

NAVIGATION NOTICE NO. 1-2015

Mississippi Valley Division

Great Lakes and Ohio River Division

February 2015

INTRODUCTION:

1. As a result of partnering efforts with navigation interests, a consolidated Notice to Navigation Interests has been prepared for the Mississippi and Ohio Rivers and their tributaries. The intent is to provide consistency by replacing current district and division regulations with a joint notice that will be updated annually. The notice is applicable to the St. Paul, Rock Island, Chicago, St. Louis, Louisville, Nashville, Huntington, Pittsburgh, Memphis, Vicksburg, and New Orleans districts.

2. The basic document includes policies of general application to the described areas within the Mississippi Valley and Great Lakes and Ohio River Divisions, while the appendices cite policies applicable to certain rivers or projects. Also included as appendices are: District maintenance schedules and the Code of Federal Regulations containing the "Blue Book" of navigation regulations prescribed by the Secretary of the Army.

3. Comments on how we may improve this notice may be sent to the U.S. Army Corps of Engineers, Rock Island District, Clock Tower Building, P.O. Box 2004, Rock Island, IL 61204-2004, ATTN: CEMVR-OD-Q (Darla J. Schertz), telephone (309) 794-5366 or email darla.j.schertz@usace.army.mil.

GENERAL:

1. Reference revised Regulations, 33 C.F.R. 207.300, Ohio River, Mississippi River above Cairo, Illinois, and their tributaries; use, administration, and navigation, and 33 C.F.R. 207.800, Collection of navigation statistics. These regulations contain information essential to the navigation of those waters and may be found at Appendix E and Appendix F. Copies of the above regulations may be obtained from lock operators without charge.

2. The following information is furnished in addition to the above-referenced regulations to provide guidance about the procedures, control, and management of the locks on the Mississippi River, Illinois Waterway and Ohio River System. Suggested towboat operations are also included that will enhance safety and reduce damage to Government structures, commercial vessels, and recreational craft.

3. The 2015 Inland Waterways Conference is scheduled to be held at the Hyatt Regency Saint Louis at The Arch, St. Louis, Missouri on March 3-5, 2015. For further information see <http://www.maritimemeetings.com/inland-waterways-conference.php>

SAFETY:

1. Commercial and recreational craft shall use the locks at all times except for navigable pass dams, and authorized fixed weir passages.

2. Vessels shall not pass under gates in the dam when they are out of the water and the river is flowing freely through the gate openings.

3. Lockage of leaking or listing vessels may be refused. Leaking or listing vessels shall be moored in a location outside of the channel and outside of the Arrival Point so as not to interfere with passing navigation.

4. All craft and tows approaching a lock, within a distance of 200 feet of the upper or lower lock gates, shall proceed at a speed not greater than two miles per hour (rate of a slow walk) during normal flow conditions.

5. All tows entering the lock shall be properly aligned with the guide or lock wall. Tows may be required to stop prior to entering certain locks at which unusual conditions exist.

6. When an amber flashing light is displayed and approval is given by lock personnel, a descending or ascending vessel may approach and moor with a backing line to the guide wall; however, the head of the tow shall be no closer than 100 feet from the near end of the lock gate recess.

7. Burning fenders shall be dropped overboard immediately rather than being placed on the deck of a barge, towboat or vessel. Fenders shall not be secured to cleats or timberheads and left unattended.

8. With regard to the use of fenders, see the appropriate appendix for policies applicable to certain rivers and projects. Additionally, Appendix E provides pertinent navigation regulations and the authority of lockmasters.

9. It is the responsibility of the vessel operator to provide adequate mooring lines. The lock operator may require mooring lines to be replaced with satisfactory lines before lockage is made if the lines appear to be of such quality, size, or condition that would make safe lockage questionable.

10. Mates and deckhands, when preparing to moor within the lock chambers, shall not throw heavy mooring lines onto the walls, but shall wait for a heaving line from lockmen on the lock wall.

11. All towboat crews, while locking or moving a tow into or out of a lock chamber, must station themselves to preclude the possibility of being injured by the parting of a cable or line under strain. Single part lines only will be used to check a moving tow. During inclement weather conditions (snow and ice) the working area of the tow where lines are used shall be free of snow and ice to prevent injury to towing industry personnel. Working lines shall be kept dry and in good working condition (not frozen) to allow lines to be worked properly and to prevent injury to personnel.

12. Towboat crewmembers shall not jump between moving tows and lock or guide walls while preparing for lockage, locking, or departing lock. Use of lock wall ladder ways is permitted only after tows are securely moored and the chamber is at upper pool.

SAFETY (Continued)

13. Tabulated below are the minimum numbers of vessel personnel required for handling lines during lockages. The captain/pilot cannot act as a deckhand.

<u>TYPE OF VESSEL OR TOW</u>	<u>MINIMUM NUMBER OF PERSONNEL</u>	<u>MINIMUM NUMBER OF LINES USED</u>	<u>MINIMUM NUMBER OF EMERGENCY USE LINES</u>
Vessels less than 65 feet	1	1	1
Towboats (light boats)	1	1	1
All other vessels requiring single lockage	2 (see Appendix B, paragraph C1)	*2	1
Tows requiring double lockage (one deckhand to remain with first cut)	3	2	1
Set-over tows	3	2	1
Knock-out tows	2	2	1

*Please reference the special requirements on page 3, #16

14. All vessels, when in the locks, shall be moored and/or moved as directed by the lock operator.

15. Commercial towing companies shall ensure that vessel operators and boat crew members have received orientation and training in all aspects of deck work and lockage procedures to ensure the safety of personnel, floating plant, and structures.

16. All cylinders or containers holding gases or liquids under pressure or any other chemical or substance shall be securely fastened to the hull of the vessel to prevent their rolling overboard into the lock chamber.

17. All containers holding paint, gasoline, or other volatile materials shall be securely fastened with tight fitting covers.

OPERATIONAL ASPECTS:

1. Commercial fishing craft are included in the classification "recreational craft" when considering the precedent at the locks.

2. Personal watercraft of the "sit-down" variety, (those you sit on and ride), will be accepted for lockage. The "stand-up" variety, (those that require the vessel to be moving for the operator to be out of the water), will not be accepted for lockage unless the craft is tied off to and locked through with an approved vessel, and the operator of the "stand-up" craft boards the approved vessel. Operators of personal watercraft and their passengers are required to wear Coast Guard approved PFDs during lockage. Paddleboards, sailboards and surfboards are not considered sit down variety water craft.

3. The sides of all vessels passing through the locks shall be free from projections that may damage lock structures. Suitable fenders shall be used with all commercial tows passing through the locks to prevent damage to the lock walls and structures. Fenders shall be cylindrical in shape and no less than 6 inches in diameter. The fenders shall be used on guide walls and lock chambers to protect the structures. The fenders shall be manufactured or fabricated for the purpose of fendering, using woven rope; laminated, molded reinforced, natural, or synthetic rubber, or other suitable material. Single, double, or triple strands of mooring line, with or without knots, and old tires will not be considered as suitable fenders. Lock operators may refuse lockage to all commercial and recreational vessels and/or tows not conforming to the above.

4. The Corps of Engineers endorses the towing industry initiative toward voluntary "self help," such as pulling unpowered cuts out of lock chambers where significant delays are being experienced because of high lockage demand, lock repairs, or some other reason.

5. During severe winter navigation conditions, the length and width of the tows may be restricted to facilitate passage of the tows into the lock chamber(s) and to minimize lock structural damage.

6. Rake to box ice couplings the entire width of the tow, at break points of the tow, will be required at all locks when ice is present at the lock. Double tripping and use of industry helper boats during ice conditions will be required if proper couplings are not accomplished prior to arrival at the locks. Failure to have the tow configured properly may result in loss of lock turn. Tow configuration to ice couplings shall not be accomplished at the lock or lock approach.

7. Tows using locks equipped with floating mooring bits shall use at least one line on each of two floating bits if the tow length permits. Floating mooring bits shall not be used to check a tow.

8. In a knockout lockage, the towboat shall be placed in the hole alongside the rear barges and should be located sufficiently forward to allow for ample clearance between its stern and the mitering gates. While exiting from any lockage, the towboat shall proceed slowly to reduce backwash action and possible damage to lock gates.

9. Radio communications between a lock and an approaching tow are required at all times. All tows shall have a positive two-way voice communication between the pilot and the head of the tow to facilitate proper and safe approach to the lock guide wall and subsequent entrance into the lock chamber. All tows that decide to switch to another channel during the locking process for communication with their deckhands will be required to inform the lock personnel as to what channel they are changing to.

OPERATIONAL ASPECTS (Continued)

10. Lock Personnel will monitor the frequencies below. However, the District Engineers are authorized to require that the initial contact to any lock be made on other frequencies where circumstances indicate necessity.

Initial contact with locks is as follows:

UPPER MISSISSIPPI RIVER

Upper St. Anthony Falls (USAF) to Lock 24 and Melvin Price Lock 156.7 MHz (Channel 14)
Locks 25 and 27 156.6 MHz (Channel 12)

ILLINOIS WATERWAY

T.J. O'Brien L/D and Chicago Harbor Lock 156.8 MHz (Channel 16)
All other Locks 156.7 MHz (Channel 14)

OHIO RIVER

Huntington, Louisville, Nashville and Pittsburgh District Locks 156.65 MHz (Channel 13)
Louisville and Nashville District Locks also monitor 156.8 MHz (Channel 16)

All tows awaiting lockage shall monitor the appropriate lock channel at all times. This will allow the lock personnel the capability of calling tows in the case of needing pull boats, broadcasting general announcements, call for preparation for lockage, etc.

11. Under normal conditions, tows that can be arranged to avoid a double lockage shall be rearranged prior to approaching the lock. Non-compliance will result in not being assigned a lock turn, until tow has been rearranged to comply or until no other vessel awaits lockage.

12. Where additional mooring facilities are provided, tows that must be rearranged in the approach area; i.e., set-overs, jackknives, etc., shall rearrange at these moorings prior to entering the lock, if they must wait for entry. Lock operators should be contacted prior to arrival and will render a decision whether the tow should be rearranged at the moorings or in the lock.

13. Towboats, when entering a lock, must remain fully attached to the barges until the tow has been stopped and properly moored. Barges within the tow configuration must be properly cabled. Lockage may be refused if lock operator considers barge couplings inadequate.

14. With regard to moving or making up tows prior to leaving the lock in an upbound movement, see the appropriate appendix for policies applicable to certain rivers and projects. Additionally, Appendix E provides pertinent navigation regulations and the authority of lockmasters.

15. When leaving the lock in down bound movement, rearrangement of tows in motion will be permitted while passing out of the lock at the discretion of the lockmaster. If there is a floating plant, bridges, or other structure located immediately downstream from the lock, these procedures shall not be used.

16. Lockage lengths in excess of 595 feet, but not more than 600 feet, will be permitted in a 600 foot chamber with the following conditions:

a. The vessel operator shall inform the lock operator by radio, prior to arrival, as to the precise overall length of an integrated tow (single lockage) or the cut lengths of a multiple lockage, the number of barges in the tow, cargo type, and tonnage. Failure to provide all information may result in refusal of lockage.

b. A tow may be required to have a total of four lines, two each leading fore and aft, at the discretion of the lock operator. The lines shall be in good condition.

c. The pilot shall be in the pilothouse and be in constant radio contact with lock personnel during the entire lockage procedure.

d. Experienced deck personnel shall be stationed at each end of the tow to monitor movement.

e. Refer to Appendix C., Pittsburgh District, item 3. for further guidance dealing with Montgomery Locks and Dam.

17. Lockage of tows wider than 108 feet for a 110-foot chamber, 82 feet for an 84-foot chamber, and 54 feet for a 56-foot chamber will be refused.

18. With regard to outdrafts, see the appropriate appendix for policies applicable to certain rivers and projects. Additionally, Appendix E provides pertinent navigation regulations and the authority of lockmasters.

19. When requested, the pilot of the towboat shall provide an accurate description of the contents of any covered or tank barge in their tow. Transiting of the locks with unknown cargos will not be permitted. All towboat pilots are required to provide accurate, detailed information concerning commodity classification and tonnage. Lockage turn may be forfeited if tow pilots do not provide this data.

20. All deck barges loaded with rock, scrap material, construction equipment and other material shall be loaded to allow for safe passage of crew members along the edge of the barges. A minimum of 2 feet of clear space shall be maintained along the edge of all of the barges. To protect the lock walls and equipment, nothing loaded on the barge shall extend beyond this 2-foot clear space from the edge of the barge. The barges shall be loaded such that the material does not move or fall into the 2-foot wide clear space while moving or transporting the barges. Additionally, material shall be loaded on barges such that it will not become dislodged or moved during the locking process, possibly falling off the barge into the lock chamber or coming to rest protruding off the edge of the barge. Lock operators may refuse lockage to all commercial tows not conforming to the above.


MICHAEL C. WEHR
Major General, USA
Commanding
Mississippi Valley Division


RICHARD G. KAISER
Brigadier General, USA
Commanding
Great Lakes and Ohio River Division

APPENDIX A

Mississippi River

A. General.

1. When tows are underway in the lock approaches or lock chamber and there is a potential for damage to the structure a minimum of two deckhands with fenders shall be stationed at the head end of every tow 100 feet or greater in width. One deckhand with a fender shall be required at the head end of tows less than 100 feet in width. Additional personnel shall be required at the aft end if the lock operator determines that it is necessary to protect the lock and guide walls from damage.
2. When moving or making up tows prior to leaving the lock in an upbound movement, towboat operators are required to keep all barges secured to the lock or guide wall. At the locks where traveling mooring bits are used, the line shall not be released until the regulator mooring line is secured at the bow. Generally, the deckhand will not release snubbing and holding lines from the lock or guide walls until the towboat is properly secured to the tow. For a single lockage, with a towboat only set over, deviating from this procedure will be allowed if the immediate situation will permit safe departure under power and a lock operator walks a line out with the tow until the towboat is again adequately secured to the tow. Lock operators will assist by moving barges with tow-haulage equipment. However, when moving barges from the lock chamber, it is the responsibility of the vessel master to assure that adequate lines and personnel are available for safe handling and mooring of the tow or sections to the lock or guide walls. Sufficient personnel shall remain with the other sections to assure its security.
3. During the high water season, strong outdrafts occur at the upstream approach to some navigation locks. On the Upper Mississippi River, the outdraft signals are displayed on the upper end of the land guide walls and may be orange or amber. At some locks, similar signs are also displayed on the downstream end of the lower guide wall for the information of upbound tows. Lock personnel on duty will be available to notify navigators of dam gate opening status and outdraft conditions upon request. All vessel operators are directed to exercise extreme caution when approaching locks for a downbound lockage or when leaving locks upbound, where outdraft conditions exist. Double trips may be required if doubt exists as to the ability of the tow to enter or leave the lock safely.
4. It is the responsibility of the Vessel Master to ensure that deckhands that are assisting with lockages are familiar with the location and proper use of life saving devices or rescue equipment such as safety blocks and ring buoys.

B. St. Paul District.

1. The level of service for the 2015 navigation season at Upper St. Anthony Falls Lock and Dam, Lower St. Anthony Falls Lock and Dam, and Lock and Dam 1 was not final as of the date of publication of this notice. In accordance with Section 2010 of the Water Resources Reform and Development Act of 2014, Upper St. Anthony Falls Lock and Dam will close to navigation operations no later than 10 Jun 2015. A reduction in the level of service is likely at Lower St. Anthony Falls Lock and Dam and Lock and Dam 1.
2. The practice of heeling off the lockwall (using lockwall for leverage) will not be tolerated while departing the locks, unless the tow has significant forward movement and it is absolutely necessary. (The purpose for this restriction is to reduce costly damage to the scour protection along the guide walls and beneath the lower and upper sills).
3. When tows are underway in the lock approaches or lock chamber, a minimum of two deckhands with fenders shall be stationed at the head end of every tow two or more barges in width. A minimum of one deckhand with fender shall be stationed at the head end of tows, one barge in width. Additional personnel shall be required at the aft end of two barge tow in length or if the lock operator determines that it is necessary to protect the lock and guide walls from damage. This protection will continue all the way into and out of the chamber.
4. When making up tows following a double lockage or a set over lockage, prior to leaving the lock in an upbound movement, towboat operators are required to keep all barges secured to the lock or guide wall. Generally, the deckhand will not release lock lines from the lock or guide walls until the towboat is properly secured to the tow. For a single lockage, with a towboat only set over, knockout lockage deviating from this procedure will be allowed (see next paragraph for specific locks) if the immediate situation will permit safe departure under power and a lock operator is available to assist the deck hands with the lock lines if required. However, when moving barges from the lock chamber, it is the responsibility of the vessel master to assure that adequate lock lines and personnel are available for safe handling and mooring of the tow or sections to the lock or guide walls. Sufficient personnel shall remain with the other sections to assure their security.
5. During times of high water, strong outdrafts may occur at the upstream approaches to some navigation locks. All towboat masters are responsible for exercising extreme caution when approaching locks for a downbound lockage or when leaving locks upbound where outdraft conditions exist. Double tripping may be required if the towboat master has doubts concerning the ability of his/her crew to enter or leave the lock safely. Guidance for specific locks can be found in Appendix A-E.
6. Upper St. Anthony Falls Lock and Dam, Lower St. Anthony Falls Lock and Dam, and Lock and Dam 1, Minneapolis, Minnesota. Locking procedure for a single lockage, with a towboat only set over, knockout lockage deviating from this procedure will be allowed at the three Twin Cities Locks if the immediate situation will permit safe departure under power and a lock operator is available to assist the deck hands with the lock lines if required.
7. Upper St. Anthony Falls Lock and Dam, Lower St. Anthony Falls Lock and Dam, and Lock and Dam 1, Minneapolis, Minnesota, use a 1-person locking operation.
8. Locking Procedures During Outdraft Conditions at Lock and Dam 3, Welch, Minnesota:
 - a. The Corps has adopted a policy for pulling tows in the upbound direction when flows exceed 21,000 cfs. Lock personnel will use the tow haulage units to pull any combination of empty or loaded barges to a point just clearing the upper miter gates, provided that the section pulled does not have one or more lead loaded spike barges that are not adjacent to the guidewall. One additional deckhand will be required to handle lines on the section being pulled.

St. Paul District (Continued)

- b. If at any time the lockmaster or his/her representative feels there is danger in using the tow haulage unit, he/she may require the towing owners and/or operators to double trip through the lock.
- c. If a downbound tow does not have sufficient control to get safely into the lock in a timely manner, the lockmaster may revoke priority for lockage. If problems locking are anticipated, a bow boat is usually available and can be used in lieu of double tripping.
- d. Lock and Dam No. 2 and Lock and Dam No. 4 will display checked flags during high flow conditions at Lock and Dam No. 3.

9. Upbound Locking Procedures During Outdraft Conditions at Lock and Dam 5A, Fountain City, Wisconsin, and Lock and Dam 6, Trempealeau, Wisconsin.

a. The Corps has adopted a policy for pulling tows in the upbound direction when flows exceed 59,000 cfs. Lock personnel will use the tow haulage units to pull any combination of empty or loaded barges to a point just clearing the upper miter gates, provided that the section pulled does not have one or more lead loaded spike barges that are not adjacent to the guidewall. One bitt will be used from the bow barge and the other bitt will be used for lines from the second barge back from the bow end. One additional deckhand will be required to handle lines on the section being pulled.

b. If at any time the lockmaster or his/her representative feels there is danger in using the tow haulage unit, he/she may require the towing owners and/or operators to double trip through the lock.

10. Upbound Locking Procedures During Outdraft Conditions at Lock and Dam 7, La Crescent, Minnesota:

a. The Corps has adopted a policy for pulling tows in the upbound direction when flows exceed 44,000 cfs. Lock personnel will use the tow haulage units to pull any combination of empty or loaded barges to a point just clearing the upper miter gates, provided that the section pulled does not have one or more lead loaded spike barges that are not adjacent to the guidewall. One bitt will be used from the bow barge quarter keel and the other bitt from the half keel or three-quarter keel on the bow barge. One additional deck hand will be required to handle lines on the section being pulled.

b. If at any time the lockmaster or his/her representative feels there is danger in using the tow haulage unit, he/she may require the towing owners and/or operators to double trip through the lock.

11. The St. Paul District Corps of Engineers is not planning a drawdown in 2015.

C. Rock Island District.

1. The practice of heeling off the lockwall (using lockwall for leverage) will not be tolerated while departing the locks, unless the tow has significant forward movement and it is absolutely necessary. (The purpose for this restriction is to reduce the very costly damage to the scour protection along the guide walls and beneath the lower and upper sills). Use of heeling line from barge to a pin on lockwall may be used in the Rock Island District to assist in swinging head of tow away from lockwall. A minimum 8 foot lead will be required and wheel wash will be directed out towards the river and not against the guide wall.

2. During double lockages, the stern of the first cut must be equipped with kevels or timberheads if used to stop the cut. Use of "buttons" in stopping a cut is prohibited. Cuts not properly equipped with timberheads or kevels at the break coupling will be required to use a helper boat to stop the cut. The practice of stopping the first cut with the quarter kevel is also prohibited.

3. At Lock 19, Keokuk, Iowa, due to very strong currents pulling along the short upper guide wall during the filling operation of the lock, all downbound commercial vessels shall not enter the forebay until the upper gates are submerged and the lockmaster has given the vessel permission to proceed.

4. At Lock 19, Keokuk, Iowa, due to strong currents near intakes and extreme turbulence within the lock chamber, all personal watercraft, i.e. wet bikes, jet bikes, jet skis, wave runners, wave jumpers, etc. will not be locked through under their own power. Personal watercraft will be locked through while being towed into and out of the lock by a conventional pleasure craft, i.e. bass boat, ski boat, runabout, day cruiser, houseboat, etc. While the personal watercraft is being towed into, locked through and towed out of the lock approach, they shall not be ridden or operated. The operator of the personal watercraft will be required to board the vessel performing the towing of the personal watercraft. Boarding and disembarking will not delay traffic in any way.

D. St. Louis District.

1. At Lock 24, Clarksville, Missouri, it is now mandatory for all northbound tows to land on the protection cell at the end of the lower guide wall. Due to the critical condition of the aging guide wall, all tows are required to land on the cell and then pivot on the cell with the lead barge in the port string. Tows may proceed forward after they are correctly aligned for straight entry into the lock to minimize impacts to the guide wall.

2. At Lock 25, Winfield, Missouri, it is recommended that prior to arrival at Lock 25, all northbound tows insure that they have the correct break coupling rigging to expedite the locking process. Many tows are arriving without the proper break coupling rigging. Delays are increasing during the remaking of the coupling due to complete relaying of wires and rigging.

3. At Lock 25, Winfield, Missouri, all northbound tows must avoid landing on the lower guide wall downstream of the 400 foot marker.

4. At Locks 27, Granite City, IL, until completion of the new protection cell in March 2015, it is necessary at river stages above 27' (St. Louis Gage) for all Northbound tows to employ the use of a helper boat upon entry to the main lock to insure the tow is flat on the wall with no angle to impact the recessed lower east wall miter gate. This mandate is necessary to prevent misaligned tows from impacting the lower east wall miter gate in the recess during north bound approach. At river stages below 27' the miter gate has timbers to protect the structural members. The Government will not provide the assist vessel. Please exercise extreme caution during approach to the lock. This will be rescinded when the new protection cell is complete. Additionally, the downstream long guide wall mooring hooks/pins, located at (from the DS miter gates) 125', 300', 450', and 550' are not adequate for checking or driving against while flattening a tow; they are designed to moor a waiting tow already against the wall. Some of the pins have already failed. For certain conditions (wind, ice, drift...etc.) the District may issue additional guidance. Following are critical Northbound approach dimensions:

a. From the main lock downstream miter gates to the end of the long (east) guidewall is 690 ft. (measured from miter gate pintle to DS face of guidewall)

St. Louis District (Continued)

b. From the main lock downstream miter gates to the end of the I-wall (shortwall) bullnose is 83 ft (measured from miter gate pintle to DS face of I-wall bullnose)

c. From the main lock downstream miter gates to the downstream bulkhead slots is 62 ft (measured from miter gate pintle to DS face of the slot) The curvature of the bullnose starts at the UPSTREAM face of the bulkhead slots.

E. Memphis, Vicksburg, and New Orleans Districts follow the Operational Aspects and General Guidance provided above.

Locks and location:

Memphis = 0

Vicksburg

J. Bennett Johnston Waterway
Lindy C. Boggs L&D - River Mile 44, Vick, Louisiana
John H. Overton L&D – River Mile 74.5, Pineville, Louisiana
Lock and Dam No. 3 – River Mile 117, Colfax, Louisiana
Russell B. Long L&D – River Mile 169, Coushatta, Louisiana
Joe D. Waggoner, Jr. L&D – River Mile 200, Shreveport, Louisiana

Ouachita/Black

Jonesville L&D – River Mile 25, Jonesville, Louisiana
Columbia L&D – River Mile 117, Riverton, Louisiana
Felsenthal L&D – River Mile 227, Felsenthal, Arkansas
H. K. Thatcher L&D – River Mile 281.9, Calion, Arkansas

New Orleans

Old River Lock - Located where the Mississippi River and the Atchafalaya River intersect.
Port Allen Lock - Located across the Mississippi River from Baton Rouge, where the GIWW Alternate Route meets the Mississippi River.
Harvey Lock – Located where the main stem of the GIWW meets the Mississippi River.
Inner Harbor Navigation Canal (IHNC) Lock – Located where the GIWW meets the Mississippi River from the east. IHNC Lock is the only Lock in the New Orleans District that's big enough to pass ships, as well as boats and barges.
Algiers Lock - Built to supplement Harvey Lock.
Bayou Boeuf Lock - Located in Morgan City, where the GIWW crosses the east Atchafalaya Basin Levee.
Berwick Lock – Located where Bayou Teche crosses the west Atchafalaya Basin Levee.
Bayou Sorrel Lock - Located where the GIWW's Alternate Route crosses the east Atchafalaya Basin Levee.
Leland Bowman Lock - Located south of Lafayette, at the intersection of the Gulf Intracoastal Waterway (GIWW) and the Vermilion River.
Schooner Bayou Control Structure – Located south of Lafayette and just south of the Gulf Intracoastal Waterway (GIWW) and Leland Bowman Lock, on the old GIWW and Schooner Bayou.
Freshwater Bayou Lock – Located near Pecan Island, where Freshwater Bayou meets the Gulf of Mexico.
Catfish Point Control Structure - Located on the lower Mermentau River at Mile 24, just south of Grand Lake in Cameron Parish.
Calcasieu Lock - Located south of Lake Charles, where the GIWW meets the Calcasieu River.
Calcasieu River Saltwater Barrier - Located 9 miles north of Lake Charles in Westlake, LA, on approximate Mile 45 of the Calcasieu River.
TOTAL = 14

Structure

Level of Service

Mermentau River

Schooner Bayou Control Structure New Operating hours - 12 hrs. a day, 7 days a week, from 6:00 am to 6:00 pm (NOTE: Leland Bowman Lock may be used as an alternate route when Schooner Bayou Control Structure is closed).

Calcasieu River and Pass

Calcasieu River Saltwater Barrier New Operating hours – Sunday thru Thursday 6:00 am to 10:00 pm, and Friday & Saturday 6:00 am to 12:00 pm.

Atchafalaya Basin

Berwick Lock New Operating hours - 16 hrs. a day, 7 days a week, from 6:00 am to 10:00 pm.

West Calumet Floodgate

New Operating hours - 8 hrs. a day, 7 days a week, 7:00 am to 3:00 pm (NOTE: Lockings will be made during hours stated above during high water season when flood side stages are between 2.5 ft. and up to 4.5 ft., NGVD.). This structure is located at the intersection of Bayou Teche & Wax Lake Outlet).

Illinois Waterway**A. General.**

1. When tows are underway in the lock approaches or lock chamber and there is a potential for damage to the structure a minimum of two deckhands with fenders shall be stationed at the head end of every tow 100 feet or greater in width. One deckhand with a fender shall be required at the head end of tows less than 100 feet in width. Additional personnel shall be required at the aft end if the lock operator determines that it is necessary to protect the lock and guide walls from damage.
2. When moving or making up tows prior to leaving the lock in an upbound movement, towboat operators are required to keep all barges secured to the lock or guide wall. At the locks where traveling mooring bits are used, the line shall not be released until the regulator mooring line is secured at the bow. Generally, the deckhand will not release snubbing and holding lines from the lock or guide walls until the towboat is properly secured to the tow. For a single lockage, with a towboat only set over, deviating from this procedure will be allowed if the immediate situation will permit safe departure under power and a lock operator walks a line out with the tow until the towboat is again adequately secured to the tow. Lock operators will assist by moving barges with tow-haulage equipment. However, when moving barges from the lock chamber, it is the responsibility of the vessel master to assure that adequate lines and personnel are available for safe handling and mooring of the tow or sections to the lock or guide walls. Sufficient personnel shall remain with the other sections to assure its security.
3. During the high water season, strong outdrafts occur at the upstream approach to some navigation locks. On the Illinois Waterway, the outdraft signals are displayed on the upper end of the land guide walls, (river wall bullnose at Lockport Lock), and may be orange or amber. At some locks, similar signs are also displayed on the downstream end of the lower guide wall for the information of upbound tows. Lock personnel on duty will be available to notify navigators of dam gate opening status and outdraft conditions upon request. All vessel operators are directed to exercise extreme caution when approaching locks for a downbound lockage or when leaving locks upbound, where outdraft conditions exist. Double trips may be required if doubt exists as to the ability of the tow to enter or leave the lock safely.

B. Chicago District.

1. The Chicago Harbor Lock is at the upper end of the Illinois Waterway, which is a tributary of the Mississippi River. All rules and regulations defined in 33 CFR 207.300, Ohio River, Mississippi River above Cairo, Illinois, and their tributaries; use, administration and navigation and 33 CFR 207.800, Collection of navigation statistics shall apply except where they conflict with 33 CFR 207.420, Chicago River, IL, Chicago Harbor Lock and Controlling Works; use, administration and navigation of the lock at the mouth of the river.
2. The Chicago Harbor Lock is extending the successful implementation of new signal lights rules for all lockages, at Chicago River mile 0, Illinois Waterway chart mile 327.2, NOAA chart #14928. SIGNAL LIGHTS FOR LOCKAGE: Due to density of traffic and congestion in Chicago Harbor, Chicago Harbor Lock will use the red-amber-green lockage signal lights, in lieu of red-green signal lights. User comments and results have been positive, and await final implementation into the CFR.

a. The meaning of the lock signal lights located near the east end of the northeast guide wall and at the west end of the northwest lock wall are as follows:

- (1) Red light: Lock is not ready for entrance. All vessels shall stand clear and shall allow unobstructed departure for the vessels leaving the lock chamber.
- (2) Amber light: Lock is ready for entrance of all government vessels and certified passenger vessels waiting in the queuing area are given permission to enter the lock chamber. All other vessels shall only enter the lock chamber when specifically directed by the lock operator via radio, telephone or voice.
- (3) Green light: Lock is ready for entrance by all other small passenger vessels, fishing vessels and recreational vessels. During the green light, certified passenger vessels, such as late arrivals to the queuing area, shall not enter the lock chamber unless specifically directed by the lock operator via radio, telephone or voice.

b. Definitions:

- (1) Certified passenger vessel: A commercial passenger vessel which was issued a current Certificate of Inspection by the U.S. Coast Guard to carry more than 6 passengers.
- (2) Queuing area: The designated lock waiting area for vessels less than 100 gross tons. The queuing area for east transits to the lake begins at Ogden Slip and the queuing area for west transits to the river begins at Municipal Pier No. 1 Light.

3. There are no changes to lock operating hours based on Inland Marine Transportation System (IMTS) Standard Levels of Service.

C. Rock Island District.

1. At Lockport, Brandon Road, Dresden Island, Marseilles and Starved Rock Locks, upbound tows with 1 barge length and up to 2 barges wide will require 2 deckhands and 2 lines. Under normal conditions, downbound tows with 1 barge length and up to 2 barges wide transiting the locks identified above will only require 1 deckhand and 1 line on the floating mooring bit and engines running at idle. At T.J. O'Brien, Peoria and LaGrange locks, 1 deckhand and 1 line are acceptable for lockage in both directions for tow configurations described above. At all locks, the navigator will provide an additional line or lines at the lock operator's discretion; conditions indicate that such added precautions are necessary for safe lockage. All vessels will have one additional line, at least equal in length to the lock lines, on the head (working side) of the tow for emergency use.
2. Only vessels waiting lockage turn at Marseilles Lock will be allowed to moor in Marseilles Canal. Mooring of tows or barges for other reasons is prohibited.

Rock Island District (continued)

3. Due to strong currents near intakes and extreme turbulence within the lock chamber, all personal watercraft, i.e. wet bikes, jet bikes, jet skis, wave runners, wave jumpers, etc. will not be locked while under their own power at Lockport Lock, Brandon Road Lock, Dresden Island Lock, Marseilles Lock, Starved Rock Lock, Peoria Lock, and LaGrange Lock. Personal watercraft will be locked through while being towed into and out of the lock by a conventional pleasure craft, i.e. bass boat, ski boat, runabout, day cruiser, houseboat, etc. While the personal watercraft are being towed into, locked through and towed out of the lock approach, they shall not be ridden or operated. The operator of the personal watercraft will be required to board the vessel performing the towing of the personal watercraft. Boarding and disembarking is not to delay traffic in any way.

D. **St. Louis District.** No special instructions for this reach.

APPENDIX C

Ohio River and Tributaries

A. General.

1. Outdraft warning signs are not used on the Ohio River or its tributaries. All tow boat operators upon request when calling a lock on this system will be provided with the Dam Gate opening, if applicable and available, the upper and lower river gages and the current river predictions, as provided by the National Weather Service. All decisions as to the existence of an outdraft and the effect of that said outdraft will have upon their tows will be made by each tow boat operator.
2. The lockage of oversize tows is not permitted on the Ohio River or its tributaries. An oversize tow is defined as a tow that cannot be locked through a 1,200-foot lock in one lockage.
3. Waterways Action Plans provides the marine industry, U.S. Coast Guard (USCG), U.S. Army Corps of Engineers (USACE), States and local governments with a plan for facilitating the safe and orderly movement of traffic during extreme conditions on the inland rivers.

B. Pittsburgh District.

1. At Emsworth Dashields, Montgomery, and Lock 2, Monongahela River, set over lockages will be done at the discretion of the Lockmaster. The request for this procedure should be made as early as possible prior to arriving at the lock.
2. At Emsworth a third line (breast line) is required for upbound lockages due to the heavy turbulence created during the lock chambers filling. If the floating mooring bit is being used to moor the tow, the third line (breast line) will not be required.
3. The large land lock chamber at Montgomery Lock and Dam is only 597 feet long. It will not be possible to lock the first cut of a double lockage with three lengths of 200' barges end on end in the port or starboard string. Tows should be configured to include at least one (1) 195' or less barge in the port and starboard strings.
4. Pilots of commercial vessels should note when locking through Lock 4, Allegheny River, the depth of water over the upper sill is 0.6 feet less than the upper gage reading. An upper gage reading of 9.0 correlates to 8.4 feet of water over the upper sill.
5. Rubbing fenders will be required to be available on the head of each tow containing red flag barges that could come into contact with the lock wall. These fenders should be used as required to prevent sparking.
6. Barges will be moored to the lock wall at all times during the lockage cycle. On all lockages, deckhands will not remove mooring lines until signaled to do so by the lock operator. This will be done by use of a whistle or by verbal command. On knockout single cut lockages, once the deckhand has been signaled to remove the mooring lines, the tow boat may proceed out of the chamber and the tow boat may face back up to the tow as the tow moves forward. If requested by the deckhand, the lock operator will assist to moor the tow to the lock wall once the tow has moved a sufficient distance along the wall so that the tow boat can face up to the tow. This will be required at the Emsworth Locks and at the Dashields Locks when the total opening on the main channel and back channel dams at Emsworth reaches 65 feet. This will also be required at the Montgomery Locks when the total dam opening there reaches 40 feet. (This is in accordance with a waterways action plan between the Coast Guard, the Army Corps of Engineers and the Waterways Association following the January 2005 accident involving the M/V Elizabeth M at Montgomery.) On all set-over lockages, the tow will move far enough along the wall to provide room to set the barges back over and face up to the rest of the tow. The tow will then be moored to the wall until the face up process is completed. The lock operator will then remove the mooring lines at the request of the deckhand. On all multiple cut lockages, the cut will be pulled from the chamber using tow haulage equipment or assistance from a helper boat. The deckhand will be required to use the traveling regulator bit if directed by the lock operator. The tow will then be moored to the wall outside of the chamber until the remaining cuts of the tow have been faced up to the first cut. Once the tow is faced up and ready to depart, the mooring lines will be removed by the lock operator at the request of the deckhand.
7. There are no changes to lock operating hours based on Inland Marine Transportation System (IMTS) Standard Levels of Service.

C. Huntington District.

1. KANAWHA RIVER DRAFT OF VESSELS AND OPERATING DURING HIGH WATER

For commercial vessels transiting the Kanawha River, the following project sill information is provided:

	Kanawha River Mile	Sill Elevation	
London Locks	82.8	Upper 596.0	Lower 578.0
Marmet Locks	67.7	Main Upper 572.0 Auxiliary Upper 572.0	Main Lower 548.0 Auxiliary Lower 554.0
Winfield Locks	31.1	Main Upper 548.0 Auxiliary Upper 548.0	Main Lower 520.0 Auxiliary Lower 526.0

The U.S. Army Corps of Engineers maintains a nine foot channel depth. Acceptable drafts for tows transiting these projects are specified below:

Lower Gauge Reading:	Maximum Barge Draft:
9'-3" and above	No restriction
9'-0" to 9'-3"	10'-6"
8'-9" to 9'-0"	10'-3"
8'-9" and below	Gauge Reading Plus 1'-3"

Draft of vessels: No vessel shall attempt to enter a lock unless its draft is at least three (3) inches less than the least depth of water over the gate sills. Information concerning control depth over sills can be obtained from the District Navigation Charts.

Operations during high water and floods in designated vulnerable areas: Vessels operating on these waters during periods when river stages exceed the level of "ordinary high water," as designated on Corps of Engineers' navigation charts, shall exercise reasonable care to minimize the effects of their bow waves and propeller washes on river banks; submerged or partially submerged structures or habitations; terrestrial growth such as trees and bushes; and man-made amenities that may be present. Vessels shall operate carefully when passing close to levees and other flood protection works, and shall observe minimum distances from banks which may be prescribed from time to time in Notices to Navigation Interests. Pilots should exercise particular care not to direct propeller wash at river banks, levees, revetments, structures or other appurtenances subject to damage from wave action.

2. Outdraft conditions for a downbound approach when the total dam opening is five feet or more at London requires lock personnel to meet all downbound tows at the end of the wall when requested by vessel operators.

3. Deckhands must stand clear of haul-out cables during all pull-out operations.

4. Vessels with flammable or hazardous cargo barges, loaded or empty, are required to use sparkproof protective rubbing fenders ("possums"). All vessels should utilize "possums" to help alleviate damages that are occurring to lock structures.

5. There are no changes to lock operating hours based on Inland Marine Transportation System (IMTS) Standard Levels of Service.

D. Louisville District.

1. The U.S. Coast Guard, Marine Safety Office, Louisville will place its Vessel Traffic Service (VTS) into operation when the upper gage at McAlpine Locks and Dam reaches 13.0 and the dam is all out. All upbound vessels should contact "Louisville Traffic" on Channel 13 upon arrival at McAlpine Locks and Dam. All downbound vessels should contact "Louisville Traffic" on Channel 13 upon arrival at Twelve Mile Island.

2. It is occasionally necessary to flush drift or ice from the upper lock approaches at Markland and Cannelton Locks and Dams. During these periods, flow is passed over a partially submerged emergency gate and through the auxiliary (600-foot) lock chamber. The auxiliary chamber will be closed during these flushing procedures and all traffic will be passed through the main (1200-foot) lock. Navigators should observe extreme caution and carefully follow the instructions of lock operators regarding the flushing operations.

3. McAlpine Locks and Dam Radio Contact Location: Due to traffic in the Louisville and Portland Canal, downbound vessels are permitted to announce their presence for lockage when they reach Six Mile Island (Mile 597.1).

4. Markland Locks and Dam: During periods of high drift, lock operators may instruct tows to stop closer than 100 feet from the upper miter gates of the main chamber to prevent excessive build up of drift between the head of the tow and the miter gates.

5. Lock and Dam 52. Draft restrictions are in effect in accordance with the chart provided in Navigation Notice No. 2008-025 Date: September 30, 2008. Vessels meeting the chart restrictions will be allowed to lock through the 1200 foot chamber. Extreme caution must be exercised in the vicinity of the lower sill. "Slow speed" and "no driving over the sill" will be mandatory.

6. Olmsted Contact Information
Marine Channel 13
Telephone 618-748-6403

Olmsted Marine Fleet
Telephone 270-748-2596 M/V Gordon Stevens
270-823-3156 M/V Lipscomb

Louisville District (Continued)

Olmsted Locks general information

<u>Mile Marker</u>	<u>Arrival Point</u>	<u>Sill Elevation</u>	<u>Gage</u>
964.6	Upper: 53's upper	Upper: 262.5	Upper: 279.0
	Lower: Olmsted boat ramp	Lower: 262.5	Lower: 270.9
		Nav Pass wicket eye: 279.8	
		Concrete shell: 278.0	
		Left boat abutment: 303.5	
		Right boat abutment: 288.0	
		Top of lock: 310.0	

Draft of vessels and operating during high water: normal draft restrictions apply.

Draft of vessels and operating during low water:

Be advised that dam tail water scour protection rock has been placed. The top of rock elevation varies but is approximately 272. However, a 400' wide channel has been constructed to allow traffic to pass during low water events (buoy locations on charts). This channel is marked by navigation markers and has a bottom elevation of 269+/- . Industry is advised to make contact with the marine fleet or lock operations at Lock 53 to verify water elevation and draft available during low water events.

Vessels are directed to exercise reasonable care to minimize the effects of their box waves and propeller washes when passing the ongoing construction site. Vessels shall operate carefully when passing close to construction fleet. Pilots should exercise particular care when passing close to active work crews, crane operations, and workers in elevated platforms.

Navigation Charts showing different conditions scenarios are available on the Louisville District's web site listed below. The pages will be included in the next paper chart book. <http://www.lrl.usace.army.mil/Missions/CivilWorks/Navigation/Charts.aspx>

7. There are no changes to lock operating hours based on Inland Marine Transportation System (IMTS) Standard Levels of Service.

E. Nashville District.

1. No vessel shall attempt to enter Kentucky Lock with less than 12 inches clearance over the miter sill.

2. Procedures for Locking Fast Doubles at Pickwick Locks, Tennessee River Mile 206.7. The following guidelines will be used for the fast double lockages at Pickwick locks.

a. Downbound fast double lockages will not be conducted when the total discharge exceeds 100,000 cfs unless specifically requested by the operator of the vessel to be locked. When discharge exceeds 100,000 cfs a request to be locked as a fast double will be honored if, in the lock operator's opinion, it is safe to do so, based on such factors as water levels, actual amount of discharge, wind, etc.

b. A downbound fast double lockage will be accomplished by locking the fifteen barges in the 1,000-foot main lock and the towboat in the 600-foot auxiliary lock. Once locked down, the towboat will move to the main lock and prepare to receive the barges as they are pulled from the chamber with the lock's haulage unit equipment. Upon request by the towboat operator, the towboat may face up to the tow and pull the barge from the chamber in lieu of using the lock's haulage unit. In either event a crew member should be stationed on the upstream end of the tow and inform the towboat operator when the stern of the tow sufficiently clears the short wall to provide clearance for the boat to move in and make up to the stern of the tow. Proper protective devices must be used to protect concrete and wall armor during the pull out operation.

c. Upbound fast double lockages will not be conducted when there is discharge through the spillways, regardless of the amount, or when total discharge exceeds 100,000 cfs. When either of the above conditions exists fifteen barge upbound tows will be locked as straight doubles.

d. During an upbound fast double lockage the towboat should pull the tow out of the lock chamber a distance that will permit the towboat to safely remake to its tow. The lock's haulage unit equipment will not normally be used to pull an upbound fast double cut from the chamber because it would still be necessary for the towboat to continue the pull out until a sufficient clearance is achieved.

e. With the exception of paragraphs c and d above all other aspects of locking and upbound fast double are the same as stated in a and b for downbound lockages.

f. If for any reason a vessel operator desires to lock a fifteen barge tow as a straight double and conditions are such to allow for a fast double lockage, he will be locked as a straight double if determined by the lock operator that it will not create any additional delay to any other vessel(s). If the lock operator determines additional; delay will be created and the vessel operator still desires a straight double lockage, his position in queue will be reestablished until such time additional delay to other traffic does not result. Tows considered in making such determination do not necessarily have to be at the arrival point.

Nashville District (Continued)

g. The lock operator may require that a fifteen barge tow be locked as a straight double through either lock, rather than as a fast double, due to various factors such as flow, wind, mechanical problems, approach obstruction, or any time when it will result in the most efficient utilization of the lock.

h. Prior to beginning each lockage, procedural aspects of the lockage will be coordinated between the lock and vessel operators in an effort to insure a mutual and thorough understanding of the locking procedure.

3. Due to the draw in the upstream lock approach when filling the chamber on Pickwick main lock all cuts of tows must be at the 600-foot marker or greater on the upper approach wall and have a minimum of 2 lines, four to six part each under normal conditions. During abnormal conditions/adverse weather conditions, tows may tie above the upper gates with additional lines provided the lock operator approves.

4. Locks with a width of less than 110' will require two deckhands with fenders when any vessel with a barge in tow is entering or exiting the lock.

5. Lock operators will not be available to handle lines on the Tennessee, Cumberland or Clinch Rivers.

6. Operating Procedures for upbound tows Wilson Main Lock, Tennessee River Mile 259.4

The U.S. Army Corps of Engineers has established several new operating procedures for lockages through the main chamber at Wilson Lock. These new procedures have been established to address issues that led to the 3 August 2006 accident at the main chamber that resulted to extensive damage to the upper lock gate and the tow that was locking up in the chamber at the time. While several new procedures have been established to address Corps operational issues, the following two procedures have been established to address barge size or tow configuration of upbound tows:

- Tows with barges over 290-foot in length will be locked as a set-over with the bow of the tow tied on the floating mooring bit at the 125-foot Marker-board.
- If the tow has more than two barges preventing a set-over lockage, they will be tied at the 300-foot Marker-board in addition to the bow and stern lines.

Note that these procedures apply only to upbound tows. Questions regarding these procedures should be addressed to the Lock Operator on duty via Marine Radio or to the Lockmaster at Wilson Lock by telephone at 256-764-5223.

7. Change in Lockage Procedures at Chickamauga Lock, Tennessee River Mile 471.0

With the completion of the lower cofferdam for the new lock, navigation conditions in the lower approach of Chickamauga Lock have changed considerably and warrant modifications to the existing lockage procedures. The top of the cofferdam extends to approximately Elevation 662 which is 28-foot above the normal tailwater level of Elevation 634.0. The massive size and height of the structure has created severe visibility issues for both upbound and downbound traffic.

To address this issue, the following guidance is being added to the standard lockage procedures for vessels wishing to transit Chickamauga Lock.

Upbound Traffic: All upbound vessels (commercial and recreational) must wait downstream of the Southern Railway Bridge until given approval to enter the lock by the lock operator. Approval will either be given by radio or the green light signal and horn blast. After receiving approval from the lock operator, vessels will advance upbound at minimum steerage headway. Tows and other vessels with restricted visibility must have a proper look-out on the head of their vessel. Look-out must have means of communicating with the pilothouse.

Downbound Traffic: All vessels (commercial and recreational) departing the lock downbound are requested to proceed at minimum steerage headway until they are downstream of the Southern Railway Bridge. Tows and other vessels with restricted visibility must have a proper look-out on the head of their vessel. Look-out must have means of communicating with the pilothouse.

All vessels (commercial and recreational) not directly engaged in locking through the lock should consider the area between the Southern Railway Bridge and the lock as a hazardous area. Vessels should not loiter in or around this area. Likewise, vessels should not transit this area without approval from the lock operator on duty.

This guidance shall remain in effect until further notice. Questions regarding this guidance may be addressed to the Lockmaster at Chickamauga Lock by telephone at (423) 875-6230.

8. There are no changes to lock operating hours based on Inland Marine Transportation System (IMTS) Standard Levels of Service.

APPENDIX D

MISSISSIPPI VALLEY DIVISION

It is anticipated that major maintenance and repairs will be performed at the following locations during Calendar Years 2015 / 2016. This notice may require periodic revision. It is given so that industrial waterway users may have a general knowledge of the lock outages and can plan their operations accordingly. Factors, which may affect this schedule, are the delivery of materials, repairs required but not anticipated, emergency repairs as a result of accidents, and funding.

All interested parties should review the maintenance schedule for impact. Additional notices furnishing specific information and operating requirements will be published approximately two weeks in advance of commencing the work items listed.

Repair/Maintenance Schedule for 2015

Illinois Waterway

<u>River Mile</u>	<u>Project</u>	<u>Repairs</u>	<u>Dates</u>	<u>Remarks</u>
326.5	T.J. O'Brien Lock (Rock Island District-MVR)	Dewater upper sector gates for major maintenance	21 Jan – 08 Mar 15	Lock Chamber closed for 45 days

Mississippi River

<u>River Mile</u>	<u>Project</u>	<u>Repairs</u>	<u>Dates</u>	<u>Remarks</u>
728.5	Lock 5A (St. Paul District-MVP)	Lock dewatering, concrete, and structural repairs	01 Dec 14 – 08 Mar 15	Work to be performed during non-navigation season
556.7	Lock 12 (Rock Island District-MVR)	Contractor installation of downstream lock bulkhead slots	15 Dec 14 – 04 Mar 15	Closed to all navigation
522.5	Lock 13 (Rock Island District-MVR)	Contractor installation of downstream lock bulkhead slots	15 Dec 14 – 04 Mar 15	Closed to all navigation
522.5	Lock 13 (Rock Island District-MVR)	Removal of existing miter gates and replacement of new miter gates	Dates to be announced	Four 12 hour closures in 2015
457.2	Lock 16 (Rock Island District-MVR)	Removal of existing miter gates and replacement of new miter gates	Dates to be announced	Four 12 hour closures in 2015
437.1	Lock 17 (Rock Island District-MVR)	Replace the miter gate machinery platforms	05 Jan 15 – 06 Mar 15	Closed to all navigation
437.1	Lock 17 (Rock Island District-MVR)	Contractors to perform work for temporary wiring, inspecting, concrete placement, and permanent wiring	Dates to be announced	Four 12 hour closures in 2015
343.2	Lock 20 (Rock Island District-MVR)	Lock dewatering to perform miscellaneous repairs	05 Jan 15 – 06 Mar 15	Closed to all navigation
343.2	Lock 20 (Rock Island District-MVR)	Contractors to perform work for temporary wiring, inspecting, concrete placement, and permanent wiring	Dates to be announced	Four 12 hour closures in 2015
324.9	Lock 21 (Rock Island District-MVR)	Contractors to perform work for temporary wiring, inspecting, concrete placement, and permanent wiring	Dates to be announced	Four 12 hour closures in 2015
185.5	Locks 27 (St. Louis District-MVS)	Installation of new downstream protection cell	05 Jan 15 – 05 Mar 15	Intermittent short closures to main lock
185.5	Locks 27 (St. Louis District-MVS)	Repair of embedded metals and rehab of miter gates	18 Nov 14 – 20 Mar 15	Closure of auxiliary lock

Repair/Maintenance Schedule for 2015 (continued)

Mississippi River (continued)

303.8	Old River Lock (New Orleans District-MVN)	Refurbish floating mooring bits	Dec 2014 – Sep 2015 Specific Dates to be announced	Intermittent Daytime Closures
303.8	Old River Lock (New Orleans District-MVN)	Pull and refurbish Tainter Valves & Floating Guidewall repairs	Oct 2014 – Sep 2016 Specific dates to be announced	Intermittent Daytime Closures

NOTE: For closures to structures where the exact date cannot be specified, the New Orleans District will provide exact times and dates to the U.S. Coast Guard for their VHF marine radio broadcasts in addition to issuing Navigation Notices.

228.3	Port Allen Lock (New Orleans District-MVN)	Remove & replace valves, & floating mooring bits	Sometime in 2015 Dates to be announced	Intermittent Daytime Closures
92.8	Inner Harbor Navigation Lock (IHNC) (New Orleans District-MVN)	Replace gates and operating Machinery	Aug or Sep 2015	60 day minimum closure around the clock

Gulf Intracoastal Waterway

<u>River Mile</u>	<u>Project</u>	<u>Repairs</u>	<u>Dates</u>	<u>Remarks</u>
238.5	Calcasieu Lock (New Orleans District MVN)	Replace Dolphin	Sometime in 2015 Dates to be announced	1 week daytime closure during demo and approx 1 week daytime closure during const.

Gulf Intracoastal Waterway (Morgan City-Alternate Route)

<u>River Mile</u>	<u>Project</u>	<u>Repairs</u>	<u>Dates</u>	<u>Remarks</u>
36.5	Bayou Sorrel Lock (New Orleans District-MVN)	Sector Gate repairs	Feb 2015 – Apr 2015	De-watering, 60 day minimum closure around the clock

Red River & Ouachita/Black

Vicksburg District (MVK)
NOTHING AT THIS TIME

Great Lakes and Ohio River Division

Repair/Maintenance Schedule for 2015

It is anticipated that major maintenance and repairs will be performed at the following locations during Calendar Year 2015. This notice may require periodic revision. It is given so that industrial waterway users may have a general knowledge of the lock outages and can plan their operations accordingly. Factors, which may affect this schedule, are the delivery of materials, repairs required but not anticipated, emergency repairs as a result of accidents, and funding.

All interested parties should review the maintenance schedule for impact. Additional notices furnishing specific information and operating requirements will be published approximately two weeks in advance of commencing the work items listed.

<u>River Mile</u>	<u>Project</u>	<u>Repairs</u>	<u>Dates</u>	<u>Remarks</u>
<u>Allegheny River System</u>				
NOTHING AT THIS TIME				
<u>Cumberland River System</u>				
30.6	Barkley L&D (Nashville District)	Repair Lower Gate Diagonals	01 Nov – 30 Nov 15	Single Chamber Closed
148.7	Cheatham L&D (Nashville District)	Clean Powerhouse Intake Screens	20 Apr – 30 Apr 15	Dam Work No Delays
148.7	Cheatham L&D (Nashville District)	Repair Spillway Gates	02 Mar – 16 Apr 15	Dam Work No Delays
216.2	Old Hickory L&D (Nashville District)	Clean Powerhouse Intake Screens	05 Aug – 13 Aug 15	Dam Work No Delays

Repair/Maintenance Schedule for 2015 (continued)

Cumberland River System (continued)

216.2	Old Hickory L&D (Nashville District)	Dewatering	14 Jul – 04 Aug 15	Single Chamber Closed
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Green River System

NOTHING AT THIS TIME

Kanawha River System

31.1	Winfield L&D (Huntington District)	Repair Miter Gate Anchorages	25 Feb – 30 Apr 15	Primary Chamber Closed
67.7	Marmet L&D (Huntington District)	Repair Roller Gate Connections	27 Jul – 30 Sep 15	Dam Work No Delays

Monongahela River System

23.8	L&D 3 (Pittsburgh District)	Repair Upstream Needle Dam	27 Apr – 29 May 15	Auxiliary Chamber Closed
41.5	Charleroi L&D (Pittsburgh District)	Repair Concrete	05 Oct – 06 Nov 15	Single Chamber Closed
61.1	Maxwell L&D (Pittsburgh District)	Repair Emergency Bulkheads	27 Apr – 29 May 15	Intermittent Closures

Ohio River System

6.2	Emsworth L&D (Pittsburgh District)	Cut Bulkhead Slots	08 Jun – 10 Jul 15 03 Aug – 18 Sep 15	Intermittent Closures and Width Restrictions
31.7	Montgomery L&D (Pittsburgh District)	Repair Lift Gates	16 Nov – 11 Dec 15	Dam Work No Delays
54.4	New Cumberland L&D (Pittsburgh District)	Repair Miter Gate	02 Mar – 10 Apr 15	Auxiliary Chamber Closed
54.4	New Cumberland L&D (Pittsburgh District)	Repair Dam Gate Hoist Shafts	02 Mar – 10 Apr 15	Dam Work No Delays
203.9	Belleville L&D (Huntington District)	Repair Miter Gates	26 May – 24 Jul 15	Primary Chamber Closed
237.3	Racine L&D (Huntington District)	Repair Miter Gate Machinery	30 Mar – 15 May 15	Intermittent Closures
237.3	Racine L&D (Huntington District)	Repair Culvert Valves	02 Mar – 27 Mar 15	Intermittent Closures
237.3	Racine L&D (Huntington District)	Repair Miter Gates	26 May – 24 Jul 15	Primary Chamber Closed
606.8	McAlpine L&D (Louisville District)	Repair Culvert Valves	12 Jan – 31 Mar 15	Intermittent Closures
776.0	Newburgh L&D (Louisville District)	Repair Miter Gate Machinery	06 Apr – 21 May 15	Primary Chamber Closed
938.9	L&D 52 (Louisville District)	Repair Miter Gate Machinery Repair Guide Wall Cells	31 Aug – 25 Sep 15	Two 12 Day Primary Chamber Closures
938.9	L&D 52 (Louisville District)	Repair Dam Sill	03 Aug – 21 Nov 15	Dam Work No Delays
938.9	L&D 52 (Louisville District)	Repair Miter Gate Sill	01 Oct – 30 Oct 15	Auxiliary Chamber Closed

Repair/Maintenance Schedule for 2015 (continued)

Tennessee River System

206.7	Pickwick L&D (Nashville District)	Repair Culvert Valves	12 Jan – 12 Feb 15	Intermittent Closures
259.4	Wilson L&D (Nashville District)	Repair Bulkhead Slots	26 Jan – 5 Feb 15	Intermittent Closures
259.4	Wilson L&D (Nashville District)	Dewatering	02 Mar – 30 Apr 15 05 May – 02 Jun 15	Intermittent Closures Primary Chamber Closed

Repair/Maintenance Schedule for 2016

It is anticipated that major maintenance and repairs will be performed at the following locations during Calendar Years 2016. This notice may require periodic revision. It is given so that industrial waterway users may have a general knowledge of the lock outages and can plan their operations accordingly. Factors, which may affect this schedule, are the delivery of materials, repairs required but not anticipated, emergency repairs as a result of accidents, and funding.

All interested parties should review the maintenance schedule for impact. Additional notices furnishing specific information and operating requirements will be published approximately two weeks in advance of commencing the work items listed.

Illinois Waterway

<u>River Mile</u>	<u>Project</u>	<u>Repairs</u>	<u>Dates</u>	<u>Remarks</u>
286	Brandon Road Lock (Rock Island District-MVR)	Remove upper service gates for repairs and painting	Dates to be announced	Four 36 hour closures

Mississippi River

<u>River Mile</u>	<u>Project</u>	<u>Repairs</u>	<u>Dates</u>	<u>Remarks</u>
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St. Louis District (MVS) -NOTHING AT THIS TIME

437.1	Lock 17 (Rock Island District-MVR)	Contractor installation of downstream lock bulkhead slots	14 Dec 15 – 02 Mar 16	Closed to all navigation
324.9	Lock 21 (Rock Island District-MVR)	Lock dewatering to perform concrete repairs	04 Jan 16 – 04 Mar 16	Closed to all navigation
522.5	Lock 13 (Rock Island District-MVR)	Lock dewatering to perform miscellaneous repairs	04 Jan 16 – 04 Mar 16	Closed to all navigation
522.5	Lock 13 (Rock Island District-MVR)	Removal of existing miter gates and replacement of new miter gates	Dates to be announced	Four 12 hour closures
556.7	Lock 14 (Rock Island District-MVR)	Contractor installation of downstream lock bulkhead slots	15 Dec 15 – 04 Mar 16	Closed to all navigation
583	Lock 11 (Rock Island District-MVR)	Removal of existing miter gates and replacement of new miter gates	Dates to be announced	Four 12 hour closures
647.9	Lock 9 (St. Paul District-MVP)	Lock dewatering, concrete, and structural repairs	07 Dec 15 – 13 Mar 16	Work to be performed during non navigation season

Great Lakes and Ohio River Division

Repair/Maintenance Schedule for 2016

It is anticipated that major maintenance and repairs will be performed at the following locations during Calendar Year 2016. This notice may require periodic revision. It is given so that industrial waterway users may have a general knowledge of the lock outages and can plan their operations accordingly. Factors, which may affect this schedule, are the delivery of materials, repairs required but not anticipated, emergency repairs as a result of accidents, and funding.

All interested parties should review the maintenance schedule for impact. Additional notices furnishing specific information and operating requirements will be published approximately two weeks in advance of commencing the work items listed.

<u>River Mile</u>	<u>Project</u>	<u>Repairs</u>	<u>Dates</u>	<u>Remarks</u>
<u>Allegheny River System</u>				
NOTHING AT THIS TIME				
<u>Chicago River System</u>				
327.2	Chicago Harbor Lock (Chicago District)	Dewater Gate Bay Electrical Modifications for 4 to 6 weeks	Jan/Feb – 15 Apr 16	Single Chamber Closed
<u>Cumberland River System</u>				
148.7	Cheatham L&D (Nashville District)	Repair Spillway Gates	01 Jul – 30 Aug 16	Dam Work No Delays
<u>Green River System</u>				
NOTHING AT THIS TIME				
<u>Kanawha River System</u>				
NOTHING AT THIS TIME				
<u>Monongahela River System</u>				
NOTHING AT THIS TIME				
<u>Ohio River System</u>				
13.3	Emsworth L&D (Pittsburgh District)	Install Bulkhead Sill	20 Jun – 5 Aug 16	Primary Chamber Closed
31.7	Montgomery L&D (Pittsburgh District)	Install Bulkhead Slots and Sill	09 May – 10 Jun 16 15 Aug – 07 Oct 16	Primary Chamber Closed Primary Chamber Closed
341.1	Greenup L&D (Huntington District)	Repair Miter Gate Machinery	01 Mar – 30 Mar 16	Intermittent Closures
341.1	Greenup L&D (Huntington District)	Replace Miter Gate	02 Apr – 30 Oct 16	Primary Chamber Closed
436.2	Meldahl L&D (Huntington District)	Replace Miter Gate	01 Mar – 30 Sep 16	Primary Chamber Closed
938.9	L&D 52 (Louisville District)	Repair Cells	05 Sep – 16 Sep 16 19 Sep – 30 Sep 16	Primary Chamber Closed Primary Chamber Closed
<u>Tennessee River System</u>				
206.7	Pickwick L&D (Nashville District)	Replace Miter Gate Sector Pins	28 Mar – 28 Apr 16	Auxiliary Chamber Closed
471.0	Chickamauga L&D (Nashville District)	Dewatering	23 May – 16 Jun 16	Single Chamber Closed

**APPENDIX E
BLUE BOOK**

THE LAW

Section 7 of the River and Harbor Act of August 8, 1917, provides as follows:

"That it shall be the duty of the Secretary of War to prescribe such regulations for the use, administration, and navigation of the navigable waters of the United States as in his judgment the public necessity may require for the protection of life and property, or of operations of the United States in channel improvement, covering all matters not specifically delegated by law to some other executive department. Such regulations shall be posted, in conspicuous and appropriate places, for the information of the public; and every person and every corporation which shall violate such regulations shall be deemed guilty of a misdemeanor and, on conviction thereof in any district court of the United States within whose territorial jurisdiction such offense may have been committed, shall be punished by a fine not exceeding \$500, or by imprisonment (in the case of a natural person) not exceeding six months, in the discretion of the court."

In pursuance of the law above quoted, the following regulations were prescribed to govern the use, administration, and navigation of the Ohio River, the Mississippi River above Cairo, Ill., and their tributaries.

33 CFR 207.300
[Code of Federal Regulations]
[Title 33, Volume 3, Parts 200 to End]
[Revised as of July 1, 2004]
From the U.S. Government Printing Office via GPO Access
[CITE: 33CFR207.300]

TITLE 33--NAVIGATION AND NAVIGABLE WATERS

PART 207--NAVIGATION REGULATIONS

Sec. 207.300 Ohio River, Mississippi River above Cairo, Ill., and their tributaries; use, administration, and navigation.

(a) Authority of lockmasters

(1) Locks staffed with Government personnel. The provisions of this paragraph apply to all waterways in this section except for Cordell Hull Lock located at Mile 313.5 on the Cumberland River in Tennessee. The lockmaster shall be charged with the immediate control and management of the lock, and of the area set aside as the lock area, including the lock approach channels. He/she shall see that all laws, rules, and regulations for the use of the lock and lock area are duly complied with, to which end he/she is authorized to give all necessary orders and directions in accordance therewith, both to employees of the government and to any and every person within the limits of the lock and lock area, whether navigating the lock or not. No one shall cause any movement of any vessel, boat, or other floating thing in the lock or approaches except by or under the direction of the lockmaster or his/her assistants. In the event of an emergency, the lockmaster may depart from these regulations as he deems necessary. The lockmasters shall also be charged with the control and management of federally constructed mooring facilities.

(2) Locks staffed with contract personnel. The provisions of this paragraph apply to Cordell Hull Lock located at Mile 313.5 on the Cumberland River in Tennessee. Contract personnel shall give all necessary orders and directions for operation of the lock. No one shall cause any movement of any vessel, boat or other floating thing in the locks or approaches except by or under the direction of the contract lock operator. All duties and responsibilities of the lockmaster set forth in this section shall be performed by the contract lock operator except that responsibility for enforcing all laws, rules, and regulations shall be vested in a government employee designated by the Nashville District Engineer. The district engineer will notify waterway users and the general public through appropriate notices and media concerning the location and identity of the designated government employee.

(b) Safety rules for vessels using navigation locks. The following safety rules are hereby prescribed for vessels in the locking process, including the act of approaching or departing a lock:

(1) *Tows with flammable or hazardous cargo barges, loaded or empty.*

(i) Stripping barges or transferring cargo is prohibited.

(ii) All hatches on barges used to transport flammable or hazardous materials shall be closed and latched, except those barges carrying a gas-free certificate.

(iii) Spark-proof protective rubbing fenders ("possums") shall be used.

(2) *All vessels.*

(i) Leaking vessels may be excluded from locks until they have been repaired to the satisfaction of the lockmaster.

(ii) Smoking, open flames, and chipping or other spark-producing activities are prohibited on deck during the locking cycle.

(iii) Painting will not be permitted in the lock chamber during the locking cycle.

(iv) Tow speeds shall be reduced to a rate of travel such that the tow can be stopped by checking should mechanical difficulties develop. Pilots should check with the individual lockmasters concerning prevailing conditions. It is also recommended that pilots check their ability to reverse their engines prior to beginning an approach. Engines shall not be turned off in the lock until the tow has stopped and been made fast.

(v) U.S. Coast Guard regulations require all vessels to have on board life saving devices for prevention of drowning. All crew members of vessels required to carry work vests (life jackets) shall wear them during a lockage, except those persons in an area enclosed with a handrail or other device which would reasonably preclude the possibility of falling overboard. All deckhands handling lines during locking procedure shall wear a life jacket. Vessels not required by Coast Guard regulations to have work vests aboard shall have at least the prescribed life saving devices, located for ready access and use if needed. The lockmaster may refuse lockage to any vessel which fails to conform to the above.

(c) Reporting of navigation incidents. In furtherance of increased safety on waterways the following safety rules are hereby prescribed for all navigation interests:

(1) Any incident resulting in uncontrolled barges shall immediately be reported to the nearest lock. The report shall include information as to the number of loose barges, their cargo, and the time and location where they broke loose. The lockmaster or locks shall be kept informed of the progress being made in bringing the barges under control so that he can initiate whatever actions may be warranted.

(2) Whenever barges are temporarily moored at other than commercial terminals or established fleeting areas, and their breaking away could endanger a lock, the nearest lock shall be so notified, preferably the downstream lock.

(3) Sunken or sinking barges shall be reported to the nearest lock both downstream and upstream of the location in order that other traffic passing those points may be advised of the hazards.

(4) In the event of an oil spill, notify the nearest lock downstream, specifying the time and location of the incident, type of oil, amount of spill, and what recovery or controlling measures are being employed.

(5) Any other activity on the waterways that could conceivably endanger navigation or a navigation structure shall be reported to the nearest lock.

(6) Whenever it is necessary to report an incident involving uncontrolled, sunken or sinking barges, the cargo in the barges shall be accurately identified.

(d) *Precedence at locks.*

(1) The vessel arriving first at a lock shall normally be first to lock through, but precedence shall be given to vessels belonging to the United States. Licensed commercial passenger vessels operating on a published schedule or regularly operating in the "for hire" trade shall have precedence over cargo tows and like craft. Commercial cargo tows shall have precedence over recreational craft, except as described in paragraph (f) of this section.

(2) Arrival posts or markers may be established ashore above and/or below the locks. Vessels arriving at or opposite such posts or markers will be considered as having arrived at the locks within the meaning of this paragraph. Precedence may be established visually or by radio communication. The lockmaster may prescribe such departure from the normal order of precedence as in his judgment is warranted to achieve best lock utilization.

(e) *Unnecessary delay at locks.* Masters and pilots must use every precaution to prevent unnecessary delay in entering or leaving locks. Vessels failing to enter locks with reasonable promptness when signaled to do so shall lose their turn. Rearranging or switching of barges in the locks or in approaches is prohibited unless approved or directed by the lockmaster. This is not meant to curtail "jackknifing" or set-over where normally practiced.

(f) *Lockage of recreational craft.* In order to fully utilize the capacity of the lock, the lockage of recreational craft shall be expedited by locking them through with commercial craft: *Provided*, That both parties agree to joint use of the chamber. When recreational craft are locked simultaneously with commercial tows, the lockmaster will direct, whenever practicable, that the recreational craft enter the lock and depart while the tow is secured in the lock. Recreational craft will not be locked through with vessels carrying volatile cargoes or other substances likely to emit toxic or explosive vapors. If the lockage of recreational craft cannot be accomplished within the time required for three other lockages, a separate lockage of recreational craft shall be made. Recreational craft operators are advised that many locks have a pull chain located at each end of the lock which signals the lockmaster that lockage is desired. Furthermore, many Mississippi River locks utilize a strobe light at the lock to signal recreational type vessels that the lock is ready for entry. Such lights are used exclusively to signal recreational craft.

(g) *Simultaneous lockage of tows with dangerous cargoes.* Simultaneous lockage of other tows with tows carrying dangerous cargoes or containing flammable vapors normally will only be permitted when there is agreement between the lockmaster and both vessel masters that the simultaneous lockage can be executed safely. He shall make a separate decision each time such action seems safe and appropriate, provided:

(1) The first vessel or tow in and the last vessel or tow out are secured before the other enters or leaves.

(2) Any vessel or tow carrying dangerous cargoes is not leaking.

(3) All masters involved have agreed to the joint use of the lock chamber.

(h) *Stations while awaiting a lockage.* Vessels awaiting their turn to lock shall remain sufficiently clear of the structure to allow unobstructed departure for the vessel leaving the lock. However, to the extent practicable under the prevailing conditions, vessels and tows shall position themselves so as to minimize approach time when signaled to do so.

(i) *Stations while awaiting access through navigable pass.* When navigable dams are up or are in the process of being raised or lowered, vessels desiring to use the pass shall wait outside the limits of the approach points unless authorized otherwise by the lockmaster.

(j) *Signals.* Signals from vessels shall ordinarily be by whistle; signals from locks to vessels shall be by whistle, another sound device, or visual means. When a whistle is used, long blasts of the whistle shall not exceed 10 seconds and short blasts of the whistle shall not exceed 3 seconds. Where a lock is not provided with a sound or visual signal installation, the lockmaster will indicate by voice or by the wave of a hand when the vessel may enter or leave the lock. Vessels must approach the locks with caution and shall not enter nor leave the lock until signaled to do so by the lockmaster. The following lockage signals are prescribed:

(1) *Sound signals by means of a whistle.* These signals apply at either a single lock or twin locks.

(l) Vessels desiring lockage shall on approaching a lock give the following signals at a distance of not more than one mile from the lock;

(a) If a single lockage only is required: One long blast of the whistle followed by one short blast.

(b) If a double lockage is required: One long blast of the whistle followed by two short blasts.

(ii) When the lock is ready for entrance, the lock will give the following signals:

(a) One long blast of the whistle indicates permission to enter the lock chamber in the case of a single lock or to enter the landward chamber in the case of twin locks.

(b) Two long blasts of the whistle indicates permission to enter the riverward chamber in the case of twin locks.

(iii) Permission to leave the locks will be indicated by the following signals given by the lock:

(a) One short blast of the whistle indicates permission to leave the lock chamber in the case of a single lock or to leave the landward chamber in the case of twin locks.

(b) Two short blasts of the whistle indicates permission to leave the riverward chamber in the case of twin locks.

(iv) Four or more short blasts of the lock whistle delivered in rapid succession will be used as a means of attracting attention, to indicate caution, and to signal danger. This signal will be used to attract the attention of the captain and crews of vessels using or approaching the lock or navigating in its vicinity and to indicate that something unusual involving danger or requiring special caution is happening or is about to take place. When this signal is given by the lock, the captains and crews of vessels in the vicinity shall immediately become on the alert to determine the reason for the signal and shall take the necessary steps to cope with the situation.

(2) *Lock signal lights.* At locks where density of traffic or other local conditions make it advisable, the sound signals from the lock will be supplemented by signal lights. Flashing lights (showing a one-second flash followed by a two-second eclipse) will be located on or near each end of the land wall to control use of a single lock or of the landward lock of double locks. In addition, at double locks, interrupted flashing lights (showing a one-second flash, a one-second eclipse and a one-second flash, followed by a three-second eclipse) will be located on or near each end of the intermediate wall to control use of the riverward lock. Navigation will be governed as follows:

(i) *Red light.* Lock cannot be made ready immediately. Vessel shall stand clear.

(ii) *Amber light.* Lock is being made ready. Vessel may approach but under full control.

(iii) *Green light.* Lock is ready for entrance.

(iv) *Green and amber.* Lock is ready for entrance but gates cannot be recessed completely. Vessel may enter under full control and with extreme caution.

(3) *Radio communications.* VHF-FM radios, operating in the FCC authorized Maritime Band, have been installed at all operational locks (except those on the Kentucky River and Lock 3, Green River). Radio contact may be made by any vessel desiring passage. Commercial tows are especially requested to make contact at least one half hour before arrival in order that the pilot may be informed of current river and traffic conditions that may affect the safe passage of his tow.

(4) All locks monitor 156.8 MHz (Ch. 16) and 156.65 MHz (Ch. 13) and can work 156.65 MHz (Ch. 13) and 156.7 MHz (Ch. 14) Ch. 16 is the authorized call, reply and distress frequency, and locks are not permitted to work on this frequency except in an emergency involving the risk of immediate loss of life or property. Vessels may call and work Ch. 13, without switching, but are cautioned that vessel to lock traffic must not interrupt or delay Bridge to Bridge traffic which has priority at all times.

(k) *Rafts.* Rafts to be locked through shall be moored in such manner as not to obstruct the entrance of the lock, and if to be locked in sections, shall be brought to the lock as directed by the lockmaster. After passing the lock the sections shall be reassembled at such distance beyond the lock as not to interfere with other vessels.

(l) *Entrance to and exit from locks.* In case two or more boats or tows are to enter for the same lockage, their order of entry shall be determined by the lockmaster. Except as directed by the lockmaster, no boat shall pass another in the lock. In no case will boats be permitted to enter or leave the locks until directed to do so by the lockmaster. The sides of all craft passing through any lock shall be free from projections of any kind which might injure the lock walls. All vessels shall be provided with suitable fenders, and shall be used to protect the lock and guide walls until it has cleared the lock and guide walls.

(m) *Mooring*

(1) *At locks.*

(i) All vessels when in the locks shall be moored as directed by the lockmaster. Vessels shall be moored with bow and stern lines leading in opposite directions to prevent the vessel from "running" in the lock. All vessels will have one additional line available on the head of the tow for emergency use. The pilothouse shall be attended by qualified personnel during the entire locking procedure. When the vessel is securely moored, the pilot shall not cause movement of the propellers except in emergency or unless directed by the lockmaster. Tying to lock ladders is strictly prohibited.

(ii) Mooring of unattended or no propelled vessels or small craft at the upper or lower channel approaches will not be permitted within 1200 feet of the lock.

(2) *Outside of locks.*

(i) No vessel or other craft shall regularly or permanently moor in any reach of a navigation channel. The approximate centerline of such channels are marked as the sailing line on Corps of Engineers' navigation charts. Nor shall any floating craft, except in an emergency, moor in any narrow or hazardous section of the waterway. Furthermore, all vessels or other craft are prohibited from regularly or permanently mooring in any section of navigable waterways which are congested with commercial facilities or traffic unless it is moored at facilities approved by the Secretary of the Army or his authorized representative. The limits of the congested areas shall be marked on Corps of Engineers' navigation charts. However, the District Engineer may authorize in writing exceptions to any of the above if, in his judgment, such mooring would not adversely affect navigation and anchorage.

(ii) No vessel or other craft shall be moored to railroad tracks, to riverbanks in the vicinity of railroad tracks when such mooring threatens the safety of equipment using such tracks, to telephone poles or power poles, or to bridges or similar structures used by the public.

(iii) Except in case of great emergency, no vessel or craft shall anchor over revetted banks of the river, and no floating plant other than launches and similar small craft shall land against banks protected by revetment except at regular commercial landings. In all cases, every precaution to avoid damage to the revetment works shall be exercised. The construction of log rafts along matted or paved banks or the tying up and landing of log rafts against such banks shall be performed in such a manner as to cause no damage to the mattress work or bank paving. Generally, mattress work extends out into the river 600 feet from the low water line.

(iv) Any vessel utilizing a federally constructed mooring facility (e.g., cells, buoys, anchor rings) at the points designated on the current issue of the Corps' navigation charts shall advise the lockmaster at the nearest lock from that point by the most expeditious means.

(n) *Draft of vessels.* No vessel shall attempt to enter a lock unless its draft is at least three inches less than the least depth of water over the guard sills, or over the gate sills if there be no guard sills. Information concerning controlling depth over sills can be obtained from the lockmaster at each lock or by inquiry at the office of the district engineer of the district in which the lock is located.

(o) *Handling machinery.* No one but employees of the United States shall move any lock machinery except as directed by the lockmaster. Tampering or meddling with the machinery or other parts of the lock is strictly forbidden.

(p) *Refuse in locks.* Placing or discharging refuse of any description into the lock, on lock walls or esplanade, canal or canal bank is prohibited.

(q) *Damage to locks or other work.* To avoid damage to plant and structures connected with the construction or repair of locks and dams, vessels passing structures in the process of construction or repair shall reduce their speed and navigate with special caution while in the vicinity of such work. The restrictions and admonitions contained in these regulations shall not affect the liability of the owners and operators of floating craft for any damage to locks or other structures caused by the operation of such craft.

(r) *Trespass of lock property.* Trespass on locks or dams or other U.S. property pertaining to the locks or dams is strictly prohibited except in those areas specifically permitted. Parties committing any injury to the locks or dams or to any part thereof will be responsible therefore. Any person committing a willful injury to any U.S. property will be prosecuted. No fishing will be permitted from lock walls, guide walls, or guard walls of any lock or from any dam, except in areas designated and posted by the responsible District Engineer as fishing areas. Personnel from commercial and recreational craft will be allowed on the lock structure for legitimate business reasons; e.g., crew changes, emergency phone calls, etc.

(s) *Restricted areas at locks and dams.* All waters immediately above and below each dam, as posted by the respective District Engineers, are hereby designated as restricted areas. No vessel or other floating craft shall enter any such restricted area at any time. The limits of the restricted areas at each dam will be determined by the responsible District Engineer and marked by signs and/or flashing red lights installed in conspicuous and appropriate places.

(t) [Reserved]

(u) *Operations during high water and floods in designated vulnerable areas.* Vessels operating on these waters during periods when river stages exceed the level of "ordinary high water," as designated on Corps of Engineers' navigation charts, shall exercise reasonable care to minimize the effects of their bow waves and propeller washes on river banks; submerged or partially submerged structures or habitations; terrestrial growth such as trees and bushes; and man-made amenities that may be present. Vessels shall operate carefully when passing close to levees and other flood protection works, and shall observe minimum distances from banks which may be prescribed from time to time in Notices to Navigation Interests. Pilots should exercise particular care not to direct propeller wash at river banks, levees, revetments, structures or other appurtenances subject to damage from wave action.

(v) *Navigation lights for use at all locks and dams except on the Kentucky River and Lock 3, Green River.*

(1) At locks at all fixed dams and at locks at all movable dams when the dams are up so that there is no navigable pass through the dam, the following navigation lights will be displayed during hours of darkness:

(i) Three green lights visible through an arc of 360° arranged in a vertical line on the upstream end of the river (guard) wall unless the intermediate wall extends farther upstream. In the latter case, the lights will be placed on the upstream end of the intermediate wall.

(ii) Two green lights visible through an arc of 360° arranged in a vertical line on the downstream end of the river (guard) wall unless the intermediate wall extends farther downstream. In the latter case, the lights will be placed on the downstream end of the intermediate wall.

(iii) A single red light, visible through an arc of 360° on each end (upstream and downstream) of the land (guide) wall.

(2) At movable dams when the dam has been lowered or partly lowered so that there is an unobstructed navigable pass through the dam, the navigation lights indicated in the following paragraphs will be displayed during hours of darkness until lock walls and weir piers are awash.

(i) Three red lights visible through an arc of 360° arranged in a vertical line on the upstream end of the river (guard) wall.

(ii) Two red lights visible through an arc of 360° arranged in a vertical line on the downstream end of the river (guard) wall.

(iii) A single red light visible through an arc of 360° on each end (upstream and downstream) of the land (guide) wall.

(3) After lock walls and weir piers are awash they will be marked as prescribed in paragraph (x) of this section.

(4) If one or more bear traps or weirs are open or partially open, and may cause a set in current conditions at the upper approach to the locks, this fact will be indicated by displaying a white circular disk 5 feet in diameter, on or near the light support on the upstream end of the land (guide) wall during the hours of daylight, and will be indicated during hours of darkness by displaying a white (amber) light vertically under and 5 feet below the red light on the upstream end of the land (guide) wall.

(5) At Locks No. 1 and 2, Green River, when the locks are not in operation because of high river stages, a single red light visible through an arc of 360° will be displayed on each end (upstream and downstream) of the lock river (guard) wall at which time the lights referred to above will not be visible.

(w) *Navigation lights for use at locks and dams on the Kentucky River and Lock 3, Green River.* A single red light visible through an arc of 360° shall be displayed during hours of darkness at each end of the river wall or extending guard structures until these structures are awash.

(x) *Buoys at movable dams.*

(1) Whenever the river (guard) wall of the lock and any portion of the dam are awash, and until covered by a depth of water equal to the project depth, the limits of the navigable pass through the dam will be marked by buoys located at the upstream and downstream ends of the river (guard) wall, and by a single buoy over the end or ends of the portion or portions of the dam adjacent to the navigable pass over which project depth is not available. A red nun-type buoy will be used for such structures located on the left-hand side (facing downstream) of the river and a black can-type buoy for such structures located on the right-hand side. Buoys will be lighted, if practicable.

(2) Where powerhouses or other substantial structures projecting considerably above the level of the lock wall are located on the river (guard) wall, a single red light located on top of one of these structures may be used instead of river wall buoys prescribed above until these structures are awash, after which they will be marked by a buoy of appropriate type and color (red nun or black can buoy) until covered by a depth of water equal to the project depth. Buoys will be lighted, if practicable.

(y) *Vessels to carry regulations.* A copy of these regulations shall be kept at all times on board each vessel regularly engaged in navigating the rivers to which these regulations apply. Copies may be obtained from any lock office or District Engineer's office on request. Masters of such vessels are encouraged to have on board copies of the current edition of appropriate navigation charts.

NOTES

1. Muskingum River Lock & Dam 1 has been removed. Ohio River slackwater provides navigable channel for recreational craft to Lock 2 near Devola, Ohio. Muskingum River Locks 2 thru 11 inclusive have been transferred to the State of Ohio and are operated during the recreational boating season by the Ohio Department of Natural Resources. Inquiries regarding Muskingum River channel conditions and lock availability should be directed to the aforementioned Department.

2. Little Kanawha River Lock and Dam 1 has been removed, thus permitting recreational craft to navigate up to Lock 2 near Slate, W.Va. Operation of Locks 2 thru 5 on the Little Kanawha River has been discontinued.

3. Big Sandy River: Lock 1 has been removed, thus permitting recreational craft to navigate to Lock 2, near Buchanan, Ky. Operation of Lock 2 and Lock 3 near Fort Gay, W.Va. has been discontinued. Operation of Lock and Dam 1 on Levisa Fork near Gallup, Ky., and Lock and Dam 1 on Tug Fork near Chapman, Ky. has been discontinued.

4. Operation of the following Green River Locks has been discontinued: Lock 4 near Woodbury, Ky., Lock 5 near Glenmore, Ky., and Lock 6 near Brownsville, Ky.

5. Operation of Barren River Lock and Dam No. 1 near Richardsville, Ky. has been discontinued.

6. Operation of Rough River Lock and Dam No. 1 near Hartford, Ky. has been discontinued.

7. Operation of Osage River Lock and Dam 1 near Osage City, Mo., has been discontinued.

8. Operation of the 34 locks in the Illinois and Mississippi (Hennepin) Canal, including the feeder section, has been discontinued.

9. Operation of the Illinois and Michigan Canal has been discontinued.

[40 FR 32121, July 31, 1975, as amended at 50 FR 37580, Sept. 18, 1985; 56 FR 13765, Apr. 4, 1991]

Sec. 207.200 Mississippi River below mouth of Ohio River, including South and Southwest Passes; use, administration, and navigation.

(a) *Mississippi River bank protection works provided by United States.* Except in case of great emergency, no vessel or craft shall anchor over revetted banks of the river, and no floating plant other than launches and similar small craft shall land against banks protected by revetment except at regular commercial landings. In all cases, every precaution to avoid damage to the revetment works shall be exercised. The construction of log rafts along matted or paved banks or the tying up and landing of log rafts against such banks shall be performed in such a manner as to cause no damage to the mattress work or bank paving. Generally, mattress work extends out into the river 600 feet from the low water line. Information as to the location of revetted areas may be obtained from, and will be published from time to time by, the District Engineers, Corps of Engineers, New Orleans, Louisiana, Vicksburg, Mississippi, and Memphis, Tennessee, and the President, Mississippi River Commission, Vicksburg, Mississippi.

(b) *Mississippi River below Baton Rouge, La., including South and Southwest Passes--(1) Supervision.* The use, administration, and navigation of the waterways to which this paragraph applies shall be under the supervision of the District Engineer, Corps of Engineers, New Orleans, Louisiana.

(2)-(3) [Reserved]

(4) *Cable and pipeline crossings.* Any cable or pipeline crossing or extending into the waterways shall be marked by large signs with 12-inch black letters on a white background readable from the waterway side, placed on each side of the river near the point where the cable or pipeline enters the water, and at a sufficient height to be readable above any obstructions normally to be expected at the locality such as weeds or moored vessels.

(5) *Marine accidents.* Masters, mates, pilots, owners, or other persons using the waterway to which this paragraph applies shall notify the District Engineer by the most expeditious means available of all marine accidents, such as fire, collision, sinking, or stranding, where there is possible obstruction of the channel or interference with navigation or where damage to Government property is involved, furnishing a clear statement as to the name, address, and ownership of the vessel or vessels involved, the time and place, and the action taken. In all cases, the owner of the sunken vessel shall take immediate steps properly to mark the wreck.

[15 FR 3325, May 30, 1950, as amended at 17 FR 6594, July 18, 1952; 27 FR 3166, Apr. 3, 1962; 33 FR 10456, July 23, 1968; 42 FR 51773, Sept. 29, 1977; 42 FR 57961, 57962, Nov. 7, 1977]

APPENDIX F

BLUE BOOK

33 CFR 207.800

[Code of Federal Regulations]
[Title 33, Volume 3, Parts 200 to End]
[Revised as of July 1, 2004]
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[CITE: 33CFR207.800]

TITLE 33--NAVIGATION AND NAVIGABLE WATERS

PART 207--NAVIGATION REGULATIONS--Table of Contents

Sec. 207.800 Collection of navigation statistics.

(a) *Definitions.* For the purpose of this regulation the following terms are defined:

(1) *Navigable waters of the United States* means those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark, and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce. (See 33 CFR part 329 for a more complete definition of this term.)

(2) *Offenses and Violations* mean:

- (i) Failure to submit a required report.
- (ii) Failure to provide a timely, accurate, and complete report.
- (iii) Failure to submit monthly listings of idle vessels or vessels in transit.
- (iv) Failure to submit a report required by the lockmaster or canal operator.

(3) *Leased or chartered vessel* means a vessel that is leased or chartered when the owner relinquishes control of the vessel through a contractual agreement with a second party for a specified period of time and/or for a specified remuneration from the lessee. Commercial movements on an affreightment basis are not considered a lease or charter of a particular vessel.

(4) *Person or entity* means an individual, corporation, partnership, or company.

(5) *Timely* means vessel and commodity movement data must be received by the Waterborne Commerce Statistics Center within 30 days after the close of the month in which the vessel movement or nonmovement takes place.

(6) *Commercial vessel* means a vessel used in transporting by water, either merchandise or passengers for compensation or hire, or in the course of business of the owner, lessee, or operator of the vessel.

(7) *Reporting situation* means a vessel movement by an operator that is required to be reported. Typical examples are listed in the instructions on the various ENG Forms. Five typical movements that are required to be reported by vessel operating companies include the following examples: Company A is the barge owner and the barge transports corn from Minneapolis, MN to New Orleans, LA, with fleeting at Cairo, IL.

(i) *Lease/Charter:* If Company A leases or charters the barge to Company B, then Company B is responsible for reporting the movements of the barge until the lease/charter expires.

(ii) *Interline Movement:* A barge is towed from Minneapolis to Cairo by Company A and from Cairo to New Orleans by Company B. Since Company A is the barge owner, and the barge is not leased. Company A reports the entire movement of the barge with an origin of Minneapolis and a destination of New Orleans.

(iii) *Vessel Swap/Trade:* Company A swaps barge with Company B to allow Company B to meet a delivery commitment to New Orleans. Since Company A has not leased/chartered the barge, Company A is responsible for filing the report. Company B is responsible for filing the report on the barge which is traded to Company A. The swap or trade will not affect the primary responsibility for reporting the individual vessel movements.

(iv) *Re-Consignment:* Barge is reconsigned to Mobile, AL. Company A reports the movements as originating in Minneapolis and terminating in Mobile. The point from which barge is reconsigned is not reported, only points of loading and unloading.

(v) *Fleeting:* Barge is deposited at a New Orleans fleeting area by Company A and towed by Company B from fleeting area to New Orleans area dock for unloading. Company A, as barge owner, reports entire movements from Minneapolis to the unloading dock in New Orleans. Company B does not report any barge movement.

(b) Implementation of the waterborne commerce statistics provisions of the River and Harbor Act of 1922, as amended by the Water Resources Development Act of 1986 (Pub. L. 99-662), mandates the following.

(1) *Filing Requirements.* Except as provided in paragraph (b)(2) of this section, the person or entity receiving remuneration for the movement of vessels or for the transportation of goods or passengers on the navigable waters is responsible for assuring that the activity report of commercial vessels is timely filed.

(i) For vessels under lease/charter agreements, the lessee or charterer of any commercial vessel engaged in commercial transportation will be responsible for the filing of said reports until the lease/charter expires.

(ii) The vessel owner, or his designated agent, is always the responsible party for ensuring that all commercial activity of the vessel is timely reported.

(2) The following Vessel Information Reports are to be filed with the Army Corps of Engineers, at the address specified on the ENG Form, and are to include:

(i) Monthly Reports. These reports shall be made on ENG Forms furnished upon written request of the vessel operating companies to the Army Corps of Engineers. The forms are available at the following address: U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center, Post Office Box 61280, New Orleans, Louisiana 70161-1280.

(A) All movements of domestic waterborne commercial vessels shall be reported, including but not limited to: Dry cargo ship and tanker moves, loaded and empty barge moves, towboat moves, with or without barges in tow, fishing vessels, movements of crew boats and supply boats to offshore locations, tugboat moves and movements of newly constructed vessels from the shipyard to the point of delivery.

(B) Vessels idle during the month must also be reported.

(C) Notwithstanding the above requirements, the following waterborne vessel movements need not be reported:

(1) Movements of recreational vessels.

(2) Movements of fire, police, and patrol vessels.

(3) Movements of vessels exclusively engaged in construction (e.g., piledrivers and crane barges). NOTE: however, those movements of supplies, materials, and crews to or from the construction site must be timely reported.

(4) Movements of dredges to or from the dredging site. However, vessel movements of dredged material from the dredging site to the disposal site must be reported.

(5) Specific movements granted exemption in writing by the Waterborne Commerce Statistics Center.

(D) ENG Forms 3925 and 3925b shall be completed and filed by vessel operating companies each month for all voyages or vessel movements completed during the month. Vessels that did not complete a move during the month shall be reported as idle or in transit.

(E) The vessel operating company may request a waiver from the Army Corps of Engineers, and upon written approval by the Waterborne Commerce Center, the company may be allowed to provide the requisite information of the above paragraph (D), on computer printouts, magnetic tape, diskettes, or alternate medium approved by the Center.

(F) Harbor Maintenance Tax information is required on ENG Form 3925 for cargo movements into or out of ports that are subject to the provisions of section 1402 of the Water Resources Development Act of 1986 (Pub. L. 99-662).

(1) The name of the shipper of the commodity, and the shipper's Internal Revenue Service number or Social Security number, must be reported on the form.

(2) If a specific exemption applies to the shipper, the shipper should list the appropriate exemption code. The specific exemption codes are listed in the directions for ENG Form 3925.

(3) Refer to 19 CFR part 24 for detailed information on exemptions and ports subject to the Harbor Maintenance Tax.

(ii) Annual Reports. Annually an inventory of vessels available for commercial carriage of domestic commerce and vessel characteristics must be filed on ENG Forms 3931 and 3932.

(iii) Transaction Reports. The sale, charter, or lease of vessels to other companies must also be reported to assure that proper decisions are made regarding each company's duty for reporting vessel movements during the year. In the absence of notification of the transaction, the former company of record remains responsible until proper notice is received by the Corps.

(iv) Reports to Lockmasters and Canal Operators. Masters of self-propelled non-recreational vessels which pass through locks and canals operated by the Army Corps of Engineers will provide the data specified on ENG Forms 3102b, 3102c, and/or 3102d to the lockmaster, canal operator, or his designated representative in the manner and detail dictated.

(c) *Penalties for Noncompliance.* The following penalties for noncompliance can be assessed for offenses and violations.

(1) Criminal Penalties. Every person or persons violating the provisions of this regulation shall, for each and every offense, be liable to a fine of not more than \$5,000, or imprisonment not exceeding two months, to be enforced in any district court in the United States within whose territorial jurisdiction such offense may have been committed.

(2) Civil Penalties. In addition, any person or entity that fails to provide timely, accurate, and complete statements or reports required to be submitted by this regulation may also be assessed a civil penalty of up to \$2,500 per violation under 33 U.S.C. 555, as amended.

(3) Denial of Passage. In addition to these fines, penalties, and imprisonments, the lockmaster or canal operator can refuse to allow vessel passage.

(d) *Enforcement Policy.* Every means at the disposal of the Army Corps of Engineers will be utilized to monitor and enforce these regulations.

(1) To identify vessel operating companies that should be reporting waterborne commerce data, The Corps will make use of, but is not limited to, the following sources.

(i) Data on purchase and sale of vessels.

(ii) U.S. Coast Guard vessel documentation and reports.

(iii) Data collected at Locks, Canals, and other facilities operated by the Corps.

(iv) Data provided by terminals on ENG Form 3926.

(v) Data provided by the other Federal agencies including the Internal Revenue Service, Customs Service, Maritime Administration, Department of Transportation, and Department of Commerce.

(vi) Data provided by ports, local facilities, and State or local governments.

(vii) Data from trade journals and publications.

(viii) Site visits and inspections.

(2) Notice of Violation. Once a reporting violation is determined to have occurred, the Chief of the Waterborne Commerce Statistics Center will notify the responsible party and allow 30 days for the reports to be filed after the fact. If the reports are not filed within this 30-day notice period, then appropriate civil or criminal actions will be undertaken by the Army Corps of Engineers, including the proposal of civil or criminal penalties for noncompliance. Typical cases for criminal or civil action include, but are not limited to, those violations which are willful, repeated, or have a substantial impact in the opinion of the Chief of the Waterborne Commerce Statistics Center.

(3) Administrative Assessment of Civil Penalties. Civil penalties may be assessed in the following manner.

(i) Authorization. If the Chief of the Waterborne Commerce Statistics Center finds that a person or entity has failed to comply with any of the provisions specified herein, he is authorized to assess a civil penalty in accordance with the Class I penalty provisions of 33 CFR part 326. Provided, however, that the procedures in 33 CFR part 326 specifically implementing the Clean Water Act (33 U.S.C. 1319(g)(4)), public notice, comment period, and state coordination, shall not apply.

(ii) Initiation. The Chief of the Waterborne Commerce Statistics Center will prepare and process a proposed civil penalty order which shall state the amount of the penalty to be assessed, describe by reasonable specificity the nature of the violation, and indicate the applicable provisions of 33 CFR part 326.

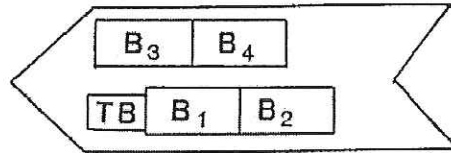
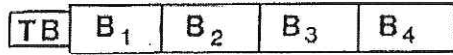
(iii) Hearing Requests. Recipients of a proposed civil penalty order may file a written request for a hearing or other proceeding. This request shall be as specified in 33 CFR part 326 and shall be addressed to the Director of the Water Resources Support Center, Casey Building, Fort Belvoir, Virginia 22060-5586, who will provide the requesting person or entity with a reasonable opportunity to present evidence regarding the issuance, modification, or revocation of the proposed order. Thereafter, the Director of the Water Resources Center shall issue a final order.

(4) Additional Remedies. Appropriate cases may also be referred to the local U.S. Attorney for prosecution, penalty collection, injunctive, and other relief by the Chief of the Waterborne Commerce Statistics Center.

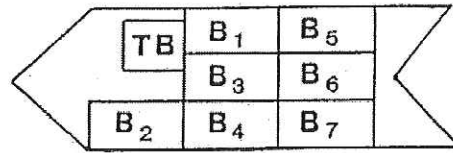
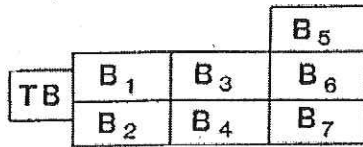
[56 FR 13765, Apr. 4, 1991]

RECOMMENDED LOCKING CONFIGURATIONS

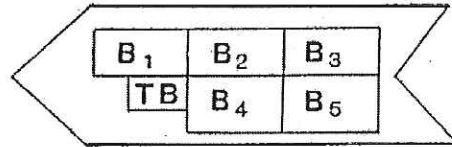
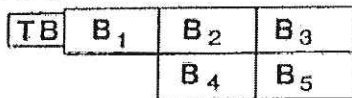
SETOVER (UNIT TOW)



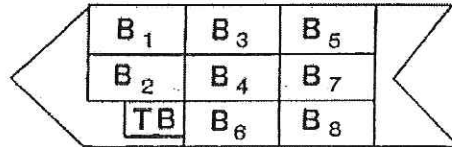
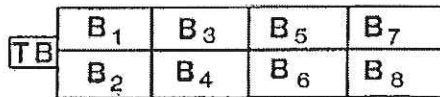
SETOVER (7 BARGE TOW & WIDE BOAT)



KNOCKOUT



JACKKNIFE



KEY

