

Sandy Hook Pilots

New York - New Jersey
Harbor
Hudson River, East River
&
Long Island Sound



2014 Tide Tables

NOTICE

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Compliments
of
**THE UNITED NEW YORK
SAND HOOK PILOTS
BENEVOLENT ASSOCIATION**

and
**THE UNITED NEW JERSEY
SANDY HOOK PILOTS
BENEVOLENT ASSOCIATION**

201 Edgewater Street
Staten Island, N.Y. 10305
www.sandyhookpilots.com



Masters or Agents are requested to advise Pilots of any change in arrival time 12 hours in advance.

New York Pilots.....	718.448.3900
New Jersey Pilots.....	718.448.3900
Hell Gate Pilots.....	718.448.3900
Long Island Sound Pilots.....	718.448.3900
Hudson River Pilots.....	718.815.4316

Email: pilotoffice@sandyhookpilots.com
Fax: 1.718.876.8055

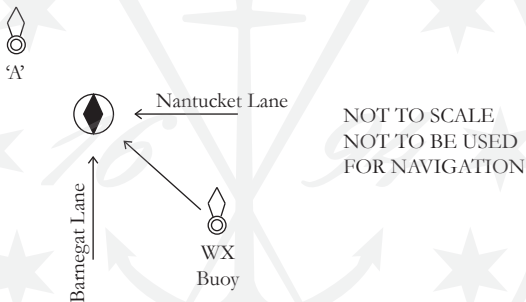
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Arrival and Pilot Embarkation at Ambrose Pilot Station

The Sandy Hook Pilots maintain a pilot vessel on station year round. Either the Pilot Boat New York or Pilot Boat New Jersey will be “On Station” and monitoring VHF channels 13, 16 and 73. Both vessels are equipped with AIS. Using a 53ft (16m) aluminum launch, the pilot will be embarked from this vessel. The pilot launch carries the same lights as the pilot boats on station.

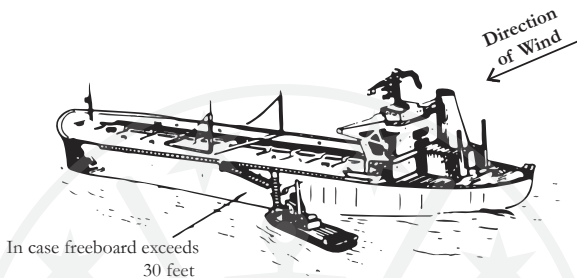
Vessels approaching the Ambrose Pilot Station from sea should give the pilot boat a minimum of three hours advance notice. Vessels should make a second call to the pilot boat when they are one hour from the sea buoy. Pilot boarding side will be given at that time.



Important Information Your Pilot Will Need

It is imperative that you brief your pilot about any automatic engine monitoring systems that could potentially shut down or would significantly reduce the power of the main propulsion engine system without substantial warning. If possible, these systems should be overridden for transiting New York Harbor pilotage waters. Please advise your pilot if any unusual problem with the ship's control or navigational systems have occurred in the last month.

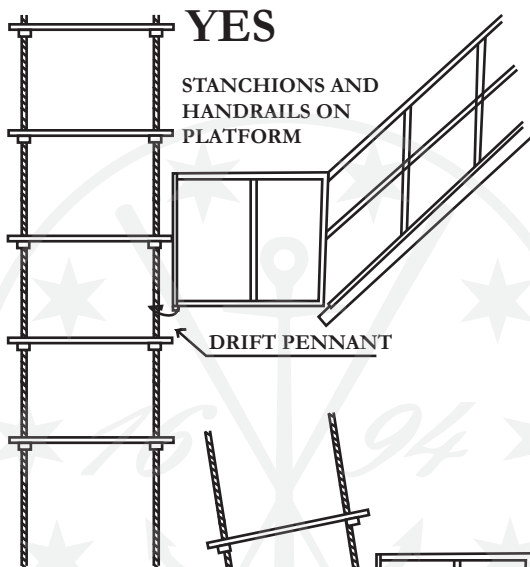
Pilot Ladder Requirements



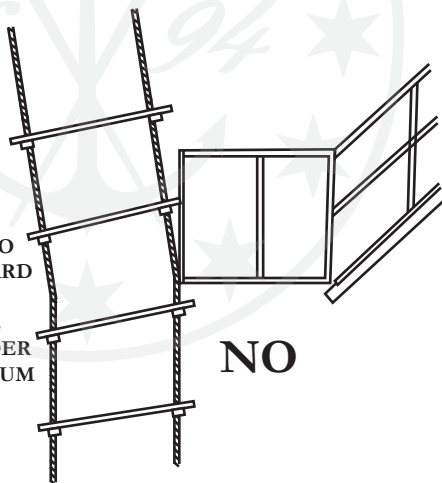
Requirements:

- 1 - Rigging of the ladder, along with embarking and disembarking of pilot, must be under the supervision of a licensed officer.
- 2 - The ladder must be made in one length and not consist of two lengths shackled or lashed together, and should be equipped with spreaders about 10 feet (3m) apart.
- 3 - The area of the deck where the pilot boards must be well lighted and must be clear of obstructions to ensure a safe passage for the pilot.
- 4 - Trailing lines or retrieving lines should not be attached to the lower ends of the ladder.
- 5 - Ladders must be rigged well clear of water and discharge outlets and at a place near midship.
- 6 - Vessels must comply with the new SOLAS Chapter V regulations.
- 7 - Rig the ladder 1.5 meters above the water. A heaving line must be available.

Pilot Ladder Requirements



NEVER BIND LADDER TO GANGWAY SO TIGHT AS TO MAKE PLATFORM A HAZARD TO CLIMBING OR CAUSE LADDER STEPS TO LEAVE THE HORIZONTAL. LADDER SHOULD EXTEND MINIMUM OF 3 METERS BELOW GANGWAY



Useful Telephone Numbers

Pilots

Sandy Hook Pilots Association.....	(718) 448-3900
	pilotoffice@sandyhookpilots.com
Hudson River Pilots Associatio.....	(718) 815-4316
Long Island/Block Island Sound Pilots	(401) 847-9050
	dispatch@nemarinepilots.com

Tug Companies

Moran Towing (VHF Ch. 7A).....	(203) 442-2825
McAllister Towing and Transportation (VHF Ch. 10).....	(718) 273-6300
Hornbeck Offshore	(718) 625-0743
Reinauer (VHF Ch. 80A).....	(718) 816-8167
Bouchard Transportation (VHF Ch. 10).....	(631) 390-4900
Henry Marine Services (VHF Ch. 74).....	(718) 966-6193
Weeks Marine.....	(908) 272-4010
Harley Marine Services (VHF Ch. 79A).....	(718) 875-7000
Kirby Marine (VHF Ch. 18A).....	(718) 720-7207

Launch Services

Miller's Launch	(718) 727-7303
Reynold's Launch.....	(718) 981-2804

United States Coast Guard

Vessel Traffic Service (VTS)	(718) 354-4088
VTS Fax	(718) 354-4096
First USCG District Bridges	(212) 668-7021

Regulatory/Governmental

NYPD Harbor Unit	(718) 765-4100
National Weather Service	(516) 924-0517
Physical, Oceanographic Real Time System (PORTS)	(718) 815-9668

US Army Corp of Engineers

To report dangerous debris	(201) 333-1170
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Linehandlers

Bayonne Line Boat Service	(201) 436-8109
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Bridge Phone Numbers

Lehigh Valley RR Bridge	(973) 690-2344
Lincoln Highway	(973) 589-5143
Path Control	(201) 216-6552
Triple Bridges	(973) 690-2609
Witt Penn Bridge	(201) 795-0631
Lower Hackensack Bridge	(201) 714-2958
Lower Hack Bridge Superintendent	(973) 879-2967
Raritan River Railroad Bridge	(973) 690-2344

Useful Websites

USCG Sector NY.....	http://homeport.uscg.mil/newyork
Port Authority:.....	www.panynj.gov
Notice to Mariners.....	www.navcen.uscg.gov/?pagename=lnmDistrict&region=1
NY Marine Weather.....	www.erh.noaa.gov/okx.marine.shtml

Tides and Currents

PORTS.....	http://tidesandcurrents.noaa.gov/ports/index.shtml?port=ny
Stevens Maritime Center.....	http://hudson.dl.stevens-tech.edu/maritimeforecast/

Bridge Air Gaps

Verrazano and Bayonne Bridge: <http://www.tidesandcurrents.noaa.gov/ports.html>

Seaman's Institute

118 Export St., Newark, NJ 07114
(973) 589-5828
www.seamanschurch.org

Seafarers and International House

123 East 15th St., New York, NY 10003
(212) 677-4800
www.sihnyc.org

Distances North Way from Ambrose Sea Buoy

UPPER BAY & HUDSON RIVER

Name	Distance
Verrazano Bridge.....	13.6M
22 Buoy.....	15.5M
off Pier #1 Brooklyn Army Base.....	16.2M
off 35th Street Gowanus	17.5M
Bayonne Terminal Dock.....	17.5M
#28 Buoy Abeam	17.9M
off Entrance Atlantic Basin	19.3M
Channel junction off Battery	19.3M
Pier #40 Abeam	21.3M
Turn off Bethlehem Steel, Hoboken.....	23.9M
Passenger Ship Terminal.....	24.5M
George Washington Bridge.....	29.4M
Pilot Station, Yonkers Abeam	35.1M

KILL VAN KULL & ARTHUR KILL

off IMIT Con Hook.....	17.6M
off Exxon Bayonne.....	18.7M
Howland Hook Container Terminal.....	22.5M
Bayway.....	23.6M
Tremley Point C/S & BP Docks.....	25.5M
Rahway River.....	26.1M
Tufts Point.....	28.3M

NEWARK BAY

Bergen Point junction.....	21.0M
Port Eliz. Entrance.....	22.9M
Port New'k. Entrance.....	23.7M
Tenaco Newark.....	25.0M
Koppers Koke.....	28.5M

Distances South Way from Sandy Hook Scotland Buoy

S.W. Spit Buoy Junction Chapel Hill	07.0M
Leonardo Dock.....	07.5M
Princess Bay.....	15.0M
Beacon #9.....	16.3M
Anaconda Dock Raritan River.....	19.3M
Hess Reserve Raritan River	20.0M
Titanium Dock Raritan River	21.3M
Perth Amboy Anchorage.....	17.5M
off 6 Buoy Sewarren.....	20.6M
off Beacon 14 Hess Pt. Reading.....	21.7M
Tufts Point.....	23.0M
Rahway River.....	25.3M
Bayway.....	27.5M

Principal Bridges in the Port of New York

Distance	Name or Location	Type of Bridge	Horizontal Clearance	Vert Clearance at Mean H.W.
EAST RIVER				
1.2	Brooklyn	Sus.	1350'	38.71M - 127'
1.5	Manhattan	Sus.	1200'	40.84M - 134'
2.5	Williamsburg	Sus.	1536'	40.54M - 133'
5.3	Queensborough	F. West Span	900'	39.93M - 131'
5.6	Roosevelt Island	V. L. E. Chan.	403'	12.19M-30.18M 40'-99' open
7.3	Triborough	Sus.	Unobstructed	42.06M - 138'
7.5	Hell Gate	Sus.	830'	40.84 - 134'
12.4	Whitestone	Sus.	2265'	41.15M - 135'
--	Throgsneck	Sus.	1711'	42.06M - 138'
HUDSON RIVER AND NEW YORK HARBOR				
9.6	Geo. Washington	Sus.	3169'	64.92M - 213' East 59.44M - 195'
11.5	Narrows	Sus.	4000'	60.35M - 198' Mid 2000' 55.77M - 183' at Piers
Note: Bridge can flex substantially based upon temperature and load. Real-time clearance observations 65.53M - 215' at Center available at http://www.tidesandcurrents.noaa.gov/ports/index.shtml?port=ny				
KILL VAN KULL AND ARTHUR KILL				
3.5	Bayonne	F.	800'	43.89M S.E. - 144' , 46.02M MS - 151' , 42.06M N.E. - 138'
Note: Real-time clearance observations available at: http://www.tidesandcurrents.noaa.gov/ports/index.shtml?port=ny				
6.2	B. & O. R.R.	V. L.	500'	9.44 - 41.15M - 31' - 135' open
6.3	Goethals	F.	617'	41.76M - 137'
14.6	Outer Bridge	F.	675'	43.59M - 143'
	Newark Bay			
3.5	N.J. Turnpike	F.	550'	41.15M - 135'
3.7	Lehigh Valley R.R.	V. L.	300'	10.67 - 41.15M - 35' - 135' open
PASSIC RIVER				
5.2	Conrail	Sw.	100'	7.62M - 25'
5.8	Lincoln Highway	V. L.	300'	12.19 - 41.15M - 35'-135' open
6.0	Pulaski Skyway	F.	520'	41.15 - 135'
6.4	Point No Point	Sw.	103'	4.87M - 16'
6.5	N.J. Turnpike	F.	319'	30.4M - 100'
HACKENSACK RIVER				
5.7	Lincoln Highway	V. L.	200'	10.67 - 41.15M - 35' - 135' open
6.1	Pulaski Skyway	F.	300'	41.15M - 135'
6.8	Penn Passenger	V. L.	168'	12.19 - 41.15M - 40'-135' open
6.8	Penn Freight	V. L.	158'	3.35 - 41.14M - 11' - 135' open
6.8	Route 10 H'way	V. L.	158'	10.67 - 41.15M - 35' - 135' open
7.1	D.L. & W. R. R.	V. L.	150'	12.19 - 41.15M - 40' - 135' open
RARITAN RIVER				
2.6	C.R.R. of N.J.	Sw.	N.S. 124' S.S. 125'	2.43M - 8'
2.6	Victory Bridge	Sw.	140'	8.53M - 28'
4.0	Thomas Edison	F.	200'	41.15M - 135'
	Garden State Pkway.	F.	200'	41.15M - 135'

SYMBOLS: F - FIXED / SUS. - SUSPENSION / SW - SWING / V.L. - VERTICAL LIFT

**(TRAVELING PLATFORM REDUCED CLEARANCE BY 15 FEET)

SPECIAL NOTATION

Vessels navigating in the Vicinity of Rikers Island with a mast height of over 125 ft. should use caution when crossing La Guardia Airport flight approaches. # 718-779-1220/nite 718-779-7901.

*Minimum clearance available at mean H.W. under extraordinary conditions of loading and temperatures.

This is a listing of the various marine terminals, bridges and landmarks in relationship to each other, which a vessel will pass in transiting the East River. The mileage given is the distance for west-bound vessels from Execution Rocks to the Battery and for east-bound vessels from the Battery to Execution Rocks.

Vessels navigating in the vicinity of Rikers Island with a mast height of over 125' should use caution when crossing LaGuardia Airport flight approaches.

West Bound Mileage	LONG ISLAND SOUND	Vertical Clearance	Width	East Bound Mileage
00.0	Execution Rocks - Sands Point			20.0
03.3	City Island -Stepping Stones LT - Kings Pt.	138'	1711'	16.7
05.5	Throgs Neck Bridge - Fort Schuyler	135'	2265'	14.5
07.2	Bronx Whitestone Bridge			12.8
09.2	Hunts Pt. - LaGuardia Airport			10.8
11.0	Castle Oil & Orion Power - Astoria			11.0
10.1	Oak Pt. - Castle Oil Bronx Tiffany St.			09.9
10.5	149th St., Cirillo Bros.- Cibro			09.5
10.7	138th St., Metropolitan Oil			09.3
11.8	Wards Island Sewer Treatment Plant			08.2
12.0	Hell Gate Railroad Bridge	134'	830'	08.0
12.3	Triborough Bridge	138'	Unlimited	07.7
12.7	Hell Gate - Harlem River - Mill Rk. - Halletts Pt.			07.3
14.3	Queensborough (59th St.) Bridge	131'	900'	05.7
15.9	National Cincrete, Long Island City			04.6
16.3	Pepsi Cola, Long Island			05.0
16.1	Green St. Lumber Term., Green Point			03.9
16.9	Nepco Oil Terminal, North 1st St.			03.1
17.1	Amstar Sugar House, South 2nd St.			02.9
17.3	Williamsburg Bridge	133'	1536'	02.7
17.7	Brooklyn Navy Yard			02.3
18.0	Con Edison, Hudson Ave.			02.0
18.1	Piers 42 & 36, East River			01.9
18.4	Manhattan Bridge	134'	1200'	01.6
18.7	Brooklyn Bridge	127'	1350'	01.3
18.9	Piers 1 to 5, Brooklyn			01.1
20.0	BATTERY			00.0

East River and Long Island Sound Distance from Junction off Battery

Location	Distance	Location	Distance
Bkly'n Navy Yard.....	02.6	Northport.....	42.0
Poor House Flats.....	3.75	Bridgeport Entrance Buoys.....	49.7
Pepsi Cola L. I. C.....	05.2	Port Jefferson Sea Buoy.....	52.8
Hell Gate.....	07.5	New Haven Sea Buoy.....	65.3
Oak Point.....	10.0	Northville.....	72.0
Throgs Neck.....	15.0	New London Entrance Buoys...	101.7
City Island.....	17.5	Montauk Channel.....	116.0
Execution Rocks.....	20.4	Point Judith.....	127.0

Times of High & Low Water Off Battery

	H.W.	L.W.	Mean	Spring
Battery	0:00	0:00	4.5	5.4
Bklyn. Navy Yard	+0:50	+0:35	4.1	4.9
Hell Gate - Hallets Pt.	+2:00	+2:04	5.1	6.1
Port Morris - Stoney Pt.	+3:23	+3:46	6.3	7.4
Hunts Point	+3:18	+3:45	6.9	8.1
Willeys Point	+3:10	+3:30	7.1	8.3
Execution Rocks	+3:04	+3:22	7.3	8.6
Bridgeport	+2:52	+2:50	6.7	7.7
Port Jefferson	+2:58	+2:53	6.6	7.6
New Haven (City Dock)	+2:54	+2:47	6.0	6.9
New London (State Pier)	+1:09	+1:15	2.6	3.1

Times of High & Low Water Slack Off Narrows

	H.W.	L.W.	Mean	Spring
Narrows	0:00	0:00	1.7	2.0
Hell Gate	+0:16	- 0:17	3.4	4.6
Throgs Neck	+0:02	- 1:24	0.6	0.8
The Race	+1:55	+1:30	2.9	3.5

Hudson River Drafts

Maximum Air Draft - 132'

Upper Hudson River North of Kingston

Maximum Draft - 30' (Salt Water Draft)

Vessels transiting the Upper Hudson River with drafts of 27' to 30' must be set up for the correct stage of a rising tide.

Daylight transits only north of Kingston.

Lower Hudson River South of Kingston

Maximum Draft - 33' (Salt Water Draft)

Vessels transiting the Lower Hudson River with drafts of 31' to 33' must be set up for the correct stage of a rising tide.
Daylight transits only north of Kingston.

Vessels with a draft of 31' or less may transit the Lower River any time.

All vessel draft information is subject to existing weather conditions at the time of transit.

Please call our Dispatchers for assistance in setting Hudson River transits or with any other questions.

Hudson River Pilots - 718-815-4316.

Distance From Junction off Battery to Locations on the Hudson River

Location	Distances	Location	Distances
Yonkers	15.5	Hess Roseton	55.5
Hastings	18.5	Milton	64.0
Irvington	21.5	Poughkeepsie	65.5
Grassy Pt.	33.0	Kingston	78.5
Tompkins Cove	35.5	Saugerties	86.5
Peekskill	38.0	Hudson	100
Texaco Newburgh	52.5	Albany & Rensselaer	124

**Distances from New York
to Points on the Hudson River**

Location	Nautical Miles	Statute Miles
Yonkers	15.5	18.0
Tarrytown and Nyack	24.0	27.5
Ossining	28.5	32.5
Haverstraw	32.5	37.0
Stony Point	35.0	40.0
Peekskill	38.0	43.5
West Point	45.0	52.0
Cold Spring	47.0	54.0
Cornwall	49.5	57.0
Hyde Park to Albany	52.0	
Newburgh and Fishkill	52.5	60.5
Yonkers to Hyde Park	56.0	
Poughkeepsie	65.5	75.5
Kingston	78.5	90.5
Saugerties	86.5	99.5
Catskill	96.0	110.5
Hudson and Athens	100.0	115.0
Coxsackie	105.5	121.5
Stuyvesant	108.0	124.0
New Baltimore	111.5	128.5
Coeymans	113.0	130.0
Castleton	116.5	134.0
Albany & Rensselaer	124.0	142.5
Troy & Watervliet	129.5	149.0
Troy Lock	131.0	151.0

**Note: Distances are measured to and between points in
midchannel abreast the various towns.**

SQUAT

$$S_{(\text{FEET})} = C_b \times \frac{V^2}{30}$$

S = SINKAGE IN FEET

C_b = BLOCK COEFFICIENT

V = SPEED IN KNOTS

In Shallow / Confined Waters Sinkage - 2 x S

INCREASE IN DRAFT DUE TO PITCH (IN FEET)

Length	0.5°	1.0°	2.0°
500'	2.18	4.36	8.72
600'	2.62	5.23	10.46
700'	3.05	6.10	12.21
800'	3.49	6.98	13.96
900'	3.92	7.85	15.70
1000'	4.36	8.73	17.45

Table assumes tipping center is at mid-point

INCREASE IN DRAFT DUE TO HEEL (IN FEET) (BEAM/2 X Sine of Angle)

Beam	5°	10°
40'	1.74	3.47
60'	2.61	5.21
80'	3.48	6.95
100'	4.35	8.68
150'	6.54	13.02
200'	8.72	17.36

SQUAT IN FEET

BLOCK

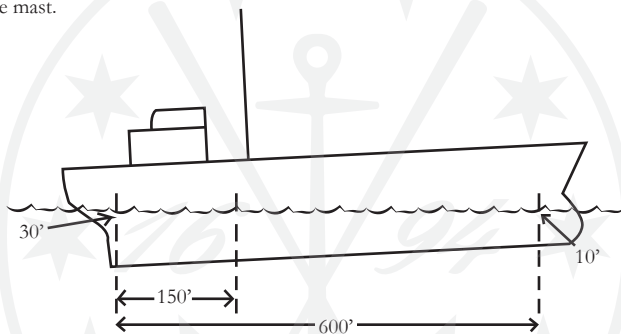
CO - EF	5k.	6k.	7k.	8k.	9k.	10k.	11k.	12k.	13k.	14k.	15k.
0.50	0.8	1.2	1.6	2.1	2.7	3.3	4.0	4.7	5.5	6.4	7.4
0.55	0.9	1.3	1.8	2.3	2.9	3.6	4.4	5.2	6.1	7.1	8.1
0.60	1.0	1.4	1.9	2.5	3.2	3.9	4.8	5.7	6.7	7.7	8.9
0.65	1.1	1.5	2.1	2.7	3.5	4.3	5.2	6.1	7.2	8.4	9.6
0.70	1.1	1.7	2.3	2.9	3.7	4.6	5.6	6.6	7.8	9.0	10.3
0.75	1.2	1.8	2.4	3.1	4.0	4.9	6.0	7.1	8.3	9.6	11.1
0.80	1.3	1.9	2.6	3.4	4.3	5.2	6.4	7.6	8.9	10.3	11.8
0.85	1.4	2.0	2.7	3.6	4.5	5.6	6.7	8.0	9.4	10.9	12.5
0.90	1.5	2.1	2.9	3.8	4.8	5.9	7.1	8.5	10.0	11.6	13.3
0.95	1.6	2.2	3.1	4.0	5.0	6.2	7.5	9.0	10.5	12.2	14.0
1.00	1.6	2.4	3.2	4.2	5.3	6.6	7.9	9.4	11.1	12.9	14.8

Determining the Air Draft of a Ship Not on Even Keel

HEIGHT OF THE MAST is the distance from the keel to the top of the mast.

AIR DRAFT is the distance from the waterline to the top of the mast.

To determine the air draft of a ship not on even keel take the difference in draft fore and aft, DIVIDE by the Length Between Perpendiculars, TIMES the Distance from the deepest perpendicular to the mast. This is the increase in Air Draft above that determined by subtracting the deepest draft from the height of the mast.



$$\frac{20}{600} \times \frac{150}{1} = 5$$

OR

$$30 - 10 = 20$$

$$(20 / 600) \times 150 = 5 \text{ FEET}$$

Actual air draft is 5 feet more than if
using deepest draft



Principal Light and Fog Signals in the Port of New York

Name	Light	Fog Signal
Scotland Lighted.....	Morse "A"	1 Bl. ev. 30 sec.
Horn Buoy S.....		Racon Signal M.
Sandy Hook Pt. Lt.....	Iso., W. 6 sec.....	1 Str. ev. 10 sec.
Sandy Hook Lt.....	FW	
Romer Shoal Lt.....	Fl. (2) W. 15 sec.....	1 Bl. ev. 15 sec.
	Emerg. Lt. - Fl. W. 6 sec.	
	when main Lt. exting.	
West Bank Front Lt.....	Iso., W. sector, 6 sec.....	2 Bl. ev. 20 sec.
Coney Island Lt.....	Fl. R. 5 sec	
Verrazano Narrows Br		1 Bl. ev. 15 sec.
Robbins Reef Lt.....	Fl. G. 6 sec	1 Bl. ev. 10 sec.
Gov. Is. Ext. Lt.....	FR.....	1 Bl. ev. 15 sec.
Gov. Is. Lt.....	2 FR.....	2 Bl. ev. 20 sec.
Old Orchard Shoal Lt.....	Fl. W. R. sector, 6 sec	
Outerbridge Crossing.....		1 Bl. ev. 15 sec.
Hell Gate Lt. 15.....	Fl. G. 2.5 sec	
N. Brothers Is. N. Lt. 9.....	Fl. G. 4 sec	
Whitstone Pt. Lt. 1.....	F. G.	
Throgs Neck Lt.....	F. R	
Throgs Neck Bridge.....	2 Bl. ev. 20 sec.	
Stepping Stones Lt.....	Oc. G. 4 sec.....	1 Bl. ev. 15 sec.
Hart Island Lt. 46.....	Fl. R. 4 sec	
Execution Rock Lt.....	Fl. W. 10 sec.....	1 Bl. ev. 15 sec.

Ranges and Bearings in the Port New York / New Jersey

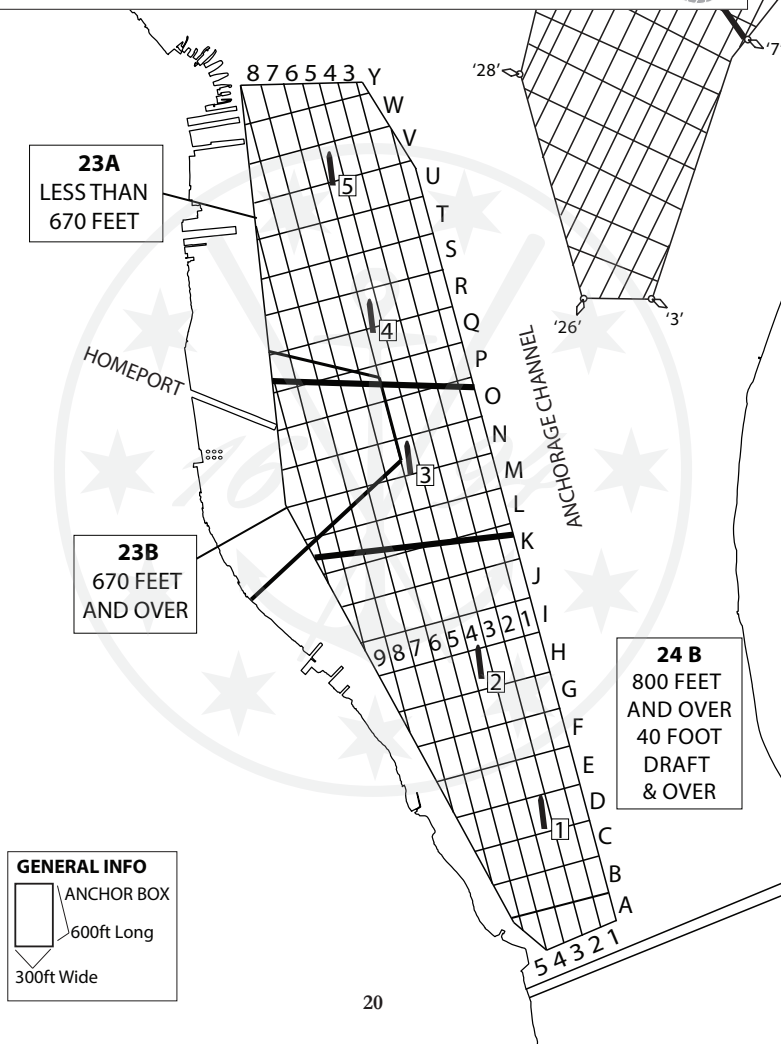
Range	Bearing
Poorhouse Flats Range.....	341.0
Buttermilk.....	069.0
West Bank with Old Orchard.....	239.0
Romer with Main Hook.....	170.5
Romer with Old Orchard.....	269.5
Ambrose Channel.....	297.0
Swash Channel.....	305.0
Leonardo Range.....	207.5
Constable Hook.....	290.0
Pralls Island.....	185.0
Outerbridge Reach.....	351.5
Sandy Hook Channel (East).....	308.0
Sandy Hook (West).....	067.5

RACON Buoys in the Port of New York / New Jersey

Ambrose Lighted Whistle Buoy A:	—●
Scotland Light Whistle Buoy S:	—
Sandy Hook Channel Front Range Light:	—●—●
KVK Channel Junction LWB KV:	—●—
Center of Outerbridge Crossing:	— — — —

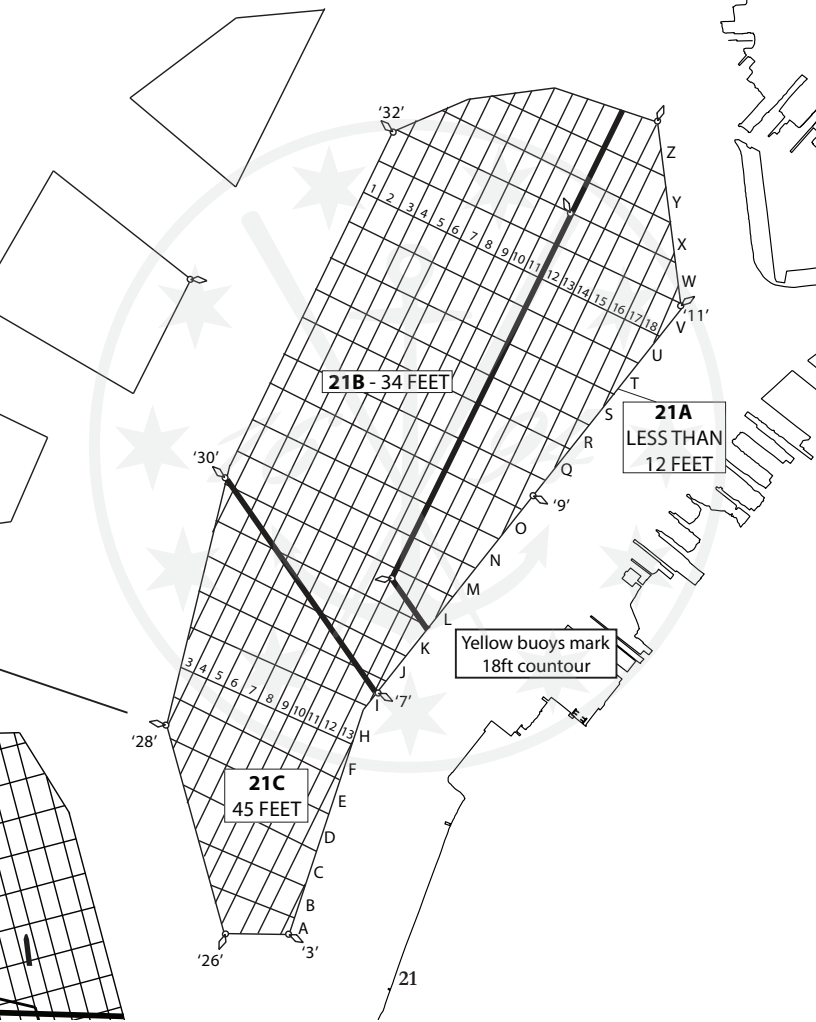
STAPLETON ANCHORAGE

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12334



BAY RIDGE FLATS ANCHORAGE

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12334

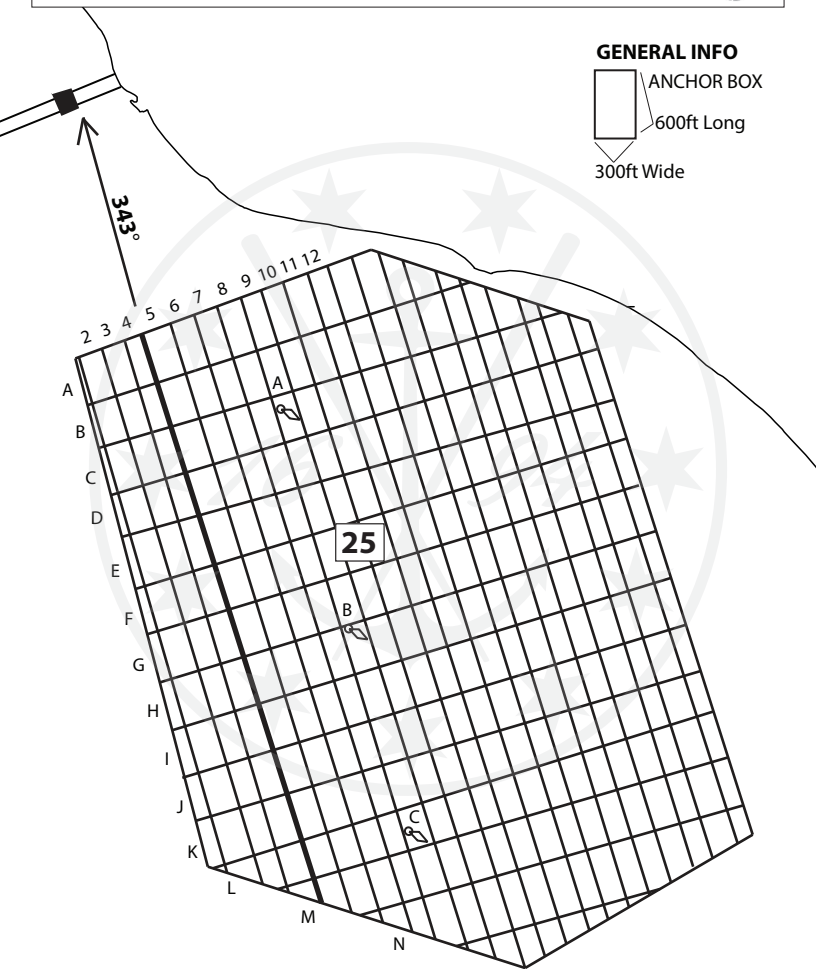
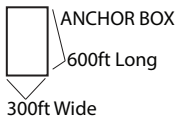


GRAVESEND BAY ANCHORAGE

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12402



GENERAL INFO



Anchorage

Number	Locations
19	Hudson River Naval Anchorage
20 - A	Liberty
20 - B	North Side Bayonne Naval Terminal
21 - B	Red Hook Flats
23	Staten Island
24	Quarantine
25	Gravesend Bay (Eastern Part)
27	Sandy Hook
44	Perth Amboy
49 - C	Gravesend Bay (Western Part)
49 - G	Leonardo

Anchorage Regulations

WHEN ANCHORED IN FEDERAL ANCHORAGE 20-A THROUGH 20-G, 21-A, 21-B, 21-C, 23-A AND 23-B, 24 OR 25 MUST COMPLY WITH THE FOLLOWING REQUIREMENTS:

- MAINTAIN A BRIDGE WATCH.
- GUARD AND ANSWER CHANNEL 16 FM AND MAINTAIN AN ACCURATE POSITION PLOT.
- NOTIFY THE COAST GUARD ON CHANNEL 12 WHEN COMMENCING AND COMPLETING THE TRANSFERRING OF PETROLEUM PRODUCTS.
- NOTIFY THE COAST GUARD ON CHANNEL 12 WHEN ANCHORED AND WHEN LEAVING THE ANCHORAGE.

UPPERBAY - WEST PART

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12334



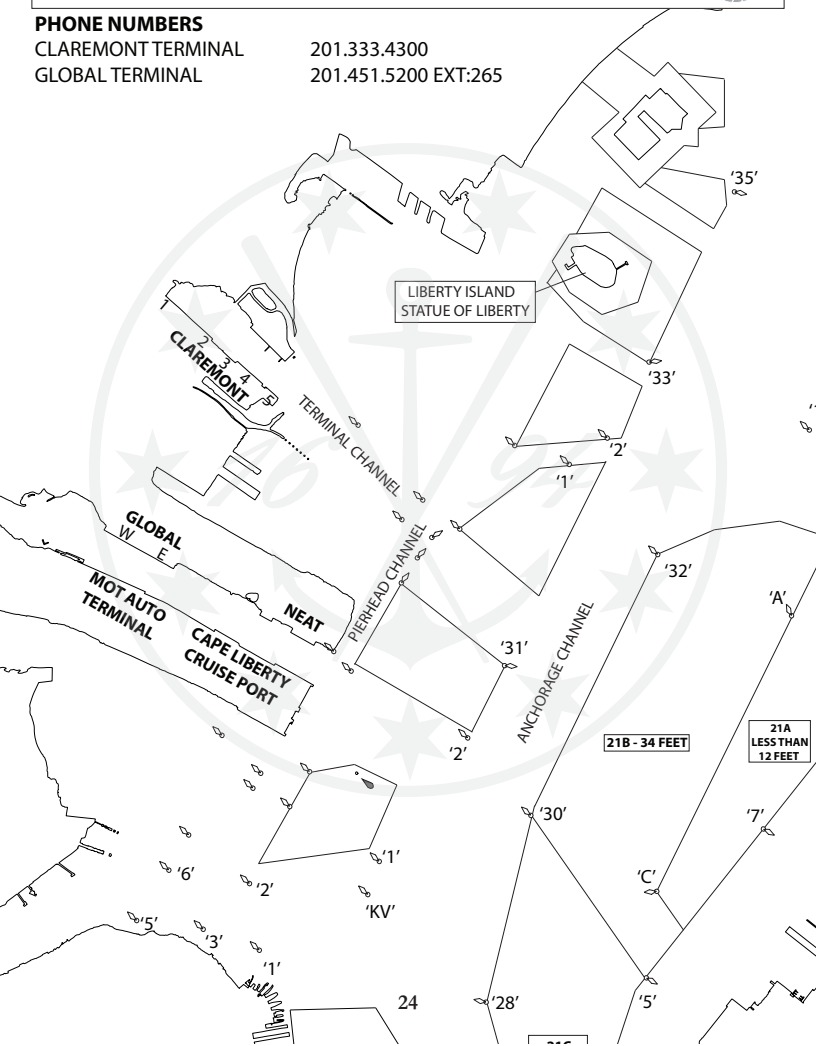
PHONE NUMBERS

CLAREMONT TERMINAL

201.333.4300

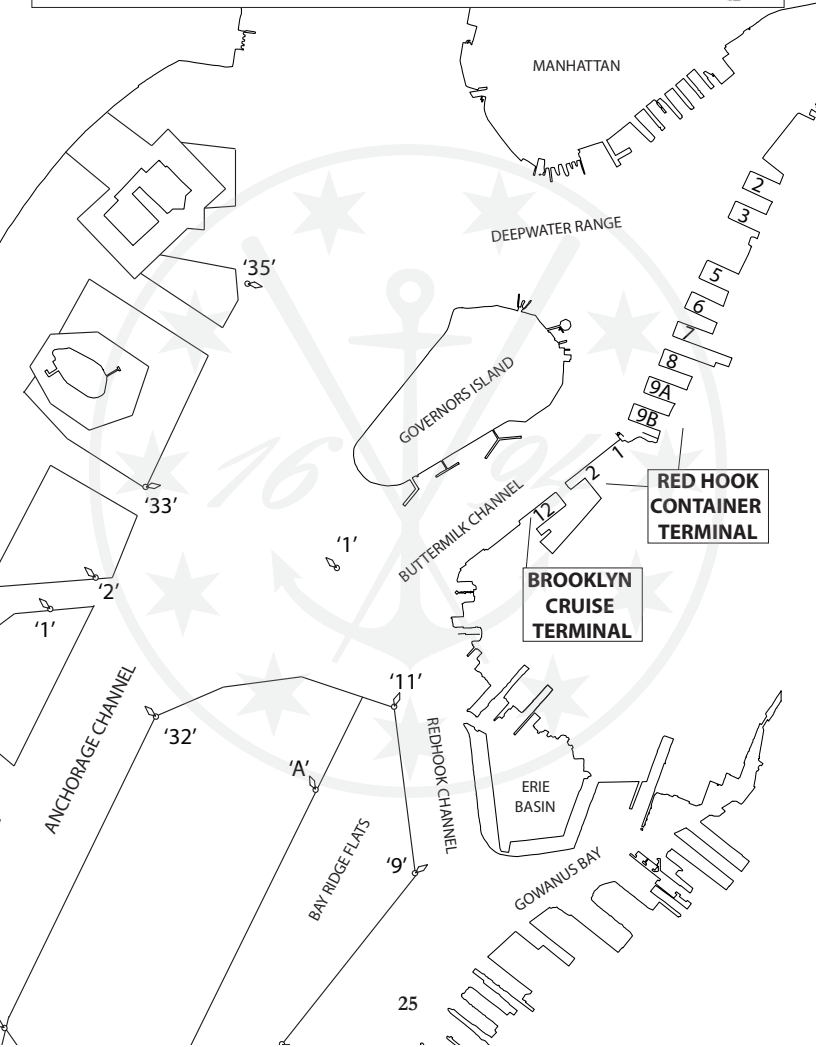
GLOBAL TERMINAL

201.451.5200 EXT:265



UPPERBAY - EAST PART

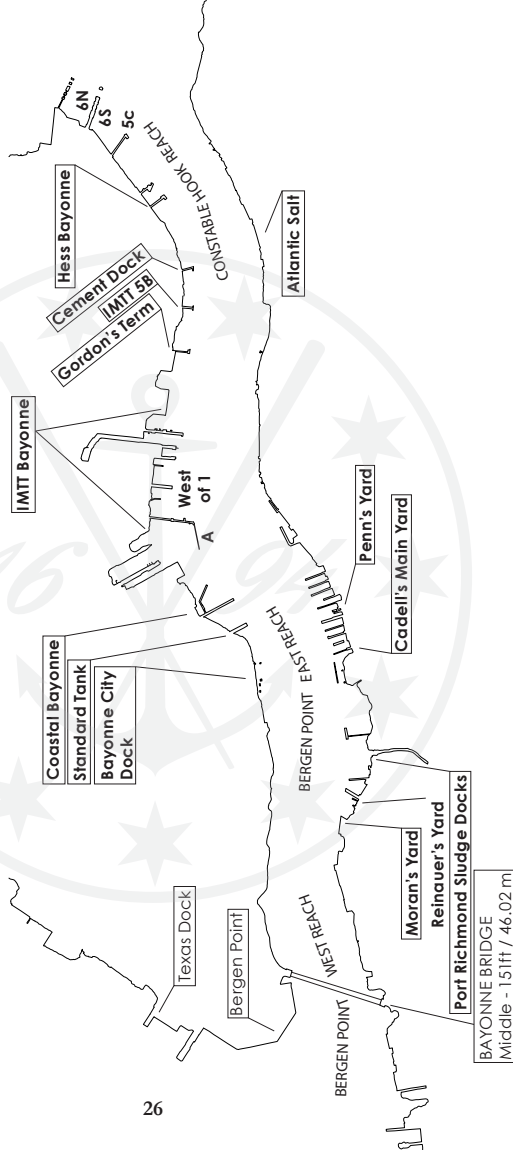
NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12334



KILL VAN KULL

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12333

IMTT SECURITY 201.399.4712
GORDONS 201.437.8300
HESS BAYONNE 201.437.1017
COASTAL BAYONNE 201.437.2200



NORTHERN PART OF ARTHUR KILL

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12333

HOWLAND HOOK 718.568.1844

ELIZABETHPORT
CONSTRUCTION
MARINE

ELIZABETHPORT REACH
NEW YORK
CONTAINER TERM
1 2 3

Port Ivory

K-Sea Yard
McAllister's Yard

May's Shipyard

Clean Waters
Great Lakes Yard
Scaramix Cement
(Elm Park)

Arthur Kill Railroad Bridge Vert: Up: 135ft / 41.15m Down: 31ft / 9.44m

Goethals Bridge Vert: 137f / 41.76m

Old Bay Draw

REACH A-SOUTH REACH

Shooter's Island

NORTH OF SHOOTERS ISLAND REACH

SOUTH OF SHOOTERS
ISLAND REACH

Bergen Point

BERGEN POINT

WEST REACH

BAYONNE BRIDGE
Middle - 151ft / 46.02 m



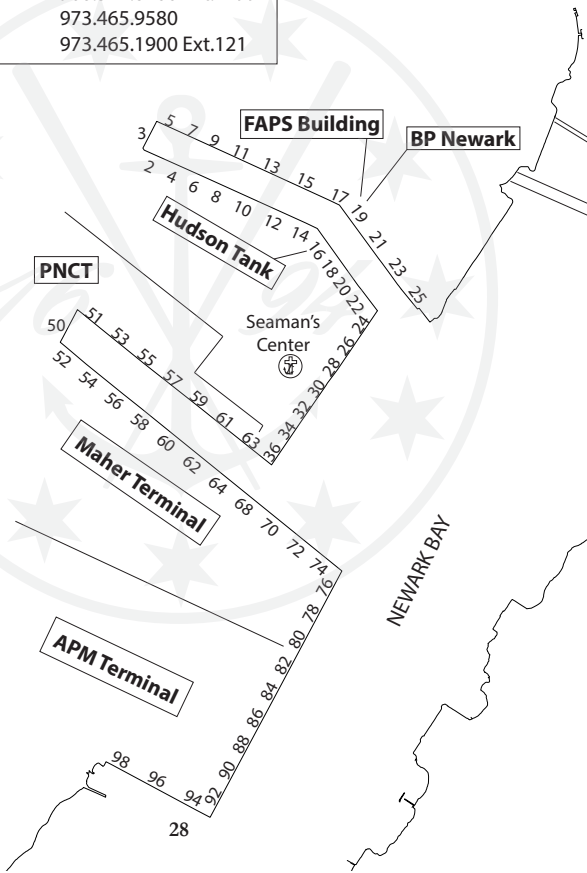
NEWARK BAY

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12333



PHONE NUMBERS

Hudson Tank	201.803.1166
APM Terminal S/L Bus	908.558.6138
APM Terminal S/L Security	908.558.6163
	908.558.6161
Maher Terminal	908.527.8200 Ext.4799
PNCT	973.465.9580
Van Iderstien	973.465.1900 Ext.121



PASSAIC & HACKENSACK RIVERS

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12337



Witt Penn Bridge
Ph: 201.795.0631

Triple Bridges
H: 158ft
V: 7 - 135ft / 2.13 - 41.5M
Ph: 973.690.2609

Penn Pass. - Path Control
H: 168ft
V: 40 - 135ft / 12.19 - 41.15M
Ph: 201.216.6552

Pulaski Highway
H: 300ft
V: 135ft / 41.15M

Lower Hack
H: 150ft / V: 40ft-135ft
Ph: 201.714.2958

Lincoln Highway
H: 200ft / V: 35ft-135ft
ph: 201.332.2779
973.589.5143

Van Iderstien / Darling Int'l
Ph: 973.465.1900x121

DEP Dock

FAPS Building

BP Newark

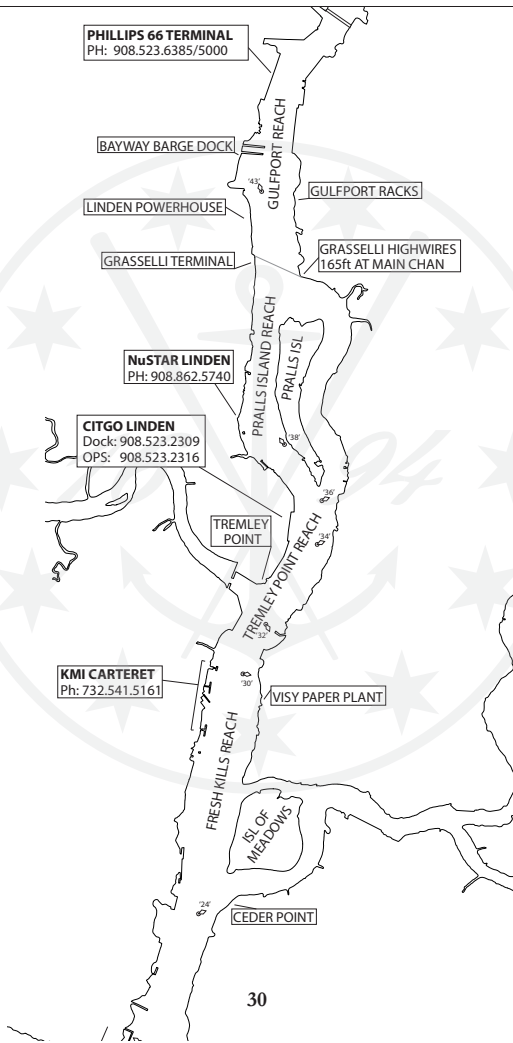
Hudson Tank

Lehigh Valley RR - H: 300ft
V: 35 - 135ft / 10.67 - 41.15M
PH: 973.690.2344

NJ Turnpike - H: 550ft
- V: 135ft / 41.15M

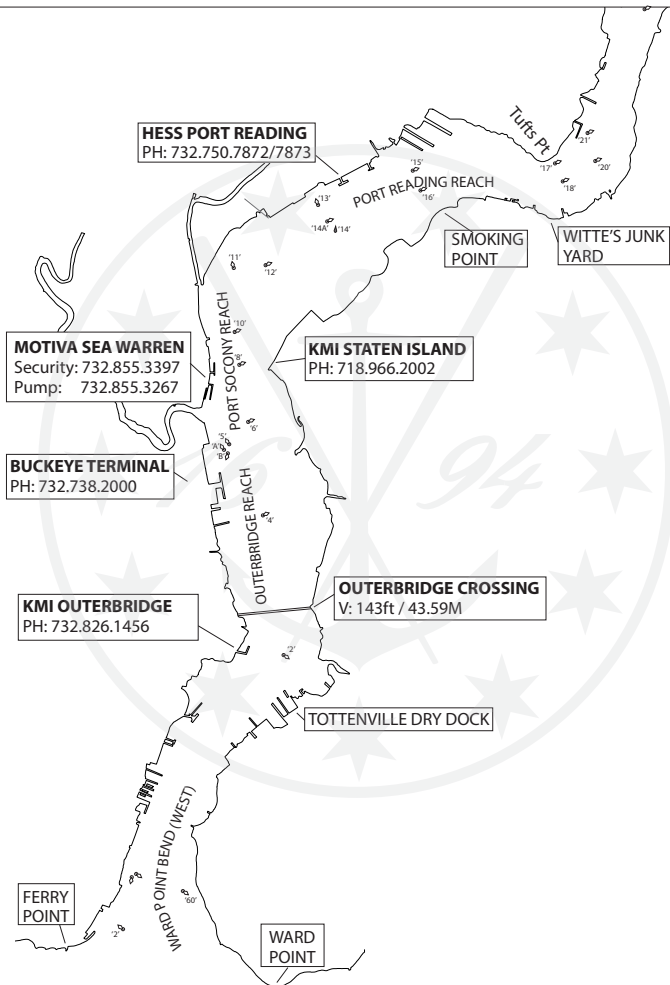
ARTHUR KILL NORTH

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12333



ARTHUR KILL SOUTH

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12331



NORTH RIVER

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12335



LINCOLN HARBOR YACHT CLUB

VHF CH 74 & 9 - PH: 201.309.5100

Weehawken Cove

Castle Point

Lackawanna Canal

NEWPORT MARINA

VHF CH 16

PH: 201.626.5550

Morris Canal Basin

LIBERTY LANDING MARINA

VHF 72

PH: 201.985.8000

NORTH COVE MARINA

VHF CH 69 - PH: 212.786.1200

SOUTH COVE MARINA

- CHELSEA PIERS /

- SURFSIDE 3 /

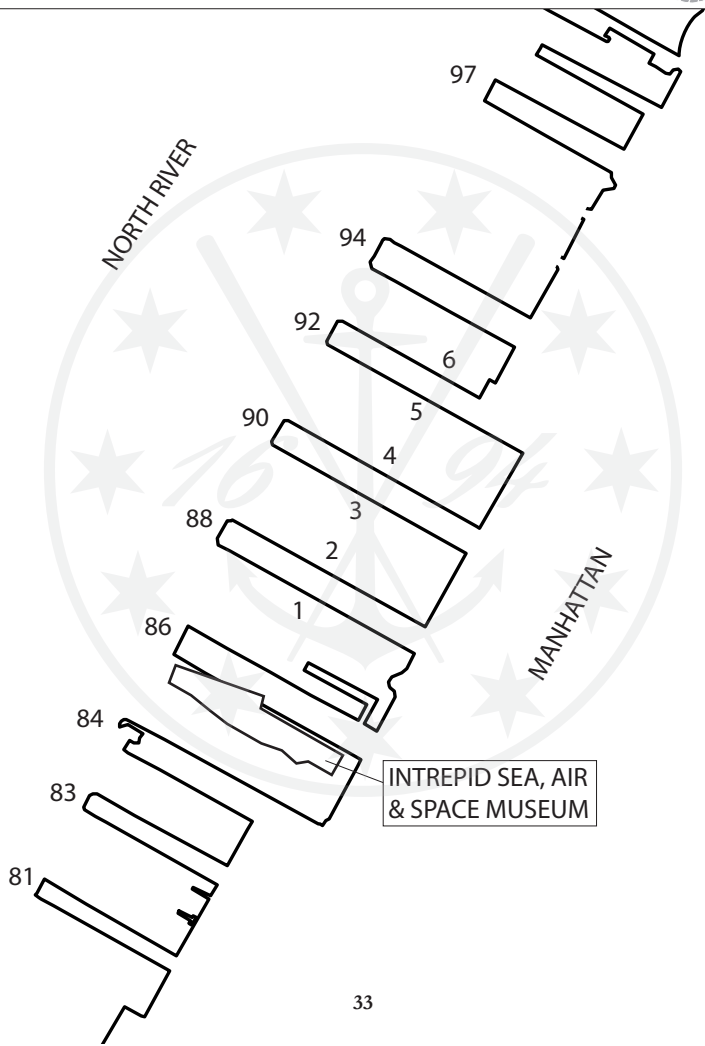
- MARINE MAX

VHF CH 68

PH 800.650.7873

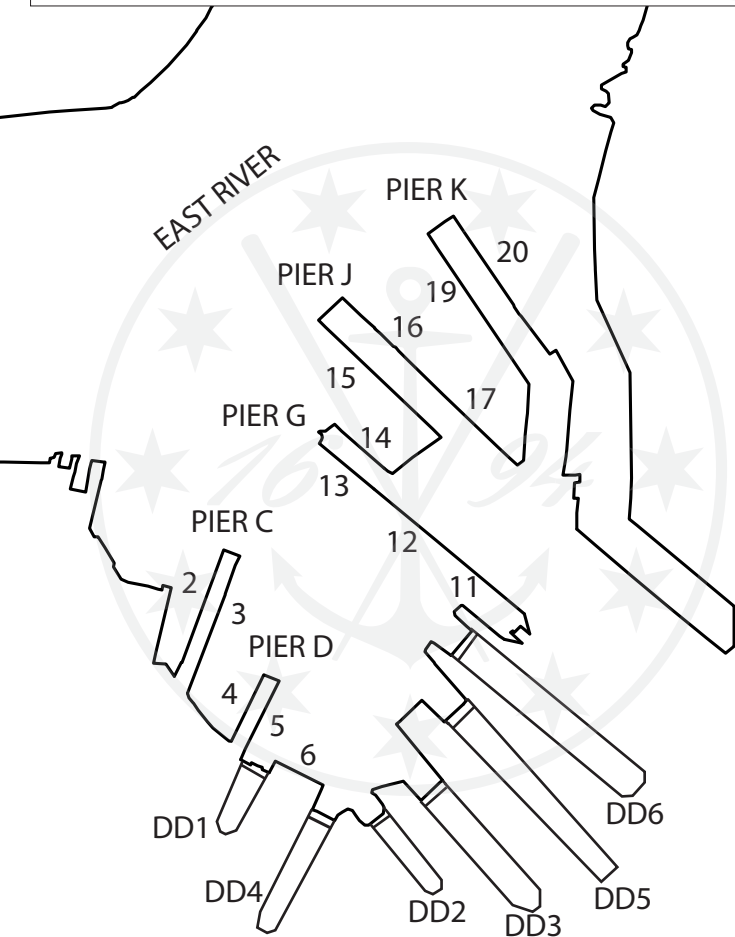
N. RIV. - PASSENGER TERMINAL

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12335



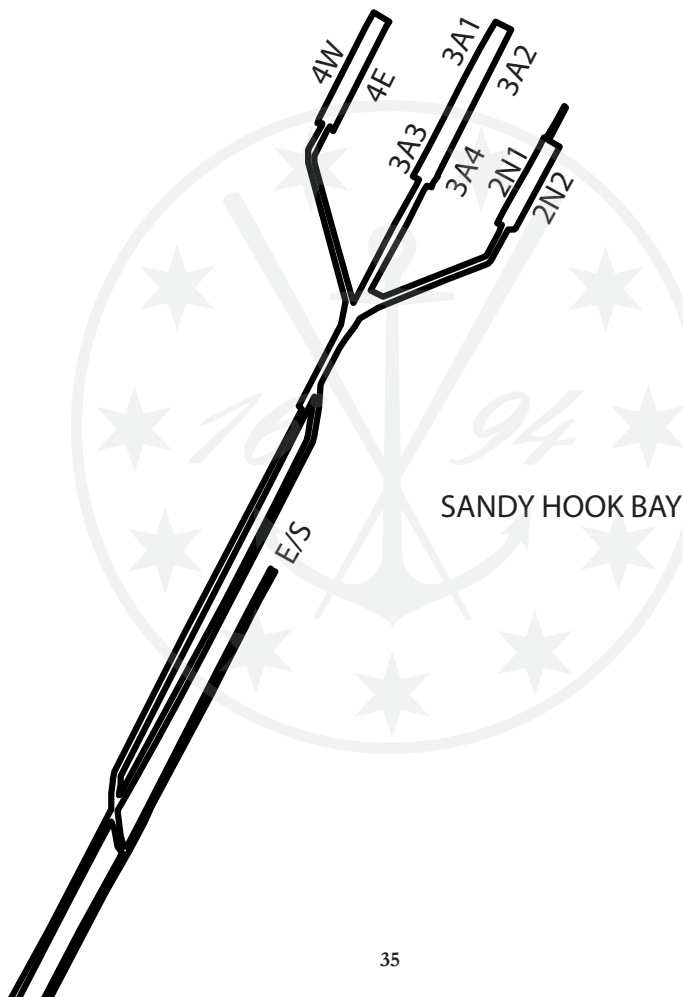
OLD BROOKLYN NAVY YARD

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12335



LEONARDO, EARLE, NJ

NOT FOR NAVIGATIONAL USE - PLEASE REFERENCE NOAA CHART 12



Common Conversion Factors and Metric Tables

Barrels (fuel oil)	42.	Gallons (fuel oil)	
British Gallon	1.20094	U.S. Gallons	
Cable	600.0	Feet	
Centimeters	00.3937	Inches	
Cubic Feet	1728.0	Cubic Inches	
Cubic Feet (fresh water)	62.5	Pounds Fresh Water	
Cubic Feet (sea water)	64.0	Pounds Sea Water	
Feet	0.3048	Meters	
Gallons	3.78533	Liters	
Gallons of Water	8.33	Pounds of Water	
Inches	2.54	Centimeters	
Kilograms	35.274	Ounces	
Kilograms (KG)	2.20462	Pounds	
1000 KG (1 metric ton)	0.98421	Long Tons	
Glometers	3281.0	Feet	
Knots	1.152	Miles Per Hour	
Liters	0.2642	Gallons	
Meters	3.281	Feet	
Meters	1.0936	Yards	
Miles	1.609	Kilometers	
Miles (land)	5280	Feet	
Miles (nautical)	6080	Feet	
Tons (long) 2,240 lbs.	1.016047	Metric Tons	
Tons (short) 2,000 lbs	0.90718486	Metric Tons	
Tons (long) Fresh Water	35.84	Cubic Feet Fresh Water	
Tons (long) Sea Water	35	Cubic Feet Sea Water	
Yards	0.9144	Meters	
Fahrenheit = 915 Centigrade + 32°			
Centigrade = (Fahrenheit - 32°) x 5/9			

To find diameter of a circle, multiply circumference by .31831.

To find circumference of a circle, multiply diameter by 3.1416.

To find area of a circle, multiply square of diameter by .7854.

To find surface of a ball, multiply square of diameter by 3.1416.

To find cubic inches of a ball, multiply cube of diameter by .5236.

Doubling the diameter of a pipe increases its capacity four times.

Double riveting is from 16 to 20 percent stronger than single.

METRIC CAPACITIES

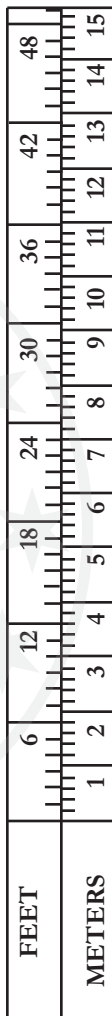
1 Milliliter = 0.001 Liters
1 Centiliter = 0.01 Liters
1 Deciliter = 0.1 Liters
1 Dekaliter = 10 Liters
1 Hectoliter = 100 Liters
1 Kiloliter = 1000 Liters

METRIC LENGTHS

1 Millimeter	=	0.001 Meters
1 Centimeter	=	0.01 Meters
1 Decimeter	=	0.1 Meters
1 Dekameter	=	10 Meters
1 Hectometer	=	100 Meters
1 Kilometer	=	1000 Meters

BOW THRUSTER CONVERSION

KW. X 1.361 = Horsepower



PRECAUTIONARY STATEMENT

The tide figures used herein are based upon the National Oceanic and Atmospheric Administration tables, and we believe them to be accurate. They cannot, however, be guaranteed because tides tend to vary with the weather conditions.

Other information herein is based upon sources deemed to be reliable and is believed to be correct but it is likewise not guaranteed.

Effective October 28, 1991, the National Ocean Service (NOS) Tidal current charts - New York Harbor will be officially withdrawn from distribution. A recent evaluation shows that tidal currents determined from the New York Harbor charts, last revised in 1976, are not as accurate as those determined from more recent information published in the NOS Tidal Current Tables - Atlantic Coast of North America including Greenland. NOS plans no further revisions of the tidal current chart series.

PRECAUTIONARY NOTE - TIDAL CURRENT PREDICTIONS FOR NEW YORK HARBOR

Tidal currents at The Narrows, and at Hell Gate have been reported to deviate significantly from official predictions published by the National Ocean Service (NOS). Tidal currents in Arthur Kill and Kill Van Kull have also been reported to deviate significantly from prediction computed from table 2 values in the NOS Tidal Current Tables - Atlantic Coast of North America. Such reports cannot, at this time, be either confirmed or dismissed. Until NOS conducts a Quality Assurance Study for these locations, mariners should exercise caution and discretion in the use of published tidal current predictions for these locations.

HEIGHT OF TIDE AT ANY TIME

Time from the nearest high water or low water

Duration

h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
5 30	0 11	0 22	0 33	0 44	0 55	1 06	1 17	1 28	1 39	1 50	2 01	2 12	2 23	2 34	2 45	2 56	3 07	3 18	3 29
6 00	0 12	0 24	0 36	0 48	1 00	1 12	1 24	1 36	1 48	2 00	2 12	2 24	2 36	2 48	3 00	3 12	3 24	3 36	3 48
6 20	0 13	0 25	0 38	0 51	1 03	1 16	1 29	1 41	1 54	2 07	2 19	2 32	2 45	2 57	3 10	3 22	3 34	3 46	3 58
6 30	0 13	0 26	0 39	0 52	1 05	1 18	1 31	1 44	1 57	2 10	2 23	2 36	2 49	3 02	3 15	3 27	3 40	3 53	4 06
6 40	0 13	0 27	0 40	0 53	1 07	1 20	1 33	1 47	2 00	2 13	2 27	2 40	2 53	3 07	3 20	3 33	3 46	3 59	4 12
7 00	0 14	0 28	0 42	0 56	1 10	1 24	1 38	1 52	2 06	2 20	2 34	2 48	3 02	3 16	3 30	3 44	3 58	4 12	4 26

Duration

Correction to height

Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.
2.5	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.2	1.5	1.8	2.0	2.2	2.5
3.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.0	2.2
3.5	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.5	2.8
4.0	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.2	3.5
4.5	0.0	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3	1.6	1.9	2.2	2.6	2.9	3.2	3.5	3.8
5.0	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.7	2.0	2.2	2.5	2.8	3.0	3.2	3.5
5.5	0.0	0.1	0.1	0.2	0.4	0.5	0.7	0.9	1.1	1.4	1.6	1.9	2.2	2.5	2.8	3.0	3.2	3.5	3.8
6.0	0.0	0.1	0.1	0.3	0.4	0.6	0.8	1.0	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.2	3.5	3.8	4.0
6.5	0.0	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.3	1.6	1.9	2.2	2.6	2.9	3.2	3.5	3.8	4.0	4.2
7.0	0.0	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.4	1.8	2.1	2.4	2.8	3.1	3.5	3.8	4.0	4.2	4.5
7.5	0.0	0.1	0.2	0.3	0.5	0.7	1.0	1.2	1.5	1.9	2.2	2.6	3.0	3.4	3.8	4.0	4.2	4.5	4.8
8.0	0.0	0.1	0.2	0.3	0.5	0.8	1.0	1.3	1.6	2.0	2.4	2.8	3.2	3.6	4.0	4.2	4.5	4.8	5.0
8.5	0.0	0.1	0.2	0.4	0.6	0.8	1.1	1.4	1.8	2.1	2.5	2.9	3.4	3.8	4.2	4.5	4.8	5.0	5.2
9.0	0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.5	1.9	2.2	2.7	3.1	3.6	4.0	4.5	4.8	5.0	5.2	5.4

Enter the table with the duration of rise or fall which most nearly agrees with the actual value and on that horizontal line find the time from the nearest high or low water which agrees most nearly with the corresponding actual difference. The correction sought is in the column directly below, on the line with the range of tide.

VELOCITY OF CURRENT AT ANY TIME

Places except Hell Gate, Cape Cod Canal, C & D Canal. Interval between slack and maximum current												
hrs. mins.	1 20	1 40	2 00	2 20	2 40	3 00	3 20	3 40	4 00	4 20	4 40	5 00
Interval bet. slack & desired time	0 20	0.4	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
	0 40	0.7	0.6	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2
	1 00	0.9	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3
	1 20	1.0	1.0	0.9	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.4
	1 40	....	1.0	1.0	0.9	0.8	0.7	0.7	0.6	0.5	0.5	0.4
	2 00	....	....	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.5
	2 20	....	....	....	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6
	2 40	....	....	....	....	1.0	1.0	0.9	0.9	0.8	0.8	0.7
Interval bet. slack & desired time	3 00	....	....	....	....	....	1.0	1.0	0.9	0.9	0.8	0.7
	3 20	....	....	....	....	....	....	1.0	1.0	0.9	0.9	0.8
	3 40	....	....	....	....	....	....	....	1.0	1.0	0.9	0.9
	4 00	....	....	....	....	....	....	....	....	1.0	1.0	1.0
	4 20	....	....	....	....	....	....	....	....	....	1.0	1.0
	4 40	....	....	....	....	....	....	....	....	....	....	1.0

Hell Gate, Cape Cod Canal, C & D Canal. Interval between slack and maximum current												
hrs. mins.	1 20	1 40	2 00	2 20	2 40	3 00	3 20	3 40	4 00	4 20	4 40	5 00
Interval bet. slack & desired time	0 20	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
	0 40	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3
	1 00	0.9	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4
	1 20	1.0	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5
	1 40	....	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6
	2 00	....	....	1.0	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.7
	2 20	....	....	....	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.7
	2 40	....	....	....	....	1.0	1.0	1.0	0.9	0.9	0.8	0.8
Interval bet. slack & desired time	3 00	....	....	....	....	....	1.0	1.0	1.0	1.0	0.9	0.9
	3 20	....	....	....	....	....	....	1.0	1.0	1.0	1.0	0.9
	3 40	....	....	....	....	....	....	....	1.0	1.0	1.0	0.9
	4 00	....	....	....	....	....	....	....	....	1.0	1.0	1.0
	4 20	....	....	....	....	....	....	....	....	....	1.0	1.0
	4 40	....	....	....	....	....	....	....	....	....	....	1.0

1. Enter from the top of the proper table with the time interval between slack=maximum (=current encompassing the time for which the velocity is desired).
2. Enter from the side of the proper table with the interval between slack and the desired time.
3. Multiply factor corresponding to above intervals, by maximum current from daily predictions.

Tidal Differences & Other Constants on New York, NY

PLACE	POSITION		DIFFERENCES			
	LAT.	LONG.	TIME		HEIGHT	
			High water	Low water	High water	Low water
NEW YORK	° ' N.	° ' W.	h. m.	h. m.	feet	feet
Time meridian, 75° W.						
East River						
Hell Gate, Ward's Island	40 47	73 55	+ 2 59	+ 3 45	+ 1.4	0.0
Hell Gate, Hallets Point	40 47	73 56	+ 2 04	+ 2 07	+ 0.5	0.0
Horns Hook, E. 90th Street	40 47	73 56	+ 1 52	+ 1 34	+ 0.1	0.0
Roosevelt Island, north end	40 46	73 56	+ 1 49	+ 1 28	+ 0.2	0.0
37th Avenue, Long Island City	40 46	73 57	+ 1 34	+ 1 13	- 0.1	0.0
East 41st Street, New York City	40 45	73 58	+ 1 07	+ 0 48	- 0.3	0.0
Hunters Point, Newtown Creek	40 44	73 57	+ 1 22	+ 0 56	- 0.5	0.0
English Kills Ent., Newtown Creek	40 43	73 55	+ 1 34	+ 1 07	- 0.4	0.0
East 27th Street, Bellevue Hospital	40 44	73 58	+ 1 12	+ 1 06	- 0.4	0.0
East 19th Street, New York City	40 44	73 58	+ 1 06	+ 1 01	- 0.5	0.0
North 3rd Street, Brooklyn	40 43	73 58	+ 0 59	+ 0 45	- 0.5	0.0
Williamsburg Bridge	40 43	73 58	+ 0 56	+ 0 41	- 0.5	0.0
Wallabout Bay	40 42	73 58	+ 0 32	+ 0 22	- 0.3	0.0
Brooklyn Bridge	40 42	74 00	+ 0 17	+ 0 10	- 0.3	0.0
NEW YORK and NEW JERSEY						
New York Harbor						
Bay Ridge	40 38	74 02	- 0 20	- 0 21	0.0	0.0
St. George, Staten Island	40 39	74 04	- 0 17	- 0 15	- 0.1	0.0
Bayonne, New Jersey	40 41	74 06	- 0 15	- 0 05	- 0.1	0.0
Gowanus Bay	40 40	74 01	- 0 15	- 0 12	- 0.2	0.0
Governors Island	40 42	74 01	- 0 07	- 0 03	- 0.2	0.0
NEW YORK (The Battery)	40 42	74 01	Daily Predictions			
Hudson River*						
Jersey City Con. Rail. RR. Ferry, N.J.	40 43	74 02	+ 0 11	+ 0 10	- 0.2	0.0
New York, Desbrosses Street	40 43	74 01	+ 0 14	+ 0 13	- 0.2	0.0
New York, Chelsea Docks	40 45	74 01	+ 0 21	+ 0 19	- 0.3	0.0
Hoboken, Castle Point, N.J.	40 45	74 01	+ 0 21	+ 0 19	- 0.3	0.0
Weehawken, Days Point, N.J.	40 46	74 01	+ 0 28	+ 0 26	- 0.4	0.0
New York, Union Stock Yards	40 47	74 00	+ 0 31	+ 0 29	- 0.4	0.0
New York, 130th Street	40 49	73 58	+ 0 41	+ 0 38	- 0.6	0.0
George Washington Bridge	40 51	73 57	+ 0 50	+ 0 46	- 0.7	0.0

* Values for the Hudson River above the George Washington Bridge are based upon averages for the six months May to October period, when the fresh-water discharge is a minimum.

Tidal Differences & Other Constants on New York, NY

PLACE	POSITION		DIFFERENCES			
	LAT.	LONG.	TIME		HEIGHT	
			High water	Low water	High water	Low water
NEW YORK	• ' N.	• ' W.	h. m.	h. m.	feet	feet
Time meridian, 75° W.						
Hudson River, continued						
Spuyten Duyvil West of RR Bridge .	40 53	73 56	+ 1 02	+ 0 56	- 0.8	0.0
Riverdale	40 54	73 55	+ 0 49	+ 0 49	- 0.7	0.0
Yonkers	40 56	73 54	+ 1 13	+ 1 13	- 0.9	0.0
Dobbs Ferry	41 01	73 53	+ 1 33	+ 1 43	- 1.2	0.0
Tarrytown	41 05	73 52	+ 1 49	+ 1 57	- 1.4	0.0
Ossining	41 10	73 52	+ 1 57	+ 2 17	- 1.5	0.0
Haverstraw	41 12	73 58	+ 2 03	+ 2 28	- 1.7	0.0
Peekskill	41 17	73 56	+ 2 28	+ 3 03	- 1.4	+ 0.3
West Point	41 24	73 57	+ 3 20	+ 3 40	- 1.6	+ 0.3
Newburgh	41 30	74 00	+ 3 46	+ 4 03	- 1.6	+ 0.2
New Hamburg	41 35	73 57	+ 4 04	+ 4 28	- 1.6	+ 0.1
Poughkeepsie	41 42	73 57	+ 4 34	+ 4 46	- 1.4	+ 0.1
Hyde Park	41 47	73 57	+ 5 00	+ 5 12	- 1.4	0.0
Kingston Point	41 56	73 58	+ 5 20	+ 5 34	- 1.0	- 0.1
Tivoli	42 04	73 56	+ 5 50	+ 6 04	- 0.9	- 0.2
Catskill	42 13	73 51	+ 6 41	+ 6 58	- 0.8	- 0.3
Hudson	42 15	73 48	+ 6 58	+ 7 12	- 1.0	- 0.4
Albany	42 39	73 45	DAILY PREDICTIONS			
The Kills and Newark Bay						
Kill Van Kull						
Constable Hook	40 39	74 05	- 0 30	- 0 18	- 0.1	0.0
New Brighton	40 39	74 05	- 0 08	- 0 15	- 0.1	0.0
Port Richmond	40 38	74 08	+ 0 01	+ 0 08	- 0.1	0.0
Bergen Point	40 39	74 08	+ 0 07	+ 0 06	0.0	0.0
Shooters Island	40 39	74 10	+ 0 10	+ 0 21	0.0	0.0
Port Elizabeth	40 40	74 08	- 0 02	+ 0 15	+ 0.5	0.0
Port Newark Terminal	40 41	74 08	+ 0 03	+ 0 21	+ 0.5	0.0
Point No Point	40 44	74 07	0 00	+ 0 22	+ 0.7	0.0
Newark, Passaic River	40 44	74 10	+ 0 26	+ 0 55	+ 0.5	0.0
Belleville	40 47	74 09	+ 0 04	+ 0 43	+ 0.9	0.0
Passaic, Gregory Ave. Bridge	40 51	74 07	+ 0 53	+ 2 00	+ 0.5	0.0
Hackensack River						
Kearney Point	40 44	74 06	+ 0 13	+ 0 36	+ 0.4	0.0
Secaucus	40 48	74 04	+ 1 17	+ 1 12	+ 0.5	0.0
Uttle Ferry	40 51	74 02	+ 1 26	+ 1 17	+ 0.7	0.0
Hackensack	40 53	74 02	+ 1 37	+ 2 01	+ 0.7	0.0

Tidal Differences & Other Constants on New York, NY

PLACE	POSITION		DIFFERENCES			
	LAT.	LONG.	TIME		HEIGHT	
			High water	Low water	High water	Low water
NEW YORK	° ' N.	° ' W.	h. m.	h. m.	feet	feet
Time meridian, 75° W.						
The Kills and Newark Bay						
Arthur Kill						
Elizabethport	40 39	74 11	+ 0 24	+ 0 41	+ 0.2	0.0
Chelsea	40 36	74 12	+ 0 23	+ 0 37	+ 0.3	0.0
Carteret	40 35	74 13	+ 0 22	+ 0 27	+ 0.6	0.0
Rossville	40 33	74 13	+ 0 16	+ 0 27	+ 0.6	0.0
Tottenville	40 31	74 15	+ 0 02	+ 0 15	+ 0.6	0.0
Perth Amboy	40 30	74 16	+ 0 12	+ 0 21	+ 0.5	0.0
Lower New York Bay,						
Raritan Bay, etc.						
New Dorp Beach	40 34	74 06	- 0 05	+ 0 15	+ 0.2	0.0
Great Kills Harbor	30 33	74 08	+ 0 06	+ 0 21	0.0	0.0
Princess Bay	30 31	74 12	0 00	+ 0 06	+ 0.2	0.0
Raritan River						
South Amboy	40 29	74 17	+ 0 04	+ 0 06	+ 0.3	0.0
Washington Canal	40 28	74 22	+ 0 33	+ 0 52	+ 0.9	0.0
South River Highway Bridge	40 27	74 22	+ 0 54	+ 1 04	+ 0.8	0.0
New Brunswick	40 29	72 26	+ 0 45	+ 1 28	+ 1.1	0.0
Keyport	40 26	74 12	+ 0 07	+ 0 21	+ 0.3	0.0
Keansburg	40 27	74 09	- 0 04	+ 0 01	+ 0.2	0.0
Port Monmouth	40 26	74 05	- 0 03	0 00	+ 0.1	0.0
Atlantic Highlands	40 25	74 02	- 0 02	+ 0 02	0.0	0.0
SANDY HOOK	40 28	74 01	DAILY PREDICTIONS			

New Jersey Outer Coast & Long Island Sound

Absecon Channel Sandy Hook	+ 0 11	- 0 09	*0.84	3.9	4.7
Cape May Harbor Sandy Hook	- 0 03	- 0 14	*0.94	4.4	5.3
Coney Island Sandy Hook	- 0 04	- 0 17	*1.01	4.7	5.7
Norton P1. J. Bay Sandy Hook	+ 0 38	+ 0 45	*1.16	5.4	6.5
Rockaway Inlet Sandy Hook	- 0 01	- 0 04	*1.07	5.0	6.0
Beach Chan. Bdge. Sandy Hook	+ 0 37	+ 0 24	*1.09	5.1	6.2
E. Rkaway Inlet Sandy Hook	- 0 07	- 0 14	*0.88	4.1	5.0
Fire Is. Inlet Sandy Hook	- 0 39	- 0 27	*0.56	2.6	3.1

Current Differences and Constants

Reference Station - The Narrows

PLACE	TIME DIFFERENCES				AVG. SP. / DIR.		
	Min. Before Flood	Max. Flood	Min. Before Ebb	Max. Ebb	Max. Flood		Max. Ebb
	h.m.	h.m.	h.m.	h.m.	kts.	deg.	kts.
New York Lower Bay and Raritan Bay & River							
Ambrose Entrance	- 0 57	- 1 10	- 0 25	- 0 07	1.6	303	1.7
Coney Is. Channel	- 1 21	- 0 44	- 0 24	- 0 48	1.1	293	1.2
The Narrows	DAILY PREDICTIONS						
off Sandy Hook Pt.	- 1 51	- 1 55	- 1 30	- 1 50	2.0	235	1.6
S W Spit	- 1 45	- 2 00	- 1 50	- 1 42	0.6	263	0.6
Channel Seguine Pt.	- 2 02	- 2 50	- 0 48	- 2 08	0.7	281	0.3
Channel Seguine Pt. 34	- 3 38	- 2 51	- 0 13	- 2 24	0.5	285	0.2
P. Amboy R.R. Br.	- 2 12	- 2 25	- 1 15	- 2 01	0.9	326	0.7
Upper Bay & Hudson River							
Bay Ridge Channel 15'	- 0 58	- 1 26	+ 0 04	- 1 17	1.0	032	0.7
Bay Ridge Channel 36'	- 1 35	- 2 36	- 0 50	- 0 09	0.6	037	0.4
Red Hook Channel	- 1 03	- 0 44	- 0 08	- 0 30	1.0	353	0.7
E. of Robbins Reef	+ 0 16	+ 0 16	+ 0 02	+ 0 24	1.3	016	1.6
1 mi. W of Red Hook	+ 0 41	+ 1 06	+ 0 47	+ 0 52	1.3	024	2.3
E. of Liberry	+ 0 57	+ 0 58	+ 0 56	+ 0 59	1.4	031	1.9
NW of Battery	+ 0 49	+ 1 12	+ 1 22	+ 2 18	1.4	009	1.4
Grant's Tomb 16'	+ 1 10	+ 0 46	+ 1 42	+ 2 06	1.6	024	1.9
Grant's Tomb 18'	+ 1 04	+ 1 18	+ 1 58	+ 1 27	1.8	025	1.8
G. Washington Br	+ 1 41	+ 1 55	+ 1 50	+ 2 08	1.6	020	2.2
Riverdale	+ 2 11	+ 2 07	+ 2 02	+ 2 32	1.4	015	2.0
Haverstraw	+ 2 55	+ 3 08	+ 3 13	+ 3 26	0.8	355	1.3
Peekskill	+ 3 10	+ 3 24	+ 3 33	+ 3 42	0.8	000	1.2
West Point	+ 3 32	+ 3 47	+ 3 51	+ 4 04	1.0	010	1.1
Newburgh	+ 3 50	+ 4 06	+ 4 03	+ 4 21	0.9	005	1.1
Poughkeepsie	+ 4 26	+ 4 37	+ 4 21	+ 4 49	1.1	005	1.2
Kingston	+ 5 09	+ 5 09	+ 4 54	+ 5 19	1.3	005	1.6
Hudson	+ 6 23	+ 6 45	+ 6 20	+ 6 15	1.6	030	2.0
Albany	+ 8 29	+ 7 32	+ 6 46	+ 7 47	0.3	020	0.8
Troy							0.7

Current Differences and Constants

Reference Station - The Narrows

PLACE	TIME DIFFERENCES				AVG. SP. / DIR.		
	Min.	Max.	Min.	Max.	Max.		Max.
	Before	Flood	Before	Ebb	Flood		Ebb
	Flood		Ebb				
	h.m.	h.m.	h.m.	h.m.	kts.	deg.	kts.
Kill Van Kull & Arthur Kill							
W. New Brighton 15'	- 1 44	- 2 08	- 1 24	- 1 43	1.3	262	1.9
W. New Brighton 12'	- 2 00	- 2 19	- 1 38	- 1 14	1.3	259	1.4
Elizabeth port.	+ 0 05	- 0 09	+ 0 32	+ 0 04	1.4	090	1.1
Carteret	- 0 18	- 0 54	+ 0 31	+ 0 29	0.9	015	0.8
Tufts Point	- 0 48	- 0 44	- 0 24	- 1 00	1.2	109	1.2
Tottenville 15'	- 1 14	- 1 25	- 0 33	- 1 23	1.0	023	1.1
Tottenville 32'	- 1 33	- 1 05	- 0 48	- 1 03	0.6	026	0.5
Newark Bay, Hackensack & Passaic Rivers							
South Reach	- 0 56	- 1 45	- 0 51	- 1 06	0.7	031	0.7
Lincoln Hway. H. River	- 0 06	+ 0 12	+ 0 47	- 0 14	0.9	017	0.8
Lincoln Hway. P. River.	- 0 31	- 0 19	- 0 12	- 0 20	0.6	009	0.5
East River Reference Station Hell Gate							
Buttermilk Channel	- 0 12	- 0 18	- 0 06	+ 0 18	1.8	050	2.4
(See Caution Note)							
Brooklyn Bridge	- 0 18	+ 0 08	- 0 04	- 0 07	2.9	046	3.5
Corlears Hook	- 0 05	+ 0 12	- 0 01	+ 0 10	2.7	020	2.9
Off Pier 67, 19th St.	- 0 08	+ 0 08	- 0 08	+ 0 07	1.8	355	1.9
Hell Gate	DAILY PREDICTIONS						
Port Morris	- 0 17	+ 0 04	- 0 06	- 0 12	1.5	054	1.2
Hunts Point SW of	+ 0 01	- 0 10	+ 0 01	- 0 05	1.7	108	1.3
Old Ferry Point	- 0 34	- 0 46	- 0 10	- 1 27	1.7	076	1.0

Caution: During the first 2 hours of flood in channel north of Governors Island, the current in the Hudson River is still ebbing, while during the first 1.5 hours of ebb in this channel the current in the Hudson is still flooding.

Table Showing Changes of Meters into Feet and Inces

METERS	FEET	METERS	FEET	METERS	FEET	METERS	FEET
3.0	09 10	7.5	24 07	12.0	39 04	16.5	54 02
3.1	10 02	7.6	24 11	12.1	39 08	16.6	54 06
3.2	10 06	7.7	25 03	12.2	40 00	16.7	54 09
3.3	10 10	7.8	25 07	12.3	40 04	16.8	55 01
3.4	11 02	7.9	25 11	12.4	40 08	16.9	55 05
3.5	11 06			12.5	41 00		
3.6	11 10	8.0	26 03	12.6	41 04	17.0	55 09
3.7	12 02	8.1	26 07	12.7	41 08	17.1	56 01
3.8	12 06	8.2	26 11	12.8	42 00	17.2	56 05
3.9	12 09	8.3	27 03	12.9	42 04	17.3	56 09
		8.4	27 06			17.4	57 01
4.0	13 01	8.5	27 10	13.0	42 08	17.5	57 05
4.1	13 05	8.6	28 02	13.1	43 00	17.6	57 09
4.2	13 09	8.7	28 06	13.2	43 04	17.7	58 01
4.3	14 01	8.8	28 10	13.3	43 08	17.8	58 05
4.4	14 05	8.9	29 02	13.4	44 00	17.9	58 09
4.5	14 09			13.5	44 03		
4.6	15 01	9.0	29 06	13.6	44 07	18.0	59 01
4.7	15 05	9.1	29 10	13.7	44 11	18.1	59 05
4.8	15 09	9.2	30 02	13.8	45 03	18.2	59 09
4.9	16 01	9.3	30 06	13.9	45 07	18.3	60 00
		9.4	30 10			18.4	60 04
5.0	16 05	9.5	31 02	14.0	45 11	18.5	60 08
5.1	16 09	9.6	31 06	14.1	46 03	18.6	61 00
5.2	17 01	9.7	31 10	14.2	46 07	18.7	61 04
5.3	17 04	9.8	32 02	14.3	46 11	18.8	61 08
5.4	17 08	9.9	32 06	14.4	47 03	18.9	62 00
5.5	18 00			14.5	47 07		
5.6	18 04	10.0	32 10	14.6	47 11	19.0	62 04
5.7	18 08	10.1	33 02	14.7	48 03	19.1	62 08
5.8	19 00	10.2	33 06	14.8	48 07	19.2	63 00
5.9	19 04	10.3	33 09	14.9	48 11	19.3	63 04
		10.4	34 01			19.4	63 08
6.0	19 08	10.5	34 05	15.0	49 03	19.5	64 00
6.1	20 00	10.6	34 09	15.1	49 06	19.6	64 04
6.2	20 04	10.7	35 01	15.2	49 10	19.7	64 08
6.3	20 08	10.8	35 05	15.3	50 02	19.8	65 00
6.4	21 00	10.9	35 09	15.4	50 06	19.9	65 03
6.5	21 04			15.5	50 10		
6.6	21 08	11.0	36 01	15.6	51 02	20.0	65 07
6.7	22 00	11.1	36 05	15.7	51 06	20.1	65 11
6.8	22 04	11.2	36 09	15.8	51 10	20.2	66 03
6.9	22 08	11.3	37 01	15.9	52 02	20.3	66 07
		11.4	37 05			20.4	66 11
7.0	22 11	11.5	37 09	16.0	52 06	20.5	67 03
7.1	23 03	11.6	38 01	16.1	52 10	20.6	67 07
7.2	23 07	11.7	38 05	16.2	53 02	20.7	67 11
7.3	23 11	11.8	38 09	16.3	53 06	20.8	68 03
7.4	24 03	11.9	39 00	16.4	53 10	20.9	68 07

Conversion Table

Meters to Feet and Inches

(Approximate Values)

m	Ft In	m	Ft In	m	Ft In
1	3 03	150	492 01	300	984 03
5	16 05	155	508 06	305	1000 08
10	32 10	160	524 11	310	1017 01
15	49 03	165	541 04	315	1033 06
20	65 07	170	557 09	320	1049 10
25	82 00	175	574 02	325	1066 03
30	98 05	180	590 07	330	1082 08
35	114 10	185	606 11	335	1099 01
40	131 03	190	623 04	340	1115 06
45	147 08	195	639 09	345	1131 11
50	164 00	200	656 02	350	1148 03
55	180 05	205	672 07	355	1164 08
60	196 10	210	689 00	360	1181 01
65	213 03	215	705 05	365	1197 06
70	229 08	220	721 09	370	1213 11
75	246 00	225	738 02	375	1230 04
80	262 06	230	754 07	380	1246 09
85	278 10	235	771 00	385	1263 01
90	295 03	240	787 05	390	1279 06
95	311 08	245	803 10	395	1295 11
100	328 01	250	820 02	400	1312 04
105	344 06	255	836 07	405	1328 09
110	360 11	260	853 00	410	1345 02
115	377 04	265	869 05	415	1361 07
120	393 08	270	885 10	420	1377 11
125	410 01	275	902 03	425	1394 04
130	426 06	280	918 08	430	1410 09
135	442 11	285	935 00	440	1443 07
140	459 04	290	951 05	450	1476 04
145	475 09	295	967 10		

1 m = 3.281 feet

2014

January

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

February

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

March

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	16
23	24	25	26	27	28	29
30	31					

April

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

May

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

June

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

July

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

August

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

September

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

October

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

November

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

2015

January

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

February

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April

Su	Mo	Tu	Mo	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May

Su	Mo	Tu	Mo	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June

Su	Mo	Tu	Mo	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	19	21	22	23	24	25
26	26	28	29	30	31	

August

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	23	24	25	26	27	29
30	31					

September

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

**Special Thanks to Jonathan Atkin,
for the aerial photograph of Pilot Boat New York,
leading USS New York (LPD-21) into NY Harbor,
for her commissioning in NYC. Nov 2, 2009.**

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www.shipshooter.com**

Communication Numbers

Day & Night

Phone : (718) 448 - 3900 (N.Y. / N.J. / Hell Gate)
(718) 815 - 4316 (Hudson River)

Fax : 1 - 718 - 876 - 8055

E-Mail : pilotoffice@sandyhookpilots.com

**For Arrival, 24 hour ETA & 12 hour updates.
Updated Arrival and Departure times greatly appreciated.**



Sandy Hook Pilots
1694 - 320 years of service - 2014