



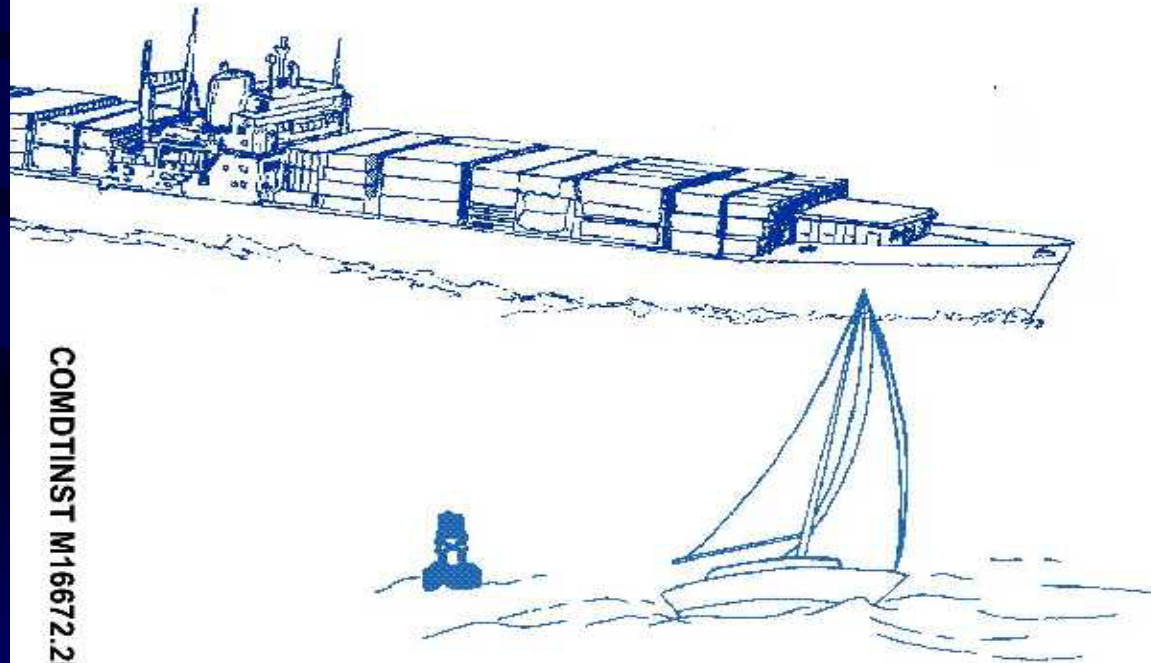
NAVIGATION RULES

U.S. Department
of Transportation
**United States
Coast Guard**



NAVIGATION RULES

INTERNATIONAL—INLAND



COMDTINST M16672.2D



Navigation Rules Book

- Combination of International and US Inland Rules
- International Regulations for Prevention of Collision at Sea (COLREGS).
- 1972 COLREGS have been Updated By 1993 Amendments.



Navigation Rules Overview

- Rules dictate how vessels should behave.
- How day shapes are used to convey behavior.
- How lights are used to convey behavior.
- How sound signals are used to convey behavior.



Navigation Rules Book

- International and Inland.
- Part A - General.
- Part B - Steering and Sailing Rules.
- Part C - Lights and Shapes.
- Part D - Sound and Light Signals.
- Part E - Exemptions.



Navigation Rules Book

- Annex I - Positioning and Technical Details Of Lights And Shapes.
- Annex II - Additional Signals For Fishing Vessels In Close Proximity.
- Annex III - Technical Details Of Sound Signal Appliances.
- Annex IV - Distress Signals.
- Annex V - Pilot Rules.



General

- Responsibility
 - You may depart from the rules to avoid immediate danger.
 - Avoid collisions, even if you have to break the rules.
- International versus Inland
 - Demarcation Lines



Definitions



Definitions

- Vessel
 - Anything that can be used as transportation on the water.



Definitions

- Vessel Not Under Command
 - Exceptional circumstances prevent maneuvering as required by these rules and not able to keep out of the way of other vessels.
 - For example: a ships rudder falls off.



Definitions

- Vessel Restricted in Ability to Maneuver
 - Operations with navigation marks, cable or pipeline.
 - Dredging, surveying, or underwater operations.
 - Launching or recovery of aircraft.
 - Mine clearing operations.
 - Towing when it affects ability to change course.
 - Not fishing vessels or vessels limited by their draft.



Definitions

- Vessel Engaged in Fishing
 - Fishing with nets, lines, trawls, or apparatus which restricts maneuverability.
 - Does not include trolling lines.



Definitions

- Sailing Vessel
 - Any vessel propelled by sail provided that propelling machinery, if fitted is not being used.
- Power-driven Vessel
 - A vessel propelled by machinery.



Definitions

- Underway
 - Not at anchor, made fast to shore, or aground.
- Restricted Visibility
 - Visibility is restricted by fog, mist, snow, rain, sand, etc
- Vessel Constrained By Draft
 - Not an Inland term, only International Rules.
- Seaplane



Definitions

- Composite Unit
 - Two Vessels Rigid Mechanical Means.
 - Respond To Sea And Swell As One Vessel.
 - Not Connected By Lines, Wires, Chains, Hawsers.
 - Should Display Shapes And Lights Of A Power-Driven Vessel Not Pushing Or Towing Vessels.



Definitions

- Whistle: Any Sound Signaling Device.
- Short Blast: 1 Second.
- Prolonged Blast: 4 to 6 Seconds.
- One Second Pause Between Blasts.
- A Minimum of Ten Second Pause Before Repeating Signal.
- Vessels $< 12\text{m}$ Must Be Able To Make Noise.
- Vessels $> 12\text{m}$ Must Have A Bell & Whistle.
- Vessels $> 100\text{m}$ Must Also Have A Gong.



Rules Of The Road



Avoid Collisions

- Safe Speed
 - Required at all times to maintain a speed that allows proper and effective action to avoid collision.
- Look-out.
 - Required at all times.
 - Report angle, range and drift of all contacts.
 - Use two way communication with helm and officer of the watch.



Risk of Collisions

- Use all means to determine risk of collision.
- Radar:
 - If operational you must use it.
 - But be careful of scanty information.
 - Still need a look-out if you are using a radar.
- Risk of collision if the compass bearing of a vessel does not change. Risk may exist even if bearing changes.
- If any doubt, assume risk exists.



Action to Avoid Collisions

- Action Should Be Positive and Made in Ample Time to Avoid a Collision.
- Any Alteration of Course or Speed to Avoid Collision Shall be Large Enough to be Readily Apparent to Another Vessel.
- A Succession of Small Alterations of Course or Speed Should be Avoided.
- Stop or Reverse Propulsion If Necessary.
- Effectiveness of Any Action Should be Confirmed



Right Of Way

- Not Under Command.
- Restricted in Ability To Maneuver.
- Constrained By Draft (International Only)
- Fishing.
- Sailing.
- Power Driven.
- Seaplane.

- Exceptions Narrow Channels, Traffic Separation Schemes, and Overtaking Vessels.



Give-way Vessel

- Give-way Vessel Is The Vessel Required By The Navigation Rules To Initiate Action To Avoid A Collision.
- Take Early and Substantial Action.



Stand-on Vessel

- Stand-on Vessel Is The Vessel That Should Not Initially Take Action To Avoid A Collision.
- Maintain Course and Speed.
- Shall Take Action To Avoid A Collision As Soon As It Becomes Apparent That The Give-way Vessel Has Not Taken Sufficient Action To Avoid A Collision.
- If Required To Take Action, Do Not Alter Course To Port For A Vessel On Port Side.



Narrow Channels

- Stay As Near The Outer Starboard Side of the Channel.
- Pass Port To Port.
- A Vessel $< 20\text{M}$ Or A Sailing Vessel Should Not Impede Vessels That Can Only Navigate Within A Narrow Channel.
- Do Not Anchor In Narrow Channels.



Traffic Separation Schemes

- Enter At The Beginning Of A Lane, Exit At The End.
- Traveling In The Correct Direction Not Across The Traffic.
- If You Have To Cross A Lane, Cross 90 Degrees To Traffic.
- A Vessel $< 20\text{M}$ Or A Sailing Vessel Should Not Impede Power-Driven Vessel.
- Do Not Anchor In A Traffic Lane.



Overtaking

- One Vessel Is Overtaking Another When Approaching > 22.5 Degrees Aft of Abeam. At Night You Can Only See The Stern Light And Not The Side Lights.
- The Overtaking Vessel Shall Stay Out Of The Other Vessel's Way.
- If Any Doubt, Assume You Are Overtaking.
- Overtaking Vessel Does Not Become A Crossing Vessel While Passing Another Vessel.



Head-on

- Each Give Way.
- Alter Course to Starboard.
- Pass Port to Port.



Crossing

- Avoid Crossing Ahead of Other Vessels.
- Give-way to Vessels on Your Starboard.



Sailboat Meets Sailboat Rules



Sailing Vessels

- The Windward Side of a Boat is the Side Opposite the Mainsail.
 - A sailboat is on a starboard tack when the wind is on it's starboard side and the boom is on it's port side.
 - A sailboat is on a port tack when the boom is on it's starboard side.



Sailing Vessels

- When the Wind is on the Same Side
 - The Leeward Sailboat has Right of Way.
- When the Wind is on Different Sides
 - The Vessel with the Wind on it's Starboard Has Right of Way.



Sailing Vessels

- When a port tack Sailboat Sees a Sailboat to Windward and Can Not Determine Whether the Wind is on a Starboard tack, Then Assume it is on a Starboard tack and Keep Out of the Way of the Other Vessel.



Sounds To Convey Maneuvers



Maneuvering Sounds

- International: Sound Blasts are Required When Within Sight of Other Vessels
- Inland: Sound Blasts are Required When Vessels are Meeting or Crossing Within 1/2 Mile.
- Sound Signals are Not Used if Agree by Radio.



Maneuvering Sounds

- See “Definitions” for Sound
- One Second Pause Between Blasts, and a Minimum of Ten Second Pause Before Repeating Signal.



Maneuvering Sounds

- Sound Blasts May be Supplemented by Light Flashes Synchronized with the Whistle
 - If You Use a Light, Use an All-Round Light.
 - Minimum Range of the Light is 2 Miles Inland, and 5 Miles International.



Maneuvering Sounds

- One Short Blast
 - International: Altering Course To Starboard.
 - Inland: Intend To Leave You To Port.
- Two Short Blasts
 - International: Altering Course To Port.
 - Inland: Intend To Leave You To Starboard.
- Three Short Blasts
 - Operating Astern Propulsion.



Maneuvering Sounds

- Five Short Blasts (The Danger Signal)
 - When You Fail To Understand Another's Action.
 - Other Vessel Does Not Take Sufficient Action.
 - Example: You are traveling in a Narrow Channel and You Doubt That a Boat Crossing Ahead Will Pass Safely
 - In addition to the danger signal, you should take appropriate precautionary action until a safe passing agreement is made.



Maneuvering Sounds

- One Prolonged Blast.
 - Used When Inland Leaving a Dock.
 - Used When Nearing A Bend And View Is Obstructed.
Respond With One Prolonged Blast.



Overtaking Sounds

- Overtaking, Passing On Other Vessel's Starboard.
 - International: Two Prolonged, One Short Blasts.
 - Inland: One Short Blasts.
- Overtaking, Passing On Other Vessel's Port Side.
 - International: Two Prolonged, Two Short Blasts.
 - Inland: Two Short Blasts.
- If The Other Vessel Agrees.
 - International: Prolonged, Short, Prolonged, Short.
 - Inland: Repeat The Same Signal



Day Shapes



Shapes

- Displayed Sunrise To Sunset.
- Ball, Cone, Inverted Cone, Cylinder, Diamond.
- Black
- $> 0.6\text{m}$ Tall
- 1.5m Between Shapes.



Shapes

- Not Under Command: Ball / Ball
- Restricted In Ability To Maneuver: Ball/Diamond/Ball
- Constrained By Draft: Cylinder
- Fishing: Inverted Cone / Cone
- Sailing: None
- Power Driven: None, Inverted Cone If Sails Up
- Seaplane: None



Shapes

- Aground: Ball / Ball / Ball
- Minesweeper: Three Balls On A Cross
- Obstruction: Diamond
- Vessel Being Towed: Diamond
- Dredging Vessel: Three Lines Of Day Shapes
 - Obstruction Side: Ball / Ball
 - Center: Ball / Diamond / Ball
 - Side Other Vessels May Pass: Diamond / Diamond
- Diving: Letter “A” Code Flag



Vessel Lights



Lights

- On Sunset To Sunrise.
- On During Reduced Visibility.



Light Coverage

- Masthead Light, White.
 - 225 Degrees Forward (22.5 Degrees Aft Of Beam).
- Sidelights; Green On Starboard, Red On Port.
 - 112.5 Degrees Toward One Side (From Bow To 22.5 Degrees Aft of Beam).
- Sternlight, White.
 - 135 Degrees Aft (22.5 Degrees Aft Of Beam).



Light Coverage

- Towing Light, Yellow.
 - 135 Degrees Aft (22.5 Degrees Aft Of Beam).
 - Same Area Covered By Sternlight.
- All-round Light, White, Red or Green.
 - 360 Degrees.
- Flashing Light, Yellow or Blue.
 - 360 Degrees, 120 Flashes / Minute.
- Special Flashing Light, Yellow
 - 360 Degrees, 60 Flashes / Minute.



Light Coverage

- All-round Light
 - 360 Degrees.
- Sternlight & Towing Lights
 - 135 Degrees Aft (22.5 Degrees Aft Of Beam).
- Masthead Light.
 - 225 Degrees Forward (22.5 Degrees Aft Of Beam).
- Sidelights.
 - 112.5 Degrees Toward One Side (From Bow To 22.5 Degrees Aft of Beam).



Light Range

- All-round Light
 - 3, 2, 2 Miles For Vessels $> 50\text{m}$, $> 12\text{m}$, $< 12\text{m}$.
 - 3 Miles For Partly Submerged Vessels or Objects.
- Sternlight & Towing Lights
 - 3, 2, 2 Miles For Vessels $> 50\text{m}$, $> 12\text{m}$, $< 12\text{m}$.
- Masthead Light
 - 6, 5, 3, 2 Miles Vessels $> 50\text{m}$, $> 20\text{ m}$, $> 12\text{m}$, $< 12\text{m}$.
- Sidelights
 - 3, 2, 1 Miles For Vessels $> 50\text{m}$, $> 12\text{m}$, $< 12\text{m}$.



All-round Light

- 360 Degrees.
- White, Red, Green.
- Used To Identify A Vessel's Activity.
- Several All-round Lights May Used Together.
- Flashing Light, Yellow or Blue.
 - 120 Flashes / Minute.
- Special Flashing Light, Yellow
 - 60 Flashes / Minute.
- On When Vessel Is Anchored Or Underway.



All-round Light

- Not Under Command: Red / Red
- Restricted In Ability To Maneuver: Red/White/Red
- Constrained By Draft: Red / Red / Red
- Fishing: Red / White, Trawling: Green / White
- Sailing: Red / Green
- Power Driven: None
- Seaplane: None



All-round Light

- Vessel Aground: Red / Red
- Pilot Vessel: White / Red
- Dredging Vessels:
 - Obstruction Side: Red / Red
 - Side Other Vessels May Pass: Green / Green
- Vessels At Anchor: White
 - Exception: Dredging Vessels Use Lights Above Instead.
- Power-driven Vessels < 12m Underway.
 - Do Not Have To Display Side Light & Sternlight.



Flashing Lights

- All-round Lights:
 - Police: Blue.
 - Air-cushioned Vessel: Yellow.
 - Dredging Pipeline: Special Yellow.
 - Submarine: Yellow (1/sec for 3 seconds, none for 3 seconds).
- Masthead Light:
 - Vessel Being Pushed (Inland): Special Yellow.



Masthead Light

- 225 Degrees.
- White, Flashing Yellow.
- One Masthead Light On All Powered Vessels.
 - Exception When Fishing, Trawling, or Pilot.
- Second Masthead Whenever Vessel Is $> 50\text{m}$.
 - One Forward, One Aft.
 - Aft Masthead Is Higher Than Forward Masthead Light.
 - Required On Fishing, Trawling and Pilot.
- On Only When Vessel Is Underway.



Masthead Light

- Not Under Command: White
- Restricted In Ability To Maneuver: White
- Constrained By Draft: White
- Fishing: None (Unless $> 50\text{m}$)
- Sailing: None
- Power Driven: White

- Pushing or Towing: White/White
- Towing $> 200\text{m}$: White/White/White



Sternlight And Towing Light

- 135 Degrees Aft (22.5 Degrees Aft Of Beam).
- White Or Yellow.
- On Only When Vessel Is Underway.



Sternlight And Towing Light

- Not Under Command: White
- Restricted In Ability To Maneuver: White
- Constrained By Draft: White
- Fishing: White
- Sailing: White
- Power Driven: White



Sidelights

- 112.5 Degrees Toward One Side (From Bow To 22.5 Degrees Aft of Beam).
- Port Side: Red.
- Starboard Side: Green.
- On Only When Vessel Is Underway.



Restricted Visibility Actions



Restricted Visibility

- Restricted Visibility Rules Apply to Vessels not in sight of Each Other.
- Restricted Visibility Rules Apply to Vessels in or Near Areas of Restricted Visibility.
- All Other Rules Also Apply.



Restricted Visibility

- Proceed At Safe Speed.
 - Reduce To Minimum That Maintains Course When You Hear A Fog Signal Forward Of Your Vessel.
 - Stop Making Way If Necessary.
- Have Engines Ready For Immediate Maneuver.



Restricted Visibility

- Use Radar.
 - Do Not Alter Course Toward Another Vessel.
 - Do Not Turn To Port If Vessel Is Forward Of Beam, Unless Overtaking A Vessel.



Restricted Visibility Sounds

- Not Under Command: 1 Prolonged & 2 Short / 2 Minutes
- Restricted In Ability To Maneuver:
 - 1 Prolonged & 2 Short / 2 Minutes
- Constrained By Draft: See Other Signals.
- Fishing: 1 Prolonged & 2 Short / 2 Minutes.
- Sailing: 1 Prolonged & 2 Short / 2 Minutes.
- Power Driven Making Way: 1 Prolonged / 2 Minutes.
- Power Driven Not Making Way: 2 Prolonged / 2 Minutes



Restricted Visibility Sounds

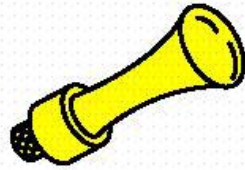
- Aground: 3 Bell Strikes, 5 Second Rapid Bell Ringing, 3 Bell Strikes Every 2 Minutes.
- Anchored Vessel: 5 Sec Bell / 1 Minute.
- Pilot Vessel: 4 Short Along With Other Signals.
- Vessel < 12m: Any Sound / 2 Minute.



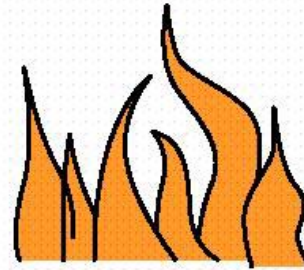
Distress Signals



RED STAR
SHELLS



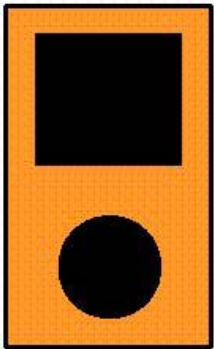
FOG HORN
CONTINUOUS
SOUNDING



FLAMES ON
A VESSEL

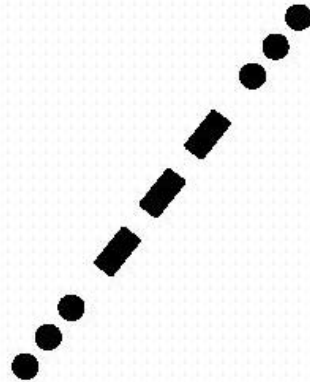


GUN
FIRED AT
INTERVALS OF
1 MIN.

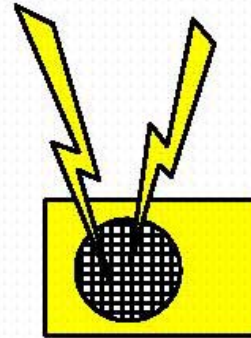


ORANGE
BACKGROUND
BLACK BALL
AND SQUARE

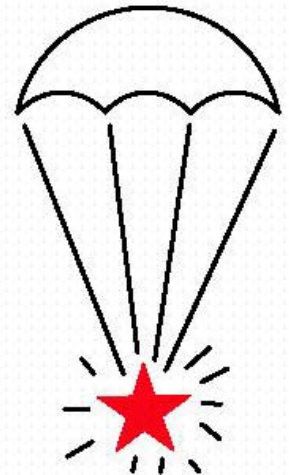
SOS



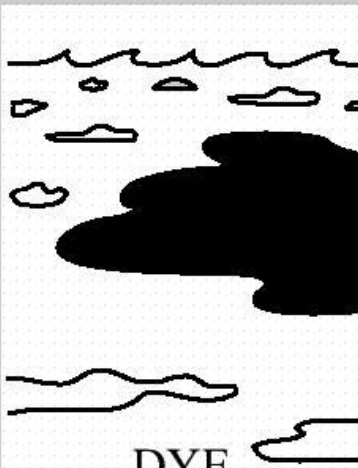
SOS



“MAYDAY”
BY RADIO



PARACHUTE
RED FLARE



DYE
MARKER
(ANY COLOR)



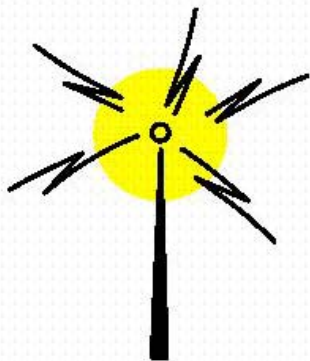
CODE FLAGS
NOVEMBER
CHARLIE



SQUARE FLAG
AND BALL



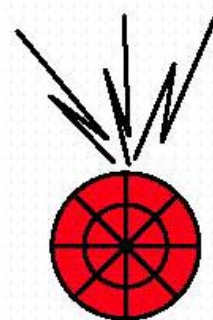
WAVE
ARMS



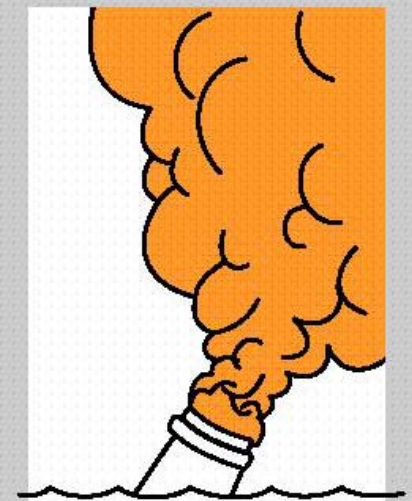
RADIO-
TELEGRAPH
ALARM



RADIO-
TELEPHONE
ALARM



POSITION
INDICATING
RADIO
BEACON



SMOKE

