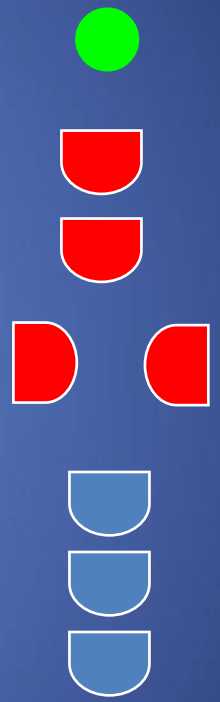
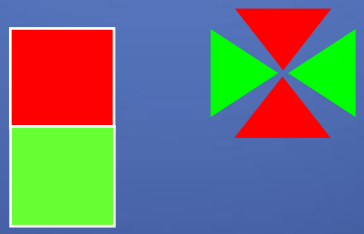
Task 6.0 Bridges

- Objectives
  - Understand bridge requirements
  - Understand reporting requirements

Bridge Lights:

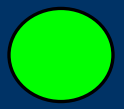
- Channel Center Lights **G -360°**
- Channel Margin Lights **R- 180°**
- Pier Lights **R- 180°**
- Channel Axis Lights **R- 180°**
- Preferred Channel Lights **3W - 180 °**
- Movable Span Lights
  R > G - 180°





Channel Center Lights

(found on *Fixed Bridges)*

Two 360-degree lanterns, hang just under lip. 

Visible from both approach channels – up and down stream.

Green in color.

Lanterns should appear as range lights mounted under the lip of the bridge's span.

Mark the center of the navigable channel.

Movable Span Lights

(found on Movable Span Bridges – Draw Bridges)

- 180-degree split-lanterns facing toward the traffic.
  - Shows a RED light when the draw is closed or moving.
  - **Shows a** GREEN light when the draw is open.

Channel Axis Lights

180-degree lanterns that face the center of channel.

RED in color.

Mark any bends in the channel or turns in the pier structures on a bridge.

Channel Margin Lights

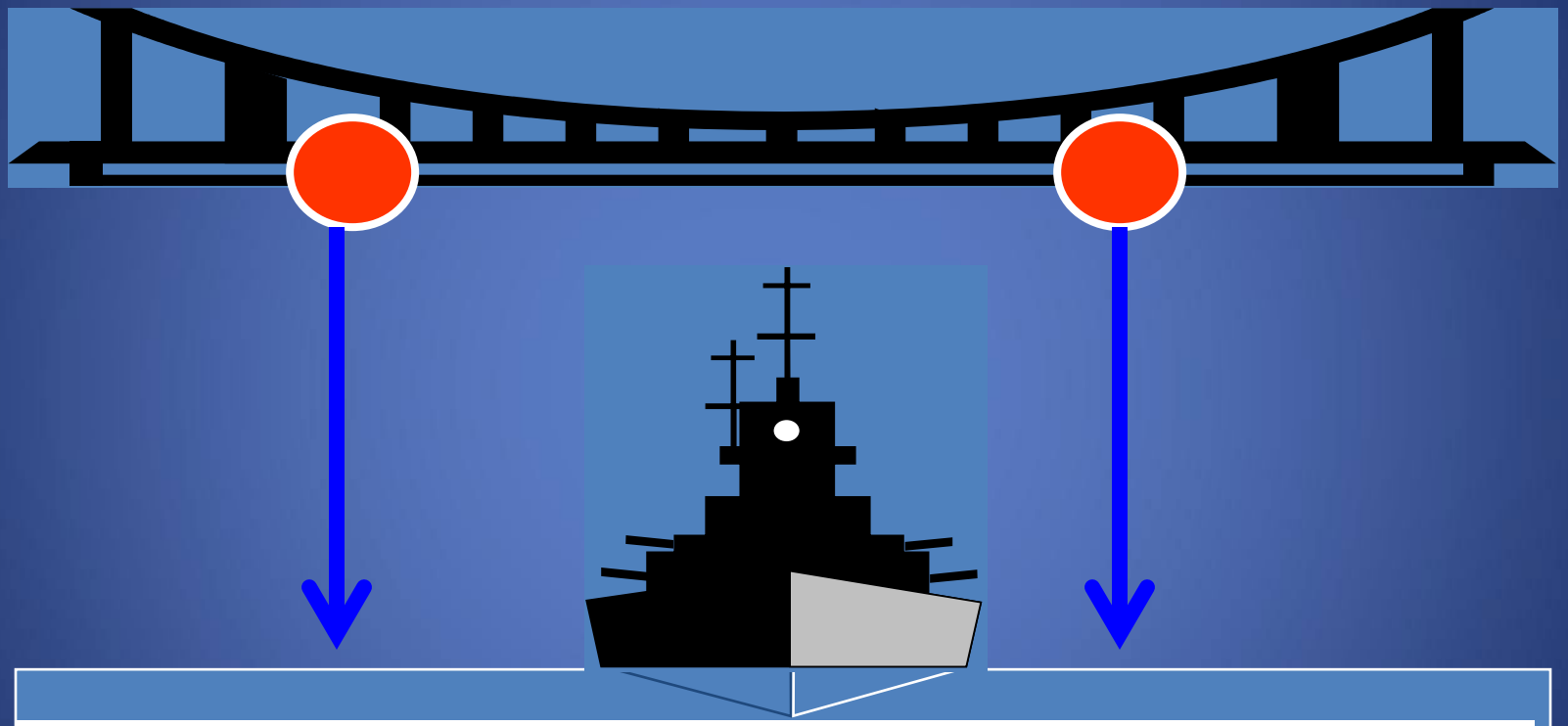
180-degree lanterns that face into the traffic.

RED in color.

Mark the edges of the navigable channel and are not required if the pier marks the edge of the channel.

Are positioned above the lip of the span. These lights mark low steel - the lower limit of the span clearance.

Channel Margin Lights



Lights define the limits of the navigable channel.

Pier Lights

180-degree lanterns – facing the traffic.

RED in color.

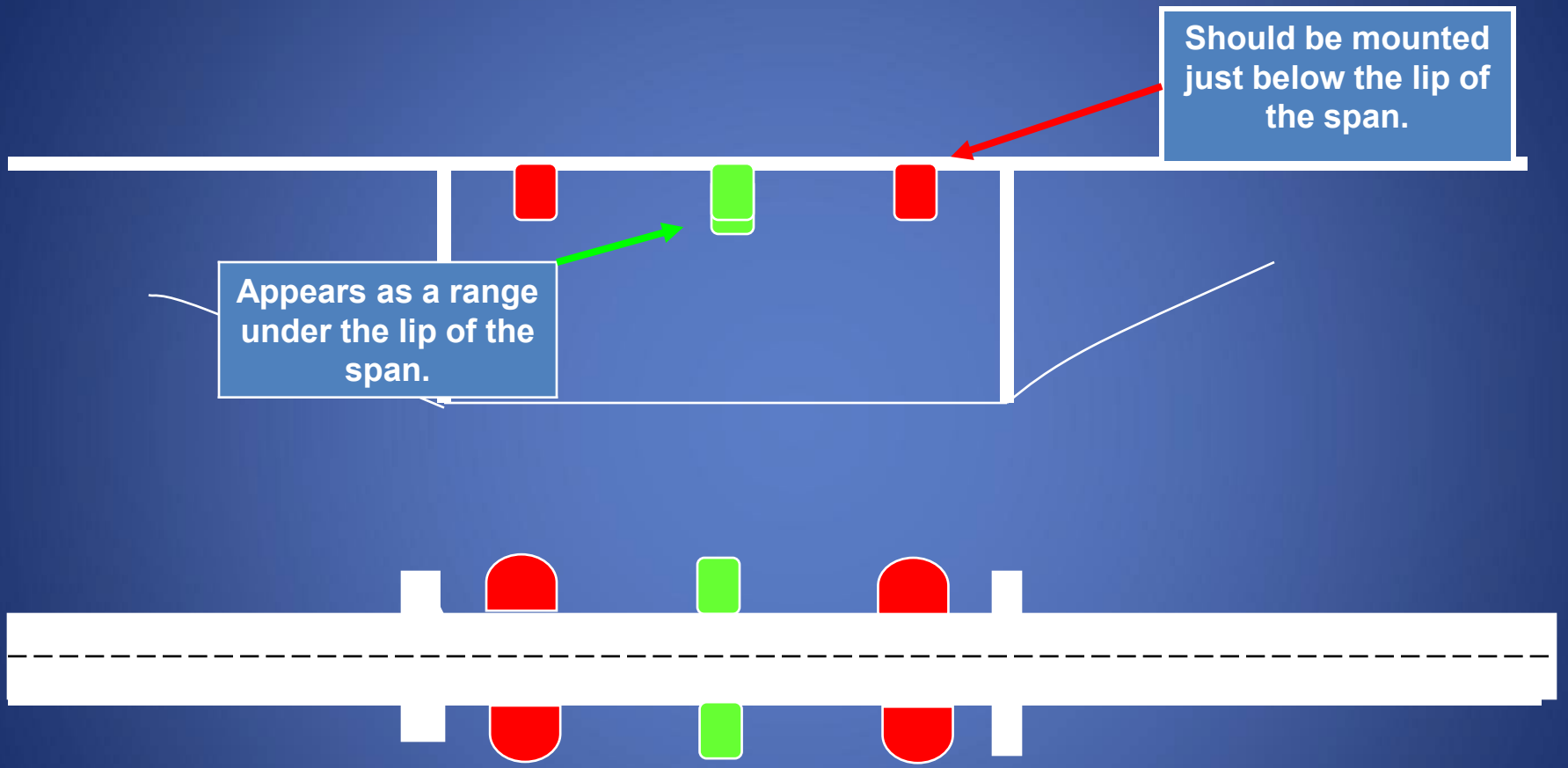
Mark the piers on the bridge.

Note that they are used for a different purpose than Axis lights.

Two Major Types of Bridges

1. Fixed Bridges
2. Movable Span or Draw Bridges
   - Lift Bridges
   - Swing Bridges
   - Bascule Bridges
     - Single Bascule & Double Bascule
   - Retractable Bridges

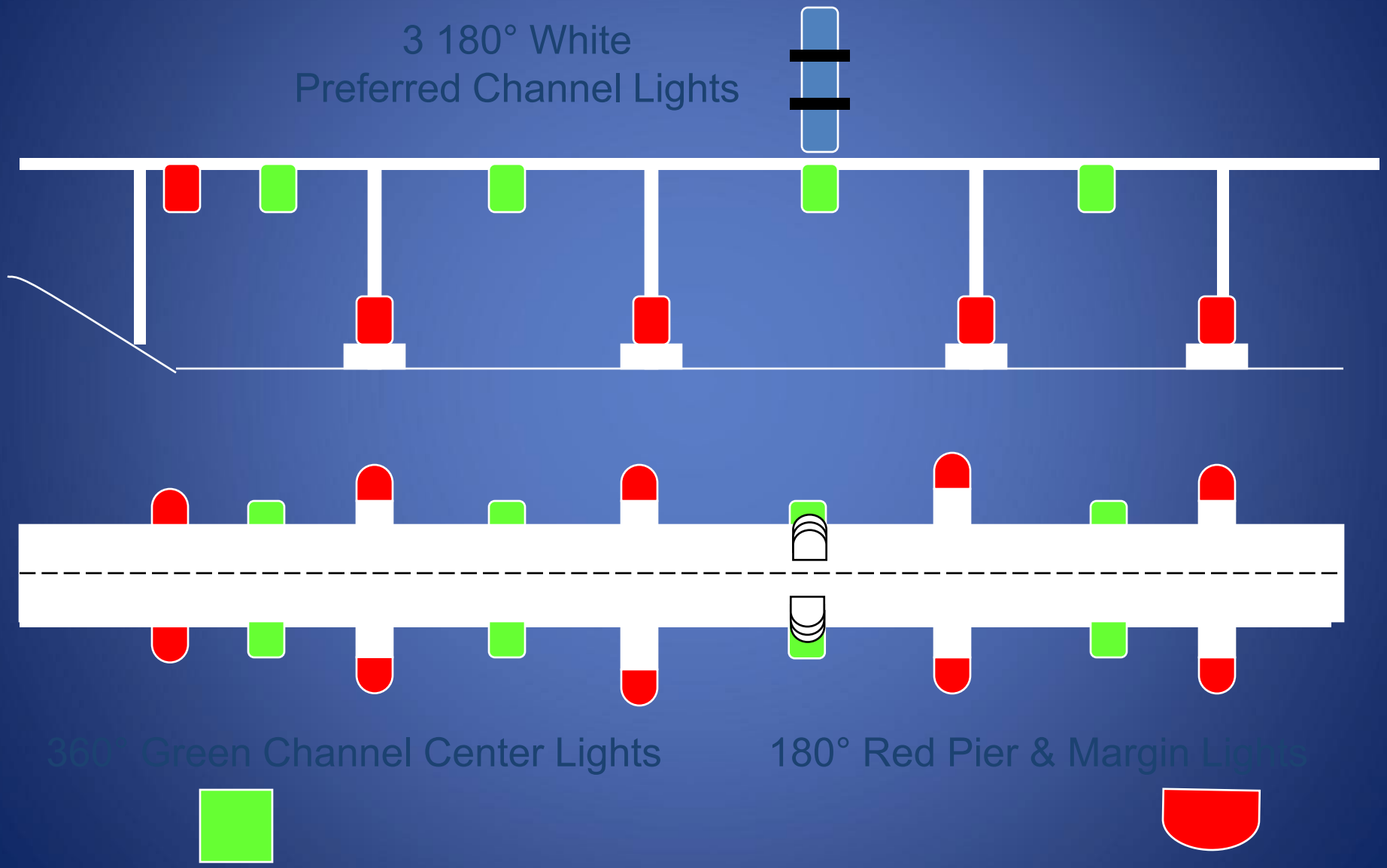
Single Span Fixed Bridge



360° GREEN Channel Center Lights 180° RED Channel Margin Lights

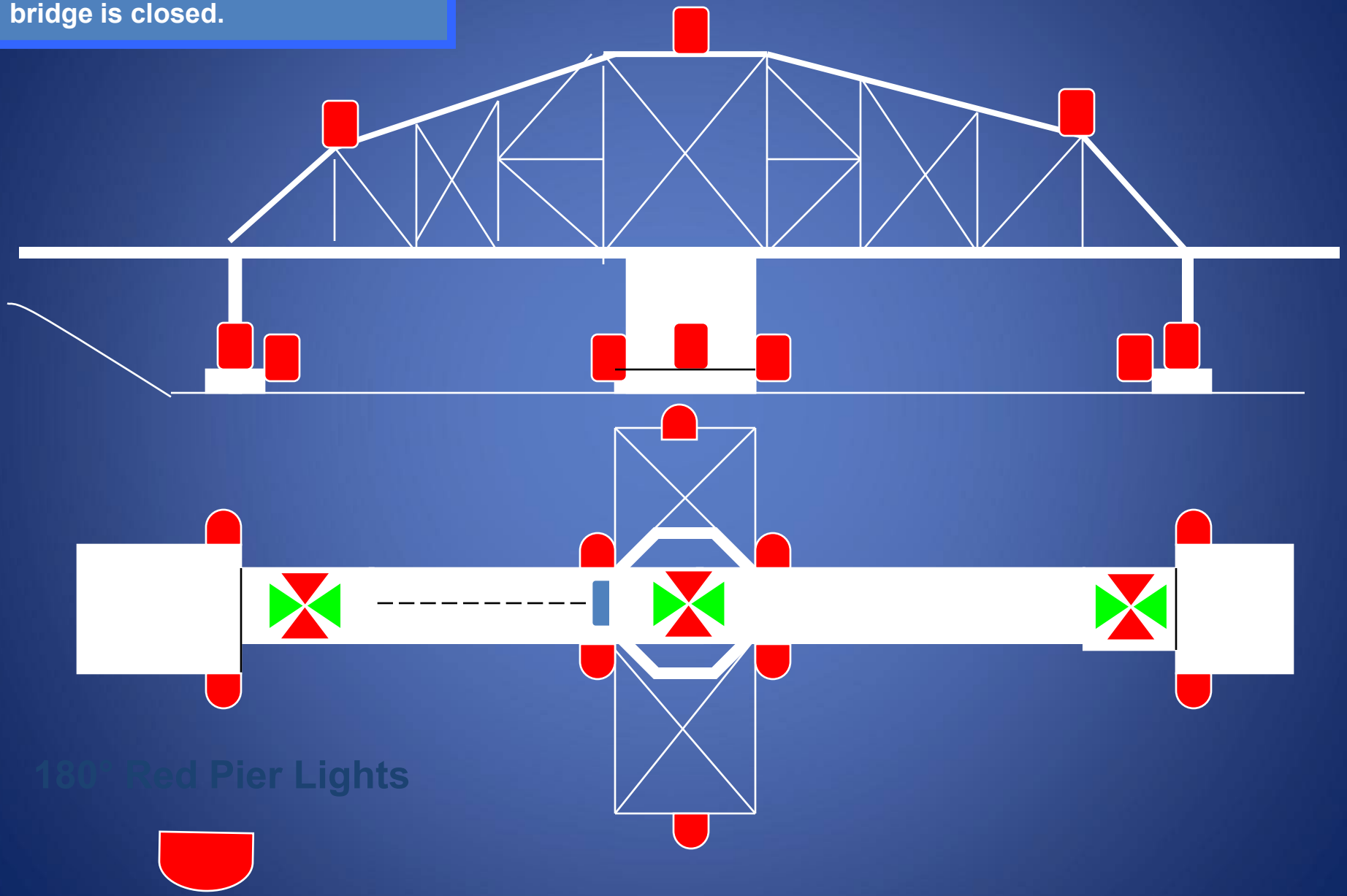

Multiple Channel
Fixed Bridge

Multiple Span Fixed Bridge

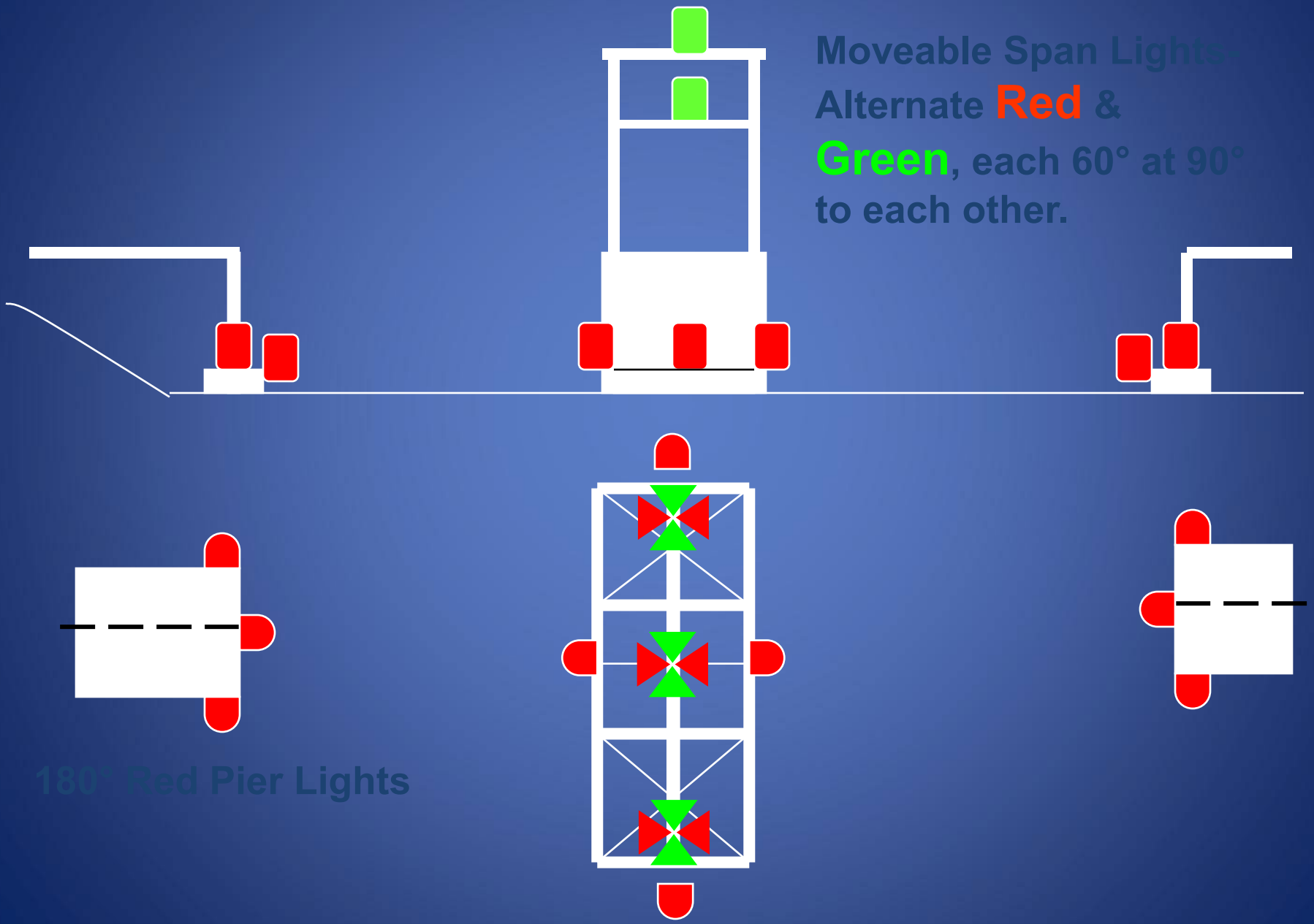


Moveable Span Lights -alternate Red & Green, each 60° at 90° to each other. Show **RED** when the bridge is closed.

Swing Bridge - Closed

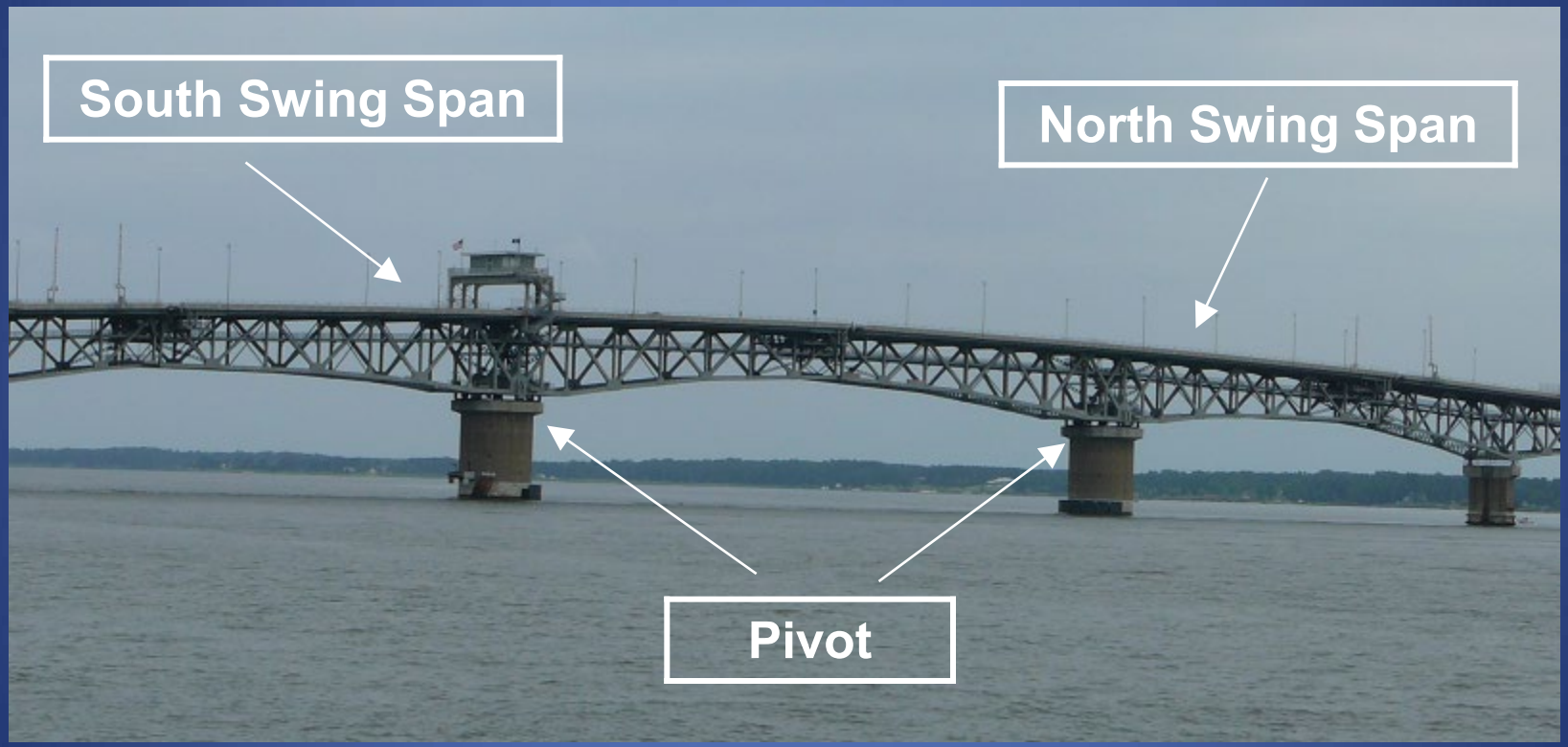


Swing Bridge - Open




Single Span Swing
Bridge - Closed

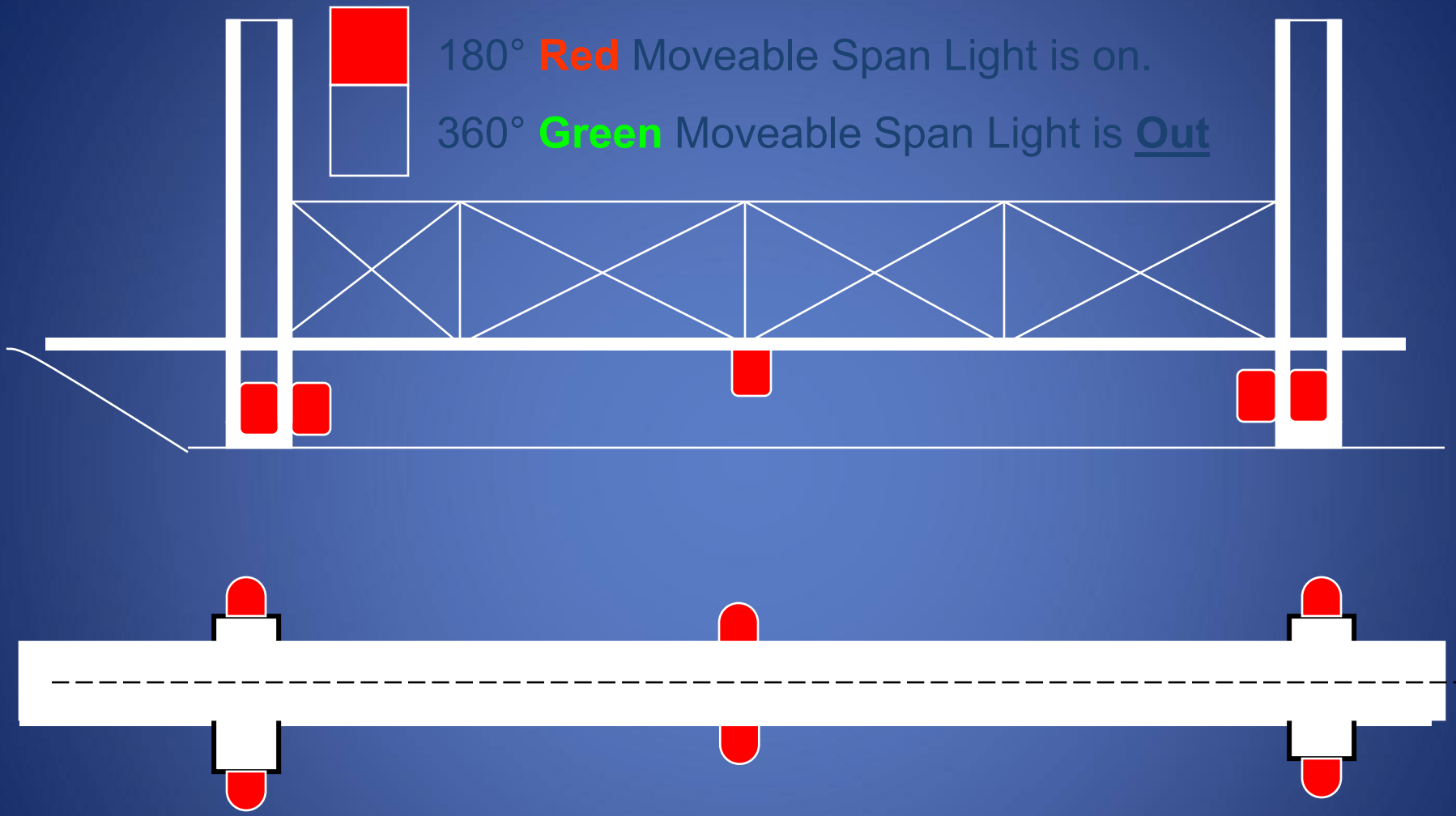
Double Span Swing Bridge - Closed



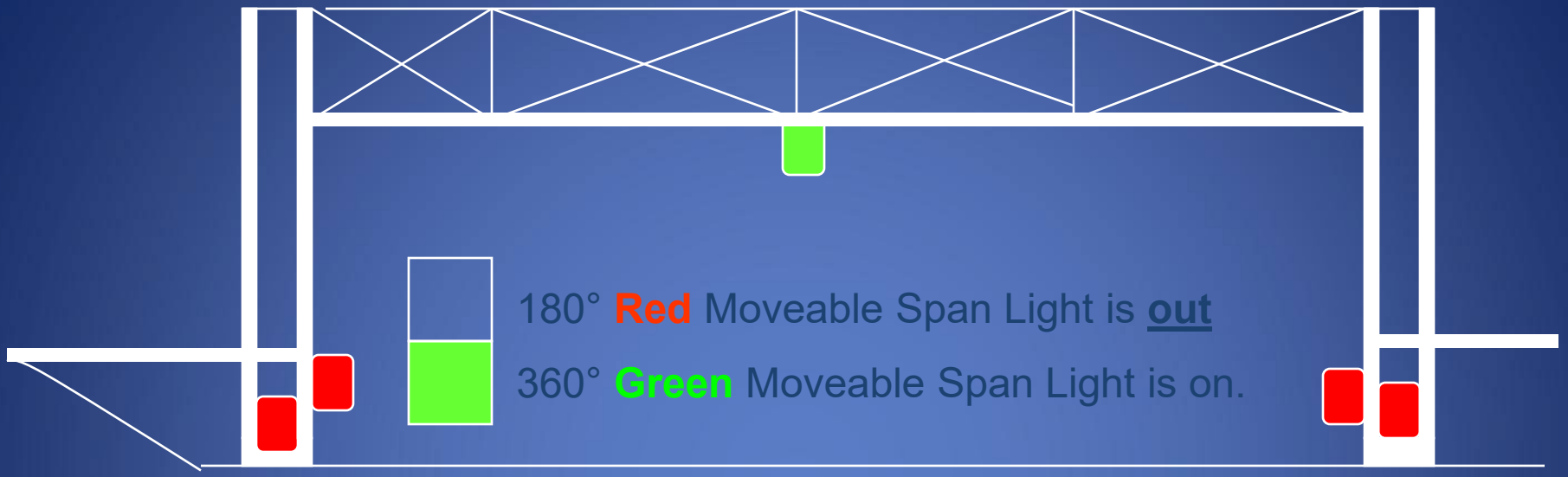
Coleman Memorial Bridge, Yorktown VA

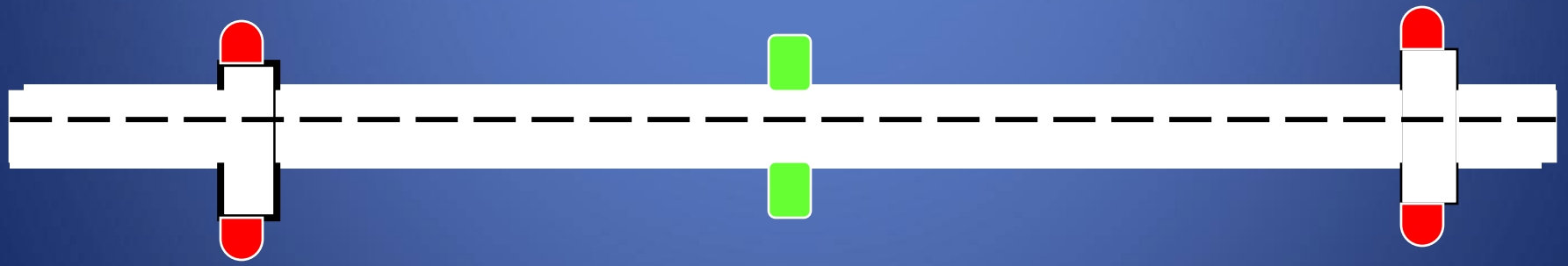

Swing Bridge - OPEN

Vertical Lift Bridge – Span is closed



Vertical Lift Bridge – Span is open





180° Red Pier Lights

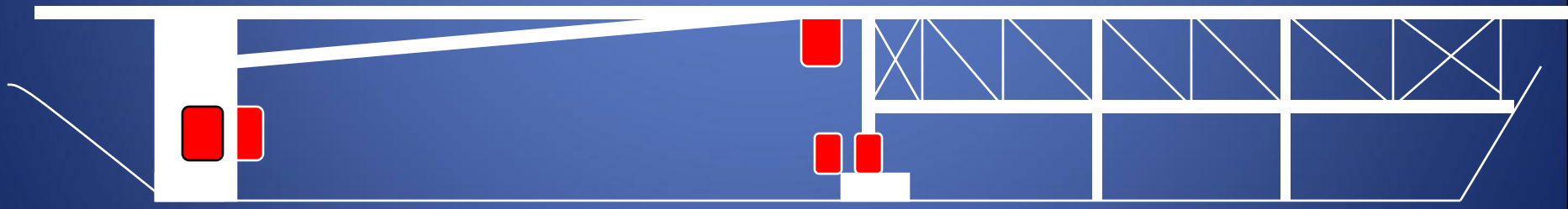

Vertical Lift
Bridge
Closed

Vertical Lift Bridge – Open

Chart may show **Hor CL** and the open and closed **Vert CL**.

Single Bascule Bridge – Span is closed

180° **Green** Moveable Span Light is **out.**
180° **Red** Moveable Span Light is on.

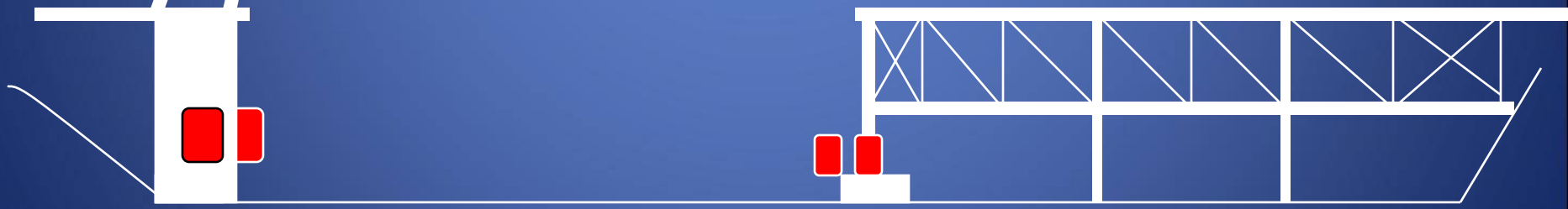


180° Red Pier Lights

Single Bascule Bridge – Span is open

180° **Green** Moveable Span Light is **on.**

180° **Red** Moveable Span Light is **out.**



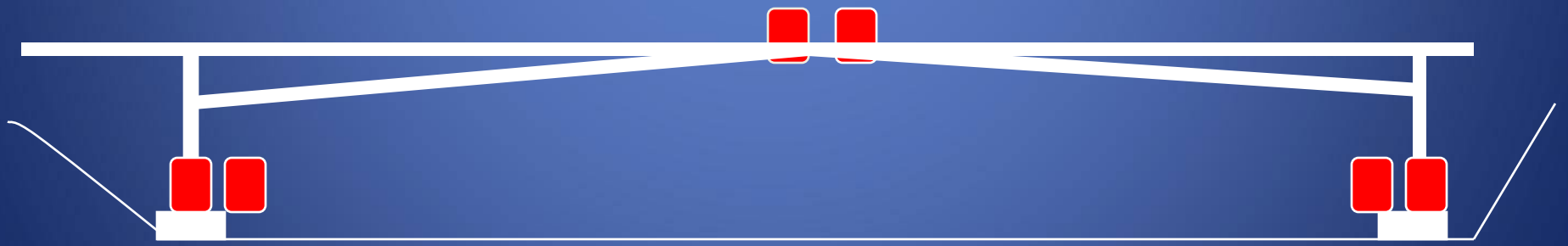
Draw must open to point where it clears the fenders

Double Bascule Bridge (Spans are closed)

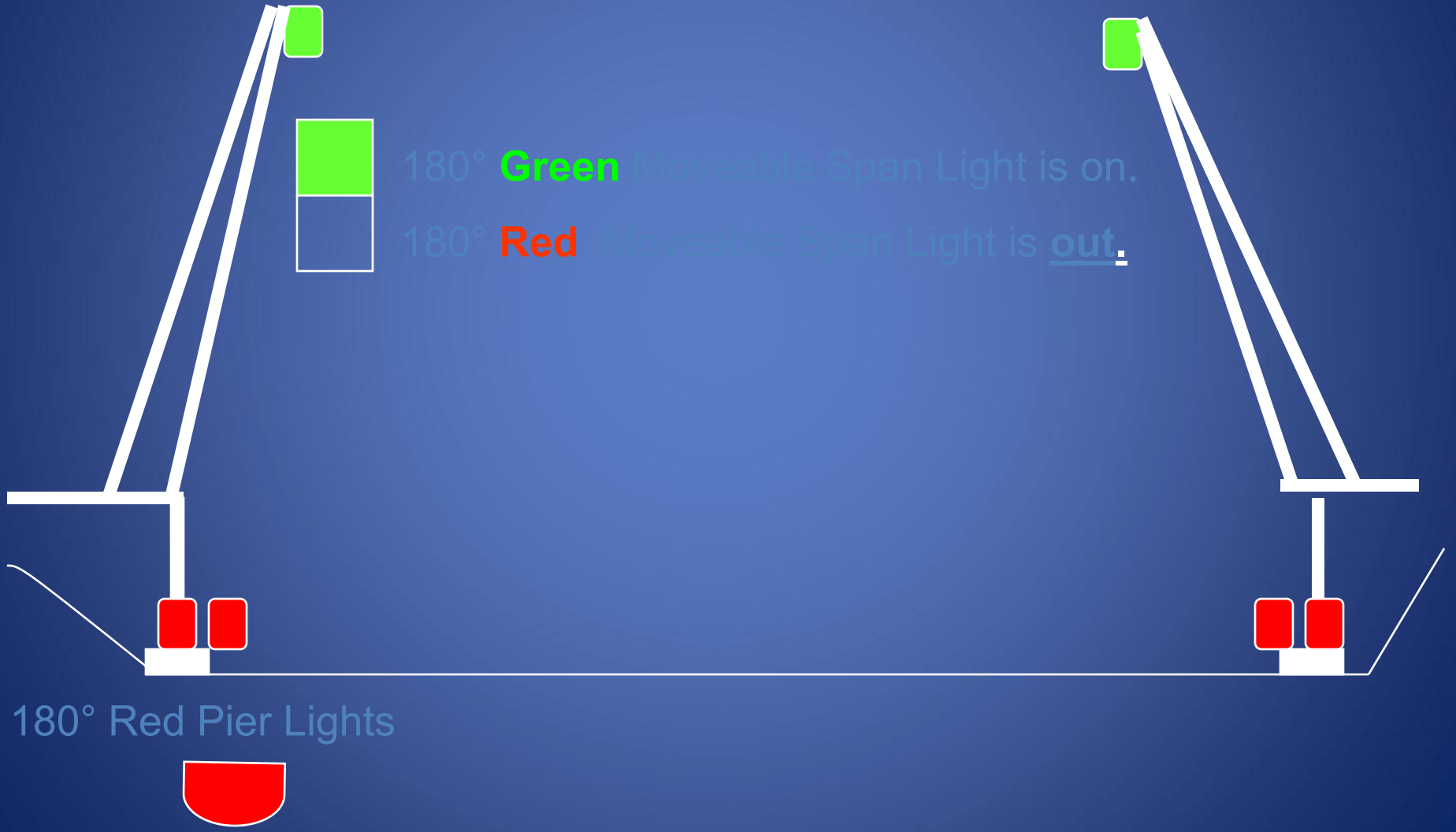
180° Red Pier Lights

180° **Green** Moveable Span Light is **out**.

180° **Red** Moveable Span Light is on.

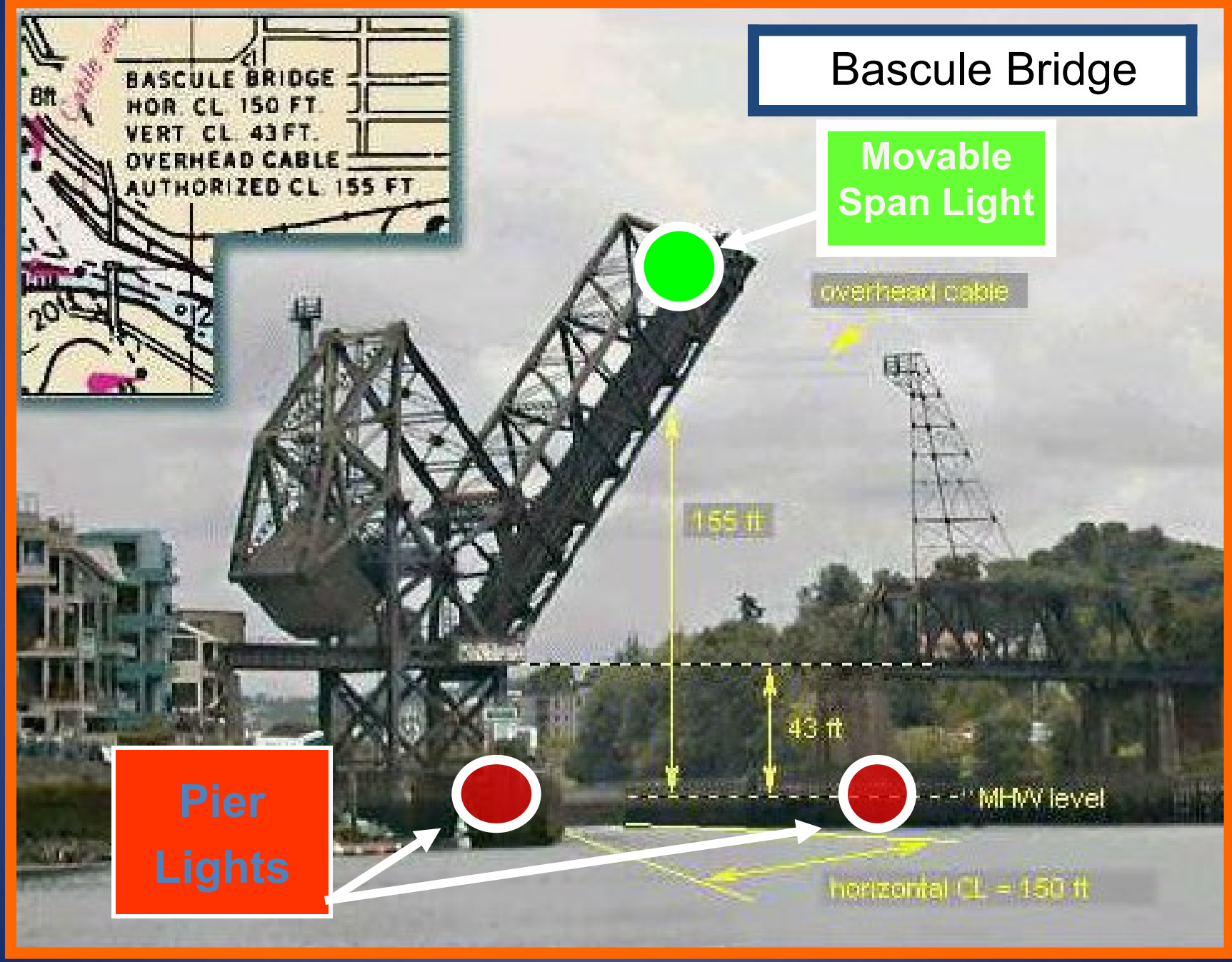


Double Bascule Bridge (Spans are open)

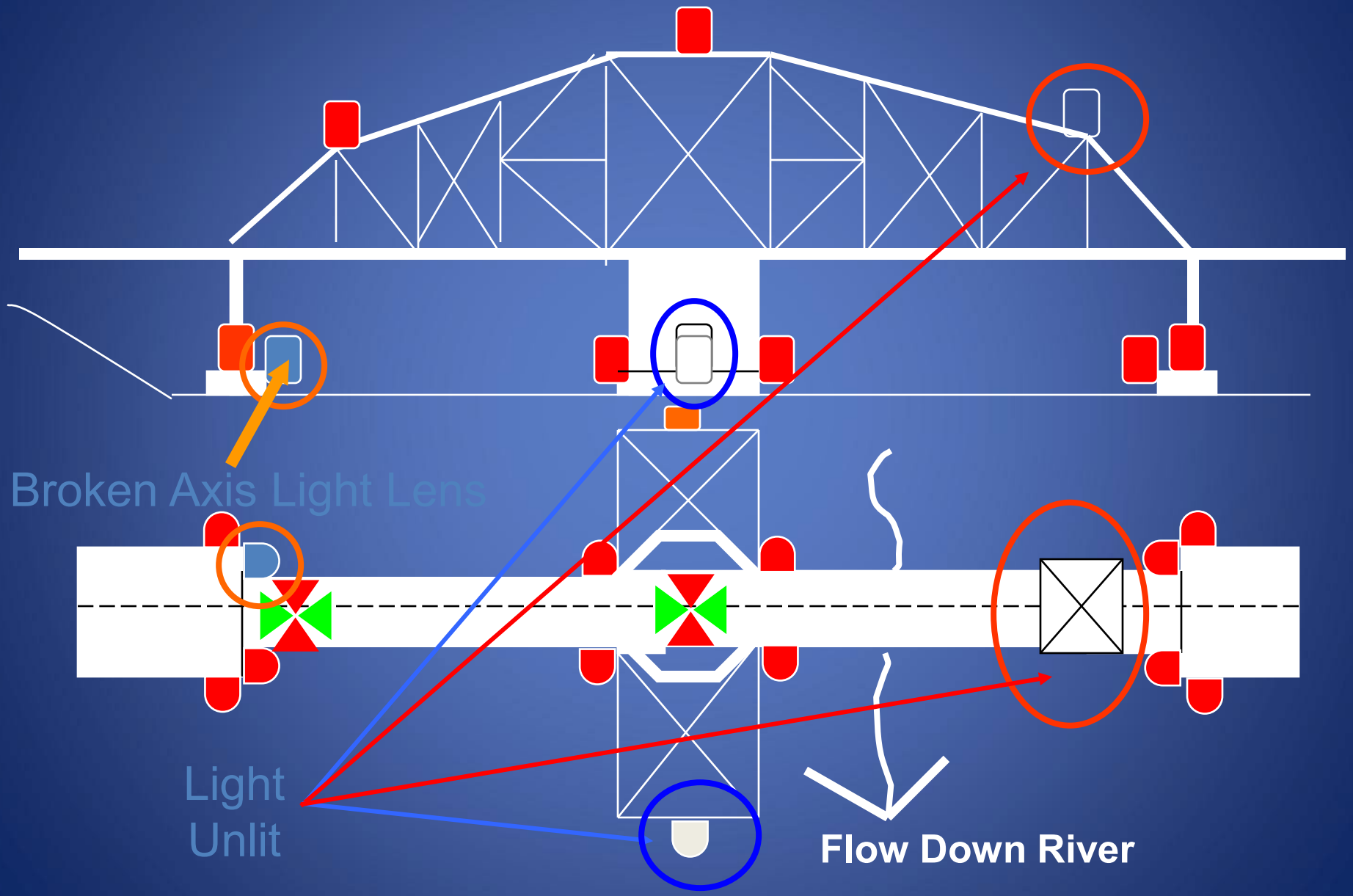



Single Bascule
Bridge Closed


Double Span Bascule Bridge
(closed)


Bascule Bridge
Movable Span Light
BASCULE BRIDGE
HOR. CL. 150 FT.
VERT. CL. 43 FT.
OVERHEAD CABLE
AUTHORIZED CL. 155 FT
overhead cable
155 ft
43 ft
MHW level
horizontal CL = 150 ft
Pier Lights

Lighting Discrepancies



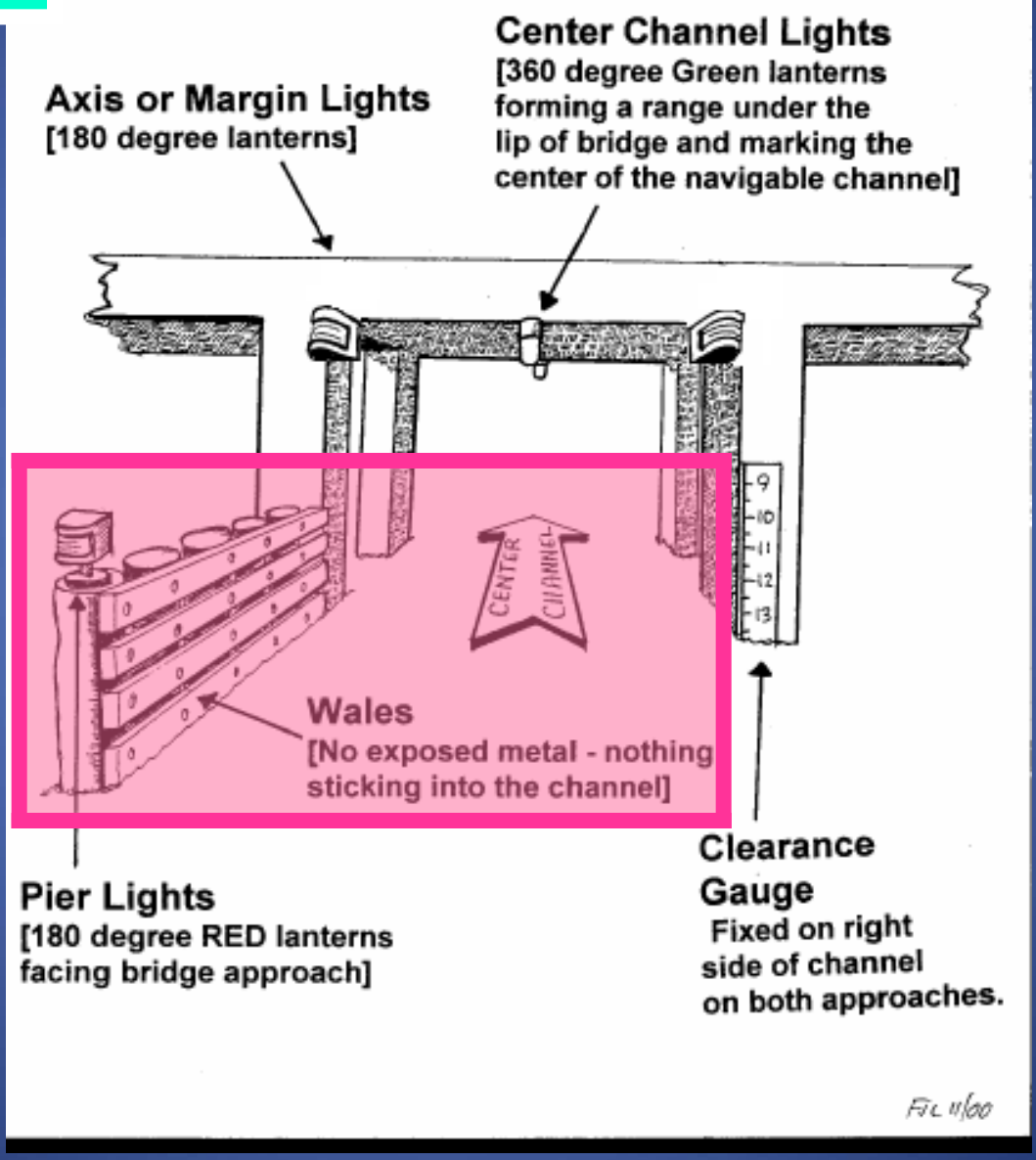
Wales – the horizontal wooden components of the fender system

Wales must be:

- **In good repair.**
- **Have no sharp metal or bolts sticking into the channel.**
- **Have no metal corners.**

WALES

FIXED BRIDGES



Special Regulation Signs must be:

- Readable.
- Located on both sides of bridge.
- Match the Federal Regulations for that bridge in the 33CFR117 Subpart B
- If a phone is required to open a lift bridge, the phone number must be shown on the ***regulatory sign.***

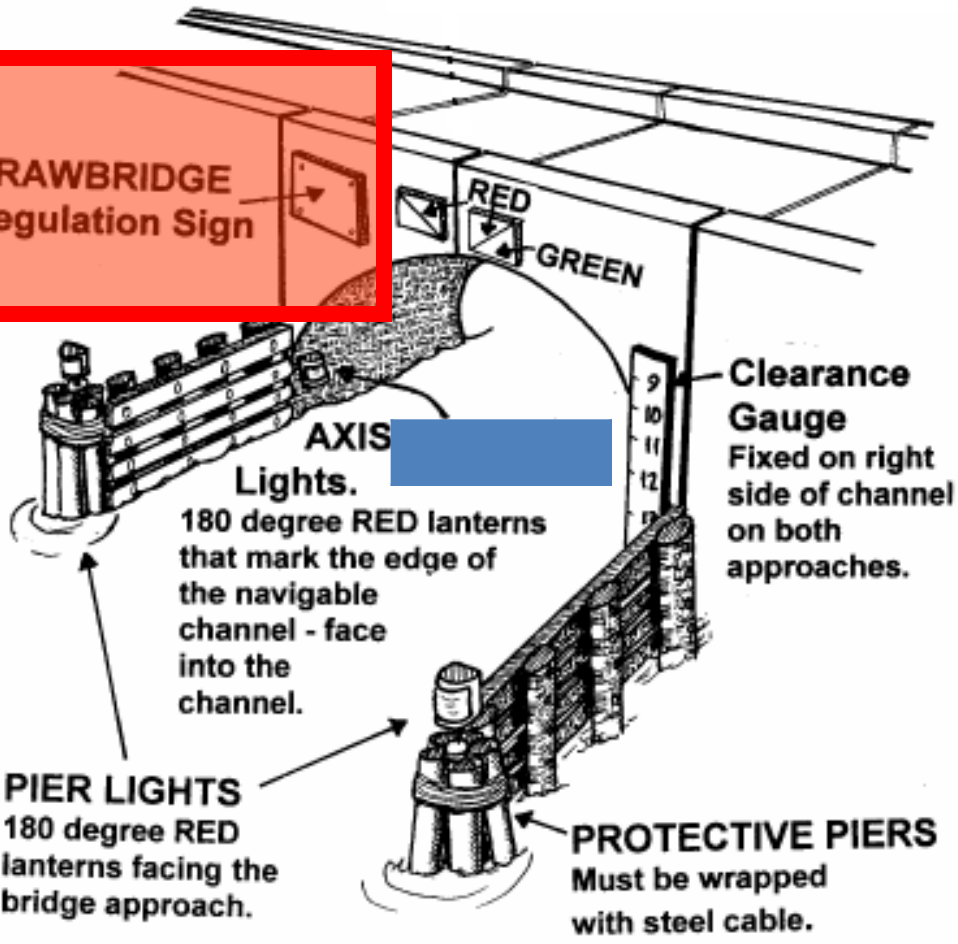
Special Regulatory Signs

- If a phone number is on the sign – call the number to make sure the number & area code is current and the phone is answered.

Special Regulatory Signs

BASCULE BRIDGES

[bas'kul] French for a seesaw.
A kind of drawbridge that is counter-weighted so that it can be raised and lowered easily.



BRIDGE KIT 04

FJL 11/00

5

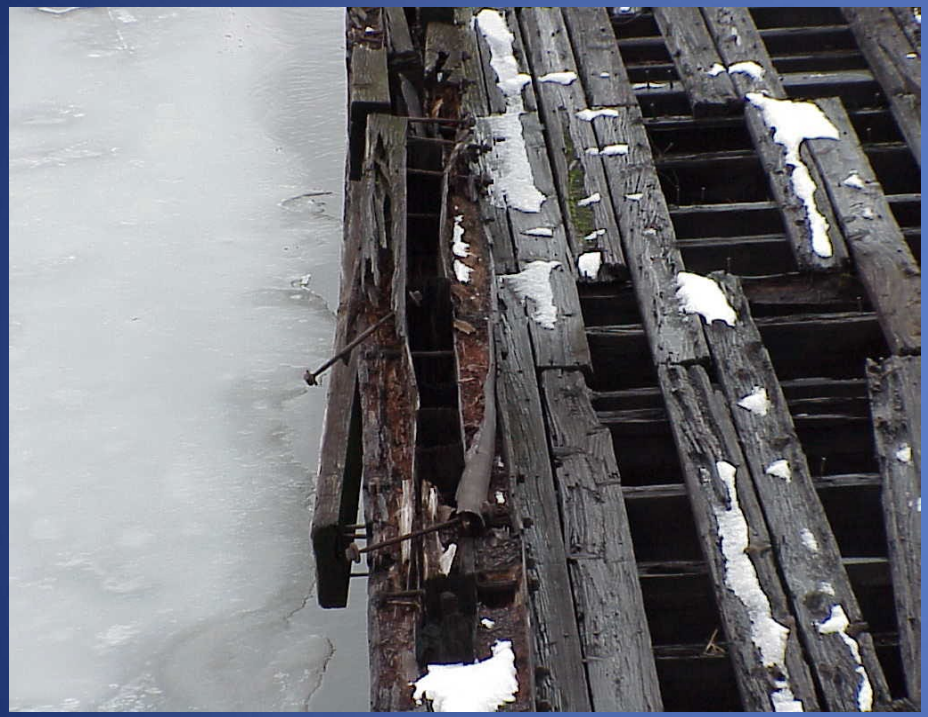
Fender Discrepancies:

- Missing or broken wales
- Fender protruding into channel
- Steel/metal exposed to channel
- Bolts not recessed
- Dolphin clusters “leaning”

- Broken or dirty vertical clearance gauge
- Missing or inaccurate drawbridge operating regulatory sign

PHOTOS REQUESTED

Bridge Fenders



PROTRUDING BOLTS
TOP VIEW

STEEL JACKETING

Bridge Fenders

PROTRUDING BOLTS

MISSING WALES

Protective Piers must be:

- Wrapped with steel cable.
- Have nothing projecting into the navigable channel.
- Undamaged
- Not be rotting at the waterline.
- Not be rotting down from the top.

Damaged Cell

Leaning Submerged Cluster

Protruding Wales

Clearance Gauges

May be required on both Fixed Bridges and Draw Bridges:

- Required only if specified on CG Bridge permit
- May be listed in 33CFR117 -Subpart B
  (may still be required by permit, even if not listed in 33CFR117)
- Listing is also found in the Coast Pilot

Clearance Gauges

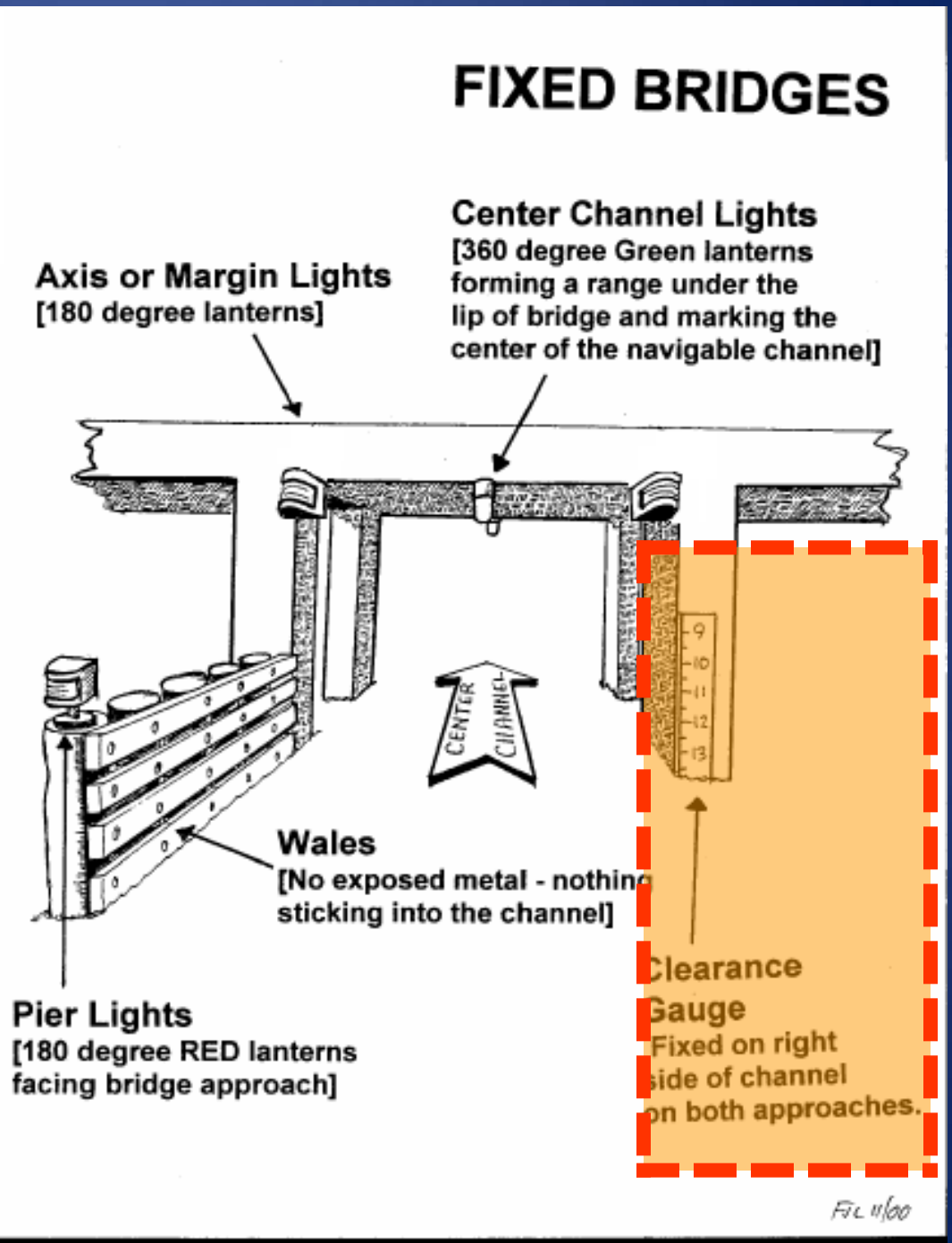
Should be mounted on the right side of the channel on both sides of the bridge (upstream & downstream).

- Should be readable from ½ mile.
- Must reflect the actual clearance from the lowest point of the span over the navigable channel to the actual water surface.

CLEARANCE GAUGES

Clearance gauges are not always required but may be found on many Bridges.

Check 33CFR117 or the Coast Pilot



Broken Gauge

Racons

- Radar transponder beacons
- Mounted at center of main channel on some major fixed bridges. Provides enhanced Morse coded echo on radar display.
- Will be listed on chart if installed.
- Use boat's radar to verify proper operation of RACON

Fog Horns

- Mounted at center of main channel on some major fixed bridges.
- Will be listed on chart if installed.
- Normally only sound when fog is present – can only be verified in fog!

Obstructions in the Channel

- Nothing may be hanging down from the span of the bridge into the navigable channel.
- Report any shoaling or other obstructions in the channel.
- Is the channel navigable?
- Is any debris caught in the fenders sticking into the channel?

Bridge Operation

- Is the draw operational?
- Did the bridge tender respond immediately?
- If a phone was required, was the phone number correct, and was it answered?
- Was the person answering the phone knowledgeable?
- Did the horns and alarms on the bridge operate effectively?

BRIDGE DISCREPANCIES

On 7055, and on ATON-1

1. **Bridge clearance lights, missing, damaged or extinguished**
2. **Clearance gages incorrect, missing or not legible**
3. **Unreadable regulation signs**
4. **Sound signals not functioning**
5. **Cables or scaffolding hanging below bridge structure**
6. **Fender conditions which present hazard to navigation for any reason**

CG 7055

COAST GUARD AUXILIARY
PREVENTION DEPT
Form NS-7055

U.S. COAST GUARD AUXILIARY
7055 - BRIDGE REPORT

Check the report type:
- ☐ Discrepancy Report
- ☐ Verification Report

Report as a Mission 32 to AUXDATA

SECTION 1 - MEMBER INFORMATION

REPORTER'S LAST NAME, FIRST NAME, MIDDLE INITIAL	AV QUAL	TELEPHONE NUMBER	DIST-DIV-FLO

DATE OBSERVED	TIME OBSERVED	OPCON NUMBER or CG UNIT NAME	EMAIL ADDRESS

SECTION 2 - COAST GUARD NOTIFICATION (Fill in only if you already reported by phone, radio or e-mail to a C.G unit.)

COAST GUARD UNIT NOTIFIED	DATE REPORTED	TIME REPORTED	COMMUNICATION METHOD USED FOR REPORTING TO CG UNIT

SECTION 8 - BRIDGE IDENTIFICATION

BRIDGE NUMBER	BRIDGE NAME	BRIDGE TYPE	BRIDGE USE

NAME OF WATERWAY	MILES ABOVE MOUTH	LOCATION (FROM)	LOCATION (TO)

LATITUDE [DDMMSS.SSS]	N/S	LONGITUDE [DDDMMSS.SSS]	E/W		# ATTACHED PHOTOS	

SECTION 9- OBSERVED BRIDGE DISCREPANCY(S)

1. LIGHT SURVEY

Check each type of light observed
- ☐ Pier Lights
- ☐ Center Channel Lights
- ☐ Center Margin Lights
- ☐ Preferred Channel Lights
- ☐ Channel Axis Lights
- ☐ Swing Span Lights
- ☐ Lift Span Lights

Check the light discrepancies that apply.
- ☐ Light is extinguised
- ☐ Light is wrong color
- ☐ Lantern is damaged
- ☐ Lantern is missing

2. CLEARANCE GAUGES
- ☐ Clearence Gauge is damaged
- ☐ Clearance Gauge is unreadable

3. REGULATORY SIGNS
- ☐ Regulatory sign is missing
- ☐ Regulatory sign is unreadable
- ☐ Regulatory sign is damaged
- ☐ Regulatory sign colors faded

4. BRIDGE SIGNALING DEVICES
- ☐ Bridge signaling device is inoperative
- ☐ Bridge communication sign missing
- ☐ Bridge radio is garbled and unreadable

5. FENDER SYSTEM
- ☐ Fenders deteriorated or rotted
- ☐ Fender is damaged by fire
- ☐ Vessel allision evident on fender system
- ☐ Wales are missing
- ☐ Wales protrude into the navigable channel
- ☐ Metal corner plates
- ☐ Exposed bolts protrude into the channel
- ☐ Debris protrude into channel
- ☐ Protective dolphin(s) is damaged

6. OBSTRUCTIONS IN NAVIGABLE CHANNEL
- ☐ Obstructions hang below the span
- ☐ Cable(s) hangs into navigable channel

SECTION 10 - COMMENTS Fully discribe the discrepancy in this section - all reports must have comments filled in.

- The web site for the D5 P/ATON for D5-7054 is:
- http://wow.uscgaux.info/content.php?unit=P-DEPT&category=ns-forms-and-manuals


NOTICE
NO LEFT
ALERT
X
SIGNALS
LANE
CLOSED
PAY TOLL AHEAD
PAY TOLL AHEAD

WHERE YOUR REPORTS GO

- To your FSO-NS and on up the COLM
- **DSO-NS will copy your Bridge report Chief Waterways Management, SDB, 1 Washington Ave., Phila., PA 19147**
- **Let your FSO-NS know each month how many reports made, so he can report to SO-NS for report at Div. Mtg.**
- **When reporting Discrepancies, give as much information as possible and suggest what is needed to correct**

Task 7.0 PATON Certification and Currency Maintenance

- Maintain Currency
  - Perform ONE PATON verification, bridge inspection, chart update or discrepancy report per year
  - TCT

Oh By the Way

- An add on: Be aware of water pollution and elements that adversely affect marine life. A simple act of scooping up a plastic bag with a boat hook can mitigate its impact on some marine life.