

Going Offshore

Skills for open-water travel

Trawler  **Fest**®

BOAT SHOW – EDUCATIONAL EXPERIENCE – RENDEZVOUS

PassageMaker Magazine 2022

Anacortes, WA – Friday May 20th

Presented by Jeff Merrill, CPYB

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Get ready before you take off!

- Nothing quite so satisfying as completing a trip
- **Preparation and planning**
Safety, food, sleep...
- What do you do out at sea?

What's it really like?

- **WARNING** – Impossible to simulate the motion, or the feelings, but this presentation should be helpful to all trawlers owners whether or not you have ventured out of sight of land or not.
- **I am a yacht broker!** 30+ years of working with clients including dozens of offshore trips training owners out at sea have provided the basis for this information

Some questions...

- How many of you have been aboard out of sight of land?
- How many of you have been underway through the night?
- Anyone have experience with modern navigation electronics?
- How many have your own boat?
- Anyone have a Captains license?

About this presentation...

- *Get familiar with your boat
before you leave the dock.
- *Your best strategy and my strongest recommendation – **learn it all!**
- *What to be aware of underway
- *My boating background

HANDOUTS BINDER –

Let's take a look

This PowerPoint (PDF) and all handouts are available for your own private use. I will post on www.JMYS.com two weeks after class.

Please fill out your contact details on my mailing list form and I will email you a reminder

You (the Owner) need training

- US Power Squadron = America's Boating Club
- Boating classes – online, classroom
 - Anchoring
 - Docking
- Seamanship
- Weather
- Navigation
- Rules of the road

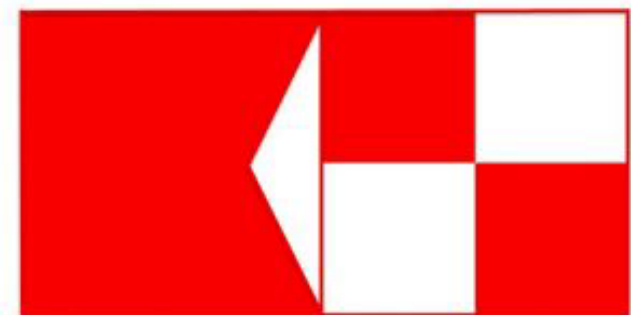
You (the Owner) need skills

- Charter? Crew with friends?
- Familiarity with machinery and operations
- Boat handling
- Hiring a Captain to train with you
- Education...online, local colleges, professional schools – any suggestions from the class?
- **Boaters University - online**

Expert Instruction From The Brands You Trust.

Offshore Cruising: Preparing Craft & Crew

Preparation is key to successful cruising. Regardless of the size, make or model of your boat, understanding its critical systems and having a plan is crucial to keep your craft performing efficiently and safely. Join yacht broker, boatbuilder and TrawlerFest instructor Jeff Merrill in this exclusive online course designed to help you prepare yourself, your boat and your crew to get the most out of your offshore boating adventures.



Boaters University

Two excellent schools

Chapman's School of Seamanship

Stuart, Florida

772.283.8130 | www.chapman.org/

Training Resources Maritime Institute

San Diego, California

(619) 263-1638 | www.trlmi.com

YouTube videos

OFFSHORE TRAINING



YouTube

54:49

INSURANCE (for those shopping)

Getting coverage to be an owner operator has become more difficult.

Looking into insurance coverage NOW is just as important as figuring out the trawler you want to buy.

Your boat must be ready too!

- Learn RPM variations, speed and fuel burn
(Develop a **Performance Card Handout* p. 2**)
- Understand operation of every system
- Acquire the right tools, spare parts, etc.
- Routine maintenance: filters, fluids, impellers, etc.

Tools

Keep the right tool near the service item



Spare Parts and Service Manuals

(When you get a spare replace the existing item and keep the item that was in service as a spare)



Organize your manuals

- Keep them in organized bins
- **Go online to get electronic PDF versions**
- Keep a list of vendors with contact information – phone and email
- Manuals can help you stock spare parts and learn service intervals

Vessel Vanguard/Wheelhouse

You will be happier if you are organized

Do you like to create spreadsheets?

Vessel Vanguard /Wheelhouse offers a systematic maintenance system that is fantastic and worth considering.

Learning more about your boat

- USCG Auxiliary inspection?
- **Through hulls and bilges**
- Clean fuel. Fuel Valves, Tanks and Hoses
- **How to “Stop” – anchor and windlass**
- Make sure you **AND** your trawler are ready to go **BEFORE** you take off...

Pre-departure preparation

- Book smarts AND practical experience
- Navigation & Communications equipment
- Checklists, maintenance procedures, routines
- Join Vessel Assist, Sea Tow, Tow Boat US
- You need to be mentally and physically ready, preparation provides peace of mind

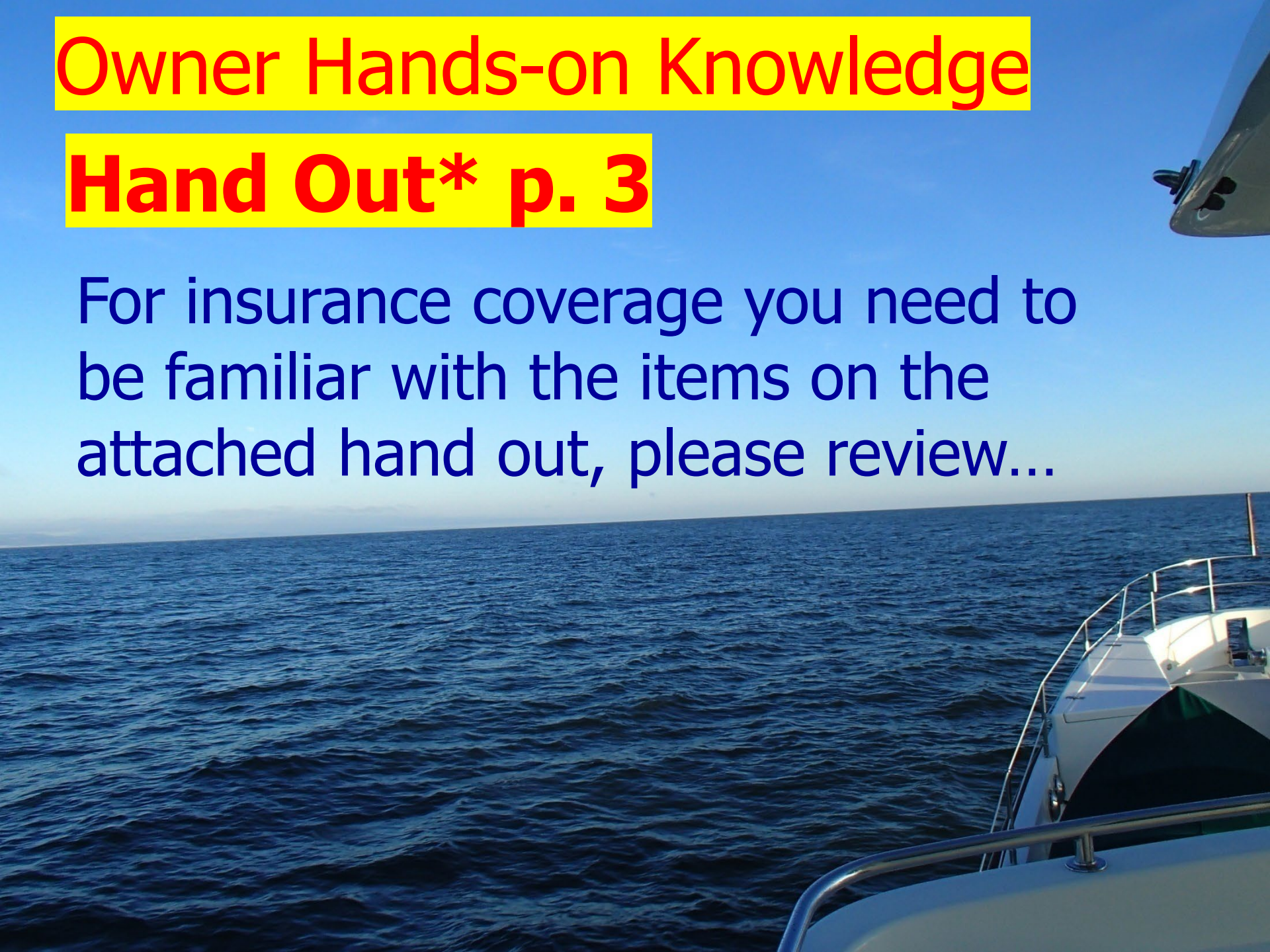
Electrical Panel – understand each breaker



Owner Hands-on Knowledge

Hand Out* p. 3

For insurance coverage you need to be familiar with the items on the attached hand out, please review...



Know before you Go...

- Simulate a “Day in the Life”
- Spend time aboard at the dock (24 hours)
- Anchor out overnight (pick a local spot)
- Learn where everything is and how it works, sounds, and how to service it
- Hire a captain to gain their insights
- The best thing you can do is use your boat locally, before you take off on a big trip

USCG Requirements - example

- ***Handout p. 4 - USCG Nordhavn 50**
Good practice to identify all of the safety gear you have on board and note the location. This is a helpful quick reference document to have laminated and keep in your pilothouse.

Lifejackets – comfortable – wear them, don't forget kids and pets



SOSpenders - inflatable life vest, comfortable, attach with tether to jack lines for on deck moving about



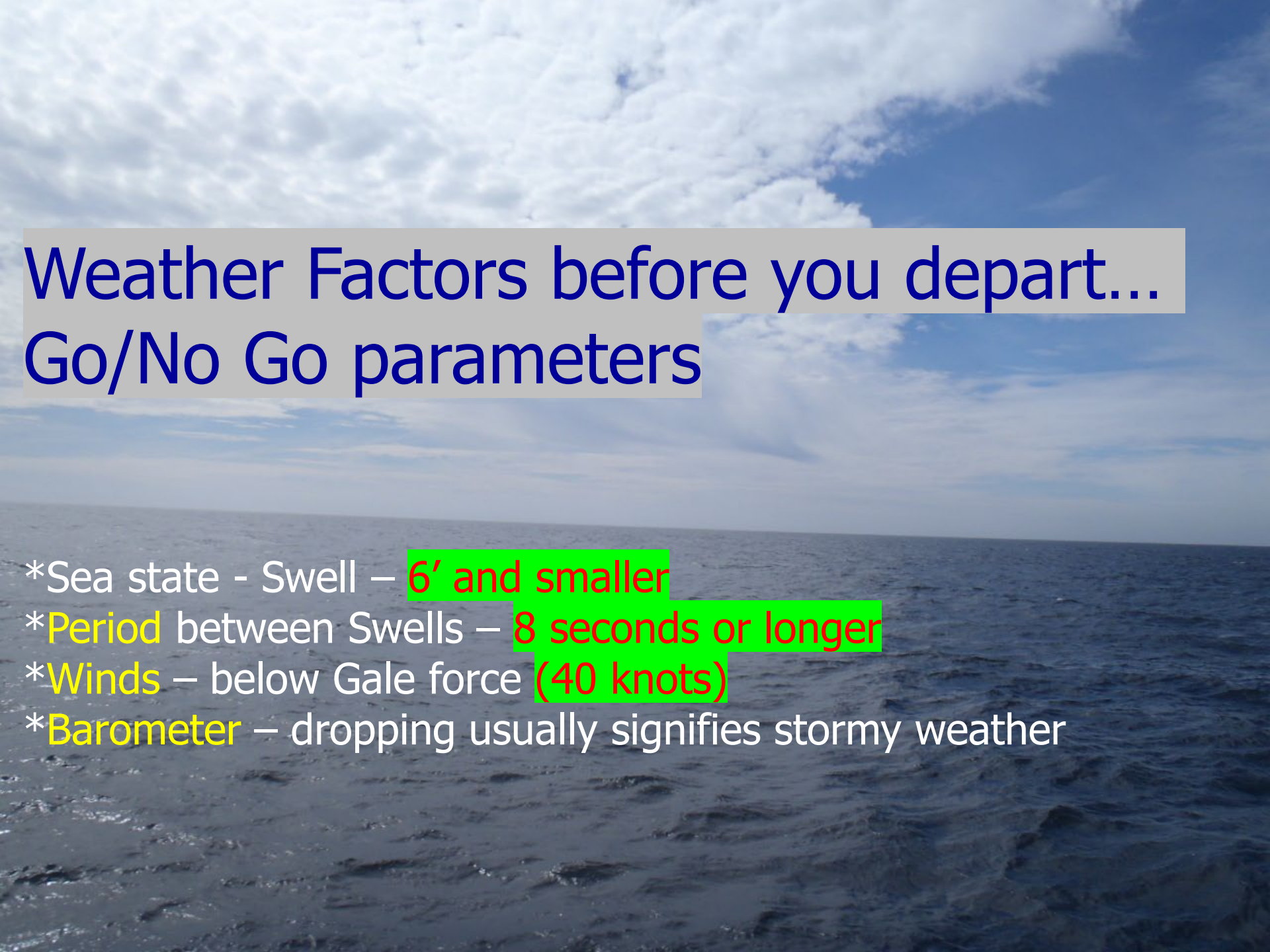
Personal Locator Beacons



Float Sleeves

Neck Lanyard

Wrist Lanyard



Weather Factors before you depart... Go/No Go parameters

- *Sea state - Swell – 6' and smaller
- *Period between Swells – 8 seconds or longer
- *Winds – below Gale force (40 knots)
- *Barometer – dropping usually signifies stormy weather

Weather Websites

www.noaa.gov – National Weather service

www.buoyweather.com – Sea State

www.sailflow.com - Wind speed and direction

www.darksky.com – Local weather

www.intellicast.com – Weather

www.stormsurf.com - Weather

Remember, there are nice days out there too...

Your loved ones can track your AIS on www.marinetraffic.com

Also www.vesseltraffic.com



Weather Forecasts Underway:

- *IridiumGo (with Predict Wind offshore app)
- *Satellite Radio – XM/Sirius forecast service
- *VHF – channel 3 and 4
- *Professional Weather Routers – **Chris Parker**
- *Internet, if you have it aboard

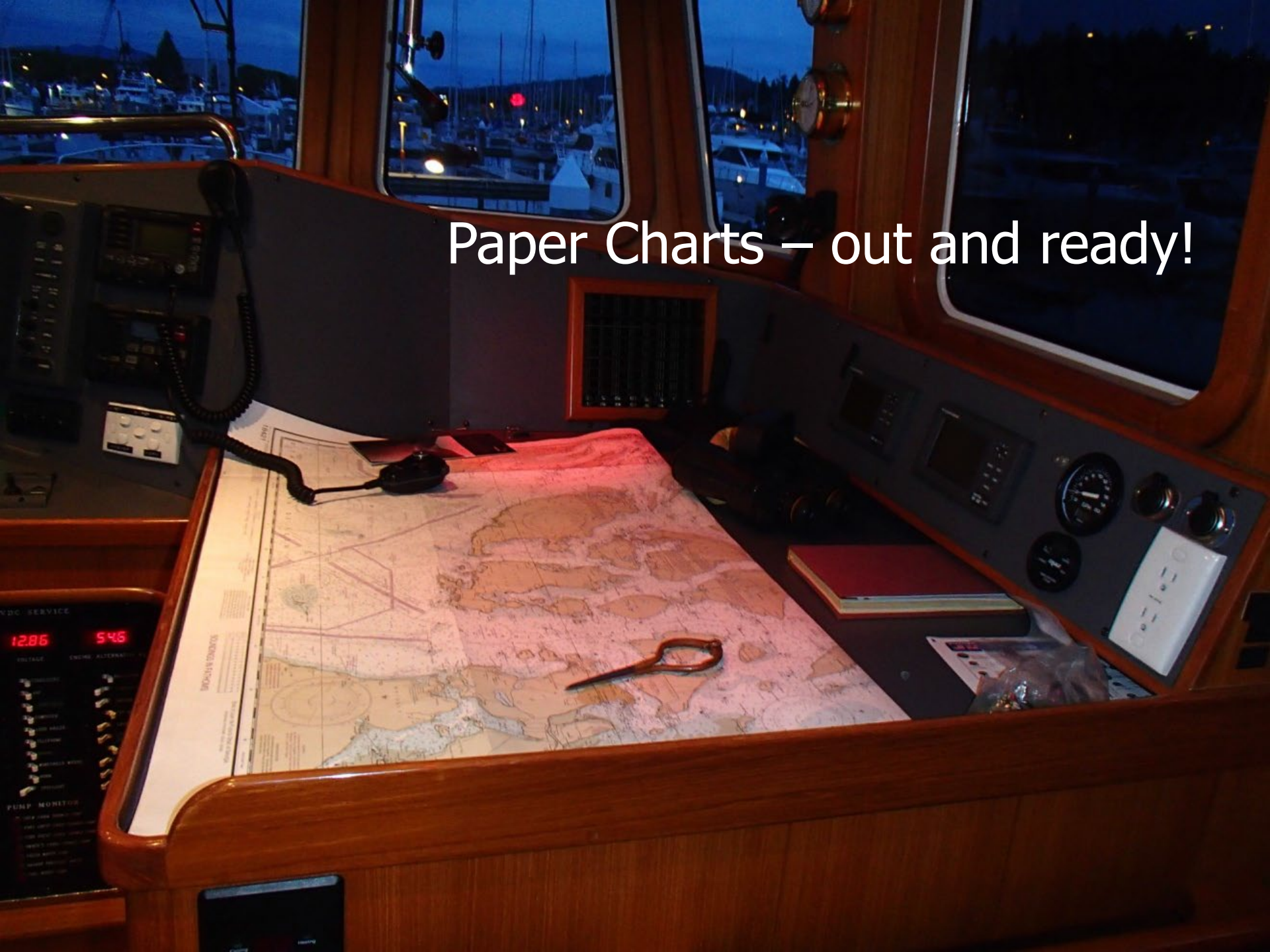
Rough Weather Suggestions

- Anticipate and prepare, sometimes you have to go through it...it won't last forever
- Make sandwiches in advance
- Secure all moving parts
- **Change course and/or reduce speed** to make it a more comfortable ride
- **Head back the way you came?**

Basic Navigation – Paper Charts

- Know how to read a paper chart
- Continually cross reference with electronic charts
- Tools – Dividers and Parallels
- Depth – safe waters, shoals, etc.
- Shipping Lanes
- Obstructions, wrecks
- Buoys and aids to navigation
- Organize charts in the order you will use them

Paper Charts – out and ready!



Pilothouse Tools

- Binoculars “long eyes”
- Night vision (FLIR), hand held monocular
- Barometer
- Clock – local and GMT
- Calculator

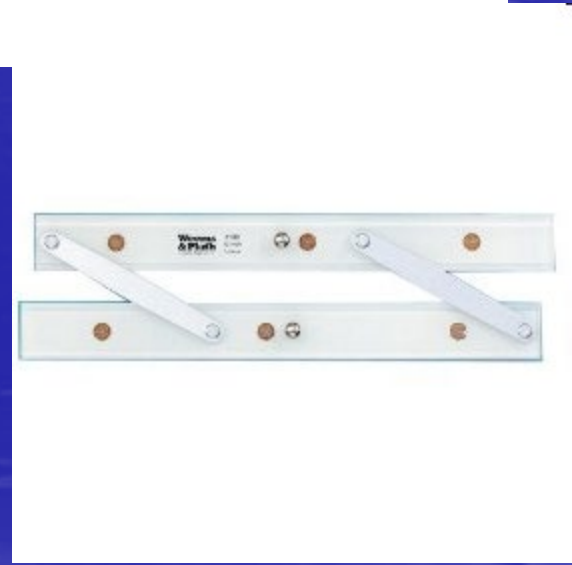
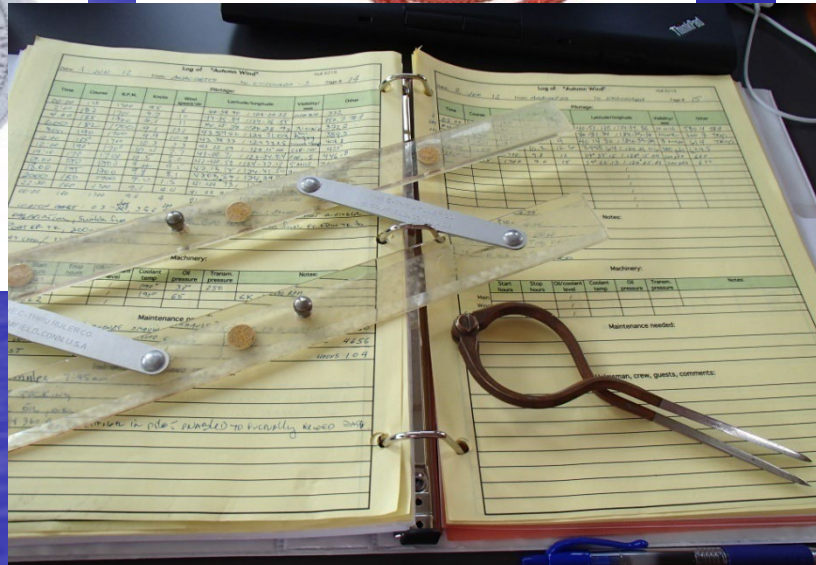
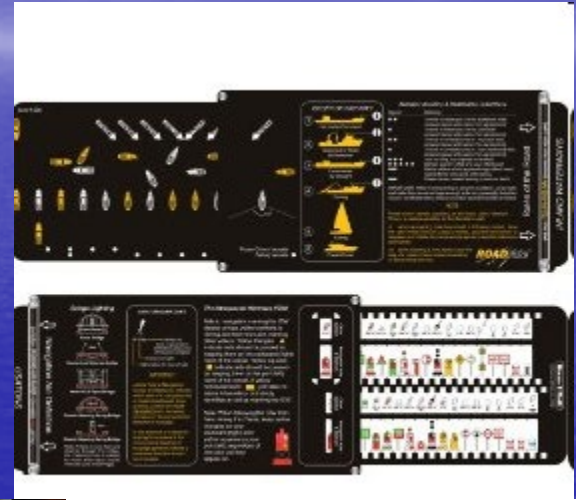
Pilothouse Tools

- Closed Circuit TV
- Spot light – built in, hand held
- Chart Guide
- Hand held compass

Pilothouse Tools

- Binoculars “long eyes”
- Night vision (FLIR), hand held monocular
- Closed Circuit TV
- Spot light – built in, hand held
- Flash light, red lens
- Good pencil & sharpener
- Barometer
- Clock – local and GMT
- Calculator
- Chart Guide
- Hand held compass
- Back up navigation on laptop
- Nav lights “slide rule”

Navigation Tools



DIY electronic navigation ▶ Power voyagers and reading the manual

OCEAN NAVIGATOR

Marine Navigation and Ocean Voyaging

OCEAN VOYAGING
The Magic of Landfall

3D Printing on
a voyaging boat

HIRING A BOAT AGENT
THE PROS AND CONS

Ocean
Navigator
Magazine

Read The Factory Manual

Mar/Apr 2021

Digital sextant ▶ Power voyaging pilothouse tools

OCEAN NAVIGATOR

Marine Navigation and Ocean Voyaging

OCEAN VOYAGING
**IND-RED MISADVENTURES ON
Isola Vulcano**

SPECIAL SECTION
SAFETY

A CINEMA ENTHUSIAST'S
FAVORITE OCEAN FILMS

UNEXPLAINED
**KILLER WHALE
ATTACKS**

Prized Pilothouse Possessions

Jan/Feb 2021

Ships Log – buy or make your own

THE
SHIP'S
LOG™

Cruising Log Handout* P. 5

Log of "Autumn Wind" Hull 6219
 Date: 30 MAY 12 From: ANA CONUES To: Page # 12

Pilotage:

Time	Course	R.P.M.	Knots	Wind speed/dir	Latitude/longitude	Visibility/seas	Other
5:10		1450	11.2	9.7K	48°17'50 / 122°50'95	CLMAY	LV. DOGIC
8:00	248	1450	8.5	5.4	48 26 39 / 123 07 79	1.5 CLMAY	2.0 WAVECAST
10:30	SAFETY MEETING				48 19 96 / 1		CAP. KIRK
12:00	265	1450	7.2	2K	48 19 96 / 123 52 67	NVBL	57 mi - JEFF.
4:00	260	1450	8.4	4K	48-23,96 / 124.16.04	4	72.5
6:00	250	1450	9.2	8.4	48 26 14 / 124 40 09		89
8:00	182	1450	6.6	6.2	48 12 99 / 124 41 92	3 calm	
10:00	174	1450	6.4	5	48 00 96 / 124 46 91	4 calm	
12:00	160	1450	7.0	21	47 47 89 / 124 39 84	NVBL	131 NM
1:00	136	1450	7.4	15	47 33 96 / 124 26 26	NVBL	145 / 9A 96
					/		
					/		

Notes:

Date: _____ Destination: _____
 Skipper: _____ Time of Departure: _____
 Port of Departure: _____ Planned Port of Arrival: _____
 Actual Time of Arrival: _____

Barometer: _____ Wave Height: _____ Wind: _____
 Narrative: _____

Places/Events to Remember: _____
 What and Where We Ate: _____
 Where We Shopped and What We Bought: _____
 Who We Met: _____



LOG BOOK
& JOURNAL



Ships Log (Where are you?)

- Record your position, departure and arrival plus machinery hours of operation
- Hourly - on the hour - recordings
- Typical details – Lat/Lon, speed, RPM, heading, miles offshore, distance to waypoint, wind and sea conditions

Crossing Situations – Part One

- Identify Targets in advance
(Head On and Overtaking)
- Hail on VHF 16 to discuss passing
- Pass Port to Port traditional

Crossing Situations – Part Two

- Make your intentions clear – **EXAGGERATE** your heading
- Understand the rules for **"Give Way"** (You alter) vs. **Stand On"** (Maintain course and speed)
- Slow or change course to avoid a collision. **Pass Behind!** Crossing in front is scary...

Try to keep one mile apart

(The operator of the other boat may not know the rules)



Navigation Electronics Instruments to know

- Autopilot modes: Auto, Standby and Nav
- Depth Sounder

Navigation Electronics Instruments to know

- Radar – Targets, Rings, Distance, CPA
- AIS – ship tracking

Navigation Electronics Instruments to know

- VHF – 16, how to talk and switch channels
- How to communicate

Navigation Electronics Instruments to know

- Chart Plotter – Waypoints, Routes
- Chart and Radar overlay

Navigation Electronics Instruments to know

- **Autopilot** modes: Auto, Standby and Nav
- **Radar** – Targets, Rings, Distance, CPA
- **VHF** – 16, how to talk and switch channels
- **Chart Plotter** – Waypoints, Routes
- **GPS** – Latitude/Longitude
- **Depth** Sounder
- **AIS** – ship tracking
- **Features:**
- **Chart and Radar overlay**
- **How to Dim**
- **How to Mute (Alarms)**
- **Waypoints / Route**

VHF (Very High Frequency)

Primary source for ship to ship communications.



VHF Communications

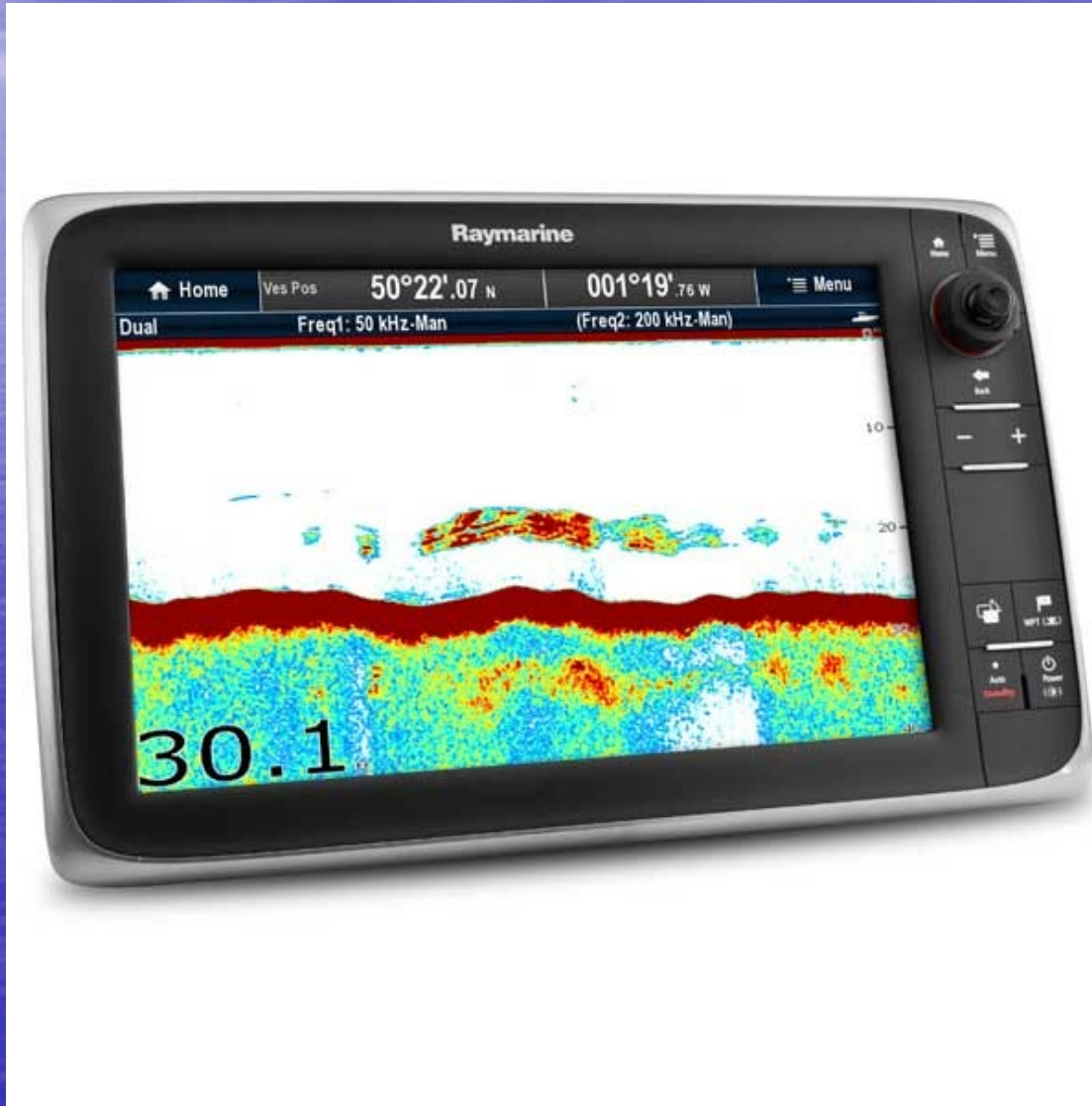
- VHF radio – Ship to Ship (line of sight)
- Hi vs. Lo settings (close range or far away)
- Weather channel on VHF (Channel 3 or 4)
- Radio check (Channel 27)
- Channel 22A “Twenty Two Alpha” – USCG communications to a boat
- Working channels –switch to 68, 69, 71, 72, 78
- MOB – Latitude/Longitude distress signal
- Fog horn, Hailer

VHF – calling for Help

- This is like 9-1-1. Captain should make the call
- **“Mayday Mayday Mayday”** (Broadcast if you are in imminent danger and need immediate assistance)
- The USCG will ask... **“Your coordinates?”**
“How many souls are aboard?”
“Describe your boat colors”
- All crew will be asked to put on life jackets

Depth Sounder

Fish Finder shows bottom contours



Depth

- If you don't have water under the keel...
- What does your boat draw?
- Set transducer to measure from keel
- Someday you will run aground (Tow Boat US/ Vessel Assist). Back off, wait for tides

GPS – Global Positioning System

Knowing your **Latitude and Longitude** is a key navigational development, surely much easier and more accurate than a sextant – **revolutionary development** – has allowed cruising to become more mainstream



AIS (Automatic Identification System)

- Integrates a VHF transceiver with GPS coordinates and navigation sensors to “exchange” information between ships
- Details like ships name, length, speed, heading, destination – and **time to closest possible approach**
- Very helpful, **don't forget Radar blips** that are also targets without AIS



48° 16'
123° 15'
Hdg 2

AIS target (Variable range, 6 - 12 miles average.)

AIS details



RADAR



- "Charts are legend, GPS is theory, Radar is TRUTH!" Author unknown
- Radar rings help with distance (Zoom in and Zoom out frequently)
- Targets – **ARPA** – Auto Radar Plotting Aids

Distance Rings – calculate distances

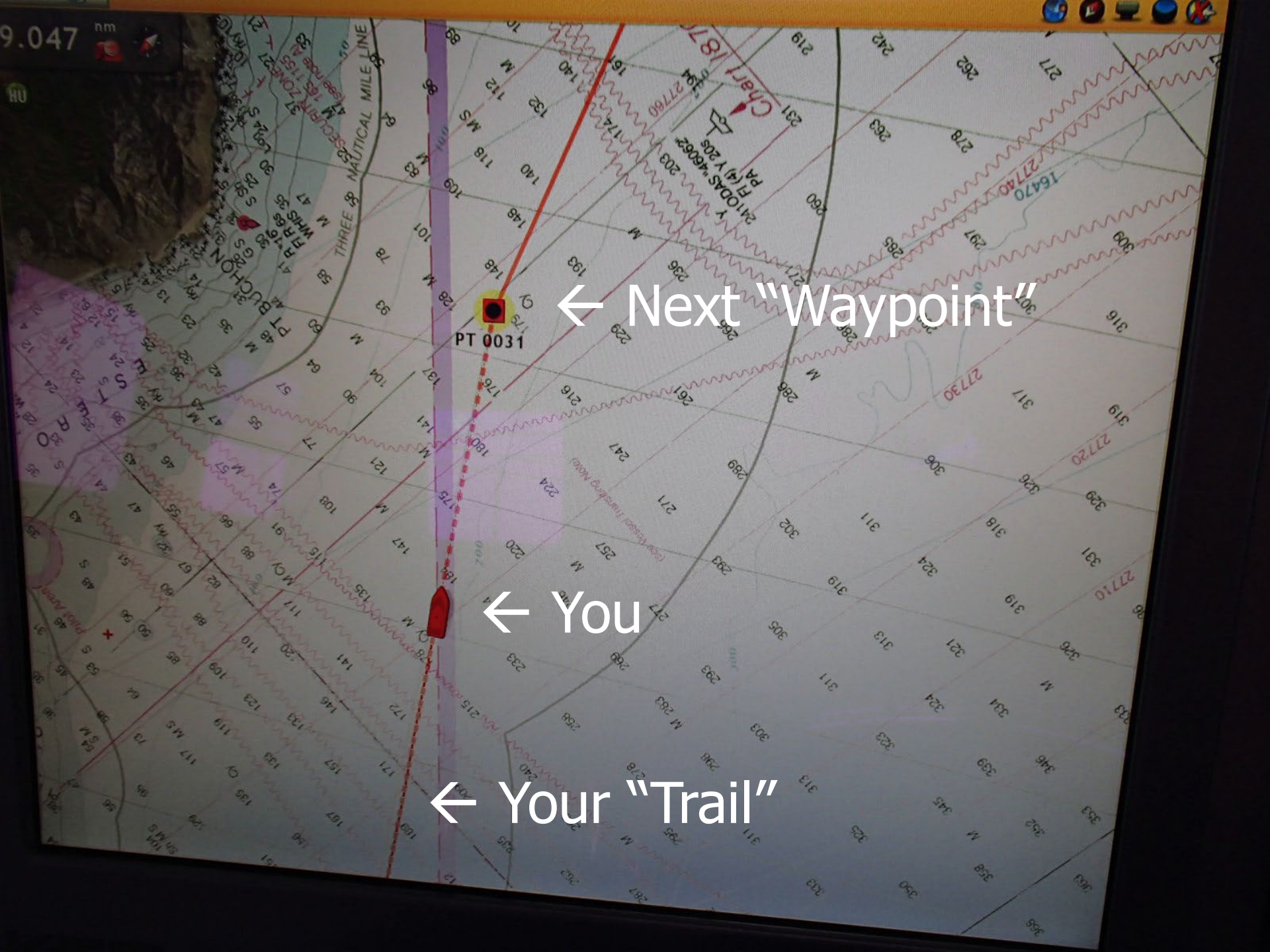


Plotting: (Paper and Electronic Charts)

- Hourly pencil Lat/Lon on Paper Chart
- Paper Charts are a reliable back up if you lose electronic navigation plotting
- **Electronic charts are not fool proof...**

Chart Plotting – Electronic Chart features

- Set up **Waypoints** (GPS coordinates)
- Create a **Route** (connect Waypoints)
- Can save **Routes**, also pre-program trips
- Move Cursor and “Go-to” it on Chart
- Connect **Autopilot to Navigate the Route**
- Leave a “bread crumb” trail
- Can overlay Chart and Radar
- Center Boat on Screen



← Next "Waypoint"

← You

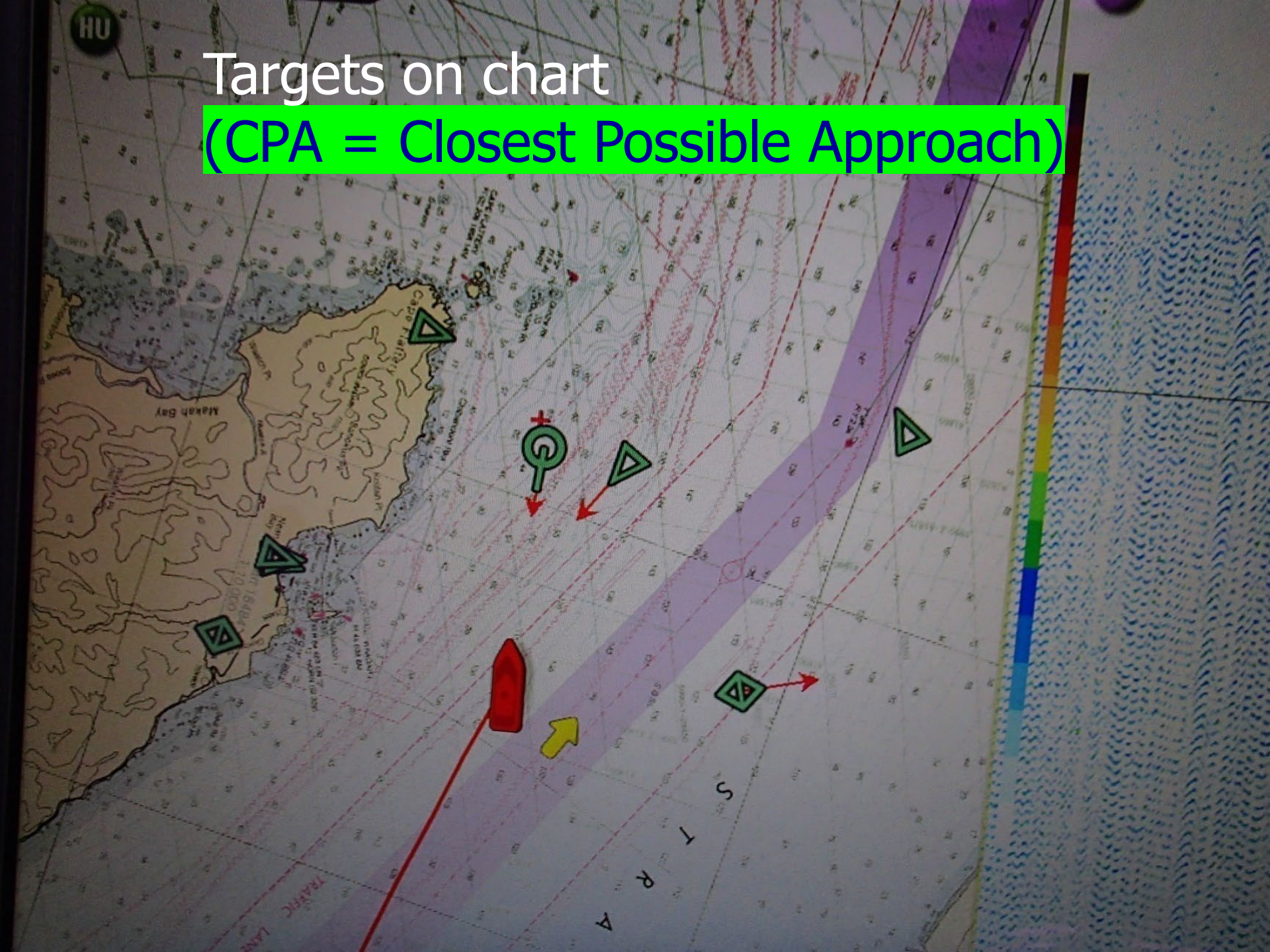
← Your "Trail"

“Bread Crumb Trail”

- This is a very useful feature
- Shows where you have been – good if you need to retreat
- Keep tides/depths in mind when using same trail
- Helps orientation, especially at night
- Also works with anchoring alerts

Targets on chart

(CPA = Closest Possible Approach)



Autopilot



Autopilot settings

- “Hands Free” much easier than steering
- “A” Autopilot – Digital compass course
- “N” Navigate – Route to next Waypoint
- “S” Standby – Hand steer

What's Up? Electronic Navigation

- Radar and Chart can be **Course Up**, **Heading Up** or **North Up**
- If your boat is heading North, it's easy
- When heading South, it's confusing
- Know how to change the screen orientation so that it is logical to you



Plotter and Radar – Heading Up



LET'S TAKE A BREAK

Navigation Priorities Class Drill

- There are 15 primary navigation items on this list.
- Rank them in your priority order 1 – 15
- This is subjective
- Once you are done – hand in and we will review.

Offshore Essentials

Skills for open-water travel

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What is the most dangerous thing on a boat?



There's a saying in the
cruising community:

*"All cruising plans should
be etched in the sand ...
at low tide."*

Pre-Departure Check List

- **Handout* - Start Up Pg. 6**
- Rain-X on windows
- Fresh Impellers, Belts, Clean Filters
- Clean Fuel and confirm Valves correct
- Clean out intake Strainers
- Test run all equipment at the dock

Common Questions:

*How far offshore will you travel?

(Close? Far? Sea state? Wind? Currents?)

100 Fathom line = crab/lobster pots.

*Avoid shipping lanes and high traffic areas?

*Getting sleepy on watch – what do you do?

*What if it is too rough to continue?



Watch Standing Essentials

- **Keep water under the keel - don't hit anything!**
- Compass Heading: Correct direction
- Navigation: Position and intended course
- Radar: Awareness of targets, boats and land

Question for the class:

What do you do on watch?

POP QUIZ

Looking for your ideas...let's make a list



A group of dolphins is leaping from the water near a boat. The dolphins are captured in mid-air, with their bodies arched and tails visible. The water is a deep green color, and the boat's edge is visible in the bottom left corner. The overall scene is dynamic and energetic.

The **Captain** is in charge!

Whether it is you as the Owner or someone you hire, only **ONE** person can be in command

The Captain makes the call on
**WEATHER, NAVIGATION and
ROUTING**



The Captain plans the route

Handout* Ready for Sea p. 7

- *Review boat safety and overview of plan with crew
- *Departure time – Daylight, Tides
- *Distance to travel, speed average **(Arrival ETA?)**
- *Anticipated Sea and Weather conditions
- *File a Float Plan let people know your itinerary
- *Keep looking back, you may need to retreat...

What do you record in the log?

Underway Log Handout* p. 8

Heading, course – following the route?

Latitude and Longitude position

Trip Log – fill out details

Speed of your boat – RPM, Knots

Fuel burn/consumption

Weather – Wind: speed/direction,

Sea state: – wave height and period

Barometer

Traffic, obstacles on the water, concerns

Battery levels – voltage good?

While On Watch:

Monitor engine gauges – engine oil pressure, coolant temp, etc.

Monitor all electrical – battery voltage, amperage consumption

Radar: Targets - speed and heading

CPA “Closest Possible Approach” (time to intersect?)

Plotter: Waypoint – Are you on course?

Heading – Hand steer or Auto/Nav?

Listen to VHF radio, Update the Ship’s Log

15 minutes

Use an egg timer or other reminder to look outside of the boat.

Visually, with naked eye and binoculars, look outside by dividing your surroundings in **zones**. Search for traffic and objects

15 minutes is the time a fast moving ship can appear out of no where...

Changing Watch

Watch Schedule* hand out page 9

- Identify all Ships Traffic (coming and going)
- Confirm Course, Route and next Waypoint
- Any observations? Record in the log
- Make sure new Skipper knows history and is ready before handing over the helm

A photograph of a boat's cockpit dashboard. The dashboard is dark grey or black and features several analog gauges and digital displays. A steering wheel is visible in the foreground. The background shows the boat's windows and interior lighting.

Zoom in on Plotter Course and slowly Scroll to the next Waypoint – confirm you have a clear route with no obstructions

Radar – all clear?

Verify your gauges and settings – engine temp, oil pressure, battery voltage, etc.

Check VHF – on channel 16? Weather?



Primary Watch Standing Duties

- *Avoid collisions, "Look Out" for objects in the water
- *Keep a "Weather Eye" for changing conditions
- *Monitor VHF 16
- ***If any trouble – change RPM** – will get everyone's attention

POP QUIZ * let's make a list!

What do you do for an Engine room check?

Looking for your ideas...



Engine Room Checks

***Handout: Hourly Temperature Watch List p 10**

- Wear ear muffs. Eyes? Knees?
- Does everything look right?
- Does everything smell right?
- Do you see any evidenced of chafe or drips?

A man wearing a blue short-sleeved shirt with a white floral pattern, khaki shorts, and red ear protection is working in an engine room. He is leaning over a white engine compartment, using a white cloth to clean or inspect a metal part. The background shows various pipes, hoses, and mechanical components of the engine.

Engine Room Inspection

*Close the ER door (quiet and heat)

*Confirm Fuel valves

*Bilge water level?

*Temperature of stuffing box?

*Under Engine Drips? Belt Chafe?

*Racor vacuum gauges?

Ear Muffs – noise canceling

Essential for the engine room – at least two pair



Infrared Temperature Gun

Equipment to observe? Hold gun close, shoot same spot



“Night Ops” running after dark

- *Running lights – make sure they are all on
- *Interior lights: courtesy red, overhead red
- *Pilothouse command – dim and mute electronics
- *Wake the Captain if there is a concern

- *Stay awake, be extra vigilant – use VHF to communicate with other ships

Ready for night? (Red lights)

Don't forget spare bulbs for your Navigation running lights! (Better to upgrade to LED)



Night Watch:

- *Have a flashlight handy
- *Red light is easier on your eyes
- *Preserve your night vision (pupils– 30 minutes)
- *FLIR (forward looking infrared)
- *Search light (built in and hand held)



Night mode – dimmed down, red film, blue tape...



***Hourly Watch – page 11**

***Top of the hour**

***Why each hour?**

Garmin inReach

- *Two Way Texting
- *Subscription you can turn on/off.



Nov 11, 2020

2:53:30 AM

Good morning all! Start of day 3. So far flat seas, highest 3' swell. Strongest winds 6kt. Magical! 1000km to go!

Speed: 9.52 mph

Course: NW

Elevation: 21.00 ft.

Batt: Normal

Lat: N 15°16'46.7148"

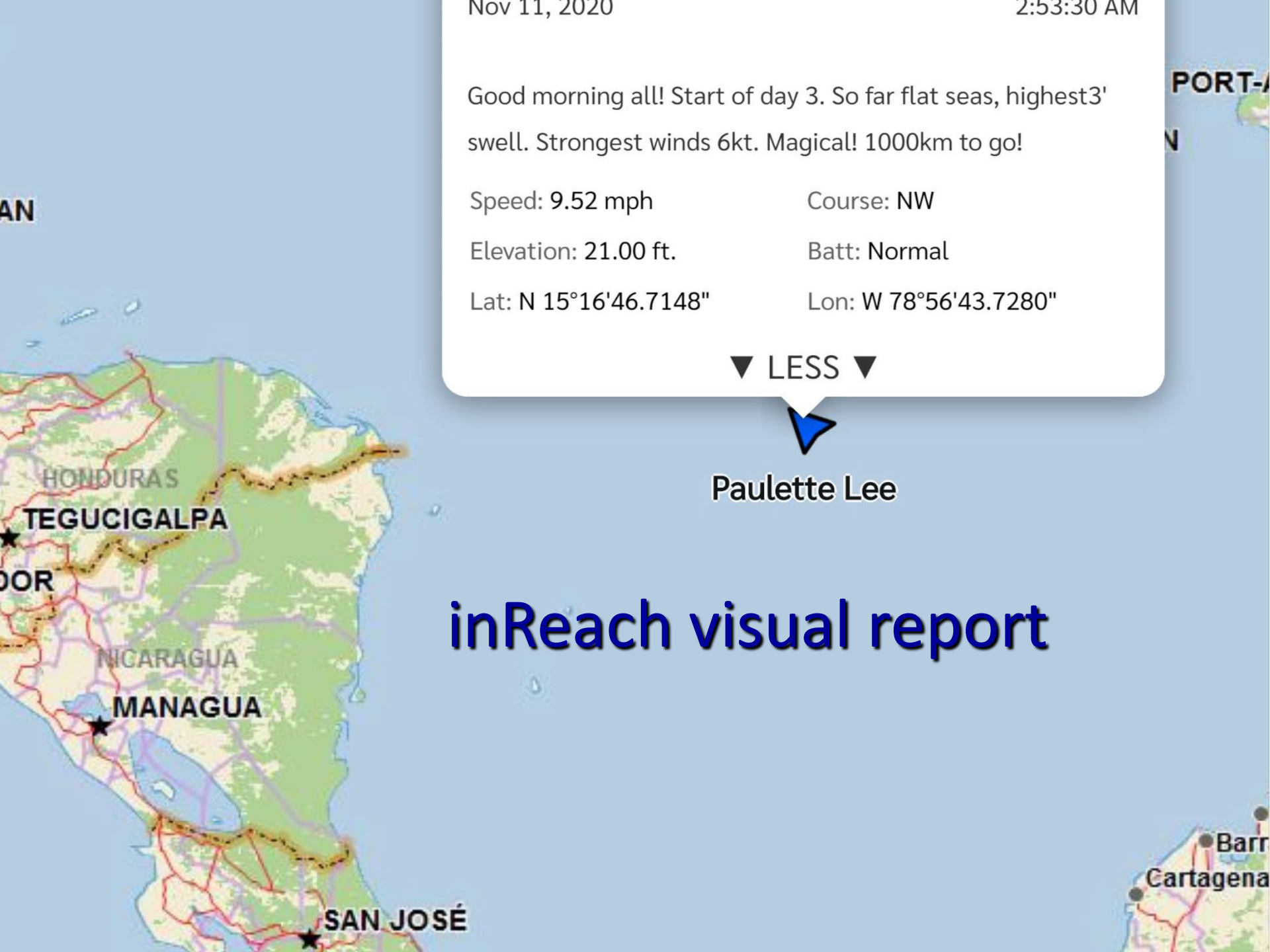
Lon: W 78°56'43.7280"

▼ LESS ▼



Paulette Lee

inReach visual report



Iridium Go – very popular

Text, talk, email and download weather
max plan \$140/Mo.

Antenna box – connects to satellite –
Wi-Fi signal to apps on phone.

Worth investigating

Are we there yet?



A photograph of the Golden Gate Bridge in San Francisco, California, viewed from a low angle looking up at the bridge's structure. The bridge's towers and suspension cables are visible against a clear blue sky. The water of the bay is in the foreground, and a hillside is visible in the background.

One Day Out:

*Plan your arrival for day light and slack tide (need rising tide?)

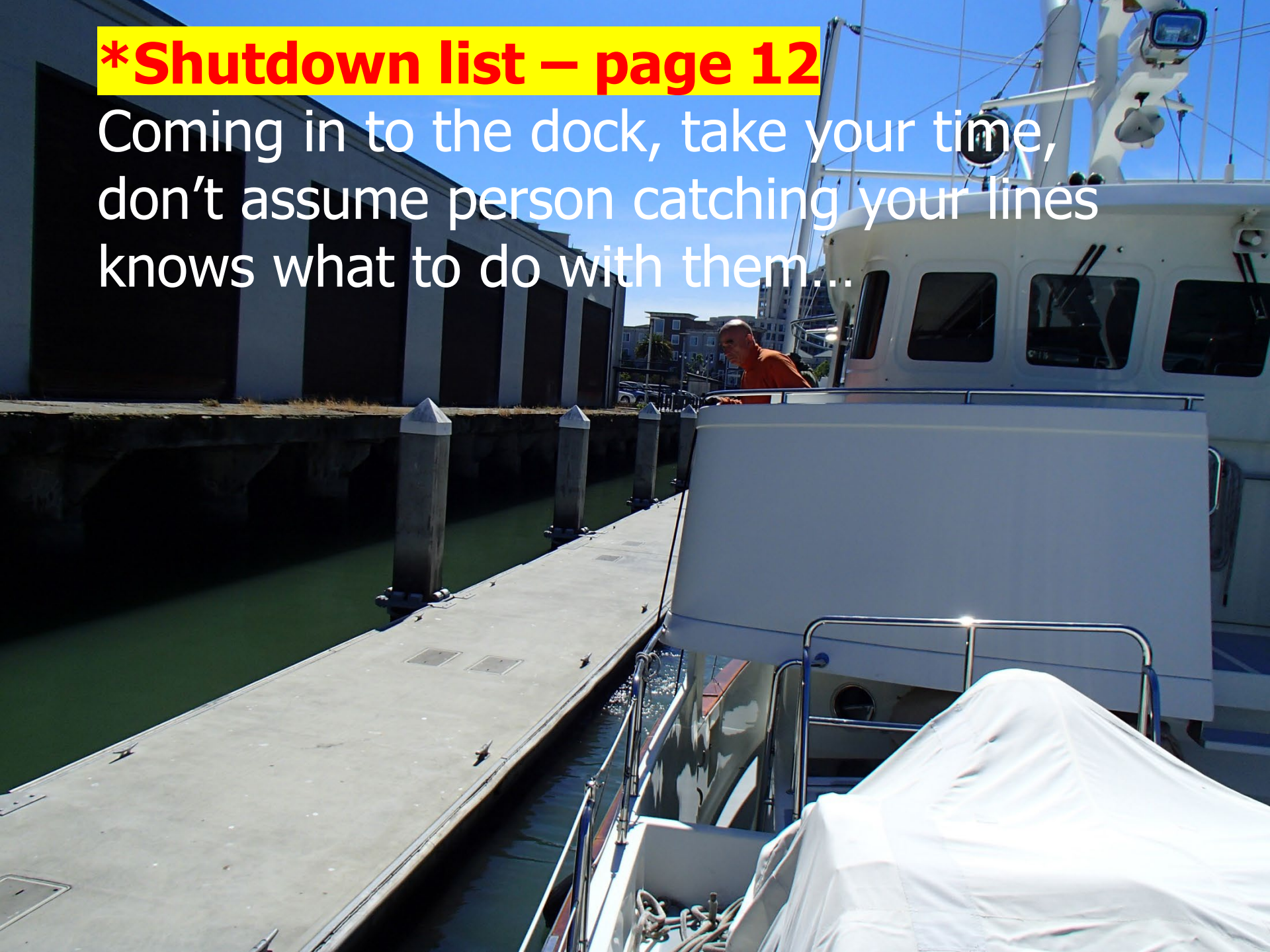
*Google Earth for aerial view

*Call ahead (VHF or cell phone) to confirm your mooring and provide ETA

*If staying at a slip find out the exact location (sometimes there is a boat there!) and also ask about keys for gates, showers, etc.

***Shutdown list – page 12**

Coming in to the dock, take your time,
don't assume person catching your lines
knows what to do with them...



Questions & Answers:
Any tips or suggestions?
Open discussion...



A sunset over the ocean with a cloudy sky. The sun is low on the horizon, casting a golden glow across the water and sky. The clouds are scattered and catch the light of the setting sun, creating a dramatic and colorful scene.

Thank you!

Please provide your contact information if you would like me to notify you when this presentation is posted on www.JMYS.com