NS-BP08 - The Elements of a Bridge Survey

For Bridge Discrepancy & Bridge Survey forms, log into the D1NR Bridge Web Page at
http://www.uscgauxnh.org/Bridges/logon.asp

District 1 Northern Region
Aids to Navigation Team
Bridge Discrepancy Reporting System

The secret for quickly getting familiar with the Bridge Data System is to login and play with their various screens. Following along with this instruction will assist with your orientation.

Login using the same password you use for the Auxiliary e-Directory

If you do not have an e-Directory password, go to the e-Directory web site and activate your account.

The ***USCG Auxiliary District 1 Northern Region Bridge Discrepancy Reporting Web Site*** is designed to provide authorized Coast Guard and Coast Guard Auxiliary members with an automated method of reporting bridge discrepancies and their annual bridge survey activities.

The bridge program is part of the Navigation Systems Division of the Prevention (P) Department. US Coast Guard Auxiliary members survey the condition of bridges and the Aids to Navigation (lights, signs, etc.) on those bridges as a part of normal operations, as well as during scheduled bridge survey missions where all requirements for a bridge are verified by a qualified Aids Verifier annually.

The above screen will appear. Log in by using your e-Directory password.

The First Northern Bridge program, managed by the District Navigation Systems Department, is composed of the following Bridge work screens:

1. ***Bridge Details Display screen*** – Indicated by a *Magnifying Glass* Icon and the words "***Show Details***;" This screen presents all the specifications for the bridge as well as the history of the past reports. *It is suggested that AVs print out a copy of this screen and use it as reference while surveying the bridge.*

2. ***Bridge Discrepancy Report screen*** – Indicated by a large "*X*" icon and the words "***Discrepancy***." This screen is used to report discrepancies observed on the bridge. This screen is used in conjunction with the "***Discrepancy Resolution***" screen that is explained below.

3. ***Bridge Discrepancy Resolution Report screen*** - Indicated by a"***Tools***" icon and the words "***Discrepancy Resolution***." The first act of an annual bridge survey for a bridge that shows a current discrepancy, is to resolve the existing discrepancy using this report and, then, use the "*Bridge Annual Survey Report*" to indicate the Annual Survey of the bridge as watching properly.

4. ***Bridge Annual Survey Report screen*** – Indicated by a large "***Check Mark***" icon and the words "***Annual Survey***." When there are no observed discrepancies, the AV uses this screen to quickly report the annual survey with a minimum of effort. All it requires is to hit the Submit button.

5. ***Bridge Characteristics Modification Report screen*** – indicated with a ***gears*** icon and the words "***Update***." You may recommend corrections or changes to every field on this report as necessary. All the changes are submitted to the Auxiliary Bridge Database Manager by the system for review before it is accepted and updated to the Bridge's formal specification.

6. ***Flag*** – for use by the DSO-NS.

NOTE: When making selections of new screens or bridges, click on the word "**BACK**" that is located at the top left of your screen. This will save having to login again in order to change your bridge screen selection.

Upon successfully logging in, check out the following features:

1. **Start by selecting the Division** where the bridge is located. You may select any Division within the First District Northern Region. Division 10 has no bridges.
2. **Exclude Class 4 Bridges** by clicking on "***Yes***." Class 4 bridges are checked only once when entered into the database and not checked again unless specifically requested or when a major change has occurred to the bridge. Class 4 bridges have little value for navigation of waterways and, therefore, the CG does not want reports for them.
3. ***The database presents all of the Class 1, 2 and 3 bridges that are located in the Division that you select***, sorted alphabetically by waterway, by mile on the waterway from the sea or start of the waterway upstream. Check the "***Last Checked***" column to verify when the bridge was last surveyed. Concentrate your efforts on bridges that haven't been checked recently or have never been checked.

***Remember that the D1NR Goal is to survey each bridge in the District at least once each year*.**

Before you read on, use your *Directory Access Code* to logon to the Bridge System.

1. ***Make the system updates*** that are suggested above.
2. ***Familiarize yourself with each of the 5 action screens*** provided by the system.
3. ***Check out a few bridges*** that you are familiar with and review their reporting history and their specifications. Compare the specifications with your memory of your experiences with these bridges.

Bridge Instructions

At the top right location on various screens, the word "***Instructions***" appears. Click on this word to view the built in instructions that delineates the use of the data in the screen.

Pictures

Always submit evidence to support all of your discrepancy claims. Close up digital photos are excellent evidence. You have the option for entering two photos on the Bridge Discrepancy Report. The Bridge Branch welcomes photos of a discrepancy because they are most effective for identifying the problem to the owner and for the owner to quickly correct it

All Bridge Surveys require the inclusion of missing photographs of the bridge, and detailed photographs of any problems observed on the bridge. This practice not only provides quality control for the program, but it will greatly enhance the information being forwarded to the

C.G. Bridge Office. As such, a camera (preferably a digital camera) is a required tool for every Auxiliarist who performs Bridge Surveys. E-mail the formal Bridge Photo directly to the DSO-NS who will get it added to the bridge's specification.

Identify each photo by showing the ***name of the bridge*** on the photo with the ***bridge number***. For example the photo named for the North Washington Street Bridge would be "Bridge #285, North Washington Street Bridge." E-mail the photos to the DSO-NS.

Conducting the Survey

Bridge Surveys should be conducted by Auxiliarists who have been trained in the bridge program procedures. Members can obtain all of the information about bridges from the Bridge Web Page located at www.uscgaan.com.

Bridge surveys are required annually. Auxiliarists who volunteer to perform annual bridge surveys should download a computer-generated "***Show Details***" form from the Bridge Database to use as a reference guide when performing the bridge survey in the field.

While the annual bridge survey report is conducted once a year, any Auxiliarist who spots a discrepancy on any Class 1, 2 or 3 bridge at any time is encouraged to submit an electronic ***Bridge Discrepancy Report*** on the Bridge Database to report the problem.

NOTE that an annual bridge survey requires, at a minimum, two separate visits to a bridge. One must be performed ***during daylight hours*** ***near low tide*** when the clearance gauges and fender system are viewable, and the other should be conducted ***after dusk when the bridge lights can be properly observed.***

Mark up the ***Bridge Details Display*** form while on scene. Then, fill in your observations on-line, and automatically submit to transmit the report to the DSO-NS.

BACKGROUND INFORMATION and TERMNOLOGY

Stay logged on the Bridge System while you scan through this bridge data. Try to identify similar fields on the various bridge screens. You will learn quicker if you select a bridge in your area that you are familiar with. You may want to make a quick trip out to the bridge to confirm what you are learning. Spend as much time in the field as you can. Learn by doing. It's the quickest method.

Bridge Identification

Enter the official name of the bridge as listed in the Coast Pilot, as well as any local names for the bridge.

Enter the latitude and longitude of the bridge as determined either with a GPS that is on or near the bridge or by taking a plot from a nautical chart. The Latitude and Longitude can also be taken from Google Maps.

Bridge Classes & Bridge Numbers

To keep track of information regarding the bridges and the results of bridge surveys, the Navigation Systems team has developed a PC based database system. This data base uses a ***Bridge Number*** as an ID to organize the bridge data.

Check that the Waterway referenced on the Bridge Report is correct. If the bridge is at a waterway junction, show the adjoining waterway's name. Each bridge lists its location on the waterway, starting at the mouth or start of the waterway toward upstream or the opposing water flow direction. Is this referenced correct? ***Indicate miles above mouth if known***.

On the Location line, list the towns on either side of the bridge. If you can verify the owner of the bridge, check this against the Coast Pilot and report any differences.

Each bridge is tracked as a member of one of four classes:

- **Class 1** - *bridges that span waters used by large ocean going ships*.
- **Class 2** - *bridges that have tug and barge traffic, but no ocean going ships*.
- **Class 3** - *bridges that have recreational traffic, but not barges or ocean going ships*.
- **Class 4** *- bridges spanning waters only used by row boats or small outboard powered boats that are not navigable to the sea*. No marine facilities are located above a Class 4 bridge. Almost all Class 4 bridges are fixed bridges or de-commissioned draw bridges over small creeks. ***Do not report on these Class 4 bridges unless specifically requested.***

Enter the bridge class on the survey form in accordance with the descriptions above. If you disagree with the classification that has already been made for a bridge, just change the Class and indicate your reasons for the change in the "**Enter Discrepancy Details**" section.

Light Survey

- Check whether there are lights on the bridge.
- If there are fixtures on a bridge, the bridge is considered as lighted.
- If only one light on a bridge is lighted, consider that the lights are operating 24/7 and you can report the lights during daytime hour.
- Complete a light survey each time that you check a bridge. Always check lights at night, not at dusk or dawn, to observe that they are working properly.
- Count and report the number of each type of light that is affixed to the bridge. Include the lights on both sides of the bridge in your totals.
- Indicate whether the lights are correctly affixed to the bridge. Explain in the "Enter Discrepancy Details" section.
- Check that the lights are the specified color. Explain in the "Enter Discrepancy Details" section.

- Indicate whether the lights are visible for one nautical mile. Explain how you made this determination in the "Enter Discrepancy Details" section.

Center Channel Lights

- Mark the center of the navigable channel on both the upstream and downstream sides of the bridge. The lights are commonly found on Fixed Bridges.
- Should appear as a pair of ***360-degree green lights*** affixed beneath the span or lip of the bridge and be ***viewable from both sides of the bridge as range lights*** marking the center of the navigable channel.

Margin of Channel Lights – Lift Span Lights

- Mark the limits (edges) of the navigable channel on one or both sides of the bridge.
- Will only be present if the navigable channel does not extend to the bridge pier at the side of the channel.
- Should be ***180-degree red lights*** that show facing into the flow of traffic as you approach the bridge in the navigable channel.
- Are affixed at the lip of the span to mark the level of low steel. **They do not show as a range as do the center-channel lights.**

Pier Lights

- Used to mark piers and structures attached to the bridge.
- Should be ***180-degree red lights*** fixed to the piers. Lights show forward toward the flow of traffic as you approach the bridge in the navigable channel. **In many cases, 360-degree red lights are used.**

Axis Lights

- Mark any turn in a pier line that is attached to a bridge. Often used to mark the centerline of the bridge across the channel of a vertical lift or swing bridge.
- Should be ***180-degree red lights*** fixed to the piers. Lights always show inward across the navigable channel.

Moveable Span Lights

- Found on draw, swing, retractable, lift, and bascule bridges in a combination lantern in ***various configurations of red and green light fixtures***.
- Should **show a red light when the bridge span is closed or moving**, and ***shows a green light when the bridge span is opened.***

Preferred Channel Lights

- Commonly found on large bridges with multiple navigable channels.
- ***Three white lights fixed above the center channel lights*** are used to indicate the preferred channel.

Fender Survey

Complete a Fender System & Wales Survey each time that you check a bridge.

Wales.

- Must be in good repair.
- No sharp metal or bolts should protrude into channel or be exposed on corners.
- No metal corners.

Protective Piers.

- Must be wrapped with steel cable.
- Nothing can project into the channel from these protective piers.

Obstructions in the channel(s).

- ***Nothing may be hanging below the lip of bridge's span***.
- Check the Bridge Section of the Local Notice to Mariners (LNM) for authorizations for deviation from this rule during periods of repair and reconstruction on the bridge.
- Sanity-check the depth of water in the navigable channel under the bridge and in both approach channels.
- ***Nothing should stick out of the sides of the bridge***. Broken wales or piers should not protrude into the defined channel area.
- Obstructions are always good photo opportunities.

NOTE: Being under construction is no excuse for blocking bridge lights with tarps or other obstructions. If navigable channels are obstructed in any way not reported in the Local Notice to Mariners, file a Bridge Report immediately. The Bridge Branch takes immediate action to get these critical problems corrected and listed in the NTM.

Signs & Clearance Gauges

- Check the Clearance Gauges and Signs on the bridge each time that you check a bridge. Reference the Coast Pilot or 33CFR 117b to see if the signs are required. If there are any special regulations listed for that bridge, a sign with those regulations is required on both sides of the bridge.

- If the "Federal Regulations & Special Notes" section, found of the "Bridge Survey Report," does not list the text as shown in the Coast Pilot, enter the corrected Coast Pilot information into that section. This action will allow the Navigation Systems Team to view this text on future surveys.

Clearance Gauges on Drawbridges.

- *Should be mounted at the right side of the bridge* as you face the bridge in the main channel.
- *Should be mounted on both the upstream and downstream sides of the bridge*.
- Is not required and usually not found on Fixed Bridges (only required if listed in Coast Pilot or in 33CFR 117b). Can be required by the District Commander.
- *Should be readable for a one-half mile distance – 1,000 yards*. Always explain how the distance was determined when reporting this discrepancy.
- *Must be readable down to the low water mark*.

***Special Regulation Signs on Drawbridges*.**

- Normally found on bridges that open to pass maritime traffic.
- Compare the regulations shown on the bridge's sign with the "Bridge Regulations" shown in the "Federal Regulations & Special Notes" section found on the "Bridge Survey Report."
- Regulatory Signs must be readable and be located on both the upstream and downstream sides of the bridge.
- When a bridge opening requires a phone call to the bridge tender, check that the phone number appears on the bridge's sign. Call the phone number and validate that it works, but never request an opening as a test.

Federal Regulations & Special Notes

- This section should contain the full text of the regulations for this bridge (if any) as listed in 33CFR 117b or the Coast Pilot. If they are not in the bridge database, enter the full text of the Coast Pilot regulations here.

Bridge Check / Survey Report and reporting activity.

- The history of past surveys for the bridge is found here. Review this section to ensure that all previously reported discrepancies have been fixed.
- When there are previous discrepancies listed, always comment on your report in the "Enter Discrepancy Details" section as to whether they continue to exist or that they have been fixed. This is an important aspect of your survey.
- This section is completed by the Auxiliary Bridge Database Manager. Do not enter data in this section.

Marine Facilities Located Above This Bridge

- To the extent known, list the name and city/town of all commercial and recreational marine facilities located upstream of the bridge. For marinas located above the bridge, list the number of boats at each marina, if known. ***Marine facilities used as a destination by barge traffic are important to list.***
- This section tells the Bridge Branch what type and volume of marine traffic use the waterway, and allows them to prioritize the handling of discrepancies.

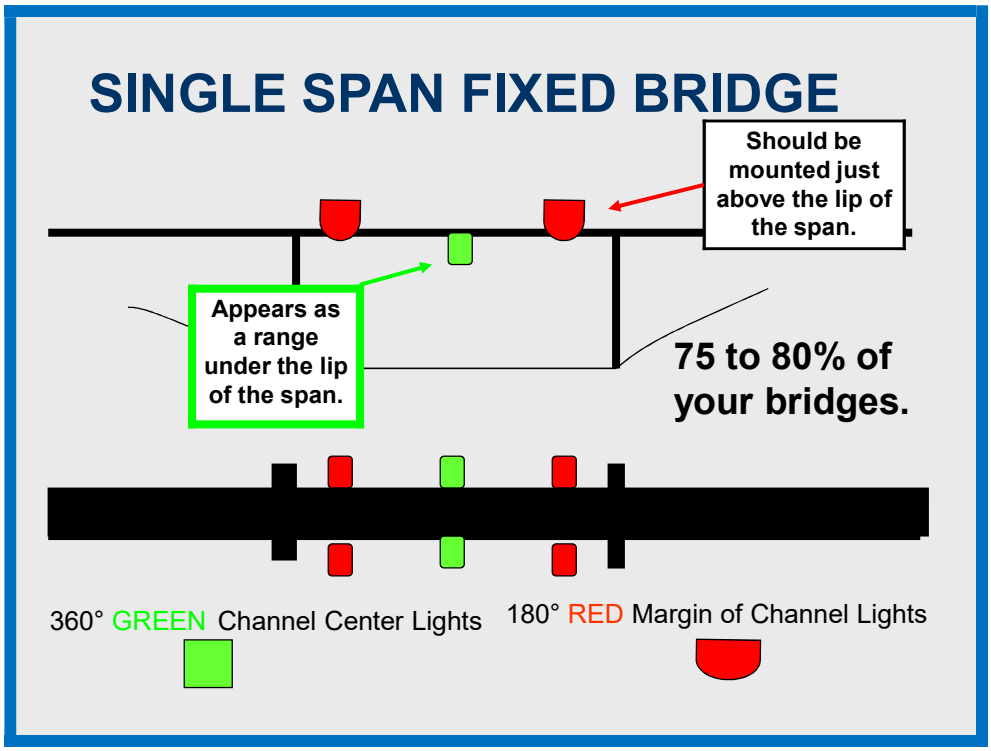
Member Information

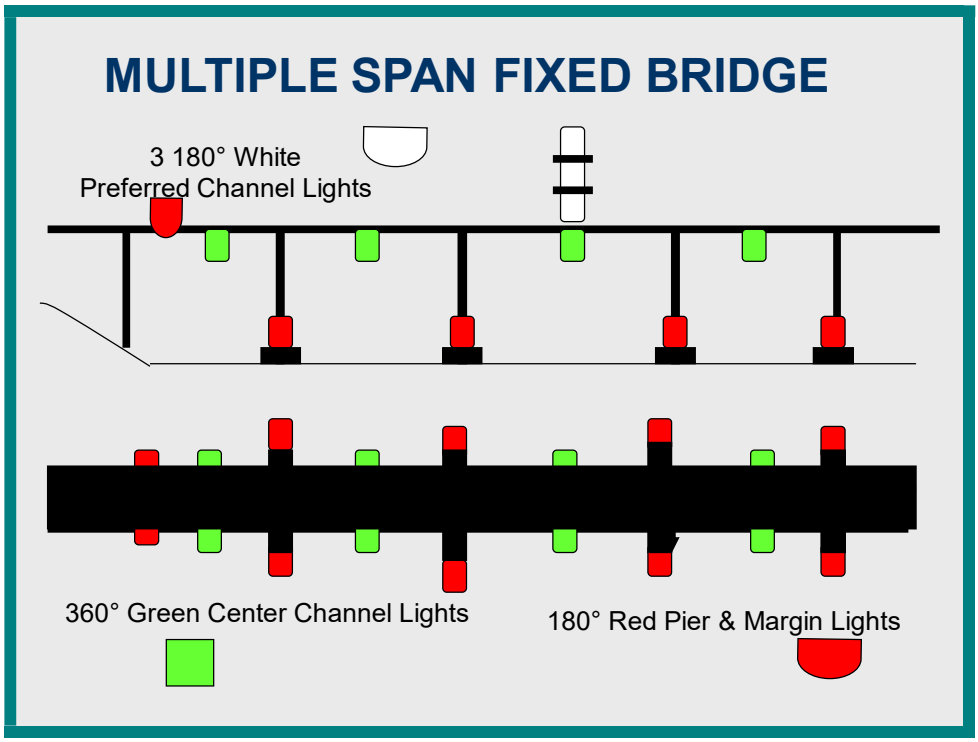
- Your member information is automatically filled in from your e-Directory data. It is important to keep your e-Directory up to date. You will have to enter the telephone number where you can be reached during normal business hours.
- If you need to correct your information, send a "***Change of Member Information Form (7028)***" to your FSO-IS.

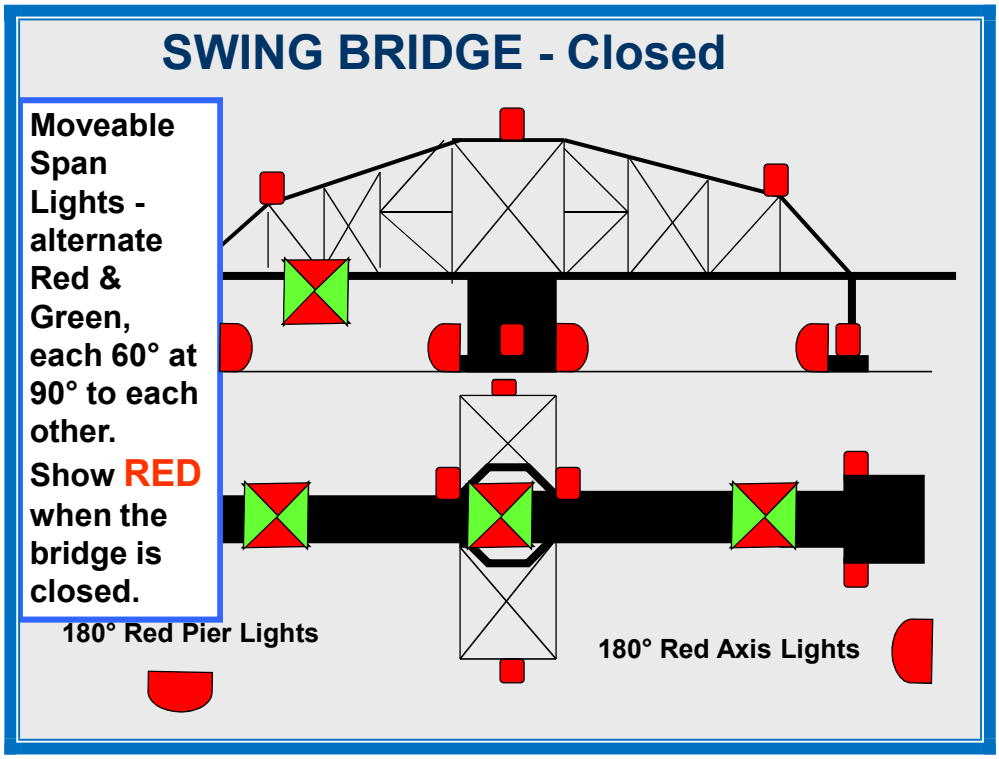
SUBMITTING YOUR REPORT

- Click on the ***SUBMIT*** button to transmit your report to the Auxiliary Bridge Manager. You will receive acknowledgements and, possibly, may receive requests for more information or potential questions about the bridge from the Auxiliary Bridge Database Manager.
- Try to submit all reports within 24 hours of making a bridge survey or discrepancy observation. If a report details a problem seen a month ago, it is not useful to the Bridge Office without a new survey to determine whether the condition still exists. ***Don't wait – send reports as soon as the survey is completed.***
- Your Bridge Survey Report will get all your discrepancy information to the Coast Guard Bridge Branch office, *but you still need to report your activity and time to AUXDATA*. Remember to submit a Form 7030 Mission Activity Report (Unit/Individual) to report the time spent surveying each bridge in order to get AUXDATA credit for your work.
- If you need guidance on how to report your activity to AUXDATA, go to www.uscgaan.com and download "**How to report your ATON Activity**" that appears on the main page of this web site.

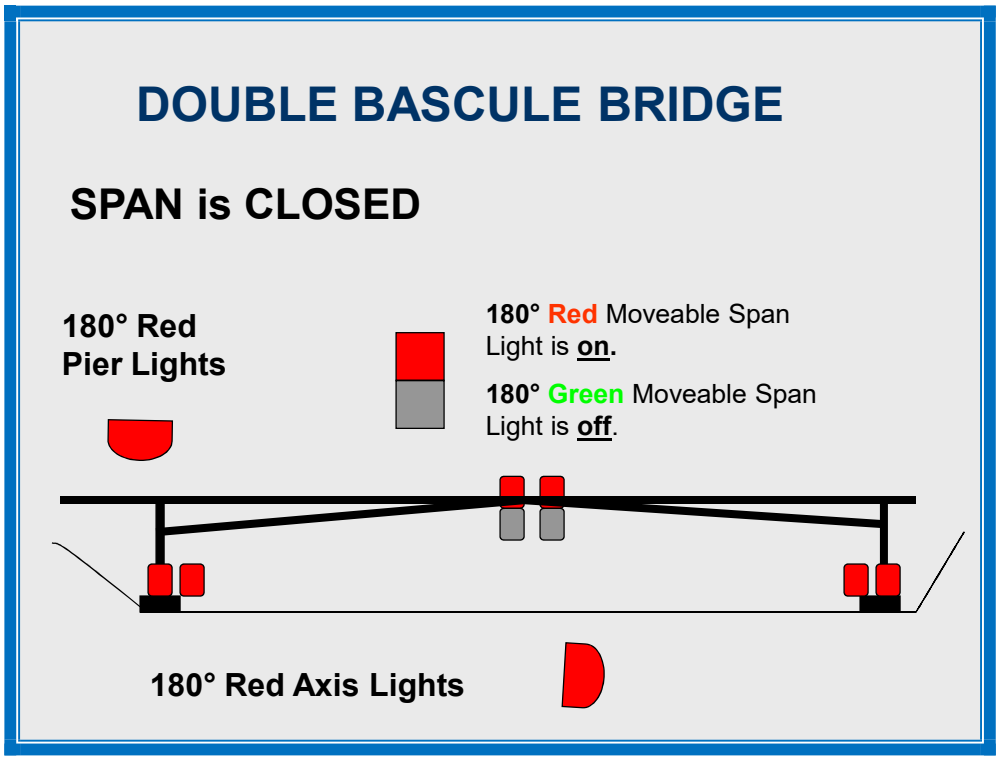
Here are some graphics of the most common bridge lighting configurations from the Coast Guard Bridge Lighting Manual. A link to the Coast Guard Bridge Lighting Manual is available on the First Northern Web site at www.uscgaan.com. Click on "Bridges."


SINGLE SPAN FIXED BRIDGE
Should be mounted just above the lip of the span.
Appears as a range under the lip of the span.
75 to 80% of your bridges.
360° GREEN Channel Center Lights
180° RED Margin of Channel Lights





Prevention, Accuracy, Credibility and Professionalism are our goals.



OTHER BRIDGE PROGRAM TRAINING OPPORTUNITIES

Log into the D1NR Navigation Systems Web Site and click on the "Bridges" Web Page at the left column. The following training tools are available to you for review:

BRIDGE PROGRAM FLYER

This contains a brief summary of the Bridge Program for use as a handout to potential AV candidates. Plan to pass it out at Flotilla and Division meetings.

NS-7055 – BRIDGE REPORTING FORM.

Only used to gather information on a new bridge, then submit to DSO-NS. *Otherwise, all reports for the listed bridges are performed online.*

NOTE: Always check out the Class 4 bridge list before you submit a report for a newly discovered bridge.

NS-BP01 BRIDGE PROGRAM HANDOUT

Use this handout to promote your Bridge Program with your membership. This a good tool to hand out to potential new members.

NS-BP02 BRIDGE PROGRAM TRAINING GUIDE

This guide describes the proper methods and procedures for surveying a bridge and reporting your activity to the Coast Guard and AUXDATA.

NS-BP03 BRIDGE FIELD WORKSHEET

You can use this worksheet for recording observations while on-scene at the bridge. This worksheet should help you do a complete job and to not miss any important items when you perform an annual survey. Keep copies of this worksheet in your Navigation Kit.

NS-BP04 COAST GUARD BRIDGE LIGHTING AND OTHER SIGNALS MANUAL

This Coast Guard manual will expand your knowledge about the various lighting configurations that are found on a bridge.

NS-BP05 BRIDGE LIGHTING AND SAFETY EQUIPMENT PRESENTATION

This PowerPoint presentation depicts the more common discrepancies that can occur with the safety equipment on a bridge. This is a great visual tool for training members.

NS-BP06 – COAST GUARD BRIDGE ADMINISTRATION MANUAL M16590.5C

This manual will give you more insight into the Coast Guard Bridge Program.

NS-BP07 – ON-LINE BRIDGE REPORTING SYSTEM.

This is an orientation exercise for the multiple reporting screens in the Bridge Data Base.

NS-BP08 – THE ELEMENTS OF A BRIDGE SURVEY

This training tool should be reviewed by every Auxiliarist and AV each year.

CALL TO ACTION - - - please take the time to check out Navigation Systems as part of your career in the Coast Guard Auxiliary.