## MARINE RADIO CHANNELS

| | |
|---|---|
| **Calling Channels (US)** | |
| **Emergency (Coast Guard)** | **16** |
| Non-Emergency | 09 |
| **Working Channels (US)** | |
| Emergency (Coast Guard) | 22 |
| Ship to Ship Safety | 06 |
| Non Emergency (Rec Boaters) | 68, 69, 71, 72, 78 |
| Navigational (Ship, Bridge, Locks, Etc) | 13 |
| Marine Operator (Marine Phone) | 24-28, 84-87 |
| Port Operations | 12, 14, 20, 66, 73, 74 |
| Commercial Shipping | 01, 07-11, 18, 19, 63, 67, 79, 80, 88 |

## MARINE RADIO EMERGENCY SIGNALS

MAYDAY - The distress signal - Immediate Danger.
PAN PAN - The urgency signal - Not Immediate Danger
SECURITE - The safety signal – Navigational Safety

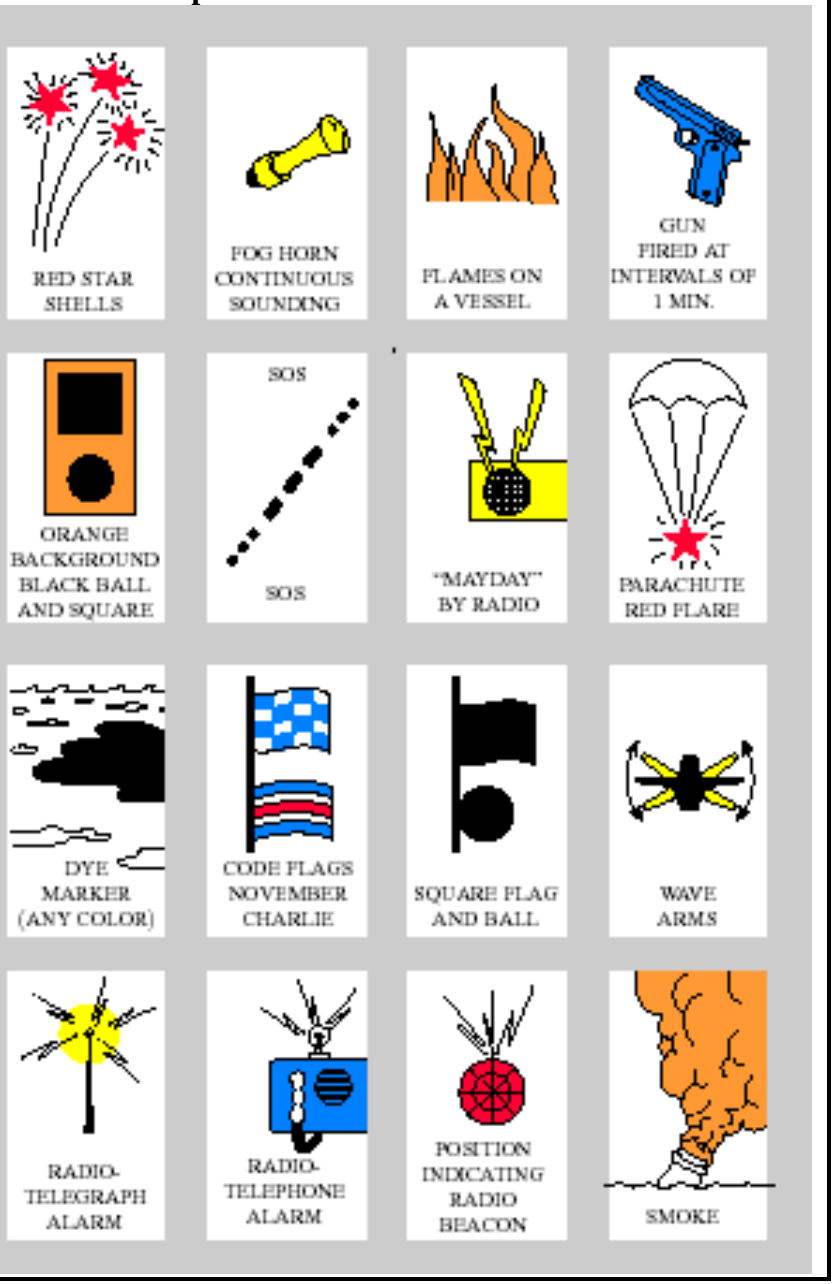
## MARINE DISTRESS PROCEDURE

**Speak -- slowly -- clearly -- calmly**.

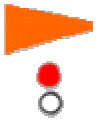
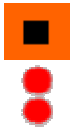
1. Make sure your radio is on.
2. Select **VHF Channel 16** (156.8 MHz).
3. Say: **"MAYDAY – MAYDAY - MAYDAY."**
4. Say: **"THIS IS THE 24 FT SAILBOAT – NORTH STAR"**
5. Say: **"MAYDAY – NORTH STAR"**
6. Say where you are:
7. State the nature of your distress
8. Give number of persons aboard and conditions of any injured.
9. Estimate present seaworthiness of your ship.
10. Say: **"I AM ON THE 24 FT SAILBOAT NORTH STAR WITH WHITE HULL AND SAIL# 10"**
11. Say: **"I WILL BE LISTENING ON CHANNEL 16."**
12. Say: **"THIS IS NORTH STAR - OVER."**
13. Release microphone button and listen. Someone should answer. If not, repeat call, beginning at Item 3 above.

## DISTRESS SIGMALS

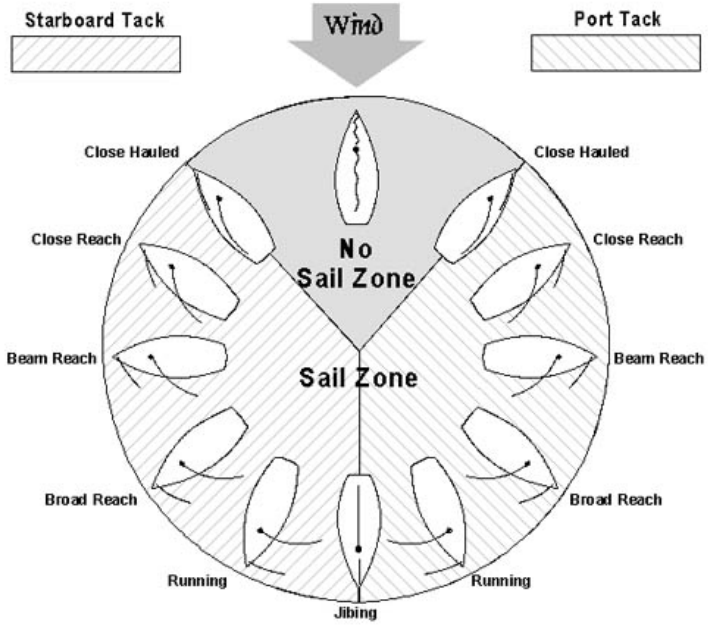
**Coast Guard Cleveland** **216-937-0111**
**Coast Guard Fairport Harbor** **440-352-3111**



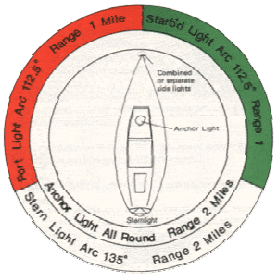
# WIND CHARTS

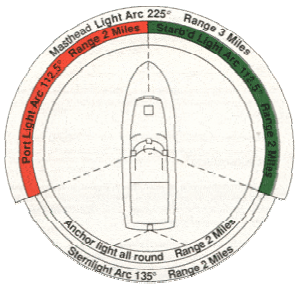
| Scale | Mph/Knots | Signals | Effects |
|---|---|---|---|
| **0 Calm** | <1 mph<br><1 knots | | Still, calm air, smoke will rise vertically. Water is mirror-like. |
| **1 Light Air** | 1-3 mph<br>1-3 knots | | Rising smoke drifts. Small ripples appear on water surface. |
| **2 Light Breeze** | 4-7 mph<br>4-6 knots | | Can feel wind on your face. Small wavelets develop. |
| **3 Gentle Breeze** | 8-12 mph<br>7-10 knots | | Leaves and small twigs move. Wave crests start to break. |
| **4 Moderate Breeze** | 13-18 mph<br>11-17Knots | | Small branches move.<br>Small waves develop, whitecaps |
| **5 Fresh Breeze** | 19-24 mph<br>17-21knots<br>Small Craft Advisory |  | Small trees sway.<br>White crested wavelets, whitecaps form, some spray. |
| **6 Strong Breeze** | 25-31 mph<br>22-27knots | | Large tree branches move<br>Larger waves, whitecaps, spray. |
| **7 Near Gale** | 32-38 mph<br>28-33knots | | Large trees sway. Larger waves developing, breaking waves. |
| **8 Gale** | 39-46 mph<br>34-40knots<br>Gale Warning |  | Twigs and small branches are broken from trees, walking is difficult. Moderately large waves with blown foam. |
| **9 Strong Gale** | 47-54 mph<br>41-46knots | | Shingles are blown off of roofs.<br>Blowing spray reduces visibility. |
| **10 Storm** | 55-63 mph<br>48-55knots<br>Storm Warning |  | Trees are broken or uprooted, building damage is considerable. Large waves (6-9 meters), sea becomes white with foam. |
| **11 Violent Storm** | 64-72 mph<br>56-63knots | | Extensive widespread damage.<br>White foam, visibility reduced. |
| **12 Hurricane** | 73+ mph<br>64+ knots<br>Hurricane Warning |  | Extreme destruction, devastation.<br><br>Large waves over 14 meters, air filled with foam, sea white with foam and driving spray, little visibility. |

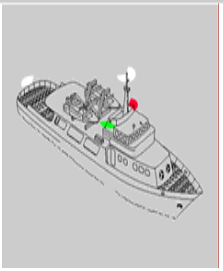
# POINTS OF SAIL




# VESSEL LIGHTS



## SPEED

**50 Ft Log Line Time Vs Speed In Knots**

| | | | |
|---|---|---|---|
| 30 Sec | 1 Knots | 6 Sec | 5 Knots |
| 15 Sec | 2 Knots | 5 Sec | 6 Knots |
| 10 Sec | 3 Knots | 4.25 Sec | 7 Knot |
| 7.5 Sec | 4 Knots | 3.75 Sec | 8 Knots |

## DISTANCE USING ANGLES

**Estimating Angles**

| | |
|---|---|
| Index finger | 2 Degrees |
| Index and middle finger | 4 Degrees |
| Index, middle and ring finger | 6 Degrees |
| Wink Distance | 6 Degrees |
| Index, middle, ring and little finger | 8 Degrees |
| All fingers and thumb | 10 Degrees |
| Fist | 12 Degrees |
| Hand with extended thumb | 15 Degrees |
| Hand w/ Extended Thumb & little Finger | 20 Degrees |

**Estimating Distance - All Angles**

| | |
|---|---|
| Height of Object / (100* Angle) | = Statue Miles |
| (Height of Object / (100* Angle)) / 1.15 | = Nautical Miles |
| (Height of Object / (100* Angle)) * 5280 | = Feet |

**Estimating Distance - Specific Angles**

| | | |
|---|---|---|
| 3 Deg | Height of Object * 20 | = Feet |
| | Height of Object * 20 / 5280 | = Statue Miles |
| | Height of Object * 20 / 6076 | = Nautical Miles |
| 6 Deg | Height of Object * 10 | = Feet |
| 12 Deg | Height of Object * 5 | = Feet |

## DISTANCE TO A STORM

Sec between Lightning and Thunder / 5 = Statue Miles

(Sec between Lightning and Thunder / 5) / 1.15 = Nautical Miles

## DEFINITIONS

Statue Miles = 5280 Ft Nautical Miles = 6076 Ft

## DISTANCE USING THE HORIZON

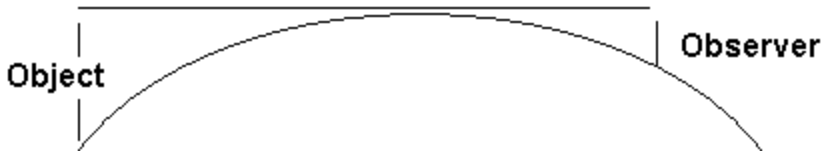
Square Root (Height of the Observer) = Statue Miles

Square Root (Height of the Observer) / 1.15 = Nautical Miles

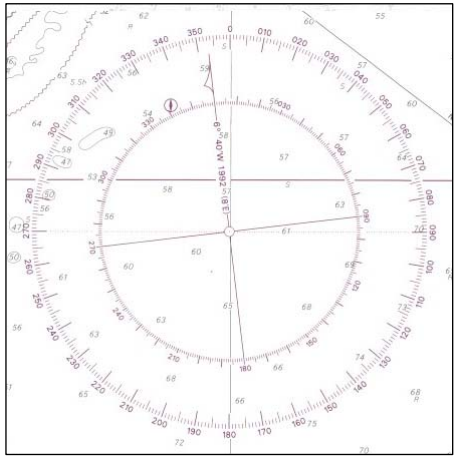
Square Root (Height of the Object) = Statue Miles

Square Root (Height of the Object) / 1.15 = Nautical Miles

Add together to get the two distances when you first see the top of an object on the Horizon




## COMPASS



**Magnetic Variation in Cleveland is 8 Deg 30 Seconds.**

Example 1

Magnetic Reading is 270’

True Reading is 270’ – 8’ 30” = 261’ 30’

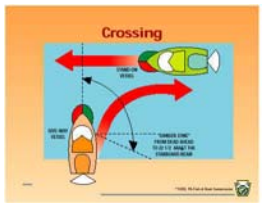
Example 2

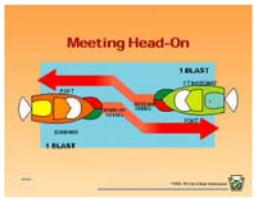
True Course is 320’

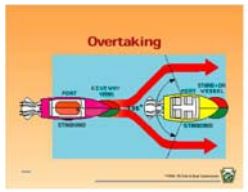
Magnetic Course is 320’ + 8’ 30” = 328’ 30”

# RULES OF THEN ROAD

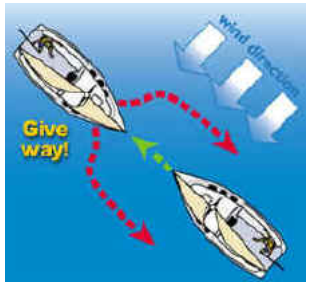
## Power Vessels

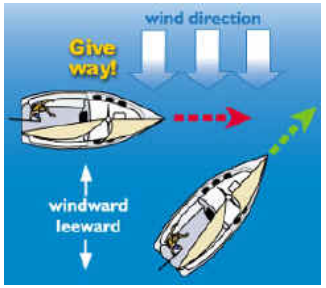



## Sailing Vessels




1. Wind on different sides
   Port Side – Give Way  Starboard Side – Stand on
2. Wind on the same side
   Windward Side – Give Way  Leeward Side – Stand On
3. If unclear of the wind direction  Give Way

# RIGHT OF WAY (Pecking Order)

1. Overtaken vessel (top priority)
2. Vessel not under command.
3. Vessel restricted in its ability to maneuver
4. Vessel constrained by its draft
5. Fishing vessel (commercial fishing or trawling, not trolling)
6. Sailing vessel (engine not on)
7. Power-driven vessel-

# Aids to Navigation Abbreviations

| | | | |
|---|---|---|---|
| 1. Flashing (2) – | Fl(2) | 5. Isophase - | Iso |
| 2. Flashing | Fl | 6. Morse Code - | MO |
| 3. Occulting | Oc | 7. | |
| 4. Quick Flashing - | Q | 8. | |