

Coastal and Offshore Sailing

MITNA
January 2015

Matthew Wall

Course Goals

- prepare for summer racing season on X-Dimension
- prepare for cruising on X-Dimension
- progress toward MIT bluewater crew and skipper ratings
- provide a place where you can ask all the stupid questions

This course is intended for those who would like to sail and race on X-dimension in the 2015 season. The course will cover topics such as racing tactics and strategies, yacht preparation, life aboard at sea, navigation, weather, communication, and safety.

Today

- Introductions
- Course Outline
- Roles and Expectations
- 2015 Season
- X-Dimension Overview

Introductions

- Adam Traina
- Scott Dynes
- Fran Charles
- Matt Lindblad
- Gigi Lirot
- Matthew Wall

Course Outline

Introduction	5 Jan 2015 18:00-21:00 Pavilion	Matthew Wall
Yacht Preparation	7 Jan 2015 18:00-21:00 Pavilion	Matthew Wall, Scott Dynes
Life Aboard	12 Jan 2015 18:00-21:00 Pavilion	Adam Traina, Scott Dynes
Weather	14 Jan 2015 18:00-21:00 Pavilion	Adam Traina, Matthew Wall
Navigation	21 Jan 2015 18:00-21:00 Pavilion	Adam Traina, Matthew Wall, Scott Dynes
Celestial Navigation	26 Jan 2015 18:00-21:00 Pavilion	Adam Traina
Racing	26 Jan 2015 18:00-21:00 Pavilion	Fran Charles, Matt Lindblad

What do you do with this?

- Crew for really good skippers
- Deliveries
- Chartering and bareboats
- Race - skipper or crew

Day Trips versus Cruising versus Racing

	Day Trip	Cruising	Racing
preparation			
skills			

Roles

	Day Trip	Cruising	Racing
crew			
skipper			

Certifications

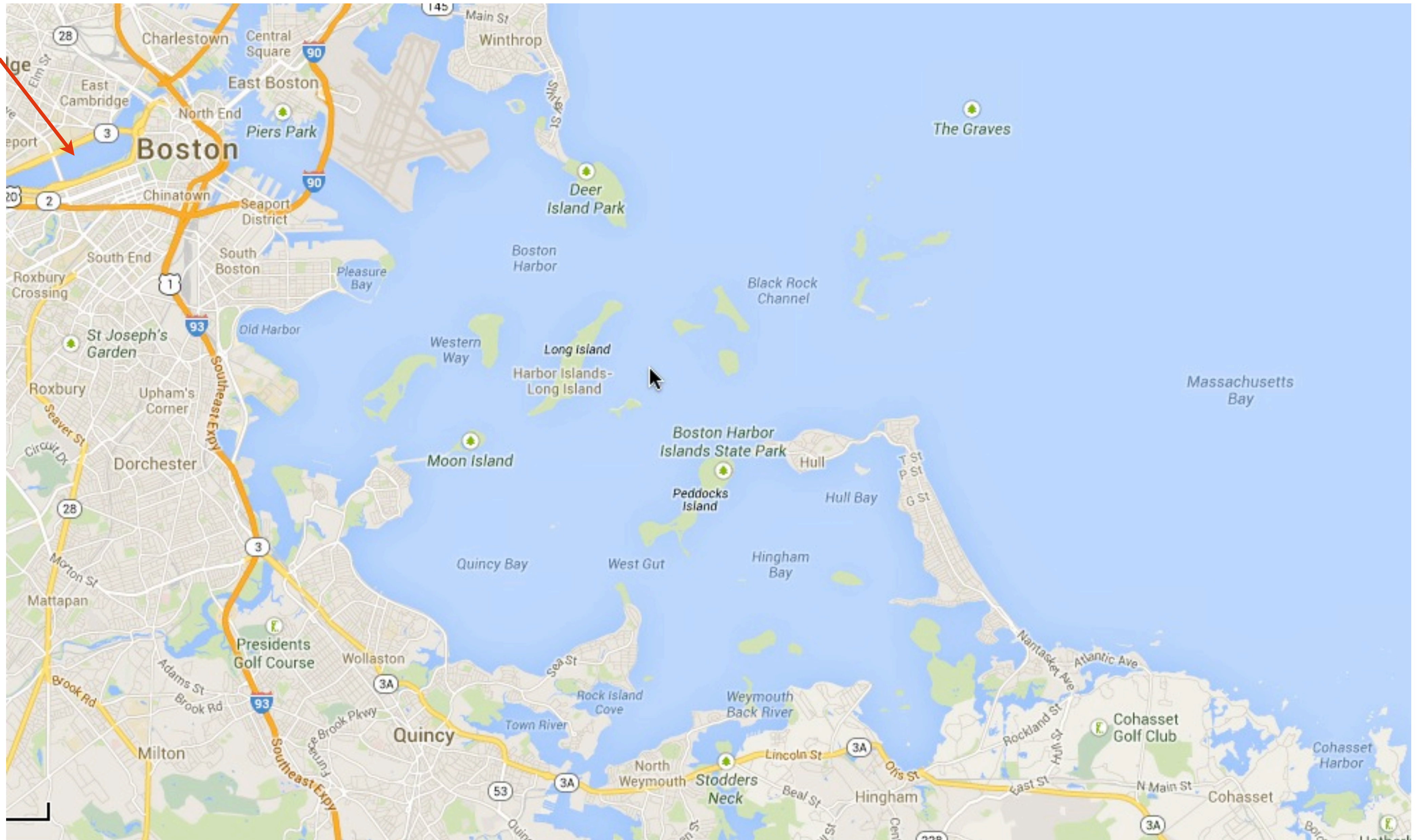
- American Sailing Association (ASA)
- US Coast Guard
- NauticEd
- US Sailing

2015 Season

- Feb-Mar - boatworks
- Apr - splash!
- May-Jun - practice, day sailing
- Jun - Bermuda
- Jul - Halifax
- Jul-Oct - cruising, day sailing, racing
- Nov - haulout

Trips: Boston Harbor

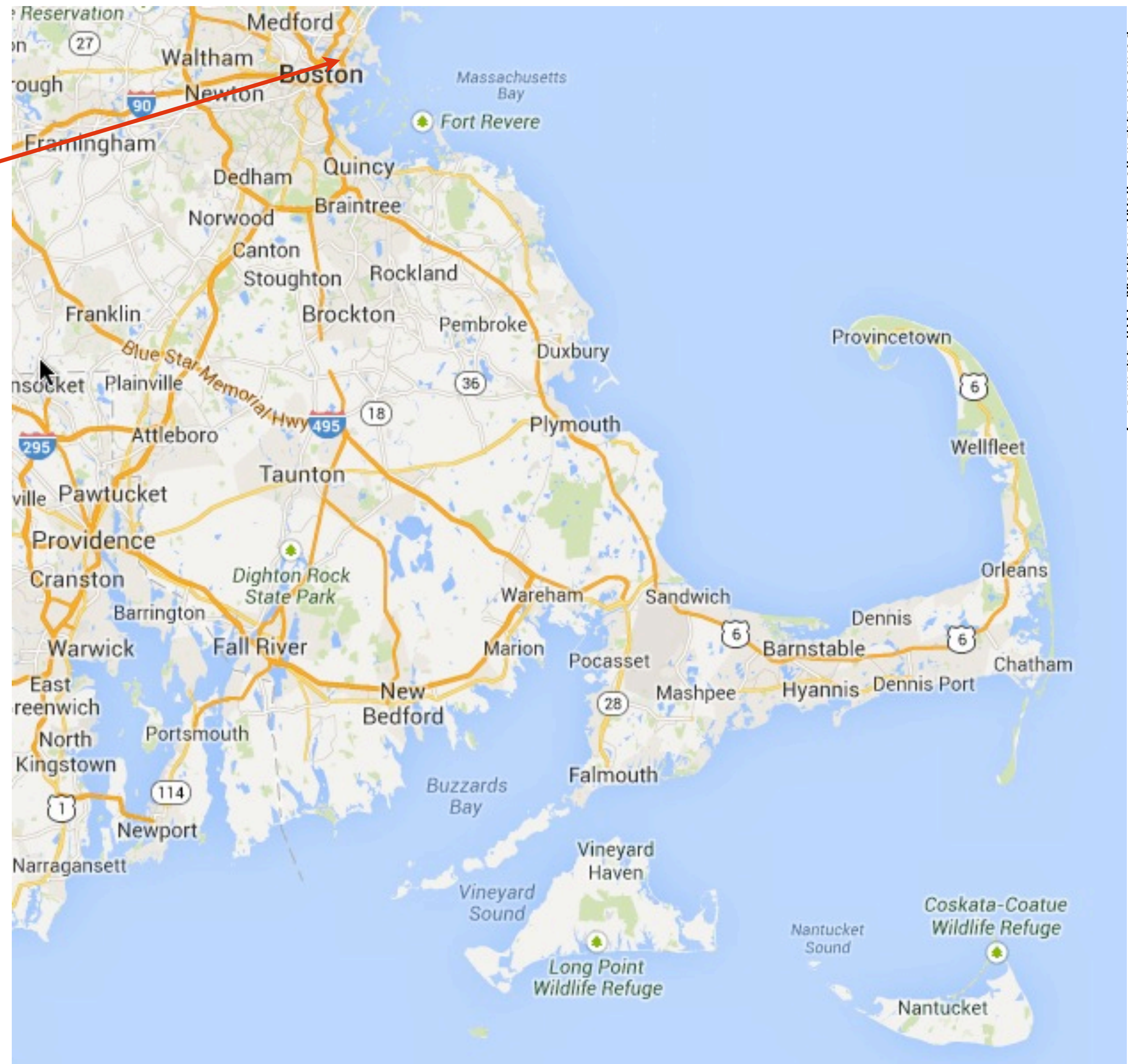
You Are Here



Trips: Cape Cod

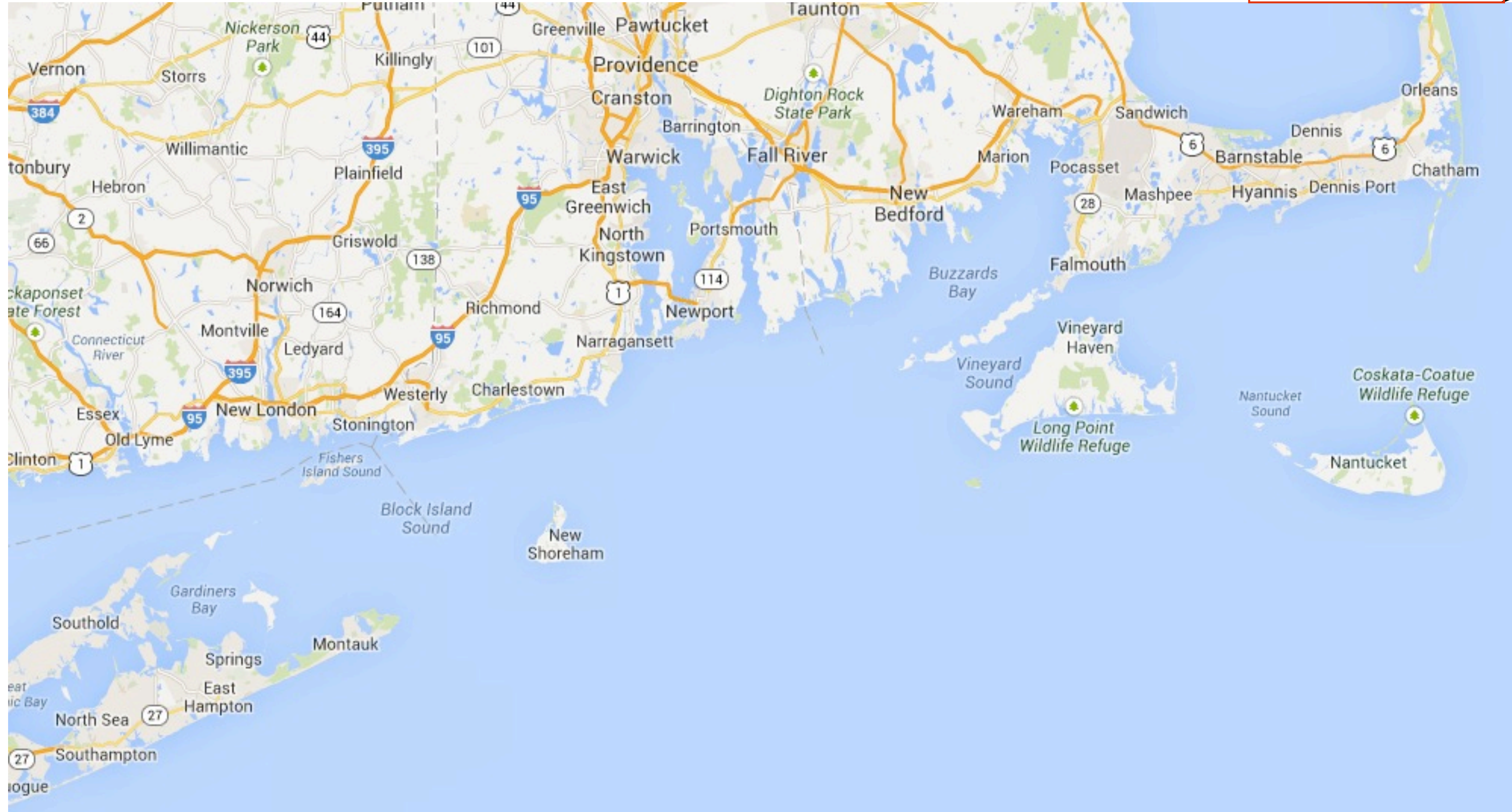
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- Provincetown
- Martha's Vineyard
- Nantucket
- Buzzard's Bay
- Newport

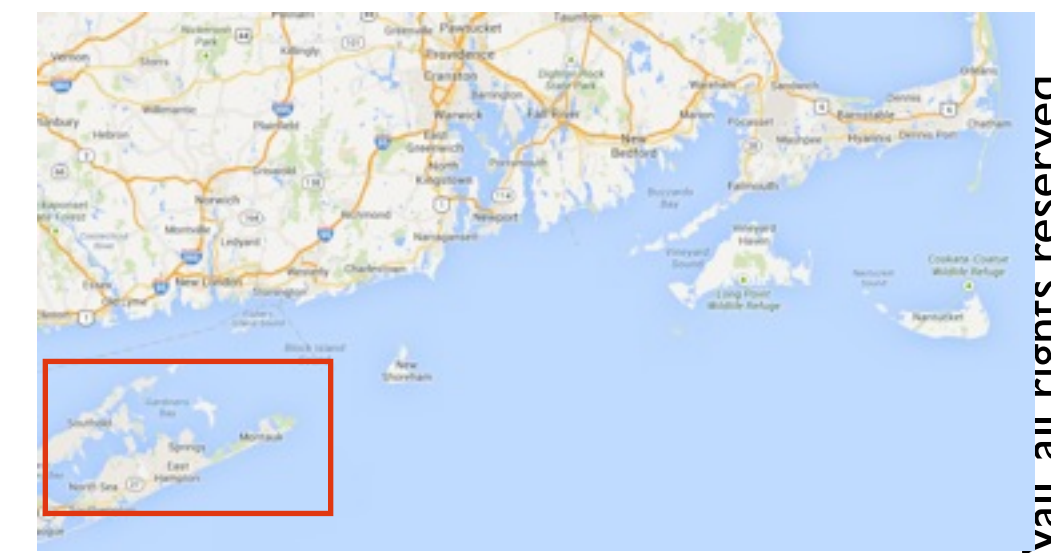


Trips: Newport

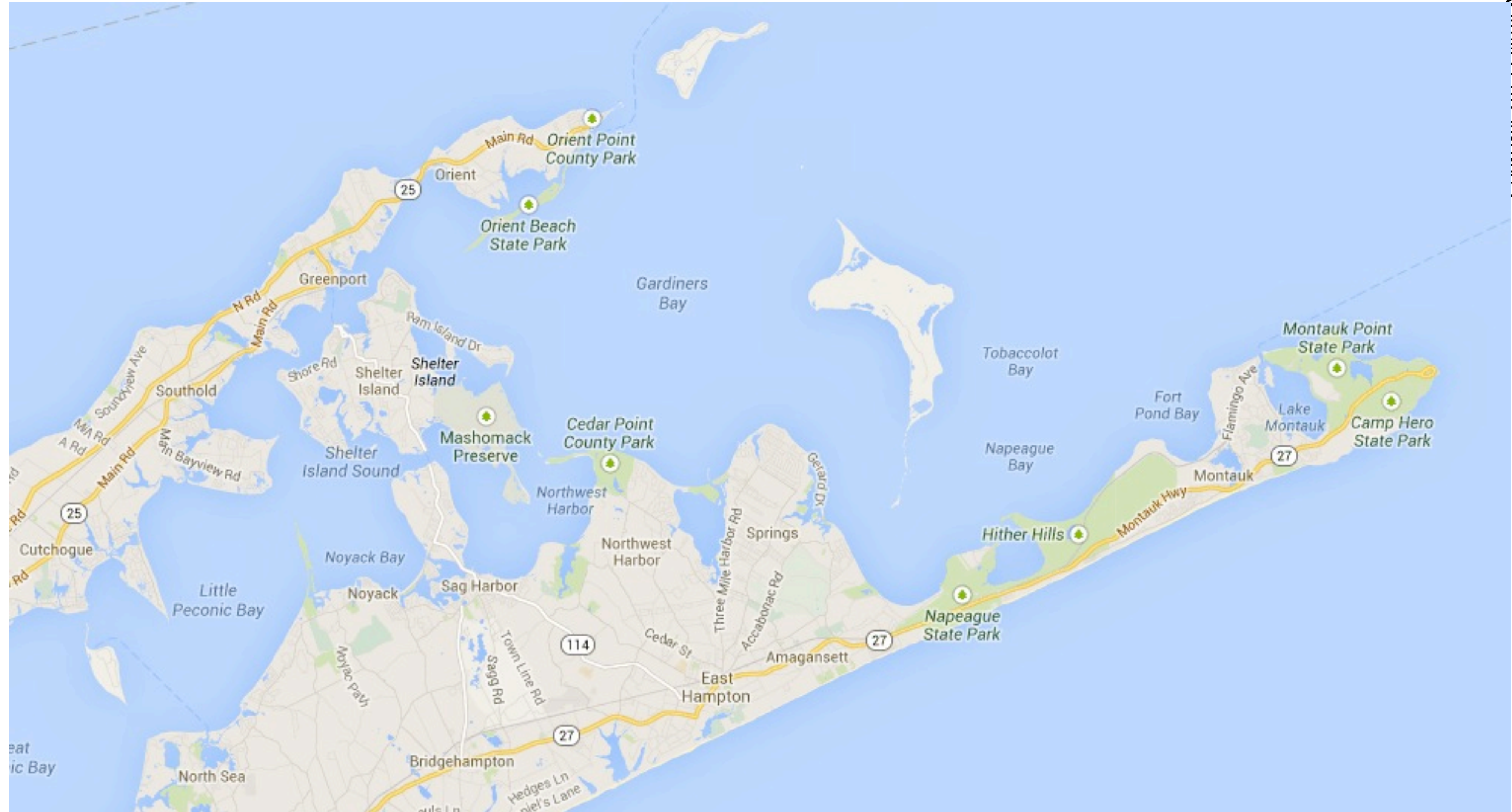
Buzzard's Bay
Newport
Block Island
Shelter Island



Trips: Shelter Island



Shelter Island



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43°34.394'N
71°05.974'W

Regulations for Ocean Dumping Sites are contained in 43 CFR, Parts 220-229. Additional information concerning the regulations and requirements for use of the sites may be obtained from the Environmental Protection Agency (EPA). See U.S. Coast Pilots appendix for addresses of EPA offices. Dumping subsequent to the survey dates may have reduced the depths shown.

Reporting Area, it has been offset slightly for clarity.

that ships of 300 gross tonnage and upwards solely in transit during the period of 1 June through 31 December should avoid the area. (MSC IMO SN.1/CIRC.263)



LIGHTS
Only the principal lights along the outer coast are shown.

CAUTION
Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117. Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution. Station positions are shown thus:
○ (Accurate location) ◊ (Approximate location)

AIDS TO NAVIGATION
Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation. See Canadian List of Lights, Buoys and Fog Signals for information not included in the U.S. Coast Guard Light List.

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may not aid to eyes may ed, mark, s should vigation replaced covered
and are es and at Guard

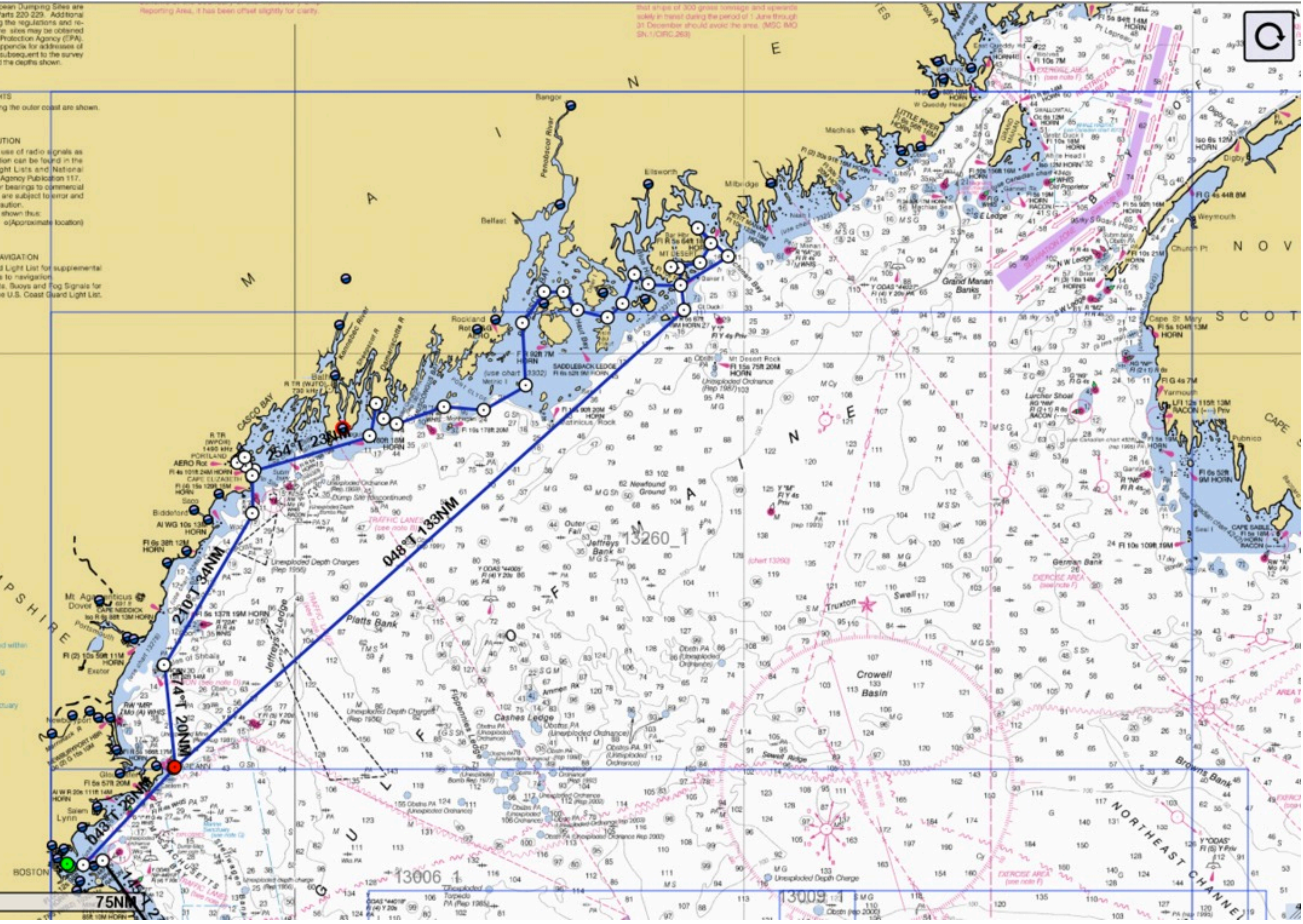
ed from secular variation
annual objective

NOTE G
(Provided in 15 CFR 922)
The following activities are prohibited within Stellwagen Bank Marine Sanctuary:
Certain discharging or dumping
Industrial exploring or developing
Drilling and dredging
Removing historical artifacts
Lightering
Refer to 15 CFR 922 for details of Sanctuary regulations.

Penobscot Bay



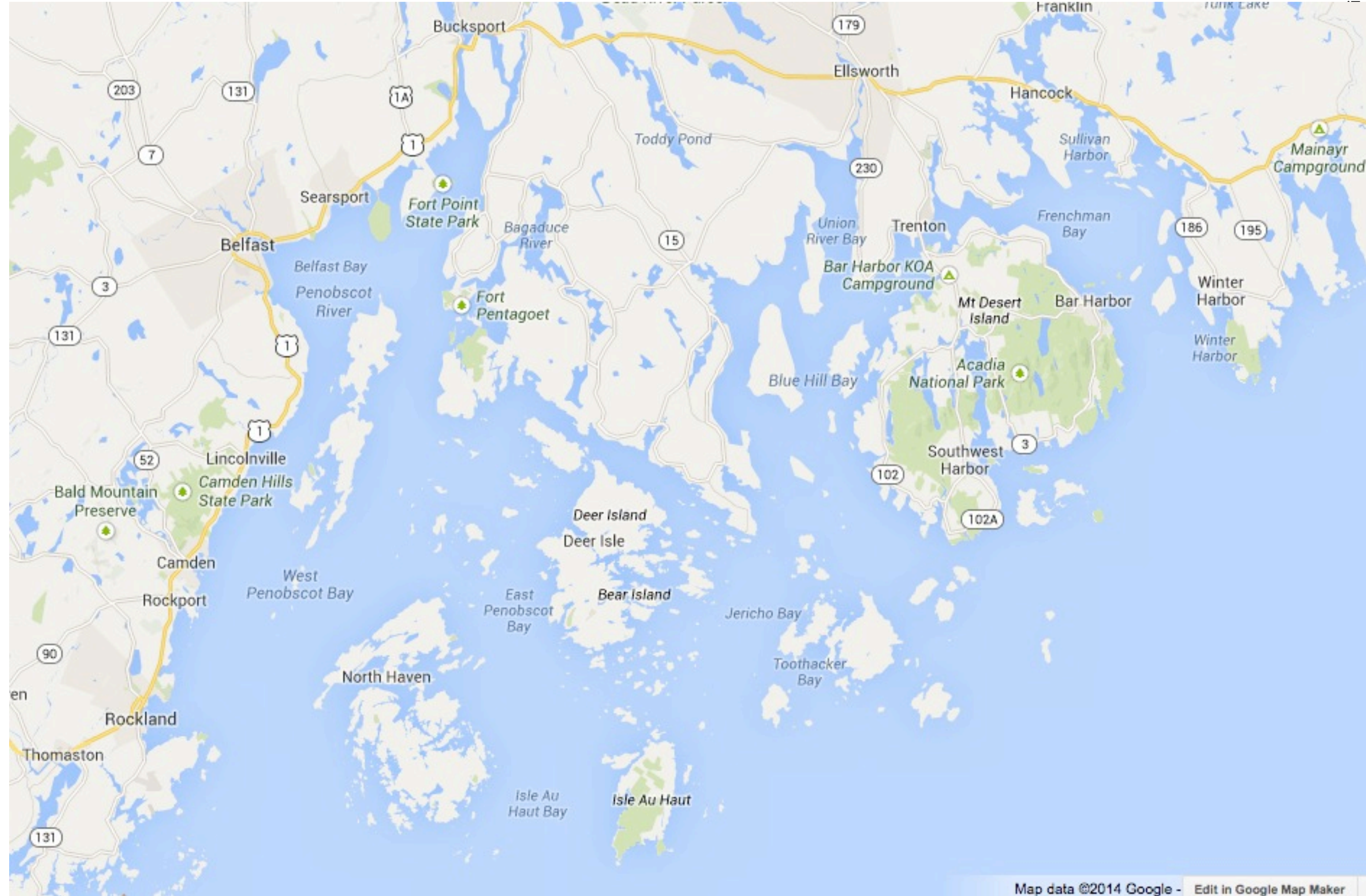
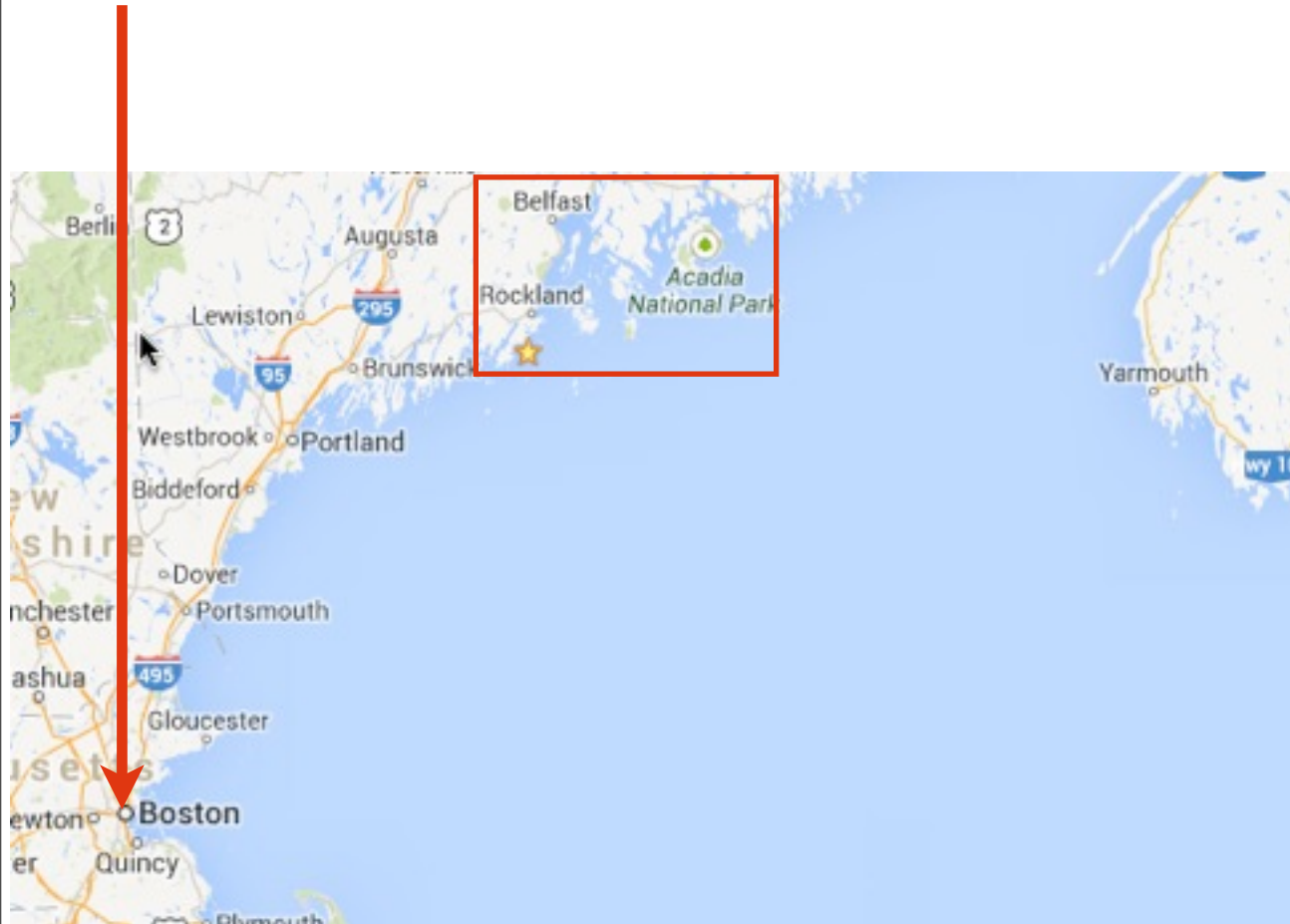
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Trips: Penobscot Bay

ights reserved

You Are Here



Wednesday Night Boston Harbor Races

Constitution Yacht Club

- Three Series of 6 round-the-buoy races each
mid-May through mid-September
- 6 “Rogue” races
end of September through the end of October
- spring (June) and fall (September) regatta of two races each

Boston Area Day Regattas

- **Flip-Flop Regatta - Pursuit Race starting outside Boston Harbor**
August
- **Boston Harbor Regatta - Pursuit Race in Boston Harbor**
September

Overnight and Multi-Day Races

- **Figawi - Pursuit race from Hyannis to Nantucket**
23-25 May, 3 days
240+ boats, 1000+ sailors
- **Chapman Bowl - Around Massachusetts Bay from Scituate**
end of June, overnight
20-30 boats
- **Beringer Bowl - Marblehead to Provincetown**
18-19 July, overnight
30-40 boats
- **Martha's Vineyard Round-the-Island Race**
25 July, one-day
40 boats

Gulf of Maine Ocean Racing Association

- gmora.org
- Monhegan (Finish at Camden)
12-13 July
- Penobscot Pursuit
19-20 July
- Corinthians Ocean Race (Lobster Run)
25-28 July
- Camden Regatta
26-27 July

Offshore Races: Halifax

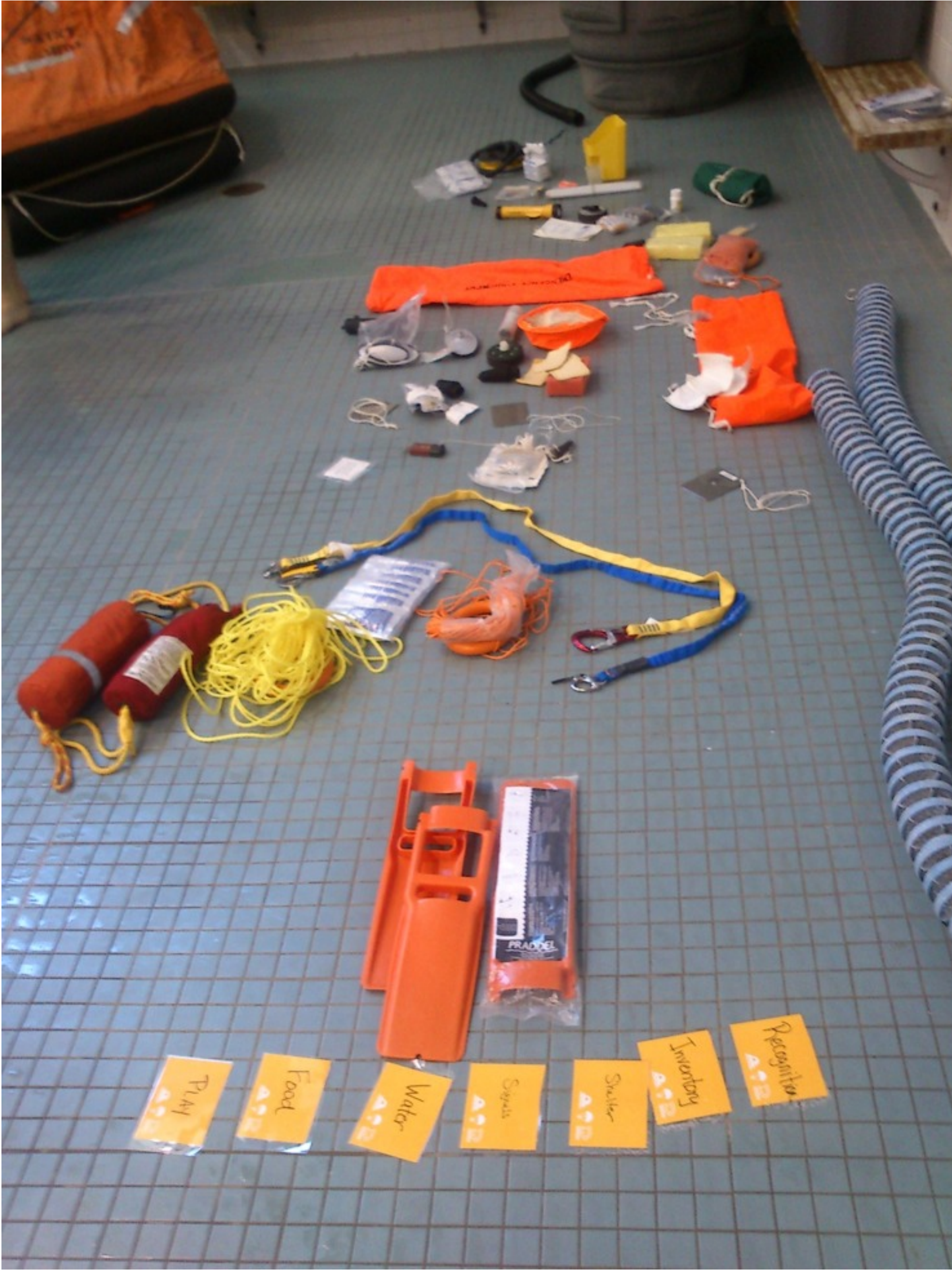


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Offshore Races: Bermuda

- Marion-Bermuda

Race Preparation



2015 Season

- **Boatworks**
Feb-Apr
- **Safety-at-Sea Training**
21-22 Mar
- **Splash**
1 Apr
- **practice, day sailing**
May-Jun
- **Bermuda**
19-24 Jun - race
26-30 Jun - return
- **Halifax**
5-9 Jul - race
10-11 Jul - return to Maine
- **Cruising, day sailing, racing**
12 Jul - 15 Aug
- **Haulout**
Nov

About X-Dimension

- 43' 1973 C&C, one of 14 boats built
- Donated to MIT August 2011 by David Collins
- Currently in Winthrop for the winter
- Summer home is Boston Waterboat Marina at Long Wharf
- 2011: 9 trips Aug-Nov
2012: 40 trips Jul-Nov
2013: ~100 trips May-Nov, many races
2014: ~? trips Jul-Nov, some races



X-Dimension - Specifications

Length Over All	43.4 ft
Waterline Length	35.9 ft
Maximum Beam	13 ft
Draft	7.75 ft
Displacement	22,000 lbs
PHRF/NE Rating	72 base, 87 racing, 90 cruising
Powerplant	Perkins 4-108 50hp 1989
Mast and Rig	64' Sparcraft tapered 2-spreader / rod
Fuel Capacity	40 gal
Water Capacity	80 gal



X-Dimension - Hull and Keel



X-Dimension - Keel



X-Dimension - Keel



X-Dimension - Rudder



X-Dimension - Sails

Mainsails

New Mainsail
Storm trysail

Jibs and Genoas

New Genoa #1
Genoa #3
Storm Jib

Asymmetric Spinnaker

Working Asymmetric Spinnaker

Symmetric Spinnakers

0.5 oz Tri Radial Symmetric Spinnaker
0.75 oz Symmetric Spinnaker
0.75 oz Symmetric Spinnaker
1.5 oz Star Cut Symmetric Spinnaker
1.5 oz Tri Radial Symmetric Spinnaker

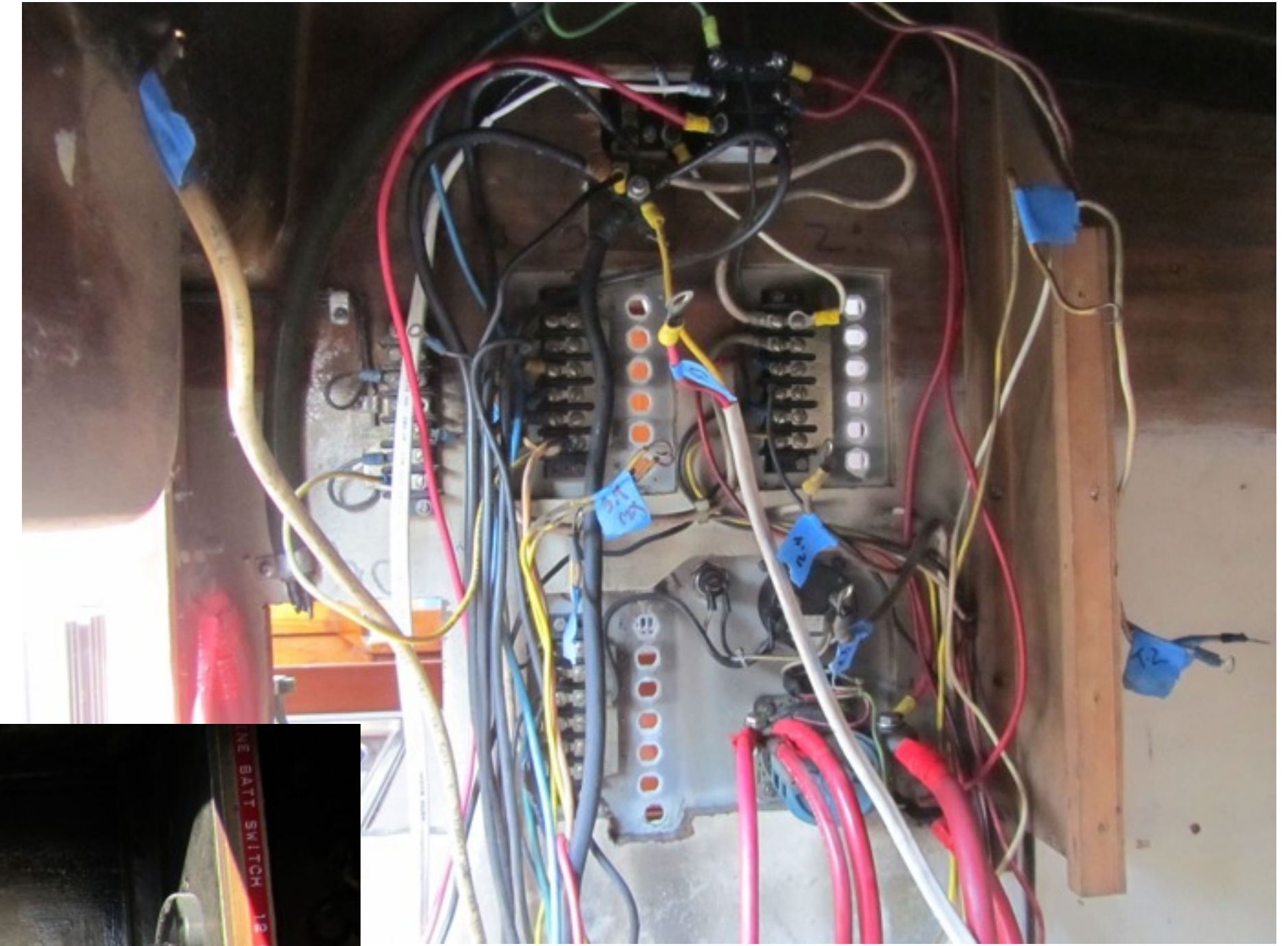
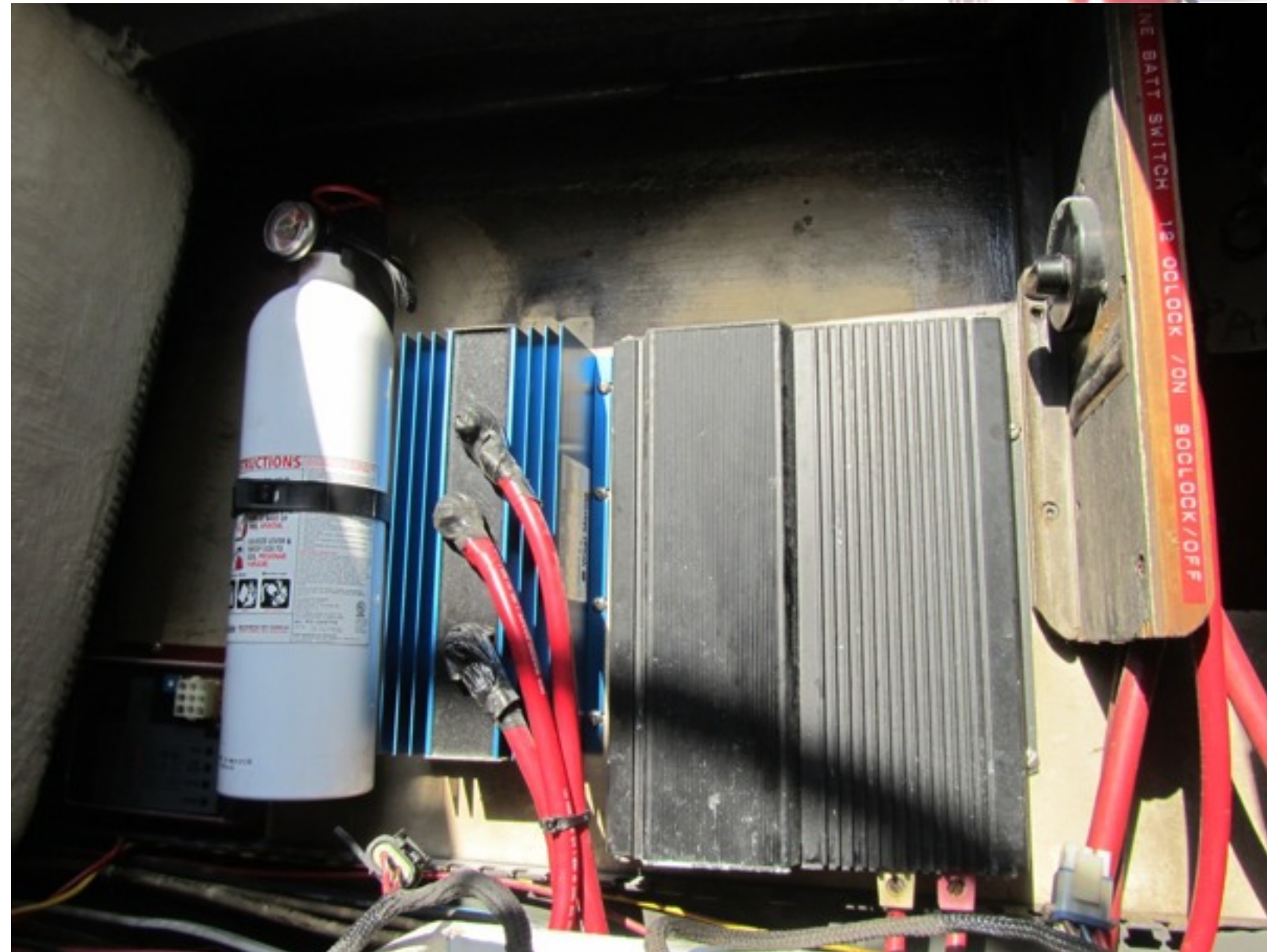


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X-Dimension - Bilge



X-Dimension - Electrical



X-Dimension - Electrical



X-Dimension - Freshwater



X-Dimension - Septic System



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X-Dimension - Septic System



X-Dimension - Engine



X-Dimension - Drive Train



X-Dimension - Prop

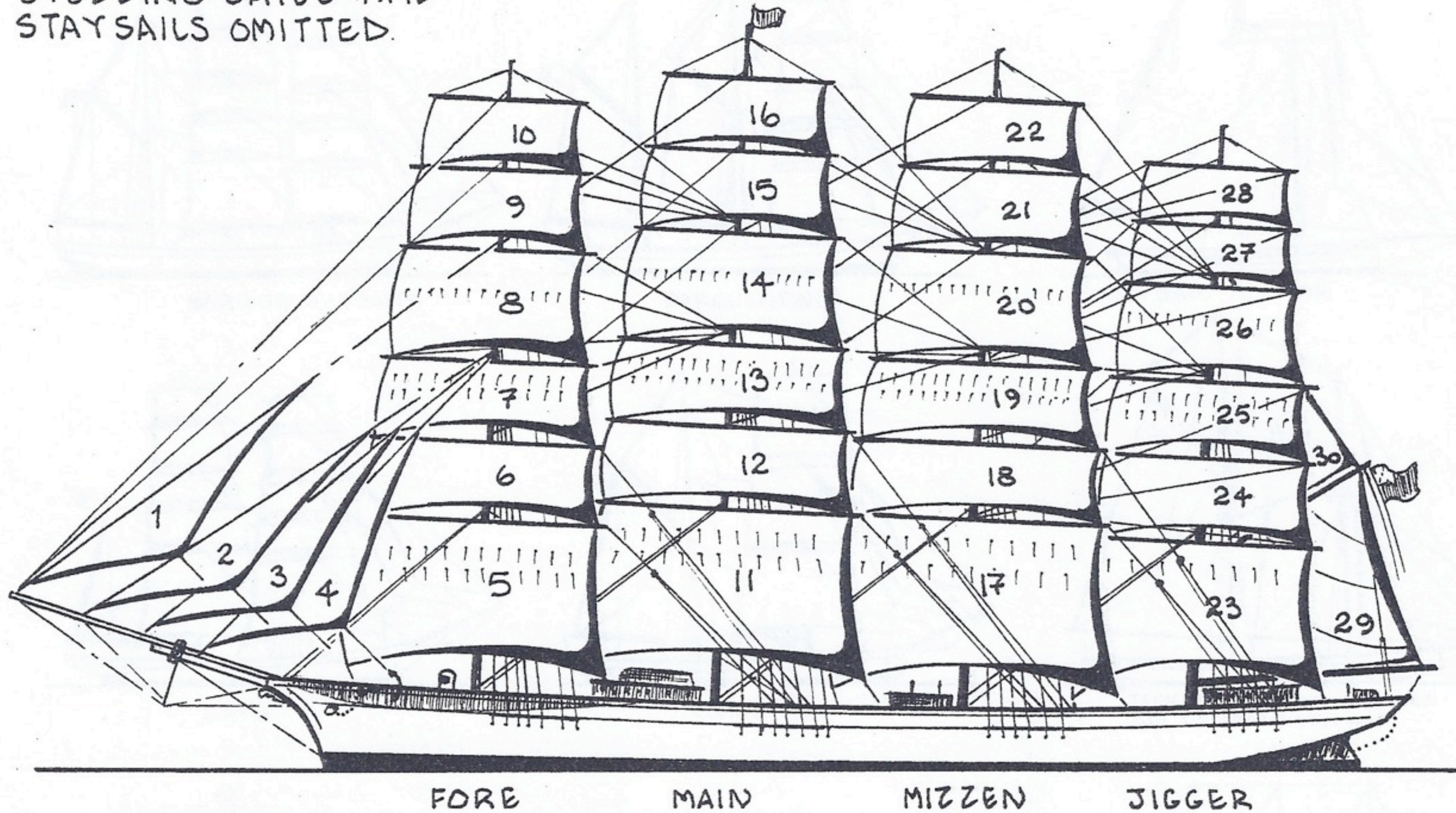


X-Dimension



Sails and Rigging

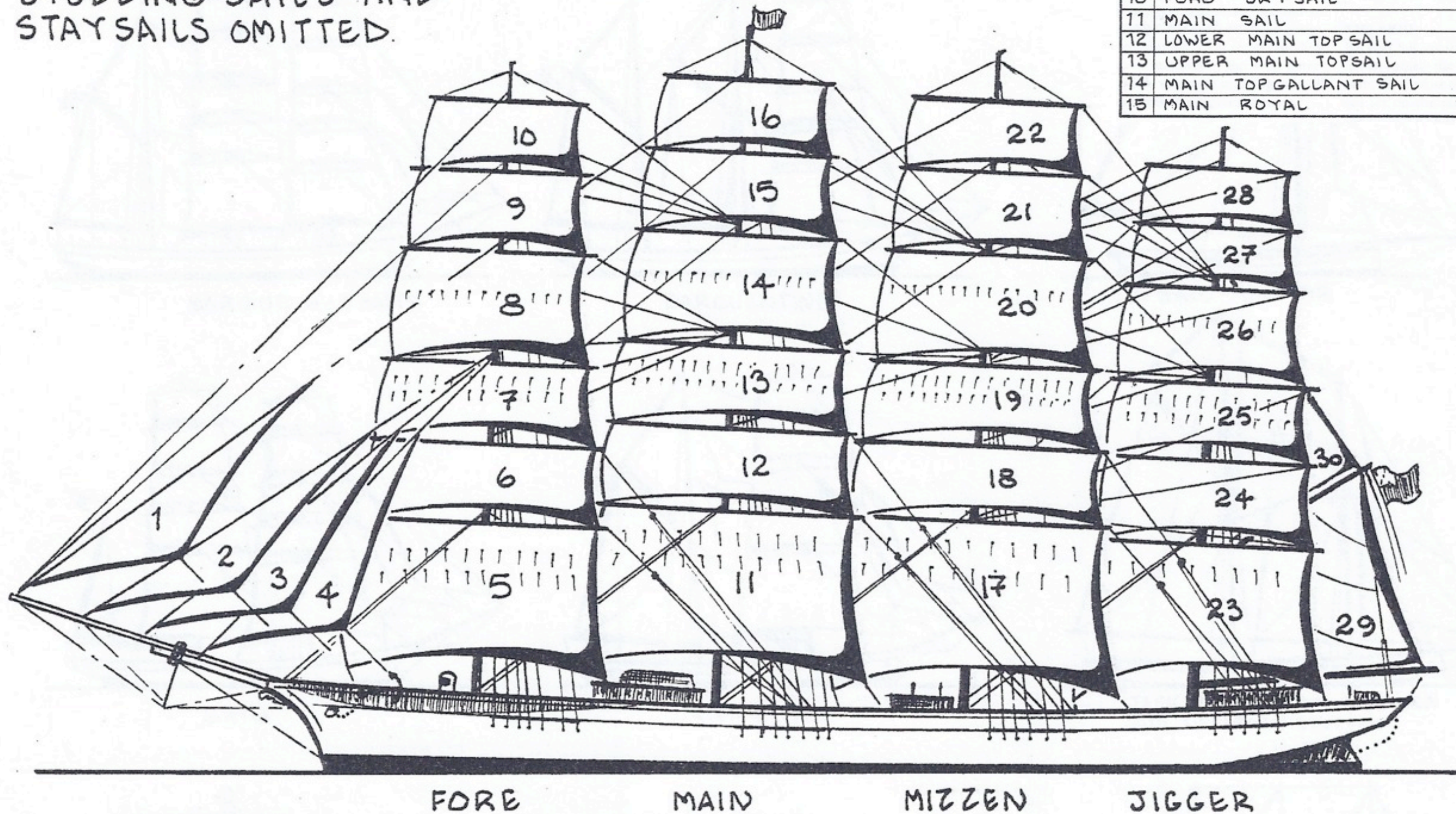
ALL PLAIN SAIL SHOWN
STUDDING SAILS AND
STAY SAILS OMITTED.



Sails and Rigging

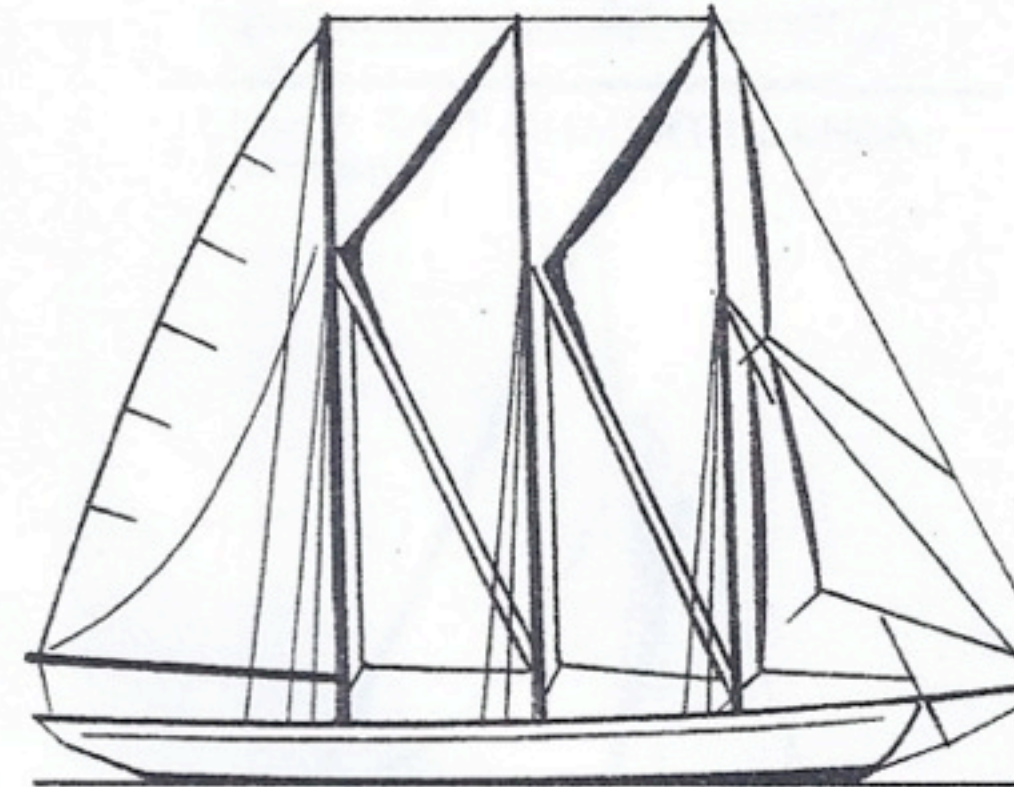
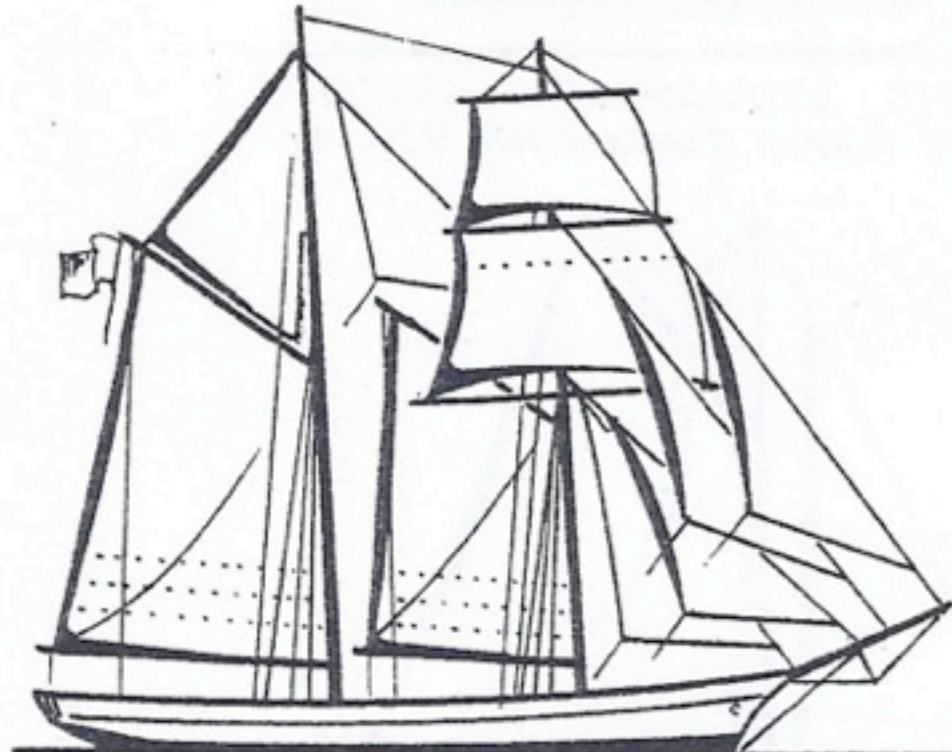
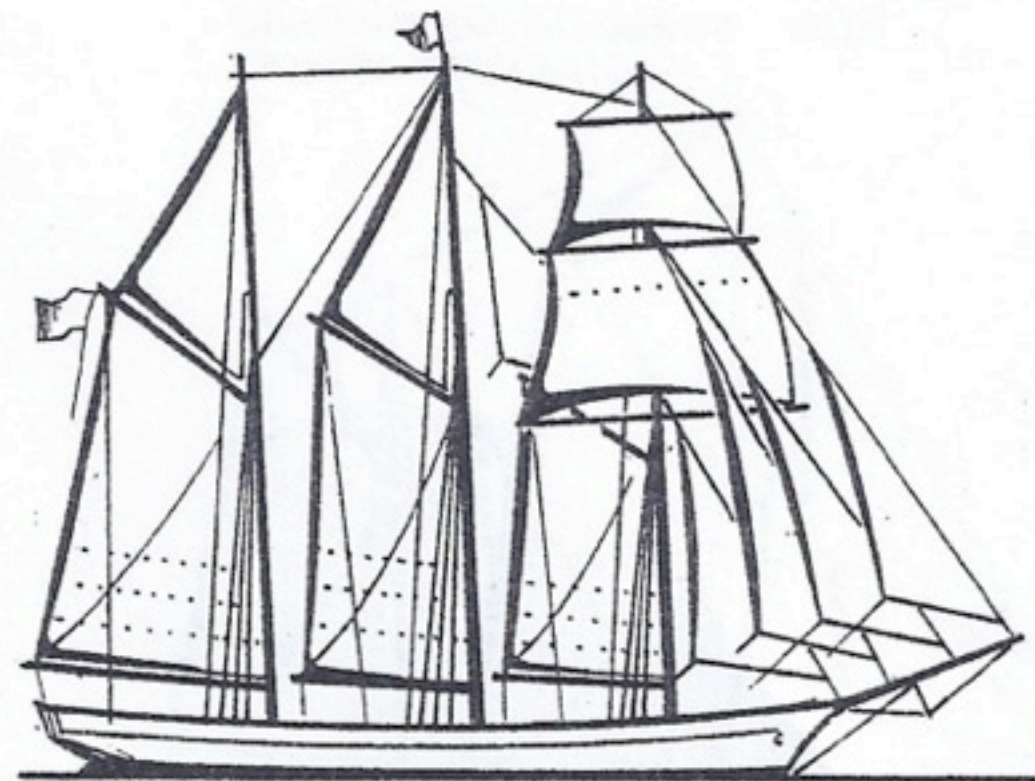
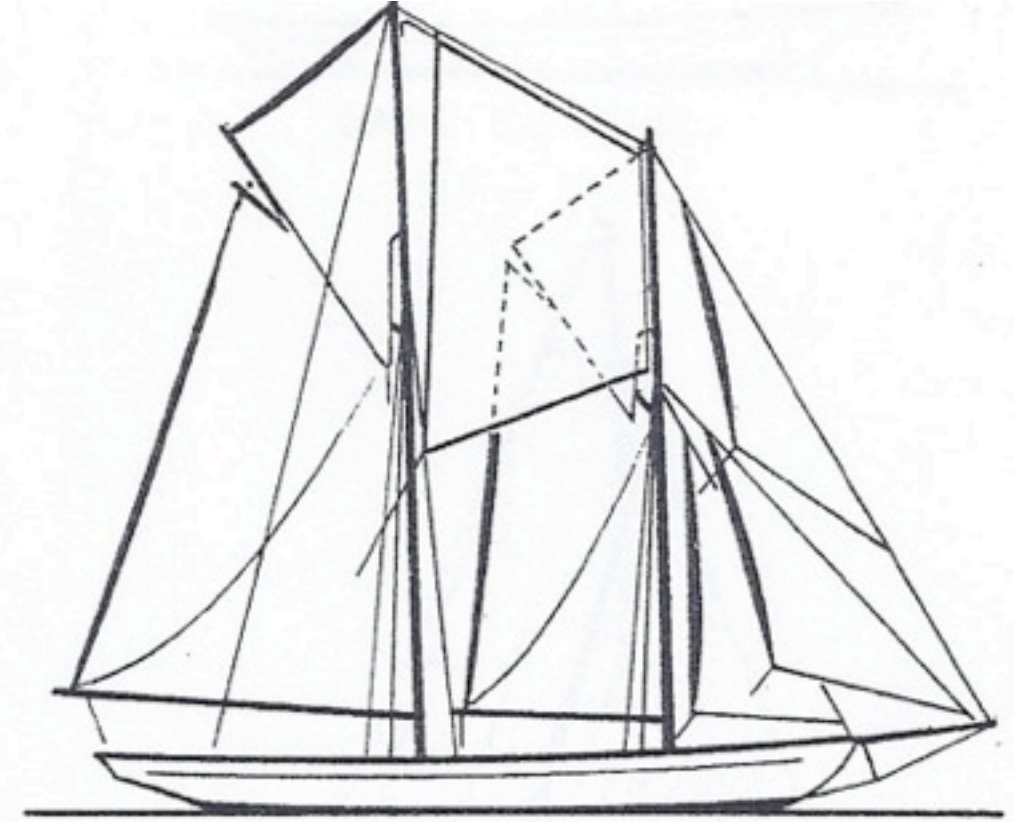
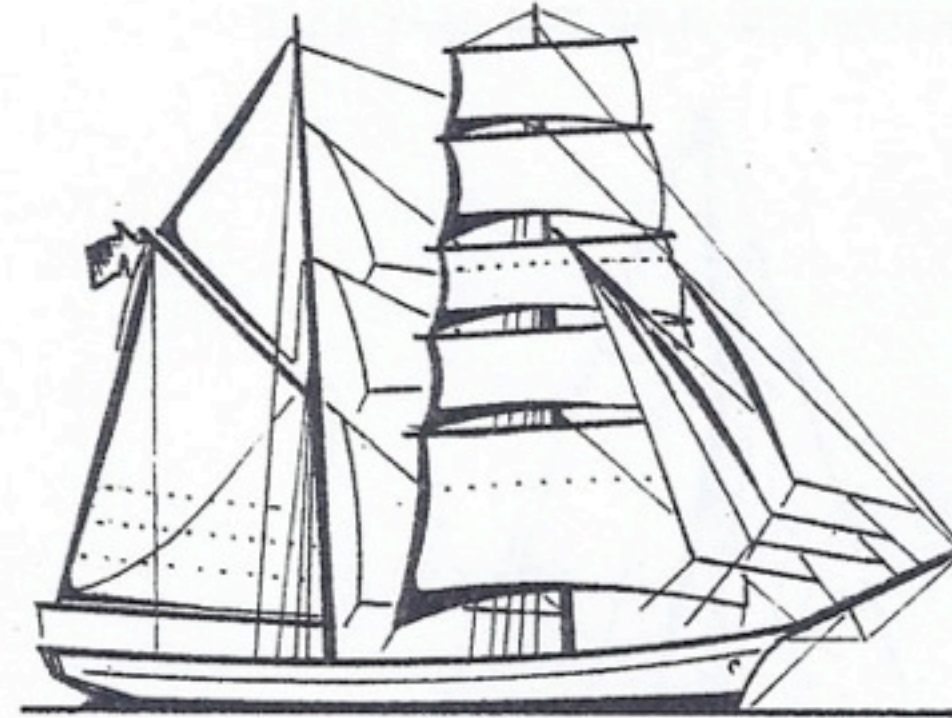
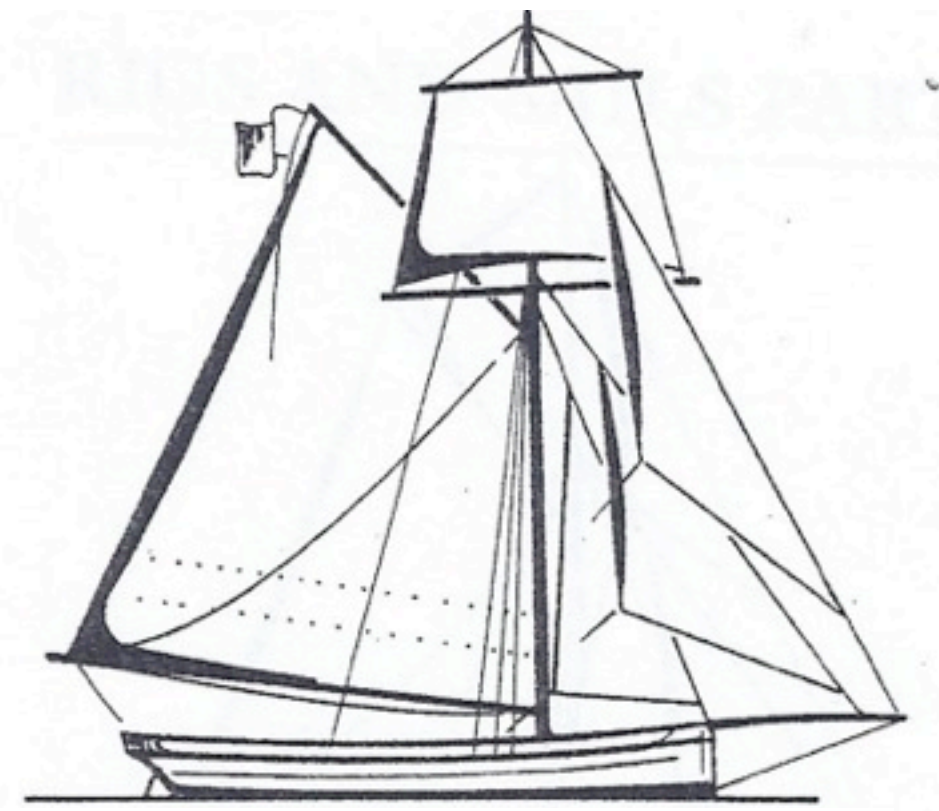
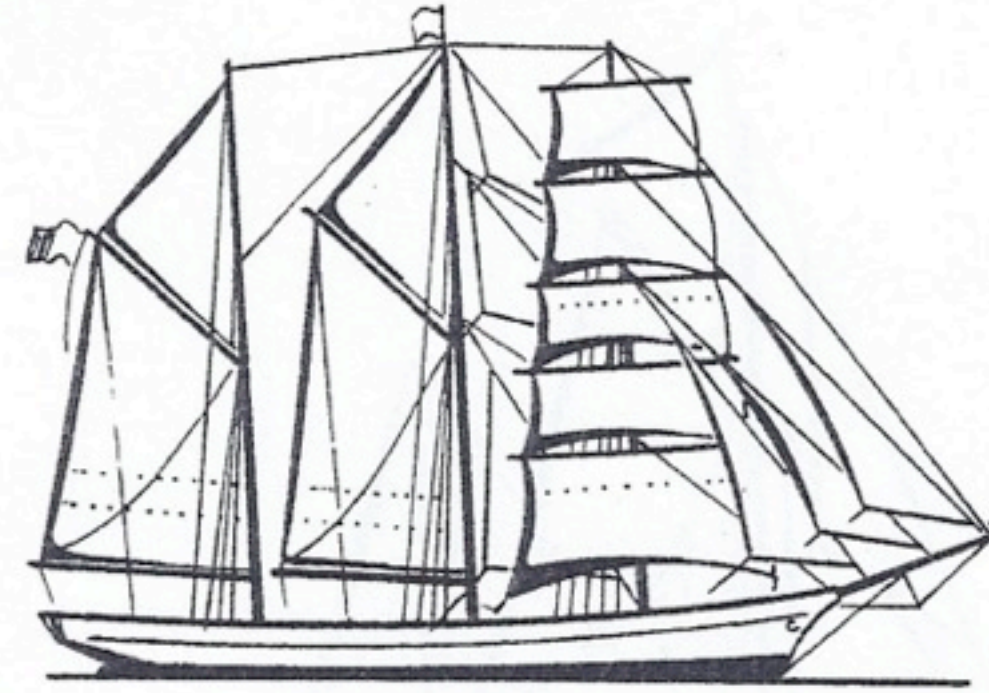
ALL PLAIN SAIL SHOWN
STUDDING SAILS AND
STAYSAILS OMITTED.

1	FLYING JIB	16	MAIN SKYSAIL
2	OUTER JIB	17	CROSS JACK (CRO' JACK)
3	INNER JIB	18	LOWER MIZZEN TOPSAIL
4	FORE TOPMAST STAYSAIL	19	UPPER MIZZEN TOPSAIL
5	FORE SAIL	20	MIZZEN TOP GALLANT SAIL
6	LOWER FORE TOPSAIL	21	MIZZEN ROYAL
7	UPPER FORE TOPSAIL	22	MIZZEN SKYSAIL
8	FORE TOPGALLANT SAIL	23	JIGGER
9	FORE ROYAL	24	LOWER JIGGER TOPSAIL
10	FORE SKY SAIL	25	UPPER JIGGER TOPSAIL
11	MAIN SAIL	26	JIGGER TOPGALLANT SAIL
12	LOWER MAIN TOPSAIL	27	JIGGER ROYAL
13	UPPER MAIN TOPSAIL	28	JIGGER SKYSAIL
14	MAIN TOPGALLANT SAIL	29	SPANKER
15	MAIN ROYAL	30	GAFF TOPSAIL



Copyright:

Sails and Rigging

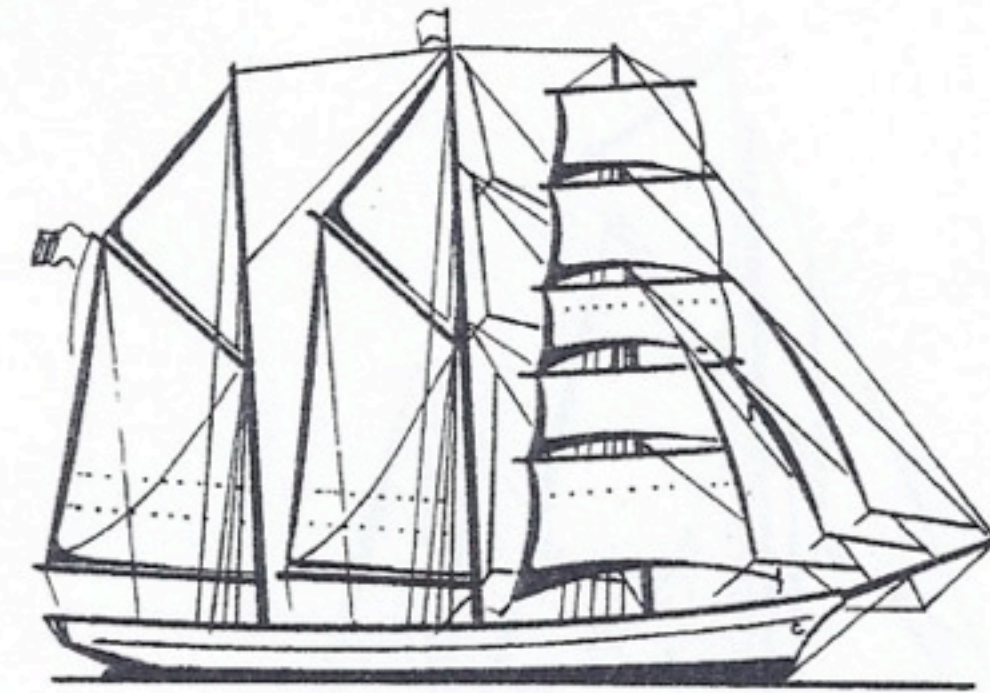


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Sails and Rigging



BARQUE. 3-5 MASTS



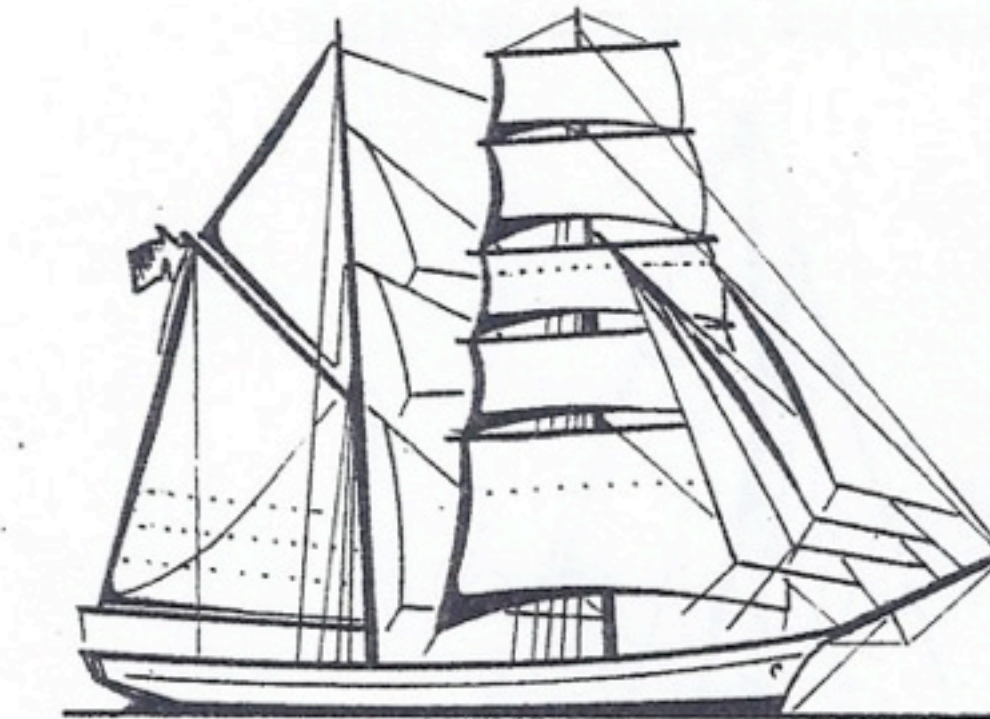
BARQUENTINE



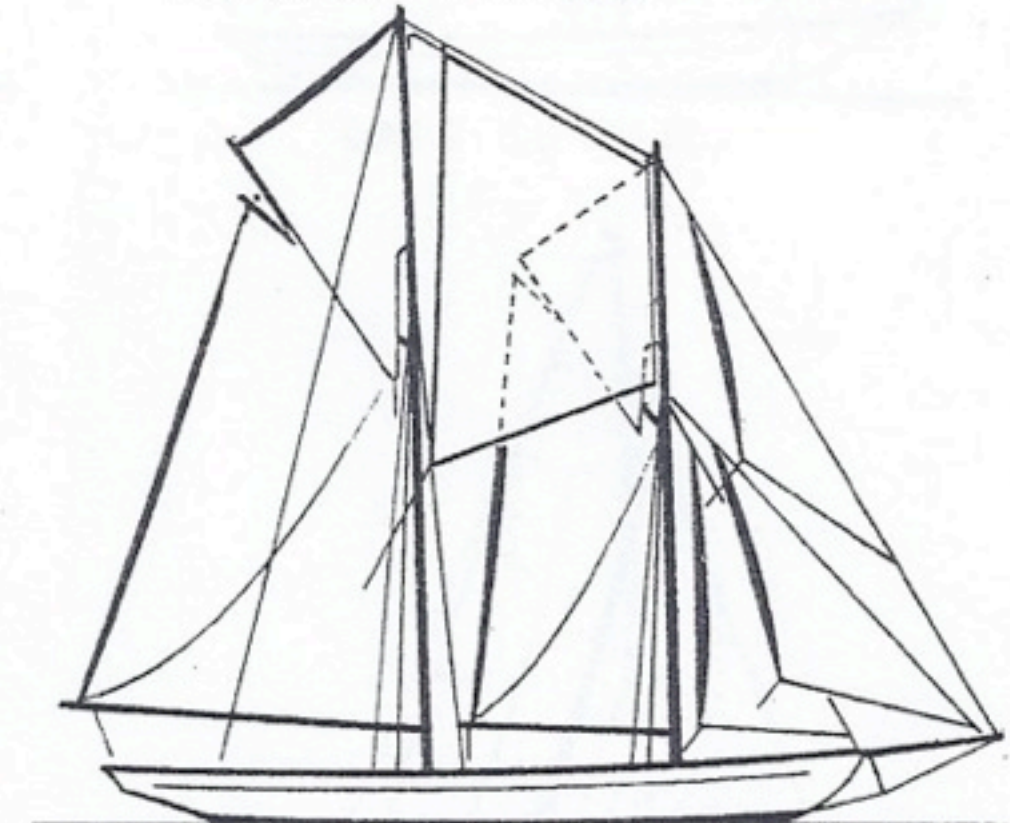
TOPSAIL CUTTER



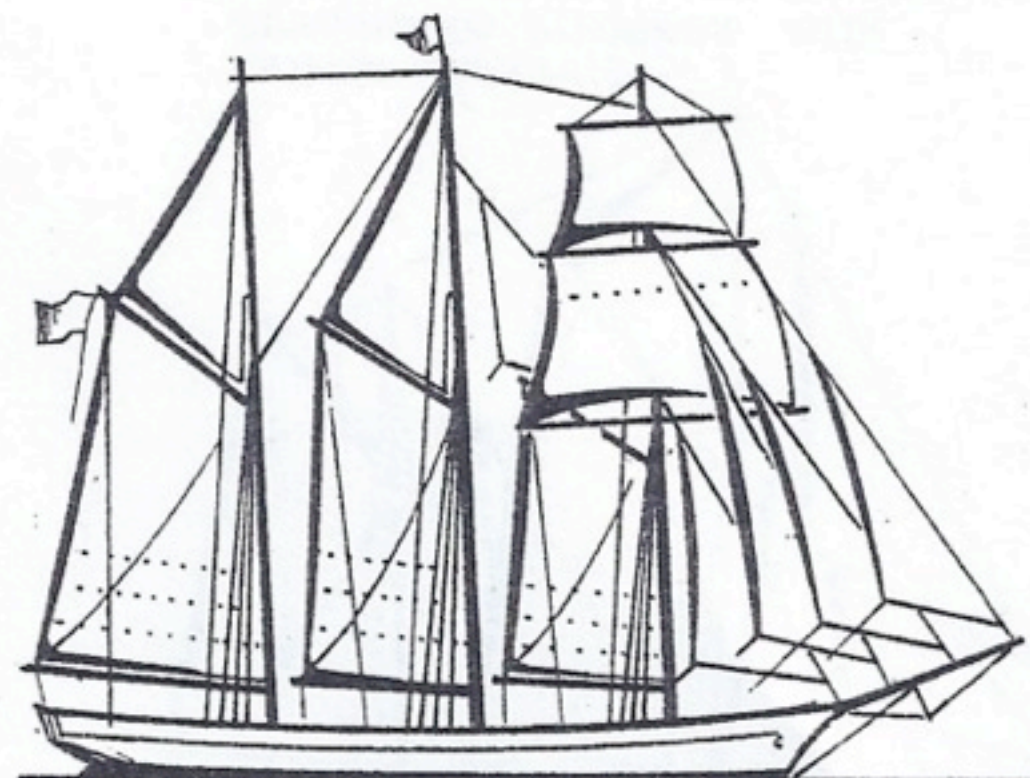
BRIG



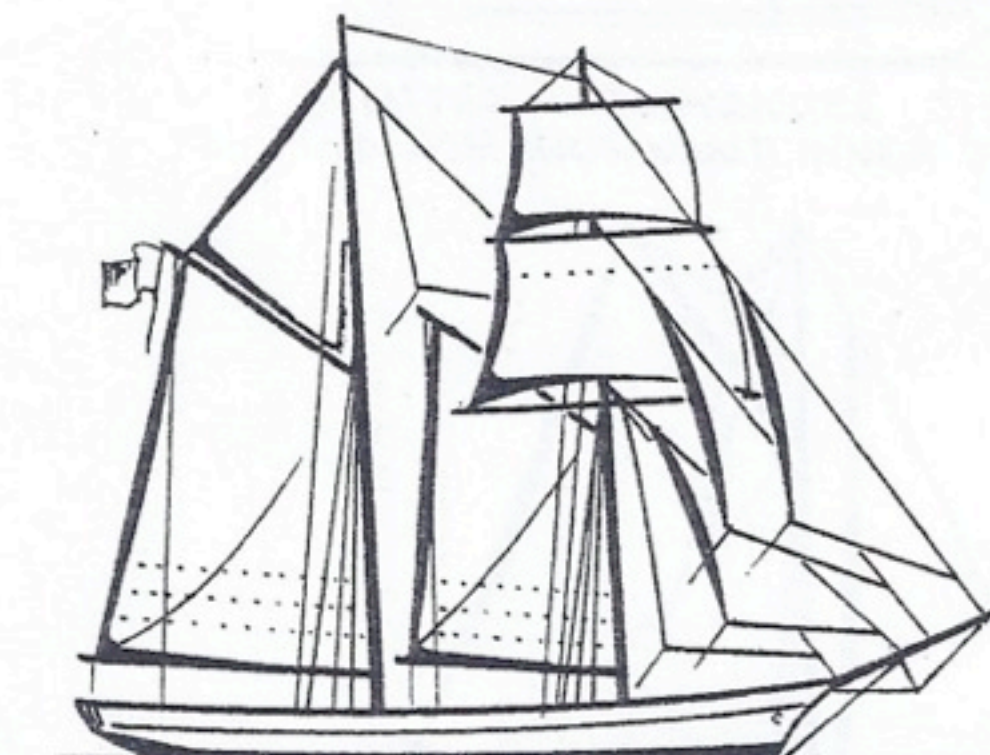
BRIGANTINE



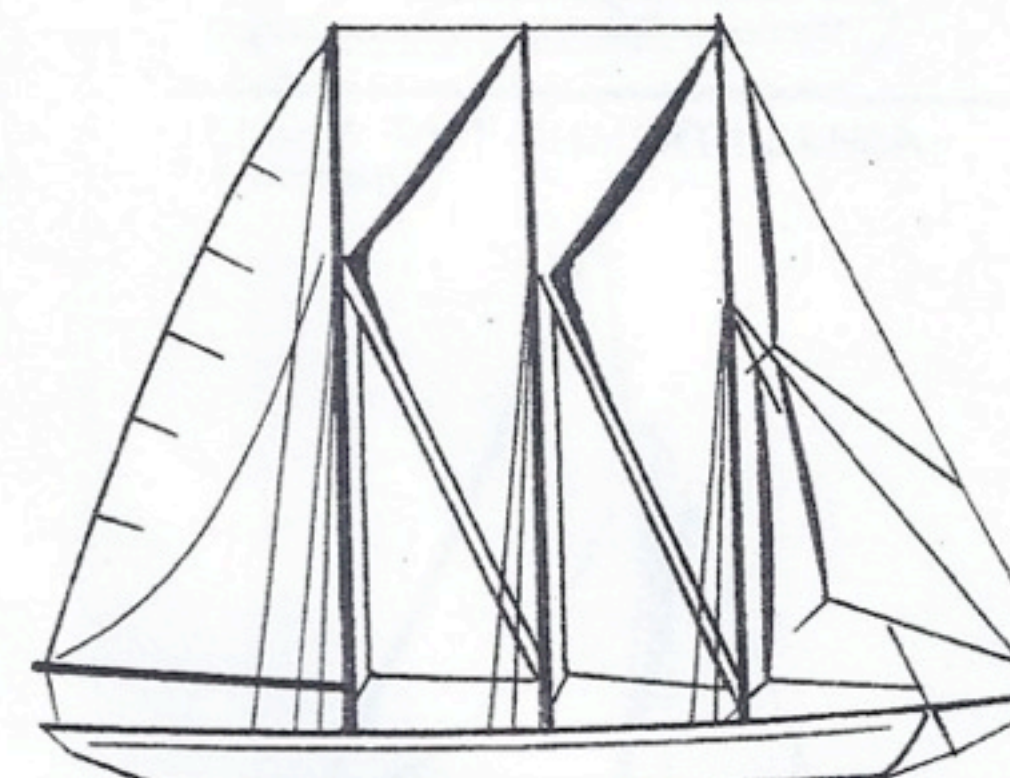
JACK YARD TOPSAIL SCHOONER
WITH FISHERMAN STAYSAIL



3 MASTED TOPSAIL SCHOONER
UPPER SQ. SL. IS TOPGALLANT



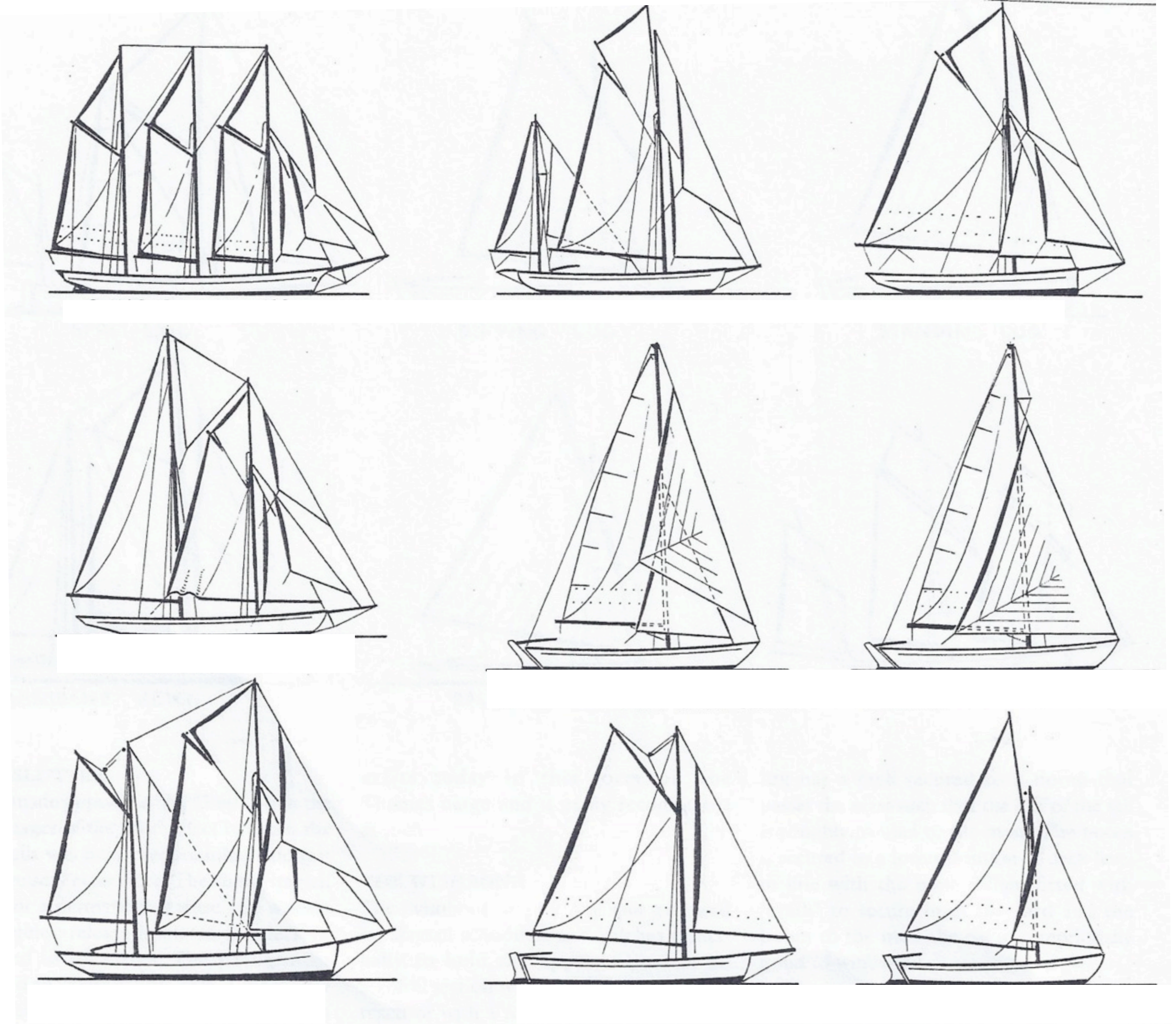
TOPSAIL SCHOONER



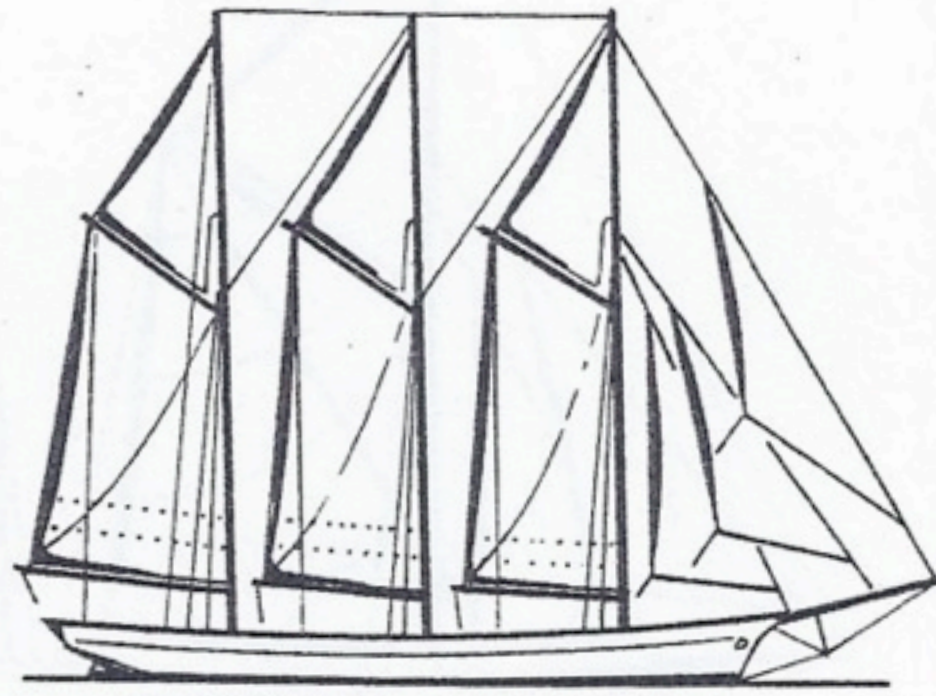
STAYSAIL SCHOONER

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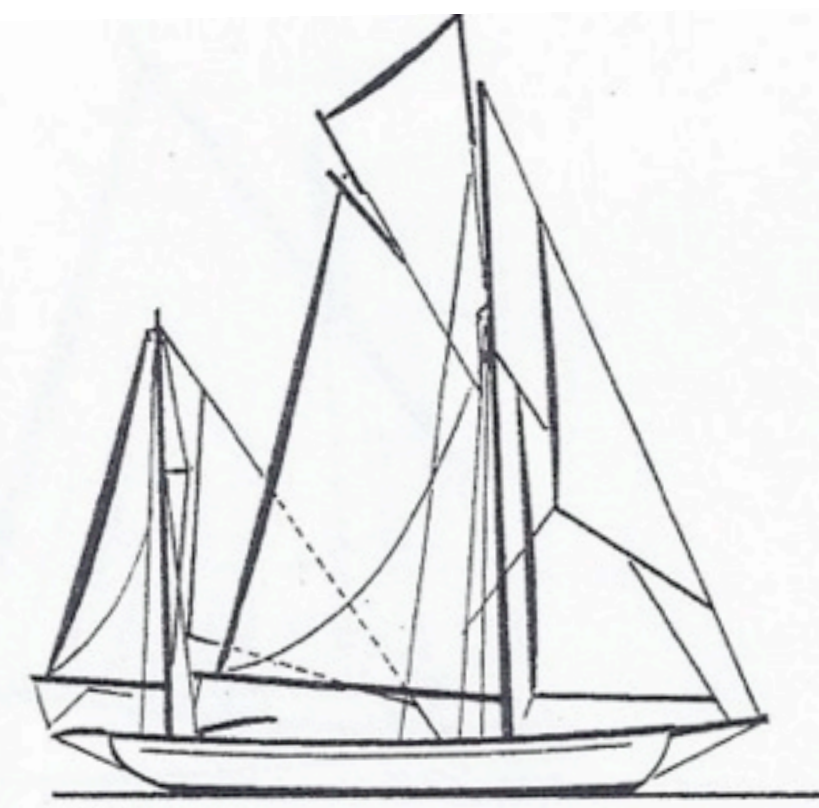
Sails and Rigging



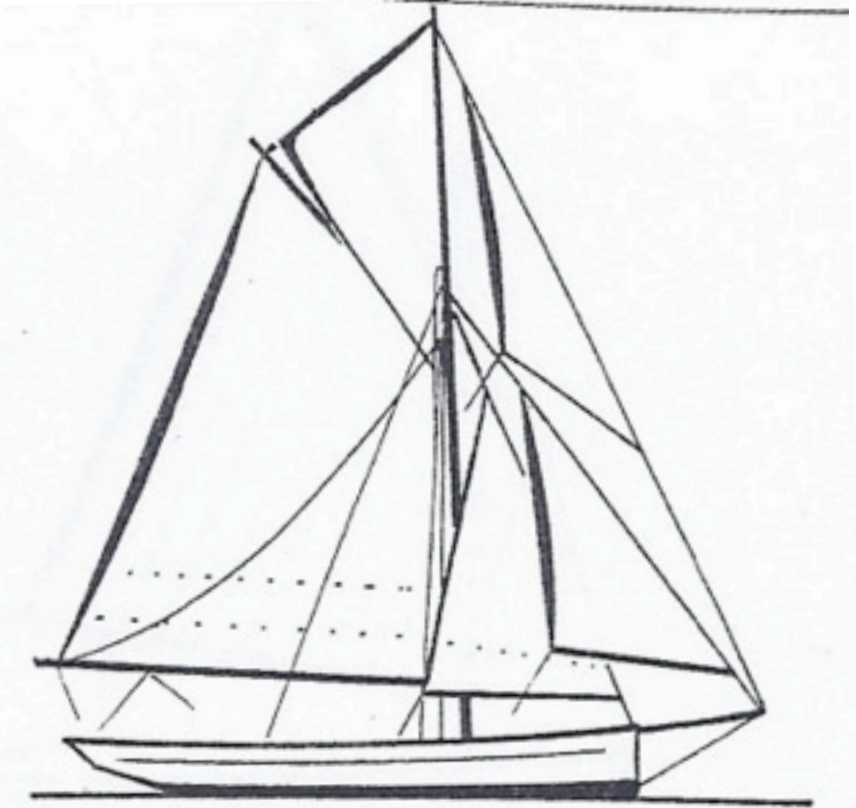
Sails and Rigging



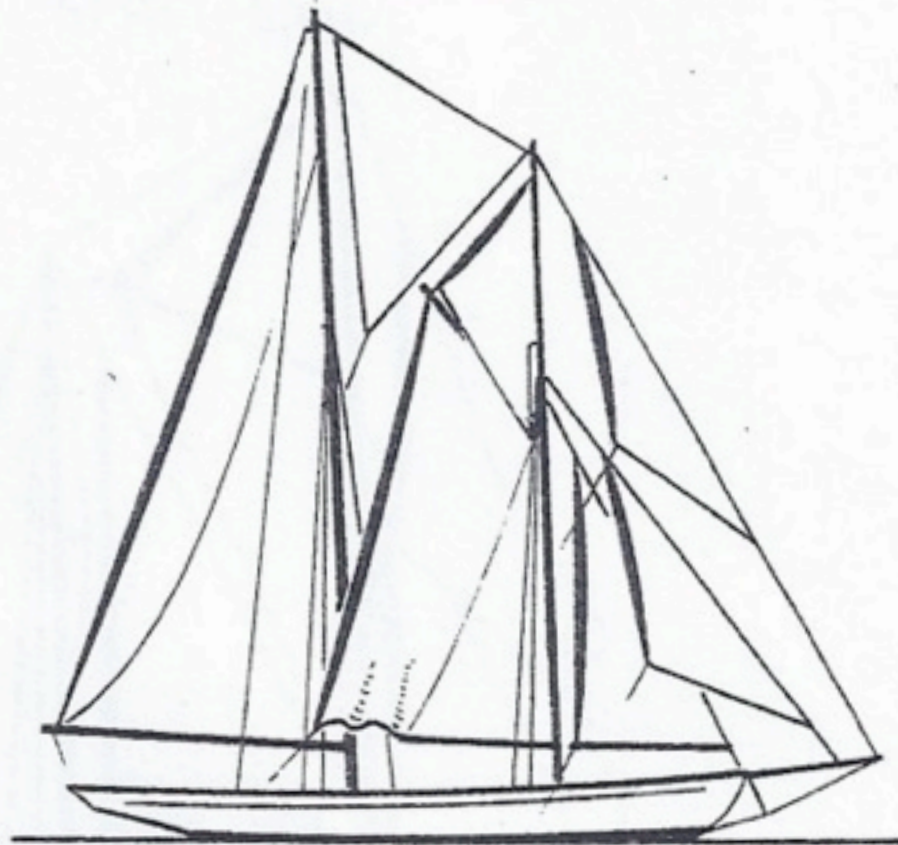
3 MASTED SCHOONER



JACK YARD GAFF YAWL WITH MIZZEN STAY



GAFF CUTTER



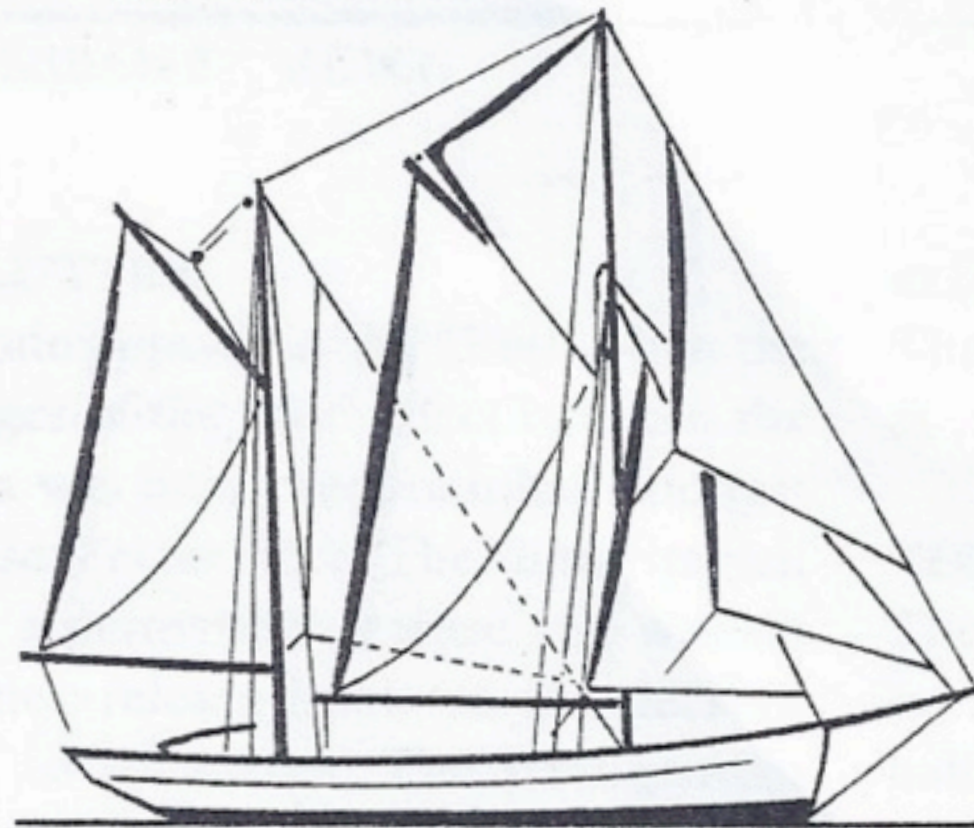
BERMUDIAN SCHOONER WITH TRIATIC STAYSAIL



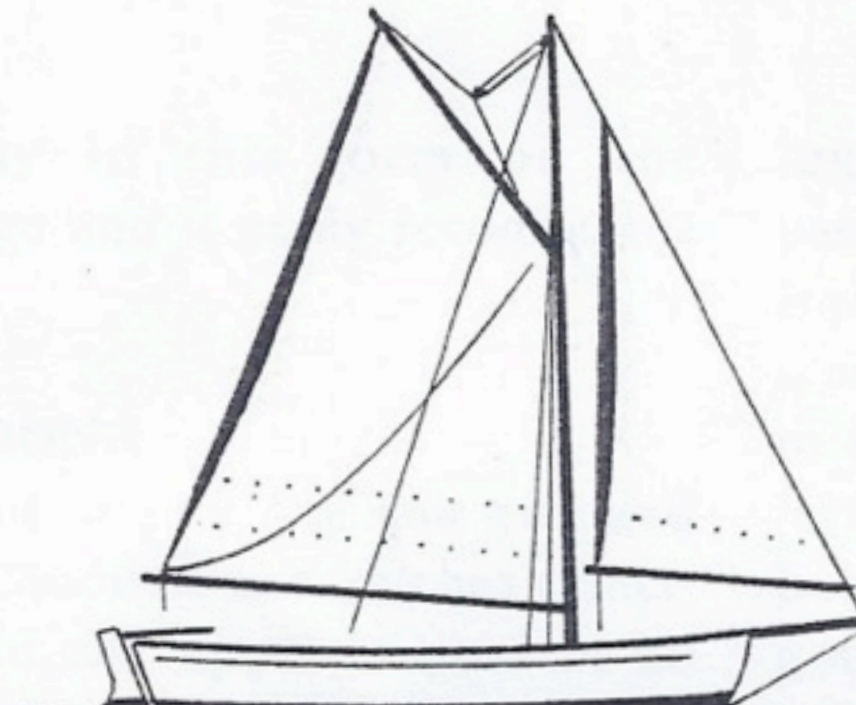
SLUTTER WITH YANKEE JIB AND NON PERMANANT INNER STAY



SLOOP 7/8TH RIG WITH GENOA STAYSAIL



GAFF KETCH

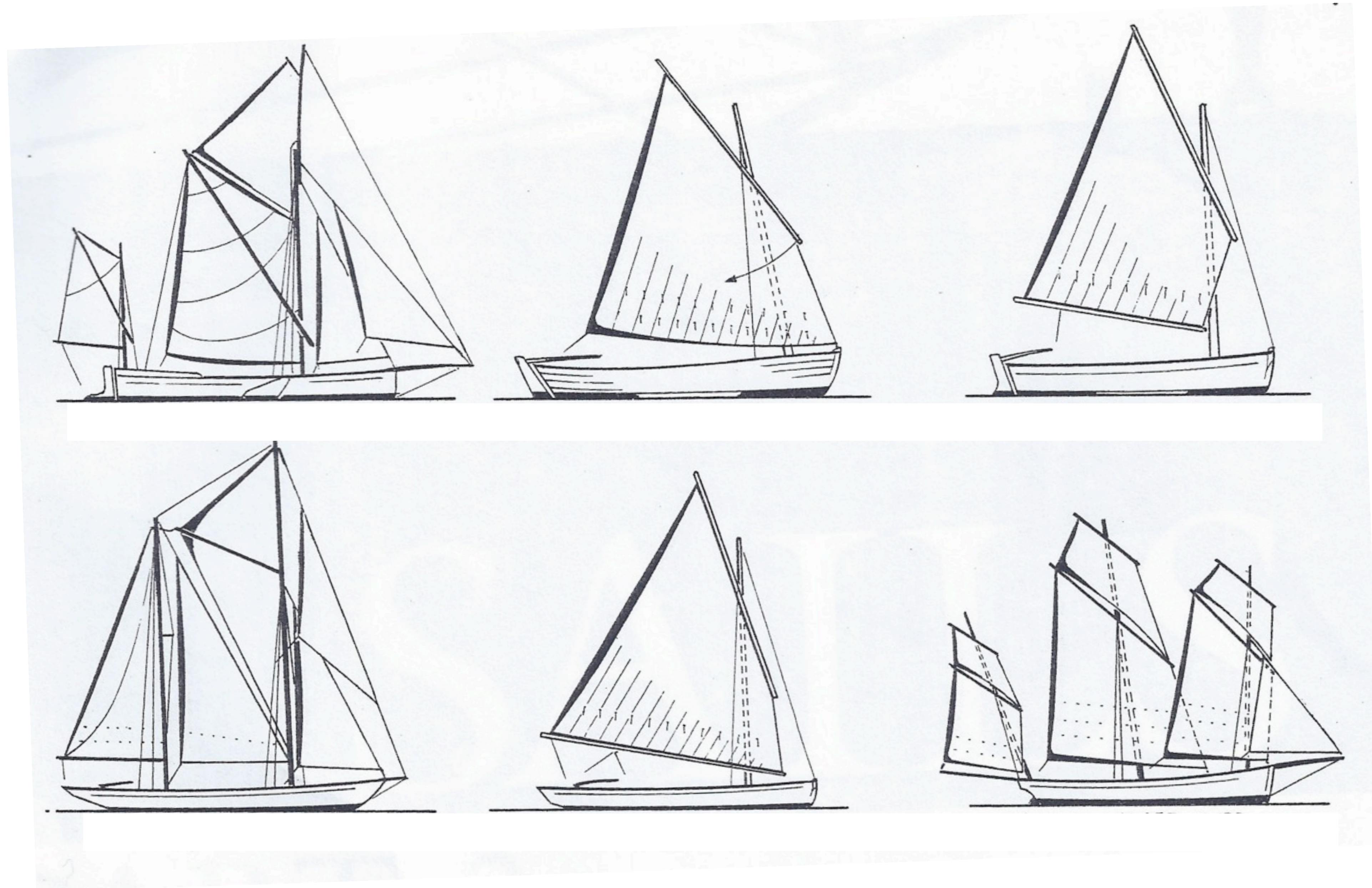


GAFF SLOOP

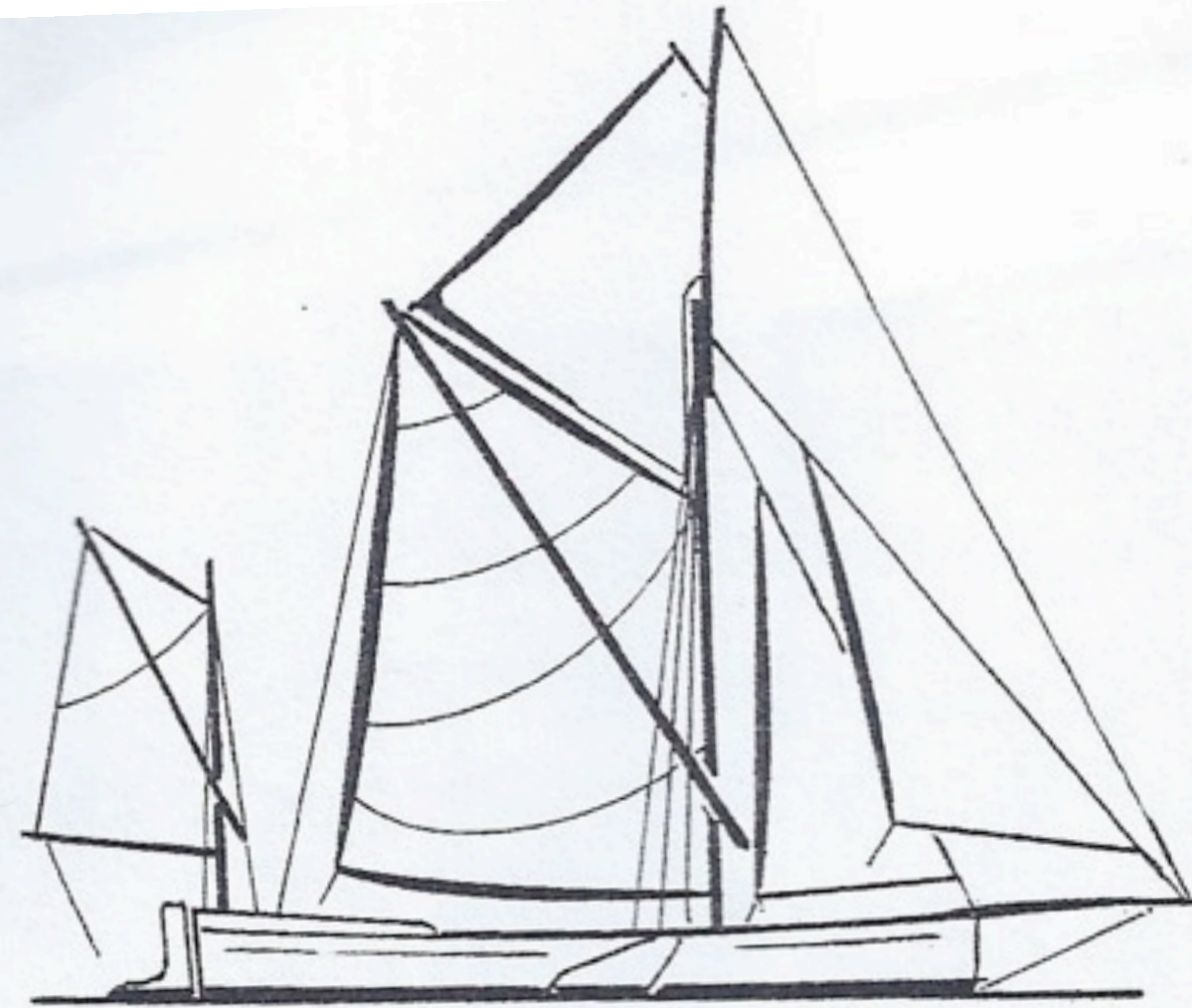


GUNTER SLOOP

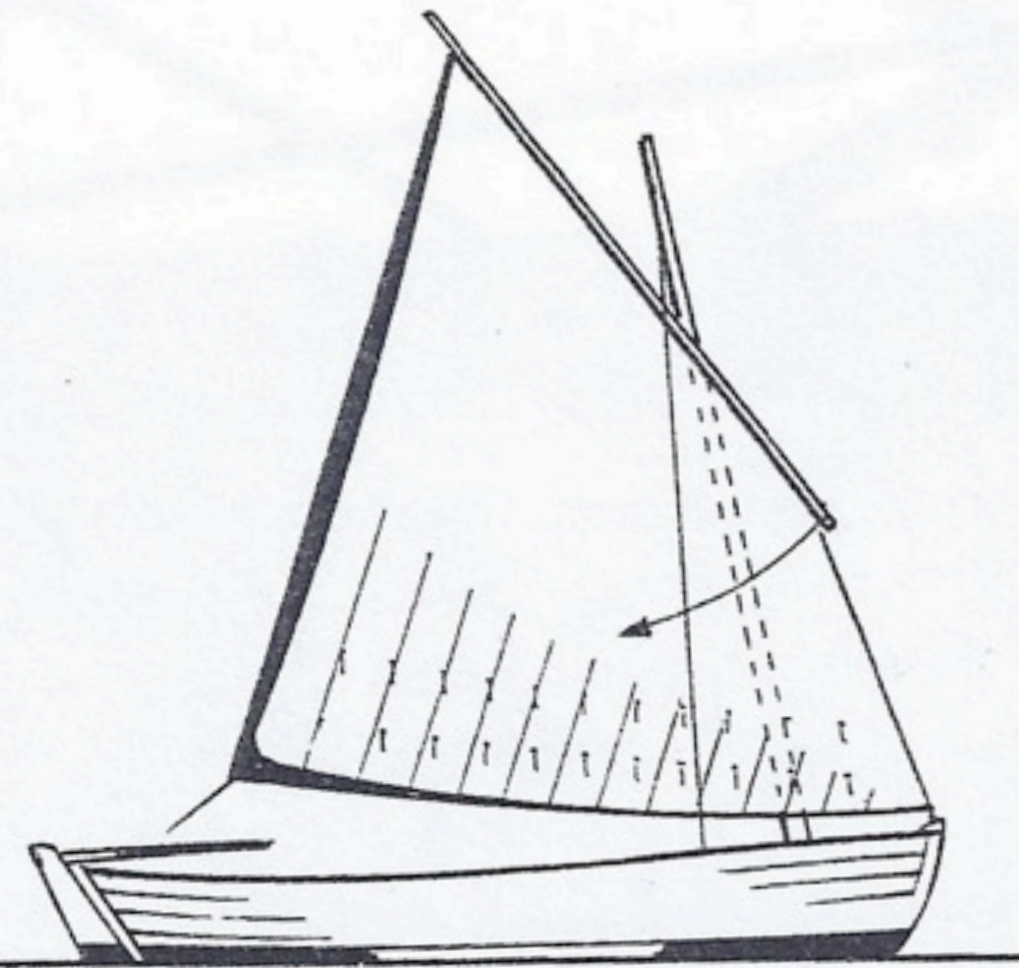
Sails and Rigging



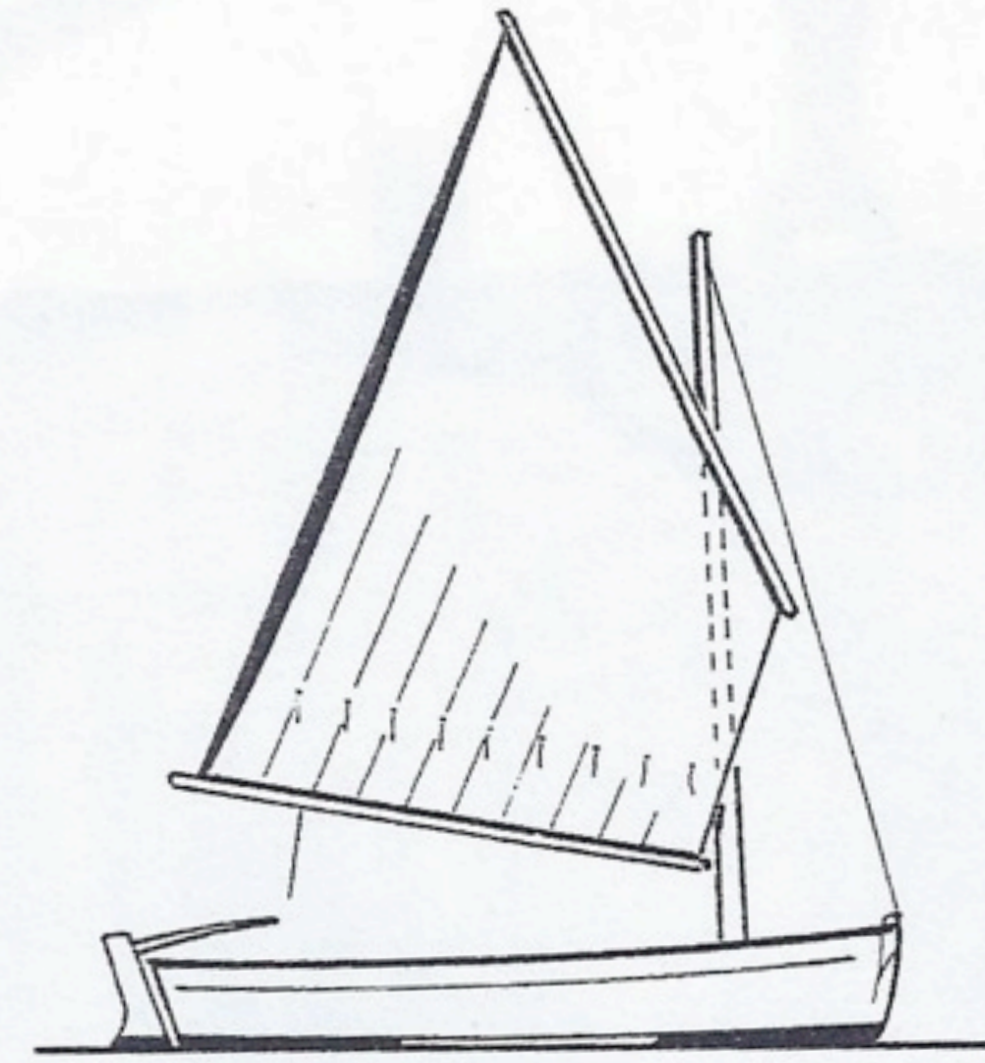
Sails and Rigging



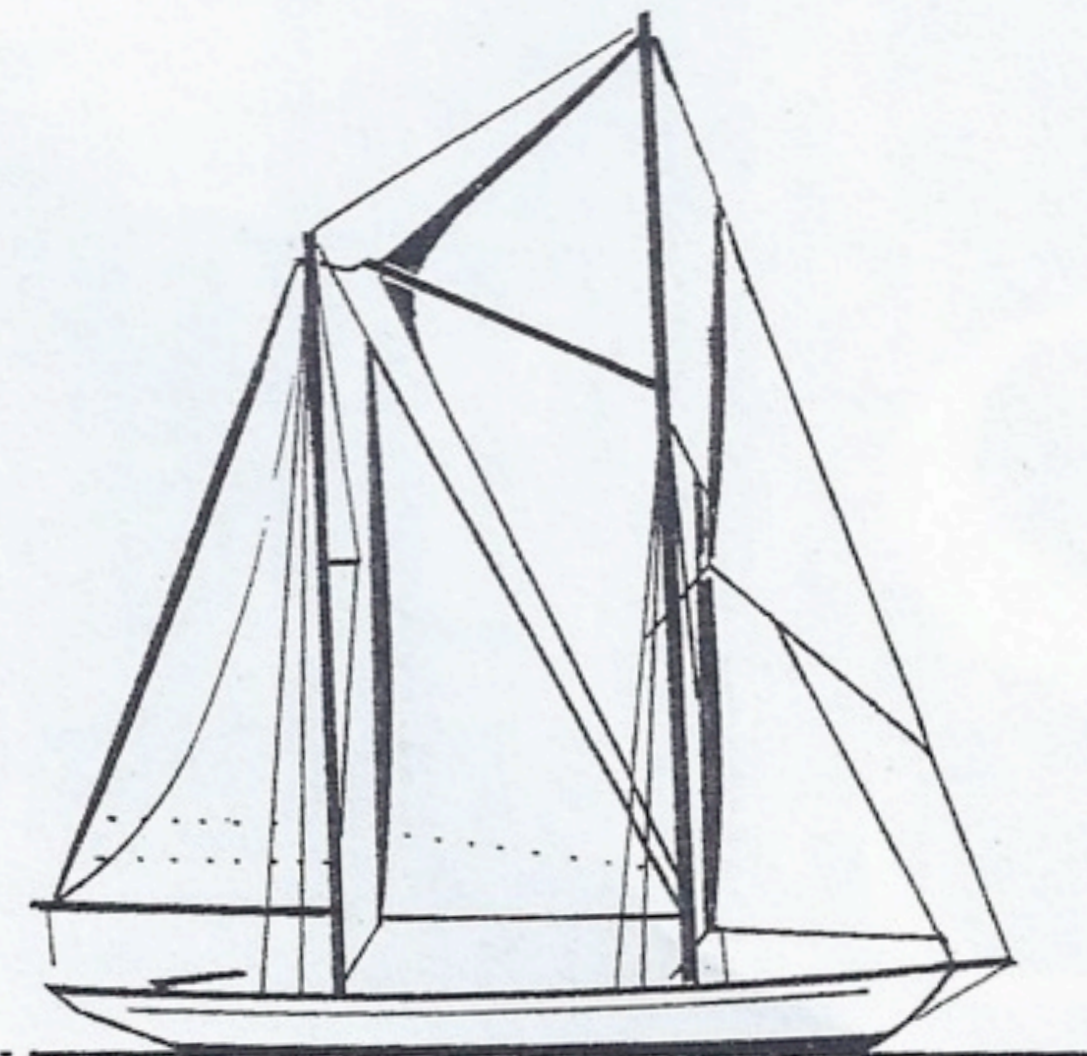
SPRIT SAIL



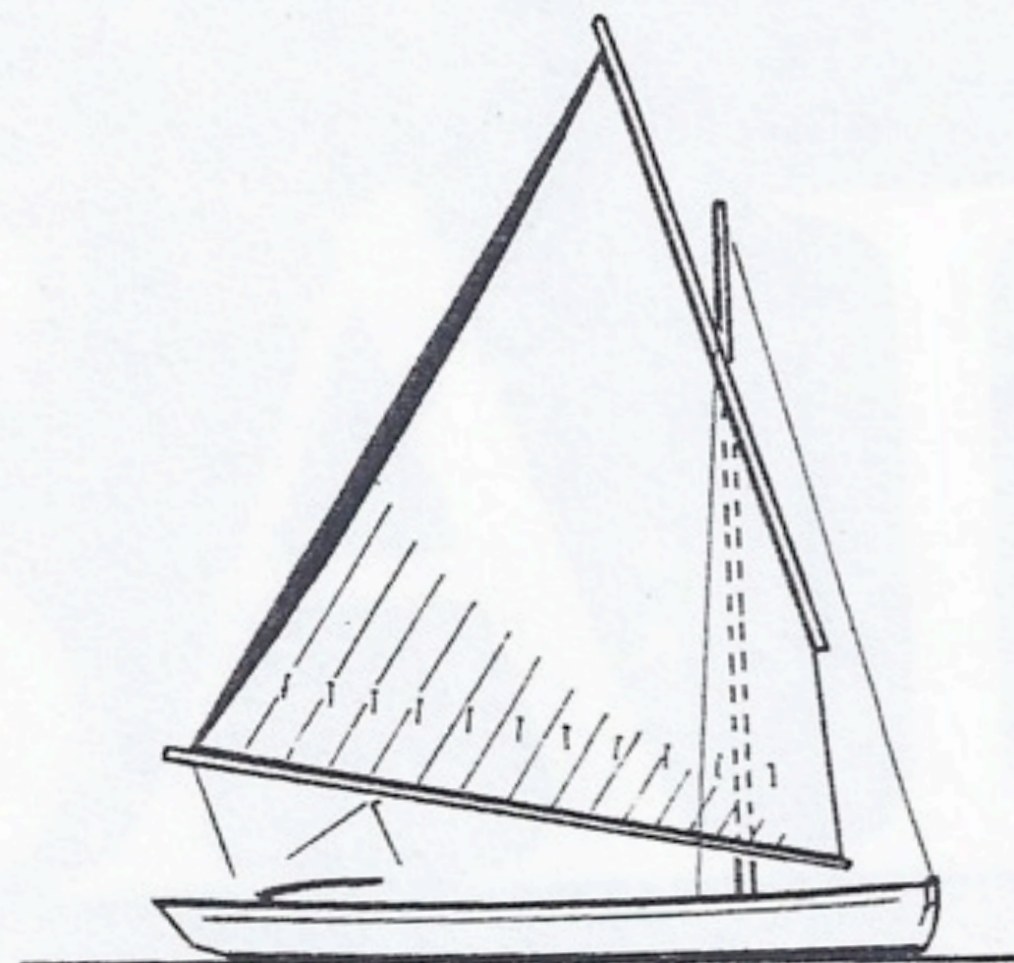
DIPPING LUG



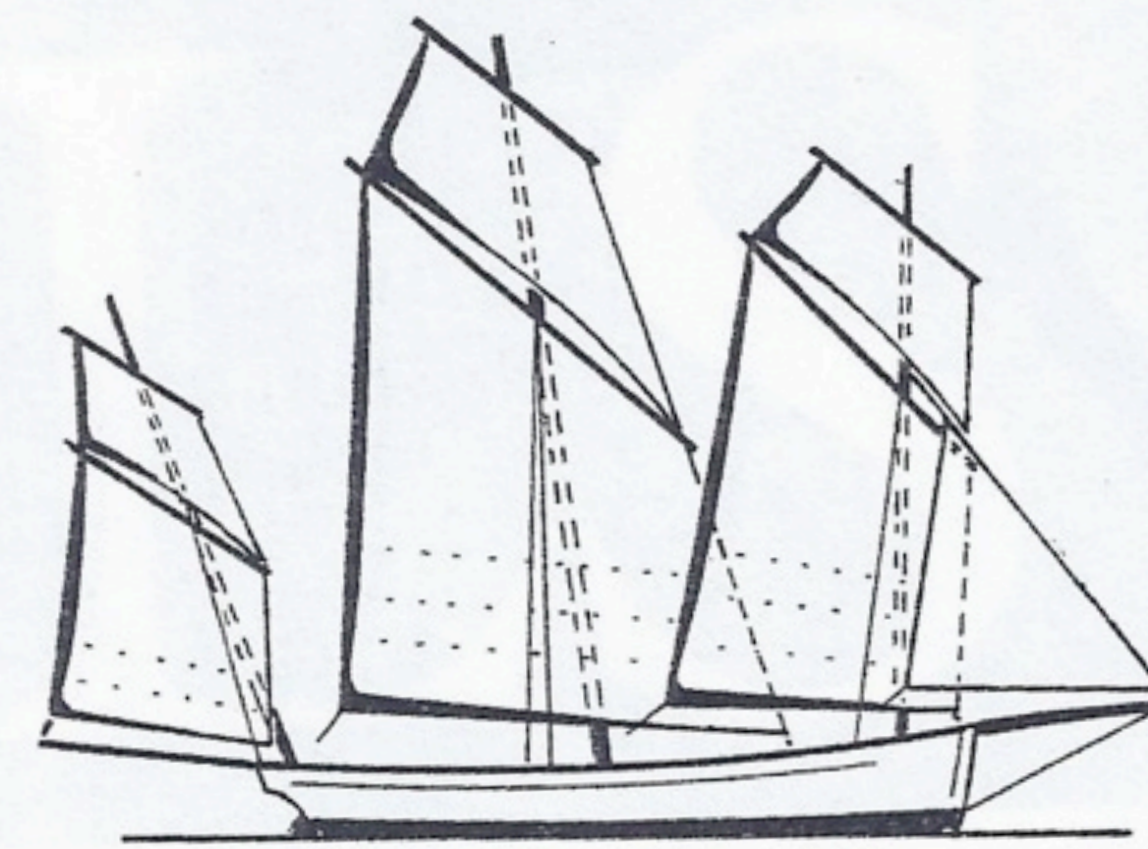
STANDING LUG



WISHBONE KETCH



BALANCED LUG

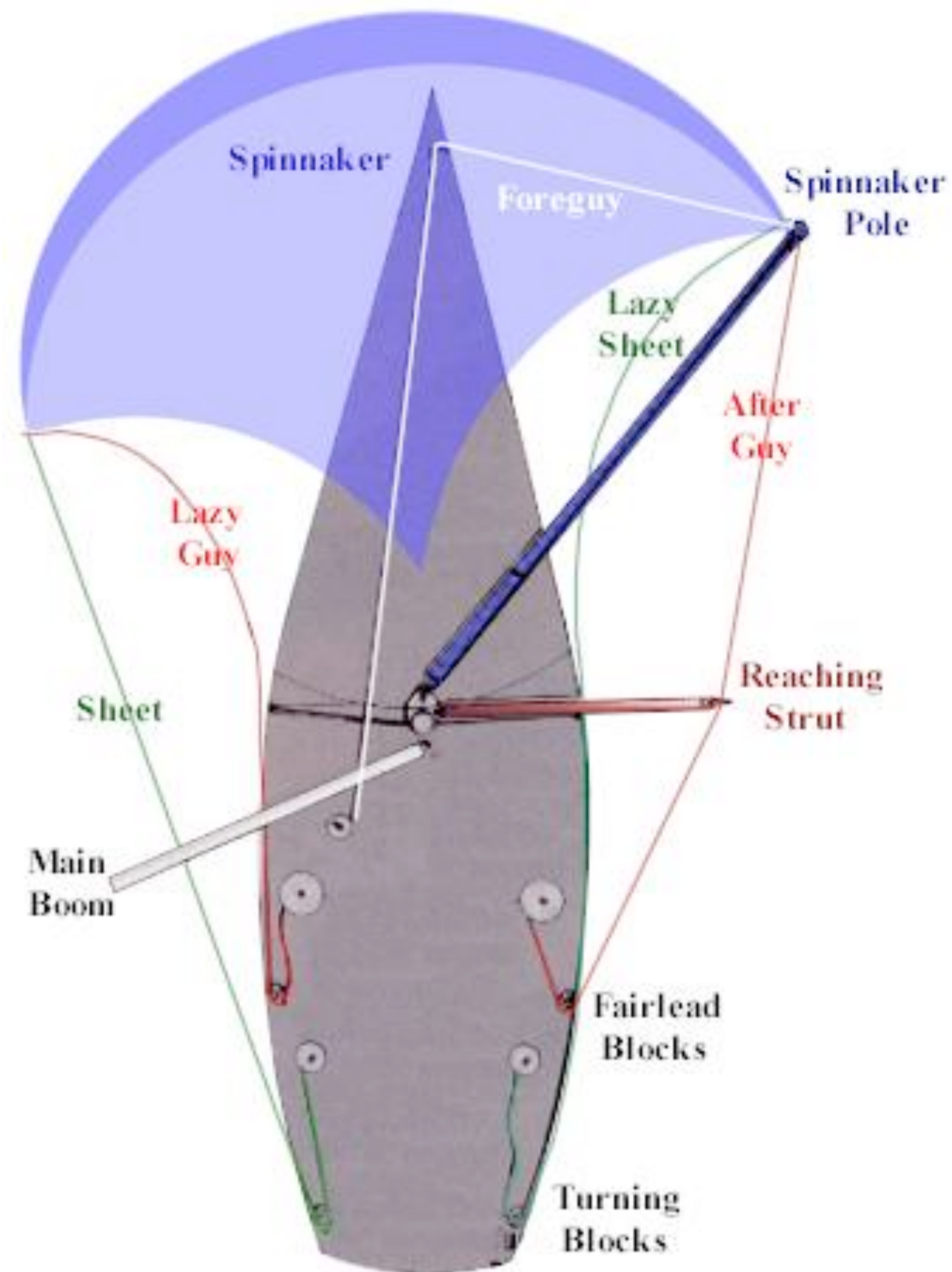


BRETON LUGGER TYPE

Sails and Rigging

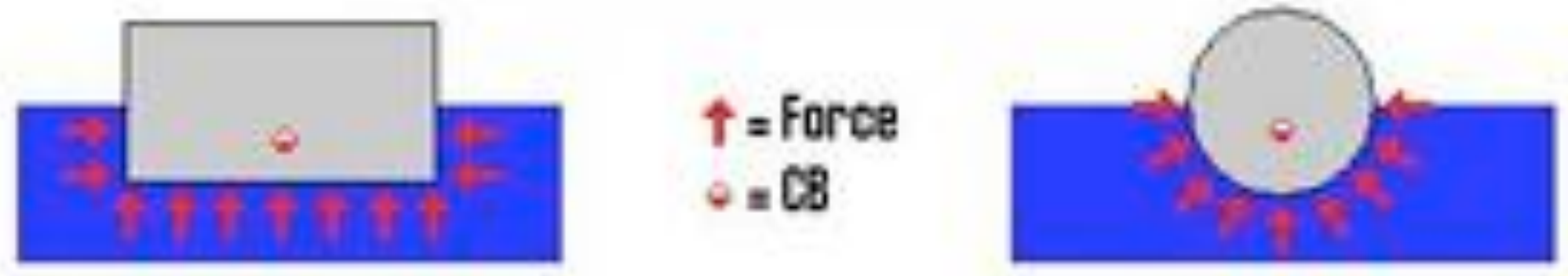


Sails and Rigging



Hulls

Buoyancy and form stability



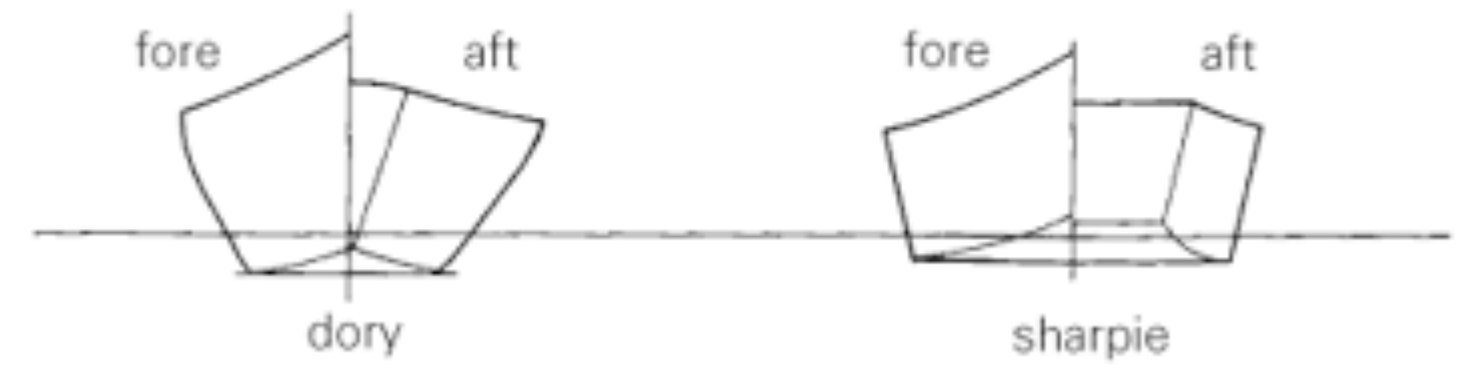
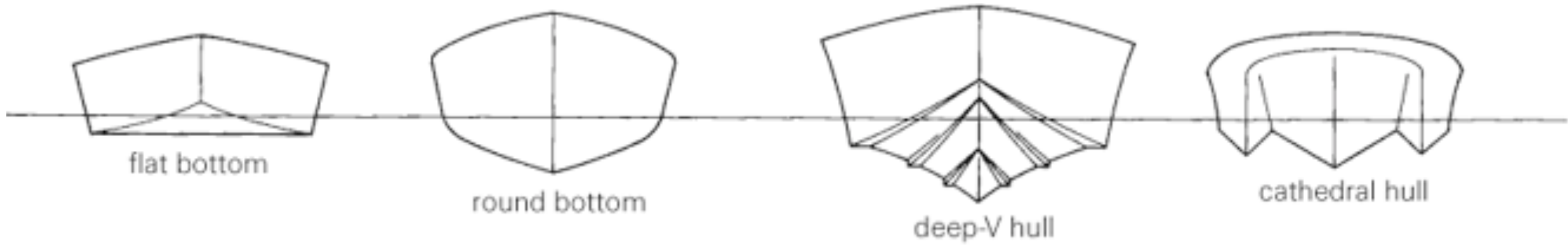
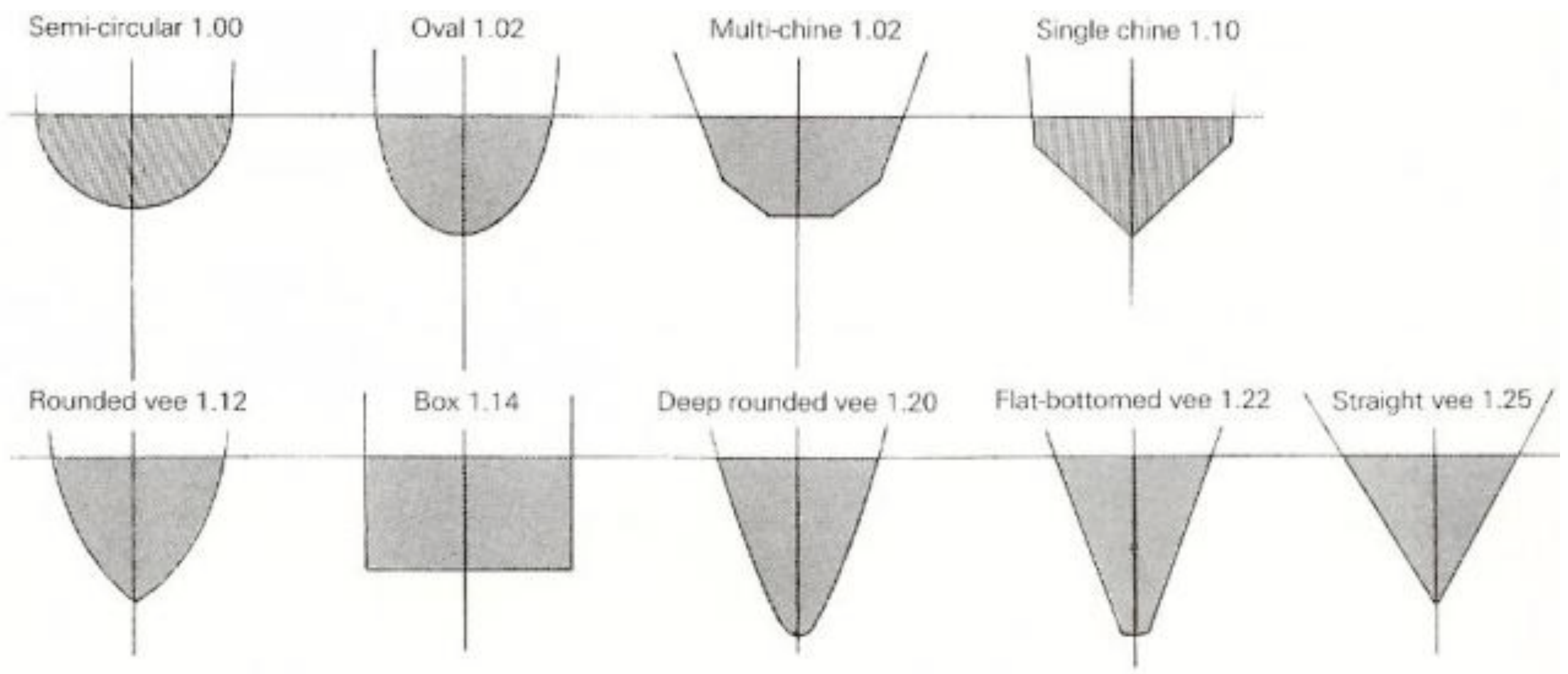
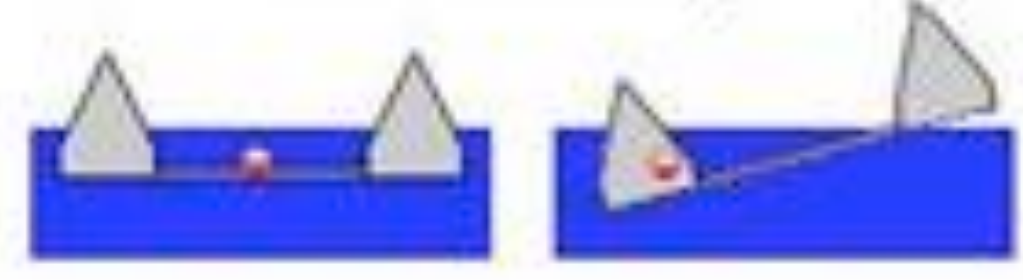
Center of Buoyancy in equilibrium



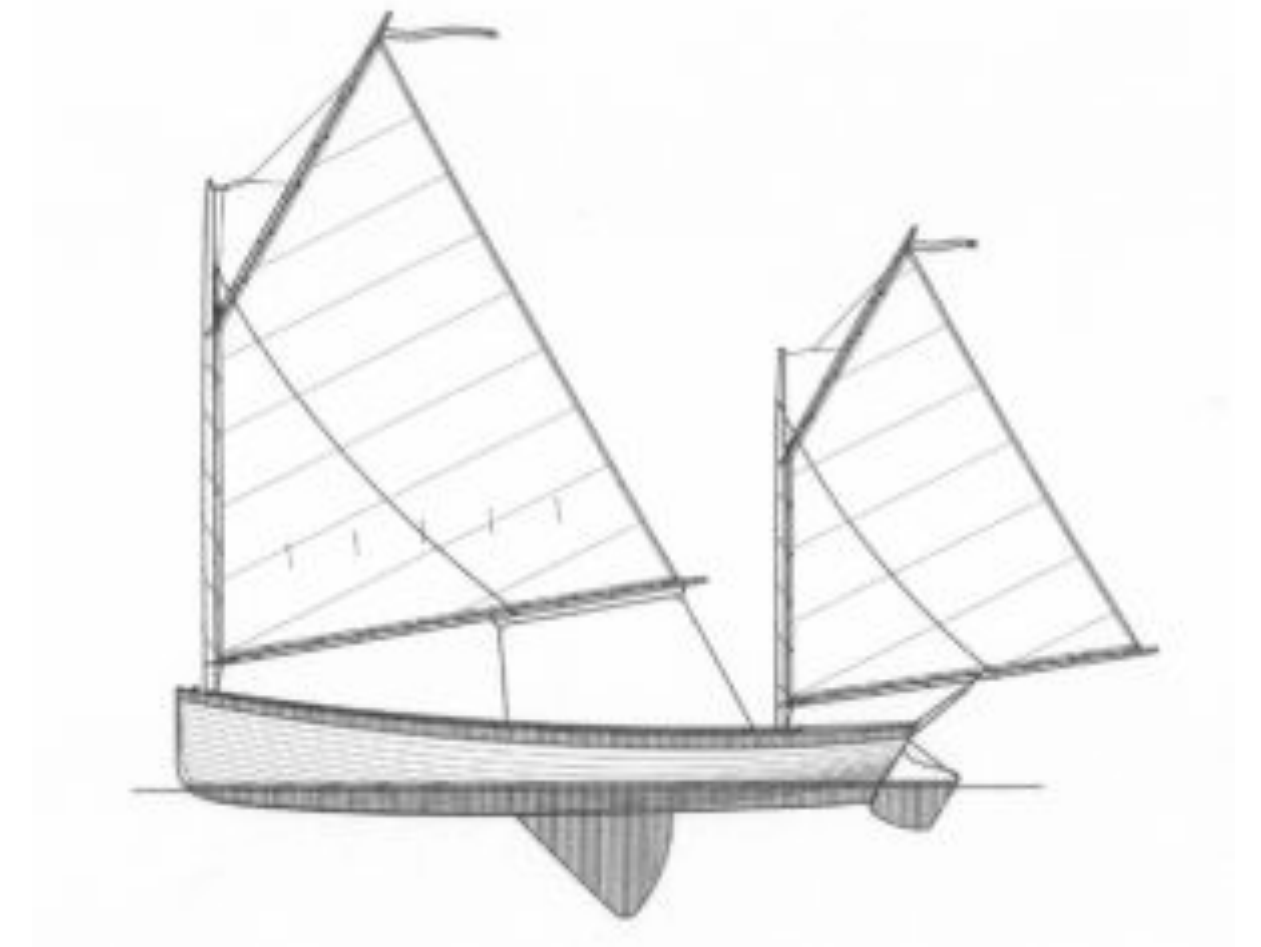
Righting moments at 15°



Inverted Stability



Keels



Keels



Keels



Keels



Props



Props - Folding



Props - Folding



Props - Feathering



Rudders



Rudders



Rudders



Instruments

- wind speed, wind direction
- compass
- gps
- sextant
- water speed, speed over ground
- radar
- depth sensor/soundings



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Boat = Work



Boat = Work



Boat = Work



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Boat = Work



Splash



Whatever kind of sailing you do...

- manage expectations
- be flexible
- have fun!





