

Handling Heavy Weather

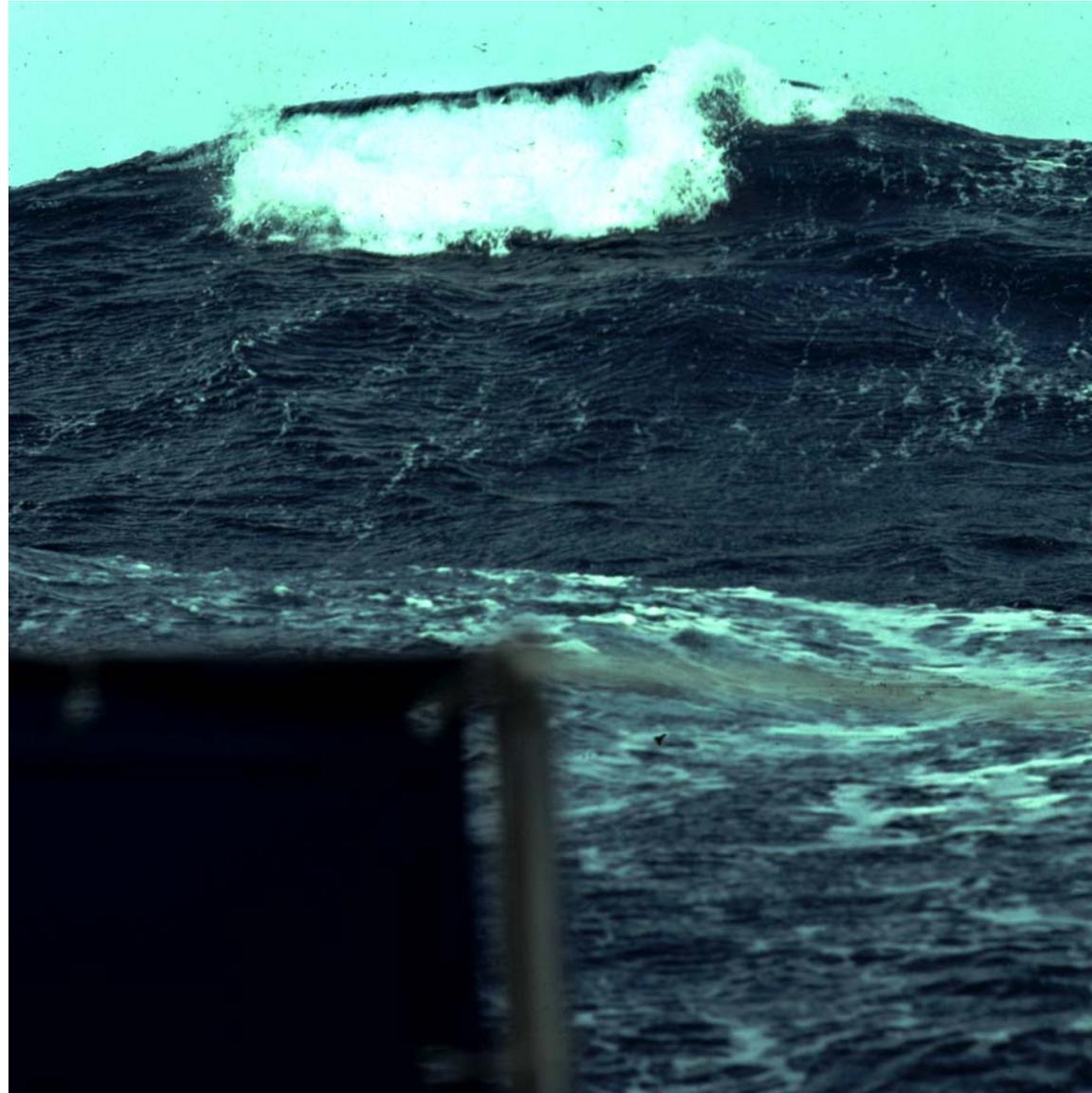
Wind and sea conditions dictate the actions of a crew.



Ralph Naranjo

A Seamanship issue

Heavy weather is a relative term, one that's tempered by the soundness of a vessel and the ability of her crew.



“Crew preparation and the development of boat handling skills make a big difference when conditions deteriorate.”



Understanding the causal factors

- Squall line
- Cold front
- Low pressure system
- Tropical systems



SQUALLS

- INDIVIDUAL CELLS
- AFTERNOON THERMAL
- TEMPERATURE & HUMIDITY LEVEL
- ASSOCIATED WITH WX SYSTEM



COLD FRONT

A person wearing a yellow and white raincoat is seen from the back, looking out over a dark, stormy sea. The person is on a boat, and the background shows a dark, overcast sky and churning water. The overall mood is somber and dramatic.

- WATCH FOR
 - ◆ VEERING BREEZE
 - ◆ FALLING BAROMETER
 - ◆ BUILDING CLOUD COVER
- DETERMINE INTENSITY
 - ◆ TIME OF YEAR
 - ◆ PRESSURE GRADIENT
 - ◆ TEMPERATURE CHANGE
 - ◆ CONVECTIVE ACTIVITY

LOW PRESSURE SYSTEMS

FAST WIND

ESTABLISH “L” INTENSITY

LOCATION AND PATH

- ◆ WX Fax details

CLOUD COVER

BAROMETER

- ◆ TREND OVER TIME

WEST WIND

CLEARING

FAIR WEATHER

SUNNY GALE



TROPICAL STORMS

MONITOR VHF,
SSB & WX FAX
FORECASTS

BEWARE OF FAST
MOVING STORMS

HATTERAS
EFFECT

SMALL STORM
SIGNIFICANT SEA

SAFE HAVEN

12/2004



ocean dynamics

- the implications of wind-on-water
- basin constraints
- non linear forces
- waves - translation vs. oscillation



wind-on-water

An aerial photograph of a dark blue ocean with white-capped waves. A bird is seen in flight in the center of the image. The text is overlaid on the image.

FETCH

DURATION

WIND FIELD

AMPLIFICATION

OTHER SWELLS

crew variables

- OIC/AOIC skill and knowledge!!!
- steering ability of crew
- ambient clue-less-ness factor
- a pro-active rather than reactive nature



vessel qualities

- buoyancy, stability
- righting moment
- structural integrity
- rig, rudder and keel
- vessel behavior
- seaworthiness



a sensible storm strategy

- what to expect
- navigation issues
- weather threat
- readiness and fatigue
- watch routine



preparing the boat



- deck gear
- stow loose items
- check jack lines
- check reefing lines
- rig preventer

Storm trysail

Track, tack & halyard

Double sheets

Secure boom

Rapid set

Storm jib

Set up inner forestay

Topping lift halyard

Running backs

Careful hanking

Rapid set



Double check safety gear

check preventer
harnesses/PFD's
backlines
review DC bill
review abandon
ship bill



Inflatable or deflatable

- test results
- manual or automatic inflation
- oral inflation



Check the inflation system

- state of CO2 charge
- bobbin condition
- check air retention





Harness

- Familiarize crew with tether usage
- Set “must wear parameters”
- Practice during fair weather
- Inspect all links in the chain



Preparation phase 1

- check rigging
- inventory gear below
- test pumps
- check batteries
- test EPIRB
- communications test
- inventory grab bag
- Inspect all sails



review sail handling safety issues

- reef ahead of time
- set preventer off-the wind
- balance the sail plan
- rig inner forestay and runners
- rig storm trysail and storm jib
- beware of who's at the helm



deteriorating conditions

- forecast update
- reduce sail and carry on
- weather route
- seek shelter



Moderate weather tactics

Describe 17-35 knot conditions
Reefing procedures
Angle of attack and sea implications
Crew adaptability
(seasickness)



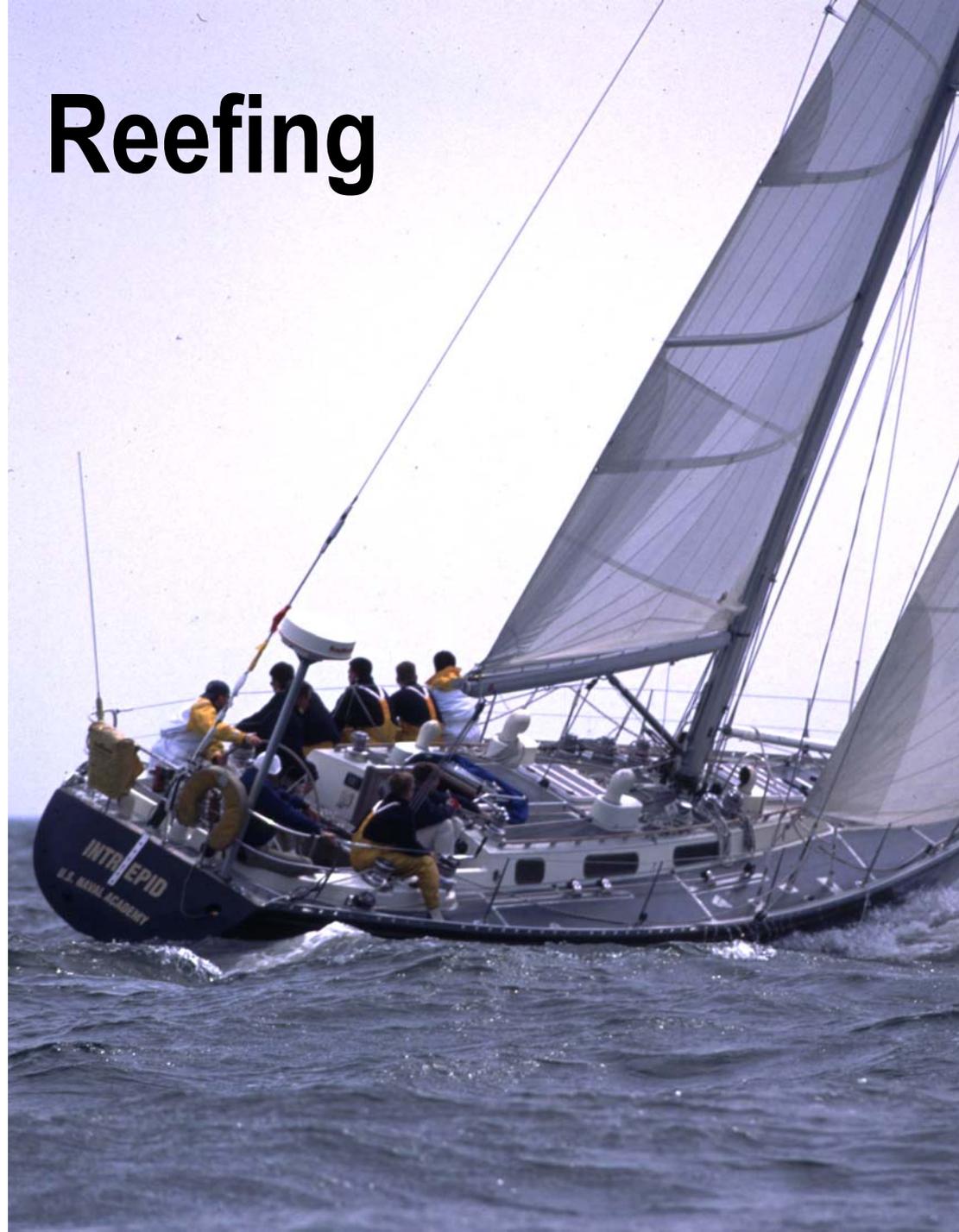
Reefing Rules



- Deal with the pressure
- Exponential influence on velocity increases
- Sail shaping to depower

Reefing

- Depower main
- Ease vang
- Spill breeze don't flog mainsail
- ease sheet
- ease halyard
- hook new tack
- haul on reef line
- set reef ties



close reach & climb waves

heave to

run before

deploy drogue

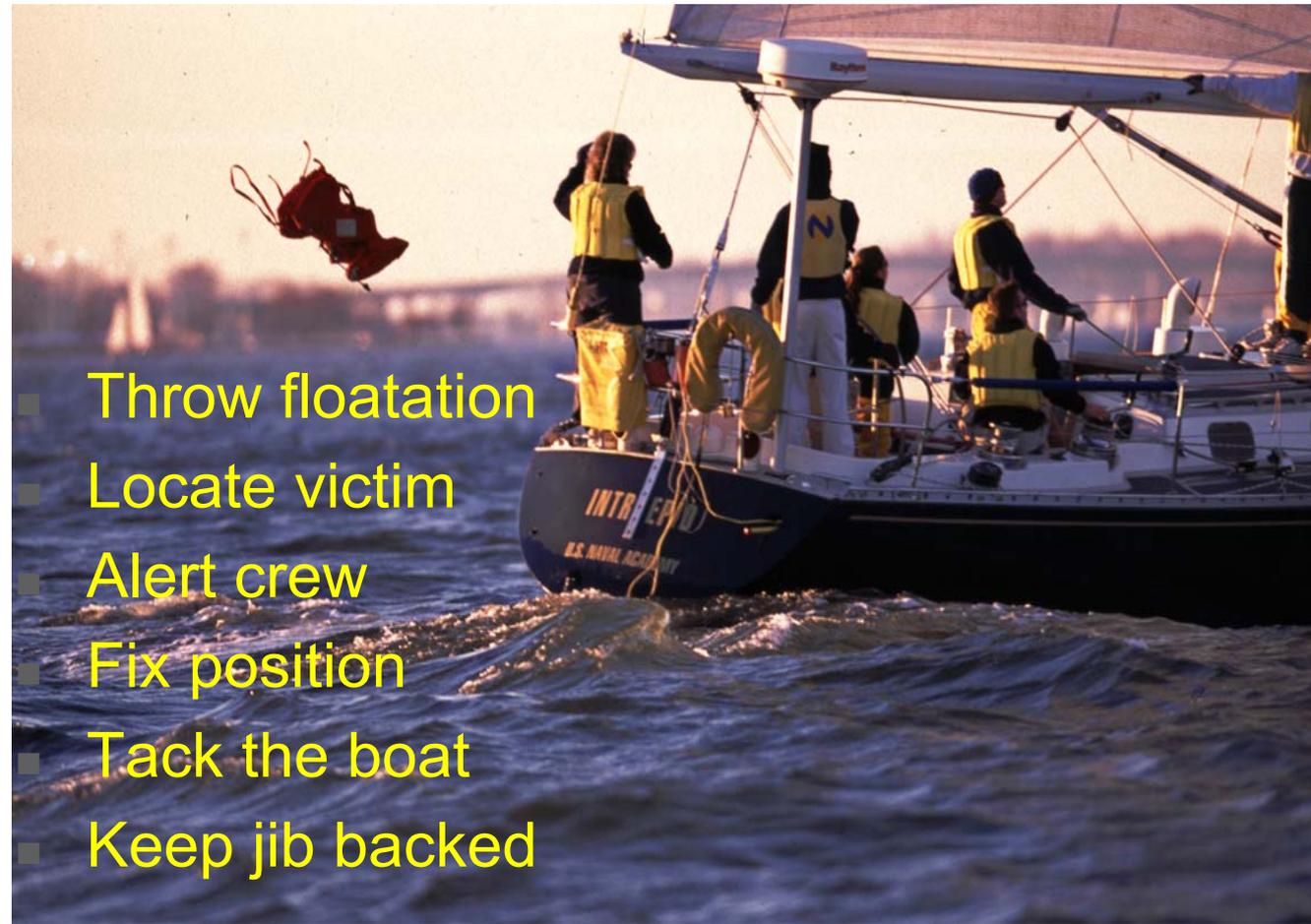
tie a hull bare pole

last resort - abandon ship

12/2004



Man Overboard



- Throw floatation
- Locate victim
- Alert crew
- Fix position
- Tack the boat
- Keep jib backed

The Quick-Stop crew overboard recovery

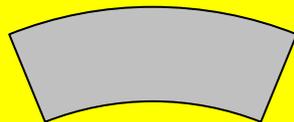
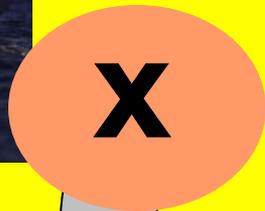




crew overboard

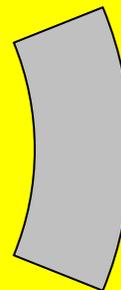
1.tack leaving headsail backed

Quick-Stop



2.Jibe mainsail

Keep boom
centerlined



3.Drop headsail



4.Approach victim
on close reach



- 5.Head to wind, slow boat prior to stopping alongside the victim



OICs/AOICs need to keep track of what's going on at both ends of the boat - - - as well as know what's in the box that surrounds their vessel.