

4963

Diag. Cht. No. 1248

4963

Form 504 Ed. June, 1928	
DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY R. S. Patten, Director	
State: Florida	
DESCRIPTIVE REPORT	
Topographic Hydrographic	Sheet No. 4963
LOCALITY	
East Coast ~ Palm Beach	
Lake Worth Inlet to	
Hypoluxo Island	
1929.	
CHIEF OF PARTY	
R. L. Schoppe, C. Shaw	

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: Florida

11-5613

DESCRIPTIVE REPORT

4963

Hydrographic Sheet No. 1

4963

B. Z. B. SURVEY

L. & A.

MAR 24 1930

Acc. No.

LOCALITY:

East Coast of Florida

Off Palm Beach

1929

Steamer R A N G E R
CHIEF OF PARTY:

Ray L. Schoppe

Chas. Shaw.

DESCRIPTIVE REPORT TO ACCOMPANY SHEET NO.1

FLORIDA EAST COAST

OFF PALM BEACH.

-0-

This sheet was partially plotted on board the Steamer RANGER. It is finished at the New Orleans Field Station and the ship files are not available for reference. Attached to this report is the ship's copy of a "Report on Unfinished Office Work on Steamer RANGER, August 19th, 1929." On this date, I was relieved by Lieut. Chas. Shaw. In red ink, are entries by Lieut. Shaw showing the condition of work when he forwarded it to Washington on November 23rd. The remaining work has been done in the New Orleans Office.

The field work on this sheet is done under instructions dated December 27, 1928.

The area covered by this sheet lies between Latitude $26^{\circ} 34'.6$ N., and Latitude $26^{\circ} 46'.5$ N., and between the shore line off Palm Beach, Fla. in Longitude $80^{\circ} 02'.1$ W., and the 100 fathom curve in Longitude $79^{\circ} 57'$ W. This sheet joins the work of the Motor vessel NATOMA on the North. It joins sheet 2, (RANGER) at Lake Worth Inlet, and it joins sheet 3 (RANGER) on the South.

Survey methods differ somewhat from the methods in common use at this time. All signals were located by triangulation and

traverse. Shore line is not shown on this sheet. It will be supplied by the office compilation of aerial photographs. Reference is made here to the fact that only one pier now exists on the ocean side of Palm Beach. The pier at the Breakers Hotel, which appears in the pictures, was entirely destroyed in the hurricane in September, 1928. All positions depend on sextant fixes. All soundings on east and west lines in less than 15 fathoms, were made by hand lead. Approximately 50% of the development of the ridge (which is noted about 1 mile offshore), was made by hand lead. The fathometer was used in connection with hand lead soundings in 90% of the soundings between 6 fathoms and 15 fathoms,- whenever the fathometer was working. In depths over 15 fathoms, the fathometer was used exclusively, except for a limited number of comparisons with up and down wire soundings. No tube soundings were made on this sheet. The soundings at Lake Worth Inlet are shown on sheet 2.

All fathometer work on this sheet was done by Lieut. W. O. Witherbee. Due to the fact that so much experimental fathometer work was done during the season, it is necessary to rely on Lieut. Witherbee's compilation of fathometer corrections for all of the results by that method. On this sheet only one striker and one recording panel were used, but due to the fact that different springs were used in the striker, and different dial

speeds were involved, as well as different water temperatures encountered along the edge of the Gulf Stream, it will be noted that the fathometer corrections are somewhat complicated. It is believed that Lieut. Witherbee's compilation of these corrections, (attached as a part of this report), are in such form that the results are free from serious uncertainty.

The operation of the fathometer during this season was unsatisfactory. The records have numerous references to the failure of the apparatus during working hours and on numerous occasions, when working conditions were favorable on the offshore side of the sheet, it was necessary to resort to hand lead work while the fathometer was overhauled and adjusted. On the whole, this resulted in considerable loss of time and was mainly traceable to the poor quality of springs installed in the No. 413A striker. It should be noted that at the end of the season, the fathometer was out of commission, - for causes unknown to the fathometer expert. I believe that the results were favorable enough to justify the installation of an improved fathometer for future soundings.

All inshore work was done by R. C. Overton, Mate. It was not necessary to use a pulling boat. Inshore launch work was done on smooth days when the launch was able to run a few meters off the beach. It will be noted that one entire line of soundings

was run inside the one fathom curve. A system of diagonal lines was run by the launch to show up the system of ridges that exist parallel to the shore in much of this inshore area.

At New Orleans, in plotting depths when simultaneous hand lead and fathometer soundings were taken, the hand lead readings have been selected except in a few cases. These cases are noted in the records and practically all occur on the ridges where it is probable that small lumps exist which might easily be missed by the hand lead.

A ridge about 1 mile offshore begins in Latitude $26^{\circ} 43' N$. (east of the Breakers Hotel) and extends southward beyond this sheet to Hillsboro Light. On this sheet, the least depth found is 43 feet, with coral bottom. This ridge usually marks the inshore limit of the Gulf Stream. Inside of it there is often a counter current. Southbound vessels come as close inshore as they dare to, and light draft vessels steam along inside the ridge. Deep draft vessels seldom come inshore so close. This ridge should be wire dragged in order that the deeper draft vessels may shape a course closer inshore and thus avoid having to buck the Gulf Stream current. With this exception, I consider the work on this sheet complete.

No serious discrepancies were noted on this sheet. A few sizeable differences occurred in deep water but these were noted at places where the fathometer was working badly. Notations in

the record show the recommended choice of soundings.

A 57 ft. fathometer sounding (Pos. 145-146B) in Latitude $26^{\circ} 44'.2$, Longitude $80^{\circ} 01'.1$ is confirmed by a 60 ft. hand lead sounding. When plotted on the boat sheet the hand lead reading was used, and while this gave a slight indication of shoal, it was close to a 63 ft. sounding and there was little to indicate need for split lines. The reduced soundings show 57 ft. and had this value been evident during field work, further development at that point would have been made. The character of bottom in this locality is not such as to ^{indicate} ~~cause~~ any ~~likelihood of~~ ~~doubt as to~~ the existance of a danger to navigation at this place. A few other minor discrepancies are cross referenced in the records and a statement as to their disposal is noted in the records.

This sheet is remarkably free from soundings which might be classed as dangers. The ruins of the old Florida East Coast Railroad pier are located off the Breakers Hotel (Latitude $26^{\circ} 42'.8$). This pier was formerly a landmark and it stood as an important detail in the history of South Florida. Before the Flagler Railway system was built south of Palm Beach, this pier was used as an ocean terminal for the railroad and vessels ran from here to Havana, Key West and Nassau. It is reported to have extended 1400 ft. from the beach. A 6 ft. spot is now found

350 meters from the high water line and it is probable that broken off screw piles covered with less water than that, may still exist in this limited area. The hurricanes of 1926 and 1928 destroyed every vestige of the superstructure except two cast iron piles on the beach above low water mark. These have now been cut off and only the shoal remains to mark the location. Small boats are warned to avoid this area.

Extending south about 2 miles from this location is a ridge parallel to the beach and having depths of from 5 to 7 ft. on it. This ridge is about 1000 ft. offshore and considerably deeper water is found between it and the beach. The Rainbow Pier in Latitude $26^{\circ} 42'$ is a fishing pier extending seaward so that its east end is near the crest of this ridge. Coastwise vessels pass less than a quarter of a mile off this pier (Ø END). Due to the courtesy of the owner (Capt. Gus Jordahn) a standard tide gauge was installed and operated on this pier in 1929.

A ridge about 1 mile offshore has been mentioned above. On the crest of it one 43 ft. sounding (Pos. 145-146 ^F ~~R~~, in Latitude $26^{\circ} 41'.8$, Longitude $80^{\circ} 01'.1$) and several scattered 45 ft. soundings were located. Deep draft vessels seldom venture inside this ridge although the present edition of Chart 1248 does not show these soundings and it is believed that

these vessels now pass directly over the shoalest part of the ridge. There are indications that the shoalest soundings are found on coral heads. For this reason, it is recommended that this area be wire dragged. Other shoal soundings in this area are noted as follows:-

	Depth	Position	Latitude	Longitude	
(a)	64 ft.	128 F	26 - 45.9	80 - 00.7	? must be 68 ft - 1st study below 128 F gtb
(b)	67 ft.	7 G	26 - 45.1	80 - 00.7	✓
(c)	74 ft.	131 B	26 - 44.5	80 - 00.8	✓
(d)	84 ft.	136 F	26 - 44.1	80 - 00.6	✓
(e)	48 ft.	92 E	26 - 42.8	80 - 01.0	✓
(f)	50 ft.	111 E	26 - 42.2	80 - 01.0	✓
(g)	5 ft.	32 e	26 - 41.8	80 - 01.8	✓
(h)	45 ft.	38 L	26 - 39.3	80 - 01.3	✓
(i)	45 ft.	37 K	26 - 39.0	80 - 01.2	✓
(j)	45 ft.	104 M	26 - 37.6	80 - 01.4	✓
(k)	45 ft.	114 M	26 - 36.9	80 - 01.4	✓
(l)	44 ft.	89 K	26 - 36.6	80 - 01.5	✓
(m)	40 ft.	157 K	26 - 36.2	80 - 01.5	✓
(n)	41 ft.	96 L	26 - 34.8	80 - 01.6	✓

A course made good one mile offshore will clear, for deepest draft, all dangers found on this sheet. Coastwise vessels run close to the buoy at the entrance to Lake Worth Inlet,-

thence to a point one quarter mile off the end of the Rainbo Pier and, then 0.3 mile offshore past the limit of the sheet. This course gives depths of 5 fathoms and many captains with local knowledge run well inside this course in daylight.

Care must be exercised in this area, especially at night. Due to the variable strengths of current along the western edge of the Gulf Stream it is unsafe to rely too closely on the distance run between bow and beam bearings.

There are no channels on this sheet except the entrance to Lake Worth Inlet. That will be described on sheet 2. There are no anchorages on this sheet. Sailing vessels anchor wherever charted depths permit, but the holding ground is poor and vessels with two anchors down have been observed to swing around and have serious difficulty with fouled chains. Small craft enter Lake Worth Inlet for anchorage. During the progress of the work, the RANGER anchored anywhere along this coast in about four fathoms.

In comparing this survey with previous surveys, somewhat shoaler soundings were found on the ridges which extend parallel to the beach. This area is covered with lumps, apparently coral formations, and it is believed that the old survey failed to locate them. In general, the eastern edge of the ridge at the ten fathom curve, is steep. No detailed comparison appears

necessary. There is no obstruction in the area mentioned in Par. 27d of the Instructions.

None of this area has been wiredragged but the character of the bottom is such that it is highly desirable to have the ridges examined by this method.

No new geographic names appear within the limits of this sheet.

The action of the Gulf Stream current has a marked influence on navigation in this area. Northbound vessels lay a course several miles offshore and need not be considered in this paragraph. I have noted above that southbound vessels run as close inshore as possible to avoid the Gulf Stream. During the working season, a small tide rip was frequently noticed along the location of the steep slope which follows closely the ten fathom curve. This usually marks the western limit of the strength of the northbound current. During easterly winds, this limit moves inshore and frequently extends to the beach. During westerly winds this limit appears to move offshore and on two occasions a southerly drift was observed all the way from shore to the one hundred fathom curve.

At Lake Worth Inlet, on an ebb tide, the discolored water from the lake can be seen drifting sharply to northward as soon

as it passes out of the jetties. This is very marked for 90% of the time. Once in a while it was noted that this current was reversed and on two occasions, when the RANCER was entering port after dark, a strong and unexpected southerly drift was found at the entrance to the jetties. Due to the narrow channel at this place, and the lack of a lighted range in the entrance, it is a source of considerable danger for any vessels except small motor boats. This danger, of course, exists only after dark, for in daylight, there are plenty of shore ranges to make the entrance an easy one.

The variations of current are so irregular that no definite conclusion can be made as to the cause. Toward the end of the season, the writer began to suspect that the strongest northbound current inshore occurred on an ebb tide. It was suspected that a weak northbound current, or possibly a southerly drift might be associated with a flood tide.

One other observation was made, which may well be noted here. When taking water temperatures and vertical casts for fathometer comparison near the one hundred fathom curve, it was difficult to obtain an up and down lead for the wire. It appeared that sub-surface currents were probably different from surface currents. In the case of windy weather, it is probable that

the surface indications may not give a correct idea of the drift of the main body of the Gulf Stream.

Only one definite conclusion can be made regarding these currents. They are so erratic that vessels running close inshore must take special precautions to determine the set and drift of the current. Southbound vessels can avoid much of the Gulf Stream by running close inshore, but in doing so, the above caution must be observed.

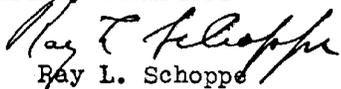
A standard tide gauge was maintained on the Rainbo Pier throughout the season. This gives a valuable set of tide observations on the open coast. All soundings on this sheet are reduced from the readings of this gauge.

The following tables are attached:-

- (a) Statistics
- (b) Landmarks for charts
- (c) Fathometer corrections.

New Orleans Field Station.
March 17 1930.

Respectfully submitted


Ray L. Schoppe
Chief of Party.

STATISTICS

for

FIELD SHEET NUMBER 1

Date	Vol.	Letter	Position	Soundings		Statute	Vessel
				Hand	Fathometer	Miles	
April 8	1	A	143	225	354	26.8	Ranger
April 10	1	B	193	354	302	39.1	Ranger
April 15	1	C	32	17	77	9.0	Ranger
April 17	2	D	17	0	40	4.8	Ranger
April 18	2	E	137	234	206	21.6	Ranger
April 29	2	F	163	150	408	40.8	Ranger
April 30	2	G	120	159	244	29.9	Ranger
April 30	3	G	72	104	111	15.1	Ranger
May 2	3	H	187	269	368	39.9	Ranger
May 3	3	J	23	0	64	4.6	Ranger
May 6	3	K	143	145	343	31.3	Ranger
May 6	4	K	48	39	128	13.8	Ranger
May 7	4	L	167	82	386	37.7	Ranger
May 31	4	M	177	138	472	32.0	Ranger
June 23	4	N	18	64	0	1.8	Ranger
	Total-Ship		<u>1640</u>	<u>1980</u>	<u>3503</u>	<u>358.2</u>	Ranger
April 17	5	a	24	98		3.1	Launch
April 19	5	b	154	908		28.3	Launch
April 22	5	c	137	832		16.7	Launch
May 5	6	d	145	831		22.5	Launch
June 4	6	e	107	536		16.2	Launch
	Total-Launch		<u>567</u>	<u>3205</u>	<u>0</u>	<u>86.8</u>	Launch
Total for Sheet No. 1 -----			2207	5185	3503	415.0	

Office Copy

Original

REPORT

on

UNFINISHED OFFICE WORK

Steamer RANGER, August 19, 1929

Typewritten copy is Ranger Work
taken over by Charles Shaw Aug 19th
from R.L. Schoppe.

Red ink remarks show work
done on these sheets thru
Nov 23, 1929 upon forwarding
unfinished work of R.L. Schoppe
to Washington office.

FLORIDA EAST COAST.

Instructions dated December 27, 1928 and
Cape May Supplemental Instructions dated July 15, 1929.

TOPOGRAPHY AND PHOTO CONTROL.

Two sheets finished. Need final
review and descriptive reports. The aero-photos covering this
area are now in possession of Lieutenant Reading. Sheets not
to be forwarded until all smooth hydrographic sheets are ready
for plotting. *Finished two sheets. Includes descriptive report and list of DM's and DP's
for signals. DM's and DP's not checked. Some of these signals have been computed in the
Tanner and their values should be used. Computations at Office: Completed.*

HYDROGRAPHY.

Sheet 4811a.

Two boat sheets.

One smooth sheet. Positions all plotted.

Three volume soundings. Ready for tide reducers.

Descriptive report is to be written.

No fathometer. *Completed and forwarded to the office Nov 15th*

Sheet 4 (1928)

Three boat sheets.

One smooth sheet, has 1928 soundings all plotted
in pencil and all 1929 positions are plotted.

Five volume soundings: ready for 1929 reducers.

Descriptive Report is to be written and reference should be made
to Descriptive Report written for 1928 work.

Fathometer corrections are submitted in rough copy
and are to be checked. *All completed and forwarded to Office Nov. 18th
Fathometer data compiled and completed.*

Sheet 1 - 1929.

One boat sheet.

One smooth sheet, has a few positions plotted and is
ready for smooth plotting remainder.

Six volume soundings records. Ready for tide reducers.

Fathometer corrections are submitted in rough copy and
need to be checked. *All positions plotted. 50% of soundings penciled on
smooth sheet. Sounding volumes all finished. Fathometer data compiled and
completed.*

1400 plotted
3800 to be done in U.S.
R.L.

H 4930
3/24

4811a
4/24

Sheet 3 - 1:10,000 Lake Worth.

One boat sheet. *with onion tracing*

Three volumes sounding records, are ready for tide reducers.

Smooth sheet not yet made. Signals for this were partly located from sketch on this vessels topographic sheet and partly from topographic sheets from NATOMA. It may be necessary to have a photostat copy of the NATOMA sheet to locate signals in the south end of the work.

Work on the south end of this sheet was left uncompleted in accordance with the Director's letter of April 11th.

No fathometer. *Sounding volumes completed. Smooth plotting of sounding positions 50% completed on smooth sheet.*

Sheet 3 - 1:20,000.

Two boat sheets.

Smooth sheet is made and signals are plotted. No positions are plotted.

— Five volumes sounding records are ready for tide reducers.

— Fathometer corrections are submitted in rough copies and are to be checked. *Sdg. vol. completed. Positions 95% plotted on smooth sheet. Fathometer data compiled and completed.*

Sheet 4 - 1:20,000.

Two boat sheets.

Smooth sheet is not yet made.

— Five volumes soundings are ready for tide reducers.

— Fathometer corrections are submitted in rough copy and are to be checked. *Sdg. vol. completed. Smooth sheet 30% positions plotted. Fathometer data compiled and completed in finished report.*

Sheet 1, Cape May 1929 - 1:5,000.

One boat sheet.

Field work complete, except to investigate any faults found in smooth plotting. This smooth sheet should receive immediate attention and if any doubtful spots are found they can be sounded immediately and before the smooth sheet goes to the office.

Signals are on Mr. Gibson's topo sheet of Cape May 1929.

— Three volumes of sounding records are ready for tide reducers. Tide gauge is at Coast Guard Boat House, Cape May Harbor.

(Note: Please furnish me with statistics for this sheet for my Annual Report). *Sheet 1 Completed and forwarded Nov 7/29*

TOPOGRAPHY, Cape May 1:5,000.

Field work is finished and sheet is inked. Ready for final review and descriptive report. Hold here until hydrography is finished, on account signals. (Please furnish statistics for my annual report. *Completed and forwarded Nov 7/29*)

Palm Beach

W. Palm Beach

TIDES.

Four stations in Florida - 1929.
Rainbo Pier - Rainbo Docks. Fort Lauderdale and
Port Everglades. (Same as Bay Mable 1928). Mariograms have
been forwarded. Rough copies are already for copying.
Report on establishment of tide stations are in rough copy
ready for copying.

Levels are completed and Mr. Massey has the smooth copies
50% complete.

One station Coast Guard Boathouse, Cape May.
Mariograms ready to send off. Gauge still operating.
Levels to be run to one Bench Mark. Other bench marks
were all recovered and levelled in 1928.

MAGNETICS.

Observations are complete.
Disc and recovery of stations are complete.
Seasons report of magnetics has been forwarded.
Other notes are to be smooth copied.
Ship swing at Palm Beach in June 1929 is computed and
ready for smooth copy.

*All above data completed and forwarded to Washington office.
earlier in season.
Nov 23, 1929.*

Nov 23/29
As Mr. Rigg is being detached from the Ranger. All the above work
forwarded now should be reviewed and inspected by Capt. Scheppe
for explanations of discrepancies in crossings, etc. Plotting of signals
on the Lake North sheet, etc should be approved by him, and other work
finished which is now uncompleted.

Charles Shaw

*Coast Pilot notes
should be written.*

Section of Field Research

cm

March 24, 1930

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 4963

Locality: East Coast Florida (off Palm Beach)

Chief of Party: R. L. Schoppe, in 1929
Plane of reference is mean low water, reading
2.5 ft. on tide staff at Palm Beach.
ft. below B. M.

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

RAW

Chief, Division of Tides and Currents.

Section of Field Records

Report on sheet No. H. 4963

Surveyed in 1929 - Instructions dated 12/27/29.

Chief of Party - P. L. Scheppe, Charles Shaw

Dredged by - P. L. Scheppe

Protective by - J. S. Massey

Soundings plotted by - J. S. Massey - J. D. Morton

Verified and inked by - J. M. Church

1. The records conform to the requirements of the General Instructions.

2. The plan and character of the development fulfil the requirements of the General Instructions except that the 72-70 and 68 ft. soundings on line 127-128 F Lat. 26-45.9 Long. 80-00.7 indicate a slight shoaling that should have been further developed. See par. 1 page 5 descriptive report for the reason of not developing the area surrounding the 57 ft. fathometer sounding Pas. 145-146 B. Lat. 26-44.2 Long. 80-01.1

3. The sounding line crossings are adequate and satisfactory.

4. The usual depth curves can be completely drawn within the limits of the sheet.

5. The field plotting was completed to the extent prescribed by the General Instructions and was very satisfactory.

6. The office draftsman did not have to do over any part of the work except move the

laminic line 17 to 196 shoreward in order to conform with adjacent depths. The signals used for the fix of position 186 are very high objects and when used close inshore give a weak fix. See note on page 37 Vol. 6 records for this sheet.

7. The contemporary adjoining sheets have not been verified at this time, but the overlap will be applied at the time these sheets are verified.

8. Remarks:-

The work on this sheet is both fathometer and hand lead. In those cases where the two types of soundings were taken simultaneously the hand lead soundings have been platted, except in the case of the 57 ft. fathometer sounding mentioned in par. 2 this report.

In no cases were the fathometer soundings inked when the depth was below 8 fathoms. In those cases where the fathometer soundings were below 8 fathoms and not taken simultaneously ^{with hand lead soundings} they have been left in pencil for the consideration of higher authority.

The shallowest depth on the ridge about 1 mile offshore which begins in Lat. 26-43 (East of Breakers Hotel) and extends southward beyond the limits of this sheet is a 43 ft fathometer

Sounding located on line 145-146 F in
Lat. 26°41.8 Long. 80-01.1 with coral bottom.

Due to the character of the
bottom and the fact small bumps
may exist which could easily be missed
with the Hard Lead, it seems that
this ridge should be wire dragged
in order that a course may be shaped
closer inshore for deep draft vessels
to avoid the effects of the Gulf Current.

Respectfully submitted
J. H. Kunk
May 14, 1930.

AND REFER TO No. **11-WSW**

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

August 22, 1930.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4963

Vicinity of Palm Beach, Fla.

Surveyed in 1929

Instructions dated December 27, 1928 (Ranger)

Fathometer and Hand Lead Soundings

Chief of Party, R. L. Schoppe, C. Shaw.

Surveyed by R. L. Schoppe.

Protracted by J. S. Massey.

Soundings plotted by J. S. Massey; J. S. Morton.

Verified and inked by J. H. Church.

1. The records are clear and conform to the requirements.
2. The plan, character and extent of the survey satisfy the general and specific instructions except that quite a number of soundings were obtained with the fathometer in depths under eight fathoms. In fact most of the shoalest depths found along the ridge, approximately one mile from shore, are fathometer soundings for which there were no simultaneous hand lead soundings. A study of simultaneous hand lead and fathometer soundings taken in shoal depths showed the fathometer to be accurate within about two feet and all fathometer soundings were accepted.
3. The sounding line crossings are adequate and the agreement of adjacent lines is generally good. There are a few spots where the fathometer showed soundings somewhat shoaler than the surrounding depths, as in the case of the 72, 70, 68 and 72 feet soundings on the line between position 127 F and position 129 F in about Lat. $26^{\circ} 46.0'$, Long. $80^{\circ} 00.7'$. These soundings were accepted however.
4. The information is sufficient for completely drawing the usual depth curves.

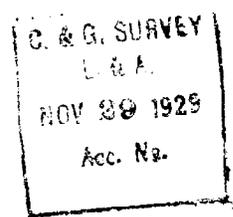
5. The junction on the north with H. 4914 is satisfactory. Neither H. 4968, the Lake Worth Inlet Sheet, nor H. 5016, which joins on the south, has been completed and the junctions will be reported in the reviews of those sheets.
 - a. The work on this sheet is much closer than on the previous surveys and shoaler depths were found along the ridge parallel to the beach.
6. The usual amount of field plotting was well done by the field party.
7. Character and scope of surveying --- very good. The ground has been well covered and about the right amount of development has been done except in the case of the 57 foot sounding in Lat. $26^{\circ} 44.15'$, Long. $80^{\circ} 01.2'$.
8. While no additional hydrography is necessary the chief of party recommends the wire dragging of the ridge beginning in Lat. $26^{\circ} 43'$ and extending south beyond the limits of this sheet. This is desirable because of the lumpy character of the bottom and the fact that south bound vessels like to hug the coast in order to avoid the gulf stream.
9. Reviewed by R. L. Johnston, June 2, 1930.

Approved:


Chief, Section of Field Records (CHARTS)


Chief, Section of Field Work (H. & T.)

Original



ABSTRACT OF TEMPERATURES AND SALINITIES

East Coast of Florida

H4963

April - June 1929

Ship RANGER

R. L. Schoppe, Chief of Party

Charles Shaw, Chief of Party
(Reduction of records etc.)

The attached three sheets of temperatures and salinities for the Ship RANGER, Florida 1929, have been compiled for last season's records left unfinished by R. L. Schoppe upon his transfer August 19, 1929.

Cape May, N. J.,
October 18, 1929.

Charles Shaw
Charles Shaw,
Commanding, Ship RANGER.

Ship RANGER

ABSTRACT

of

Temperatures & Salinities

Florida 1929

Depth fms.	Tempt. Cent.	Salinity	Latitude	Longitude	Date	Remarks
101	8.0	36.5	28° - 46.0 ^N	79-56.3W.	4-15-29	c Sheet 1, 1929
90	8.8	36.5				
80	9.5	36.5				
70	10.5	36.5				
60	12.7	36.5				
50	16.7	36.5				
40	18.3	36.5				
30	20.6	36.5				
20	23.2	36.5				
10	24.2	36.5				
2	25.0	36.5				
1	24.3	none taken	26-42.0	80-00.1	4-18-29	13E Sheet 1, 1929
10	23.7					
20	23.7					
30	22.0					
40	19.2					
50	14.3					
35	20.5					
45	17.5					
109	13.3	None taken	26-40.0	79-57.4	4-29-29	F Sheet 1, 1929
90	16.0					
80	17.5					
70	17.9					
60	21.1					
60	20.5					
50	19.1					
50	21.5					
40	22.9					
30	23.3					
20	26.5*					
10	27.0*					
0	27.2					
		*Reads off scale				
67	14.6	Non taken	26-38.7	79-59.9	4-30-29	G day Sheet 1, 1929
60	15.3					
50	16.3					
40	17.7					
30	18.8					
20	22.4					
10	24.2					
0	25.5					
18	24.1					

Depth fms.	Temp. Cent.	Salinity	Lat.	Long.	Date	Remarks
10	25.4					
90	25.6					
115	8.2	37.0	26-35.5	79-57.1	5-7-29	L day, Sheet 1, 1929
100	9.2					
80	10.2					
70	15.0?					
60	15.0					
50	17.7					
70	14.5					
40	20.7					
30	22.2					
20	25.0					
10	26.5					
0	26.7					
30	24.6	(None	26-14	80-03.8	4-26-29	C' day Sheet 4, 1928, 1929
20	25.0	Taken)				
10	25.2					
2	25.3					
100	10.5	36.2	26-15	80-01.5	4-26-29	C' day, Sheet 4, 1928, 1929
90	13.3					
80	16.1					
70	18.5					
60	19.0					
50	21.0					
40	21.5					
30	23.8					
0	25.2					
62	14.9	36.4	26-30.9	80-01	6-7-29	D day Sheet 3, 1929
50	18.5					
40	20.1					
30	23.0					
20	24.6					
10	26.4					
0	27.3					
22	24.5	None taken	26-30.8	80-01.6	6-7-29	D day Sheet 3, 1929
10	27.0					
0	27.5					
102	12.5	36.4	26-27	79-59.1	6-12-29	G Day Sheet 3, 1929
90	13.5					
80	14.8					
70	16.0					
60	19.5					
50	22.4					
40	24.4					
30	25.6					
20	25.6					
10	25.6					
0	28.5					

Depth fms.	Temp. Cent.	Salinity	Lat.	Long.	Date	Remarks
106	10.8	None taken	26-19.5	80-00.5	6-20-29	D day Sheet 4, 1929
90	11.5					
80	13.1					
80	12.8					
70	12.1					
60	15.7					
50	17.6					
40	22.3					
30	24.3					
20	24.3					
10	27.0					
0	28.2					
60	13.6	None taken	26-16.8	80-02.9	6-21-29	E day Sheet 4, 1929
50	14.1					
40	16.4					
30	18.6					
20	22.5					
10	25.0					
0	27.5					
33	17.6	None taken	26-16.0	80-03.3	6-21-29	E day Sheet 4, 1929
20	21.9					
10	25.0					
0	27.5					

Oct 1929
Compiled by W.A.G.
R.C.O.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO.

4963

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. I 1929

REGISTER NO. **4963**

State Florida

General locality East Coast ~ Palm Beach

Locality Lake Worth ^{Inlet} Hypoluxo Island
~~Palm Beach.~~

Scale 1:20,000 Date of survey April - June, 1929

Vessel Ranger.

Chief of Party R. L. Schopps, Charles Shaw

Surveyed by R. L. Schopps.

Protracted by J. S. Massey

Soundings penciled by J. S. Massey - J. S. Morton

Soundings in fathoms feet feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by None

Inked by _____

Verified by _____

Instructions dated Dec. 27 1929, 19

Remarks: Sheet is not finished. (Steamer RANGER)

Sheet completed in New Orleans Field Station.

August 22, 1930.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4963

Vicinity of Palm Beach, Fla.

Surveyed in 1929

Instructions dated December 27, 1928 (Ranger)

Fathometer and Hand Lead Soundings

Chief of Party, R. L. Schoppe, C. Shaw.

Surveyed by R. L. Schoppe.

Protracted by J. S. Massey.

Soundings plotted by J. S. Massey; J. S. Morton.

Verified and inked by J. H. Church.

1. The records are clear and conform to the requirements.
2. The plan, character and extent of the survey satisfy the general and specific instructions except that quite a number of soundings were obtained with the fathometer in depths under eight fathoms. In fact most of the shoalest depths found along the ridge, approximately one mile from shore, are fathometer soundings for which there were no simultaneous hand lead soundings. A study of simultaneous hand lead and fathometer soundings taken in shoal depths showed the fathometer to be accurate within about two feet and all fathometer soundings were accepted.
3. The sounding line crossings are adequate and the agreement of adjacent lines is generally good. There are a few spots where the fathometer showed soundings somewhat shoaler than the surrounding depths, as in the case of the 72, 70, 68 and 72 foot soundings on the line between position 127 F and position 129 F in about Lat. $26^{\circ} 46.0'$, Long. $80^{\circ} 00.7'$. These soundings were accepted however.
4. The information is sufficient for completely drawing the usual depth curves.

5. The junction on the north with H. 4914 is satisfactory. Neither H. 4968, the Lake Worth Inlet Sheet, nor H. 5016, which joins on the south, has been completed and the junctions will be reported in the reviews of those sheets.
 - a. The work on this sheet is much closer than on the previous surveys and shoaler depths were found along the ridge parallel to the beach.
6. The usual amount of field plotting was well done by the field party.
7. Character and scope of surveying --- very good. The ground has been well covered and about the right amount of development has been done except in the case of the 57 foot sounding in Lat. $26^{\circ} 44.15'$, Long. $80^{\circ} 01.2'$.
8. While no additional hydrography is necessary the chief of party recommends the wire dragging of the ridge beginning in Lat. $26^{\circ} 43'$ and extending south beyond the limits of this sheet. This is desirable because of the lumpy character of the bottom and the fact that south bound vessels like to hug the coast in order to avoid the gulf stream.
9. Reviewed by R. L. Johnston, June 2, 1930.

Approved:

Chief, Section of Field Records (CHARTS)

Chief, Section of Field Work (H. & T.)

appended to ch 291

4/12/49

H. W. B.