8006

Diag. Cht. No. 1107 & 1207-2 CS-246

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. ECSP-1252 *Office No.* H-8006

LOCALITY

State MASSACHUSETTS

General locality BOSTON HARBOR

Locality BLACK ROCKS-BLACK LEDGE

194 52

CHIEF OF PARTY

C. R. Reed

LIBRARY & ARCHIVES

DATE OCTOBER 6, 1953

8-1870-1 (1)

8006

OCT 6 1953

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

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.

REGISTER No. H-8006

Field No. ECSP 1252

State Massachusetts

General locality Boston Harbor

Locality Black Rocks- Black Ledge

Scale 1:10,000 Date of survey 29 August - 25 Sept.1952

Instructions dated 17 July 1952 to the ship Hilgard

Vessel East Coast Shore Party

Chief of party Clarence R. Reed

Surveyed by R.H. Houlder & H.S. Foote

Soundings taken by fathometer, ~~graphic recorder,~~ and hand lead, ~~wire~~

Fathograms scaled by Party Personnel

Fathograms checked by C.R. Reed, H.S. Foote and R.H. Houlder

Protracted by W.W. Feazel

Soundings penciled by A.G. Atwill

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

REMARKS: This survey was smooth plotted in the Hydrographic Section of the Norfolk Processing Office.

U. S. GOVERNMENT PRINTING OFFICE 777032

HBE

NOTES FOR
DESCRIPTIVE REPORT
TO ACCOMPANY

HYDROGRAPHIC SHEETS H-8005, H-8006, H-8007, (FIELD NOS. ECSP 1152, 1252,05152)

BOSTON HARBOR, BOSTON, MASSACHUSETTS

EAST COAST SHORE PARTY CLARENCE R. REED, CHIEF OF PARTY

PROJECT CS-246 1952 SCALES: 1:5000 & 1:10000

* *

PROJECT: This survey was accomplished under Supplemental Instructions dated 28 March 1952, 22/MEK, FP East Coast, Project CS-246 which called for a basic hydrographic survey within the project limits, except in the dredged channels regularly surveyed by the United States Engineers. They were addressed to the Officer in Charge, USC&GS East Coast Field Party.

SURVEY LIMITS AND DATES

The survey on Sheet H-8005 (Field No. ECSP 1152) covers Hingham Harbor to latitude 42-15.76, Weymouth Back River to latitude 42-15.80, Weymouth Fore River to longitude 70-57.00 on the east and longitude 70-57.80 on the west; a channel development at approximate latitude 42-16.40 and longitude 70-56.70; and a shoal investigation at approximate latitude 42-16.30 and longitude 70-52.40.

A junction was made with Sheet No. H-7715 (1:10,000 - 1948) and a contemporary junction was made with Sheet No. H-8007, (Field No. ECSP 05152). The field work was accomplished between 17 April and 21 July.

The survey on Sheet H-8007 (Field No. ECSP 05152) covers Town River Bay and Weymouth Fore River to longitude 70-57.75. A contemporary junction was made with Sheet No. H-8005 (Field No. ECSP 1152). The field work was accomplished between 30 June and 18 July.

The survey on Sheet H-8006 (Field No. ECSP 1252) covers an area bounded on the west by longitude 70-49.40, on the east by longitude 70-48.00, on the north by latitude 42-16.45 and on the south by the shoreline. The survey junctioned with Sheet Nos. 6642 and 6643 (1:10,000-1940) on the west, with contemporary survey on sheet H-8008 (Field No. HI-25/152) on the north and with contemporary survey on Sheet No. H-8009 (Field No. ECSP 05152) on the east. The field work was accomplished between 29 August and 25 September.

Not applicable

VESSEL AND EQUIPMENT Aluminum Launch No. 168 was used for the survey. The launch was operated from a shore base at Hingham, Massachusetts and a mooring at Cohasset Harbor.

This launch had a turning radius of 15 meters while running at sounding speed. Sounding speed for this launch was 5 knots at 1500 R.P.M.

On Sheet No. H-8007 (Field No. ECSP 05152) all echo soundings were obtained with Graphic Recorder No. 150 SPX. On Sheet No. H-8006 (Field No. ECSP 1252) all echo soundings were obtained with Graphic Recorder No. 139 SPX. On Sheet No. H-8007 (Field No. ECSP 1152) both Graphic Recorders were used. The transducers were mounted inboard.

TIDES AND CURRENTS The tide note is attached to this report. No currents were observed.

SMOOTH SHEET The smooth sheet ~~is to be~~ was plotted by the Norfolk Processing Office.

CONTROL STATIONS The control consisted mainly of triangulation stations and topographic stations located by planetable methods using a three point fix. On sheet No. ~~T~~ D.R. with H-8005 (ECSP Bb 1952) a traverse of 1000 meters was run with an error of closure of 4 meters. Hydrographic stations were located by using a three point fix taken at the station site. Several check angles were also taken at each station. The number of hydrographic stations was kept to a minimum and they were used as little as possible. G.C. sheet to be destroyed

The control for Sheet No. H-8006 (Field No. ECSP 1252) consisted of triangulation and photogrammetric stations. The photogrammetric stations were transferred from Sheet No. T-9512 (1:10,000-1950).

SHORELINE AND TOPOGRAPHY The shoreline for the various boat sheets was obtained as is shown below.

H-8005 (Field No. ECSP 1152) from T-5776 (1:10,000-1944)
H-8006 (Field No. ECSP 1252) from T-9512 (1:10,000-1950)
H-8007 (Field No. ECSP 05152) from T-5776 (1:5000-1944)

There were no major inaccuracies in the shoreline. The hydrographer sketched certain minor changes directly onto the boat sheet.

SOUNDINGS The depths were measured with graphic recorders and hand leads. Bottom samples were obtained with armed handleads.

CONTROL OF HYDROGRAPHY The sounding lines of this survey were controlled by the three-point-sextant-fix method. There were no unusual "jumps" when changing control stations. Fixes were taken at 1 to 2 minute intervals. In the upper reaches of creeks were hydrographic control was lacking, positions of sounding lines were referred to distinctive shoreline details. Appropriate remarks were entered in the sounding record.

ADEQUACY OF SURVEY This survey is complete and considered adequate to supersede prior surveys. The junctions with adjoining sheets are satisfactory. There are no holidays and depth curves can adequately be drawn at the junctions.

CROSSLINES Crosslines required by the Supplemental Instructions were run during the progress of the work. The crossings were in good agreement.

COMPARISON WITH PRIOR SURVEYS A comparison made with surveys ~~H-2162~~, and H-2163 (1:10,000-1893) showed no major changes other than the natural changes that can be expected over a period of fifty years.

Some of the channels have been dredged in recent years, therefore spot-checks were made with the following U. S. Engineers surveys:

In Town River Bay:
Dr. 18; File No. 183; March, 1947
Dr. 18; File No. 187; October, 1947
In Weymouth Fore River:
Dr. 24; File No. 311; February, 1949

Not H-8006

APPROVAL SHEET - HYDROGRAPHIC SURVEYS

H-8005 - H-8006 - H-8007

The records and boat sheets for Hydrographic surveys numbered H-8005, H-8006, and H-8007 have been inspected by me and are approved.

/s/ Clarence R. Reed

Clarence R. Reed
CDR,USC&GS
OinC, East Coast Shore Party

COMPARISON WITH CHART Chart No. 246 - 12 February 1951 (25th Edition)

Latitude	Longitude	1952 Survey	Chart	Remarks
Sheet No. H-8005 (Field No. 1152) Hingham Harbor				
42-15.71	70-52.92	4-5 ft.	10 ft.	Six foot curve in this area does not extend as far north as shown on chart.
42-15.60	70-53.40	Sunken rock	Sunken rock	As charted.
42-15.55	70-53.37	7½ ft.	6 ft.	Shoalest sounding, item 2 of Preliminary Review, Project CS-246
Sheet No. H-8005 (Field No. 1152) Weymouth Back River				
42-15.40	70-55.08	7-8 ft.	2 ft.	Shoal does not extend as far off shore as shown on chart.
Sheet No. H-8005 (Field No. 1152) Weymouth Fore River				
42-15.94	70-57.76	- - - -	Boiler	No sign of this boiler was found during the survey in this area.
Sheet No. H-8007 (Field No. 05152) Town River Bay				
42-14.97	70-58.39	Wreck	Wreck	As charted, verified as per Preliminary Review, Project CS-246.
Sheet No. H-8007 (Field No. 05152) Weymouth Fore River				
42-13.94	70-57.58	Pier ruins	Wreck	No wreck was found in this area, only a pier in ruins.
Sheet No. H-8006 (Field No. 1252) Black Rocks-Black Ledge				
42-16.30	70-48.50	18 ft.	24 ft.	Shoalest sounding (see 13-14f)
42-16.40	70-48.33	28 ft.	29 ft.	do
42-16.32	70-48.76	2½ ft.	22 ft.	do

Not present survey

See #6 of Review

COAST PILOT INFORMATION The Coast Pilot notes were reviewed and no important corrections or additions were found. In U.S.C.P. -Atlantic Coast-Section A-1950, page 348, line 17 the following phrase should be inserted: "This channel is marked with temporary buoys."

AIDS TO NAVIGATION

The following channels are marked by unofficial aids:

Weymouth Fore River-below latitude 42-14.00- temporary markers maintained by the Weymouth Yacht Club.

Hingham Harbor-channel to head of bay- Temporary markers maintained by Harbormaster.

LANDMARKS FOR CHART There are no landmarks to report.

GEOGRAPHIC NAMES No changes or additions were found.

MISCELLANEOUS The area SE of Grape Island and SW of Slate Island at the entrance to Weymouth Back River is shoaling. Extensive mussel beds are developing in this area.

Detached positions located by skiff relating to sheet H-8006 (ECSP-1252) were recorded in two volumes submitted with Project CS-349.

(transferred to Vol. 2 Pg. 2) H-8006

TIDE NOTE TO ACCOMPANY

Hydrographic Survey Sheets: H-8005, H-8006, H-8007

Observations were obtained at eight tide stations. Portable automatic tide gages were maintained at all of these stations except Weymouth Fore River Bridge, which was a standard automatic gage. Limits of the area in which each was used is shown on the boat sheet in blue ink. No difference in time and height was applied to the observed tides. Planes of reference were furnished by the Washington Office or computed from elevations of previous tidal bench marks.

STATION	LATITUDE	LONGITUDE	MLW ON STAFF
Eastern Neck(Weymouth Back River)	42-15.28	70-55.36	2.2 ft.
Naval Depot (Weymouth Back River)	42-14.39	70-55.61	3.9 ft.
Crow Point (Hingham Harbor)	42-15.75	70-53.61	1.8 ft.
Hingham Town Wharf(Hingham Harbor)	42-14.76	70-53.12	1.9 ft.
Fore River Bridge	42-14.66	70-58.08	1.8 ft.
Town River Bay	42-15.22	70-58.74	1.5 ft.
Weymouth (Weymouth Fore River)	42-13.47	70-57.88	3.1 ft.
White Head (Cohasset Harbor)	42-14.94	70-47.04	3.0 ft.

FATHOMETER CORRECTIONS

HYDROGRAPHIC SURVEY

H-8005 (FIELD NO. ECSP 1152)
H-8007 (FIELD NO. ECSP 05152)
H-8006 (FIELD NO. ECSP 1252)

The corrections tabulated below are based on an initial set with a correct sounding of twelve feet. Where the initial on the fathogram varies from the correct setting, INDEX CORRECTIONS must be entered in the sounding volumes. All depths were obtained on the (A) or (B) Range, FOOT SCALE.

All corrections are positive unless otherwise noted.

FATHOMETER NO. 139 SPX
and
FATHOMETER NO. 150 SPX

16 May --- 23 June

(A) Scale

Corr.	Depth From	To
-1.0	2.8	2.9
-0.8	3.0	3.1
-0.6	3.2	3.3
-0.4	3.4	3.5
-0.2	3.6	3.9
-0.0	4.0	Sdg. Limit

24 June --- 21 July

(A) Scale

-1.2	1.0	2.9
-1.0	3.0	3.2
-0.8	3.3	3.3
-0.6	3.4	3.8
-0.4	3.9	4.8
-0.2	4.9	8.2
-0.0	8.3	18.0
0.2	18.1	Sdg. Limit

(Cont. From Page 1)

22 July --- 14 Aug.

(A) Scale

Corr.	Depth From	To.
-1.0	2.8	2.9
-0.8	3.0	3.1
-0.6	3.2	3.3
-0.4	3.4	3.5
-0.2	3.6	3.9
0.0	4.0	19.5
-0.0	19.6	34.-
-0.4	34.1	48.5
-0.6	48.6	Sdg. Limit

(B) Scale

Corr.	Depth From	To
-1.8	34.5	48.5
-2.0	48.6	62.5
-2.2	62.6	76.5
-2.4	76.6	Sdg. Limit

FATHOMETER NO. 139 SPX

15 August - 14 October

(A) Scale

Corr.	Depth From	To.
-1.0	2.8	2.9
-0.8	3.0	3.1
-0.6	3.2	3.3
-0.4	3.4	3.5
-0.2	3.6	3.9
-0.0	4.0	19.5
-0.2	19.6	34.0
-0.4	34.1	48.5
-0.6	48.6	Sdg. Limit

(B) Scale

Corr.	Depth From	To
2.0	35.0	48.5
1.8	48.6	62.0
1.6	62.1	Sdg. Limit

STATISTICS TO ACCOMPANY HYDROGRAPHIC SHEET H-8006

(FIELD NO. ECSP 1252)

Date 1952	Day Ltr.	Vol. No.	Lead Lines	No. Of Positions	Stat. Mi. Sdgs.
9 Aug.	a	1	0	152	18.4
2 Sept.	b	1	0	43	4.8
3 "	c	1&2	0	67	7.4
15 "	d	2	12	12	0.0
17 "	e	2	0	69	8.5
25 "	f	2	0	48	4.2
			12	391	43.3
		TOTALS ———		* 46	
				437	

* 46 positions added to Vol. 2

Area in square statute miles: 0.9 sq.mi.

LIST OF SIGNALS
H-8006

TRIANGULATION STATIONS

BAR	BARREL ROCK, DAY BEACON, 1950
HAL	HULL TOWN HALL, CUPOLA, 1934
MIN	MINOT'S LEDGE L.H., 1915-34
SUT	SUTTON HOLE LIGHT, 1950
HAY	HAYDENS HOTEL, OCEAN HOUSE, 1847

MARKED TOPOGRAPHIC STATIONS

MIKE MIKE, 1950 (T-9512)

TOPOGRAPHIC STATIONS

SOURCE T-9512

Bag Cat Dim Mar Ola Pile

SOURCE T-9512A

Fly ~~Ola~~ ~~Pile~~

HYDROGRAPHIC STATIONS

Cab (Vol. 1, pg. 9)
Tax (Vol. 2, pg. 61)

[redacted] TRIANGULATION STATION

CONCRETE MILITARY LOOKOUT TOWER, 1943

ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8006 (Field No. ECSP-1252)

GENERAL

An overlay is being submitted with the smooth sheet pointing out several unchafted shoal soundings. Some of these, after confirmation by Washington Office, should be considered for immediate charting. Particular attention is directed to the ~~17½~~ 18 foot sounding falling in charted 24 foot depths at Lat. 42-16.3', Long. 70-48.5'.

18ft. sdg. applied to Cht. 246 (9-28-53)

Detached positions on boulders, observed by Mr Romero and recorded in seperate volumes, have been transferred to volume 2 of this survey. They are shown on the smooth sheet in blue ink. (46 pos. added to Vol. 2)

Respectfully submitted,

Hugh L. Proffitt

Hugh L. Proffitt
Cartographer.

Norfolk, Va.
30 September 1953

Approved & Forwarded:

Roswell C. Bolstad

Roswell C. Bolstad
Supervisor, S.E. District.

falls on ch 246

ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8006 (Field No. HOSP-1252)

[illegible]

An overlay is being submitted with the smooth sheet pointing out several uncharted shoal soundings. Some of these, after confirmation by Washington Office, should be considered for immediate charting. Special attention is directed to the 16 foot sounding falling in charted [illegible] depths at Lat. 42-16.6, Long. 70-48.5.

Detached positions on boulders, observed by Mr Romero and recorded in separate volumes, have been transferred to volume 2 of this survey. They are shown on the smooth sheet in blue ink. ([illegible])

Respectfully submitted,
Hugh L. Proffitt
Cartographer.

Norfolk, Va.
30 September 1955

Approved & Forwarded:
[illegible] C. Bolstad
Supervisor, S.E. District.

GEOGRAPHIC NAMES

Survey No. H-8006

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Massachusetts										1
Massachusetts Bay										2
Black ledge										3
Black Rocks										4
Brush Island										5
Cohasset Harbor		(B.G.H = Cohasset)								6
Boston Harbor					Names underlined in red are approved 10-19-53. L. Heck					7
Sutton Rks										8
Names of all eight tid. stations are approved.					additional names 2-24-54 L.H					9
										10
										11
										12
										13
										14
										15
										16
										17
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										24
										25
										26
										27
										M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-8006....

Records accompanying survey:

Boat sheets ..1..; sounding vols.. 2....; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls .2 Env.;

special reports, etc. 1 Descriptive Report; 1 Smooth Sheet;.........................

....

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

Number of positions on sheet		..437
Number of positions checked		...78
Number of positions revised		....7.
Number of soundings revised (refers to depth only)		...10
Number of soundings erroneously spaced		...49
Number of signals erroneously plotted or transferred		0
Topographic details	Time	..32.
Junctions	Time	6
Verification of soundings from graphic record	Time	..30..

[signature] 24 2-12-54

Verification by..W. Werline.......Total time 117... Date 12-30-53

Reviewed by [signature]......................... Time ..19... Date 2-23-54

M-2232-1

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8006 FIELD NO. ESCP-1252

Massachusetts, Boston Harbor, Black Rocks to Black Ledge

Project No. CS-246

Surveyed - August-September, 1952 Scale 1:10,000

Soundings:

808 Fathometer
Lead line

Control:

Sextant fixes on
Shore signals

Chief of Party - C. R. Reed
Surveyed by - R. H. Houlder and H. S. Foote
Protracted by - W. W. Feazel
Soundings plotted by - A. G. Atwill
Verified and inked by - W. A. Werline
Reviewed by - I. M. Zeskind 2/23/54
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with air-photographic survey T-~~5912~~ 9512 (1950).

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

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depths Curves and Bottom Configuration

The usual depth curves were adequately delineated.

The bottom is very irregular. Ledges, reefs, pinnacles and mounds contribute to the bottom irregularity.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-6642 (1940) on the west. Junctions with H-8008 (1952) on the north and with H-8009 (1952) on the east will be considered in the reviews of those surveys.

5. Comparison with Prior Surveys

A. H-221 (1846-47-48), 1:20,000

This early reconnaissance survey lacks sufficient detail to make a comparison between it and the present survey of any practical value.

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

B. H-2167 (1893), 1:10,000

A comparison between the prior and present surveys reveals no changes in the bottom. Except for a few soundings which have been carried forward to the present survey, differences in depths between the prior and present surveys vary from 1 - 2 ft.

With the addition of a few soundings from the prior survey, the present survey is adequate to supersede the prior survey within the common area.

6. Comparison with Chart 246 (Latest print date 9/28/53)

A. Hydrography

The charted hydrography originates with the previously described prior survey H-2167 (1893) which needs no further consideration, and with a critical sounding from the present survey prior to verification and review.

The following discrepancies in charted soundings are noted:

1. The 8-ft. sounding charted in lat. 42°16.18', long. 70°49.35', from H-2167 (1893-94) should be disregarded. The sounding is located at the end of a line which is controlled by a weak fix and has been replotted on the prior survey 50 meters to the westward where it falls in comparable depths on the present survey.

2. The 17-ft. sounding charted in lat. 42°16.30', long. 70°48.51', from advance information of the present survey (Chart Letter 881, 1953) was revised to 18 ft. during verification and review of the present survey.

The present survey supersedes the charted information within the common area.

B. Aids to Navigation

There are no aids to navigation within the limits of the present survey.

7. Condition of Survey

a. The sounding records and Descriptive Reports are complete and comprehensive.

b. The field plotting was accurately done.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work Recommended

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

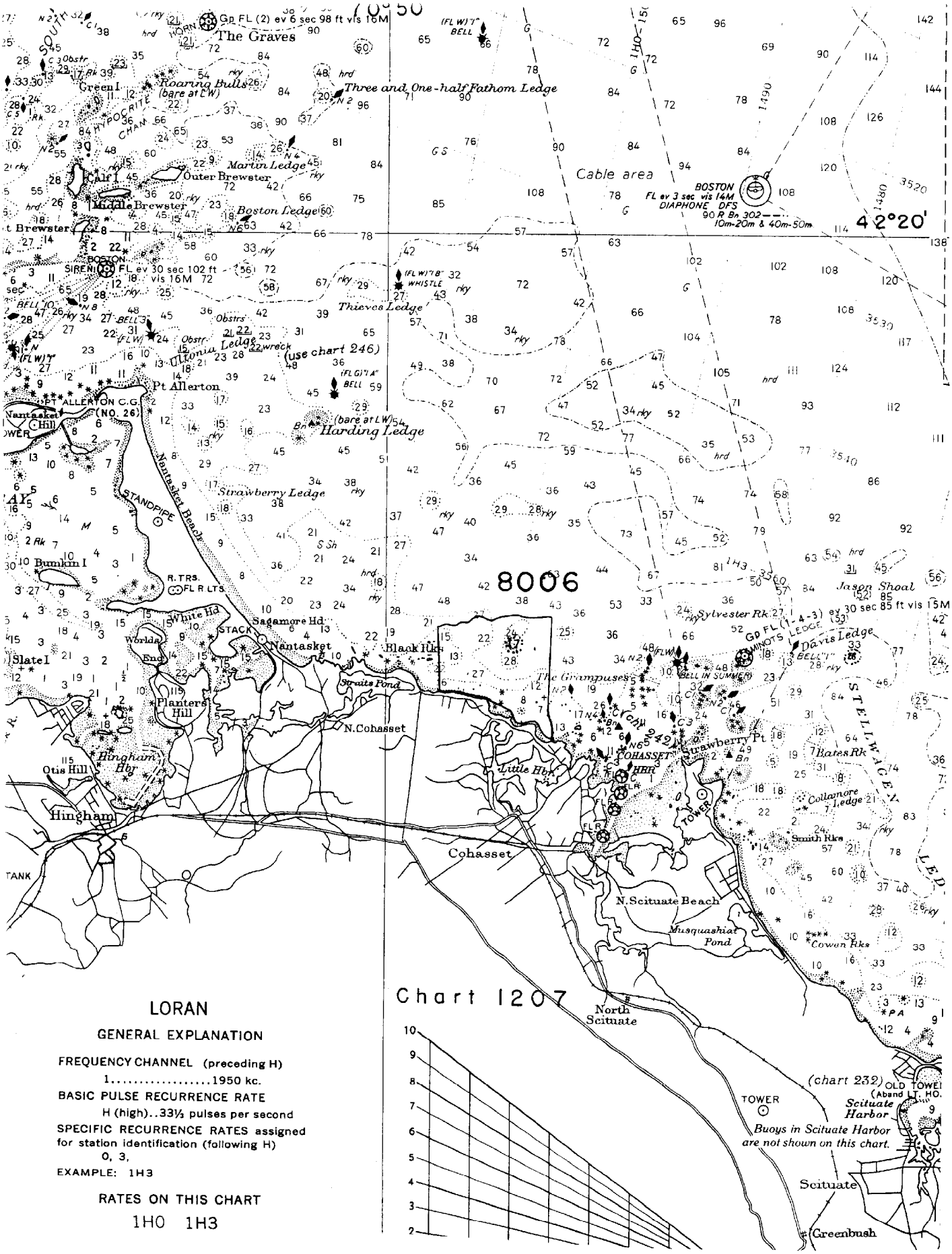
Examined and approved

H. R. Edmonston
Chief, Nautical Chart Branch

H. Arnold Karo
Chief, Division of Charts

G. R. Fish
Chief, Section of Hydrography

Earl O. Heaton
Chief, Division of Coastal Surveys



LORAN

GENERAL EXPLANATION

FREQUENCY CHANNEL (preceding H)

1.....1950 kc.

BASIC PULSE RECURRENCE RATE

H (high)..33⅓ pulses per second

SPECIFIC RECURRENCE RATES assigned for station identification (following H)

0, 3,

EXAMPLE: 1H3

RATES ON THIS CHART

1H0 1H3

RHC

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Division of Hydrography and Topography: 15 October 1953

Division of Charts: R. H. Carstens

Plane of reference approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET 8006

Locality Boston Harbor, Massachusetts

Chief of Party: C. R. Reed in 1952
Plane of reference is mean low water, reading
3.0ft. on tide staff at White Head, Cohasset Harbor
18.3ft. below B. M. 1 (1940)

Height of mean high water above plane of reference is 8.8 feet.

Condition of records satisfactory except as noted below:

E.C. McKay
Section of Tides
Chief, Division of Tides and Currents.

U. S. GOVERNMENT PRINTING OFFICE 756675

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8006

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
5-18-54	1207	J.H. Benoon	Critical corrections only ~~Before~~ After Verification and Review
9/7/54	246	Stern	~~Before~~ After Verification and Review Exam. only
5/5/55	246	H.W. Burgoyne	~~Before~~ After Verification and Review Fully applied
3/17/60	1207	Helmer	~~Before~~ After Verification and Review Fully applied
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.