

2229-2230-2231

2229 2230 2231

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey *Hydrographic*

Field No. *2729* Office No. *2230*
2231

LOCALITY

State *Mass.*

General locality *New Bedford*

Locality *Harbor*

1895
194

CHIEF OF PARTY

St. G. C. Harris U.S.N.

LIBRARY & ARCHIVES

DATE

83
SHA
2230
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COAST AND GEODETIC SURVEY
LIBRARY AND ARCHIVES

Jan. 20,

Diag. Lht. No. 1210-1

Department of Commerce and Labor

COAST AND GEODETIC SURVEY

W. W. Duffield
Superintendent.

State: *Mass*

DESCRIPTIVE REPORT.

Hyde Sheet No. *2230*

LOCALITY:

See

2229

1895
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CHIEF OF PARTY:

G. B. Harris

2230

2231

Diag. Cht. No. 1210-1

Department of Commerce and Labor
COAST AND GEODETIC SURVEY

W. W. Duffield
Superintendent.

State: *Mass*

DESCRIPTIVE REPORT.

Hyd^c Sheet No. 2231

LOCALITY:

See

2229

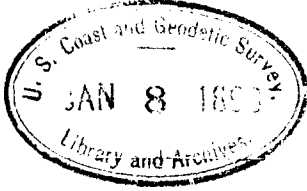
1895-
190

CHIEF OF PARTY:

S. B. Hannus

2231

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U. S. COAST AND GEODETIC SURVEY.

Gen. W. W. Duffield, Superintendent.

State: *Mass.*

DESCRIPTIVE REPORT.

Hydrographic Sheets Nos. *2229,*
2230, 2231.

LOCALITY:

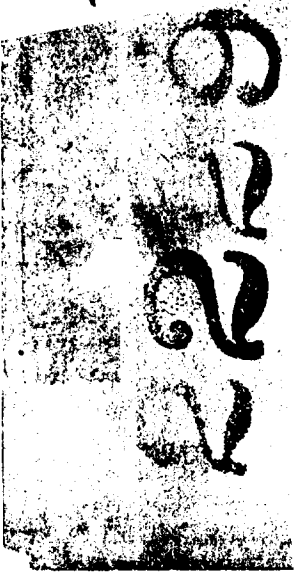
New Bedford Harbor.

1895.

CHIEF OF PARTY:

Lieut. G. C. Hannus, U.S.N.

2229-2230-2231



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Jan 209.

Memorandum for Draftsman.

On the South Western Part of Sheet II where Mishamun Δ was not recovered some trouble was at first experienced in determining signals accurately, and some of the lines at first run which are now correctly plotted did not cover the desired area. By extending Sheet I going into the interior and cutting back, the signals as now plotted on that portion of the Sheet are relatively correct, although shrinkage of paper may have changed the scale slightly. On this Sheet II the position of Round Still Δ was changed slightly to make it relatively correct with the rest of the signals on the Sheet. Tracings taken from the sheets of one of the shore parties before their seasons work commenced did not cover the S.W.ⁿ section of the "Cagres" sheet exactly, but as now transmitted all the signals are absolutely correct with reference to each other, and if the scale is slightly changed, it is so small that it could not be taken into consideration practically.

In plotting soundings at the beginning of the Season's work, it will be well to bear in mind that, when the Launches were used they did not have their proper headway at first, and that they often had not been turned completely when the Line was started. As soon as I noticed this it was corrected by taking a second angle after the boat was fairly underway.

The signals as plotted on the smooth Projections are absolutely correct, (relatively) on the working sheets however they were frequently wrong owing to the Sheets getting damp and even wet. They were of course corrected from time to time and as often as possible.

In broken uneven rocky bottom such as is found in the Approaches to New Bedford, it is exceedingly difficult to do the work thoroughly on a scale of 10,000 and the work is done so closely that it will be very difficult to plot the soundings, I recognized this but can not see how it could have been avoided. Now that the work is completed many of these extra Lines

developed nothing, but without running them this fact would not have been established, and it is my opinion that we have missed nothing that we should have found.

For greater convenience in plotting refer to the Table giving Rocks, Shoals etc in this report.

Jan. 209. (1)

Sheet No. I.

New Bedford Harbor, Clark Cove and Padanaraw
Harbor.

Sheet No. 1's

Acushnet River.

Sheet No. II

Approaches to New Bedford Harbor.

The table of statistics required by the Instructions
Pages 56, 57 and 58, is transmitted rolled up in the
sheets as directed.

Descriptive Report.

Paragraph 209 (2) (3) (4) (5) (6) --- (8) ---, ---, (11) (12) ---,
(14) ---, ---, (17)

The information asked for is already contained in the Sailing Directions and it would lengthen this report unnecessarily to repeat it here.

U. S. Coast Pilot Part III and Atlantic Coast Pilot Division D, Boston to New York contain nearly all the information required.

It seems to me that the Approaches to New Bedford should be regarded as including all the waters East of Misham Point and West of West Island.

On page 205 Atlantic Coast Pilot Division D, there is an erroneous statement. It should read after the italicized words "Inner and Outer Harbor" - the former comprising all that portion inside of Talmer's Island, and the latter embracing all that part North of Clark's Point and outside of Talmer's Island. As one in this vicinity regards the Approaches

among the ledges as a desirable anchorage.

In the same volume the statement that 11 feet can be carried above the bridge (meaning the first or lower bridge) at mean low water requires correction. The barge "Love Star" drawing 20.2 feet frequently discharges her cargo above the bridge, and while she goes up at high water a statement that 16 feet can be carried above the bridge at mean low water would be more accurate.

In a harbor like New Bedford information at high water is all that the larger vessels are interested in.

The largest cargoes are brought here by the following vessels.

Sloop	James N. Elwell	21.3 ft	1812 tons.
Schooner	St. N. Macomber	20.4 "	1572 "
"	Marjorie	20.6 "	2052 1/2 "
"	Mary & St. J. Dow	20.6 "	1834 "
"	Epiphany	20.6 "	1632 "
"	John B. Manning	20.6 "	1666 "
"	M. K. Pack	20.8 "	1800 "
"	Jen. S. E. Merwin	20.3 "	1395 "
"	W. S. Little	20.6 "	1744 "

Schooner	B. A. Van Bunt	20.3 ft	1793	tons.
"	K. D. Perry	21.3 "	1727	"
"	C. L. Davenport	20.8 "	1640	"
"	Marjorie Brown	20.3 "	1840	"
"	W. J. Sissett	20.0 "	1555	"
"	J. F. Toole	20.6 "	1797	"
"	Sagamore.	19.6 "	2300	"

There is a 2nd drawbridge known as the Coggeshall Street Bridge about 1 1/2 statute miles above the first bridge. This draw is near the middle of the bridge but slightly nearer the Eastern end. It permits vessels drawing 14 feet to pass through. There is however no one permanently stationed to open this draw, and the Board of Public Works must be notified if a vessel wishes to go above this bridge.

"Landmarks and Ranges."

With reference to the Paragraph on Ranges Page 90. I would state that the most prominent Land mark in Buzzards Bay is the Spud pipe in Fairhaven.

The next important in the Approaches to New Bedford is the old Light tower at Clark's Point.

This Landmark is extensively used in the day time and should be at once placed on the Charts and kept there while there is anything of it remaining.

"Ranges"

The following are ranges which will carry vessels clear of everything to the depths shown on the charts.

1st, The White Beacon N^e of Butlers Flat, known as Egg Island Beacon or with the Standpipe at Fairhaven will carry a vessel clear until she arrives in the vicinity of the gasbuoy.

2nd, The old light tower at Clark's Point or with the Fairhaven Standpipe can be seen a long ways off and by getting on this range and standing in a vessel will find herself between black buoy No 7, and the Sandspit buoy, as these buoys are sometimes hard to see, especially the spar buoy No 7, this range is extensively used.

The range of Egg Island Beacon or with Fort Beacon is already given in Division P Page 206.

The old light tower at Clark's Point or with the tower of Rodgers School which is a Coast Survey Δ is the range used by the tugs in bringing in the deepest draft vessels. It closely corresponds with the edge

of the red sector of Clark's Point Light, at night.

The range given in the Sailing Directions after passing the gas buoy is correctly described, but the tugs after passing the buoy about a quarter of a mile haul in to the N. a hundred yards or more and then steer for the black buoy No. 11 marking the eleven foot spot afterwards following the buoys. They do this to avoid Scups on the E. edge of the channel.

Paragraph 209 - (9)

The prevailing wind is SE. During the summer months it blows almost continuously - often with the force of a moderate gale. At night it nearly always dies away.

The only dangerous gales in the harbor are South Easters, when the sea heaves in through the opening. At such times the bottom is so disturbed that the anchors are apt to drag, while under normal conditions the holding ground is excellent, wherever the chart shows mud bottom.

Paragraph 209, (10)

A wreck was located on Great Ledge. It will probably remain there a long time. Least depth over it at mean low water is 2.0 feet.

Paragraph 209 (13)

"Descriptive Report."

Wharves and data relating to them.

All data with reference to wharves will be found in a separate book, 2nd Cutter (Yellow), for convenience of reference at all times in the future.

The wharves are numbered on the Sheet 1, 2, 3, 4, etc.

In the wharf book this number is always referred to, but in addition the owners names are given.

For still greater ease of reference the following Table is submitted. Any information desired can thus be easily obtained.

Sheet No.	No. of Wharf	Owners	Port	Day	Position	Depths at end of wharf	Depths alongside of wharf
	1	Namsutta Mills Corporation	Second	a	42-43		West to East, -2.5, +5.5, 10.5, 9.5 ft.
	1	"	"	a	43-44	7.5 ft. South to North	
		"	"	"	44-45		East to West 6.0, 5.5, 1.5 ft.
	1	"	"	a	45-46	South to North 5.5, 1.0 ft.	
		"	"	"	46-47		West to East, 2.0, 0.5 ft.
	1	"	"	a	47-48	South to North 0.5, -2.5, -1.5 ft.	

Sheet No. of No. 1 Wharf	Owners	Boat No.	Direction	Position	Depth at end of wharf.	Depth alongside of wharf.
2	Benj. F. Hathaway	✓	Cutter	a	39-40	South to North 3.9, 2.9 ft
3	Rodman's Wharf	✓	"	a	26-27	South to North 8.5, 10.5, 3.5 ft
					27-28	West to East, 6.5, 5.0, 3.5 ft
					28-29	South to North 1.5, 1.0 ft
					29-30	West to East 1.0, 2.5, 3.5 ft
4	Edward Rodman & Others.	✓	"	a	30-31	South to North 4.5, 6.5 ft
					31-32	East to West, 9.5, 10.5, 7.5 ft.
4	Edward Rodman & Others.	✓	"	a	20-21	West to East, 0.2 + 22, 5.8 ft
					21-22	" " + 4.8, 6.8, 9.8 ft
					22-23	" " 9.8, 10.3 ft
					23-24	" " 9.8, 11.3, 10.8, 11.3 ft
					24-25	South to North 12.7, 12.2, 12.7 ft
5	Howland's Wharf	✓	"	a	25-26	East to West, 9.6, 8.1, 5.6 ft.
					10-11	West to East, 0.7, 1.2 ft
5	Howland's Wharf	✓	"	a	11-12	South to North 1.2 ft
					12-13	" " 2.2, 3.7, 4.2 ft
					13-14	South to North 5.2, 1.2 ft.

Sheet No.	No of Wharf	Owners	Boat Day	Position	Depth at end of wharf.	Depth alongside of wharf.
	5	Howland's Wharf	Cutter	a	14-15	West to East 5.7, 10.2, 14.2 ft
					15-16	South to North 15.2, 14.7 ft
					16-17	East to West 13.6 ft
					17-18	North to South 10.1, 9.1, 6.1 ft
			"	a	18-19	East to West 11.1, 13.1, 9.1, 2.1 ft
	6	Nileox & Rickwoods Wharf	"	a	4-5	West to East 7.3, 6.3, 11.3 ft
					5-6	" " 10.3, 12.8, 13.3 ft
					6-7	" " 13.3, 17.3, 17.8 ft
					7-8	South to North 14.3, 15.3, 15.8 ft
					8-9	East to West 9.3, 9.3, 1.3 ft
	7	Auguste E. Smith & Others.	"	a	1-2	South to North 6.4, 10.4, 20.9 ft.
					2-3	East to West 17.9, 12.4, 6.4 ft.
	27	✓	No 23 Launch	m	60	South to North 7.1 ft

Sheet No	to of Wharf	Owners	Boat	Day	Location	Depth at end of wharf	Depth alongside of wharf
30	United States	Cutter f	62-63				South West to North East. 0.1, 2.1, 4.1, 6.6, 9.1 ft
			f	63-64	N 61 E	7.1, 7.6, 7.1 ft	
			f	64-65	N 61 E	7.6, 4.1, 4.6, 0.1 ft	
46		Second Cutter a	33-34		N 61 E	10.2, 5.2, 3.2 ft	
			34-35		N 61 E	11.2, 13.2, 8.2 ft	
		" a	35-36		N 61 E	8.2, 10.7, 11.2 ft	
			36-37				West to East 11.2, 7.2, 6.2 ft
47		" a	38-39		North to South	7.6, 12.1, 9.1, 0.1 ft	
50	Clark's Cove	Guano Works Cutter e	50-51		South to North	14.9, 13.5 ft	
52	C. N. Howland's	Gal "	a	19-20	North to South	13.4 ft	
	Wharf.			20-21			West to East 13.4, 7.4, 5.4 ft
58	Longsett Association	Cutter g	15-16		North to South	11.8, 11.3 ft	

Paragraph 209 (15)

No Hydrographic Office. No Ice, code.

Paragraph 209 (16)

There are three Marine Railways in New Bedford Harbor located as follows.

1. Abram Chase & Co. Fairhaven. Depth over sill forward 10 ft aft 14 ft. Capable of taking out a vessel of 900 tons. Length of Cradle 150 ft. It is proposed to lengthen this Cradle 30 ft making it 180 ft.
2. Granite Wharf Marine Stock Co. Fairhaven. Depth over sill forward 9 ft aft 12 ft. Capable of taking out a vessel of 600 tons. Length of Cradle 120 ft.
3. A. Dealkey. Fish Island, New Bedford, Depth over sill forward 10 ft aft 14 ft. Capable of taking out a vessel of 200 tons. Length of Cradle 45 ft.

Jan 209. (71)

Rocks, Shoals etc.

Few persons would notice the remark on Chart 350 about the plane of reference and that it is not Mean Low Water. I call attention to this as the Chart shows nearly a foot (.8 of a foot) less water than it would had the plane been as usual, mean low water.

For convenience of reference the data with reference to rocks and shoals has been tabulated, all new information is indicated in red, all that is old in black.

As a recognition of the zeal and close attention to duty displayed by Mr. Wm. D. Proctor of this Party who was indefatigable in his search for sunken dangers and rocks, I would respectfully recommend that the ledge of 38 sunken rocks off Sutters Point first determined by him be called Proctor Rocks, especially as they have no local name, and their existence did not seem to be known to anyone.

An inspection of the annexed tables will show many discrepancies between the depths shown on the Chart and those

actually developed by the survey and I would most respectfully urge that in placing rocks reported by outside parties on charts, that a record be kept, so that the weight which may be given to such reports may be judged by officers sent to examine or re-survey such localities.

We wasted an immense amount of time in trying to find the depths marked on the chart, and the examination was, in all cases thorough. In many cases the rocks could be plainly seen, this of course disposed of any chance of our being mistaken.

Taking into consideration the fact that Chart 350 shows depths .8 of a foot below mean low water, an inspection of the Tables will show the results of our work at a glance.

The rocks formerly given on the Chart were visited and revisited, always located, dragged over and least depths diligently searched for. Examination in all cases was thorough.

Keel Rock on the Chart it is impossible to locate, the whole vicinity is full of rocks, some with less water, some with more than shown on Keel Rock, so called on the Chart.

The rock known to the inhabitants in the vicinity as Keel Rock is another rock altogether, one that is bare at low water, the one given in the table Launch 23 3 ³² ✓. Sheet 2.

The great number of new shoals found are of more or less importance. Most of these will be useful only to cat boats and small yachts, but as these latter always use our Charts they will no doubt appreciate the great number of changes in the new chart.

Paragraph 209 (7)

An inspection of the following Table will show all information with reference to rocks and shoals developed by the Survey at a glance. New information in red. Old information in black.

Chart	Locality	Depth	Day	Position	Chart	Sound water on chart at M.S.T.	Sound water actually found	Remarks.
I	1075 metres S from Tac 0 d 22	i		24			13.4 ft	
I	Taber Rock							
I	475 metres S from Dec d 23	t		20			19.0 ft	Evidently carried there by ice.
I	Nantuxouth Rock	L 22	t	1	7.0 ft	7.8 ft	7.6 ft	
I	Shunken spike near Nantuxouth Rock	L 22	t	12			2.4 ft	Slightly fixed, not likely to be obliterated for a long time.
I	Beetle Rock							Known only to a few scall-p. fishermen.
I	740 metres N x E from Lane d 23	y		1			1.6 ft	
I	1100 metres N x E from Day d							
I	1000 metres E from Lane d 20	y		2			8.9 ft	
I	Old Southey Rock off Clark's Point	Cutter	f	66	1 ft	1.8 ft	0.4 ft	This rock has an iron spindle on it.
I	600 metres S x S from Clark's	L 22	z	1	17 ft	17.8 ft	7.0 ft	
I	700 metres N from Point d 22	L 22	z	1127			3.7 ft	
I		L 22	z	2/10			1.6 to 6.4 ft	A ledge of rocks.
I	650 metres N x S from Point d 22	z		18			6.7 ft	
I	Butcher's Flat				12 ft	12.8 ft		Shoals gradually to the shore, but is not a detached shoal at all.
I	0.9 of a mile E x E from Clark's	L 23	x	25-26	18 ft	18.8 ft	18.0 ft	
I	1/2 miles E from Camp 0 d 23	k'		9			13.0 ft	
I	250 metres N x W from Cutter	k'		1			2.8 ft	

Old information in black. New information in red.

Sheet	Locality	Boat	Day	Sections	Chart	Actual	Remarks	
I	280 metres West of Draw	Cutter	w	74		13.1 ft		
I	580 metres S from Tac	L 22	a'	38-39 40, 41, 42 43, 44, 45 46, 47, 48 49		15.6 ft	2 rocks.	
I	650 metres S from Tac	L 22	a'			6.7, 6.6, 7.6, 6.5, 6.6, 6.6, 6.6, 6.6	10 rocks. They be dangerous for small yachts, known in the vicinity as Swift Rock. Numbers with 11 ft in the vicinity	
I	7 ft spot on northern end of Bait's Ledge near Buoy No 4	L 22	c'	28	9.0 ft	9.8 ft	10.1 ft	
II	Wilkie's Ledge	L 22	w	112	9.0 ft	9.8 ft	8.8 ft	✓
II	Black buoy No 5. known as Salt's Ledge 2 rocks	Cutter	a	43-44	1.0 ft	1.8 ft	1.9, 2.5 ft	✓ To Lobsterman over knew of shallower water.
II	The Saudepit	L 23 L 22	d' h'	1	7.0 ft	7.8 ft	10.7 ft 1.6 ft	✓ Examination through
II	Great Ledge	L 23	3' h'	51, 52, 53 47, 1	*7.0 ft	0.8 ft	2.3, 2.3, 3.9 4.9, 3.0 ft	✓
II	Track + + + on Great Ledge	L 23	3'	45			2.0 ft	✓
II	Fatal Rock	L 23	s'	1	5.0 ft	5.8 ft	3.4 ft	✓ 2 rocks - the one on Chart does not exist.
II	Lazy Rock (2 rocks)	L 23	x'	80-81	1.0 ft	1.8 ft	5.2, 3.7 ft	✓ Blake was mistaken.
II	Shussey Rock	L 22	d'	12	4.0 ft	4.8 ft	4.0 ft	✓
II	Middle Ledge	L 23	e'	1	3.0 ft	3.8 ft	5.0 ft	✓
II	Low Rock	L 23	d''	8	2.0 ft	2.8 ft	2.0 ft	✓
II	Quey Rock	L 22	y''	3	6.0 ft	6.8 ft	11.7 ft	✓ Another one of those rocks for which I do not believe any reliable authority can be furnished.
II	S Bait's Ledge	L 23	w	66	5.0 ft	5.8 ft	6.2 ft	✓
II	North Ledge	L 22	b''	10	7.0 ft	7.8 ft	10.3 ft	✓
II	Deeater Rock	L 22	c''	2	5.0 ft	5.8 ft	6.9 ft	✓

Old information in black. New information in red.

Sheet	Locality	Depth	Direction	Chart	Actual	Remarks
				Chart at M.D.N.	actually found	
II	Church Rock	L 22	6'	51	9ft 9.8ft	15.2ft ✓
II	Shimney Rock	L 22	0'	1	11ft 11.8ft	11.1ft ✓
II	Sturcell Rock	L 22	4'	48	14ft 15.3ft	16.7ft ✓ Located again & again. Examination through.
II	Masher Ledge	L 22	4'	49	6ft 6.8ft	7.2ft ✓
II	Sturitta Rock	L 22	3'	21	11ft 11.8ft	11.2ft ✓
II	Packet Rock	L 22	3'	64	5ft 5.8ft	5.6ft ✓
II	Trinity of Black Dunes	L 23	d'	1	8ft 8.8ft	8.7ft ✓
II	210 metres SxW from Duquette	Cutter	0	92		5.3ft ✓
II	5 rocks			79, 80, 81, 85, 87		6.7, 3.2 ✓ Separate rocks north of Keel Rock (so called) 2.7ft on the chart.
II	360 metres N 85° E from Mind	0	L 23	3		Called by the natives Keel Rock.
II	1/4 mile E x S from Keel	0	L 23	3	82	*(-.3ft) Keel Rock.
II	Ledge of rocks			83, 84, 85, 86, 87	4ft 4.8ft	-1.3, 3.7 ✓ One of these might be the original Keel Rock 4.7, 3.2, 1.7ft as called on the chart.
II	370 metres S 85° E from Keel	0	L 23	3		✓ 4.5ft ✓
II	200 metres East from Keel	0	L 22	d'	30	✓ 4.5ft ✓
II	West Island Ledge	L 23	h'	1	1ft 1.8ft	2.1ft ✓
II	West Island Ledge further to the S.W.	L 23	u' u'	43, 44, 45, 47		3.7, 2.7, 2.0, 3.6, 2.3, 3.8, 3.0, 3.0 ✓ 9 rocks in all covering about 100 metres in area. A dangerous ledge of rocks.
II	a ledge of rocks	L 22	g'	36, 35, 39, 40, 41		✓ 3.6ft ✓
II	Ledge of rocks nearly about of water at low water 550 metres S.E. from West. Numerous rocks in and out of water inshore of this.	Cutter	a, a	10, 21, 23, 28, 30, 38		✓ -9, -8, -8, -3.8, -1.8, 0.9ft ✓ Only of value to cat boats and small yachts.

Old information in black. New information in red.

Sheet	Locality	Spot	Day	Position on Chart	Least water on Chart at 2.5 M	Least water actually found	Remarks.
II	2 rocks 630 metres S 1/2 N from Red Cutter	a	a	44, 45	✓	2.9	Only of value to cat- *boats and small yachts.
II	1/4 of a mile S 1/2 E from Red Cutter	a		1 etc	Rock out of water ✓	-3.0 ft	Very much used as a Landing place. Known as Little Black Rock.
II	Extending out from that	a		15, 16, 17	Rocks in and out of water ✓		The bottom here is very foul.
II	North of Little Black Rock between East & West 990 metres S 1/2 N from Black	L 23	i'	1	1 ft	1.8 ft	3.0 ft ✓
II	790 metres S x E from Red	L 20	i'	27			3.8 ft ✓
II	2 rocks. 1900 metres South from Red	L 23 L 22	i' f"	22 24	15 ft	15.8 ft	19.1 ft 16.1 ft ✓
II	In channel 1.4 miles S 1/4 N from Red	L 22	a"	20	✓	19.8 ft	Tessels drawing 20.6 feet at Red Cutter Slightly less water was found on 1 day L 23 3/4.
II	370 metres S 1/2 E from West	L 22	a"	11	✓	22 1/2 ft	
II	440 metres West from Red	a		55		-1.1 ft	✓
II	440 metres West from Nil	L 23	f	18		.9 ft	✓
II	550 metres N 1/2 N from Nil	L 20	f	18-19 midway		2.4 ft	✓
II	320 metres N 1/2 N from Red	L 22	b'	43		12.5 ft	✓
II	260 metres from Star	L 22	a'	45	✓	6.4 ft	Group of this rock there are numerous rocks in & out of water.
II	680 metres from Red	L 22	a'	45	✓	4.6, 4.6, 4.6 4.7, 2.8, 1.9	These 38 sunken rocks it is recommended to call Proctor Rocks
II	38 sunken rocks to Southward of Salt	Cutter		46, 47, 48 49, 50, 51 52, 53, 54 55, 56, 57 58, 59, 60 61, 62, 63 64, 65, 66 67, 68, 69	✓	4.9, 3.9, 4.9 4.9, 5.5, 6.0 3.0, 5.0, 2.0 4.0, 2.0, 5.0	Proctor deter- mined them and they were not here before on any chart and appear to have no local names.
	further out out 530	Cutter		70, 71, 72 73, 74, 75 76, 77, 78	✓	2.2, 2.2, 2.2 2.2, 2.2, 2.2 3.2, 3.2, 4.2	
	metres distant.	Cutter		79, 80, 81 82, 83.	✓	3.3, 3.3, 1.3 2.3, 4.3, 2.3 4.4, 4.4, 4.4	

Old information in black. New information in red.

Sheet	Locality	Boat	Day	Position	Seant water on Chart at M.S.T. found.	Seant water actually found.	Remarks.
II	Shunts Rocks	2 nd Cutter	@	84, 85, 86, Out of 87, 88, 89, always		3.4-2.4-3.4 Outer 2.4 -2.8-2.4-2.4 -1.0 ft.	✓
II	2 rocks 40 metres apart about 300 x 260 metres SE from Shaw	Cutter	@	90-91		3.4 4.4 ft	✓
II	120 metres S from Dump	L 23	X'	79		5.5 ft	✓
II	1/2 mile S 1/2 S from Salt	L 23	g"	⁵⁰ 12		12.8 ft	✓
II	2 rocks 210 metres S 1/2 S from Dump	Cutter	@	92-93		5.3 9.8 ft	✓
II	About 360 metres NE 1.6 x 1 from Hill	L 23	z'	62, 63, 64 65, 66, 67 68, 69, 70 71, 72, 73 74, 75, 76 77, 78	✓ ✓ ✓ ✓	4.1, 3.7, 3.9, 3.4, 3.9, 2.7, 0.9, 4.1, 4.1 2.9, 3.4, 4.9 3.5, 3.1, 3.3, rocks in & out of water 3.3, -5 ft inshore of these.	A ledge of 16 sunken rocks. One awash and
II	120 metres S 1/2 S from Dump	Cutter	e	5-6	15 ft 15.8 ft	11.0 ft	✓
II	Between the two Ragged Rocks the Cuttle always out of water. Near Quez Rock	L 23	z'	78		3.5 ft	✓
II	1/2 mile NE from there	L 22	g"	86		22.2 ft	✓
II	Between Quez Rocks & Cattle Ledge 1.8 x 6 from Keel @ 1.2 miles	L 22	e"	76		12.8 ft	Just as important as the four rocks which are buoyed in the vicinity.
II	4 1/2 metres S 1/2 S from Hill	Cutter	e	10-11		3.2 ft	✓
II	500 metres S 1/2 S from Salt	Cutter	e	24-25		4.9 ft	✓
II	0.7 miles S from Red	L 23	h"	19	✓	11.4 ft	
II	210 metres from H.W.M.	Cutter	e	34	✓	4.2 7.0 ft	Of use only to small yachts and centre- boards boats.
II	160 metres N 1/2 E from Bar	Cutter	k	18	✓	2.6 ft	An important rock the passage is ex- tremely steep.
II	0.9 mile East from Point	L 22	f"	1	✓	18.9 ft	near enough to channel to be dangerous for deep draft vessels which sometimes anchor in this vicinity.

Specimens.

While for purposes of Navigation specimens of the bottom in our work may be of very little value, still for scientific purposes they may be of use and sixty six specimens were obtained well distributed over the work outside of Palmer's Island. Twenty four of these specimens were obtained on Sheet I and forty two on Sheet II. They are forwarded in the bottles provided for that purpose and labeled. A complete record of these will be found in the Specimen books one for each sheet.

Currents.

A spar buoy off Clark's Point afforded a fine opportunity to get the difference of time between high and low water and the change of flood and ebb currents had there been any current to speak of at this Point, but the buoy nearly always rode to the wind when there was any.

There is so little current in both the Inner and Outer Harbore that vessels at anchor always rode to the wind if it blows with the force of a light breeze.

For this reason no special effort was made to obtain current data.

It is not practicable to anchor the launches in the open bay for forty eight hours. The Schooner could be used but as it is only at the S'm limit of our work where any currents are encountered the steamers which will hereafter join on to our work can readily determine such current data as may be required.

Tides.

The work in connection with tidal data was placed under the charge of Ensign W. C. Edgar, at the beginning of the season. On Oct. 15, Ensign Edgar became Executive Officer, and the tidal work was assigned to Ensign J. T. Hubbard, by whom all data herein submitted was prepared.

Tide Gauges.

On May 27, 1895, a box gauge was established on the sheltered side of the stone pier at Clark Pt. Six other gauges (staff) were established, as the work advanced, and careful comparisons were made with the standard (Clark Pt.) The comparisons show that the tides of the harbor and approaches are of a simple form. The gauges established in addition to the one at Clark Pt. are:-

- Upper Padanaram gauge, situated near Stern's bathing wharf, and used for soundings in the upper harbor (above bridge.) Bench marks given in separate ^{pages, later on.} report.
- Lower Padanaram gauge, situated near the coal wharf, below the bridge - used only for comparison. Bench marks later.
- Nonguitt gauge, situated near Picketon's wharf in Nonguitt - used only for comparison. Bench marks later.
- Philadelphia & Reading Coal Wharf gauge, situated in the southern slip of the coal company, back of the office - used for soundings between Palmer Id. and Fairhaven bridge. Bench marks later.
- Wausutta Mills Wharf gauge, situated on north side of mill wharf - used for soundings between the Fairhaven & Coggeshall St. bridges.
- Belleville gauge, situated half way between the Coggeshall St. bridge and head of river, on west side, south of a ruined wharf,* near signal Stimp. Used for soundings above the Coggeshall St. bridge. * Public landing of New Bedford, owned by city.

There is an automatic tide gauge in the inner harbor, owned by the city & under the charge of the City Engineer. During the past seasons, its mechanism was out of order, and its results have not been considered in working up the data. Mr. Williams, the City Engineer has been most obliging, and should the office desire additional data, he would furnish it with pleasure. As these observations will continue for a period of years, the results obtained may prove of great value.

In 1903 Capt. R. L. Faris leveled between B. Ms. at Clark Point. The results are shown in the following table:

	1875 ft.	1903 ft.
B. M. 1 - B. M. 2	0.69	1.51
B. M. 3 - B. M. 1	2.20	2.09
B. M. 3 - B. M. 2	2.89	3.60

It appears that Lieut Horns was quite rough in his measurements, for the later ones were made with care. L. P. S. Aug., 1905.

Comparison of Gauges.

Clark Pt.	Mean low water reading (determined from one lunation, May 29 - June 27, 1895)	2.0 ft.
Upper Padanaram	" " " " (determined by comparison Aug. 15-17, 1895)	1.0 "
Lower Padanaram	" " " " " " " "	5.9 "
Nonquitt	" " " " " " " "	3.0 "
Phil. + Reading Coal Wharf	" " " " " " " "	4.0 "
Nansuita Mills Wharf	" " " " " " " "	1.8 "
Belleville	" " " " " " " "	1.9 "

Bench Marks.

Clark Point: - No. 1. 1st seam under lower tier of embrasures, on N.W. face of fort under the center of modern gun-port and corresponds to reading 5.61 ft.

No. 2. Center of the (6th) sixth flagging stone on west side of the stone pier from the top of the stone steps. Marked by a cut on the edge of the stone, and corresponds to reading 6.3 ft.

No. 3. Center of the edge of the port sill of the Eastern lower gun port on the N.W. face of fort. Corresponds to reading of 3.41 ft.

Bench marks 1 and 2 are about $\frac{1}{2}$ mile distant from each other.

Upper Padanaram: -

Bench mark No. 1. on wharf post aboast gauge. Marked... and corresponds to reading of 5 ft.

No. 2 is on a rock 20 ft. east of gauge. Marked with + cut in rock, and corresponds to reading 5 ft.

Lower Padanaram: -

Bench mark No. 1 is on wharf pile to which gauge is nailed. Marked with 5 copper nails (∴) and corresponds to reading 10 ft.

No. 2. is a cross (+) cut on rock alongside gauge and corresponds to reading 10 ft.

Nonquitt: -

Bench mark No. 1. is 9 copper nails... on wharf pile alongside gauge, and corresponds to reading 8 ft.

No. 2. is a cross (+) cut on rock 31 ft. south of gauge, and corresponds to a reading of 8 ft.

Bench Marks.

Phil. + Reading Boat Wharf:-

Bench mark No. 1 is the letter E and two holes, thus (E..) six feet west of tide gauge on stone wharf and the lower line of the E corresponds to a reading of 8.1 ft. No. 2 is a cross and two holes, thus (+..) 2 ft. 8 in. west of gauge on stone pier. Center of cross corresponds to a gauge reading of 5.2 ft. No. 3 is 3 large iron nails driven in first splice east of gauge. Center nail corresponds to a gauge reading of 7 (seem) feet.

Wamsutta Mills Wharf:-

Bench mark ^{No. 1.} is directly alongside gauge on wharf splice and consists of 3 copper tacks, corresponding to reading of 6 ft. No. 2 is a cross and two holes (thus +..) cut in stone wharf 4 ft. 3 in below top of wharf, abreast gauge, Center of cross corresponds to gauge reading of 5 ft.

Belleville:-

Bench mark is a hole in rock of stone pier of public landing. There are two smaller holes above the bench mark thus: (..) The lower hole corresponds to reading 5 ft.

Establishment of Port.

From observations during one lunation (CLARK Pt.)

MAY 29 - JUNE 27 - 1895.

DATE.	Standard Time High of WATER.	LONG.	G.M.T. of C's Meridian Passage.	Correction for Longitude.	L.M.T. of C's Meridian Passage.	L.M.T. of High WATER.	LUNATIONAL INTERVAL.
MAY 29	11-45 a.m.		4-49 ^m	+ 11 ^m	5-00 ^m	12-01	7-01
30	12-55 "		17-15	10	17-25	1-11	7-46
31	1-27 a.m.		5-41	10	5-51	13-43	7-52
31	1-52 a.m.		18-06	10	18-16	2-08	7-52
JUNE 1	1-55 a.m.		6-30	10	6-40	14-11	7-31
1	2-50 p.m.		18-54	9	19-03	3-06	8-03
2	2-27 a.m.		7-18	9	7-27	14-43	7-16
2	3-42 p.m.		19-41	9	19-50	3-58	8-08
3	3-45 a.m.		8-04	9	8-13	16-01	7-48
3	4-40 p.m.		20-28	9	20-37	4-56	8-19
4	5-00 a.m.		8-52	10	9-02	17-16	8-14
4	5-30 p.m.		21-18	10	21-28	5-46	8-18
5	6-02 a.m.		9-43	10	9-53	18-18	8-25
5	6-25 p.m.		22-09	10	22-19	6-41	8-22
6	6-42 a.m.		10-35	11	10-46	18-58	8-12
6	7-05 p.m.		23-03	11	23-14	7-21	8-07
7	7-52 a.m.		11-30	11	11-41	20-08	8-27
7	7-57 p.m.		23-59	11	0-10	8-13	8-03
8	8-22 a.m.		12-27	11	12-38	20-38	8-00
8	8-47 p.m.	70° 54' w	0-55	11	1-06	9-03	7-57
9	9-10 a.m.	09	12-22	11	13-33	21-26	7-33
9	9-37 p.m.		1-49	11	2-00	9-43	7-43
10	9-55 a.m.		14-16	10	14-26	22-11	7-45
10	10-20 p.m.	44° 43' 36"	2-41	10	2-51	10-36	7-45
11	10-35 a.m.		15-05	9	15-14	22-57	7-37
11	11-02 p.m.		3-28	9	3-37	11-18	7-41
12	11-15 a.m.		15-51	9	16-00	23-31	7-31
12	11-40 p.m.		4-13	9	4-22	11-56	7-34
13	12-27 p.m.		16-34	8	16-42	0-43	8-01
14	12-20 a.m.		4-55	8	5-03	12-36	7-33
14	1-07 p.m.		17-15	8	17-23	1-23	8-00
15	1-20 a.m.		5-35	8	5-43	13-36	7-53
15	1-42 p.m.		17-54	8	18-02	1-58	7-56
16	1-57 a.m.		6-14	8	6-22	14-13	7-51
16	2-30 p.m.		18-34	8	18-42	2-46	8-04
17	2-20 a.m.		6-54	8	7-02	14-36	7-34
17	3-00 p.m.		19-14	8	19-22	3-16	7-54
18	3-15 a.m.		7-36	8	7-44	15-31	7-47
18	4-22 p.m.		19-58	9	20-07	4-38	8-31
19	4-12 a.m.		8-22	9	8-31	16-28	7-57
19	4-57 p.m.		20-45	10	20-55	5-13	8-18
20	5-25 a.m.		9-11	10	9-21	17-41	8-20
20	5-52 p.m.		21-37	11	21-48	6-28	8-20
21	6-10 a.m.		10-06	11	10-17	18-26	8-09
21	6-47 p.m.		22-34	12	22-46	7-03	8-17
22	7-10 a.m.		11-05	12	11-17	19-26	8-09
22	7-47 p.m.		23-36	12	23-48	8-03	8-15
23	7-47 a.m.		12-08	12	12-20	20-03	7-43
23	8-20 p.m.		0-40	12	0-52	8-36	7-44
24	9-02 a.m.		13-12	12	13-24	21-18	7-54
24	9-17 p.m.		1-43	12	1-55	9-33	7-58
25	9-30 a.m.		14-13	12	14-25	21-46	7-21
25	10-05 p.m.		2-42	12	2-54	10-21	7-27
26	10-27 a.m.		15-09	12	15-21	22-43	7-22
26	11-00 p.m.		3-36	11	3-47	11-16	7-29
27	11-15 a.m.		16-02	11	16-13	23-31	7-18

56 441 - 55

Estab. of Port. 7-53²⁷ 56

Note:-

C.S. Clark No. 350 gives 74.49m

"Bowditch" gives 74.57m

Tidal Data.

(For Chart - Art. 99 "Instructions for Hydrographic Parties".)

The plane of reference is Mean Low Water, which reads on staff	2 ft.
Average time of High Water after moon's meridian passage	7 ^h 53 ^m ²⁷ / ₅₆
Average time of Low Water " " " "	1 ^h 04 ^m ⁴⁹ / ₅₆
Average height of High Water above the plane of reference	3.5 ft.

Additional data:-

Rise of Spring tides above plane of reference	3.8 ft.
Rise of highest observed tide above plane of reference	5.0 ft.
Fall of Spring tides <u>below</u> plane of reference	1.8 ft.
Fall of lowest observed tide <u>below</u> plane of reference	1.5 ft.
Mean duration of High Water stand	52 m.
Mean duration of Low Water stand	1 ^h 09 ^m
Mean duration of Rise	6 ^h 48 ^m ³⁴ / ₅₆
Mean duration of Fall	5 ^h 38 ^m
Mean range of tide [Mean Rise & Fall]	3.5 ft.
Spring range -- [Spring " " "]	4.6 ft.
Neap range -- [Neap " " "]	2.8 ft.

Unusual tides on separate page (No. 6.)

The above table was obtained principally from the observations during a lunation - May 29 - June 27, 1895, when weather was favorable and tides apparently characteristic, throughout. Observations of high & low water were also made during 56 days, and have been used when advisable.

The following report of the highest tide known in the harbor is a copy of one forwarded this vessel by Mr. W. P. Williams, City Engineer, in answer to a request for any data in regard to ~~very~~ ^{unusually} high tides. There seems no doubt that this is the highest tide known.

The city plane of reference (M. H. W.) is (.7) seven-tenths of a foot above our M. H. W. or is 4.2 ft. above our plane of reference - M. L. W. (Determined by a comparison of city gauge records with standard gauge readings at Clark Pt. (J. T. H.)

High Tide of Feb. 8, 1895.

Moon full and in perigee Feb. 9th. Almanac predicted medium tide.

Tide reached maximum height at about 6-30 a. m. on the 8th.

Along the wharves the tide reached a point 4.2 ft. above datum (M. H. W.)

at Coggeshall St. Bridge it rose to 4.4 ft. above M. H. W.

The railroad track was covered along the wharves.

Barometer 7 a. m. 28.76

Thermometer 7 a. m. 16°

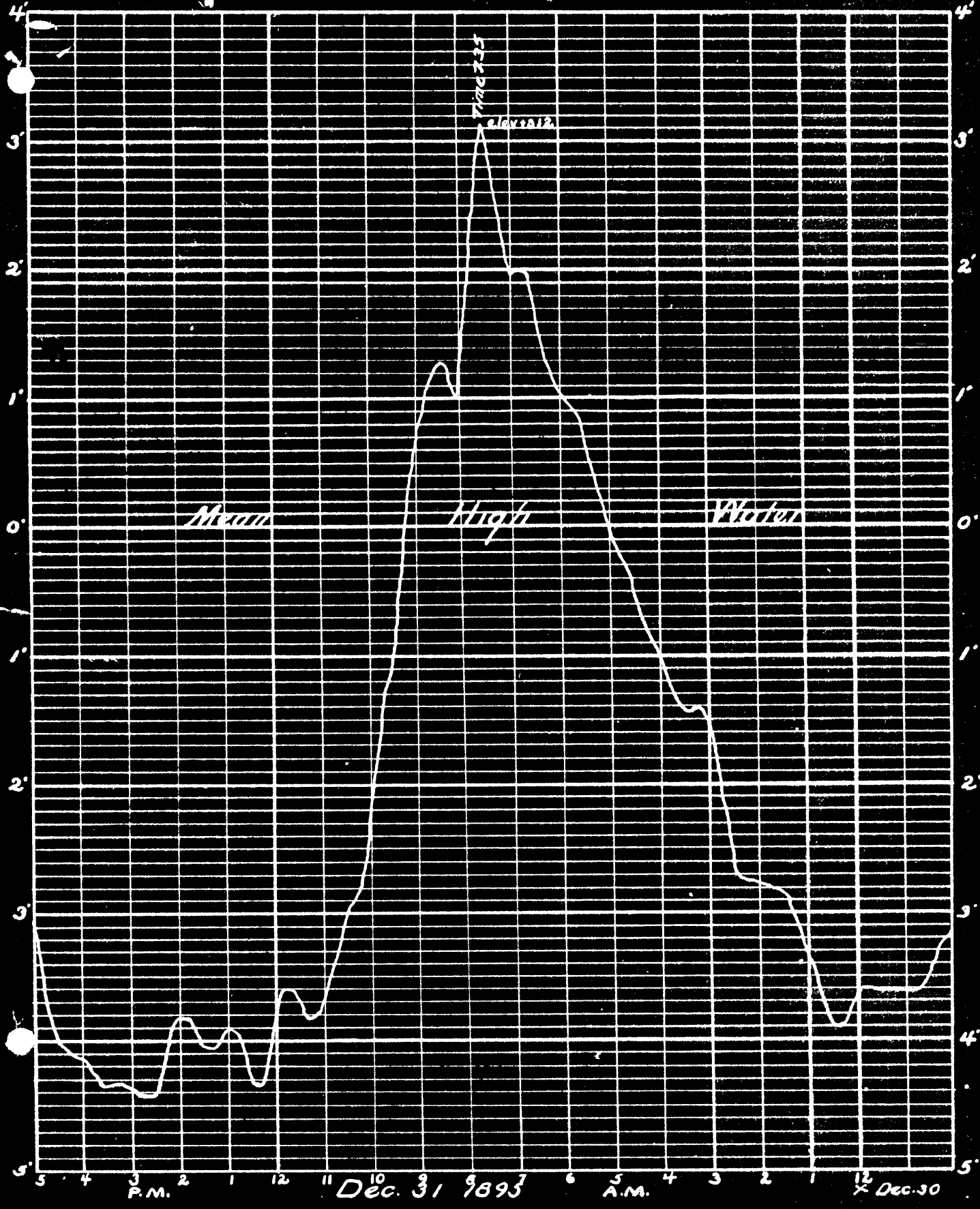
Wind " S. W. 30 miles an hour

Snowing - began at 9 p. m. evening before.

The harbor was full of ice and on this account there was no sea and the rise was very uniform.

High Tide of Dec. 31, 1895.

Accompanying this report is a blue print, furnished by Mr. Williams, New Bedford City Engineer, showing the tide of Dec. 31, 1895 as recorded on the city's automatic gauge.



Statistics of Field Work executed by *Hydrographic party of Lieut. J. C. Hamer, U.S.N.*
U. S. Schooner Eagle.

Date and place of beginning field work *May 21, 1895, New Bedford, Mass.*
Date and place of closing field work *December 21, 1895, New Bedford, Mass.*

RECONNAISSANCE:

Area of, in square statute miles
Lines of intervisibility determined as per sketch submitted
Number of points selected for scheme

BASE LINES:

Primary, length of
Secondary, length of
Beach measurements, length of
Number of days employed in measurements of base
Number of days employed in remeasurements

TRIANGULATION:

Area of, in square statute miles
Signal poles erected, number of
Observing tripods and scaffolds built, number of
Observing tripods and scaffolds built, heights of
Days occupied in opening and verifying lines of sight, number of
Stations occupied for horizontal measures, number of
Stations occupied for vertical measures, number of
Geographical positions determined, number of
Elevations determined trigonometrically, number of

GEODETTIC LEVELING:

Elevations determined by spirit-leveling of precision, number of
Lines of geodetic leveling, length of

LATITUDE, LONGITUDE, AND AZIMUTH WORK:

Latitude stations occupied, number of
Pairs of stars observed for latitude, number of
Average number of observations on a pair
Longitude stations, telegraphic, number of
Longitude stations, telegraphic, number of nights on which signals were exchanged
Longitude stations, chronometric, etc., number of
Azimuth stations, number of
Number of nights of observations for azimuth
Number of stars observed for azimuth

N.Y. TIMES of Thursday, Sept. 4, 1902, has a headline "Brooklyn Strikes Rock in Buzzard's Bay". For a couple of weeks prior to this date there had been combined navy and army manoeuvres along the New England Coast, and as far south as New York. The Brooklyn was the flagship of one of the attacking squadrons. Pertinent sections of text of article in TIMES follow:

"New Bedford, Sept. 3.--The United States cruiser Brooklyn, flagship of Rear Admiral Coghlan in the make-believe war now being waged off the New England coast, ran upon a real obstruction in Buzzard's Bay at 12.36 P.M., immediately after the completion of a theoretical attack on Fort Rodman, which guards New Bedford. The extent of the injury inflicted upon the cruiser is not as yet known, but it is reported that the "stinking flooring of her magazines are buckled", which expression is manifestly erroneous. It is said that she is making but little water and that divers are being set to work at once, to ascertain the extent of the damage.

(text relating to attack on Fort Rodman prior to accident)

"The Brooklyn led a section of Admiral Higginson's invading fleet" * *
was going a nine-knot speed when she encountered the obstruction, which was uncharted, but which is believed to be an ancient wreck."

In the same column in the TIMES is quoted the following despatch from the New Bedford correspondent of the New Yorker Staats-Zeitung:

"After attacking Fort Rodman at New Bedford this morning, the Brooklyn struck a rock in 6 fathoms of water. Two of her plates and frame were bent in and seams between two compartments were opened slightly, but the cruiser made little water. One small pump was sufficient to control it. At no time was there any danger, and the damage was not considered serious at all.

"At time of the accident four of the officers were on the bridge with the Admiral himself. They had taken bearings, knowing that the cruiser was in rocky waters, and were congratulating each other that they had passed, according to the chart, all danger of hitting a rock, when the crash came. The other ships were signaled to keep away from the dangerous spot, and steps were taken to mark the spot where the hidden rock is located.

New York TIMES of Sept. 5th, 1902, had a despatch from Washington, in part as follows:

Admiral Coghlen gives technical details of damages in a despatch to Navy Dept. One phrase: "Do not consider blame attaches to any person concerned."

Comment from Washington TIMES correspondent stated that the cost of repairs would probably total upward of \$50,000. to take from 3 weeks to two months at the Brooklyn Navy Yard.

"The bay in which the Brooklyn struck was charted, not by the Navy Hydrographic Office, but by the Coast and Geodetic Survey. The Brooklyn is believed to be the biggest vessel which ever entered Buzzards Bay. It was realized that an element of risk attended her appearance in that locality, but naval officers point out that the manoeuvres are intended to simulate actual war conditions and produce beneficial results in the way of valuable information to the army and navy.

Apparently repairs were ~~not~~ not considered as immediately needed, since the name of the Brooklyn appears in some items about the war games in the Narragansett Bay area in the TIMES of Sept. 6th. There was a long editorial in the TIMES of Sept. 9th which has no reference to the Brooklyn accident.

The Brooklyn had been Admiral Schley's flagship in the war with Spain.

See also annual report for 1903

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for files

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* * *

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From U & G S Annual Report for 1903, page 42:

Account of the summer's work by SS BLAKE, hydrographic surveys of Nantucket Shoals, Mass.:

*****was nearly completed on September 20 (1902), when the ship proceeded to New Bedford, Mass., for the purpose of finding, locating and developing the rock upon which the U.S.S. Brooklyn had recently struck in the approaches to New Bedford Harbor.

"The search for this rock afforded an excellent opportunity for testing the efficiency of a new channel sweep or drag recently devised and constructed at the Coast and Geodetic Survey Office. Assistant D.B. Wainwright reported on board to superintend the installation and use of the drag in making search for the rock mentioned above and its use in other tests of the apparatus. The details of the construction of this drag are given in an appendix to the Report of the Superintendent, and details in regard to its use are given in the statement of work executed by Assistant Wainwright. After the Brooklyn rock was found the region about it was closely developed by sounding from a steam launch, and afterwards lines were run over it with the drag set at various depths in order to ascertain the minimum depth of water over it. This work was completed on September 26, and Assistant Wainwright left the ship on that date. The development of certain localities in the approaches to New Bedford Harbor and in Buzzards Bay was begun on Sept. 29, and continued until October 3. Eight localities were examined, the drag being used in all cases, set to clear the minimum depth indicated by the latest chart of the locality under examination. This work served to test the efficiency of the drag, and proved its practicability and usefulness in close hydrographic development work."

From C & G S Annual Report for 1903, page 42:

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