-29-80

J. Myers 12/4/79 2 hrs

REGISTRY NO. H-9633

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-9633

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 6-30-82 TIME REQUIRED 30 Hrs INITIALS JHC

REMARKS:

ATLANTIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO. H-9633

FIELD NO. AHP-10-2-76

Florida, Banana River, Vicinity of Thousand Islands

SURVEYED: June 25, 1976 through April 1, 1977

SCALE: 1:10,000

PROJECT NO.: OPR-499

SOUNDINGS: Raytheon DE-719B
Raytheon DE-723
Sounding Pole

CONTROL: Del-Norte
(Range-Range)
Del-Norte
(Range-Azimuth)
"See Boatsheet"

Chief of Party W.R. Daniels
..... K. Andreen
..... W.L. Sprye
..... E.W. Fanning
..... J.M. Robinett
Automated Plot by XYNETICS 1201 Plotter (AMC)
Verified and Inked by R.R. Hill
June 20, 1979

1. Introduction

The sounding datum in this area is called ~~Indian River Florida~~ Low Water. Tidal conditions are such that Mean Low Water is not definable. Elevations of features seaward of the shoreline such as piles, etc. are referenced to Low Water and description appended are shown in slanted lettering. Most features a foot or more above Low Water are exposed during high water condition which may occur in this area due to atmospheric conditions. The high water line shown on this survey is for the most part a Mean Water Level line and the Coastal Zone Maps used in this area should be consulted to determine the various lines.

2. Control and Shoreline

a. The source of control was adequately described in Sections F. and G. of the Descriptive Report.

b. The shoreline originates with Coastal Zone Maps TP-00137, TP-00138, TP-00139 and TP-00140 of 1969-70-71. During application of this shoreline, a problem was encountered. It was necessary to adjust these maps when transferring shoreline between two different maps. (In the vicinity of latitude 28°20', longitude 80°40' and latitude 28°20', longitude 80°38') It appeared that the junctions between these maps are not in agreement. Also these maps had to be adjusted during application of shoreline to compensate for distortion.

Shoreline was dashed in red to symbolize uncertainty

3. Hydrography

- a. Depth at crossings were in good agreement. ✓
- b. The standard depth curves, along with a 3-foot supplemental curve, were adequately delineated. ✓
- c. The development of the Presurvey Review Items and investigation of least depths were considered adequate. ✓ *See Q.C. Report*

4. Condition of Survey

The smooth sheet and accompanying overlays, hydrographic records, and reports are adequate and conform to the requirements of the Provisional Hydrographic Manual.

5. Junction

An adequate junction has been effected with H-9606 (1976) to the south and H-9665 (1976) to the north. ✓

6. Comparison With Prior Surveys

H-1380	(1876-77)	1:20,000
H-1415b	(1878)	1:20,000

These prior surveys taken together provide complete coverage of the present survey.

The comparison with these prior survey is adequately discussed under Section K. of the Descriptive Report. In general the changes noted are attributable to cultural changes. ✓

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

7. Comparison With Charts #11476 (9th Edition, December 13, 1975)
#11485 (12th Edition, August 17, 1974)a. Hydrography

The charted hydrography originates with the previously discussed prior surveys, with the exception of numerous depths located primarily along the edges of the dredged channels. The source for these charted depths was not readily determined at this time; however, the present survey is considered adequate to supersede these charted depths with in the common area. ✓

The disposition of Presurvey Review Items and charted features located within the limits of this survey were adequately discussed under Sections K. and L. of the Descriptive Report.

b. Aids to Navigation

The charted positions of the aids in the survey adequately mark the intended features. The aids to navigation are further discussed under Section N. of the Descriptive Report. *See Q.C. Report*

8. Compliance With Instruction

This survey adequately complies with the Project Instruction. ✓

9. Additional Field Work


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


Inspection Report

H- 9633


Any verification errors regarding procedures and presentation of survey data detected during inspection by the Hydrographic Inspection Team have been corrected before submission for administrative approval. HIT comments regarding quality of field work, compliance with instructions, and adequacy of the survey have been incorporated within the Verifier's Report.

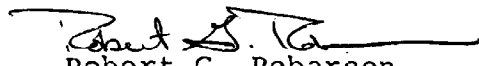
Examined and Approved:
Hydrographic Inspection Team
Date:


Robert A. Trauschke, CDR, NOAA
Chief, Processing Division

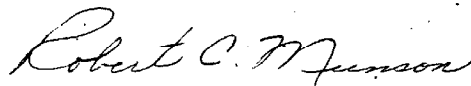

Carl W. Fisher, CDR, NOAA
Chief, Operations Division

Absent
R. D. Sanocki
Technical Assistant
Processing Division


Maureen R. Kenny, LTJ, NOAA
Chief, Electronic Data
Processing Branch


Robert G. Roberson
Team Leader
Verification Branch

Approved/Forwarded


Robert C. Munson
RADM, NOAA
Director, Atlantic Marine Center



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

OA/C352:FPS

October 24, 1979

TO: Glen R. Schaefer *GRS*
Chief, Hydrographic Surveys Division

THRU: Chief, Quality Control *gm* Branch

FROM: *F. P. Saulsbury*
F. P. Saulsbury
Quality Evaluator

SUBJECT: Quality Control Report for H-9633 (1976-77), Florida, Banana River, Vicinity of Thousand Islands

A quality control inspection of H-9633 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, shoreline transfer, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. In general, it was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report, the HIT Report, and as follows:

1. Hydrography

a. The positions and continued existence of several privately maintained markers shown on the 1971 topographic surveys were not verified. Because of an incomplete investigation, some private markers established subsequent to 1971 within the survey area may not be shown on the present survey.

b. Positional conflicts between hydrographic and topographic locations of offshore items, mostly daybeacons and private markers, were not addressed.

c. Some signals falling in the water are not described.

d. No landmark information was furnished.

e. Geographic names were not furnished.

f. The position of the cable crossing in latitude 28°21.47'N, longitude 80°40.72'W on the original boat sheet is in conflict with its position



shown on the smooth boat sheet. Chart cable crossing as shown on present survey. A few items shown on the original boat sheet were not transferred to the smooth boat sheet.

g. Geographic positions are not furnished in the sounding volumes for detached positions.

h. A pile in latitude $28^{\circ}21.78'N$, longitude $80^{\circ}37.10'W$ was described as marking an obstruction; however, the obstruction was neither located nor described. Also an entrance channel in the vicinity of latitude $28^{\circ}21.25'N$, longitude $80^{\circ}39.61'W$ referenced in the survey records was unsurveyed.

i. The wreckage in latitude $28^{\circ}21.99'N$, longitude $80^{\circ}37.19'W$ on TP-00138 (1969-71) was not verified.

2. Verification

a. The accuracy of transfer of contemporary topographic survey information is considered less than desirable. Shoreline is slightly out of register and many markers were displaced from their centers.

Some items such as piers, pier endings, grass, islets, private markers, small segments of shoreline, and shoal designations overlooked during verification were added to the smooth sheet during quality control inspection. Boat sheet items such as bridge clearances, a cable crossing, an area noted as being dredged, and notes to entrances to canals determined to be closed to navigation were added during quality control inspection.

b. The color of odd-numbered daybeacons, shown as black on the smooth sheet, is in error. The color of these daybeacons is green, except for yellow daybeacon "17," which apparently had not been repainted at the time of the survey.

c. The hydrographic positions of several daybeacons and private markers are in conflict with their counterpart topographic positions. These conflicts are not addressed in the Verifier's Report.

The identification numbers of private markers, furnished by the hydrographer and not shown on the contemporary topographic surveys, were not shown on the smooth sheet.

The identification numbers of private markers, changed subsequent to topographic survey information, were neither shown on the smooth sheet nor are addressed in the Verifier's Report.

Positional conflicts are addressed in the quality control report and identification numbers for private markers reported by the hydrographer were added to the smooth sheet during quality control inspection.

d. Some positions omitted or plotted in error on the position overlay were added and/or revised during quality control inspection.

e. A note in the sounding volume at position 5886--line bends right 5 meters north of daybeacon "R12A"--was overlooked in verification. A private marker was added to the smooth sheet from this information during quality control inspection.

f. The lettering of geographic names on the smooth sheet was incomplete. Several geographic names were added to the smooth sheet and geographic names were listed for approval during quality control inspection.

g. A few 1- and 3-foot soundings were mistaken for 13-foot soundings and were contoured accordingly. Depth curves were corrected during quality control inspection.

h. In the junction on the north with H-9665 (1976) some shoal soundings, curves, and two piles were replotted and a 3-foot curve was made coincidental during quality control inspection.

3. Compilation

a. The positions of two 8-inch diameter piles, privately maintained channel markers, in the vicinity of latitude $38^{\circ}22.36'N$, longitude $80^{\circ}39.68'W$ are in conflict with counterpart positions shown on TP-00138 (1969-71). Chart the locations of the markers as shown on the present survey.

b. The islet in latitude $28^{\circ}20.38'N$, longitude $80^{\circ}37.06'W$ on TP-00138 (1969-71) is now covered by 1 foot at L.W.D. according to the present survey. The islet is not now charted.

✓ c. The pile on TP-00140 (1969-71) in latitude $28^{\circ}19.82'N$, longitude $80^{\circ}39.95'W$ was located on the present survey 15 meters south of this position as a dolphin uncovering 6 feet at L.W.D. Disregard the topographic pile and chart the dolphin as located on the present survey.

d. Presurvey Review Item 6--The visible wreck charted in latitude $28^{\circ}19.36'N$, longitude $80^{\circ}39.50'W$ from TP-00140 (1969-71). The charted position of the wreck was verified on the present survey. The position of the wreck on the present survey is 14 meters south of the position shown on TP-00140 and supersedes the topographic position.

SUPERSEDED BY L-1410 (1980)

NOISE WRECK
ON CHART ON SMOOTH SHEET
5-27-81 RAK

e. Presurvey Review Item 37--"Stakes reported 1974" are charted in the vicinity of latitude $28^{\circ}17.50'N$, longitude $80^{\circ}37.20'W$ from Chart Letter 1145 of 1974. According to the chart letter, the shoal charted here is marked by small stakes. The present survey delineates a shoal, with 1/2-foot depths, 100 meters west of the charted shoal. Delete the charted shoal and stakes and chart the area as shown on the present survey.

f. Presurvey Review Item 38--Markers reported, charted in the vicinity of latitude $28^{\circ}17'06''N$, longitude $80^{\circ}36'54''W$ from Chart Letter 1145 of 1974.

Markers were located by detached positions in the vicinity of latitude $28^{\circ}16.94'N$, longitude $80^{\circ}36.67'W$

Four markers were also located by the hydrographer in the vicinity of latitude $28^{\circ}17.50'N$, longitude $80^{\circ}37.03'W$ as 12-inch diameter piles uncovering 7 to 8 feet at L.W.D.

Also in this area several privately maintained channel markers were transferred to the smooth sheet from TP-00140 (1969-71). While the hydrographer furnished no descriptions on the majority of these markers, the field editor did report that "these are substantial pilings and worthy of being charted."

g. Presurvey Review Item 45--The visible wreck P.A. charted in latitude $28^{\circ}20.97'$, longitude $80^{\circ}40.95'W$ from Chart Letter 159 of 1977 was located by detached position and should be charted as shown on the present survey.

h. Presurvey Review Item 46--The piling P.A. charted in latitude $28^{\circ}20.81'N$, longitude $80^{\circ}40.95'W$ from Chart Letter 159 of 1977 were located as a pile and pier ruins and should be charted as shown on the present survey.

i. Signal 157 in latitude $28^{\circ}21.07'N$, longitude $80^{\circ}38.36'W$ and signal 176 in latitude $28^{\circ}21.79'N$, longitude $80^{\circ}37.23'W$, identified on the smooth sheet as daybeacons in their triangulation names, are not in the Light List and should be symbolized as private markers when charted.

j. The shoreline conflict, where contemporary topographic surveys junction, in latitude $28^{\circ}19.90'N$, longitude $80^{\circ}40.00'W$ was arbitrarily reconciled during quality control inspection with dashed red lines symbolizing shoreline uncertainty.

k. "Shoaling reported 1974" charted in latitude $28^{\circ}18.55'N$, longitude $80^{\circ}39.00'W$ --A shoal area is delineated here on the present survey.

Also "shoaling reported 1974" charted at the edge of the channel in latitude $28^{\circ}18.35'N$, longitude $80^{\circ}39.18'W$ --an oyster bed awash at L.W.D. is just south of this position on the present survey.

Chart these areas as shown on the present survey.

1. Though elevations are referenced to L.W.D. and usually indicated by an underscored slanting number in parenthesis, features of a topographic nature (above a high water plane) should be annotated in vertical lettering. An approximate value for the difference between L.W.D. and the high water plane is 1 foot.

4. Fixed Aids to Navigation

a. The present survey locations of the following daybeacons are in conflict with their counterpart locations shown on the contemporary topographic surveys. Topographic positions located by sextant in 1971 are considered superseded by present survey positions located by theodolite.

Banana River Daybeacons--Numbers 11, 12, 14, 15, 17, 19, 20, 21, 22, 23, 24, 25, 27, and 28

b. The positions of the following privately maintained markers on the present survey are in conflict with counterpart positions shown on the contemporary topographic surveys. Hydrographic positions are considered to supersede topographic positions. Chart the location of these markers as they are shown on the present survey. The marker numbers are shown in black ink on the smooth sheet.

<u>Marker Number</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>	<u>Elevation at L.W.D.</u>
✓ 103	$28^{\circ}21.39'$	$80^{\circ}38.13'$	8 feet
✓ 107	$28^{\circ}21.36'$	$80^{\circ}37.82'$	8 feet
✓ 108	$28^{\circ}21.34'$	$80^{\circ}37.83'$	7 feet
✓ 309	$28^{\circ}19.35'$	$80^{\circ}38.57'$	unknown
No number (formerly 352)	$28^{\circ}19.37'$	$80^{\circ}38.72'$	9 feet
✓ 361 (formerly 359)	$28^{\circ}18.82'$	$80^{\circ}38.63'$	unknown
✓ 407	$28^{\circ}18.66'$	$80^{\circ}38.97'$	10 feet
✓ 408	$28^{\circ}18.64'$	$80^{\circ}38.96'$	10 feet
✓ 409	$28^{\circ}18.68'$	$80^{\circ}38.90'$	10 feet
✓ 410	$28^{\circ}18.65'$	$80^{\circ}38.89'$	8 feet
✓ 411	$28^{\circ}18.69'$	$80^{\circ}38.84'$	8 feet
✓ 412	$28^{\circ}18.16'$	$80^{\circ}38.84'$	unknown
✓ 419 (formerly 361)	$28^{\circ}18.73'$ <i>Locate by GP</i>	$80^{\circ}38.65'$	unknown
✓ 420	$28^{\circ}18.57'$	$80^{\circ}38.81'$	unknown
✓ 421	$28^{\circ}18.64'$	$80^{\circ}38.61'$	8 feet
✓ 426	$28^{\circ}18.57'$	$80^{\circ}38.34'$	8 feet

c. The numbers of the following privately maintained markers on the present survey are in conflict with counterpart marker numbers shown on the contemporary topographic surveys.

These marker numbers, shown in black ink on the present survey, supersede those shown on contemporary topographic surveys.

<u>Old Marker Number</u>	<u>New Marker Number</u>
4	R4
10	R10
12	R12
19A	40
20	22
28	R28
34	R34
134	R134
136	R136
138	R138
140	R142
146	R146
160	R160
359	361
361	419

d. The identification numbers of numerous privately maintained markers are shown only on the topographic surveys and should be obtained by reference to those surveys. The hydrographer found some of the markers to be without visible numbers.

The following marker information is found in the survey records and is listed to facilitate availability. (Diameter of marker is expressed in inches and its elevation uncovered at L.W.D. in feet.)

<u>Marker Number</u>	<u>Diameter</u>	<u>Elevation at L.W.D.</u>	<u>Sign Description</u>
23	12	9	No Skiing-6MPH-No Wake
23A	12	9	6MPH-No Wake
R28	--	9	No Skiing
31	--	9	6MPH-No Wake
R34	--	8	6MPH-No Wake
R160	12	8	End Skiing-6MPH-No Wake Zone
311	12	8	No Skiing
313	12	8	No Skiing
315	12	8	No Skiing
319	12	8	No Wake

H-9633

7

<u>Marker Number</u>	<u>Diameter</u>	<u>Elevation at L.W.D.</u>	<u>Marker Number</u>	<u>Diameter</u>	<u>Elevation at L.W.D.</u>
R10	10	9	134	12	7
R10A	10	9	R134A	12	7
25	8	9	162	12	7
111	12	8	321	12	8
112	12	8	424	12	6
115	12	8	425	12	8
130	12	8	426	12	8
132	12	8			

<u>Marker Number</u>	<u>Elevation at L.W.D.</u>	<u>Marker Number</u>	<u>Elevation at L.W.D.</u>	<u>Marker Number</u>	<u>Elevation at L.W.D.</u>
R4	9	107	8	144	6
R12	9	108	7	145	7
26	9	109	6	R146	9
27	9	110	6	408	10
29	9	113	8	409	10
32	6	126	8	410	8
101	8	129	7	411	8
102	8	R134	9	412	8
103	8	R136	8	415	8
104	8	R138	10	421	8
105	7	R142	8	422	10
106	8				

CC:
OA/C35
OA/C351



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

JUN 2 1980

OA/C351:SR

TO: OA/CAM - Richard H. Houlder

FROM: F/OA/CS  Roger F. Lanier

SUBJECT: H-9633 (1976-77), OPR-499-AHP-76, Florida, Banana River, Vicinity
of Thousand Islands, Report of Compliance with Project Instructions

The smooth sheet and Descriptive Report for the subject survey have been examined. In addition to the Quality Control Report, dated October 24, 1977 (copy attached), and the Hydrographic Survey Inspection Team Report, dated June 29, 1979, the following is submitted:

The smooth sheet exceeded the maximum allowable length of 60 inches.

Except as noted, the survey is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-499-AHP-76, dated October 1, 1975.

Attachment

cc:
OA/C352 w/o att.

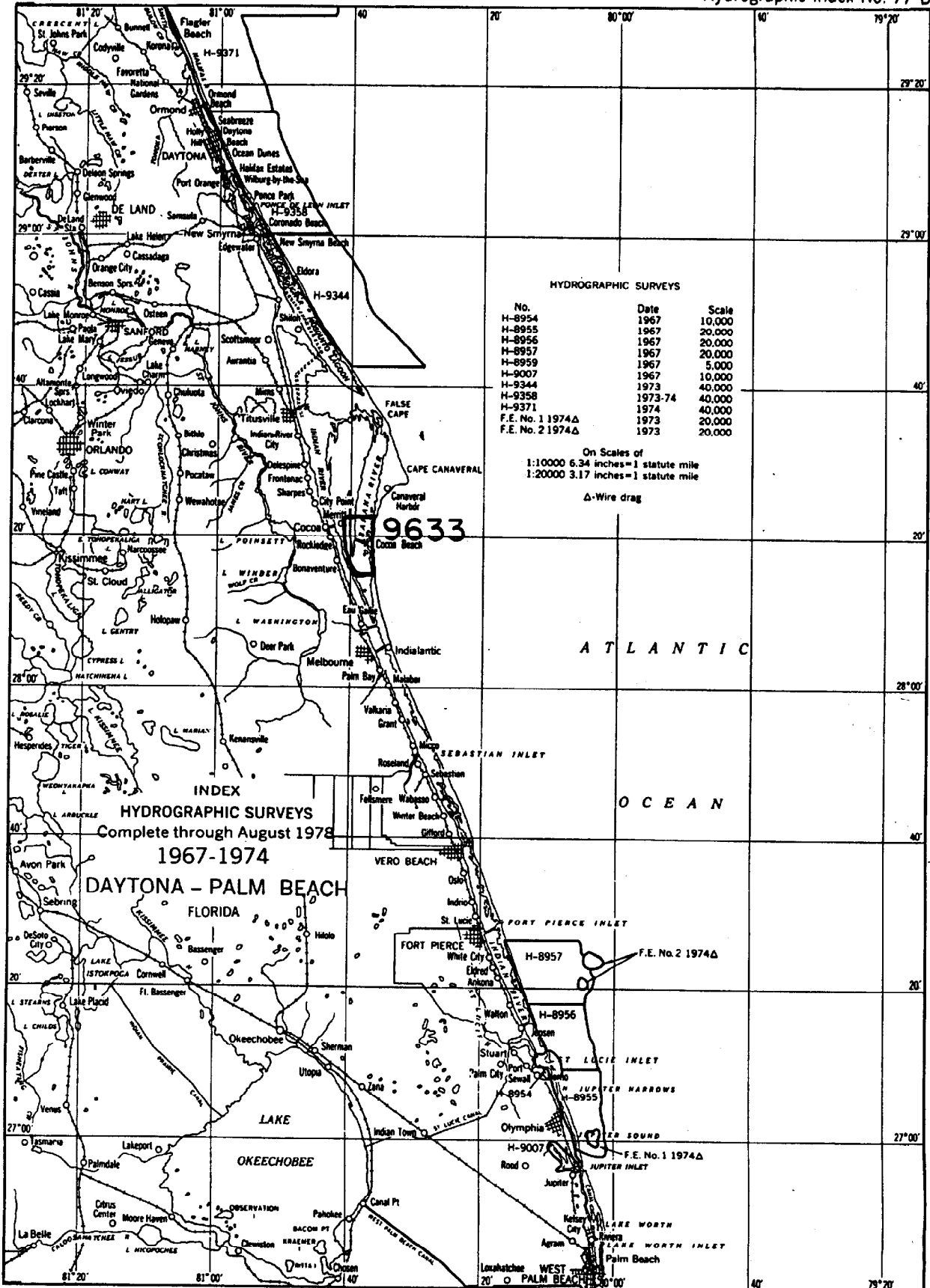


10TH ANNIVERSARY 1970-1980
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DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Rockville, Maryland

Hydrographic Index No. 77 D



HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-8954	1967	10,000
H-8955	1967	20,000
H-8956	1967	20,000
H-8957	1967	20,000
H-8959	1967	5,000
H-9007	1967	10,000
H-9344	1973	40,000
H-9358	1973-74	40,000
H-9371	1974	40,000
F.E. No. 1 1974Δ	1973	20,000
F.E. No. 2 1974Δ	1973	20,000

On Scales of
1:10000 6.34 inches=1 statute mile
1:20000 3.17 inches=1 statute mile

Δ-Wire drag

INDEX
HYDROGRAPHIC SURVEYS
Complete through August 1978
1967-1974

DAYTONA - PALM BEACH
FLORIDA

ATLANTIC
OCEAN

9633

F.E. No. 2 1974Δ

F.E. No. 1 1974Δ

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9633

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
11484	18 July 80	Alex. Radichevich (Q.C. - sheet)	Full Part Before After Verification Review Inspection Signed Via Drawing No. DIRECTLY APPLIED ON #2 DWG "20" (REDUCTION)
11485B	5-28-80	(A.C. - sheet)	Full Part Before After Verification Review Inspection Signed Via Drawing No. 19B
11476	1/22/82	J.B. Keenan	Full Part Before After Verification Review Inspection Signed Via Drawing No. 30
11481	10/10/64	Peter Shumar	Full Part Before After Verification Review Inspection Signed Via Drawing No. NEW CHART 1st ED.
			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.
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