



# ***Handling Heavy Weather***

*Presented by-*  
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# When to set storm sails

## 35 KNOT RULE OF THUMB

- GALE STRENGTHENING
- SEA STATE
- NIGHT APPROACHING
- CREW CONDITION
- SAVE THE MAIN



# Stay ahead of the sea state



fetch

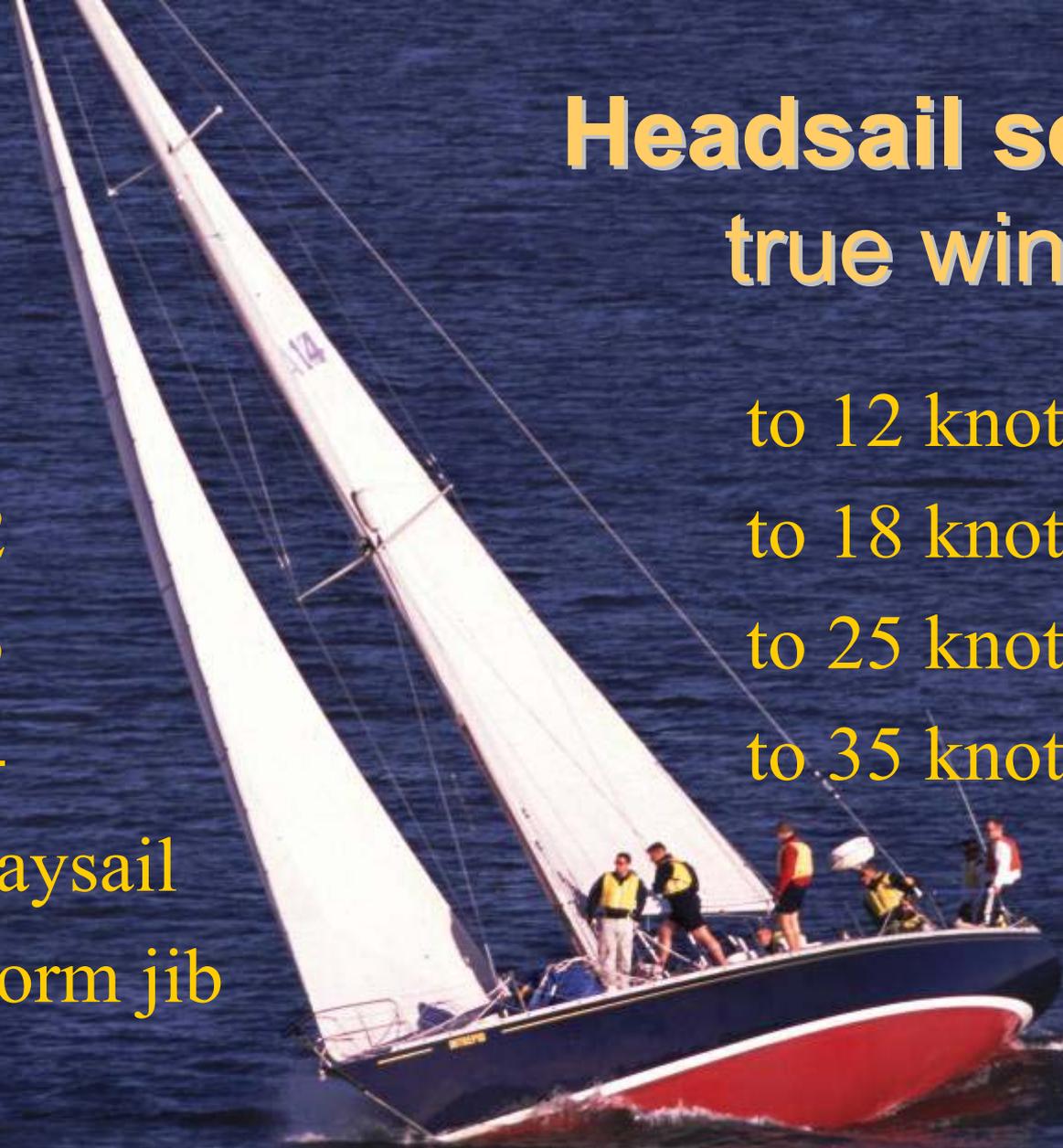
duration

depth

current

# Headsail selection true wind speed

- #1 to 12 knots
- #2 to 18 knots
- #3 to 25 knots
- #4 to 35 knots
- Staysail
- Storm jib



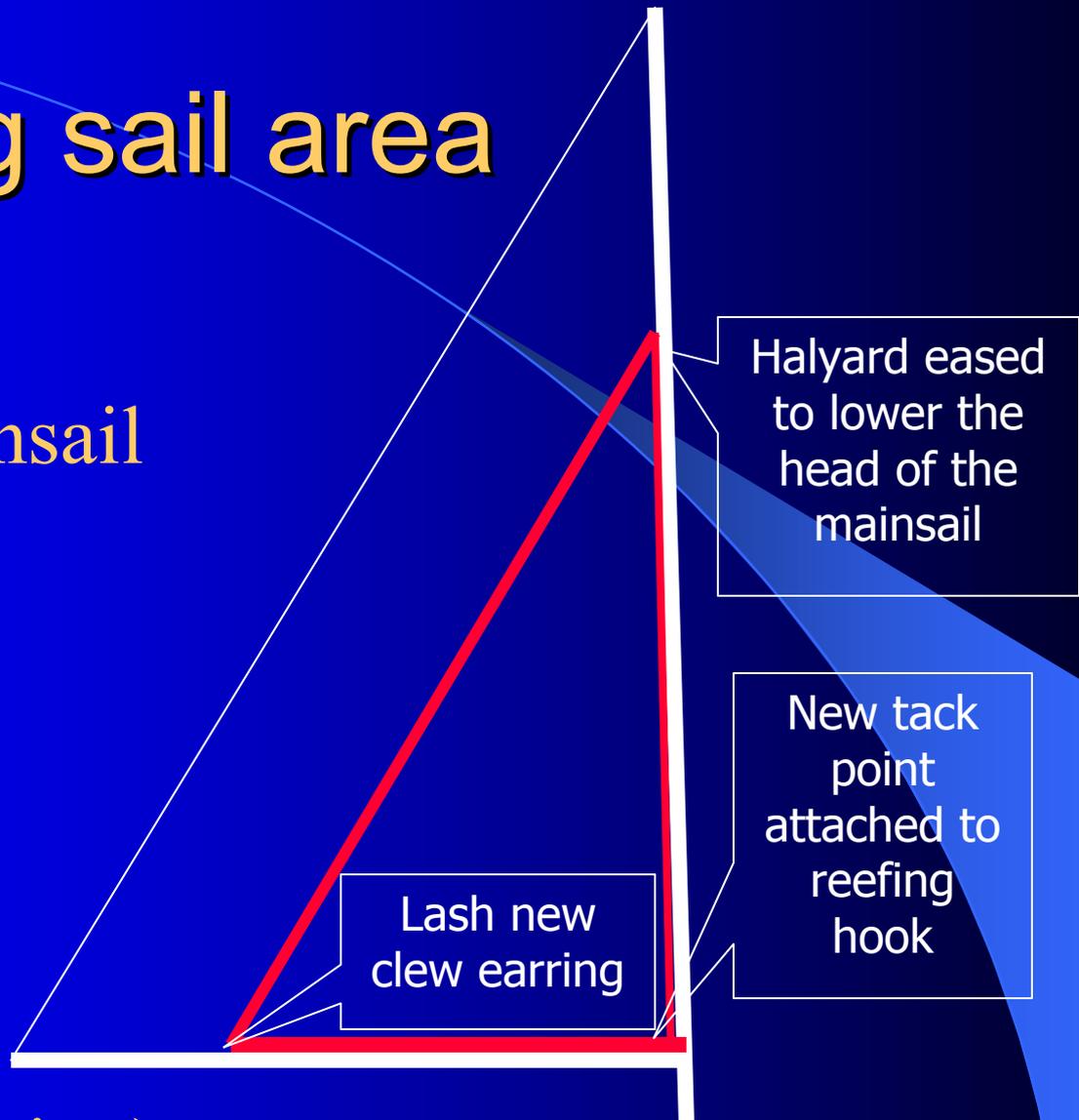
# Reefing skills

Clew lashing  
called an  
**earring**



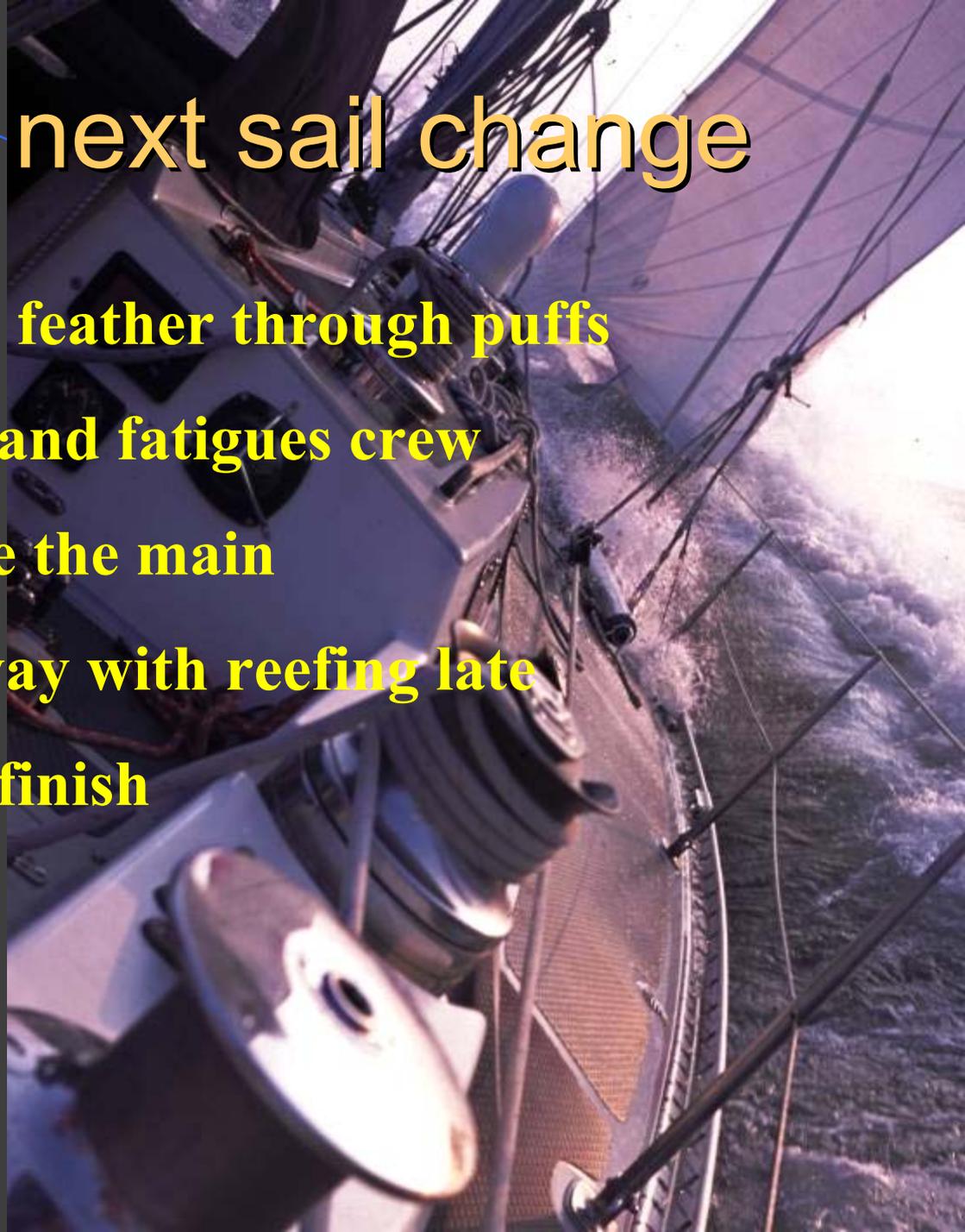
# Reducing sail area

- De-power mainsail
- Ease vang
- Ease halyard
- Set new tack
- Haul in clew
- Tie reef points
- Lash clew (earring)
- Trim



# Ready for the next sail change

- Powered up in the lulls feather through puffs
- Excess heel slows boat and fatigues crew
- Can't afford to damage the main
- Must be good to get away with reefing late
- Can't win if you don't finish



# Matter of Record



- Fastnet 79
- Hobart 98
- Cape Hatteras History
- Transoceanic races
- Evolution of open 60s

# Vessel attributes

- Stability
- Structural integrity
- Rudder
- Rig
- Rugged keel attachment



# Inspections and expectations



- ISAF cat I scrutiny
- The politics of ISO
- The absence of ABS
- Geriatric GRP
- Standard industry practice

**structural survey**

# A structural clean Bill of Health



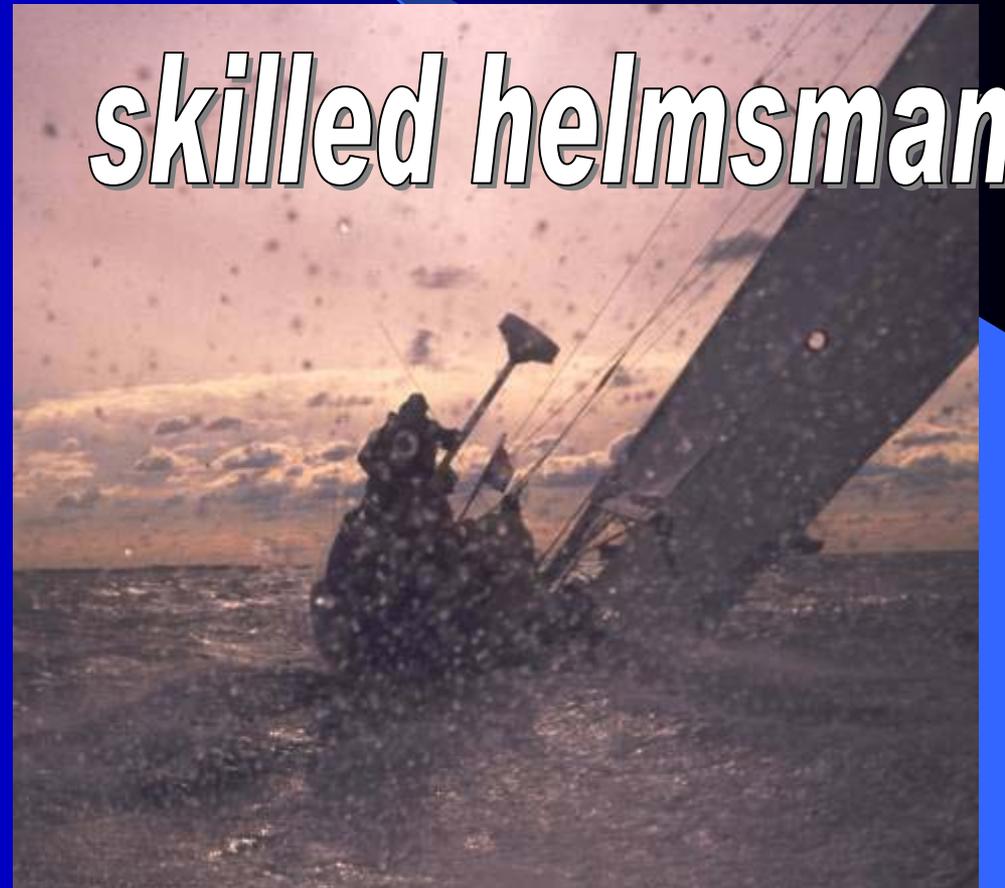
- Core bond, voids, delamination
- Hull/deck joint
- Keel attachment
- Chainplates
- Maststep
- Rudder
- Rig
- Rigging

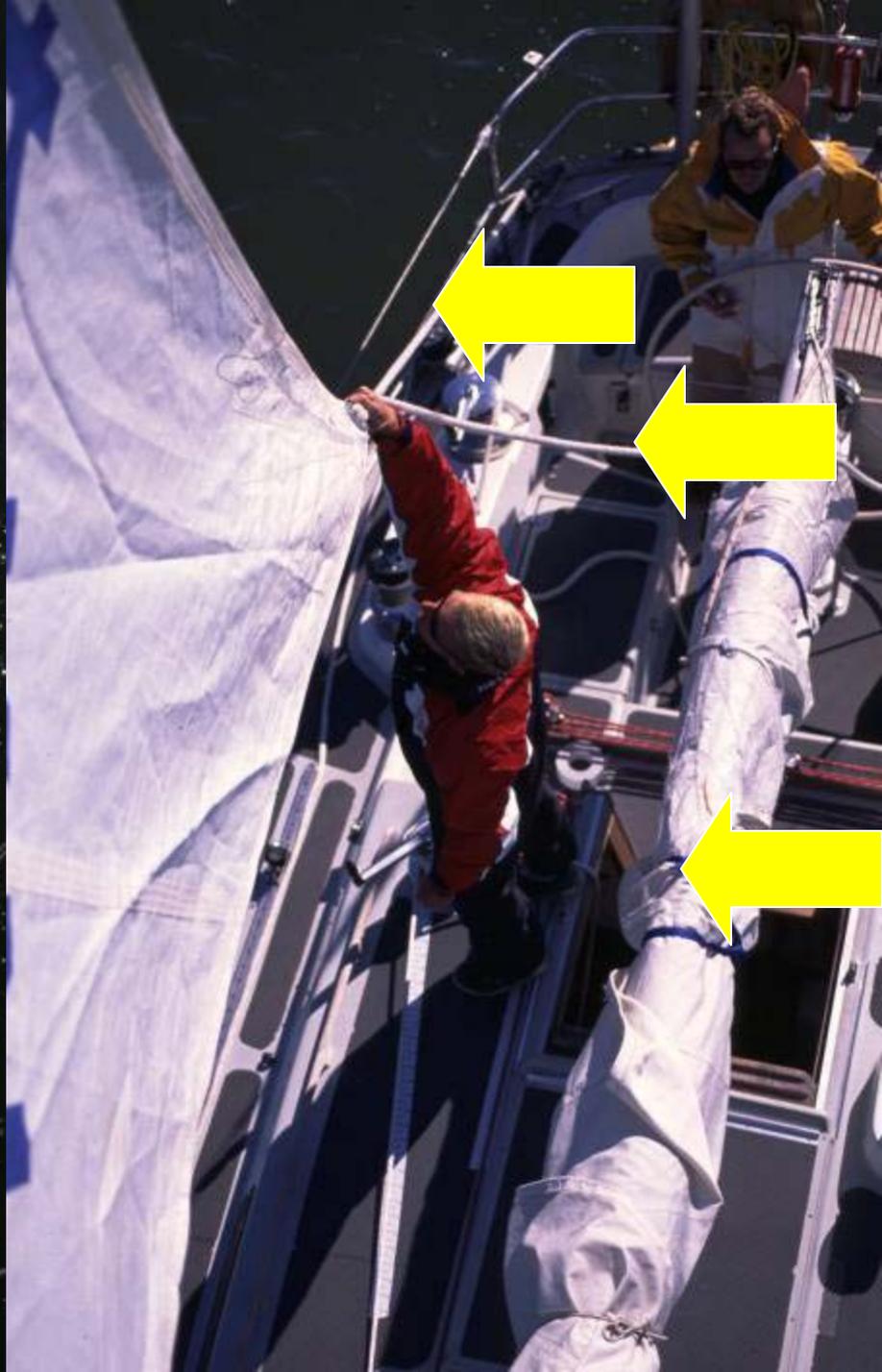
# Tactics

- Dictated by the wind and sea
- Influenced by your track and the storm's track
- Contingent upon what the crew and vessel can handle
- Effected by the duration of heavy weather

# Heavy weather alternatives

- Reef and run
  - Bare pole
  - Tow drogue
- Working to windward
  - Climb and drop ordeal
- Heave to
- Deploy a sea anchor
- Lie a hull





# Wind and sea geometry

- Note the wind and swell offset angle
- Avoid being beam on to largest seas
- Plot location of WX system and movement
- Sail away from worst part of storm
- Establish if weather is worsening or improving





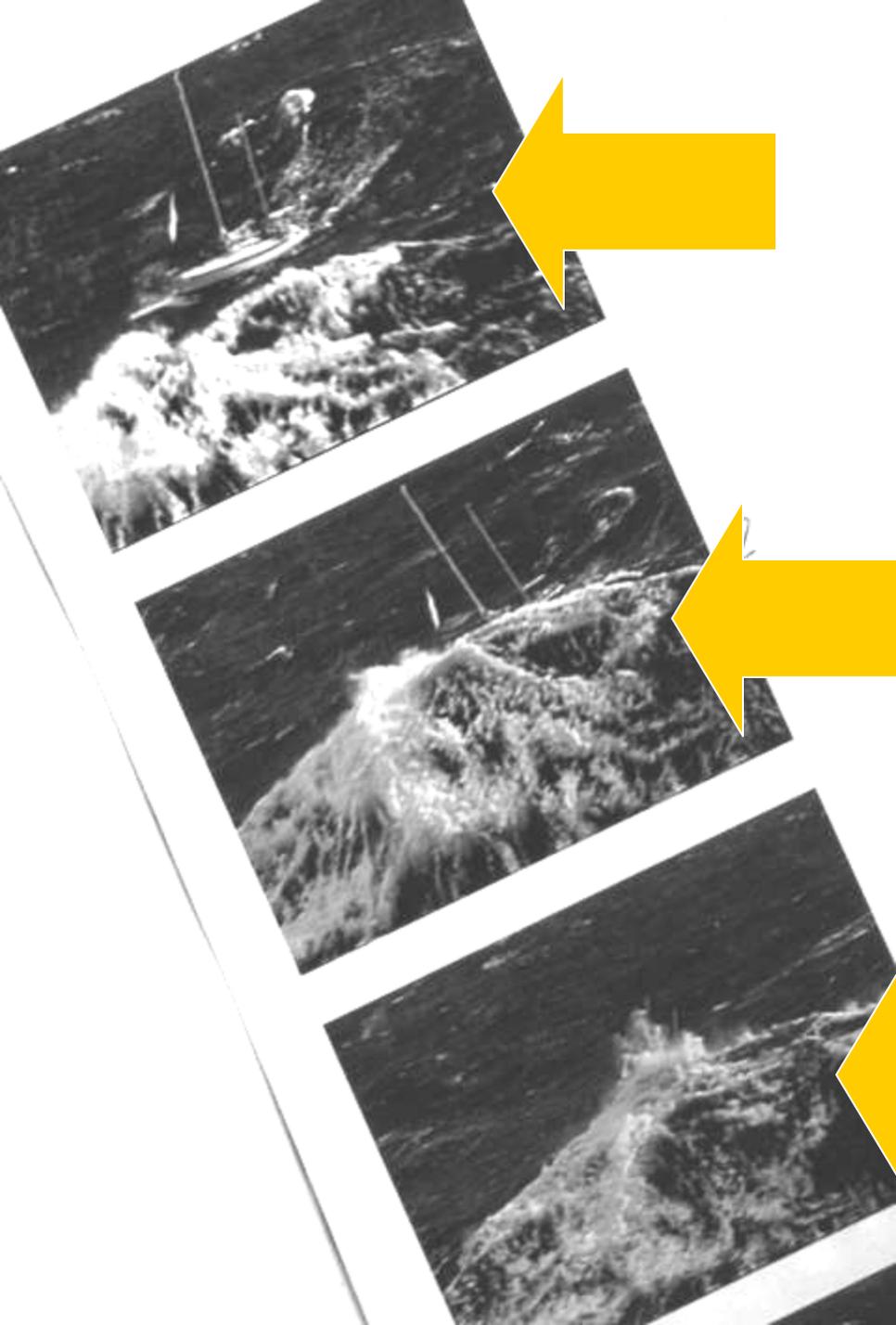
respond to conditions

# When a race becomes survival

- Waves rather than wind dominate
- Harness use is imperative (PFD)
- Steer to minimize boat damage
- Anticipate knock downs (gear stowage)
- Short watches (helmsman and wave watcher)
- Communicate position and situation
- Clothing, knife, whistle, strobe

# *Malachite*

- Morgan OI – 41
- Fall Gulf Stream
- Vessel abandoned
- Vessel recovered
- Lessons learned



# Communications search and rescue

A decorative graphic element consisting of a blue gradient shape that starts as a thin line on the left and curves downwards and to the right, ending as a solid blue area at the bottom right corner of the slide.

# Equipment familiarization

- VHF
- SSB
- EPIRB
- Sat Phone
- Inmarsat
- Cellular Phone
- Aviation VHF



# Crew familiarization

- Emergency operation
  - Securite
  - Pan-pan
  - Mayday



# Escalating needs

- Shore side contact
- Routine position/situation reports
- Ship-to-ship, ship-to-shore
- Potential hazard
- Developing situation
- In extremis



# Electronics and water



- Above and below deck options
- Maintenance
- Antenna's, ground planes and connections

# 406 EPIRB

- Train the crew about its use
- Position it strategically
- Check registration
- Advise contacts of your itinerary
- Motion, spray and physical contact



# Abandon Ship

- **Factors involved in the decision making process**
- **Have all reasonable alternatives been exhausted**
- **The step up into the raft rule**
- **Transfer crew and vital gear**
- **The transitional danger**

# Search and Rescue

- Summoning help starts before you abandon ship
- Portable communications equipment
- Signaling gear
- A needle in a barn full of haystacks



# SAR process

- EPIRB signal or Mayday received
- USCG calls to validate
- Ship or air asset deployed
- Responder assigned coordinates

**locate life raft**



# SOLAS Flares



# Ship Rescue

- Danger in coming alongside
- Difficulty in climbing Jacobs ladder
- Nearly impossible in heavy weather
- Use of harness



# Helicopter evacuation

- Communicate with handheld VHF
- Deploy smoke canister
- Prepare for 75 knot rotor wash
- It's likely that a swimmer will be deployed
- Static charge and grounding line
- Do not tie off basket line

# Medical issues

Trauma - bleeding – respiratory issues

cardiac problems - infection

Hypothermia

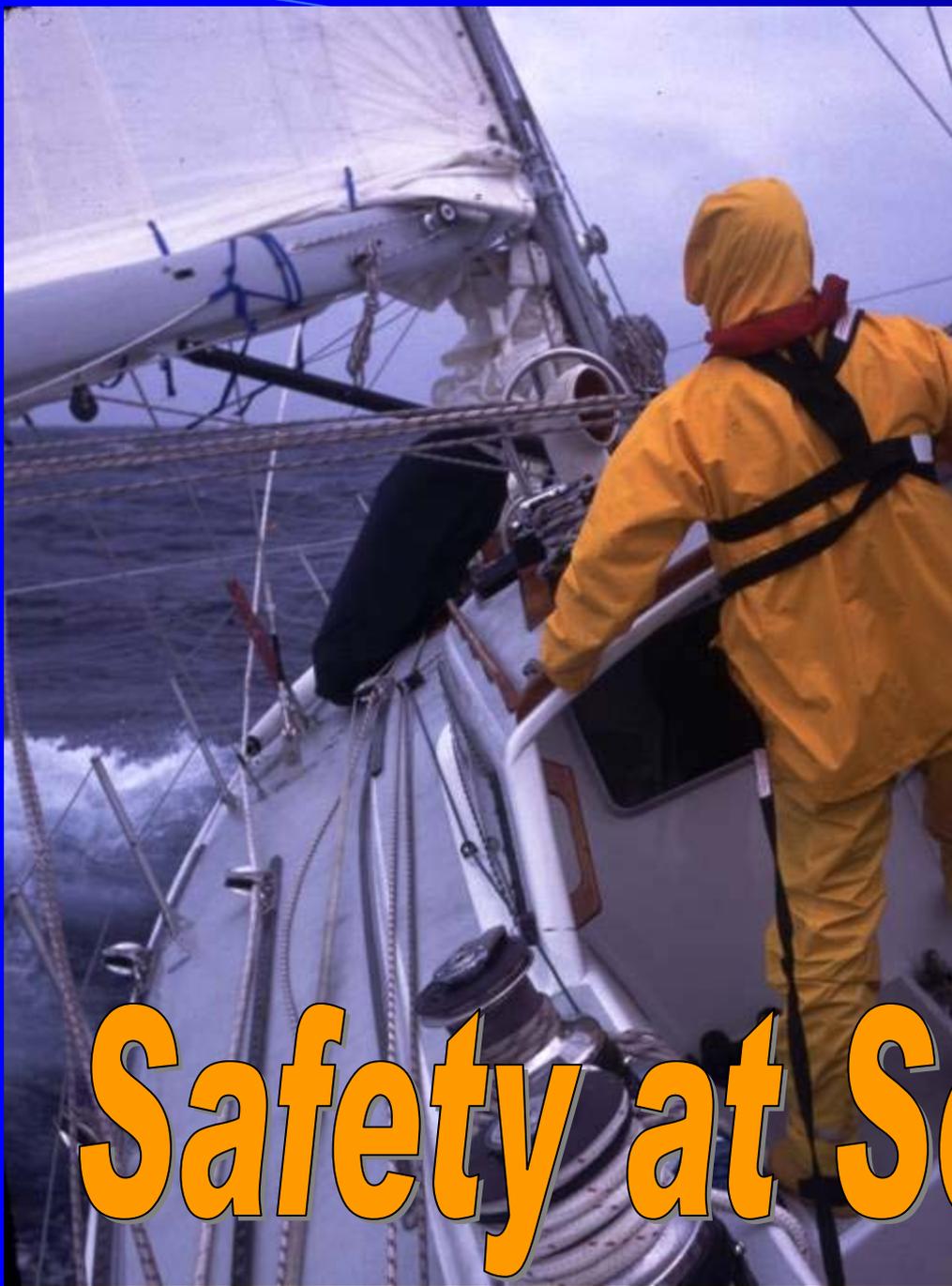
Cold water shock response

- **CPR course**
- **First aid training**
- **Good medical kit**

# Self reliance versus being in the hands of others

- modern approach to survival
  - Remain afloat but at the whim of the wind and sea
  - Communication is essential
  - Anticipate rescue process





seamanship

selfreliance

accountability

***Safety at Sea 2005***