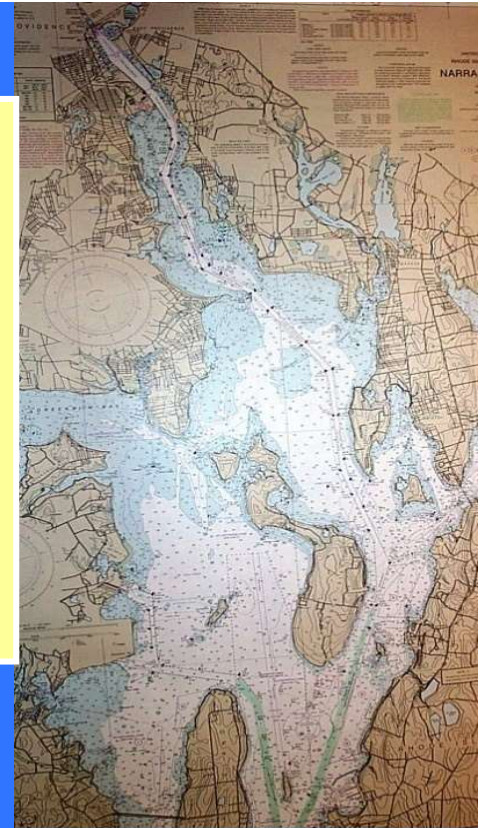




First Northern Navigation Systems



**NS-PN05
PATON
DISCREPANCY
REVIEW**



PATON

Categories

Class 1

Class 2

Class 3

Definition of Class I

C

L

A

S

S

- ❖ An aid to navigation on a marine structure or other works, for which the owner is legally obligated to establish, maintain and operate.

- ❖ Aid still needs a Coast Guard permit.

1

C

L

A

S

S

1

❖ PATON must be verified by the Coast Guard ANT.

❖ PATON must be verified every year by July 1.

Definition of Class 2

**C
L
A
S
S
2**

- ❖ An aid to navigation, exclusive of Class 1, which is located in waters used by general navigation.
- ❖ Usually are lateral aids.

C L A S S 2

- ❖ Aid is verified by the CG Auxiliary.
- ❖ Aid is verified every three years.
- ❖ Lateral aids may be designated for more frequent verifications.

Definition of Class 3

C

- ❖ Aids to Navigation, exclusive of Class 1, which are located in waters not ordinarily used by general navigation.

L

A

S

S

- ❖ Usually are unlighted regulatory buoys.

3

C
L
A
S
S
3

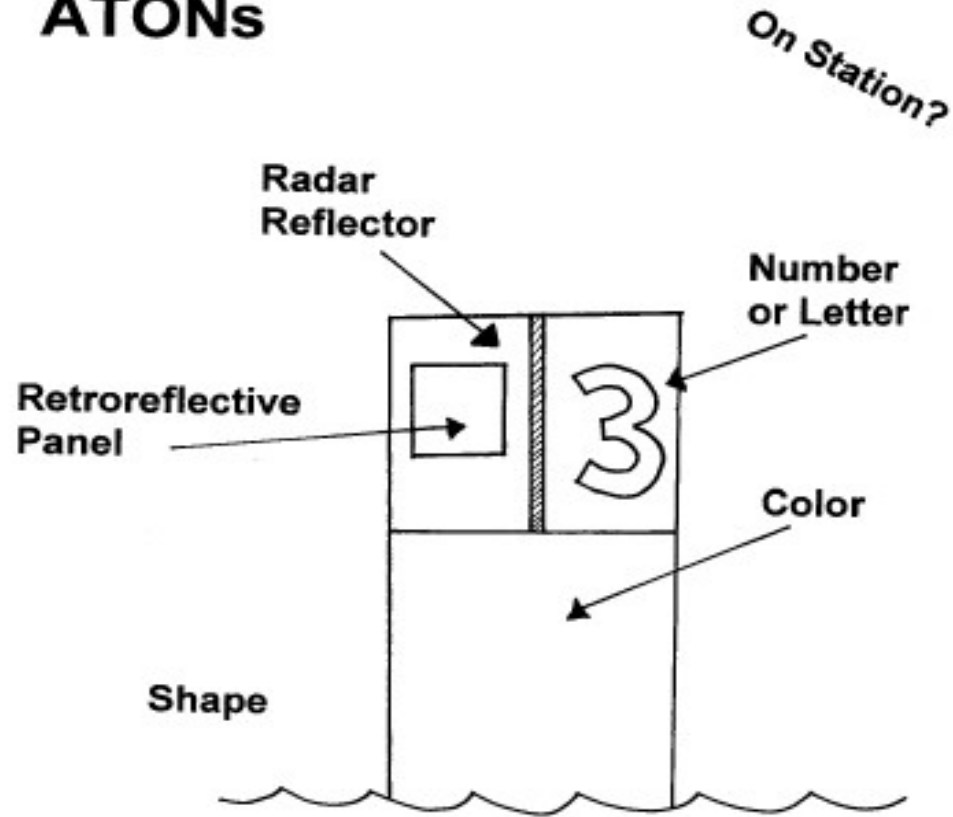
- ❖ Aid is verified by the CG Auxiliary.
- ❖ Aid is verified every three years.
- ❖ Many Class 3 aids only need to be counted.

OFF STA Criteria

- ❖ Floating Lateral Buoys – **50 feet**
- ❖ Fixed Lateral DBNs – **25 feet**
- ❖ Regulatory Aids – **500 feet**
- ❖ Lighted Regulatory Aids – **50 feet**

A
I
D
E
E
F
F
E
C
T
S

Aids To Navigation ATONs



Light List Narrative

Compare visual sighting to the chart symbols on the latest nautical chart to the data in the Light List. If there is a difference, report it.

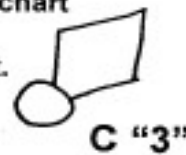


Chart Symbol

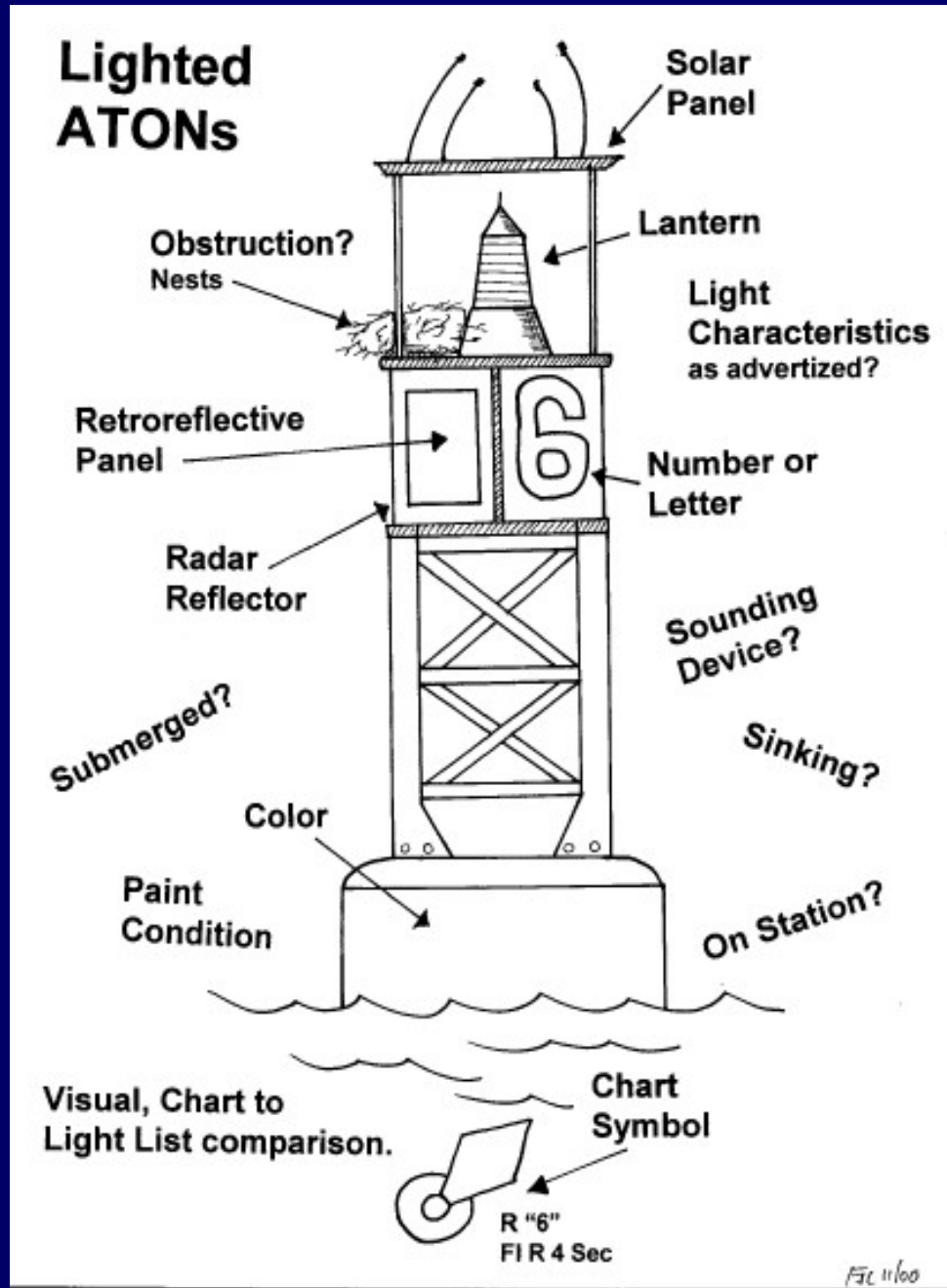
Sinking?

Submerged?

Paint Condition

Report it if it shows 25% deterioration or loss of lateral significance.

M
O
R
E
I
S
S
U
E
S





LED LANTERN

(Light Emitting Diode)

Model 601

- Not approved for use by USCG.
- 2 NM range.
- Self-contained.
- May be used on private aids.
- Small, lightweight, easy to install, inexpensive.



Programming the light characteristic:

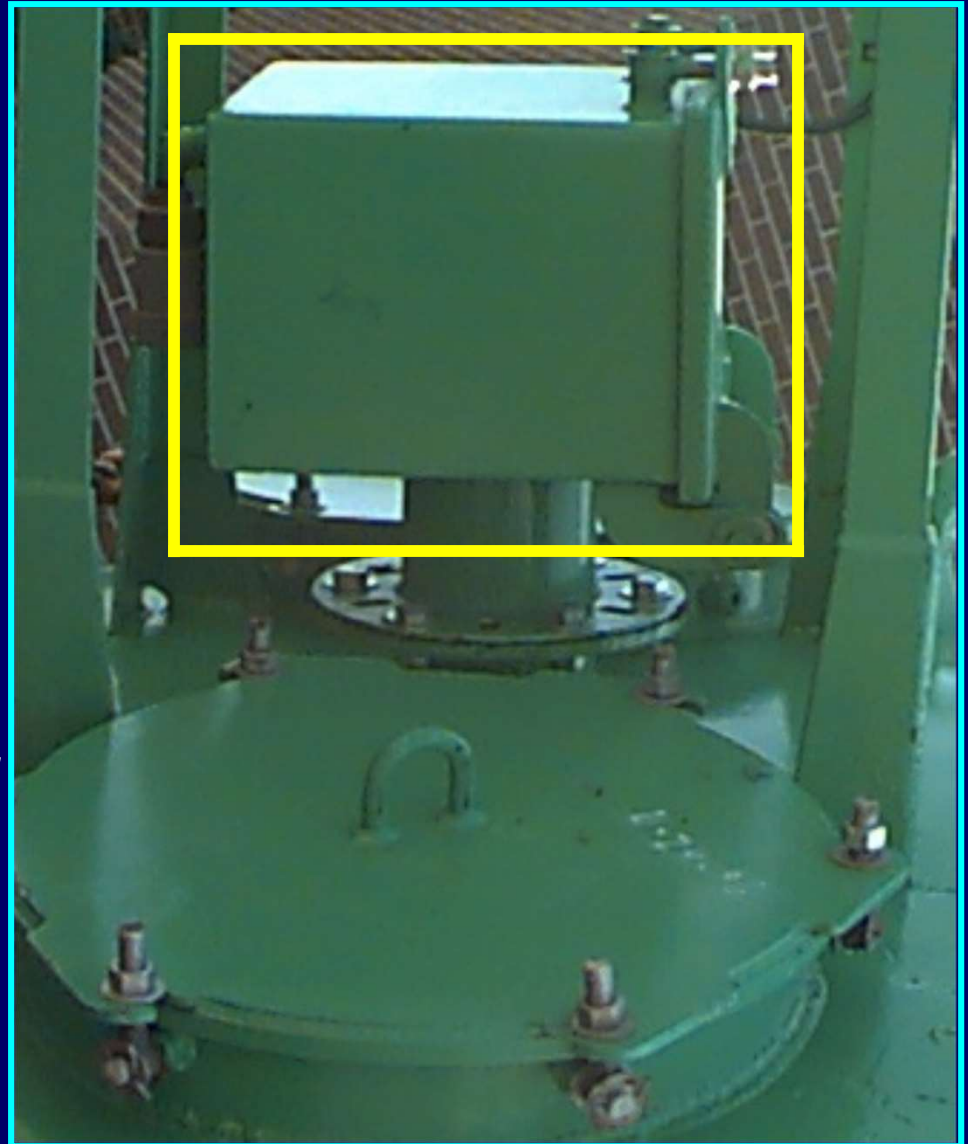
- Lantern color determined by colored dot near serial number.
- Any flash characteristic can be programmed using a Universal TV remote control.
- Security code must be entered to prevent accidentally changing characteristic.
- Follow instructions supplied with lantern.

Service Life of Lantern

- LED lanterns do not burn out.
- Light output degrades over time.
- Replace lanterns according to Duty Cycle.
- 10-29% duty cycle replace every 12 yrs.
- 30-100% replace every 8 years.
- Replace battery every 4 years.

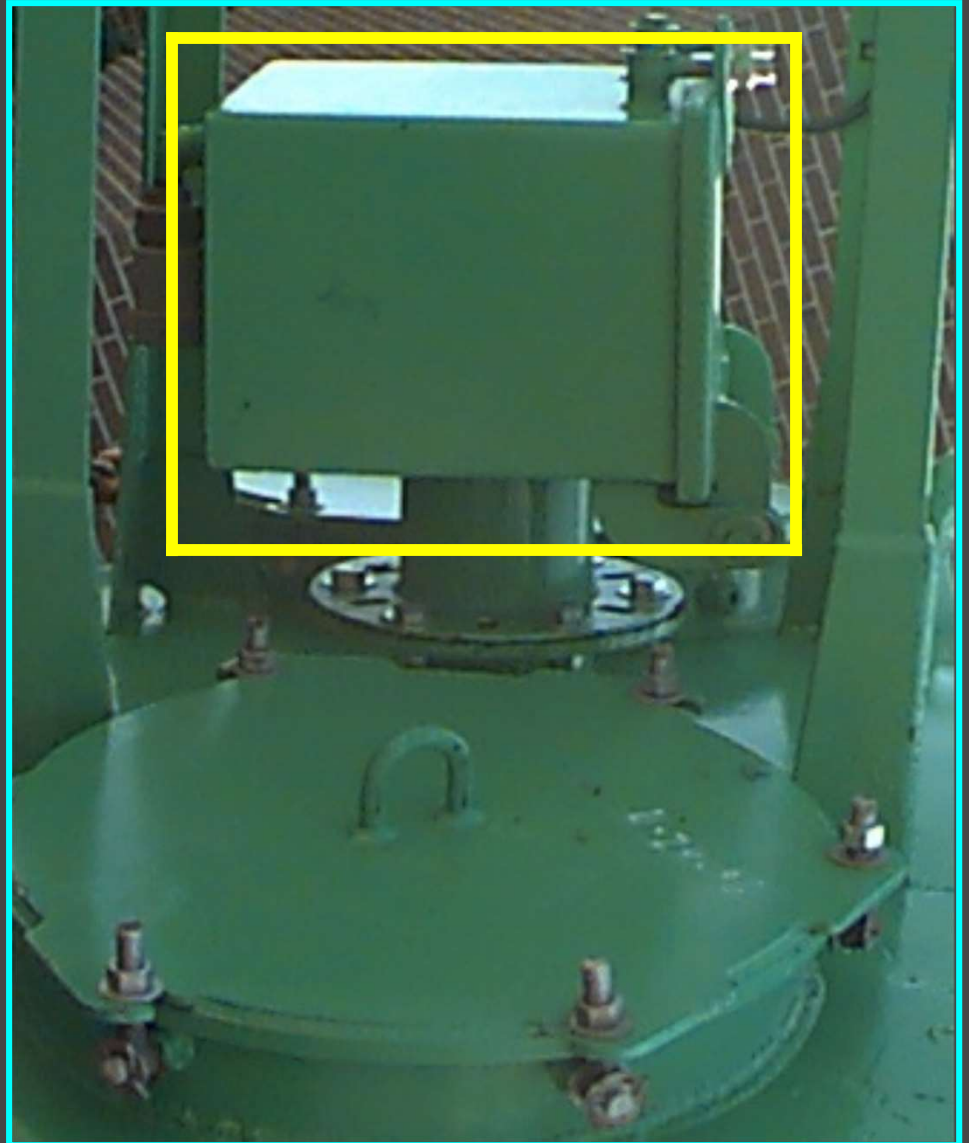
Battery Box

- There are single and double battery boxes.
- A vent valve must be installed.
- Box may be painted the color of the buoy.



Battery Box

- Not required for aids fitted with LED lanterns.
- A vent valve or a cap must still be installed when the old battery box is fitted to the aid.



Sound Systems

There are three main types of wave actuated sound signals:

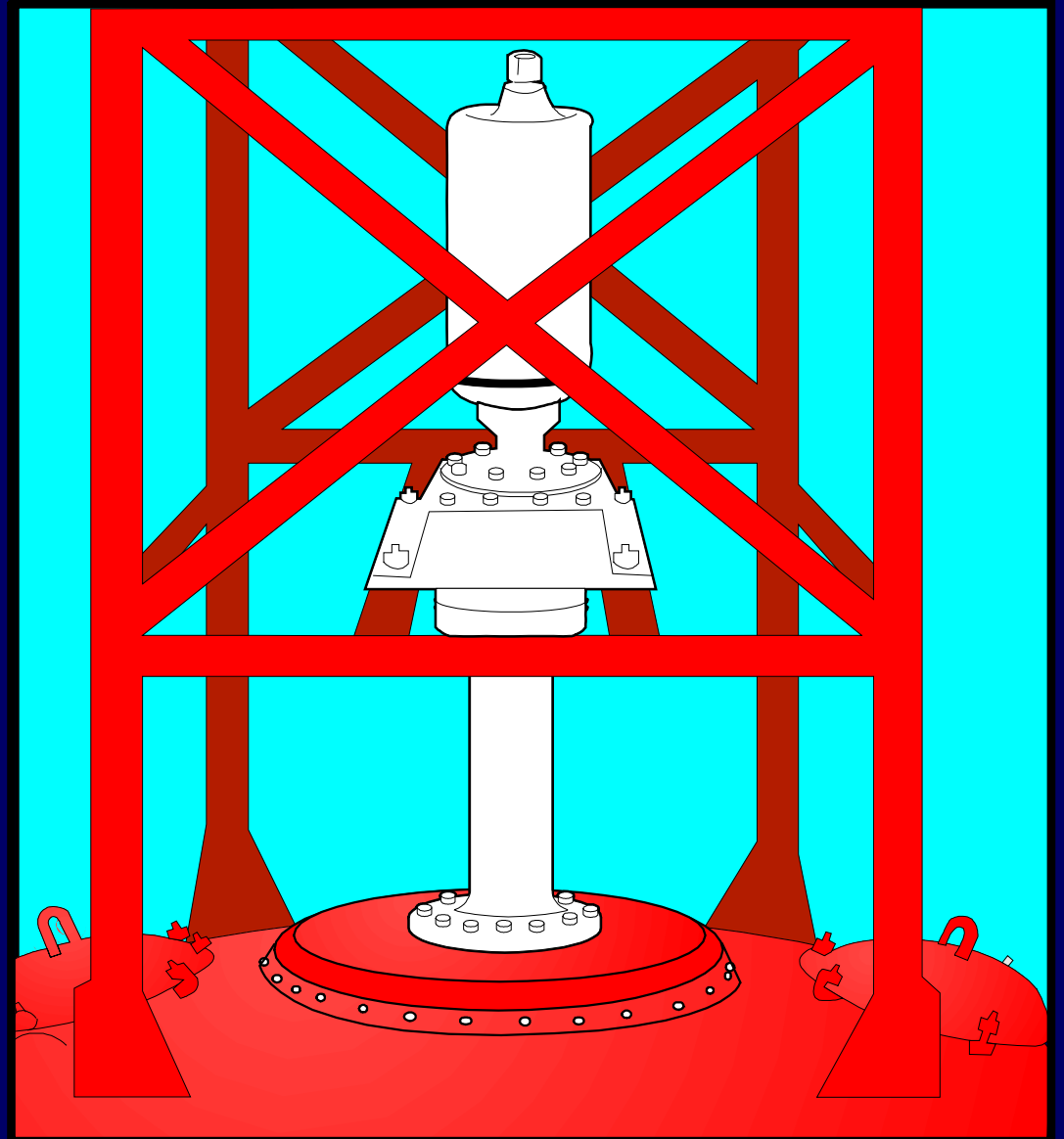
Whistle

Bell

Gong

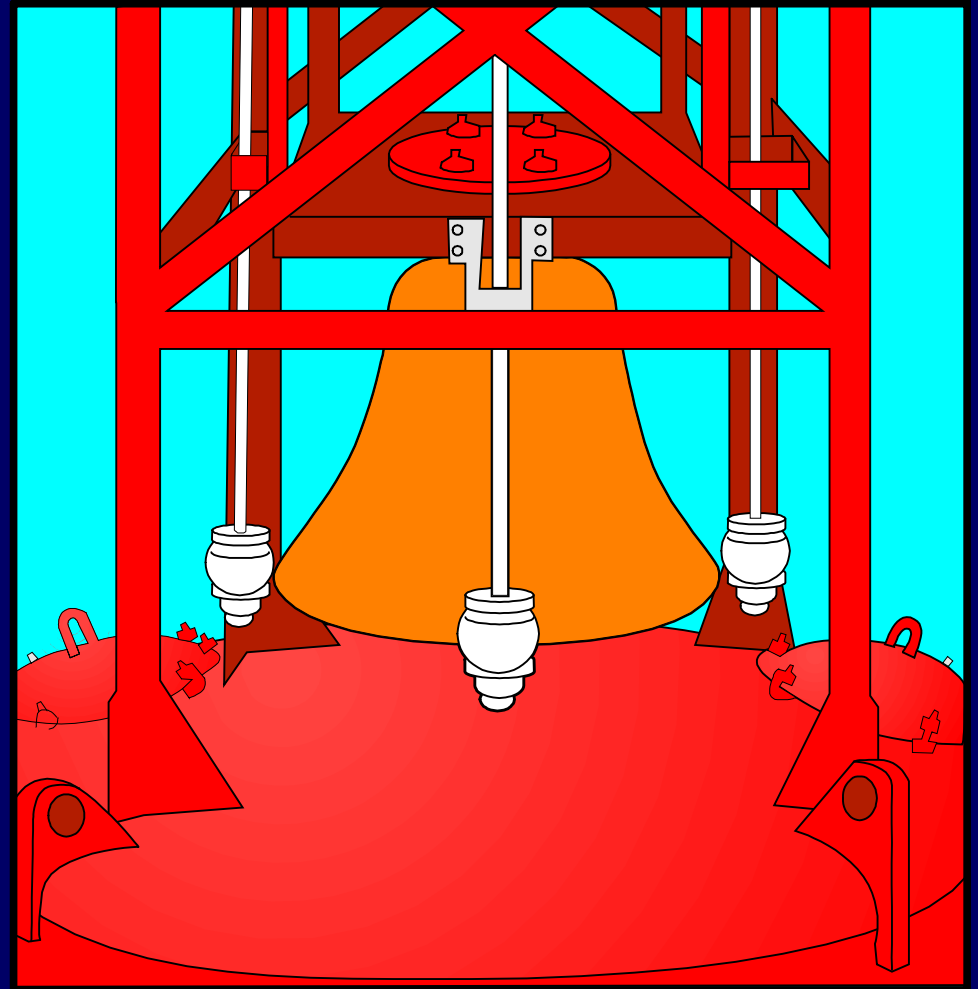
Whistle

- Whistle is made of cast bronze and is mounted inside the cage.
- As air is forced through the whistle, the familiar drone sound is made.



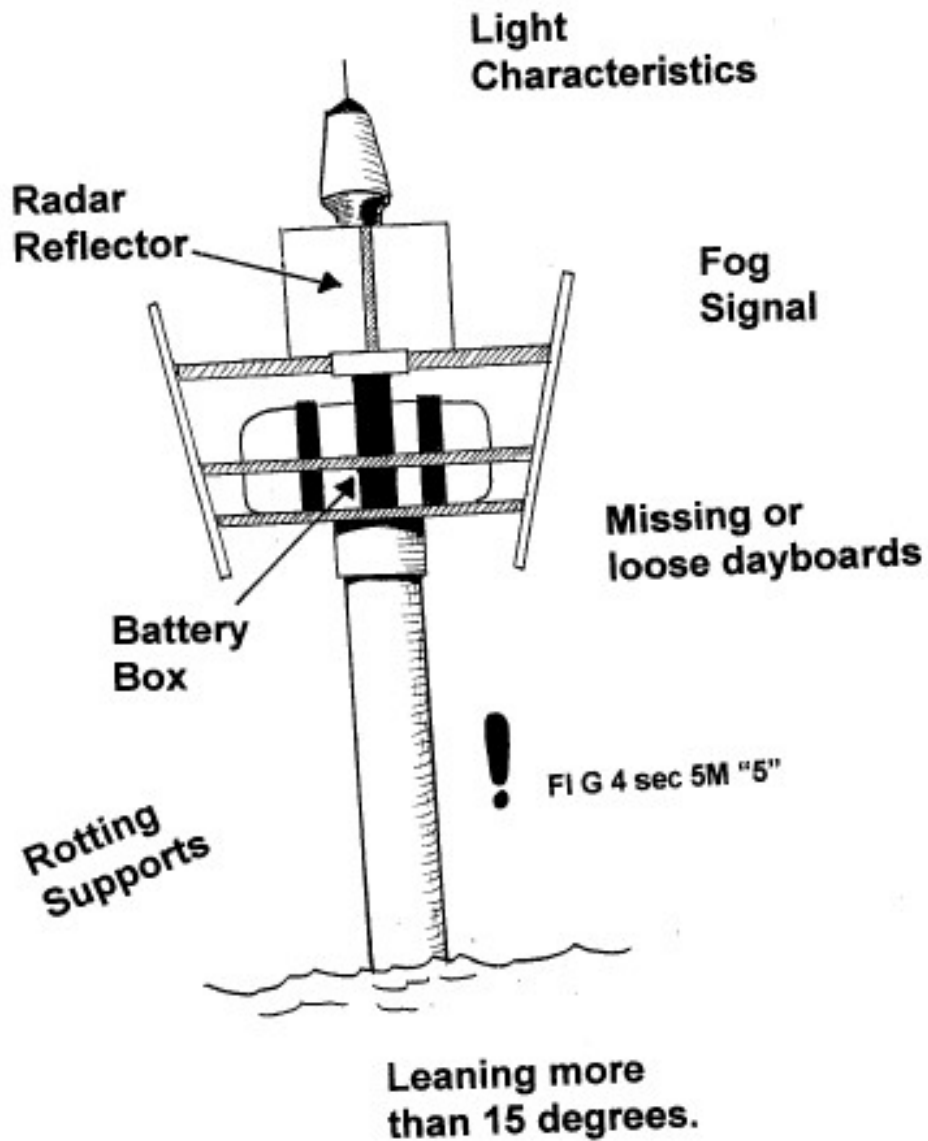
BELLS

- Bells used on lighted and unlighted buoys and are made of a copper-silicon alloy.
- External tappers impact the fixed bell when wave motion causes the buoy to roll.



Small Lights and Daymarks

SMALL LIGHTS



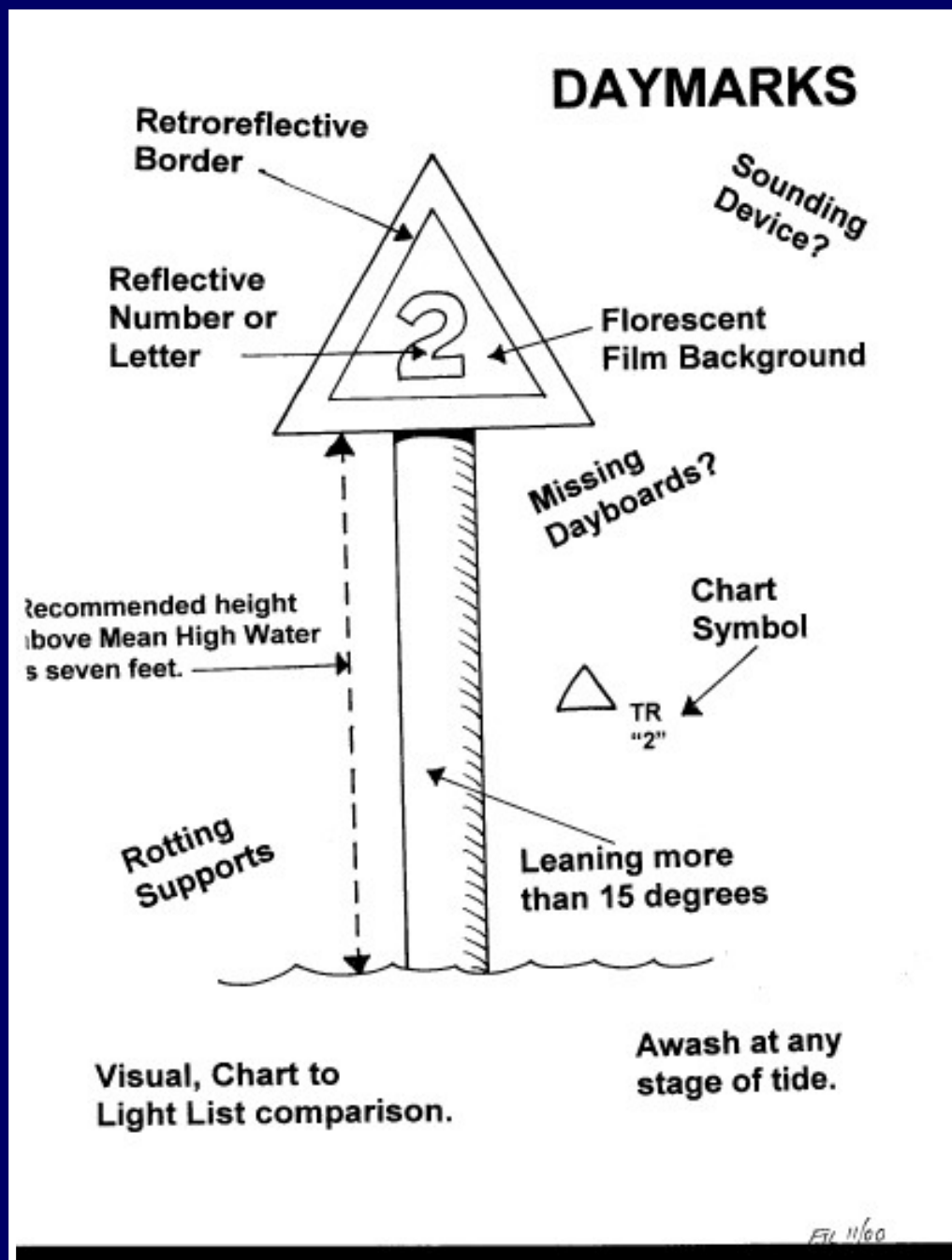
FL/11-00

**Don't
get
too
close
to this
PATON!

Stay
in the
channel.**

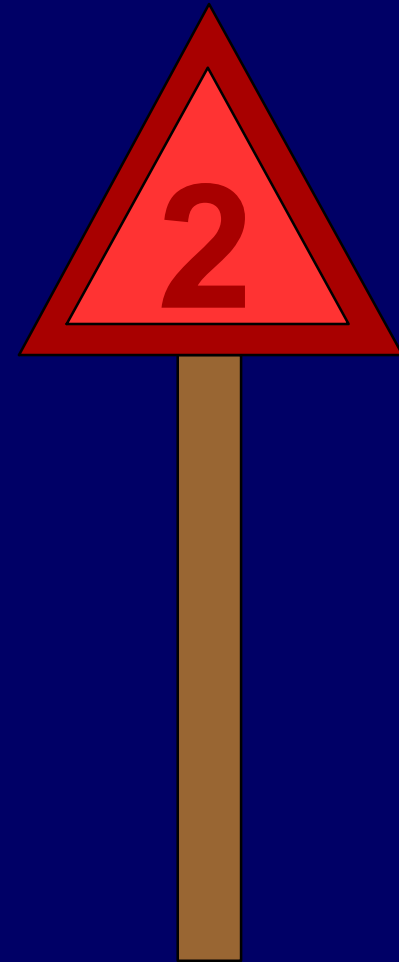
Check after storms.

Panels are designed to break away so that high winds or waves will not destroy the supporting pile or structure.



Single Pile Structure

- Used in protected or semi-exposed locations where *fixity* can be attained.



Multiple Pile Structures

- Used when *fixity* can not be achieved with single pile.
- Two categories:

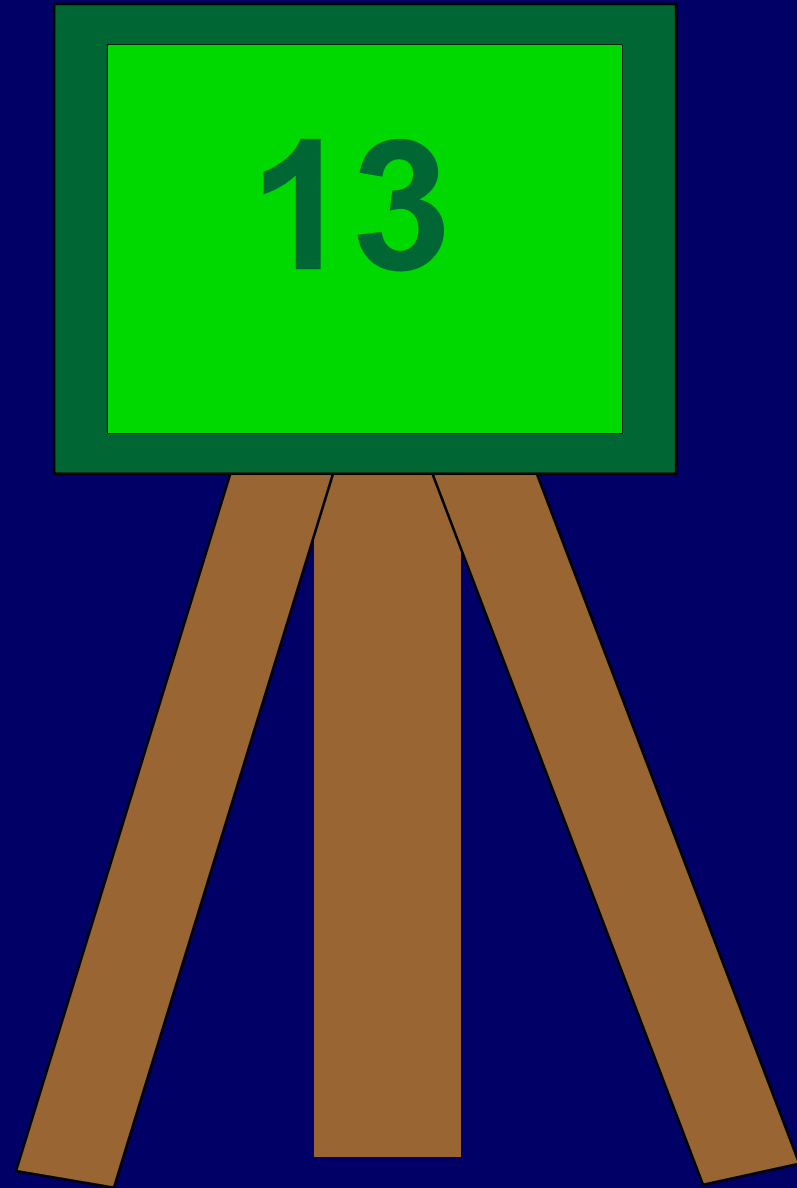
Dolphin

Platform Structure

Dolphin

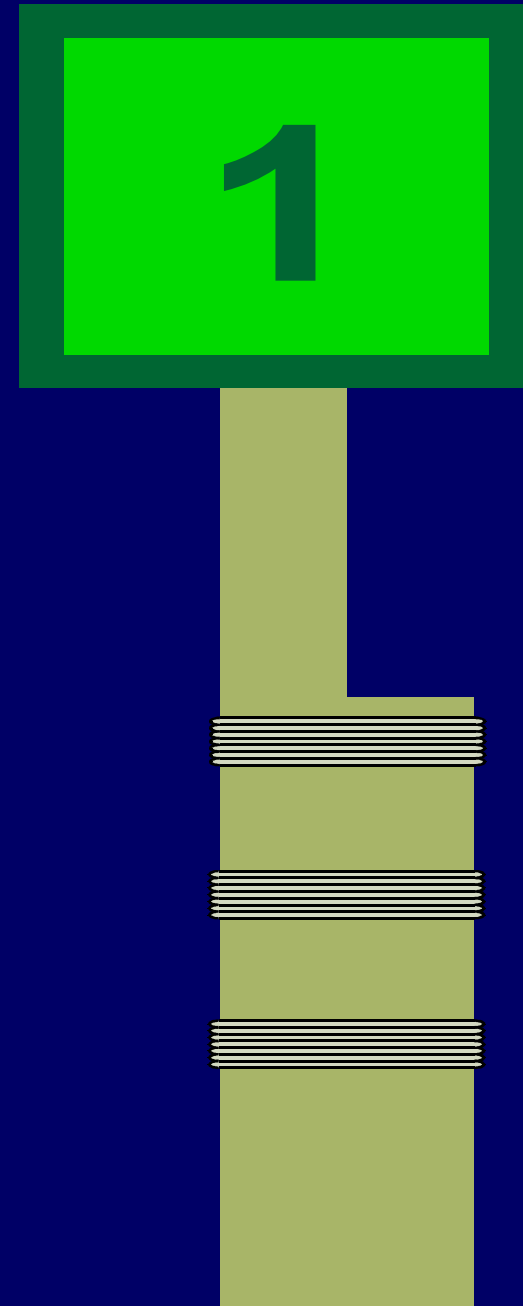
- **Battered pile**

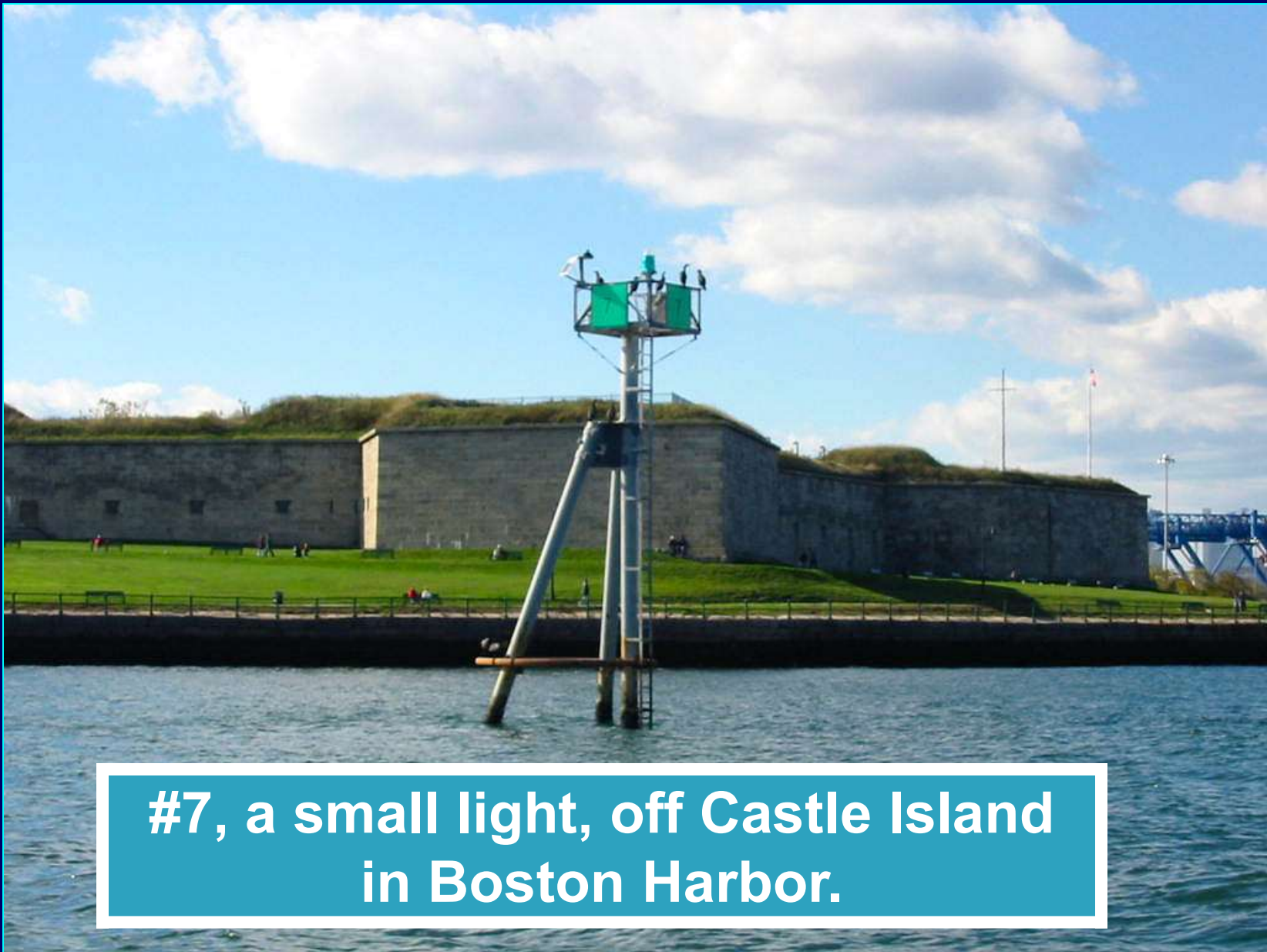
Three to seven piles driven at an angle with the bottoms spread and the tops secured with *wire rope* or bolts and shear connectors.



Dolphin

- **Cluster pile**
 - Three or more piles driven *vertically* with their surfaces in contact with each other and wrapped tightly at various heights.





**#7, a small light, off Castle Island
in Boston Harbor.**

Platform Structure

Things to check on this aid.

load over all the piles.

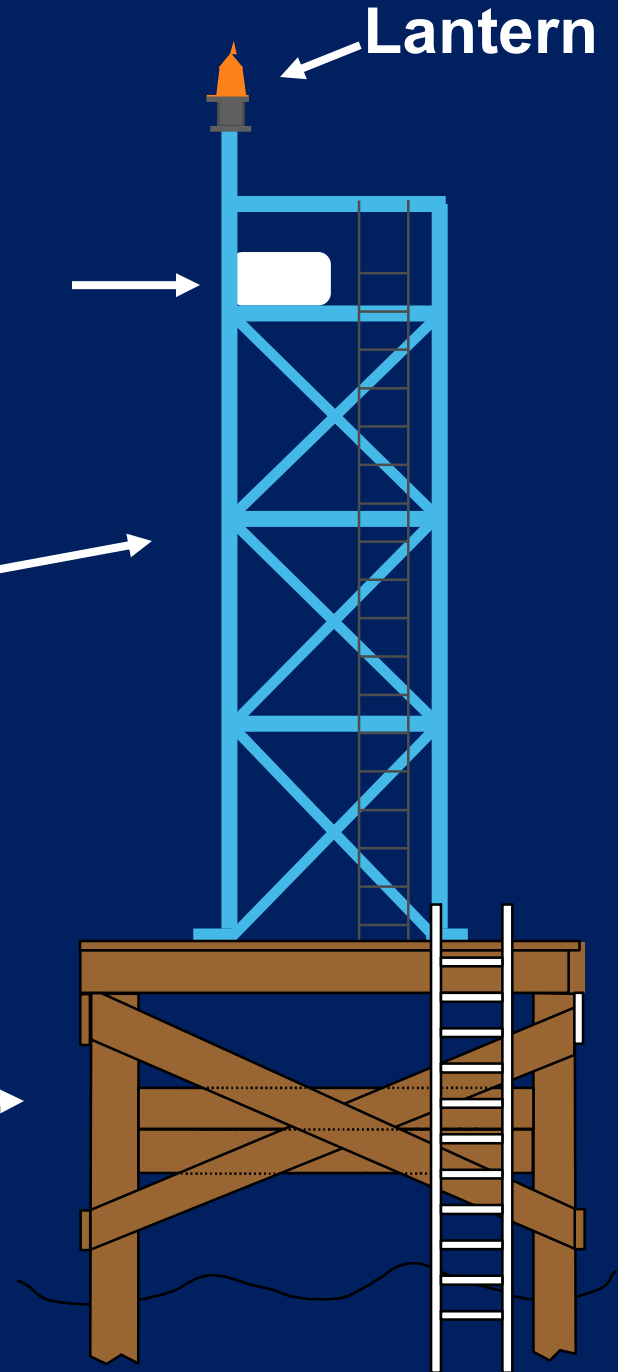
Usually in for skeletal

more separate Tower at the top by a flat spreads the

Platform Structure

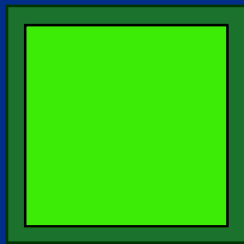
Battery Box

Lantern

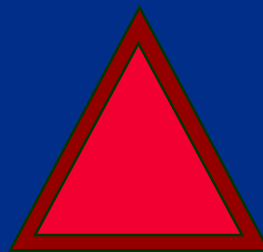


Dayboards

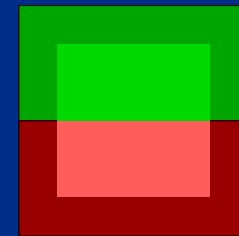
- The first letter refers to the shape or purpose of the dayboard.



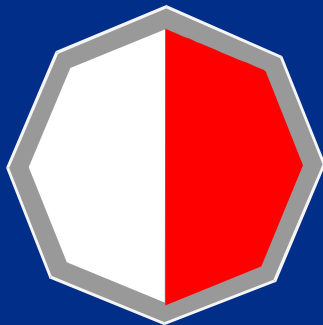
S-Square



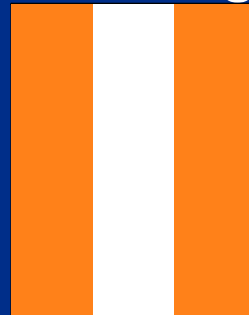
T-Triangle



J-Junction



M-Mid-Channel



K-Range



N-No Lateral Significance

Dayboards

- The letter represents the key or background color.



R- Red



G- Green

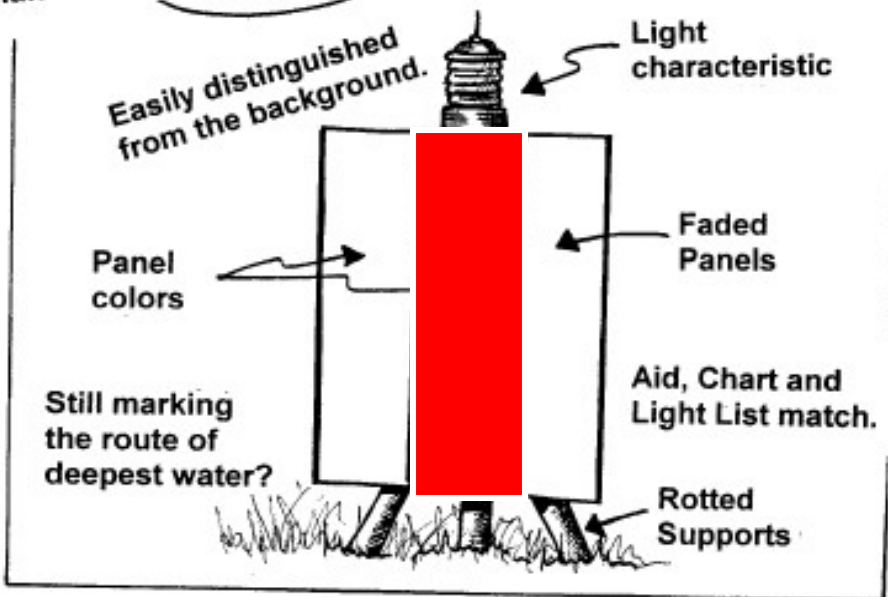
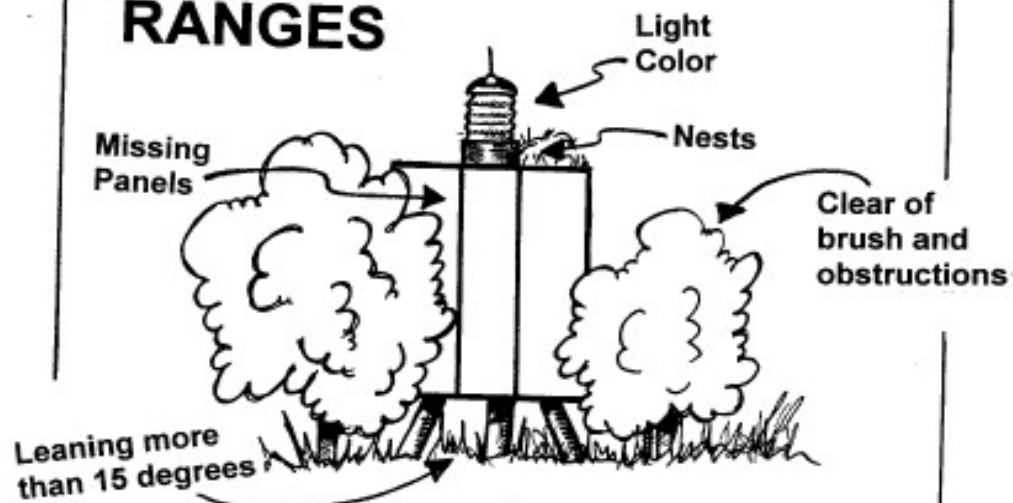


W- White



B- Black

RANGES



Front Panel Symbol

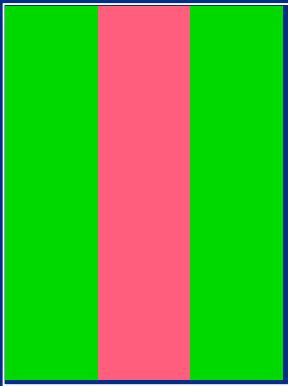
KWR

Main panel is white.

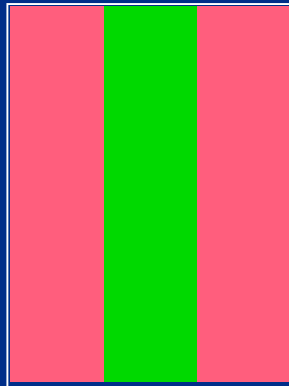
Center stripe is red.

Dayboards

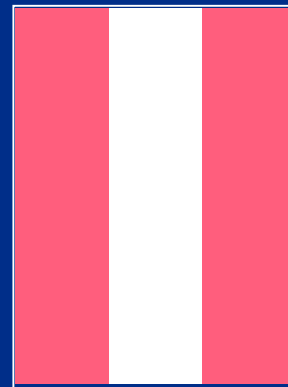
- The letter indicates the color of stripe
- (range dayboards only).



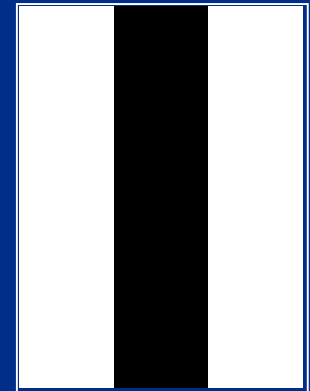
R- Fluorescent red



G- Fluorescent green



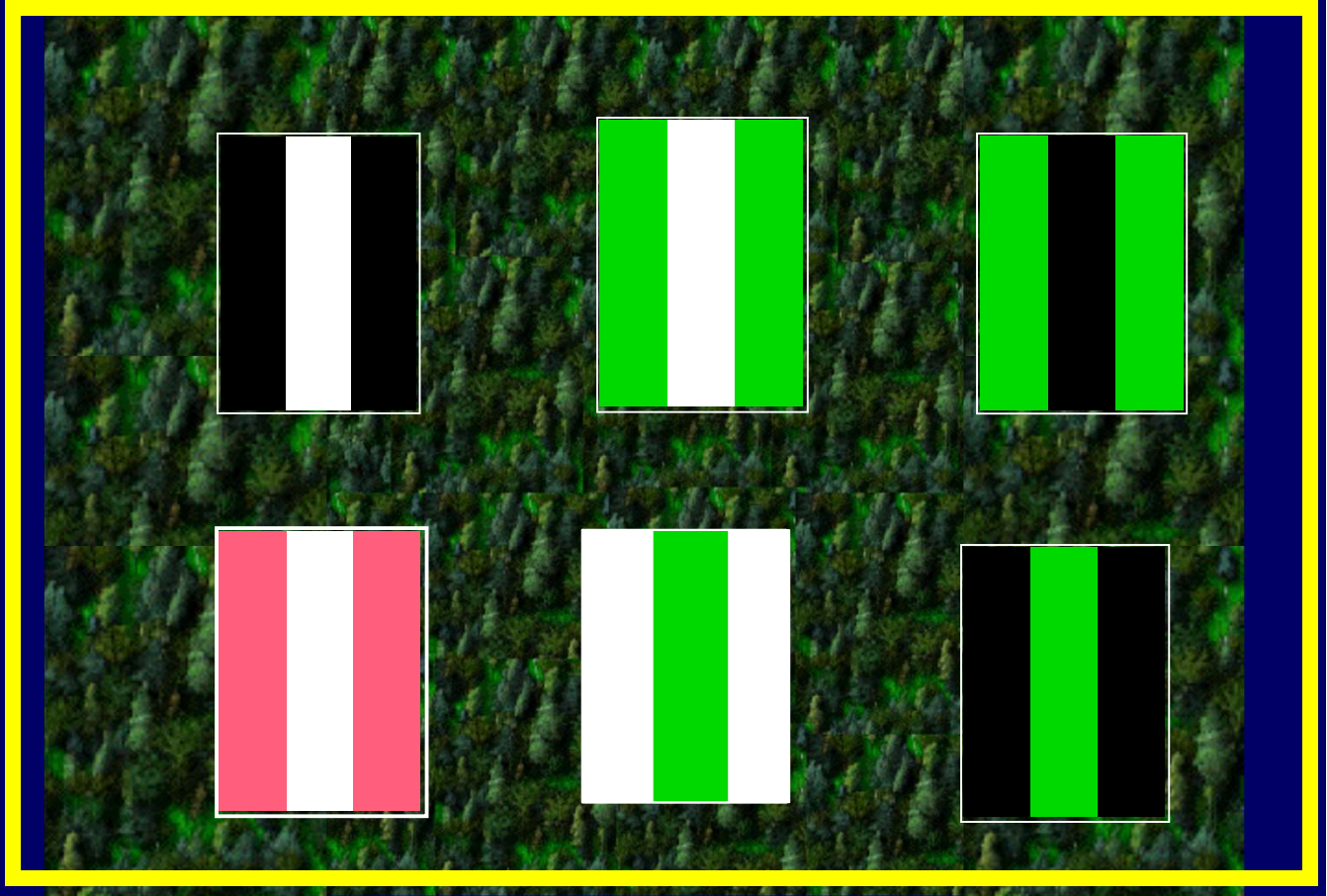
W- White



B- Black

Operational Requirements

- **Contrast**
Vegetation
Background
lights



Backing Material

- ***Delamination*** should not have progressed over more than 25 percent of the backing material.
- Material should not be sufficiently **warped** to visibly detract from the signal.
- **Mounting points** should not be *softened* or deteriorated to the degree that the board may come loose during a storm.
- Great photo opportunities for your report!

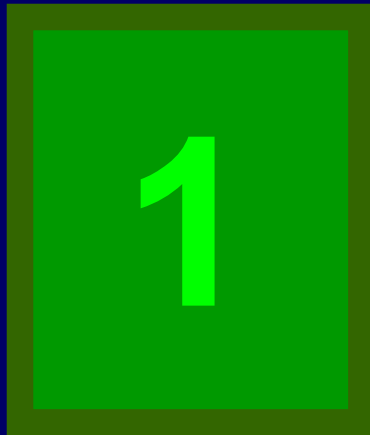
Films, Numbers, Letters, and Borders.

- *Delamination* of the film should not progress over **10%** of the surface area.
- Material should *not* be *cracked, checked* or *abraded* so as to provide a dull or roughened top surface.
- Attached material should *not* have *peeled* more than **10%** of the surface area.
- Good Photo opportunities for your report!

Fading . . .

- There is no practical way to measure fading.
- Replacement is based on the judgment of servicing personnel.
- Aid must be able to display the intended signal until its next scheduled service date.

... more **FADING**



NEW



FADED



REPLACE

HOW to report unauthorized aids to the CG ANT

“NS-PN04 CG7054 PATON REPORT”

- ❑ Important to identify the name of the aid’s owner.
- ❑ The owner is solely responsible for submitting a PATON Permit application and for making all repairs and updates for a PATON-Private Aid to Navigation.
- ❑ Each AV should know how to prepare and submit a PATON Application and explain how to an owner.

Besides being able to train PATON owners how to prepare an PATON Application.

AVs should be aware of the Training PATON presentation that is provided on the NS Web Site and be able to transmit it to an PATON owner when requested.

REPORT all unauthorized private aids to the Coast Guard through the DSO-NS.

ALSO, YOU CAN REPORT

all unauthorized Aids to Navigation activity to AUXDATA as a Mission 31 on an 7030 Activity Report – Mission Individual form.

An unauthorized private aid report is considered a discrepancy.

***Call in any QUESTIONS to the
DSO-NS at 617-997-7423***

***Email any QUESTIONS to
FrankJLarkin@Verizon.net.***