

Bluewater Seamanship and Safety

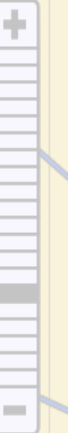
Scott Dynes

Matt Wall

Bluewater Seamanship and Safety
MIT IAP 2015

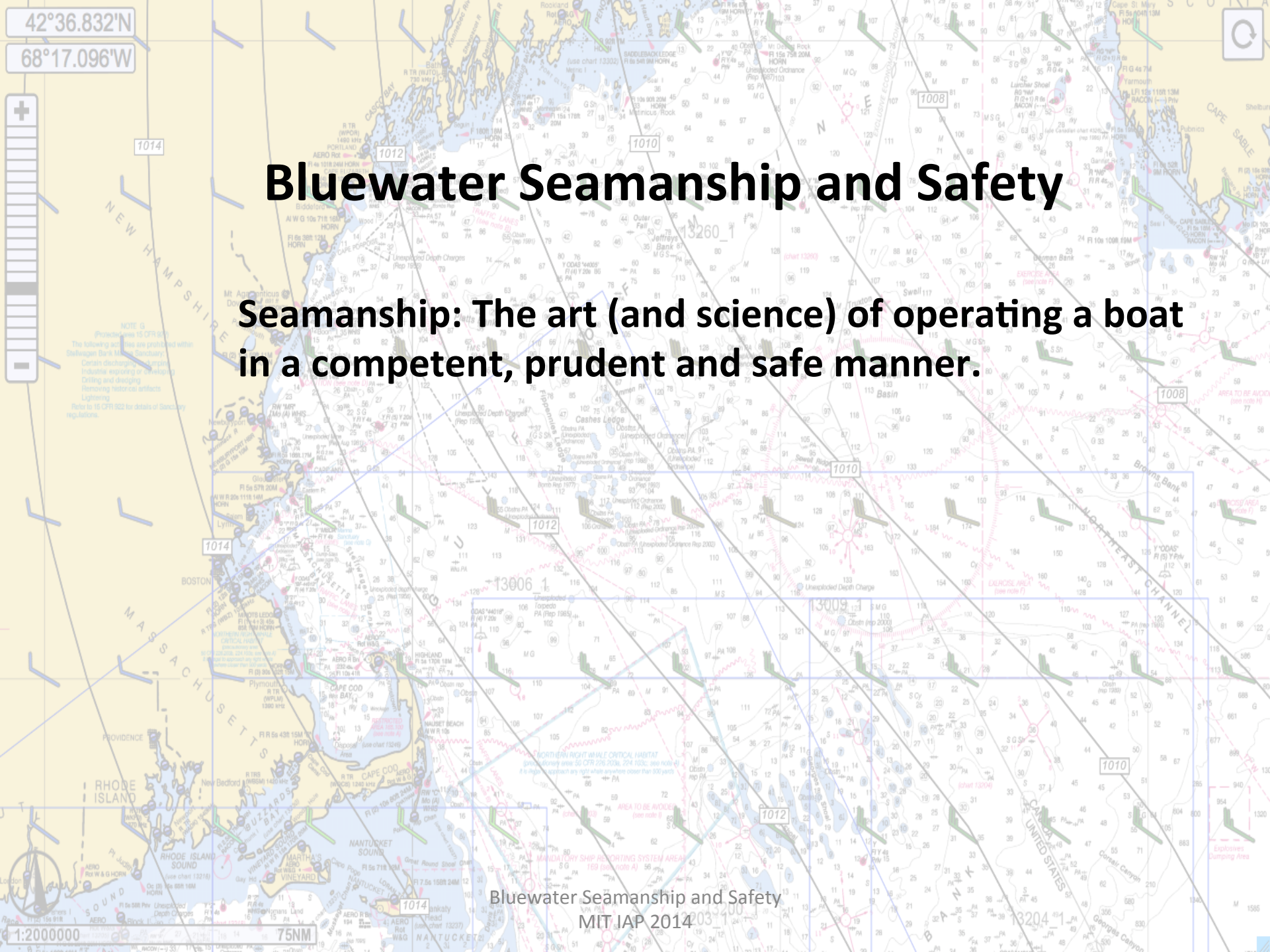
42°36.832'N

68°17.096'W



Bluewater Seamanship and Safety

Seamanship: The art (and science) of operating a boat in a competent, prudent and safe manner.



Bluewater Seamanship and Safety

MIT IAP 2014 03 10

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Bluewater Seamanship and Safety

Seamanship: The art (and science) of operating a boat in a competent, prudent and safe manner.

Themes:

- Communication
- Preparation/Knowledge
- Situational Awareness
- Personal Responsibility

... and an overarching theme of risk management

44°10.975'N

68°58.582'W

Bluewater Seamanship and Safety

Seamanship: The art (and science) of operating a boat in a competent, prudent and safe manner.

Evening will be broken into:

- Boat Handling
- Crew and Boat Safety
- Sailing

44°10.975'N

68°58.582'W

Practical Boat Handling

Know Your Fellow Crew and Their Capabilities.
Who, by name, can help with

- Crew Overboard
- Reefing
- Docking
- Sailing

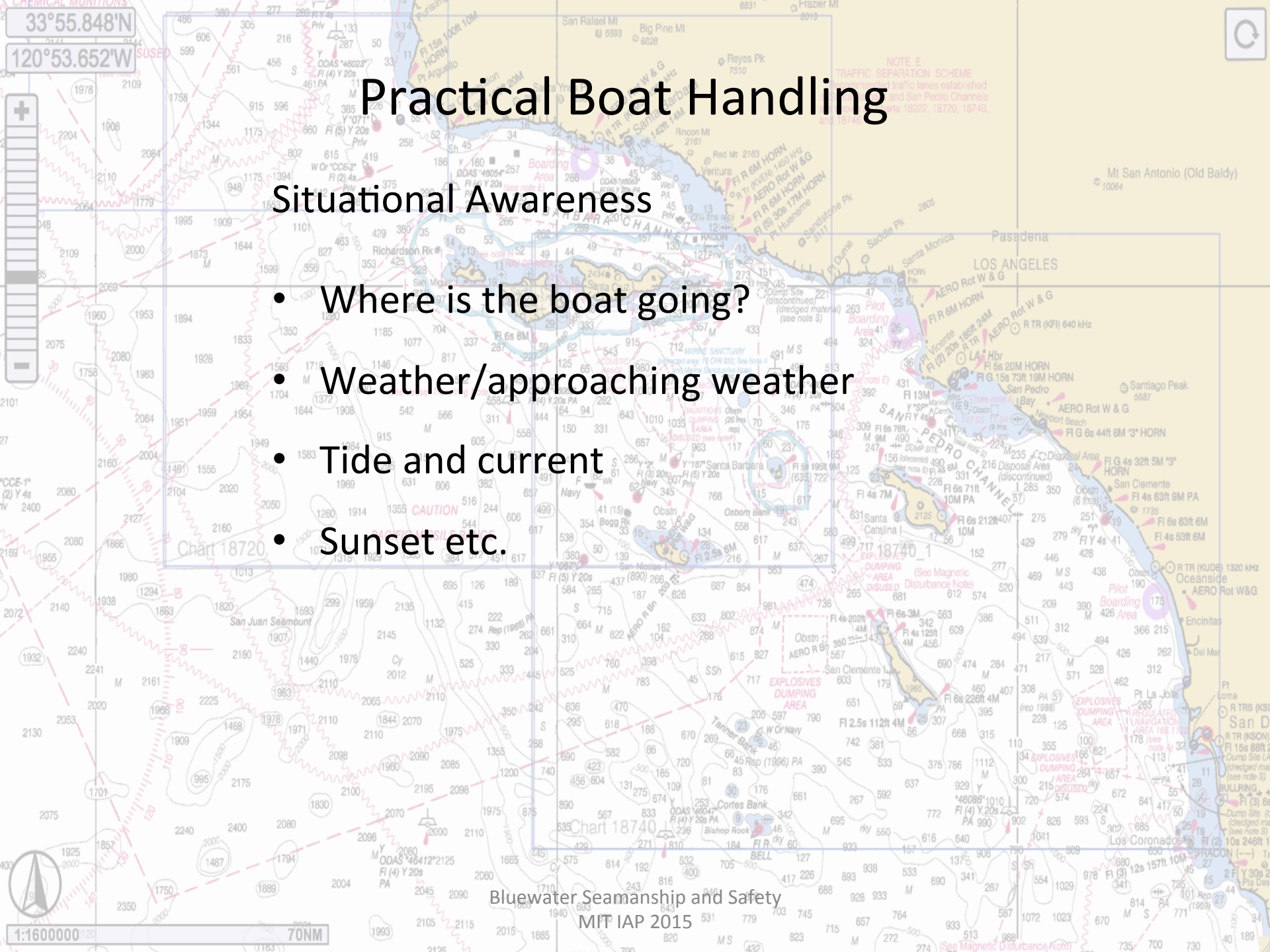
37°43.494'N

122°56.672'W

Practical Boat Handling

Communication

- Outside the boat:
 - Float plan
 - Early communication with other vessels
- Inside the boat:
 - Clear instructions to crew
 - Prepare crew for actions in advance
 - Complete sentences, calm voice.
- In general,
 - What do I know?
 - Who needs to know?
 - Do they know?



Practical Boat Handling

Situational Awareness

- Where is the boat going?
- Weather/approaching weather
- Tide and current
- Sunset etc.

42°21.725'N

71°02.865'W

NOTE B

An Act of Congress, Public Law 90-312, declared the waterfront area shown in magenta to be nonnavigable

Practical Boat Handling

- Familiarity with vessel and systems before getting underway
- Do a walkaround
- Minimum equipment list
 - Required equipment
 - Recommended equipment
 - Paperwork
 - Spare parts
 - Medical kit

Practical Boat Handling

- Normal lights and sound signals
- Distress signals
- Radio
 - Calling procedure
 - Channels
 - Practice – what to say, where to find data
 - Mayday / Pan Pan / Securite

Practical Boat Handling

Pan Pan, Mayday, or Securite?

- You see a large floating log in the main ship channel that could be a hazard to small boats.
- You are offshore, and a passenger starts complaining of chest pains.
- In Boston Harbor, a thru-hull fails and the boat starts filling with water, near the capacity of the primary bilge pump.
- On a spinnaker reach, your unsecured whisker pole whips forward and whacks a crewmember in the head, who drops to the deck senseless.

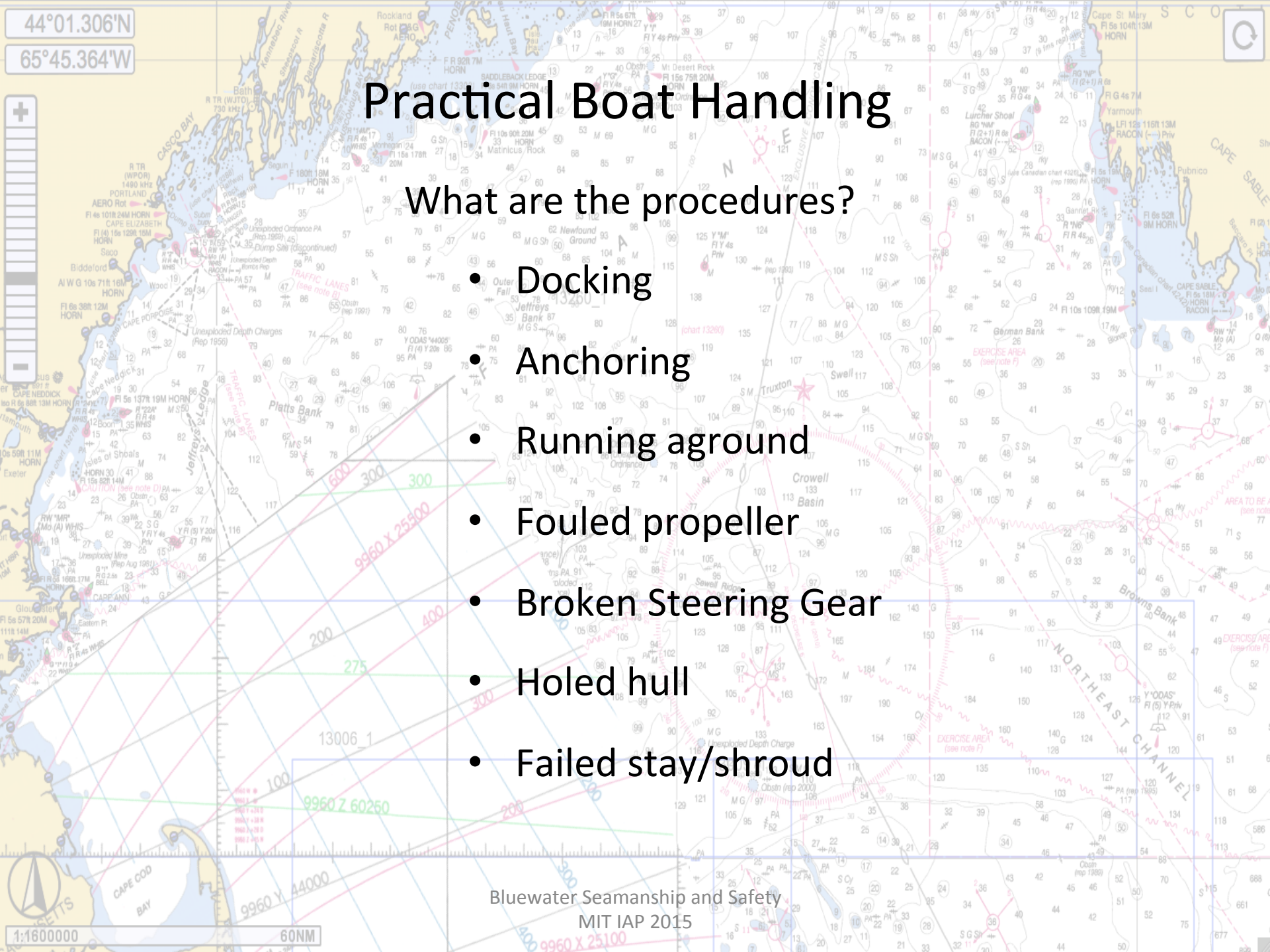
44°01.306'N

65°45.364'W

Practical Boat Handling

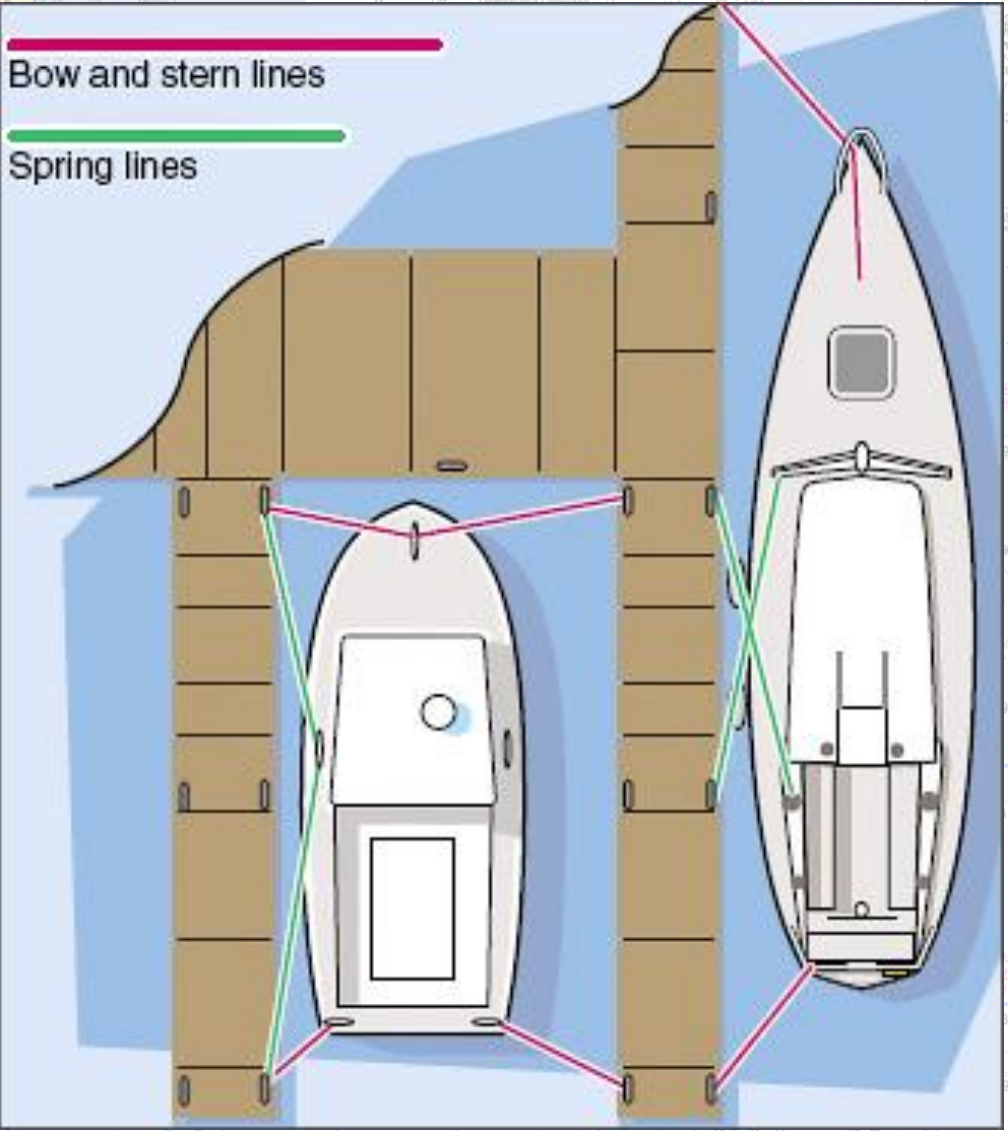
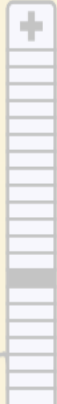
What are the procedures?

- Docking
- Anchoring
- Running aground
- Fouled propeller
- Broken Steering Gear
- Holed hull
- Failed stay/shroud



44°01.306'N

65°45.364'W



Bow and stern lines

Spring lines

A man wearing a grey cap, sunglasses, and a red jacket is steering a boat. The boat has a large wooden steering wheel and a compass. An American flag is visible on the deck. The boat is moving through blue water, leaving a white wake. The sky is clear and blue.

Questions?

Boat and Crew Safety

Personal Responsibility

- Everyone is responsible
- Preparation
- Be honest about your abilities – and have the courage to say ‘No’
- If you see something that isn't right...
- Be proactive

44°01.306'N

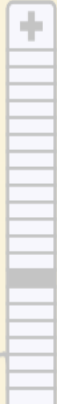
65°45.364'W



Boat and Crew Safety

Planning

- What's the trip and route?
- Crew
- What needs to be onboard
- Weather
- Boat status



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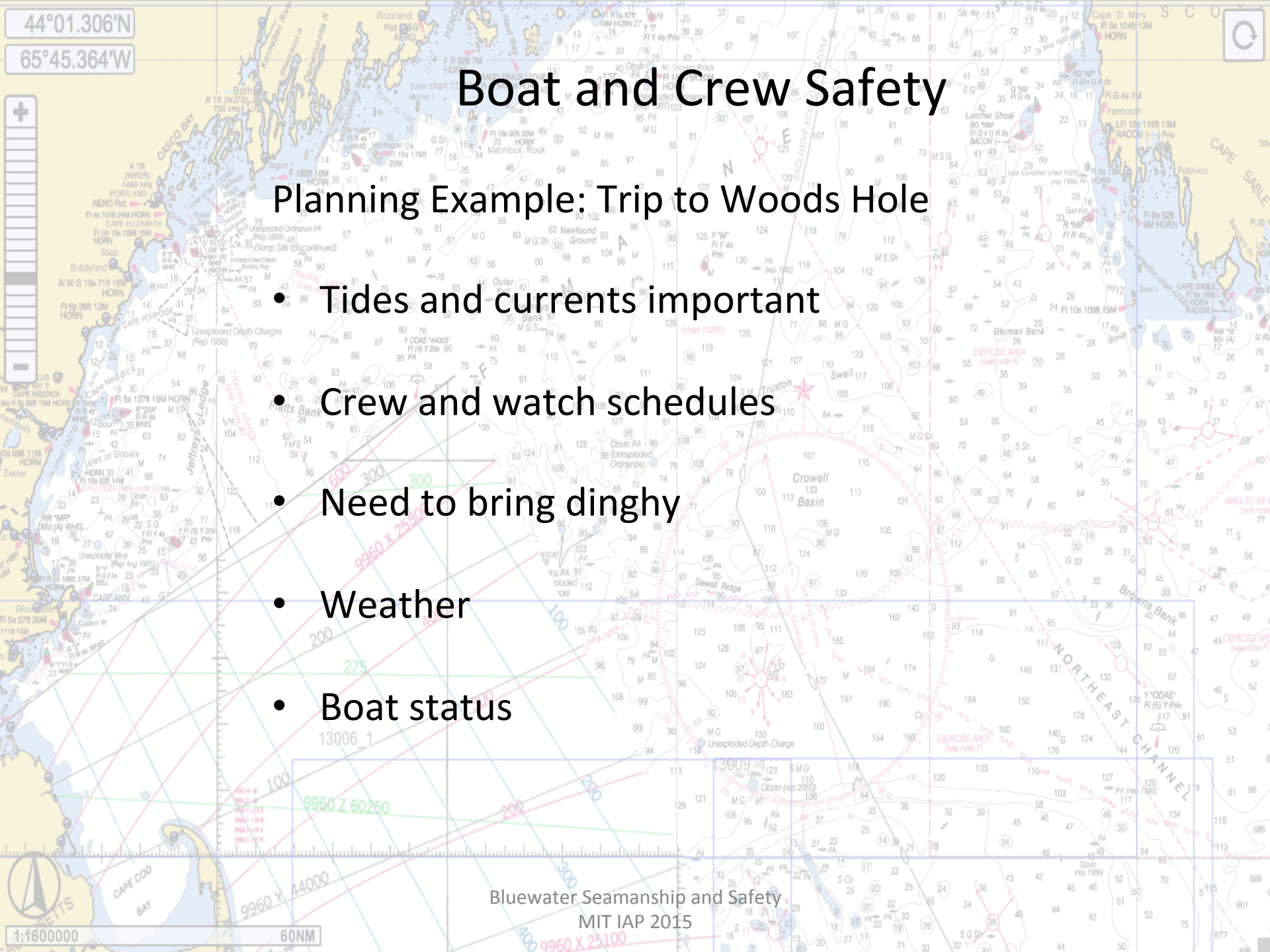
44°01.306'N

65°45.364'W

Boat and Crew Safety

Planning Example: Trip to Woods Hole

- Tides and currents important
- Crew and watch schedules
- Need to bring dinghy
- Weather
- Boat status



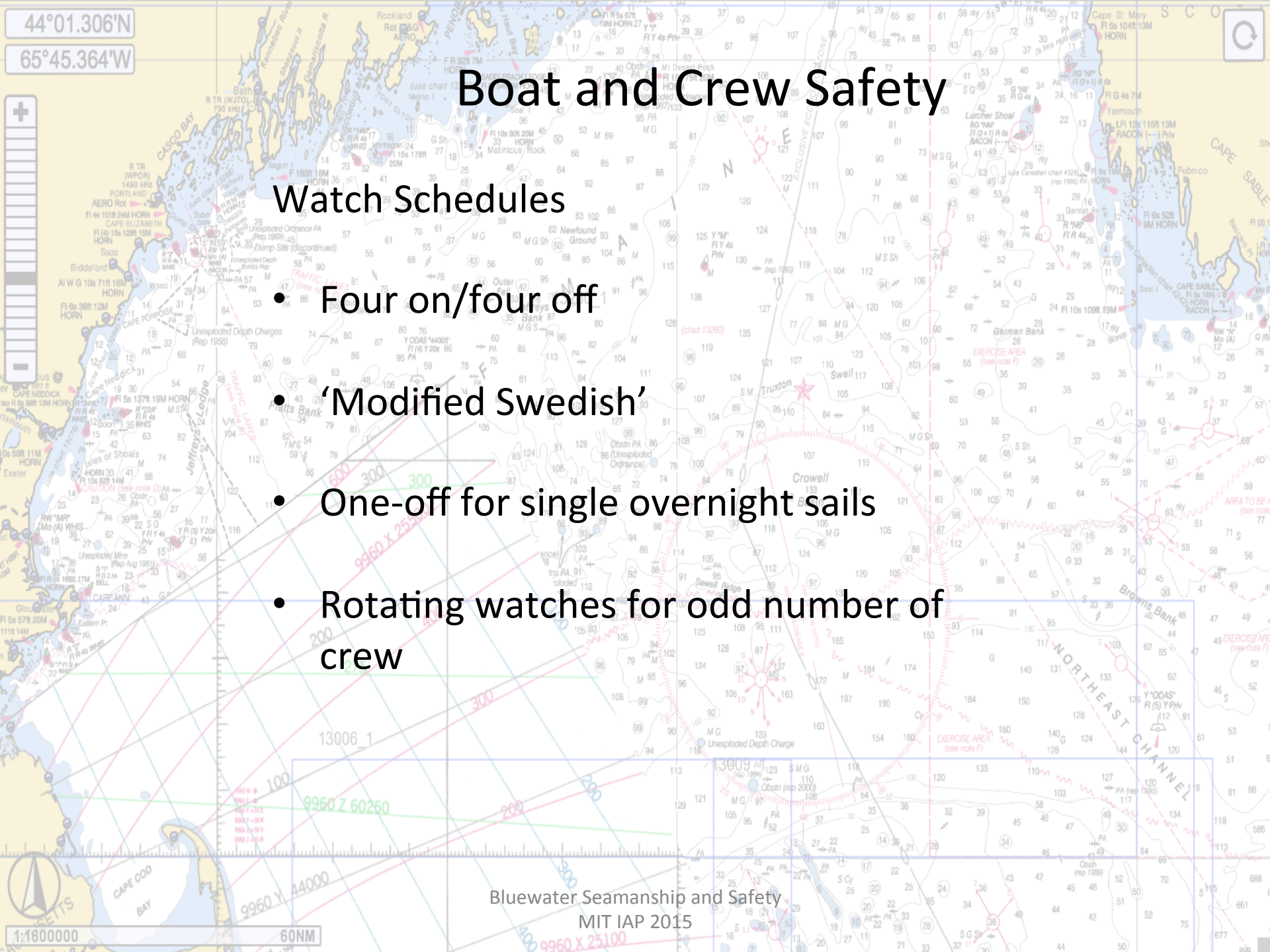
44°01.306'N

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Boat and Crew Safety

Watch Schedules

- Four on/four off
- 'Modified Swedish'
- One-off for single overnight sails
- Rotating watches for odd number of crew



Boat and Crew Safety

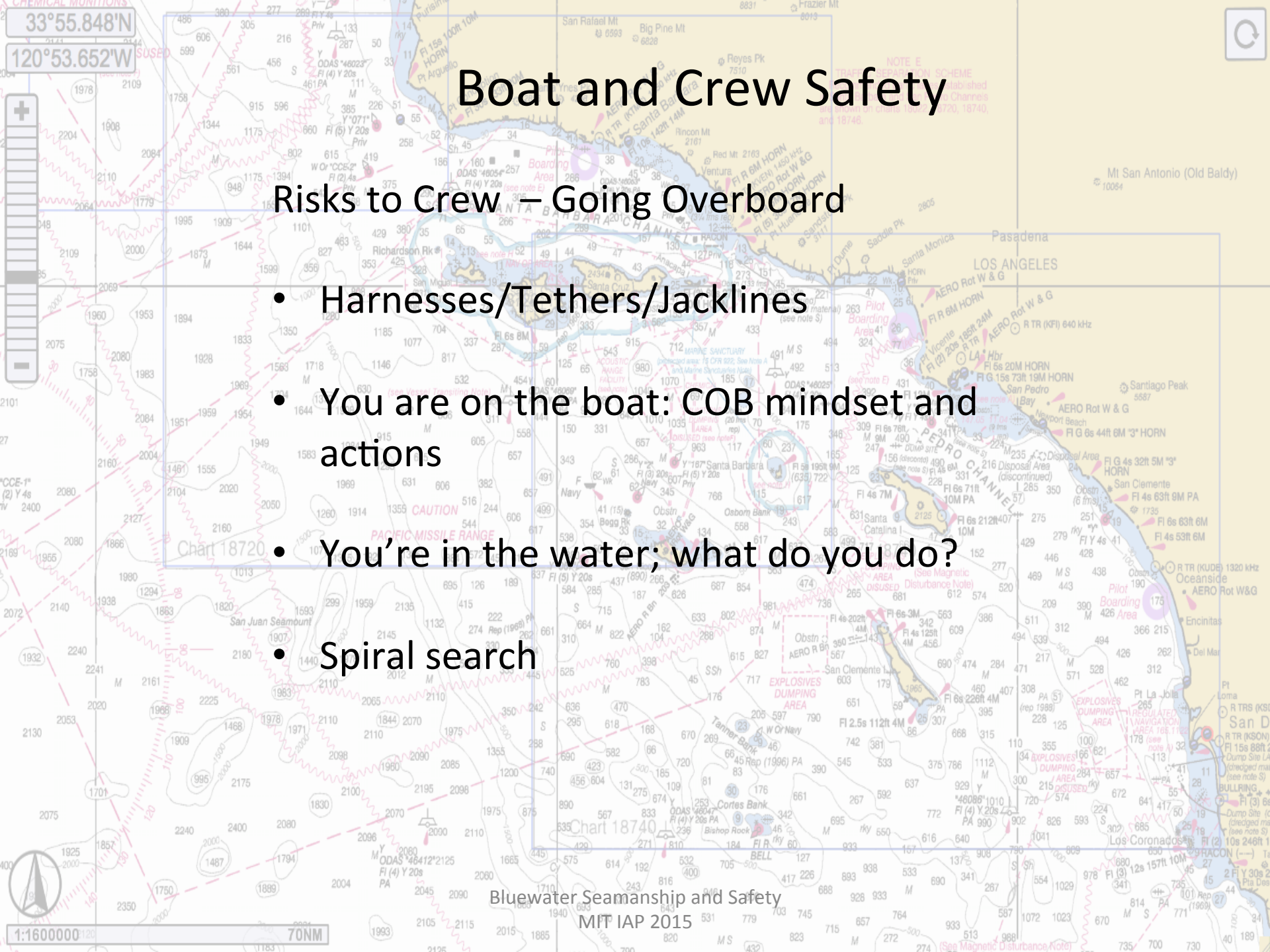
Risks to Crew – Staying Healthy

- Sunburn
- Hyper/hypothermia- what to wear
- Shoes/boots
- Food and Water
- Sleep

Boat and Crew Safety

Risks to Crew – Injury

- No running
- Getting Whacked
- Securing the deck and cabin
- Things that make you go ouch (+ gloves)
- Bad decisions (lack of sleep!)



Boat and Crew Safety

Risks to Crew – Going Overboard

- Harnesses/Tethers/Jacklines
- You are on the boat: COB mindset and actions
- You're in the water; what do you do?
- Spiral search



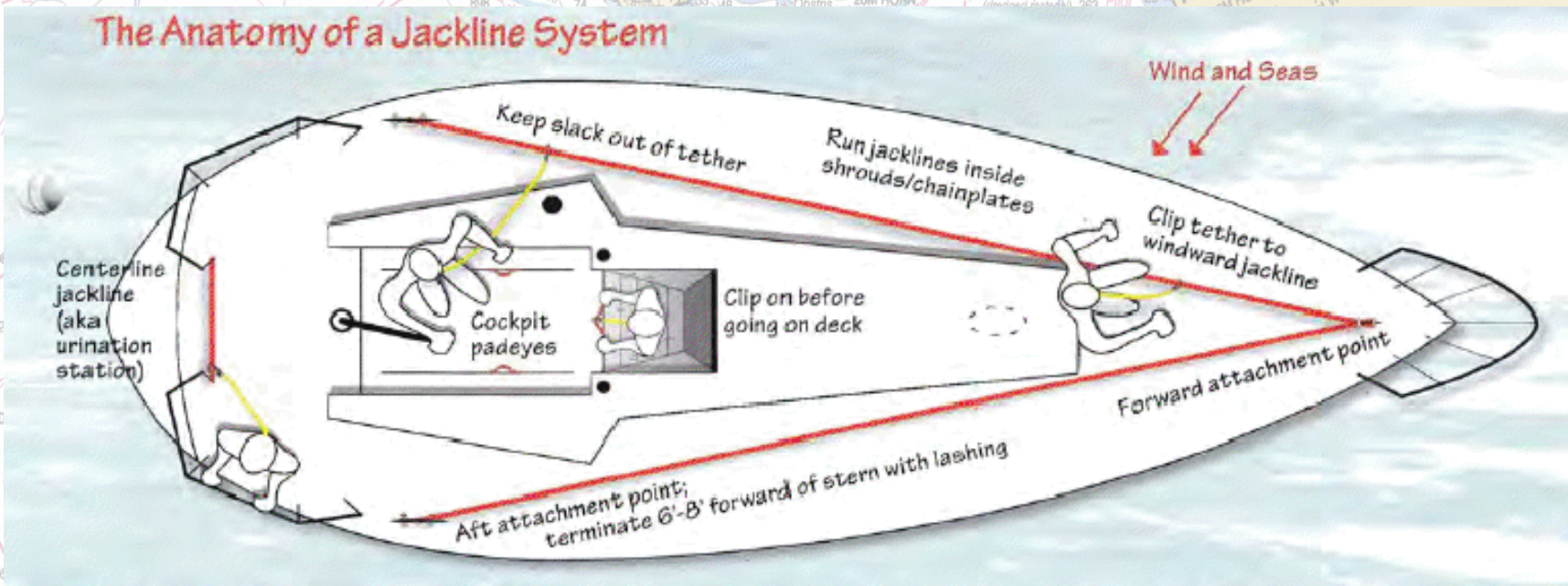
33°55.848'N

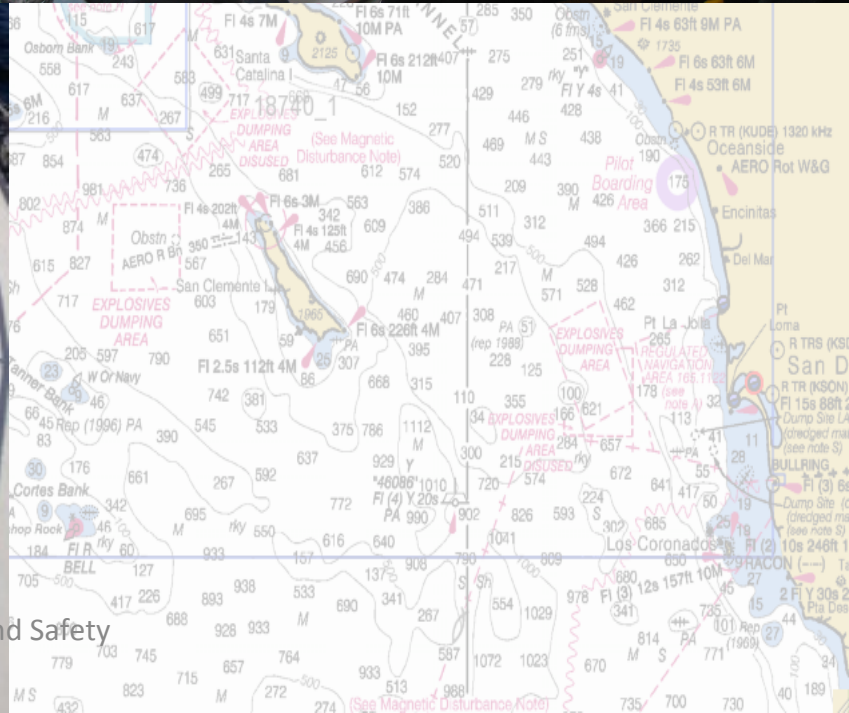
120°53.652'W

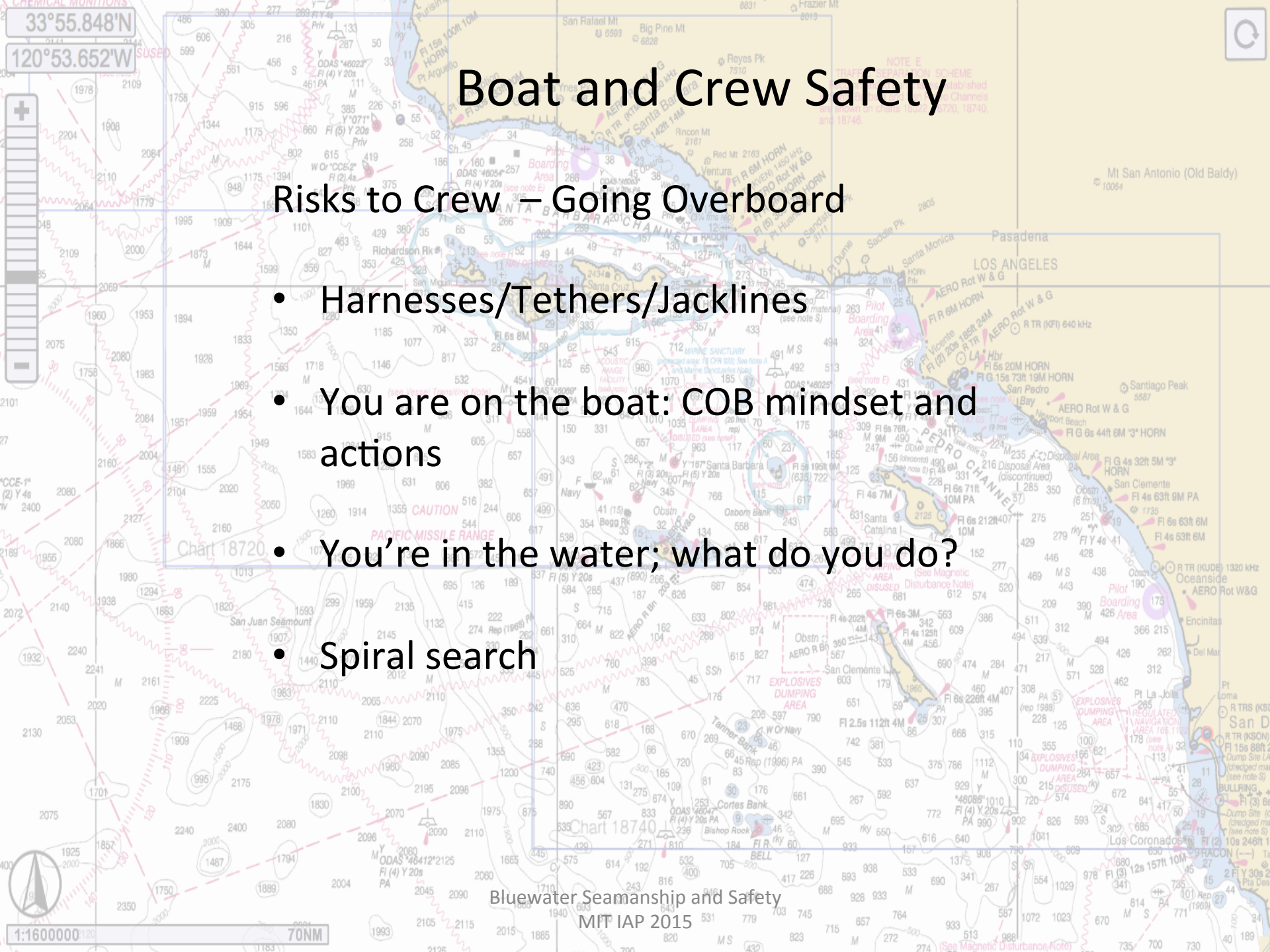
Deck and Crew Safety



Boat and Crew Safety







Boat and Crew Safety

Risks to Crew – Going Overboard

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42°36.832'N

68°17.096'W

Crew Overboard Strategy

1. A clear chain of command

2. Mark the spot

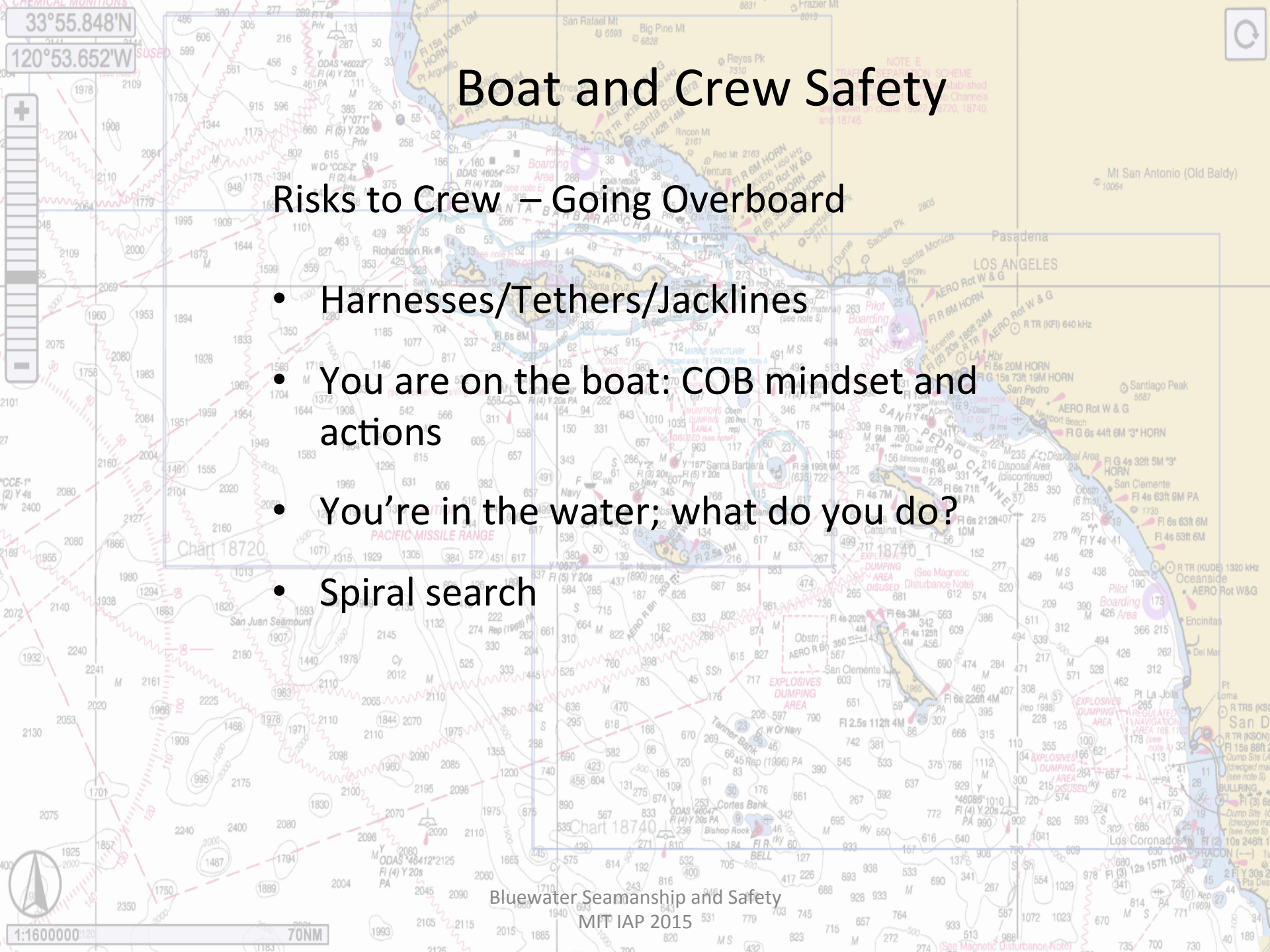
3. Most important task: seeing the COB

4. Attaching the COB to the boat

Key tips:

- Furl the jib to control speed/reduce complexity
- No style points for rescue under sail; start the engine
- **Only through periodic drills can you be prepared for the real event**





Boat and Crew Safety

Risks to Crew – Going Overboard

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42°36.832'N

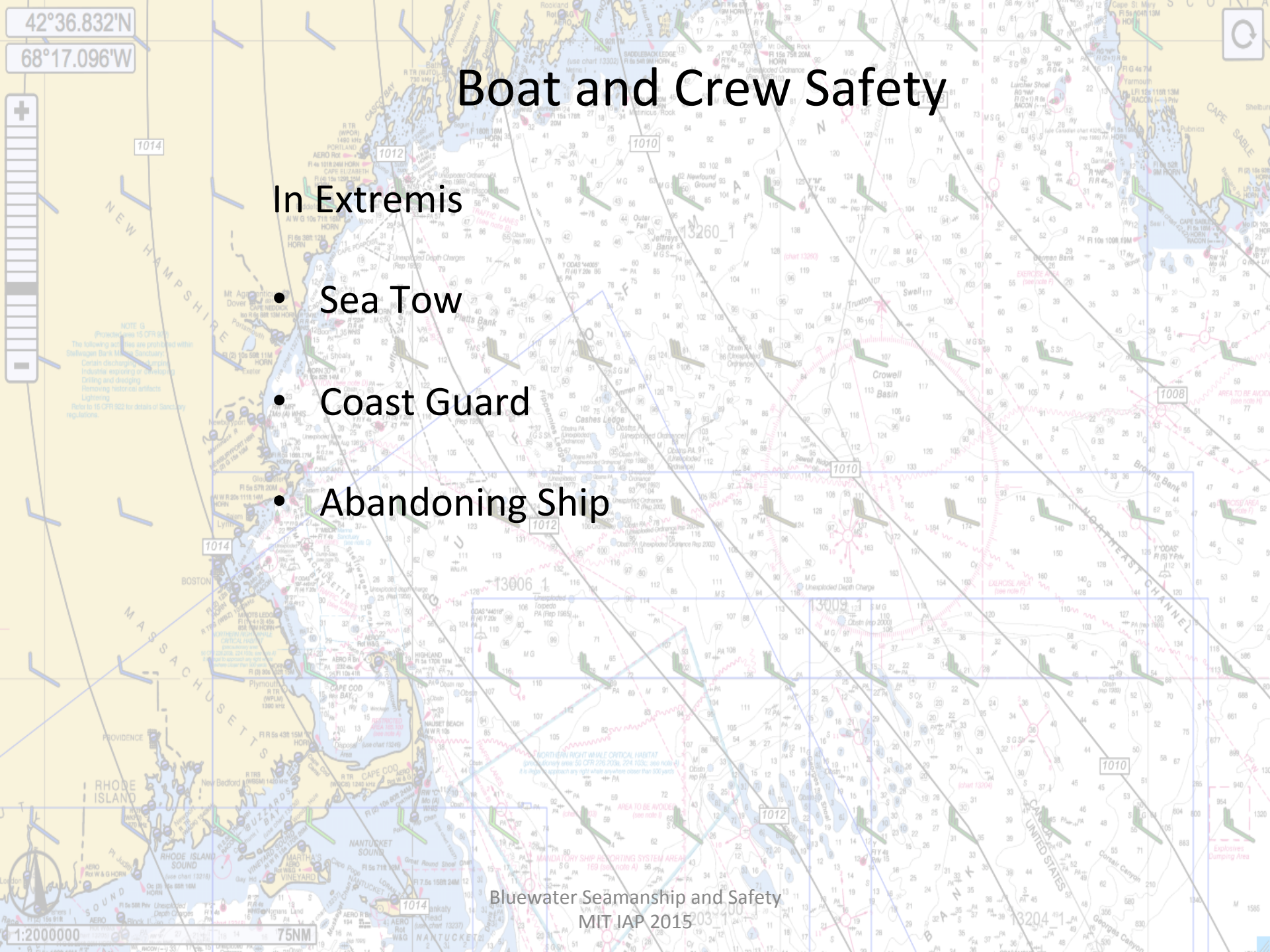
68°17.096'W



Boat and Crew Safety

In Extremis

- Sea Tow
- Coast Guard
- Abandoning Ship



Questions?

42°36.832'N

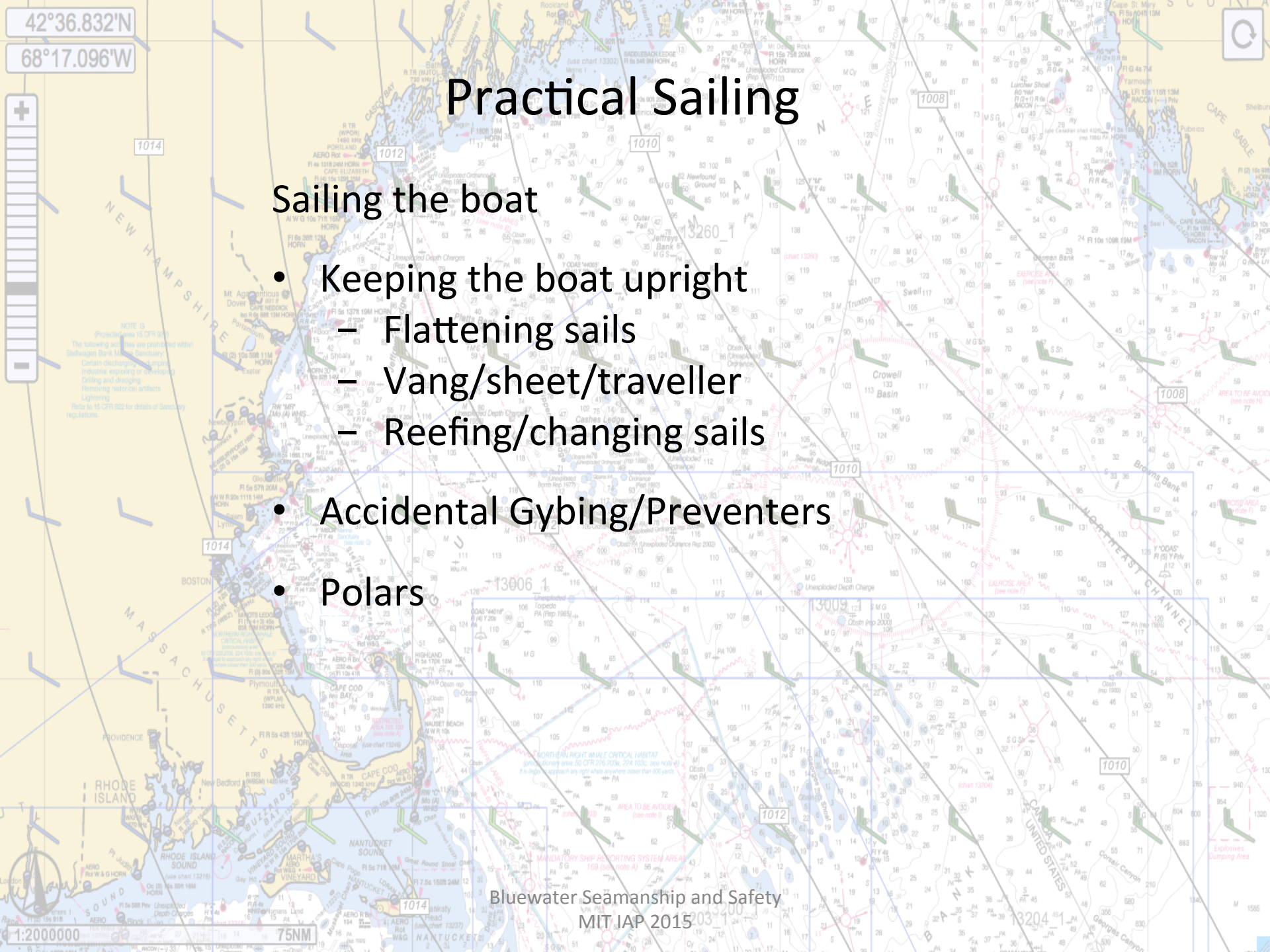
68°17.096'W



Practical Sailing

Sailing the boat

- Keeping the boat upright
 - Flattening sails
 - Vang/sheet/traveller
 - Reefing/changing sails
- Accidental Gybing/Preventers
- Polars



42°36.832'N

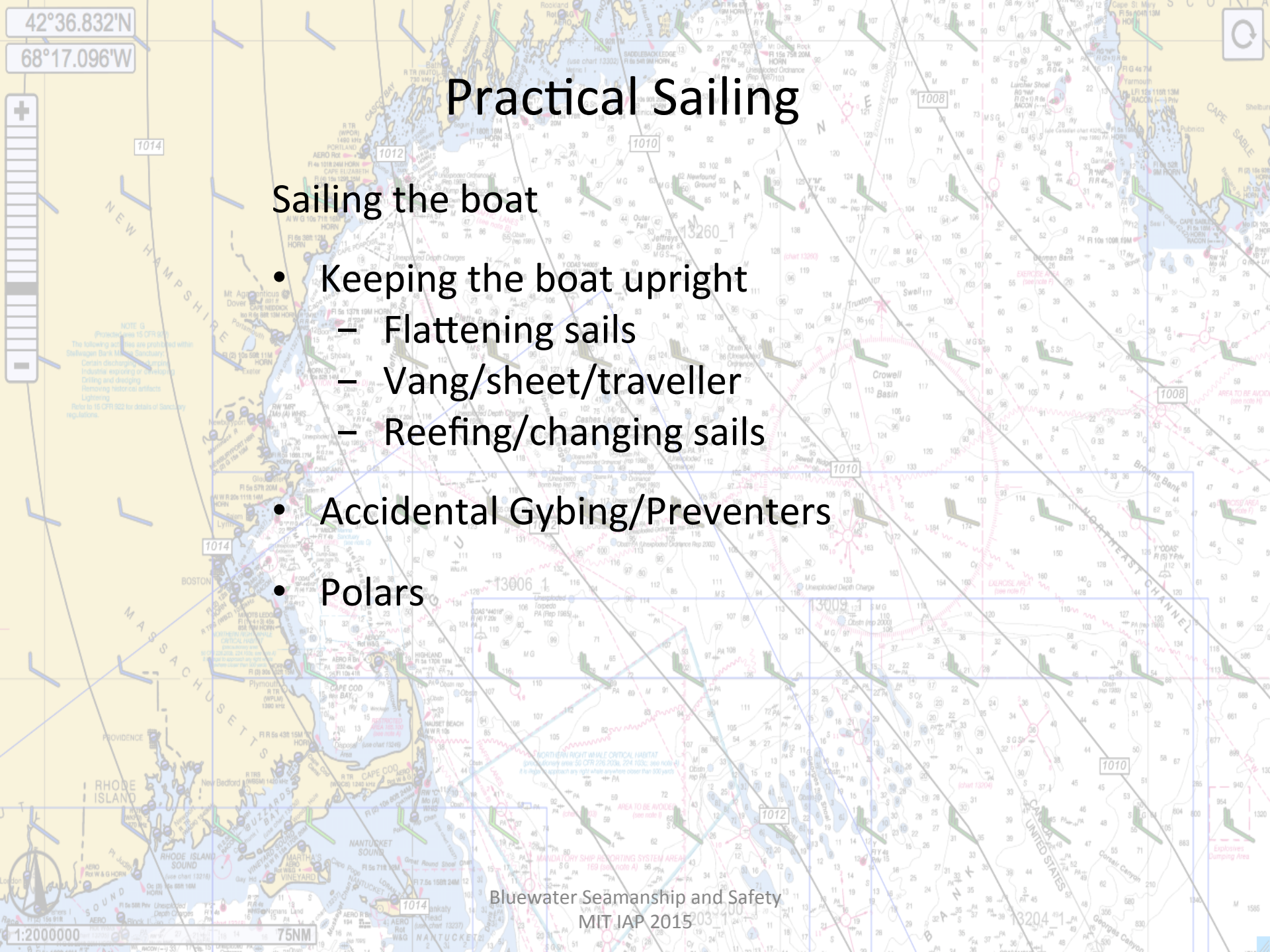
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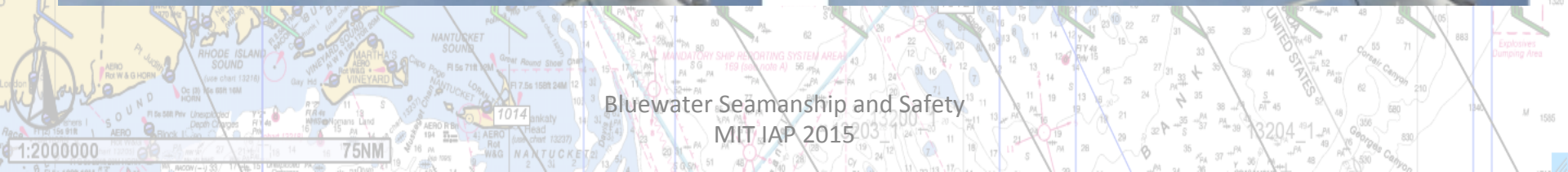
Practical Sailing

Accidental Gybing/Preventers

Windex pointing to box (good!)



Windex pointing between boxes (bad!)



42°36.832'N

68°17.096'W

Practical Sailing

Accidental Gybing/Preventers



1:2000000

42°36.832'N

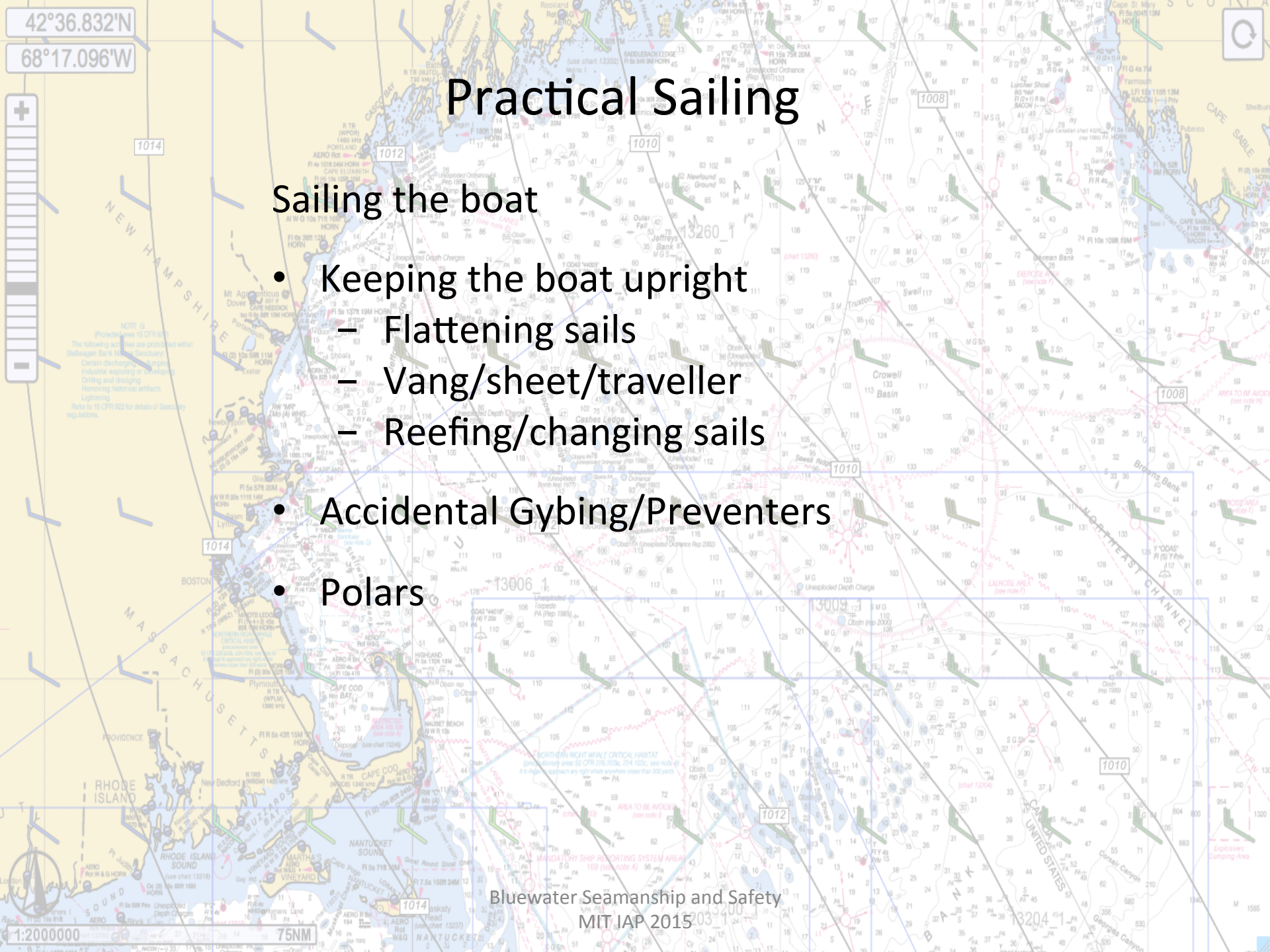
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Practical Sailing

Sailing the boat

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A Polar Example

POLAR DIAGRAM

BOAT SPEED AS A FUNCTION
TRUE WIND VELOCITY & ANGLE

Yacht AUDACIOUS

NAVY 44 44 LOA NA-1
MASTHEAD SLOOP 150% JIB, KEEL
Folding Exposed Prop

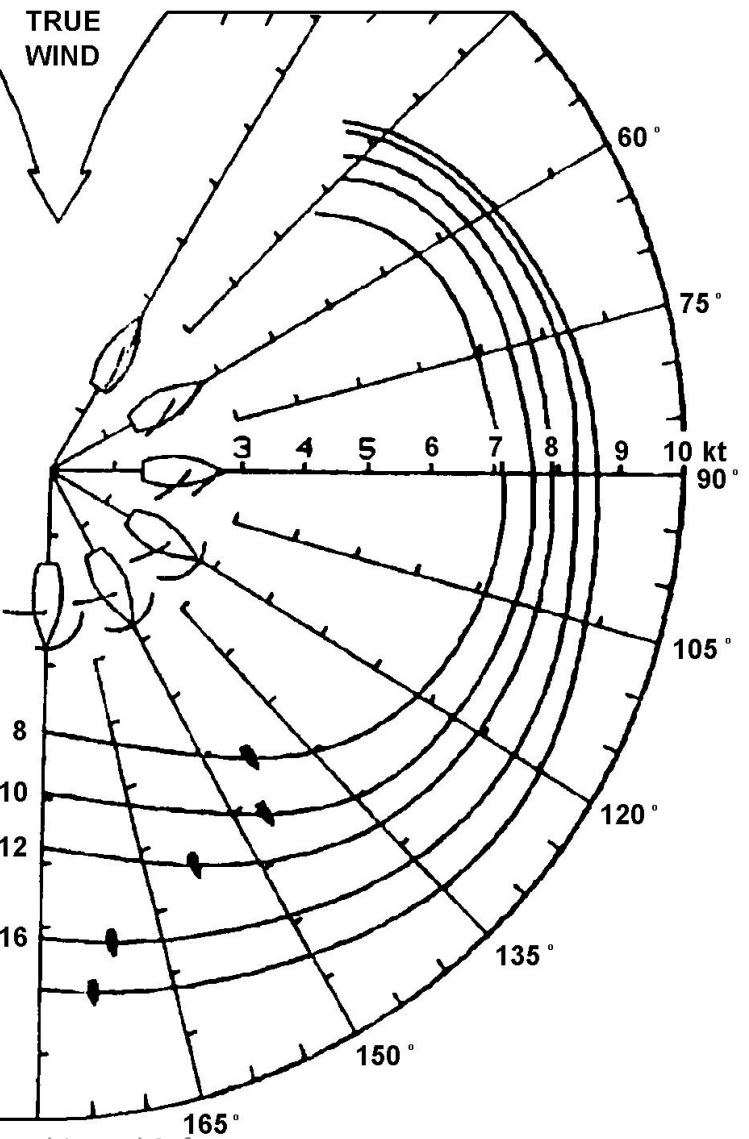
WIND	OPTIMUM VMG BEAT	OPTIMUM VMG RUN	OPTIMUM RUN ∠
8 kt	4.375	143 °	
10 kt	5.241	146 °	
12 kt	6.008	158 °	
16 kt	7.246	171 °	
20 kt	8.040	174 °	

Notes:

Boat - speed curves are
five different true wind
velocities as shown at right:

• optimum run angle

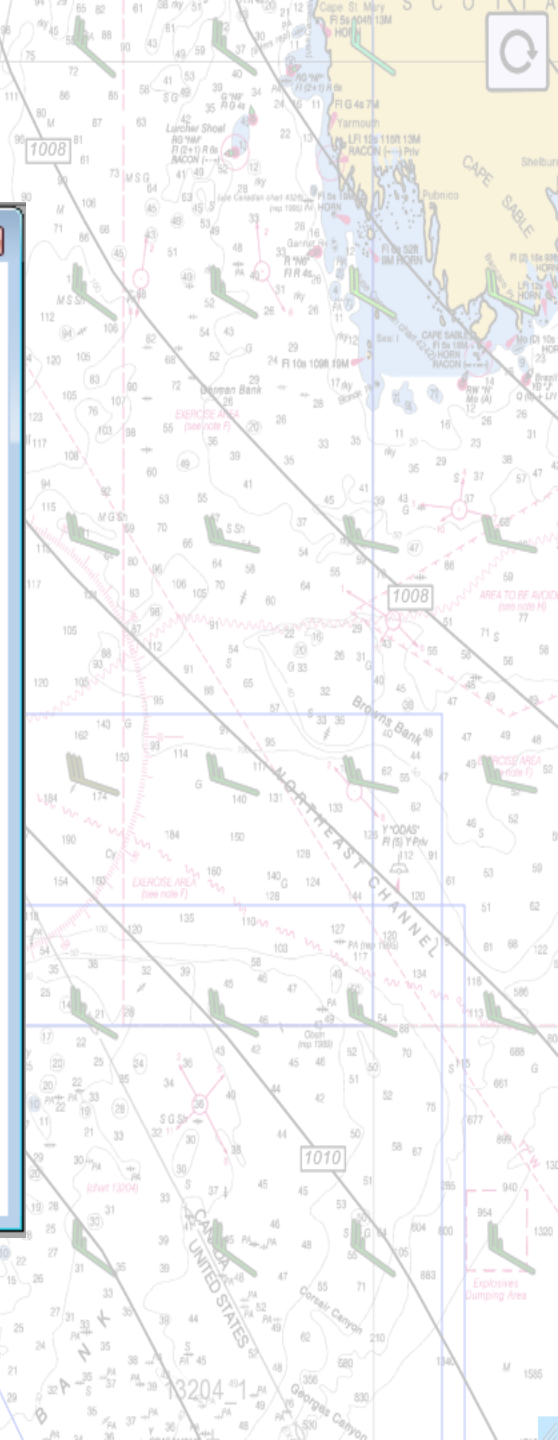
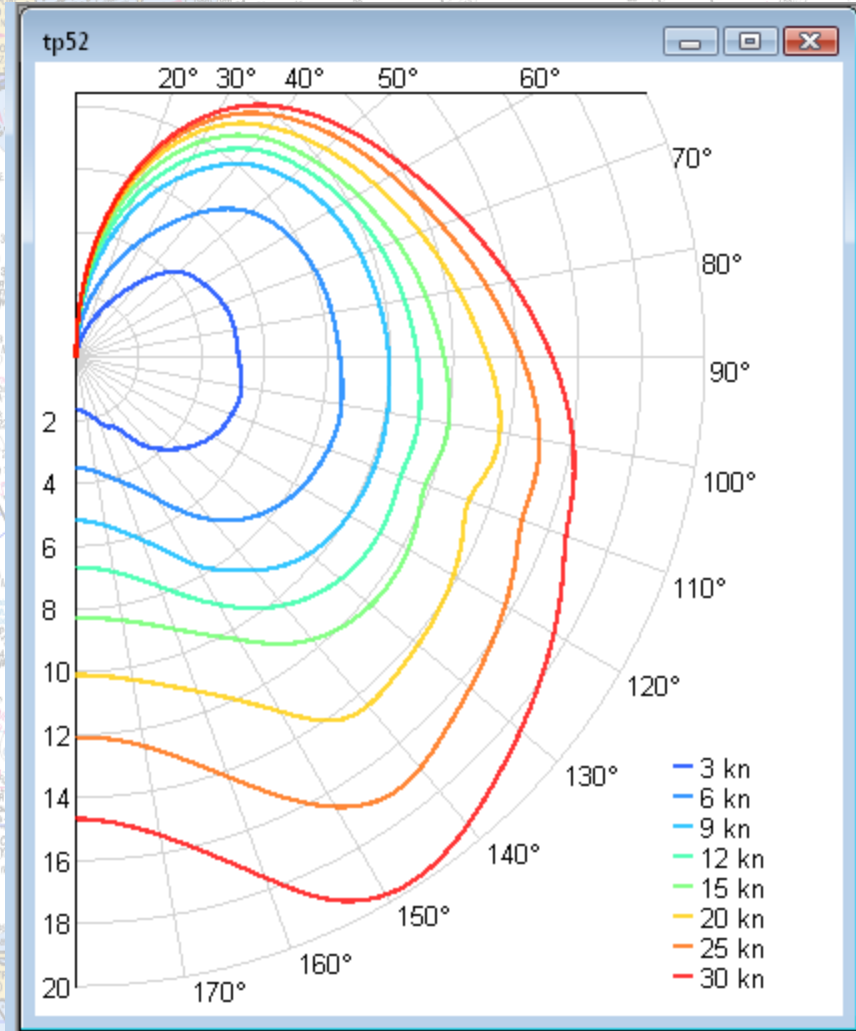
Run: 5/20/87 8:49:12 Cert 19065 20
Copyright 1987 USYRU Newport, RI



42°36.832'N

68°17.096'W

Another Polar Example



44°10.975'N

68°58.582'W

purpose is considered equivalent to the World Geodetic System of 1984 (WGS84). Geographic positions referred to the North American Datum of 1927 do not require conversion to NAD 83 for plotting on this chart.

Practical Sailing

Handling Lines

- Knots
- Fastening to a cleat
- Bowline
- Tautline hitch
- Coiling lines
- Heaving a line
- On winches

42°19.714'N

70°58.800'W

Practical Sailing

Heavy Weather Sailing

- Reducing Sail - Reef early, go faster. Chicken Jibes.
- Heaving to
- Lying a-hull
- Running off
- Warps, sea anchors



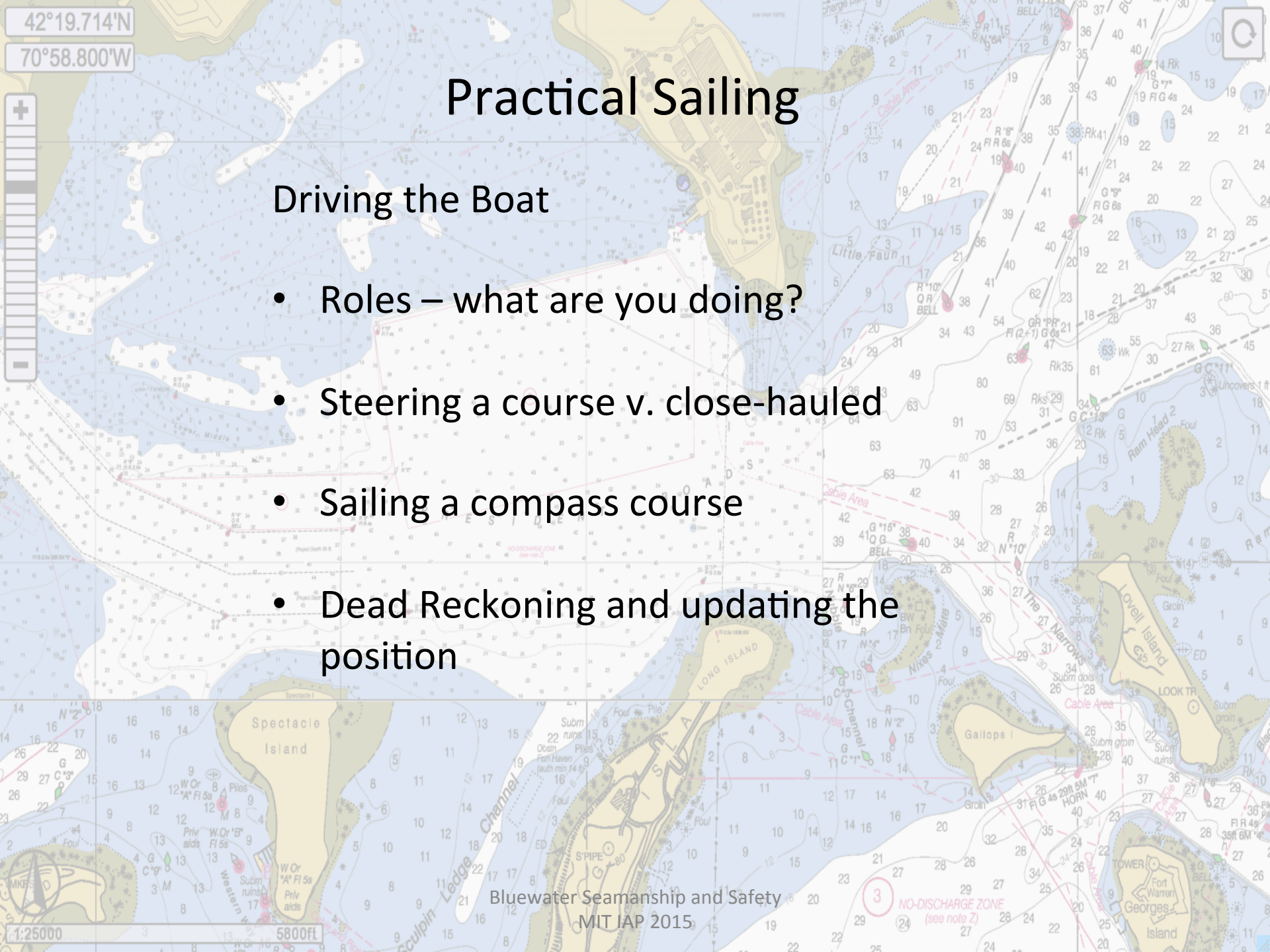
42°19.714'N

70°58.800'W

Practical Sailing

Driving the Boat

- Roles – what are you doing?
- Steering a course v. close-hauled
- Sailing a compass course
- Dead Reckoning and updating the position



42°21.725'N

71°02.865'W

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Practical Sailing

Standing Watch

- Know the situation
- Keep a sharp eye out
- Look at the boat
- Update the log

Questions?

