U. S. Coast Guard Communications

and

Search and Rescue

LCDR Kellen Browne
USNA '09

Navy OS 2005-2009
Newport/Bermuda
Annapolis/Newport
HELLMARVA 2008

MH-60T Instructor Pilot
CG Air Station Clearwater, FL
CG Air Station Sitka, AK

Planning and Preparation

Vessel Readiness

Free CG Auxiliary inspection
cgaux.org/vsc

Comms Equipment Registration

EPIRB Registration
sarsat.noaa.gov

VHF-DSC Registration
U.S. Power Squadron, Inc.
https://www.usps.org/php/mmsi_new/
BoatUS
http://www.boatus.com/mmsi

Float Plans

File with friend or family member

USCG accesses, if needed
floatplancentral.org

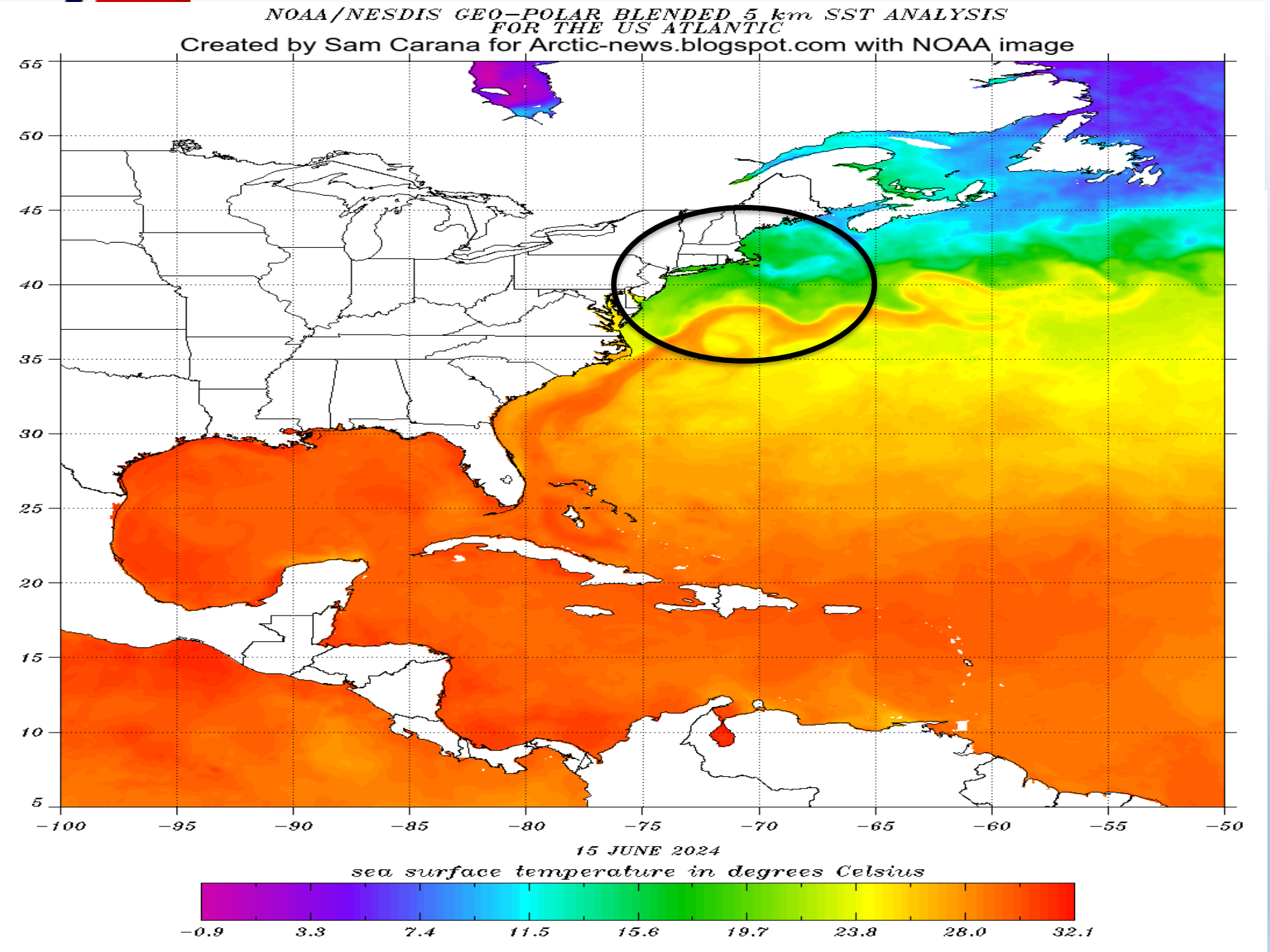
Required Information

- Name of vessel
- POB
- Type of vessel
- Departure/Destination
- Survival equipment on-board

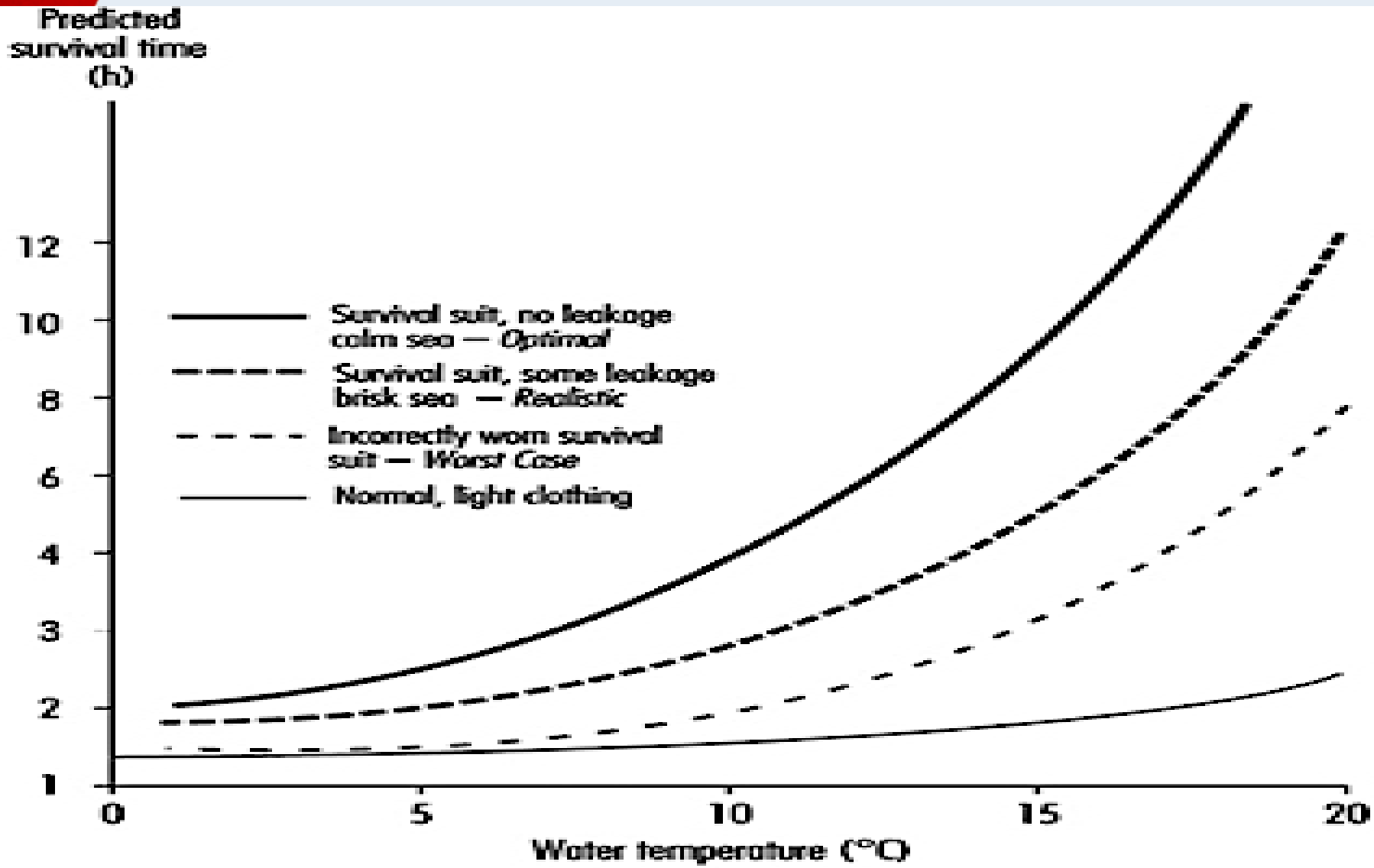
Planning and Preparation

Survival equipment

- Life jackets
- Survival suits
- Rafts


NOAA/NESDIS GEO-POLAR BLENDED 5 km SST ANALYSIS
FOR THE US ATLANTIC
Created by Sam Carana for Arctic-news.blogspot.com with NOAA image
55
50
45
40
35
30
25
20
15
10
5
-100
-95
-90
-85
-80
-75
-70
-65
-60
-55
-50
15 JUNE 2024
sea surface temperature in degrees Celsius
-0.9
3.3
7.4
11.5
15.6
19.7
23.8
28.0
32.1

Planning and Preparation



Planning and Preparation

Radios & Beacons

- VHF-DSC
- SAT Phone
- EPIRB
- Personal Locator Beacon (PLB)
- AIS - MOB
- HF

Signaling Devices

- Mirrors
- Flares/Smoke
- Sea Dye
- Strobes
- Whistle
- Flashlight

Night Vision Goggle Visible

- Red lights
- Phones
- Non-LED lights
- Flame

Planning and Preparation

EPIRB - Emergency Position Indicating Radio Beacon

Digitally Encoded / Satellite Detected Distress Signal

406MHz Signal

Embedded Vessel ID

Registration

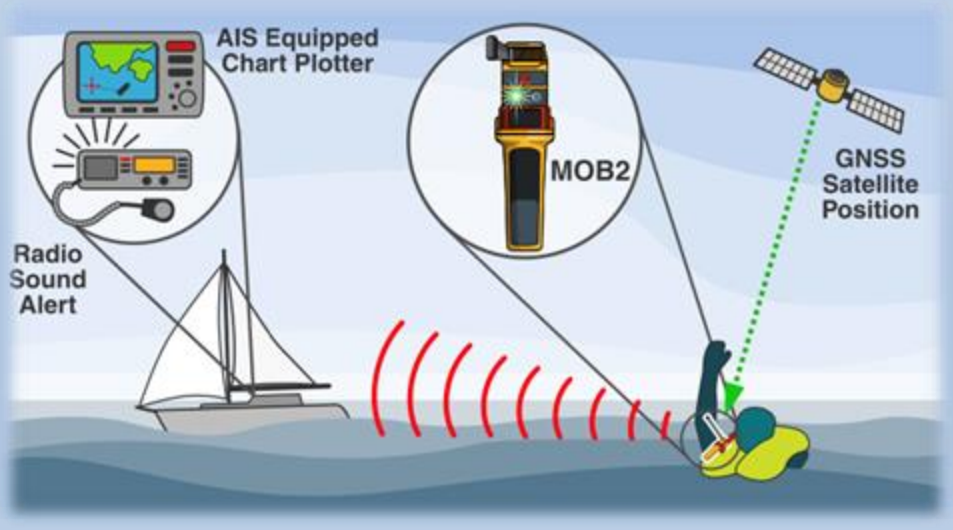
sarsat.noaa.gov

Planning and Preparation

Automatic Identification System - Man Overboard (AIS-MOB)

MOB2

- Auto Activation
- GPS Interface
- AIS Position Broadcast Locally
- VHF-DSC Enabled



406 MHz vs. SENDS

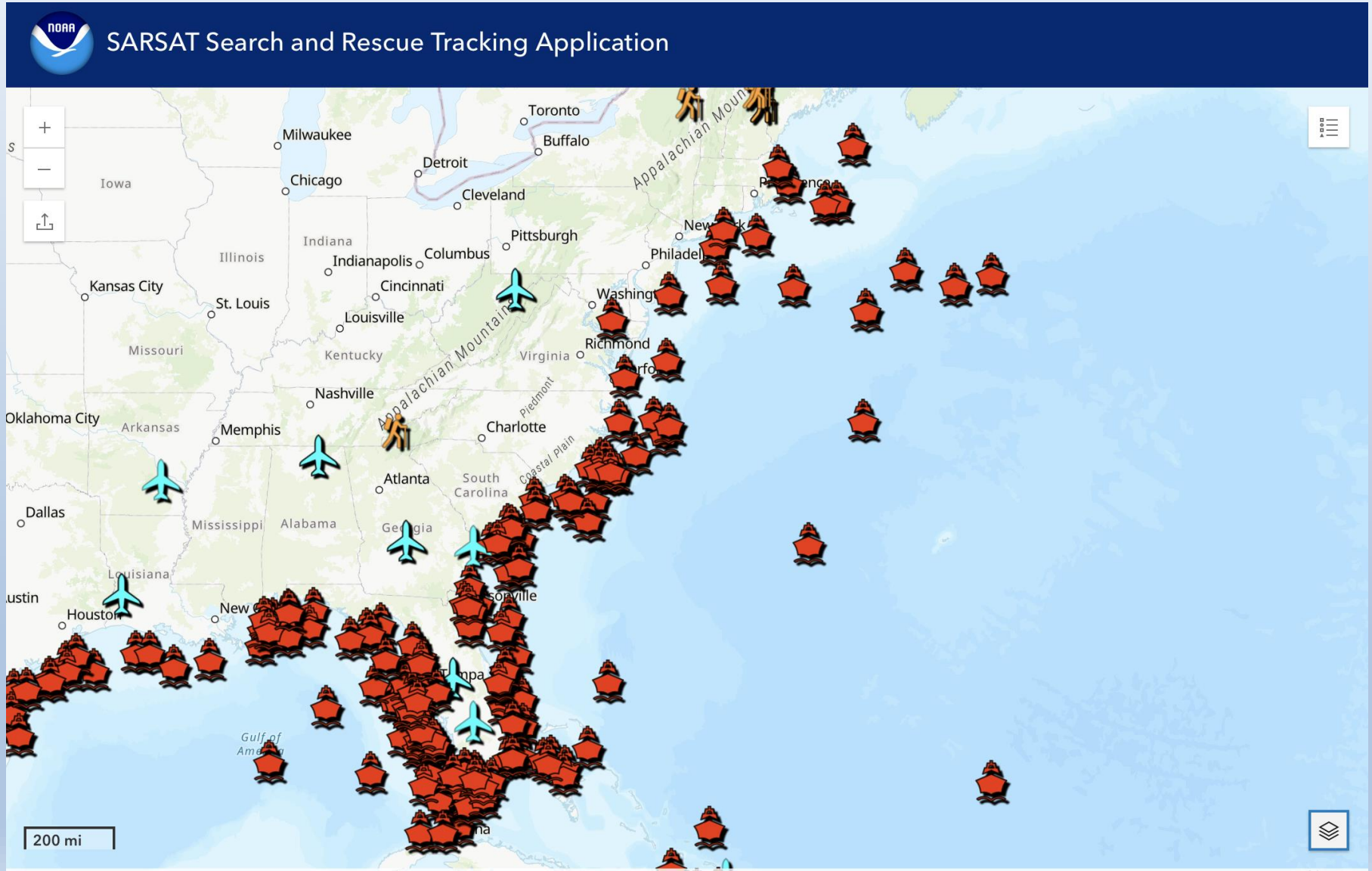
Cospas-Sarsat Beacons (406 MHz)

- Direct notification to SAR professionals
- Global coverage

Commercial Satellite Emergency Notification Devices

- Subscription service
- Potentially limited coverage

SARSAT - Assisted Rescues 2022 - Present



How to Communicate with the USCG

How to Communicate with the USCG

Important to call early!

- Extremis rarely improves
- CG can monitor
- Nightfall increases risk
- If in doubt, CALL!

Sailors are planners, plan ahead for your rescue!

How to Communicate with the USCG

- Satellite Phone call to US Coast Guard

  Atlantic Area SAR Coordinator, Portsmouth, VA

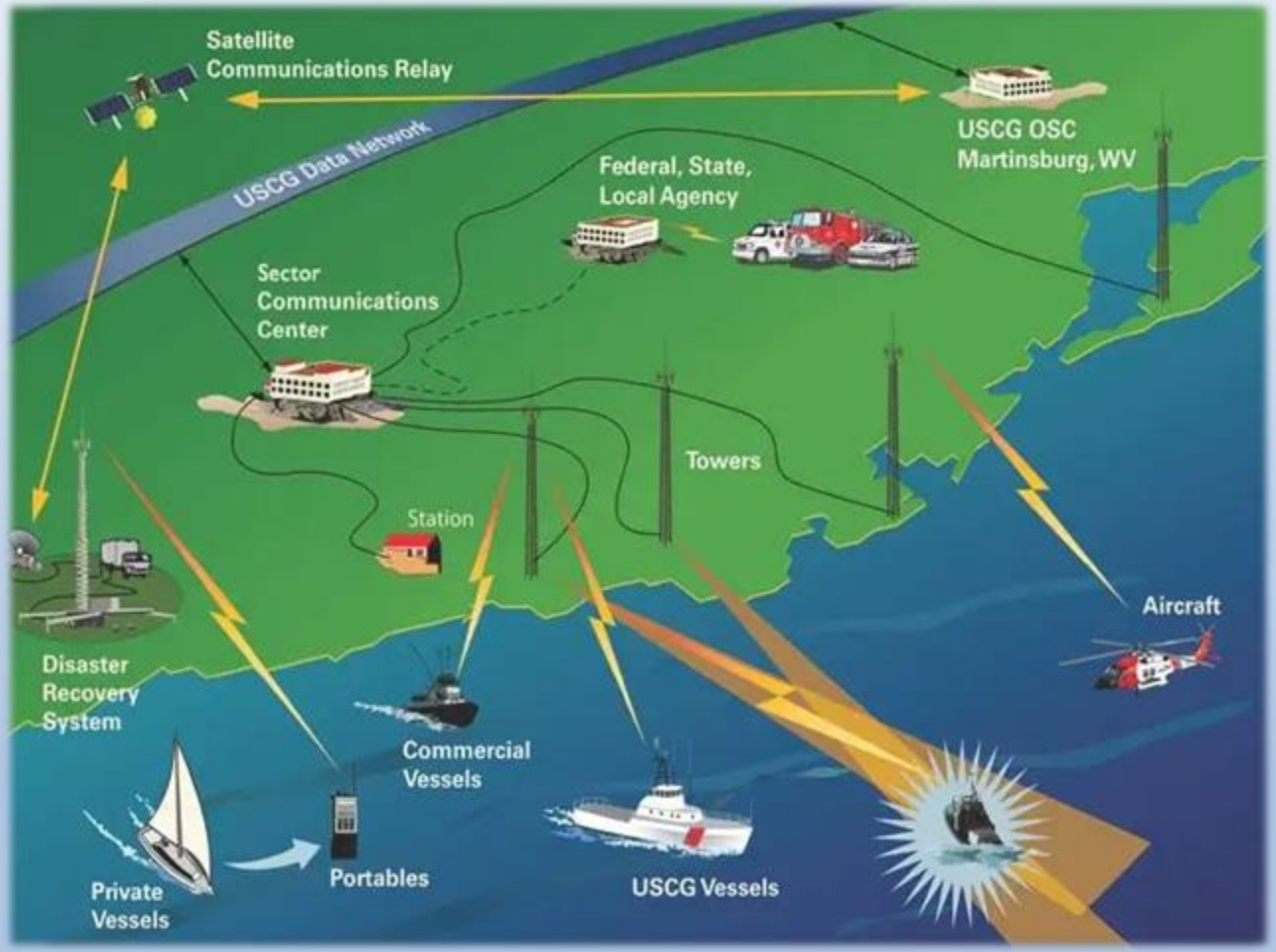
  - **757-398-6700**

  Pacific Area SAR Coordinator, Alameda, CA

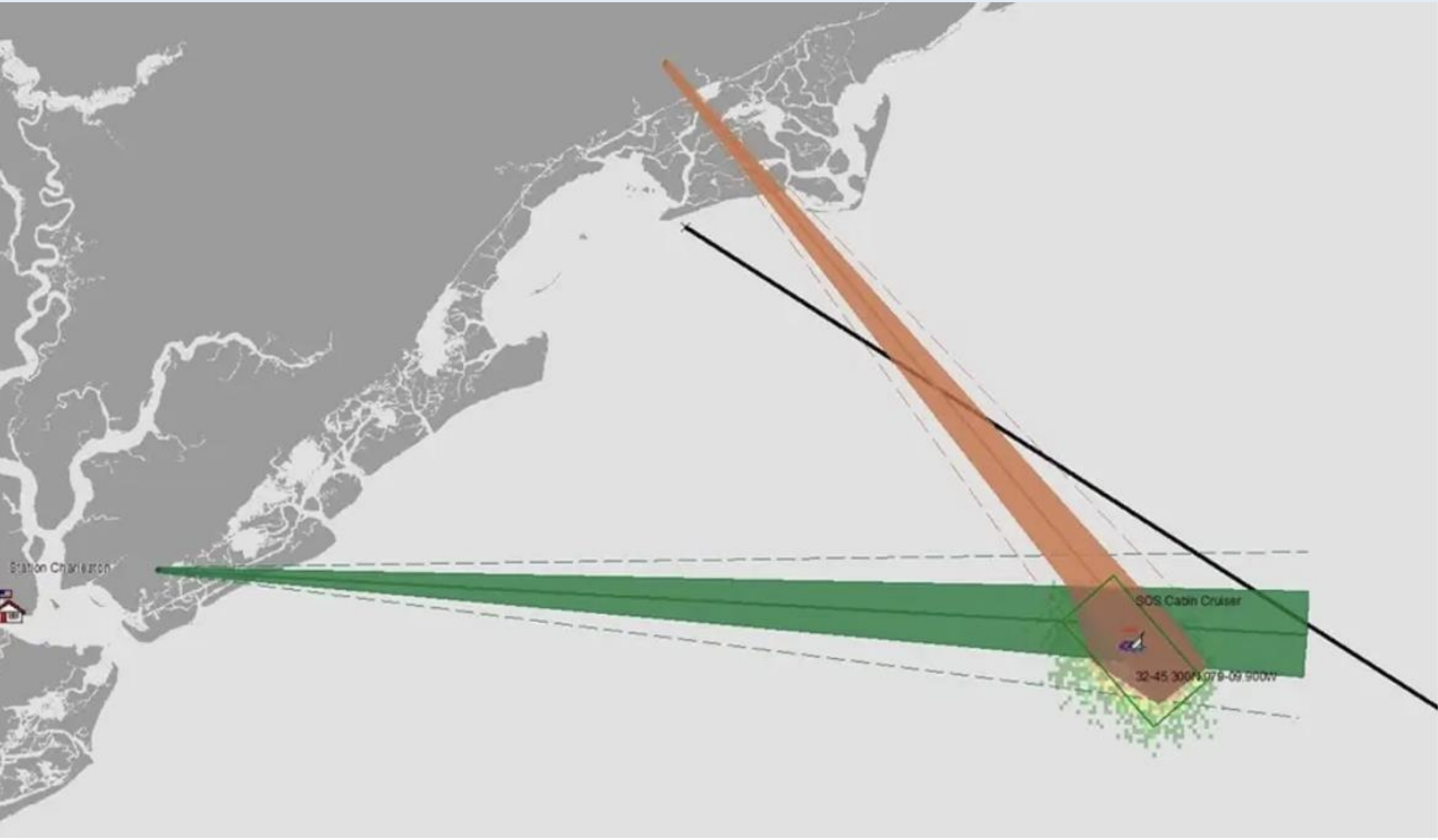
  - **510-437-3701**

U.S. COAST GUARD
RESCUE 21
SAVING LIVES IN THE 21st CENTURY

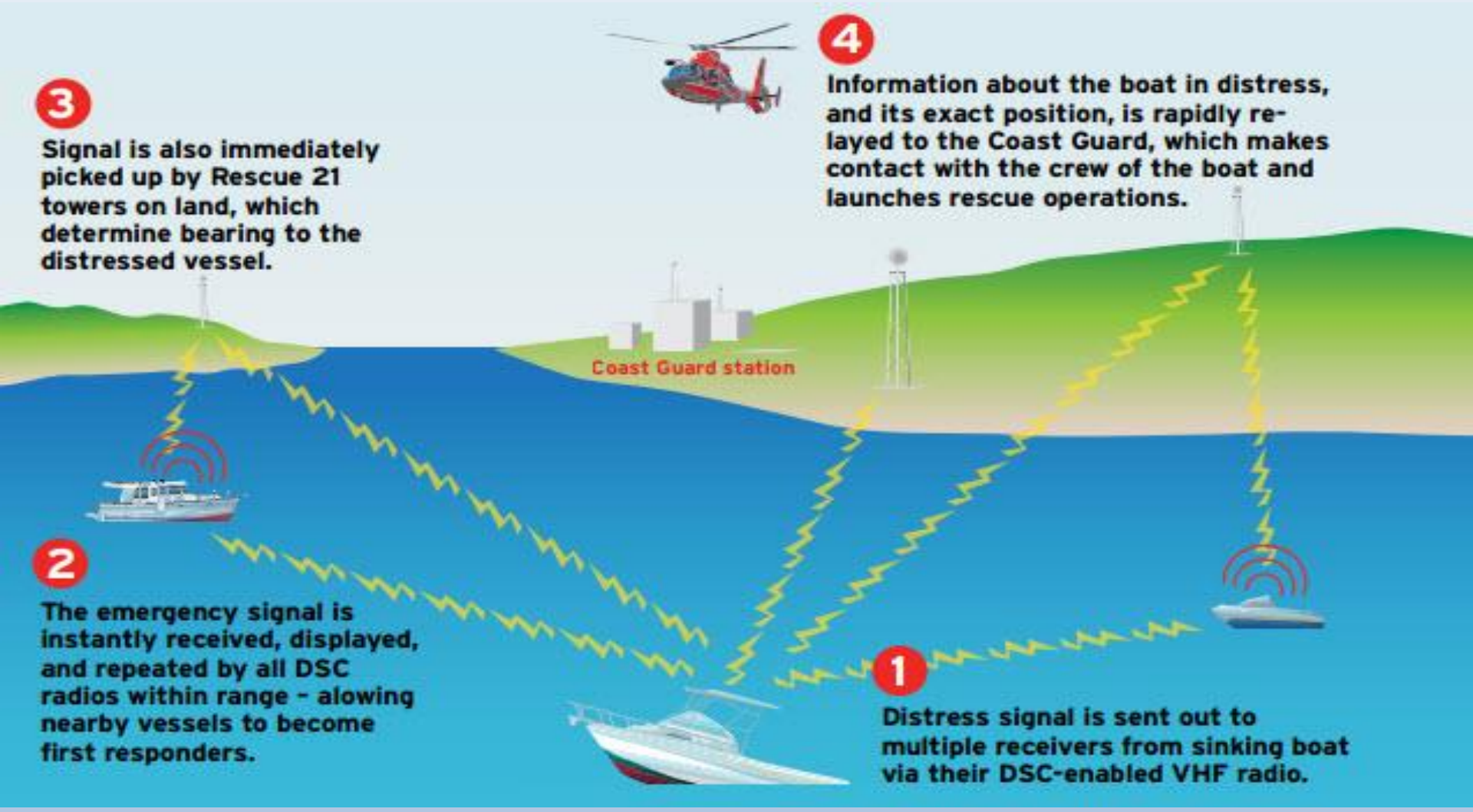
- Maritime Distress Comms for Coastal United States (within 20nm)
- Communications Infrastructure for All USCG Coastal Missions
- Uninterrupted Guard on VHF Ch 16
- Direction Finding Capability



R21 - Line of Bearing Fix



How to Communicate with the USCG



Rescue **C**oordination **C**enters

SAR Mission Coordinator

- Directs the SAR case
- District/Sector level

Create Search Pattern

- SAROPS

Dispatch Appropriate Response

- Small boat
- Aircraft
- Cutter

Search and Rescue Optimized Planning System (SAROPS)

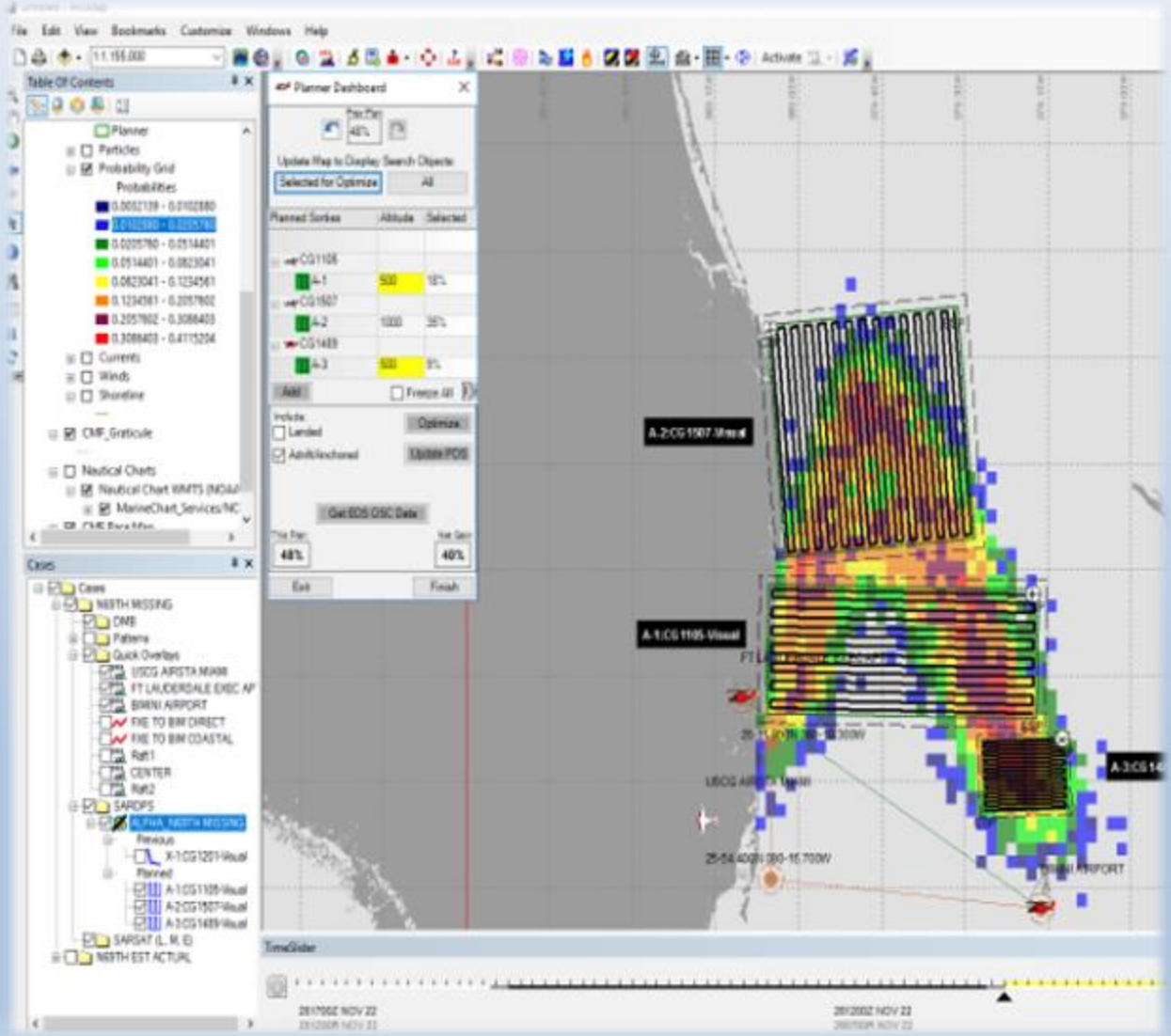
Uses the Most Advanced Technologies

Improve Usability, Effectiveness, Efficiency

Streamline Search Planning Process

Higher Probabilities of Success in Less Time

Use Best Available Data



SAR Response

- First Call
  - SAT Phone distress call
  - Hatteras
- USC
  - Type
  - Gathers additional info
    - Vessel homeport
    - ulate
    - Time of Day
    - Asset(s) to be used

- Response
  - D5 employs SAROPS to draft preliminary Search Action Plan (SAP)
  - Alert/Launch HC-130 from Air Station Elizabeth City, NC
    - Pass SAP prior to launch or after takeoff
  - Alert any other vessel traffic in the area to assist
    - AIS / AMVER
  - C130 locates & establishes comms with distressed vessel
  - D5 Launches MH-60 from Air Station Elizabeth City
  - H60 locates distressed vessel and renders assistance as necessary
    - Dewatering pump
    - Hoist survivors

SAR Methods

Help yourself get located!

- Expose bright colored objects
- Keep communicating
- Toss garbage, debris, non-useful items overboard to drift
- Keep your radio on
- If you must abandon ship, STAY WITH YOUR VESSEL!!

SAR Methods

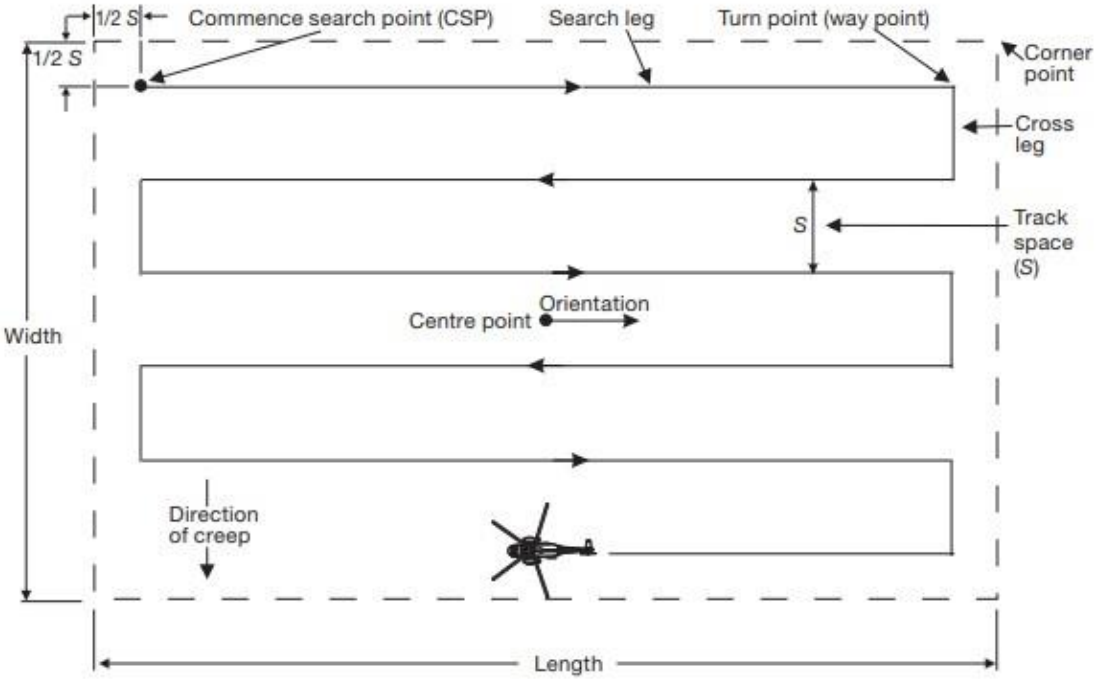
How do we find you?

- GPS position
  - Deg/Min/Sec vs Decimal
- Signal Homing
  - EPIRB Frequencies
  - Long counts
- Search Patterns
- Radar
- Flares

SAR Methods

Parallel Search

- Large search area
- No well-known position
- Accounts for wind/drift

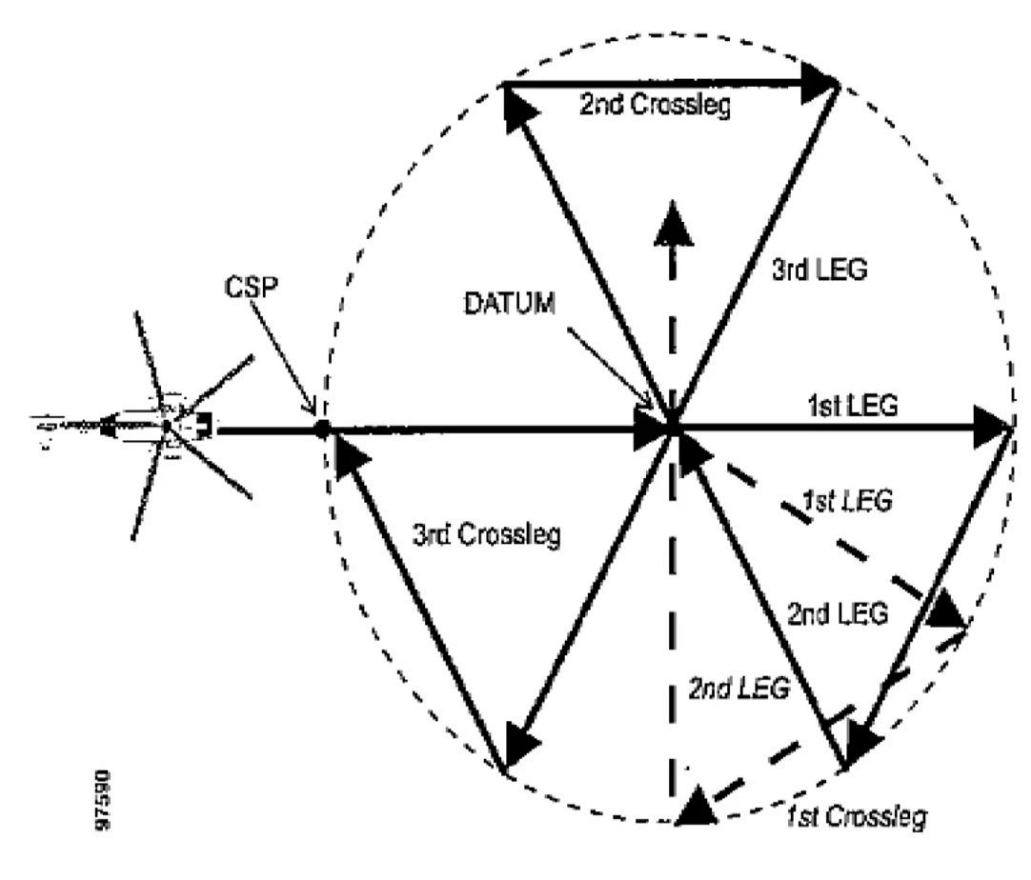


Parallel track search (PS)

SAR Methods

Sector Search

- Small search area
- PIWs
- More precise position known

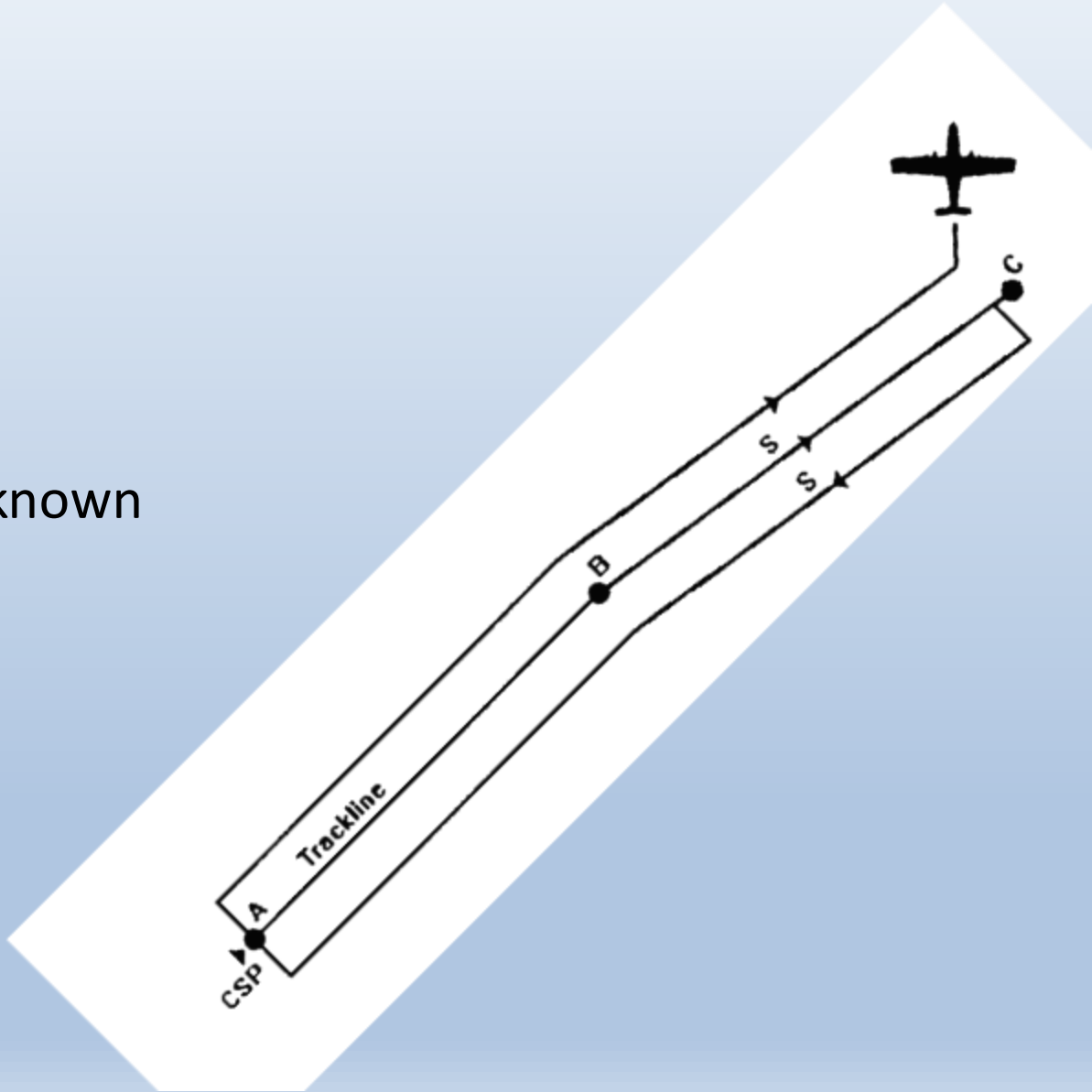


SAR Methods

Track Line Search

Overdue vessel

Course/destination known



What to Expect When We Arrive

Establish comms

Evaluation/Risk assessment

- Use of the Rescue Swimmer

Hoist sequence & instructions

- Rescue Brief
- Underway
- DIW

Clear the hoisting area

- Loose gear
- Sails
- Anything with windage
- Collapsible antennas
- Secure radar
- Static Discharge

What to Expect When We Arrive

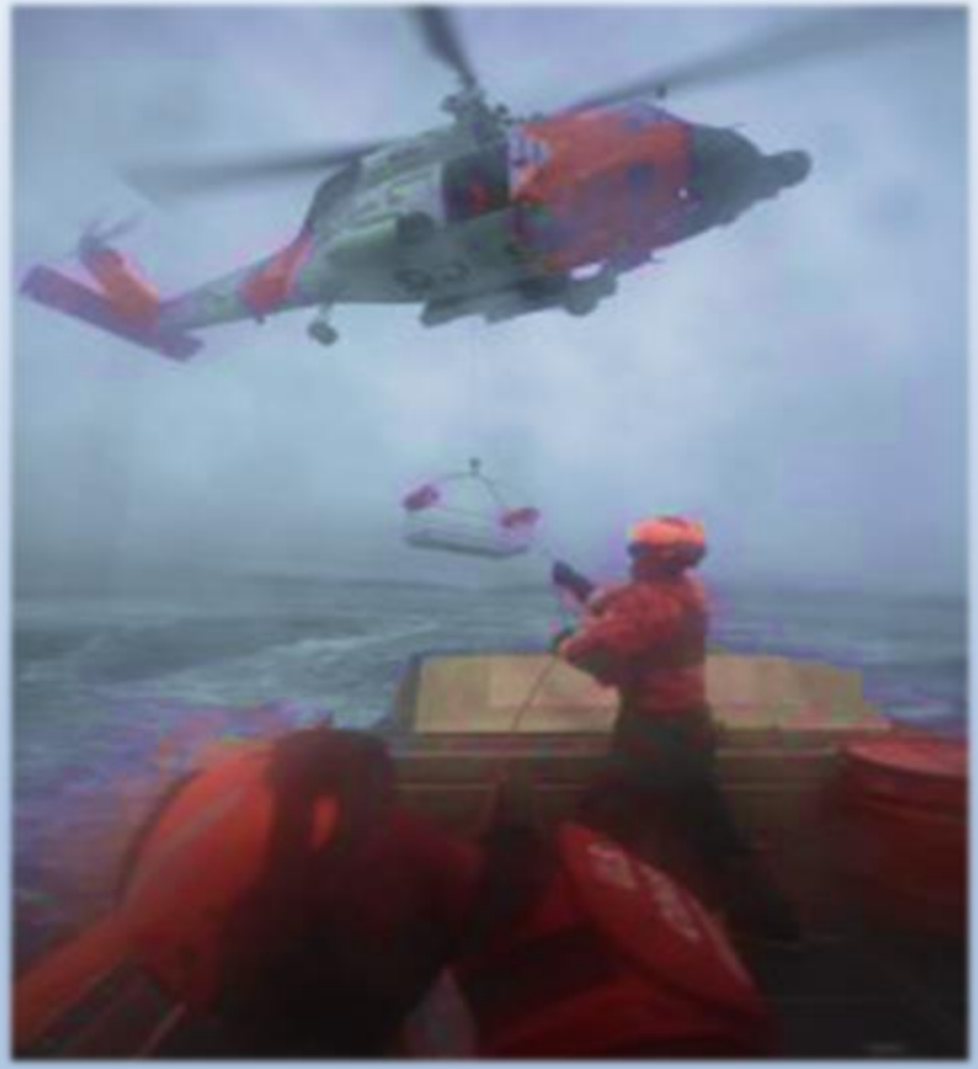
- Underway hoisting
  - Make 5-8 kts
  - 30-45 degrees off the wind
  - Maintain heading, don't steer into waves
- Dead In the Water (DIW) hoisting
  - Significant rotor wash
  - Boat may spin
  - Rescue Swimmer deployment to assist

- DO
  - Pull the device to the deck with trail line
  - Maintain slack in all lines after device is delivered
  - Keep lines/cables free of snag hazards on deck & super-structure
- DO NOT
  - Connect any lines/cables to your vessel
  - Wrap anything around your body
  - Hang on to any device if there is tension in the hoisting cable

What to Expect When We Arrive

Using the trail line

- No risk of static discharge
- Assists delivery of rescue device
- Keep tension
- Pull hard, don’t yank
- Allow device to touch vessel



What to Expect When We Arrive

- Dewatering pump
  - Pre-fueled
  - 150 gal/min
  - Instructions included
  - Two methods of delivery

What to Expect When We Arrive

Getting in the water

- Inflate life vest before!
- Don’t fight the Swimmer
- Let yourself be towed

Taking the $10K ride

- In the basket
- With the Swimmer
- From the water

Stay in the basket!

Other Sources of Rescue

AMVER – **A**utomated **M**utual-assistance **VE**ssel **R**escue System

- Voluntary participation by commercial vessels >1000 gross tons on a voyage of 24 hours or more
- Vessels can be called on to assist with emergencies
- Over 7,000 participating vessels underway each day

More Info @

U.S. Coast Guard Navigation Center

www.navcen.uscg.gov