6326

Form 504
Rev. Dec. 1933

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

~~Topographic~~
Hydrographic } *Sheet No.* H-6326

State Florida ~~Keys~~

LOCALITY

~~Spanish Channel~~
~~to~~
~~Barracuda Keys~~ Florida Keys
Annette Key to Johnston Key

1939

CHIEF OF PARTY

E.M. McCarthy

U.S. GOVERNMENT PRINTING OFFICE: 1934

6326

Form 537
Ed. Dec. 1930

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

JUN 1939

REG. NO.

HYDROGRAPHIC TITLE SHEET

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

Field No. 24

REGISTER NO. H- 6326 6326

State Florida

General locality Florida Keys

Locality ~~Spanish Channel to Barracuda Keys~~ Annette Key to Johnston Key

Scale 1:20,000 Date of survey Oct. 1938 - Mar., 1939

Vessel Shore Party No. 1

Chief of Party E. R. McCarthy

Surveyed by E. R. McCarthy and P. A. Weber

Protracted by P. A. Weber, E. L. Patterson, J. C. Tribble, Jr. and H. F. Garber.

Soundings penciled by H. F. Garber

Soundings in ~~fathoms~~ feet

Plane of reference Mean low water

Subdivision of wire dragged areas by

Inked by Wallace A. Bruder

Verified by W. A. B.

Instructions dated November 17, 1933

Remarks:

U. S. GOVERNMENT PRINTING OFFICE

APPROVAL SHEET BY THE CHIEF OF PARTY
HYDROGRAPHIC SHEET NO. 6326
FLORIDA KEYS, 1938-39

6326

The field work on this sheet was executed under E. R. McCarthy, Chief of party. The smooth sheet was prepared and the first fifteen volumes of soundings were protracted by P. A. Weber, Aid, and E. L. Patterson, draftsman, under the direction of E. R. McCarthy. The tide reducers were entered and the soundings reduced by E. R. McCarthy. On March 31, 1939 George L. Anderson, H. & G. E. relieved E. R. McCarthy as Chief of Party. The protracting of the sheet was then carried forward through volume number 21 by J. C. Tribble, jr. H. & G. E. On April 15 J. C. Tribble was detached. Beginning with the protracting of volume number 22, the remainder of the sheet was completed by H. F. Garber, jr. H. & G. E. while the chief of party was on leave.

As all officers who were engaged in the field work on this sheet have been transferred, the boat sheet and a copy of the descriptive report are being forwarded to E. R. McCarthy in order that he may supplement the descriptive report. Supplemental reports attached

The records, sheets, and report have been examined and are approved.

George L. Anderson
George L. Anderson,
H. & G. Eng'r.
Chief of Party.

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEET # 6326 (FIELD #24)
Items marked thus + are discussed further in attached supplemental report.
FLORIDA KEYS 1938- 1939

AUTHORITY

Instructions from the Director dated November 17, 1933 to H. A. Cotton. Data of any supplemental instructions are not on hand.

LIMITS

In general, the area covered extends from Harbor Key Bank to Johnston Key on the north, and from Howe Key to Sugarloaf Key on the south. The sheet joins sheet 6128 to the eastward, sheets 6324, 5922 and 5925 to the southward, sheet 5925 to the westward, and part of sheet 5925 to the northwestward. No contemporary survey exists along the northwestward side from Harbor Key Bank to two miles west of Content Keys.

METHODS AND EQUIPMENT +

Standard hydrographic methods were used. Soundings were taken with lead line and sounding pole.

Two small power launches (chartered), BOWEN and BLUEFISH, were used for sounding boats.

The shoals in the area are either mud banks or of a broken rock formation. Owing to the clarity of the water their delineation is easily seen from the sounding launch, so that these shoals were developed by taking sextant fixes and soundings along their edges at critical points. This gives a good delineation of the shoal, and saves a great deal of work in running closely spaced lines to bring out the outline, especially in the case of the narrow mud ridges.

On the extensive shoals only occasional spots bare at M. L. W., and the soundings range from minus one-half foot to one foot, where there is often a definite deepening of water. The zero curve is so sketchy and spotty that it cannot be satisfactorily drawn on the sheet. The shoals were outlined by short dash lines on the boat sheet to depths of one foot. The same procedure was followed on the smooth sheet.

Soundings are plotted to one-half feet up to one foot and even feet thereafter to conform with adjacent sheets. Soundings were taken and the tide reducers applied to the half foot.

WATER SIGNALS +

The character of the signals shown outside of the high water line, other than the navigational beacons, are explained in the reports of the topographic sheets of this area. No data concerning them is available at this time.

The symbol "Grs" is used to denote grass on the bottom, although it is not a standard bottom characteristic.

DISCREPANCIES +

The sounding crossings on the sheet are exceptionally good, generally crossing exactly, or within, one foot. The crossings of greater discrepancies are as follows:

	Lat. ° '	Long. ° '	Position No.	Sdg. '	Position No.	Sdg. '	
	24 45.15	81 29.90	4-5s (red)	17	2-3q (red)	19	Both inked.
	47.05	28.68	101-102s (red)	3	32-33k (red)	5-6	3 inked.
	44.15	25.75	119-120c (pur)	6	47-48g (pur)	3	6 inked.
	46.75	28.78	35-36k (red)	2	43-43p (pur)	0	0 inked.
*	44.05	36.00	34-35g' (pur)	4	130-131g (pur)	11	Adjusted.

*It is believed that the 11' sounding is correct and that the 4' sounding is displaced as the interval between 34 and 35g (pur) is long compared with the following position. On several occasions when changing from the lead line to a sounding pole the interval between positions has been unusually long, as if the time consumed in making the change is not taken care of, or it may be as the speed is reduced on approaching shoal water that is unrecorded. It is believed in this instance that the 4' sounding should be slightly to the north forming the westward point of the bank, and that the 11' channel sounding on the east and west line was not on the sounding interval of the north and south line. Sheet H-8925 shows 11' at this point.

On plotting the smooth sheet it was found that the topographic location of signal "Was" (the tide gage at ~~Bay Gudjoe~~ Sawyer Key) was in error, possibly due to an erroneous rod reading. The hydrographic location as found on Page 1, Volume 6, was accepted with satisfactory plotting of positions. This signal is shown in blue on the smooth sheet.

SHOALS AND DANGERS

The following shoals and dangers were developed from this survey. They were compared with the air photos of this area in regard to relative position and shape. In giving their positions the degrees of latitude and longitude are omitted: Lat. 24° Long. 81°

1. Lat. 50'.35 Long. 26'65

A 7' sounding (pos. 80e' pur) is the least depth on small shoal, in general depths of ~~10'~~.8 to 10'.

2. Lat. 50.05 Long. 26.05

A 5 1/2' sounding (pos. 58e' pur) is the least depth on a 6' bank.

3. Lat. 49.45 Long. 25.90

The point of a mud bank makes out at this position, the bank

continuing on the adjacent sheet. Chart 1251 does not bring out this point of bank.

4.+ Lat. 49.35 Long. 25.80

An extensive mud bank with 1',M. L. W., lies between two 7' channels.

5. Lat. 49.40 Long. 26.~~16~~ 10

Center of long narrow ridge with 1' at M. L. W. (pos. 34-37b pur.)

6. Lat. 47.5 Long. 26.2

This is the center of a triangular area, one, by one and one-half miles consisting of numerous long mud ridges, baring in spots at M. L. W. The general depths are from 3 to 5'. The ridges are outlined on the sheet, and are in good agreement with the shoal areas as they appear on the air photo #190. Indication of these shoals appear on sheet H-1926, but are improperly delineated due to insufficient development.

7. Lat. 47.40 Long. 26.75

Center of mud bank baring in spots at M. L. W. close to a channel's edge. Delineated by position 4 to 8h (red). This shoal appears on sheet H-1926 and is in good agreement with the air photos.

8. Lat. 47.05 Long 26.70

Center of narrow mud ridge covered 1' at M. L. W. in depths from 4' to 6'. Not indicated on sheet H-1926, but is in good agreement with air photos.

9.+ Lat. 46.3 Long. 26.1

It is interesting to note that this key (signals Fr~~e~~u and Gut) shows as a well defined key covered with a dense growth of mangrove on the air photos, while sheet H-1926 surveyed in 1889-90 shows no high water line, instead a dashed line with minus 1/2' soundings appearing with the word "Reef". This bears out the fact that new keys are continually forming, this one under a period of fifty years.

10. Lat. 44.74 Long. 43.6~~0~~2

North point of mud ridge covered one foot at M. L. W. (pos. 39 and 40e pur) between 4' and 3' soundings.

11. Lat. 44.78 Long.23.62

There are at this point two small mud shoals covered 2 and 3' at M. L. W., positions 21a (red) and 41e (pur~~k~~)respectively in general depths of 5 and 6'.

2 ft. on pos. 38e (pur) ~~falls~~ shown instead of 3 on pos. 41e.

12. Lat. 44.73 Long. 23.58

Pos. 38e pur. N. E. point of mud bank on edge of channel. See previous par.

13. Lat. 44.55 Long. 23.45

Pos. 36e pur., S. W. point of above bank on edge of an isolated mud patch with one-half foot at M. L. W.

14. Lat. 44.3 Long. 23.3

Pos. 25 to 34 e pur., Mud patches covered 2 and 3' at M. L. W. along edge of channel.

15. Lat. 44.2 Long. 22.9

Center of large mud bank with one foot at M. L. W. midway between Annette and Big Pine Keys.

16. Lat. 44.77 Long. 23.67

Pos. 42e pur. A two foot sounding taken at Beacon #18 on point of mud bank, surrounded by 4 and 5' soundings.

17. Lat. 44.77 Long. 23.75

Pos. 43e pur., a 2 ~~1/2'~~ sounding taken at Beacon #20 on point of mud bank.

18. Lat. 44.75 Long. 23.91

Pos. 44e pur., a 2 ~~1/2'~~ sounding at Beacon #20 on point of mud bank at edge of channel.

19. Lat. 44.97 Long. 24.04

Pos. 45e pur., a 2 ~~1/2'~~ sounding on point of mud bank at Beacon #22.

20. Lat. 45.27 Long. 24.17

Pos. 46e pur., a 1 1/2' sounding on isolated mud patch at Beacon #24.

21. Lat. 48.85 Long. 27.48

A small rocky shoal with 1/2' at M. L. W. with 2' surrounding soundings. This shoal is verified on sheet H-2006.

22. Lat. 48.35 Long. 28.30

Pos. 65 - 66y red., center of rocky shoal awash at M. L. W., a little outside of the low water line. This shoal agrees with the position on Chart 1251.

22 A. +

23. Lat. 45 to 46 Long. 27.5 to 29

Numerous middle ground mud banks with least depths and delineated as shown on sheet. These banks are not brought out on sheet H-2006.

24.+ Lat. 44.60 Long. 28.15

Center of rocky shoal with least depth of 1/2' at M. L. W.

25.+ Lat. 44.10 Long. 28.50

Center of rocky shoal awash in spots at M. L. W.

26. Lat. 44.05 Long 28.38

Pos. 84m (red), northeast point of rocky shoal making out from small key, covered 1/2' at M. L. W.

27. Lat. 47.50 Long. 29.03

Pos. 61-63y (red), center of sand bar awash at M. L. W.

28. From Lat. 46.67 Long. 29.18 to Lat. 45.22 Long. 29.30

There is a long narrow mud ridge bare in spots ~~awash~~ at M. L. W. This ridge is very pronounced in the air photos. It is shown in part on Sheet H-2006 and Chart 1251

29. Lat. 46.1 Long. 29.4

Center of long narrow mud ridge covered 1/2' at M. L. W.

30. Lat. 46.2 Long. 29.9

Center of group of numerous coral heads with least depths of zero feet at M. L. W. Positions 20 to 31r (pur) and Pos. 15, 16, 29, 30 and 31(1) pur.

31. Lat. 45.75 Long. 29.70

Center of mud ridge 5 meters wide with 1' at M. L. W. Pos. 43-44k, red.

32. Lat. 43.8 Long. 29.1

Center of middle ground mud bank covered 1' at M. L. W. Agrees with the position on Sheet H-2006.

33. From Lat. 45.3 to 47.0 and Long. 30.0 to 31.0 numerous mud banks

with depths of 0 to 1' at M. L. W., in general depths of 3 and 4', outlined as shown. These were verified from the air photos. The dividing channels at Lat. 46.6, Long. 30.4 are blind, and the whole area should be avoided.

Coral heads in this area are as follows:

Lat.	Long.	Position
46.16	30.81	39t (red) Covered 1' at M. L. W.
45.95	30.15	30,31,33,37k (pur) Group of coral heads covered 1/2' at M. L. W.
45.85	29.96	40k (pur) Covered 1/2' at M. L. W.

All shown as awash at MLW.

34. Lat. 45.07 Long. 30.55

Pos. 26-27v (pur) Center of rocky shoal with least depth of 1 1/2' at M. L. W.

35. Lat. 45.03 Long. 30.65

Pos. 23-24v (pur) Center of mud bank baring in spots at M. L. W.

36. Lat. 44.90 Long. 30.47

Pos. 28-30v (pur) Center of mud bank covered 1 1/2' at M. L. W.

37. Lat. 44.80 Long. 30.20

Pos. 3-7t (red) Center of large rocky shoal with least depth of ~~1/2~~ 0 at M. L. W.

38. Lat. 43.15 Long. 30.50

Center of rocky ledge baring in spots at M. L. W., extending from signal "Led" to Signal "Mar". No attempt should be made to cross this ledge, avoiding it by hugging Beacon #58.

39. Lat. 47.09 Long. 31.09

There is a coral head covered 3' at M. L. W. in surrounding depths of 6'.

40. Lat. 46.6 Long. 31.40

A mud shoal of 2' at M. L. W. from depths of 3 and 4'. Pos. 40, 41y (red)

41. Lat. 46.3 Long. 31.7

Lies 2 small mud shoals with least depths of 1 1/2' and 2' at M. L. W.

Pos. 36, 37, 38 and 39y (red).

42. Lat. 46.3 Long. 31.9

Center of mud shoal with least depth of ~~1/2~~ 0' at M. L. W. lying between two natural channels.

43. Lat. 46.0 Long. 31.90

Pos. 98w (pur) A coral head covered 2' at M. L. W.

44. Lat. 45.6 Long. 31.4

From north of signal "Nub" extending southwestward is an extensive mud bank awash in places at M. L. W.

45. Lat. 44.82 Long. 31.60

Pos. 102s (pur) and between 19 and 20s pur is a small middle ground ~~of~~ mud shoal with a least depth of 3½' at M. L. W., with surrounding soundings of 11 and 12'.

46. Lat. 44.65 Long. 31.55

Center of U-shaped mud shoal with least depth of 1½' at M. L. W. Pos. 116-118v (red).

47. Lat. 44.33 Long. 31.38

A coral head awash at M. L. W. Pos. 7v (pur).

48. Lat. 44.05 Long. 31.95

Pos. 37w (pur) Lies a coral head awash at M. L. W. just inside the one fathom curve.

49. Lat. 44.55 Long. 31.95

Lie two coral heads 70 meters apart just inside the one fathom curve. ~~with a least depth of 1' at M. L. W.~~ One awash, other covered 2 ft at MLW. Pos. 100-101x (pur).

50. Lat. 44.6 Long. 31.9

Lies a group of six small mud patches with a least depth of 1' at M. L. W. outlined as shown.

51. Lat. 43.4 Long. 31.55

A small mud bank with a least depth of 0' at M. L. W., in general depths of one fathom. Pos. 138s (pur), also 10 and 11t (pur).

52. Lat. 43.05 Long. 31.25

Lies a small rocky shoal with a least depth of 1/2' at M. L. W. in general depths of 4 and 5'. Pos. 7, 8, and 9t pur. LW shown from topographic maps.

53. Lat. 43.38 Long. 31.80

Pos. 13v (red) Lies a coral head covered 2' at M. L. W. just inside the one fathom curve.

54. Lat. 43.60 Long. 31.8

Lies a group of 3 small and 1 large mud shoals with a least depth of 0' at M. L. W. outlined as shown.

55. Lat. 43.95 Long. 31.85

Lies a rocky shoal with a least depth of 2 ~~1/2'~~ at M. L. W. in general depths of 4'. Beacon #62 was placed just ~~north~~ south of this shoal that it might be avoided.

56. Lat. 46.65 Long. 32.60

Lies a small rocky shoal with 2' at M. L. W. This falls within the area of Sheet 5925 and was mentioned in the supplemental descriptive report of that sheet.

57. Lat. 46.5 Long. 32.55

A coral head with 2' at M. L. W. This lies in the area of Sheet 5925 and was previously submitted as a sunken rock.

58. Lat. 46.4 Long. 32.4

Center of narrow mud ridge with 2' at M. L. W. in general depths of 4 to 6'. Pos. 25, 26 and 30y (red).

59. Lat. 45.8 Long. 32.3

Center of extensive mud bank outlined as shown.

60. Lat. 45.5 Long. 32.1

Center of group of numerous small mud lumps with least depth of 0' at M. L. W. Pos. 109-150w (pur).

61. Lat. 45.60 Long. 32.75

Lies a middle ground shoal with a least depth of 3' at M. L. W. ~~Pos. 108w 109w (red) 116w 117w (pur)~~ Pos. 91, 92, 93 and 94x (pur).

62. Lat. 44.9 Long. 32.15

Two small mud shoals with ~~one foot~~ 1½ ft at M. L. W. Pos. 108-109u (red), 116-117x (pur).

63. Lat. 44.75 Long. 32.25

A small mud shoal with one foot at M. L. W. in surrounding depths of 9 to 13'. Pos. 155, 156w (pur) and 96 to 99x pur.

64. Lat. 44.80 Long. 32.90

An isolated mud shoal with a least depth of one foot at M. L. W. Pos. 121x (pur).

65. Lat. 44.50 Long. 32.80

A mud shoal covered 1/2' at M. L. W. Pos. 38 to 46a' (pur).

66. Lat. 44.44 Long. 32.96

A rocky shoal with a least depth of 1' at M. L. W. Pos. 34 to 37a' (pur).

67. Beginning at Triangulation station "Saw" Lat. 45.2, Long. 32.87 and extending southeastward for nearly two miles to Lat. 43.50, Long. 31.80 is a rocky ridge from 100 to 200 meters wide, awash in places at M. L. W. There are numerous coral heads along the eastern side of the ridge with zero feet at M. L. W. The ridge is partially shown on Chart 1251.

68. Lat. 43.80 Long. 32.45

A coral head ~~with 1/2'~~ awash at M. L. W. in depths of 3 and 4'. Pos. 6a' (pur). Immediately south of the coral head is a small rocky shoal, covered 2' at M. L. W. Pos. 5 and 7a' (pur).

69. Lat. 43.65 Long. 32.60

Pos. 10a' (pur) A coral head with a depth of 0' at M. L. W. A rocky shoal lies just north of the head with 2' at M. L. W. Pos. 8 and 9a' (pur).

70. Lat. 43.70 Long. 32.20

The center of a narrow rocky shoal covered 2 ~~1/2'~~ at M. L. W. Pos. 134 to 136z (pur). A mud lump covered with two feet of water just S. E. of the shoal, Pos. 137z (pur).

71. Lat. 43.45 Long. 32.60

Two coral heads ~~covered 1'~~ awash at M. L. W. Pos. 108y (pur). A small mud bank with 1' at M. L. W. and small rocky shoal with 2' at M. L. W. lie just east of the coral head Pos. 109 to 114y (Pur).

72. Lat. 43.2 Long. 32.2

Two separate mud shoals covered 1/2' at M. L. W. in depths of 3 to 5'. Pos. 115 to 119y (pur)

73. Lat. 42.8 Long. 32.6

~~Pos. 7b' (pur) is~~ The north point of rocky shoal making out from the key to the southward. Depths ½ to 1½ ft.

74. Lat. 45.9 Long. 33.3

Center of small mud shoal with a least depth of 5' at M. L. W. Position 24y (red). Chart 1251 shows6' on this shoal.

75. Lat. 45.65 Long. 33.80

An inshore coral head covered 5' at M. L. W. in 8' of water.

76. Lat. 45.4 Long. 33.05

A group of coral heads close to the one fathom curve awash ~~covered 1'~~ at M. L. W. Pos. 82 to 90w (pur).

77. From Lat. 44 to 45, Long. 33 to 34 are numerous mud and rocky shoals with least depths as shown in general depths of 4 and 5'.

78. Lat. 42.5 Long. 33.3

Center of rocky shoal baring in spots at M. L. W. The northern part of the shoal is a spoil bank along the edge of the channel.

79. Lat. 42.5 Long. 33.6

At Beacon #43 is a small spoil bank with a least depth of 1½' at M. L. W. Pos. 6 - 7c' (pur).

80.+ Lat. 42.7 Long. 34.0

Center of group of narrow ridges baring in spots at M. L. W. in general depths from 3 to 5'. The hydrographic determination was modified somewhat to conform with the shapes as appear on air photo #172. The shoal area extends southeastward to Sugarloaf Key.

81. Lat. 45.6 Long. 34.0

Lies a coral head on the one fathom curve close inshore covered 2' at M. L. W. Pos. 7-8z ~~80y~~ red.

82. Lat. 45.5 Long. 34.25

A cluster of three coral heads covered 2, 3 and 3' at M. L. W. on

the one fathom curve close inshore.

83.+ Lat. 44.35 Long. 34.55

Lies a middle ground mud bank with a least depth of 2' at M. L. W. Pos. 14y red.

84. Lat. 44.35 Long. 34.95

Lies a middle ground mud bank with a least depth of 1' at M. L. W. Pos. 42 to 45d' pur.

85.+ Lat. 44.05 Long. 34.70

Is an isolated mud shoal with a least depth of 1 1/2' at M. L. W. Pos. 97 - 98d' pur. in surrounding depth of ~~0~~. 5 to 13 ft.

86. Lat. 44.10 Long. 34.05

Is the center of small mud shoal on edge of channel with 2' at M. L. W. Pos. 64-65c' pur. Three small mud shoals with least depths of 1' at M. L. W. lie just south of the shoals. Pos. 61 to 63c' pur, 115 to 118z pur.

87. Lat. 43.50 Long. 34.65

Lies a coral head ~~covered 1'~~ awash at M. L. W. Pos. 105g' pur. A small bank with a least depth of 1' at M. L. W. lies 330 meters west of this point.

88. Lat. 44.50 Long. 35.22

Is a small mud shoal at channel's edge with a least depth of 2' at M. L. W. Pos. 87-88d' pur. A second shoal lies just north of this, awash at M. L. W. Pos. 89-90d'.

89. Lat. 44.37 Long. 35.70

Is a mid-channel shoal with a least depth of 0' at M. L. W. Pos. 135f' pur.

90. Lat. 44.25 Long. 35.55

Is a cluster of coral heads with a least depth of 0' at M. L. W. Pos. 65 to 69d' pur.

91. Lat. 44.30 Long. 35.40

~~Is~~ Arc two coral heads with a least depth of 0 ~~and 1/2'~~ at M. L. W. Pos. 75 - 76d' pur.

92. Lat. 44.03 Long. 35.75

Is a zero sounding (first sdg. before Pos. 100f' pur.) at M. L. W. on the middle ground shoal between two small channels. This shoal extends southeastward 300 meters to Pos. 129f' pur.

93. Lat. 44.10 Long. 35.80

Pos. 55d' pur. is the western point of extensive shoal making out from signal "New". A small mud ridge with 1' at M. L. W. makes out just north of this point.

94.+ The long mud ridge, baring in spots at M. L. W. extending from Signal "New" to the small key just west of Johnson Key, completely shuts off any passage to the eastward. The air photos were used in collaboration with the hydrography in determining the shapes of this and adjacent shoals.

95. Lat. 43.8 Long. 35.6

A small mud patch with a least depth of 2' at M. L. W. Pos. 152g' pur.

96. Lat. 43.8 Long. 35.8

Center of large mud bank baring in spots at M. L. W.

97. Lat. 43.60 Long. 35.70

Two isolated mud patches with a least depth of 2' at M. L. W. Pos. 5 and 6h' pur.

98. Lat. 43.45 Long. 35.85

Center of mud shoal with least depth of 1/2' at M. L. W. A small mud patch with a least depth of 1½ at M. L. W. lies 100 meters east of this shoal Pos. 4h' pur.

99. Lat. 43.05 Long. 35.95

Pos. 181g' pur. is the western point of extensive ~~rocky~~ mud shoal. This point controls the width of a 6' channel 75 meters wide. The western shore of the channel is controlled by the S. E. point of an extensive shoal outlined by pos. 13 and 14f' pur.

100. Lat. 43.3 Long. 36.1

Numerous small mud patches with least depths as shown.

101.+ Lat. 42.8 Long. 36.8

Center of group of mud ridges outlined as shown. The air photos were used in collaboration with the hydrography in determining their shapes.

CHANNELS

The following channels were developed within the area of this sheet:

1.+ The channel line was run following the beacons, from Bn. 4, east of Big Pine Key, to Bn. 68, north of Sugarloaf Key.

A controlling depth of 3' may be carried from Bn. 4 to Bn. ~~28~~ 20, thence 2' to Bn. 28, thence 3' to Bn. 32, thence 2' to Bn. 46, thence 1½' to Bn. 48. It appears that by over-running Bn. 46 100 to 150 meters, the south end of the 1½' mud bank at Lat. 24° 44'.3, Long. 81° 28'.1 would be avoided and a depth of 2' carried. An additional sounding line just west of the 28' meridian would be desired. Resuming at Bn. 48, 2' may be carried to Bn. 57. Bn. 50 was down at the time of the survey. The channel line was not run between Bn. 37 and 66, but according to the sounding lines, 3' may be safely carried. From Bn. 66 to 68 there is a controlling depth of 2'. Bn. 24 must be given a little berth to avoid the 1 1/2' mud shoal close to it. Bn. 54 must be passed close aboard to avoid the northern point of rocky shoal.

Part of this channel was run on Sheet 5925 from Bn. 54 to Bn. 68. The soundings are in good agreement. No recommendations are made concerning this channel as it was not field inspected by the officer preparing the report.

2.+ The natural channel with 10' of water between Howe and Big ~~Pine~~ Torch Keys comes to a blind end at Lat. 24° 43'.7.

3.+ A boat may safely proceed from Bn. 31 northward to Bn. 43 by following the natural channel with a controlling depth of 5' at M. L. W.

4.+ There is a natural channel with a controlling depth of 2' at M. L. W. through the Content Passage, but it comes to a blind end at Lat. 24° 47'.0.

5.+ A controlling depth of 6' at M. L. W. may be carried from Bn. 52 to the Gulf just east of ~~Bay Cudjoe~~ Sawyer Key by following the natural channel. Pos. 1 to 26s red.

6. The Gulf may also be reached at the above point by turning midway between Bns. 37 and 60, passing west of Tarpon Belly Key, with a controlling depth of 7' at M. L. W. A partial channel line was run from Pos. 14 to 23y red.

7.+ A natural channel exists from the Gulf at Lat. 24° 46'.3, Long. 81° 32'.7, to just west of Crane Key and thence southeastward to Bn. 52 with a controlling depth of 5' at M. L. W.

8.+ A controlling depth of 6' may be carried from the limit of the sheet in Johnston Channel to open water at Lat. 24° 44'.2, Long. 81° 36'.0 by following the natural channel.

9.+ Passage may be made to the above point by going west of Johnston Key through a tortuous route, avoiding mud banks, with a controlling depth of 5+. Due to its numerous mud shoals, it is not recommended.
3

10.+ The approach to the passage just east of Knockemdown Key is clear within the limits of this sheet with a controlling depth of 2' at M. L. W.

11.+ The approach to the passage between Cudjoe Key and Knockemdown Key is clear with a controlling depth of 5' at M. L. W.

12.+ Two feet at M. L. W. may be carried through the approaches to Sugarloaf Channel by avoiding the mud shoal, Lat. 24° 41'.7, Long. 81° 33'.2, Pos. 1 to 3c' purple; and the two one foot spots, Pos . 16x, red, and the sounding before 18x red. The above mud shoal was not developed on Sheet 5922. The positions of Bns. 19, 20 and 21 are not available at this time. Beacons added in office.

13. +

ANCHORAGES +

At the time of writing this report none of the officers engaged in the field work was available, so no attempt will be made to recommend anchorages without a field inspection.

COMPARISON WITH PREVIOUS SURVEYS +

References to various previous surveys are found throughout the listing of shoals and dangers.

a. Comparison with Sheet 1926

1. The 10' depth at Lat. 24° 45'.3, Long. 81° 24'.0 on Sheet 1926 shows 4 and 5' on the present survey, with a 9' deep a few hundred meters farther south. Datum correction not considered. 10 falls between lines on present survey and in a deep indicated on T-5544. Added.

2. The 18' deep at Lat. 24°44'.5, Long. 81° 25'.5 shown on Sheet 1925 has a depth of two feet on the present survey. The remainder of the area is in fair agreement except the soundings run a little deeper on the present survey, probably caused by different tide reducers. No indication of deep on present survey or on air photo. Disregard.

b. Comparison with Sheet 2006

So much more development was done on the present survey in the determination of shoals, that a detailed comparison is of little value.

By inspection, the soundings agree fairly well, being slightly deeper on the present survey, probably caused by different tide reducers.

c. Comparison with Sheet H.1828

The soundings and the 2 and 3 fathom curves agree very well in the area just north of the keys, except the 2 sounding lines along the meridians 81° 28'.0 and 81° 28'.5 which are 2 and 3' shoaler on Sheet 1828 than on the present survey. The ~~two~~ 13' soundings on Sheet H-1828 Lat. 24° 49'.4, Long. 81° 28'.5 falls among ~~18' and~~ 16' soundings on the present survey. 3ft. diff. general. Disregard.

~~The area south of the line of keys is little more than reconnaissance on Sheet H-1828.~~

d. Comparison with Sheet 5925

The present survey overlaps Sheet 5925 in places. The junctions and overlaps are in agreement. Further development was done on the present survey in the area of Lat. 24° 44'.4, Long. 81° 35'.8.

e. Comparison with Sheet 5922

The junctions and overlaps are in agreement between the sheets except the mud shoal covered 1' at M. L. W. at Lat. 24° 41'.7, Long. 81° 33'.2 is not shown on sheet 5922. Added in office.

f. Comparison with Sheet 6324

This sheet is not available at the time of writing this report. However, in many cases the sounding lines were continued between the sheets that would give a satisfactory junction. Satisfactory junction.

The sheet lying east of the present survey is not available at this time. (H-6188) Satisfactory junction.

g. Comparison with Chart 1251

1. Lat. 24° 50'.3, Long. 81° 26'.2, a 5' sounding on the chart falls among 7, 6 soundings on the present survey. 5½ on H-1327. Disregard.

2. Lat. 24° 49'.5, Long. 81° 27'.7, a 12' sounding on the chart falls among 15' soundings on the survey with a least depth of 14' nearby. From H-1327. Differences general. Disregard.

3. Lat. 24° 49'.4, LOng. 81° 28'.0, a 13' sounding falls among 15's on the present survey. Ditto above.

4. 24° 48'.9, Long. 81° 28'.1, an eight foot sounding on the chart falls among 14's on the present survey. A 14' sounding was obtained at this point, pos. 77y, red. Ditto above.

5. Lat. 24° 49'.0, Long. 81° 28'.6, a 14' sounding on the chart falls among 18's on the present survey. Split lines brought out no indication of this sounding. Ditto above.

6. 24° 48'.5, Long. 81° 28'.6, On pos. 78y, red, there is an isolated sounding of 14' among 17's which falls close to the 13' sounding on the chart. The boat sheet is marked "No Indication" but it seems rather contradictory. 14 satisfactory.

Due to the large amount of development on the present survey, the shapes of the shoals south of the outer line of keys, are different than those shown on the chart. A detailed comparison of this area was not made, but a general inspection showed no gross irregularities.

GEOGRAPHIC NAMES +✓

Geographic names were transferred directly from the chart. No information regarding new or changed names from field investigation is available.

LANDMARKS FOR CHARTS

Landmarks for charts were submitted previously with the topographic control sheets. ✓

AIR PHOTOGRAPHS

The air photographs covering this area are from #170 to 192 inclusive ✓ and #264 to 296 inclusive.

COMMENTS

The records are clear with comprehensive notes, especially regarding the development of shoals. Although the soundings were plotted and the ✓ descriptive report written after the departure of the officers doing the hydrography, very few points of question came up that could not be settled by the records or boat sheet.

The sheet is apparently well developed and when plotted in conjunc- ✓ tion with the air photographs, it is believed that no important shoals are overlooked.

The unusually large amount of development on a scale of 1:20,000 caused considerable crowding of sounding and position numbers in places. Some of these can undoubtedly be omitted in inking the sheet, but it was ✓ desired to plot as many soundings as possible so that a proper selection for inking could be made.

It can be readily seen that this sheet covers an area of difficult sounding. The least depths and delineation of the numerous mud and rocky shoals together with the coral heads took a great amount of patience and attention to detail. Then there was a continual fight against the tides, having sufficient tide to sound the extensive shoals and often coming to places where the sounding boat must be pushed through mud banks by brute force. The shoal water caused considerable motor trouble, taking quantities of mud and sand through the water intake, packing the pumps and water ✓ jacket. Then in areas hopelessly foul, decision must be made for the amount of development necessary for charting purposes. In addition, the establishment and maintenance of sixteen tide stations with interpolations between them added to the difficulties. The development of the natural channels with satisfactory cross lines called for exacting work. The slightest change in course between positions was plotted, an unusual proceeding in work on a launch sheet. The reaction received in plotting was that the field work was well executed.

H6326

STATISTICS

PROJECT # HT158 FLORIDA KEYS

HYDROGRAPHIC SHEET # H-6326

LAUNCH BLUEFISH (RED)

DAY	DATE	MILES (STATUTE)	SOUNDINGS	POSITIONS	DAYS RUN
a	10/14/38	5.2	287	43	9.6
b	10/17/38	20.2	900	126	32.5
c	10/18/38	4.4	206	29	11.2
d	10/19/38	4.2	179	30	28.3
e	10/20/38	27.2	1106	157	37.9
f	10/21/38	16.0	627	101	34.1
g	10/24/38	13.8	511	89	26.4
h	10/26/38	0.0	25	25	8.2
j	11/15/38	18.4	741	112	28.0
k	11/16/38	22.0	844	121	24.8
l	11/17/38	15.3	644	95	24.3
m	11/18/38	13.2	534	96	19.5
n	11/23/38	9.6	464	84	18.5
p	12/ 5/38	8.9	439	72	25.7
q	12/ 6/38	5.8	246	41	15.4
r	12/ 7/38	8.1	348	55	27.0
s	12/13/38	22.8	826	141	41.9
t	12/14/38	7.3	378	121	25.8
u	12/15/38	18.3	624	118	39.2
v	1/10/39	25.6	932	169	42.9
w	1/11/39	24.4	760	116	51.5
x	1/19/38	4.8	274	50	12.8
y	2/ 6/39	7.9	356	88	23.5
z	2/10/39	1.2	83	9	2.4
TOTAL		304.6	12334	2088	611.4

STATISTICS

PROJECT HT158 FLORIDA KEYS H6326

HYDROGRAPHIC SHEET # H-6326

LAUNCH BOWEN (PURPLE)

DAY	DATE	MILES (STATUTE)	SOUNDINGS	POSITIONS	DAYS RUN
a	10/28/38	8.3	487	103	12.4
b	10/31/38	6.7	408	79	19.0
c	11/ 2/38	14.2	836	135	20.2
d	11/ 3/38	12.7	719	119	20.4
e	11/ 4/38	6.6	397	84	10.4
f	11/ 7/38	13.5	723	106	16.6
g	11/ 8/38	9.6	466	66	15.5
h	11/10/38	8.1	346	73	26.9
j	11/22/38	10.3	484	71	28.4
k	11/29/38	4.0	234	76	10.6
l	11/30/38	6.1	269	58	15.9
m	12/ 1/38	11.1	501	96	22.5
n	12/ 6/38	3.8	215	34	15.8
p	12/19/38	13.7	735	118	33.6
q	12/20/38	12.6	641	123	33.2
r	12/21/38	20.0	919	147	38.0
s	1/ 4/39	26.9	932	144	32.1
t	1/ 5/39	11.4	573	111	15.5
u	1/ 6/39	18.7	784	134	30.3
v	1/ 9/39	12.1	541	131	25.3
w	1/12/39	5.0	338	171	17.9
x	1/13/39	12.6	591	144	25.3
y	1/16/39	13.5	602	124	23.3
z	1/17/39	8.2	448	137	20.1
a'	1/18/39	7.8	403	113	23.2
b'	1/24/39	7.6	467	134	19.1
c'	1/25/39	8.5	419	127	27.5
d'	1/31/39	7.2	327	98	23.4
e'	2/ 1/39	16.5	598	111	45.3
f'	2/ 2/39	13.6	712	168	27.1
g'	2/ 3/39	14.8	780	183	29.8
h'	2/ 4/39	7.2	274	82	21.7
TOTAL		352.9	17169	3600	746.3

LIST OF SIGNALS TO ACCOMPANY SHEET H-6326

H6326

Hydro. Name	Location	Hydro. Name	Location
Har	Harbor Key Lt., 1935	Bor	Harbor, 1935
Lit	Little, 1935	Water	Water, Key, 1935
How	How, 1935	Ann	Ann, 1935
Piney	Piney, 1935	Bill	Bill, 1935
Pinkey	Pinkey, 1935	Tent	Tent, 1935
Wat	Wat, 1935	Sum	Summerland Key, 1935
Joe	Joe, 1934	Cont	Content$_2$, 1935
Eak	EAK, 1935	Rac	Rac, 1935
Cud	Cud, 1935	Knock	Knock, 1934
Saw	Saw, 1935	Ruf	Ruf, 1935
Wejoe	Wejoe, 1934	Loaf	Loaf, 1935
Sawyer	Sawyer$_2$, 1935	Nost	Noston, 1934
East	Easton, 1934	Sugar	Sugar, 1934
Marvy	Marvy, 1934	Tor	Tor, 1935
Mic	Michael Key, 1934		

The follwwing signals were transferred from Topographic Sheets, Field Letters K and L, 1938:

Beacons nos. 43 41 38 39 4 20 22 24 25 27 28 30 29 31 32 34 36 38 40 42 44 33 46 48 35 52 54 56 58 37 60 64 66 41 43 45 68.

Ace	Eel	Wim	Pil	Cran	Zan
Dub	Cut	Wit	Spot	Dirt	Wood
Murd	Bot	Hap	Qui	All	Belt
Lora	Amp	Qum	Rust	Nub	Xan
Glad	Elk	Puf	Newt	Nel	Yat
Just	Dry	Rot	Poor	Boy	Zut
Hort	May	Yam	Quil	Bay	Win
Vite	Fod	Hunt	Rule	Urs	
Alg	Ape	Nu	Bar	The	
Full	Ump	Mart	Don	Crab	
Wart	Tav	Look	Old	New	
Xart	Sor	Kat	Ken	Luck	
Zilch	Duf	Jud	Leo	Sam	
Earm	Box	Ink	True	Vic	
Gut	Bap	Poo	Orat	Not	
Fru	Alto	Uno	Car	Halt	
Tow	Barn	Gag	Able	Dry	
Cam	Ion	Oaf	Ball	Wel	

Was, Hydrographic location on page 1, Vol. 6.
Fine, " " by Inspection.

STATISTICS

PROJECT HT168 FLORIDA KEYS H6326

HYDROGRAPHIC SHEET # H-6326

RECAPITULATION

BOAT	MILES (STATUTE)	SOUNDINGS	POSITIONS	DAYS RUN MILES
BLUEFISH	304.6	12334	2088	611.4
BOWEN	352.9	17169	3600	746.3
TOTALS	657.5	29503	5688	1357.7

Respectfully submitted,

Harry F. Garber

Harry F. Garber
Jr. H. & G. Engr.

Approved and Forwarded,

George L. Anderson

George L. Anderson,
H. & G. Engr.
Chief of Party

HYDROGRAPHIC SURVEY NO. 6326

Smooth Sheet One

Boat Sheet One

Records; Sounding 23 Vols., Wire Drag ___ Vols., Bomb ___ Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Yes

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) None

Special Chart for Lighthouse Service (Circular Nov.30, 1933) No chart was submitted by McCarthy but a chart was submitted in 1935

Hydrography: Total Days 56 ; Last Date March 10,1939

Remarks

2776

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. H.6326

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

Number of positions on sheet	5688
Number of positions checked	415
Number of positions revised	4
Number of soundings recorded	29,503
Number of soundings revised	30
Number of soundings erroneously spaced	3
Number of signals erroneously plotted or transferred	0

Date: 10/21/39

Verification by Wallace A. Bruder Time: 200 hr. 45 min.

Review by J.A.McCormick 11/9/39 Time: 35 hr.

2629

	Remarks	Decisions
1		File Nos. 247 815
2		247 815
3		247 814
4		247 814
5		246 814
6		247 814
7		248 814
8		247 814
9		247 814
10		247 814
11		247 813
12		246 813
13		246 815
14		246 814
15	See [illegible] of Light [illegible]	248 814
16		248 814
17	Lat. 24 - 47.6 small chan. ~~[illegible]~~ Long 81 - 29.0 ~~[illegible]~~.	247 814
18	Off limits of Hydro. Do not ink.	247 813
19		247 814
20		247 813
21		246 813
22		246 814
23		246 814
24		247 815
25		246 815
26		247 815
27		247 815
234	see Boat Sheet 24 - 45.3 81 - 32.2	247 815

GEOGRAPHIC NAMES

Survey No. H6326

Name on Survey	A. On Chart No. 1251	B. On previous survey No.	C. On U. S. quadrangle Maps	D. From local information	E. On local Maps	F. P. O. Guide or Map	G. Rand McNally Atlas	H. U. S. Light List	K.	
Johnston Johnson Key	✓									1
Sawyer * Bay Cudjoe Key	✓									2
Content Keys	✓									3
Raccoon Key	✓									4
Knockemdown Key	✓				* - USGB decisions					5
Water Keys	✓									6
Upper Harbor Key	✓									7
Big Torch Key	✓									8
Howe Key *	✓									9
Big Spanish Key	✓									10
Annette Key	✓									11
Big Pine Key	✓									12
Sugarloaf Key	✓									13
Cudjoe Key	✓									14
Harbor Key Bank	✓									15
Harbor Channel	✓									16
Content Passage										17
Big Spanish Chan.	✓									18
Cutoe Key	✓									19
The Grasses	✓									20
Pine Channel	✓									21
Niles Channel	✓									22
Kemp Chan.	✓									23
Cudjoe Chan.	✓									24
Sugarloaf Chan.	✓									25
Johnston Key Chan.	✓									26
Riding Key *	✓									27
Riding Key Bank										M 234

Names underlined in red approved by GHE on 7/29/39

Continued on page 2

	Remarks	Decisions
1	(Not Cut-toe)	247 814
2	Do not ink name	247 814
3	Not appld for charting	247 814
4	Location ?	
5		
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27		
234		

GEOGRAPHIC NAMES

Survey No. H 6326

Name on Survey	A, On Chart No. 1251	B, On previous survey No.	C, On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Cutoe Banks										1
Howe Key Mangrove ~~Little Harbor Key~~	✓									2
Raccoon Basin										3
Riding Key Anchorage										4
										5
										6
										7
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										27

M 234 VR

FORM M-238

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
~~xxPHOTOSTATxOFxx~~ } No. H 6326
~~xNamexTxx~~

received June 10,1939
registered July 18,1939
verified
reviewed
approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25	✓	HC	Pages 13 and 14.
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	Lt. Reed

✓ FBR

xae

Form 712 -
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

August 5, 1939.

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. H. R. Edmonston

Plane of reference approved in
23 volumes of sounding records for

HYDROGRAPHIC SHEET 6326

Locality Annette Key to Johnson Key, Florida Keys

Chief of Party: E. R. McCarthy in 1938-1939
Plane of reference is mean low water, reading
2.0 ft. on tide staff at Harbor Key Light
6.0 ft. below B. M. 1
1.9 ft. on tide staff at Water Key (N)
3.4 ft. below B. M. 1
1.2 ft. on tide staff at Water Key (S)
3.4 ft. below B. M. 1
2.3 ft. on tide staff at The Grasses
2.8 ft. below B. M. 1
2.3 ft. on tide staff at Porpoise Key
2.3 ft. below B. M. 1
1.0 ft. on tide staff at Howe Key
2.2 ft. below B. M. 1
3.2 ft. on tide staff at Top Tree Hammock
3.3 ft. below B. M. 1
Condition of records satisfactory except as noted below:
2.4 ft. on tide staff at Raccoon Key
3.4 ft. below B. M. 1
1.2 ft on tide staff at Content Passage
No B.M.s
1.5 ft. on tide staff at Crane Key
2.5 ft. below B. M. 1
1.7 ft. on tide staff at Bay Cudjoe Key
4.5 ft. below B. M. 1

Chief, Division of Tides and Currents.

Continued on Page 2.

U. S. GOVERNMENT PRINTING OFFICE 154327

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

Division of Hydrography and Topography:

Division of Charts:

Plane of reference approved in
volumes of sounding records for

HYDROGRAPHIC SHEET 6326

Locality Annette Key to Johnson Key, cont'd.

Chief of Party:
Plane of reference is
1.7 ft. on tide staff at Tarpon Belly Key
3.8 ft. below B. M. 1
2.0 ft. on tide staff at Cudjoe Key
2.5 ft. below B. M. 1
2.0 ft. on tide staff at Sugarloaf Key
1.4 ft. below B. M. 1
2.1 ft. on tide staff at Sugarloaf Channel
2.8 ft. below B. M. 1
1.9 ft. on tide staff at Johnston Key
1.8 ft. below B. M. 1

Condition of records satisfactory except as noted below

Height of mean high water above plane of reference is 3.3 feet at Harbor Key Light; 2.9 feet at Bay Cudjoe Key; 2.4 feet at Water Key (N); Content Passage and Crane Key; 2.2 feet at Water Key (S) and Tarpon Belly Key; 2.0 feet at Cudjoe Key and Sugarloaf Channel; 1.9 feet at Raccoon Key; 1.6 feet at The Grasses and Sugarloaf Key; 1.3 feet at Johnson Key; 1.1 feet at Top Tree Hammock; 1.0 feet at Howe Key; 0.9 feet at Porpoise Key.

Chief, Division of Tides and Currents.

U. S. GOVERNMENT PRINTING OFFICE 164327

DEPARTMENT OF COMMERCE

UNITED STATES COAST AND GEODETIC SURVEY

L. O COLBERT DIRECTOR

SUPPLEMENTAL

DESCRIPTIVE REPORT

HYDROGRAPHIC SHEET NUMBER H-6326

FLORIDA KEYS

1939

SHORE PARTY #1

E. R. MCCARTHY CHIEF OF PARTY

SUPPLEMENTAL DESCRIPTIVE REPORT FOR HYDROGRAPHIC SHEET H-6326.

PURPOSE OF REPORT

To supplement the excellent report written by Mr Garber with information obtained from the actual field work on the sheet.

The report will follow- in general- the outlineof the original report.

METHODS AND EQUIPMENT

The BLUEFISH was a fishing boat of the type common to the locality. About 40' long, 10' beam, 2½' draft, large cabin forward, and small cockpit aft. The engine was housed in the cabin.

The BOWEN was a small tunnel stern boat drawing 1' light and 18" loaded with a hydrographic party. She was quite satisfactory for the area and the difficulties encountered with her engine were only those common to any automobile marine conversion.

WATER SIGNALS

The water signals were of 2x4 or 4x4 posts with braces and target. They will probably be carried away or rotted out in two years. The tide stands were also used for signals. Some are three or four legged platforms about two feet above highwater and some are braced 4x4's. All are temporary.

DISCREPANCIES

A large number of no bottom soundings were recorded. These invariably occurred where the depth changed suddenly and the leadsman was unable to change from sounding pole to leadline quickly. Due to the small size of the BOWEN a quick change was difficult.

SHOALS AND DANGERS

As the sounding records were not available, no review could be made of the ~~varei-~~ various items. However, no difficulty should be experienced in the verification as numerous notes were made on practically all shoal examinations.

Some items are qualified herein --numbers correspond to the original report.

4. Locally called Cut-toe Banks. See name on boat sheet.

9. Locally called Little Harbor Key . It is infrequently used. Name approved is Howe Key Mangrove.

22A. Lat 24-47.0 to 49.5 Long 81-26.0 to 29.0

An extensive bank surrounds Harbor and Content Keys. An effort was made to determine the outlines and to locate the 0 curve but would have taken more time than the area

SHOALS AND DANGERS (CONT'D)

was worth. The grid lines outline the 0 curve closely enough for practical purposes. ✓

In the vicinity of Content Passage, the shoal areas consist of isolated grass or mud banks which were not outlined because of lack of opportunity of visiting the area on the proper tide. The outlines of the banks are shown in red on the boat sheet and were transferred from the photos. They may be checked by occasional soundings on the grid lines. The outlines were inspected in the field. Smooth sheet delineation satisfactory.

24. This shoal or rocky bank is on the west side of the inside route. ✓

25. This rocky bank is on the north side of the inside route. ✓

80. Itis suggested that caution be used in modifying the outlines of the banks and ridges as shown on the boat sheet. The photographs are- in some cases- quite definite and the outlines of the shoals may be easily determined by inspection. However, in the greater number of cases the outlines of the apparent shoal areas are deceptive and can only be properly made with local knowledge. The boat sheet was usually checked daily against the photo to insure that nothing was being missed and the apparent shoal areas were checked or examined. As the survey was made with the information available from the photos at hand, the hydrographic determination will probably be- in most cases- the better. Boat sheet followed.

This comment also applies to shoals # 94 and # 101. ✓

83. Also an isolated shoal ~~(15y-fod)~~ ~~100~~ 150 meters southeast (covered 3ft. MLW)

85. See also-- Sheet 5925. ✓

CHANNELS AND ANCHORAGES

References are to the same numbers that appear on the original report. ✓

1. This is the Inside Waterway (local name) and as it provides ~~vi~~ access through passage from Key West to Florida Bay, it is used to a considerable extent during the winter fishing season by the local fishermen, spongers, and turtle hunters. It is well protected and although it has a controlling depth of but 2', a draft of 4-5' may be carried thru by taking advantage of the tides. ✓

CHANNELS AND ANCHORAGES (CONT'D)

The Waterway is well marked by beacons established and maintained by the U. S. Lighthouse Department. The beacons are made of finger pointers on a 2" or 3" galvanized iron pipe. The pipes last about two or three years and then rust out and break off at the waterline. A routine inspection to replace the missing beacons is made semi-anually.

The passage is torturous and the best directions are-- " Follow the beacons and found using caution as some of the beacons may be missing.". The channel is not improved except where it crosses Sugarloaf (Johnston Key) Channel. There a cut 75' x 5' was made in 1906 by the FE& RR. The cut was and is not maintained and has shoaled to some extent. Because there is no established channel, the waterway was developed by only a single sounding line. In fact, through The Grasses this was about all that could be carried on the scale.

The channel was fully developed as far east as Bn 37 on Sheet 5925 (W. H. Bainbridge) and no attempt was made to develope it west of this point except that a channel line was run in the center of the above mentioned improvement as it was apparent that the lines on sheet 5925 had not found the best water.

The waterway is not used to any extent by strangers and it is not recommended without the services of a pilot. Should a stranger attempt a passage, he should have the sun high or behind him as the shoals are plainly visible under those conditions.

Several attempts have been made by local interests in Key West to have the Government improve the waterway to a 5' depth but without success to date.

The beacons are not shown through The Grasses due to congestion. The developement line passed on the wrong side of Bn 25 because- at the time of sounding- it was thought to be Bn 26-- a stump prevented positive identification.

Added in office. except 26 which apparently was not located.

2. This channel is a trough.

3. Harbor Channel.

This channel connects Big Spanish Channel to the Inside Waterway. Itis used to some extent during the winter fishing season. It is not marked but is easily followed as the channel is relatively deep and shows as a deep blue contrasted to the light green and brown of the shoals and ridges, on either side.

CHANNELS AND ANCHORAGES (CONT'D)

3. Harbor Channel (Cont'D)

The chart is the best guide. Anchorage may be had in 6-7' NE of Water Key and out of the worst of the current. Holding is fair.

The channel comes to a dead end east of the small mangrove key on which Station BILL is located. Passage to the east and south may be made via a narrow natural channel--see #13 under this heading. Lat. 24° 43.1' Long. 81° 25.5'

4. This channel is used as an infrequent refuge anchorage. A strong current sets thru it. It is referred to as Content Passage for identification purposes. It is not a through pass.

5. Cudjoe Channel.

This channel provides entrance from the Gulf to a refuge anchorage east of Riding Key and south of Riding Key Bank. It is used to a large extent by the smaller lighthouse tenders and the 'run' boats of the fishing fleet. It leads to the only protected anchorage between Key West and Spanish Channel that may be entered by a boat of 6' draft.

The channel permits a boat of 6' draft to proceed as far south as the Inside Waterway. From the Waterway a draft of 4' may proceed south to the Straits of Florida. (See Page 16 report for sheet 6324--Kemp Channel). But only 2' in waterway connecting channels.

The channel is not marked. The chart is the best guide. The channel is easily followed. A strong current sets thrugh it. North with the ebb and south with the flood.

7. This channel is little used and little known but is deep and clean. It passes east of Little Crawl Key, west of Crane Key, and west of Raccoon Key to meet the inside waterway east Of Hurricane Key.

From the junction with the Inside Waterway a draft of 2-3' may be carried via Niles Channel to the Straits--(see Page 15 report for Sheet 6324) . The best water is west and south of the small mid-channel mangrove key east of the north point of Knock-en-down Key.

A cross over connects this channel (called Crane Key Channel for reference) to Cudjoe Channel.

None of the channels are marked but are easily followed especially if the sun be high.

CHANNELS AND ANCHORAGES (CONT'D)

8. Johnson Key (Sugarloaf) Channel leads NW to the Gulf. It is used to a small extent. This channel is considered to extend from the Inside Waterway to the Gulf.

Sugarloaf Channel proper leads south from the Inside Waterway to the Straits. It is well marked by the USLHS. For details from Inside Waterway to the dredged cut at the north point of Sugarloaf Key see ~~sheet 5925~~, see #12 under this heading. For details from the cut south to the highway bridge see Sheet 5922. For details from the highway bridge to the Straits see Page 18 report for sheet 6323.

Through traffic from the Inside Waterway to the ~~Gu~~-Straits is restricted as to size by the bridge clearances and as to draft by the shoal water north of the bridges.

9. This channel is un-named. It is foul and should not be attempted without local knowledge.

10. This is Niles Channel. See #7- this heading.

11. This is Kemp Channel-- see #5 under this heading.

12. The shoal referred to is a spoil bank on the west side of a dredged cut which was fully developed on sheet #5922. See also #8 above.

Spoil bank not indicated on H-5922. Added from present survey.

13. Other channels.

Passage may be made at High Water by an ordinary fishing boat from the Inside Waterway at the north point of Big Pine Key southwesterly to Pine Channel and thence -- following the directions given on Page 14-Sheet 6324 south to the Straits.

Passage may also be made at half tide by the same type boat westerly from the south section of Harbor Channel passing north of the mangrove key on which Station BILL is located to Pine Channel.

14. Anchorages.

These have been taken up in the main in the body of the channels above. The launch RODGERS --5½' draft had anchored in Riding Key Anchorage and in Harbor Channel NE of Water Key.

Fishing boats anchor in the small basin in Lat 24044.4 Long 81-23.0 east of The Grasses, in Content Passage, and in Sugarloaf or Johnston Key Channel in the lee of Johnston Key. The anchorages are used principally as refuges from the winter northwesters.

COMPARISONS WITH PREVIOUS SURVEYS

Sheets 1926 and 2006 were little more than reconnaissance. In general, the depths on the two sheets failed to agree--as on other sheets-- by varying amounts due to the tidal control.

Overlaps were made with sheets 5922 and 5925 on the west and with sheets #17 and #20 (field numbers) on the east. A junction was made with sheet 6324 on the south.

See par. 4. review.

As sheet 2006 was the probable basis for the chart, the area south of the 6' curve in the Gulf was developed on the basis of the current survey. North of the 6' curve, the area was developed on the basisof the current survey and all charted soundings investigated , if necessary. Notes in the record cover the examinations.

GEOGRAPHIC NAMES

These names were discussed in the reports for the topographic sheets of the area. They were also discussed in the report of Lieut Bainbridge on the subject.

Any new names have been discussed in the body of this report. In general, the channels are named as they lead out from the inside waterway as the fishermen use this waterway and proceed easterly along the Waterway leaving it at the various channels..

The names given in the reports are concurred in with the exception of the name Sugarloaf Channel for the channel leading from the Inside Waterway to the Gulf passing to the east of Johnston Key. The name Johnston Key Channel as given in the report of W. H. Bainbridge is in favor locally and it is recommended.

New names in local use follow and are recommended--

RIDING KEY ANCHORAGE - ?
RIDING KEY BANK
HARBOR (HARBOR KEY) BANK
RACCOON BASIN (LAKE)

These names are shown in black on the boat sheet.

MISCELLANEOUS

Statistics and tidal note were submitted in the origina l report. Memorandum by Chiefof Party is attached.

Respectfully submitted.

E. R. McCarthy

E. R. McCarthy
Chief of Party

Galveston Texas
June 17 1939

MEMORANDUM BY CHIEF OF PARTY***** SHEET 6326.

The area covered by the sheet was surveyed from Key West as a base and the sub-party commutted daily. The alternative was the use of the Elsie 111 as a house boat which would have necessitated the services of two more men -- a cook and an engineer-- and it is believed that more results for the money were secured by commuting. The boats were transferred from channel to channel as the surveys progressed westerly.

There was a question as to how much time to spend on the sheet and how close to make the developement as the area is , at present, relatively unimportant. However, it is believed that in the future--due to the splendid sport fishing among the keys- the section will receive a considerable increase in traffic.

The minimum developement consistent with good work was made. The area is very complicated and considerable detail has been shown on a small scale. It was necessary to survey the real shoal area on the high tide and the channels and shoal outlines on a low tide.

An exceptionally large number of tide gauges were established and the number could have been increased by 50% were it practical. The range and tide difference between the open Gulf areas and the keys is remarkable. The re-established gauges at Harbor Key Light and at Bay Cudjoe (Sawyer) Key were used as standards and a considerable number of simultaneous comparisons made. It is believed that the final reducers are correct within a half foot. The criterion used in establishing the limits of the various sections was that-- a jump of not over one in the units of reducers should be experienced in passing from one section to another.

Little developement was made on the channels except that a single split line was run down some of them. In addition, a thorough visual search was made for all coral heads and grass shoals within the channels. A better developement would have resulted from splitting the channel lines but - unfortunately- lack of funds prevented and the party was fortunate to complete the sheet with the funds allotted.

A tunnel stern launch with an inboard engine was used in the shoal area and it was a considerable improvement over the barge and outboard motor rig.

E. R. McCarthy

E. R. M'Carthy
Chief of Party

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

② The usual depth curves were ~~completely~~ drawn.

③ The field plotting was completed to the extent prescribed in the Hydrographic Manual, with the following omission:

Evidently the signals were not inked on the smooth sheet until after the soundings had been plotted. At least three signals are known to have been used in plotting, where the signals used were not on the sheet when it came in the office. Probably they were erased in cleaning up the sheet. They are:

1) ⊙ Ala φ 24° 44.3' λ 81° 34.0' } No prick marks. Plotted from T-6509 b. Used in pos 126 c' purple

2) ⊙ Sulu φ 24° 41.0' λ 81° 26.6' } Prick marks only on hydro. sheet. Checked with T-6667 b by verifier.

3) ⊙ Zet φ 24° 43.9' λ 81° 25.9' }

To be on the side of safety although a 20 minute search of the records failed to show either was used, two other signals on the boat sheet were plotted on the smooth sheet (~~hydro~~; no prick marks by field plotter).

⊙ Cow φ 24° 42.8' λ 81° 34.5' } Plotted from T-6509 b

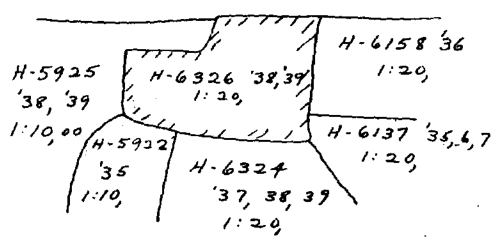
⊙ Abe φ 24° 42.3' λ 81° 32.5' }

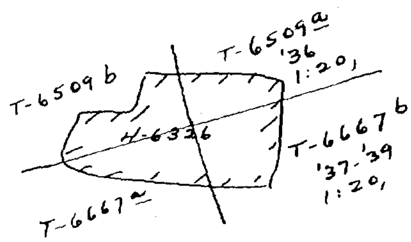
-½ was plotted as -½ instead of zero. This omission of 100 soundings was not counted on the ~~statistics~~ sheet.

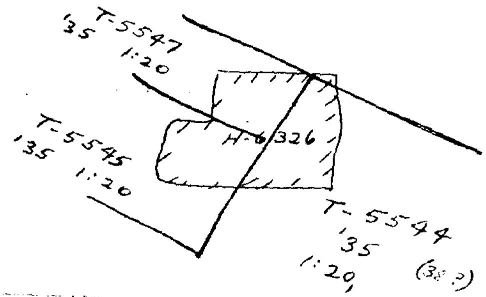
④ The office draftsman did not have to do over any part of the field drafting, except to underline the section of ~~x~~ names of ~~x~~ triangulation stations used in recording. (about 8 names)

The degree mark (°) was omitted entirely, necessitating the verifier to ~~sink~~ them in.

⑤ The junctions with all contemporary adjacent sheets are complete and satisfactory. except as noted in review.







Remarks: Sheet was excellent, thoroughly developed, & crossings checked (except as noted in descr rpt) Beacons 5 to 21 inclusive of Big Pine Key Beacons were plotted on smooth sheet by verifier from T-6667 b. φ 24° 44.5 λ 81° 23.5'

Beacon 26 φ 24° 45.5' λ 81° 24.1' } appears on chart, but not on T-6509 a not on H-6326 and not mentioned in records, so nothing was done about it. No location available. See annotated par. p. 3, Supp. D.R.

All rocks awash on this sheet are awash at MLW due to only 2 ft of tide. Therefore the note was put only as a general note that "All rocks awash are awash at MLW unless otherwise specified.

The Triangulation names gave much confusion because of their similarity and in the same group of islands. For some unknown reason the following sets of names were selected for stations near each other:

Saw 1935, Sawyer 2 1935 (Example pos 83-85 Z purple, vol 19, p. 71)

Piney 1935, Pinkey, 1935

Harbor 1935, Harbor Key Light 1935

Wat 1935 Water Key 1935

Tor 1935 Torkey 1935

Tent 1935 Content 1935

Joe 1934 Wejoe 1934

Respectfully submitted,
Wallace A. Bruder
10/21/39

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6326 (1938-39) FIELD NO. 24.

Annette Key to Johnston Key, Florida-Keys, Florida.
Surveyed in Oct., 1938-Mar., 1939, Scale 1:20,000.
Instructions dated Nov. 17, 1933 (H.A. Cotton).

Hand Lead and Pole Soundings. 3 Point fixes on shore signals.

Chief of Party - E. R. McCarthy
Surveyed by - E. R. McCarthy, P. A. Weber
Protracted by - P.A. Weber, E.L. Patterson, J.C. Tribble, H.F. Garber
Soundings plotted by - H. F. Garber
Verified and inked by - W. A. Bruder

1. Shoreline and Signals.

Shoreline is from topographic maps T-5544, T-5545 and T-5547. Topographic signals are from graphic control surveys T-6509a & b (1936) and T-6667a & b (1937-39). Hydrographic signals were located by sextant cuts recorded in the sounding volumes.

2. Depth Curves.

Satisfactory.

3. Sounding Line Crossings.

Satisfactory.

4. Junctions with Contemporary Surveys.

a. Junctions with H-6158 (1936) on the northeast, H-6324 (1937-39) and H-5922 (1935) on the south and H-5925 (1935) on the west and northwest are satisfactory.

b. The present survey does not actually join H-6137 (1935-37) on the southeast but several soundings from H-1926 (1889) have been added to the present survey in lat. 24°44.4', long. 81°22.2', thus making a connection with H-6137 and indicating a shallow channel between the Keys. Agreement of old surveys with new is sufficiently good in this vicinity to warrant such action in the absence of evidence to the contrary on the new surveys.

c. There are no new surveys on the north but overlaps with old surveys are satisfactory for present charting needs.

5. Comparison with Prior Surveys.

a. H-1131 (1872), 1:80,000.

Approximately 15 soundings from the above survey fall within the northwestern limits of the present survey. Agreements of depths is fair. The present survey supersedes the old survey in the common area.

b. H-1827 (1888), 1:40,000; H-1828 (1888), 1:40,000; H-1926 (1889), 1:20,000; H-2006 (1890), 1:40,000.

This group of surveys completely covers the area of the present survey. Agreement of depths with those on the present survey is fair to poor, differences of 2 and 3 feet not being uncommon. Natural changes may be responsible for some of the differences but less accurate tide reducers on the old surveys are undoubtedly a major factor in most cases. Several notable differences are discussed in the descriptive report and office disposition made directly therein. The present survey, with a few minor additions from H-1926, adequately covers the area and supersedes the overlapping portions of the old surveys.

6. Comparison with Chart 1251 (New Print of Sept. 21, 1939).

a. Hydrography.

Hydrography charted in the area covered by the present survey is entirely from surveys discussed in the foregoing paragraphs. Every charted hydrographic feature has been compared with the survey and retention of any not shown on the survey is not recommended.

b. Aids to Navigation.

At the time of the survey, beacons 26 and 50 had been destroyed and consequently were not located. Positions were obtained for all of the many other finger beacons in the area. The survey positions differ from those charted by varying amounts, some of as much as 0.3 mile. The former are the latest available at the time of this review and supersede those now charted. A few of the beacons could be shifted to some slight advantage but as they mark but 2 or 3 feet of water at best, changes are not recommended.

7. Condition of Survey.

Satisfactory.

8. Compliance with Instructions for the Project.

Satisfactory.

9. Additional Field Work Recommended.

None.

10. Superseded Surveys.

H-1131 in part.
H-1827 " "
H-1828 " "
H-1926 " "
H-2006 " "

11. Reviewed by - J. A. McCormick, November 8, 1939.

12. Inspected by - H. R. Edmonston.

Examined and Approved:

T. B. Reed,
Chief, Section of Field Records.

K. T. Adams
Chief, Division of Charts.

Fred. L. Peacock
Chief, Section of Field Work.

G. Rude
Chief, Division of H. & T.

Applied to Cht.	1251	Feb. 3, 1940	K.R.	
" " "	1350	Aug. 1940	N.E.B.	
" " "	1113	Oct. 11, 1940	g.K.S.	
" " "	853	Oct 27, 1958	JPW	
" " "	859	Nov 6, 1958	JPW	
" " "	854	Jan. 21, 1964	JPW	thru Chart 859 dwg"