

# Wanted: Illinois & Michigan Canal Workers

## Only Hard Workers Need Apply

**OVERVIEW:** There were many people with many different types of jobs that were important to the building and operation of the Illinois & Michigan Canal. Students will be dividing into pairs to learn more about their assigned part in those building and operating processes. They will then enact, using student made or written stories/reports/charts/ diagrams/ maps/dioramas/models, their role in the development of the Illinois & Michigan Canal.

**Grade Level** 5-10

**Duration** 3 class periods and homework time

### **Illinois Learning Standards**

Social Science: 16 Science: 11, 13 Language Arts: 3, 4

### **Geography Themes**

Places: Physical and Human Characteristics

Human and Environmental Interaction

### **National Geography Standards**

**Element:** Places and Regions

**Standard 4:** The geographically informed person knows and understands the physical and human characteristics of place.

**Element:** Human Systems

**Standard 10:** The geographically informed person knows and understands the nature and complexity of Earth's cultural mosaics.

**Standard 11:** The geographically informed person knows and understands the patterns and networks of economic interdependence on Earth's surface.

**Element:** Environment and Society

**Standard 14:** The geographically informed person knows and understands how human actions modify the physical environment.

### **Cross Curricular Connections**

History Art Drama Language Arts Science

### **Objectives:**

Students are expected to:

1. analyze readings and diagrams for descriptions of the different activities/construction requirements of their assigned topic.
2. create a short multi-media report on their assigned topic (oral and visual).
3. perform/present their information in a dramatic way in order to paint a picture for their classmates of life along the Illinois & Michigan Canal in the late 1800's.

### **Suggested Teaching Procedure**

#### **Advanced Preparation for the Lesson**

1. Make two copies of each of the Information Sheets for Student Reenactors. There should be enough assignments so that each part can be assigned to two students, however, each student should have their own Information Sheet. Make one copy per student of the Action Plan for an Illinois & Michigan Canal Project.
2. Make copies of the Illustrations, Locking Through and Docked Canal Boats in the form of pictures to put on the wall/overheads.
3. If you decide to provide part of the materials for the projects, collect them prior to introducing the lesson. Have blank transparencies and transparency markers available in case students choose that way of presenting information.

### **Opening the Lesson**

1. Ask students if any of them have ever attended a Civil War (or any other type of) Reenactment? Have students who have been to a reenactment describe the activities they witnessed. Discuss the importance to reenactors of authentic costumes, weapons, living arrangements, etc.

2. Inform students that in this lesson on the Illinois & Michigan Canal, they will be staging a reenactment of their own. Even though they cannot put the effort, time and money into their reenactment that hobbyists do, they can attempt to be as authentic as possible.

3. Read over the list of jobs they will be playing using the Student Materials list. As a class, brainstorm different ways they can present the information and visuals to the class. The ideas should include, but not be restricted to student made or written stories/reports/charts/diagrams/maps/dioramas/models.

4. Write all of the ideas on the board. Then, go back and discuss which ideas they would be able to carry out. Have students copy the revised list from the board.

### **Development of the Lesson**

1. Assign two students to every job and give them their Information Sheet(s). As you assign students to a job, give the class an overview of what everyone will be doing by briefly showing the diagrams/reading short excerpts from the Information Sheets.

2. The most difficult jobs for students will be the Lock Builders, the Gate Builders, and the Aqueduct Builders. Assign those jobs to students with a knack for figuring out how things operate.

3. Some groups may choose to work together but they should do so only if it gives a more coherent picture of an activity. Natural combinations would be Lock Builders and Gate Builders; Engineers, Bridge Builders and Aqueduct Builders; and Packet Boat Crew and Passengers. Lock and Gate Builders should be careful not to use the information that the lock Tender will be using to explain their job. Students should be free to discuss their jobs with other pertinent groups in order to understand their job more completely. Students may need to do some more research to add to the information provided.

4. Ideas for students of effective ways to present their information might be:

*Engineers*-Students could build a cross section of the canal using a shoe box with one end cut out and covered with clear plastic. The model could be made with dirt. Another more challenging idea would be to make a mock-up of a larger section of the Canal.

*Lock Builders*-Students could make a lock using a shoebox and even attaching moving parts.

*Gate Builders*-Students could make a large poster of the gates so that the butterfly valve actually moves. It is the most crucial part that they will need to demonstrate so that other students can understand the operation of the lock.

*Bridge Builders*-Students could build different types of bridges that were used to span the Illinois & Michigan Canal.

*Aqueduct Builders*-Students could make a replica of an aqueduct and explain how it works.

*Canal Laborers*-Students could build a model of the clapboard shacks of Corktown, make a flow chart showing what happened to Irish immigrants who came to America to work, or make a graveyard with headstones showing the names of those who died building the Canal.

*Lock Tender*-Students could build a lock tenders house to go with a model of the canal or do a skit of the lock tenders life.

*Mule or Horse Team Drivers*-Students could demonstrate the process used for pulling canal boats especially what happened when boats had to pass each other.

*Lake Boat Crew, Grain Boat Crew, Stone Boat Crew, Steamboat Crew, or Packet Boat Crew*-Students could build a replica of the canal boats.

*Packet Boat Passengers*-Students could write and perform a skit or make a diagram of the interior of the boat both in the day and when prepared for sleeping.

*Townspeople*-Students could reenact a town meeting where the townspeople were trying to decide what types of activities and businesses to set up to entertain passengers who might be stopping over in their town on a Sunday.

5. Make sure students understand that they must have their plan of action approved by you before they begin their project. Pass out the Action Plan for an Illinois & Michigan Canal Project to students. Go over the instructions with them and discuss how projects will be graded. Assign a date when the student projects/skits/etc. are due.

6. Give students the rest of the class period plus the following class period to make plans on how to present or to reenact their assigned job. After that, they will need to complete their project/practice their reenactments on their own time.

## **Concluding the Lesson**

1. On the date that projects/skits are due have students present the material in the order listed in Development #4. In that way, they should be able to visualize the canal from the initial stages of building to the final stages of operation.
2. When they are through with the presentations, find someplace to display their projects so they can be viewed by other students in the school, if possible.

## **Grade Level Adaptations**

5th grade

This plan should be usable as it is by fifth grade classes. The projects may need to be made a little easier or the requirements for a grade may be a little less stringent.

## **Assessment**

Students should be graded on their project separately for 1) the finished project, 2) presentation, and 3) effort.

## **Extensions**

This could be turned into a class play or tour that could be performed for other classes.

If you have a class that works extremely well together/you have quite a bit of time to allot to the project, students could plan and construct a full size/living diorama.

## **Special Information**

Philip Vierling's book, Hiking the Illinois & Michigan Canal and Exploring its Environs, was the source of much of the material used in this lesson. The text is very readable. The sets of four books contain very detailed and intricate hiking maps as well as detailed information about towns along the route from LaSalle to Ottawa. If you can find this set of books in your library, it is an excellent source for more information that could not be included due to space constraints.

## **Sources**

Boyer, Edward, River and Canal, New York, New York, Holiday House, 1986.

Drago, Harry Sinclair, Canal Days in America, New York, New York, Bramhall House, 1972.

Hayden, Martin, The Book of Bridges, New York, New York, Galahad Books, 1976.

Illinois and Michigan Canal, Pamphlet copy put out by the Illinois Historic Preservation Agency and Illinois State Historical Society, no date given.

O'Donnell, Kevin, The Illinois and Michigan Canal, The Nature of Illinois, Chicago, Illinois, The Nature of Illinois Foundation, Volume V, Number 1, 1990.

Vierling, Philip E., Hiking the Illinois & Michigan Canal and Exploring its Environs, Chicago, Illinois, Dandellis Printing, 1986.

## **Materials**

*Students and Teachers:*

Name \_\_\_\_\_ Class \_\_\_\_\_

### **Action Plan for an Illinois & Michigan Canal Project**

Read over the Information sheet you were given and using the brainstorming list you copied from the board, decide with your partner how you will present the information. Choose three of the ideas from the list of ideas of your own and answer the questions below for each.

#### **Idea #1**

What is the idea? \_\_\_\_\_

What are some things you could do to really make your job/part interesting?

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#### **Idea #2**

What is the idea? \_\_\_\_\_

What are some things you could do to really make your job/part interesting?

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#### **Idea #3**

What is the idea? \_\_\_\_\_

What are some things you could do to really make your job/part interesting?

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Choose the idea you think would be the most interesting and that you think you could carry out. Circle that idea# on this sheet. Take it to your teacher for approval. Explain your idea to her/him and have them sign this sheet if they approve. Turn this sheet in with your final project.

Date Due \_\_\_\_\_

Teacher's initials \_\_\_\_\_



## Information for Engineers

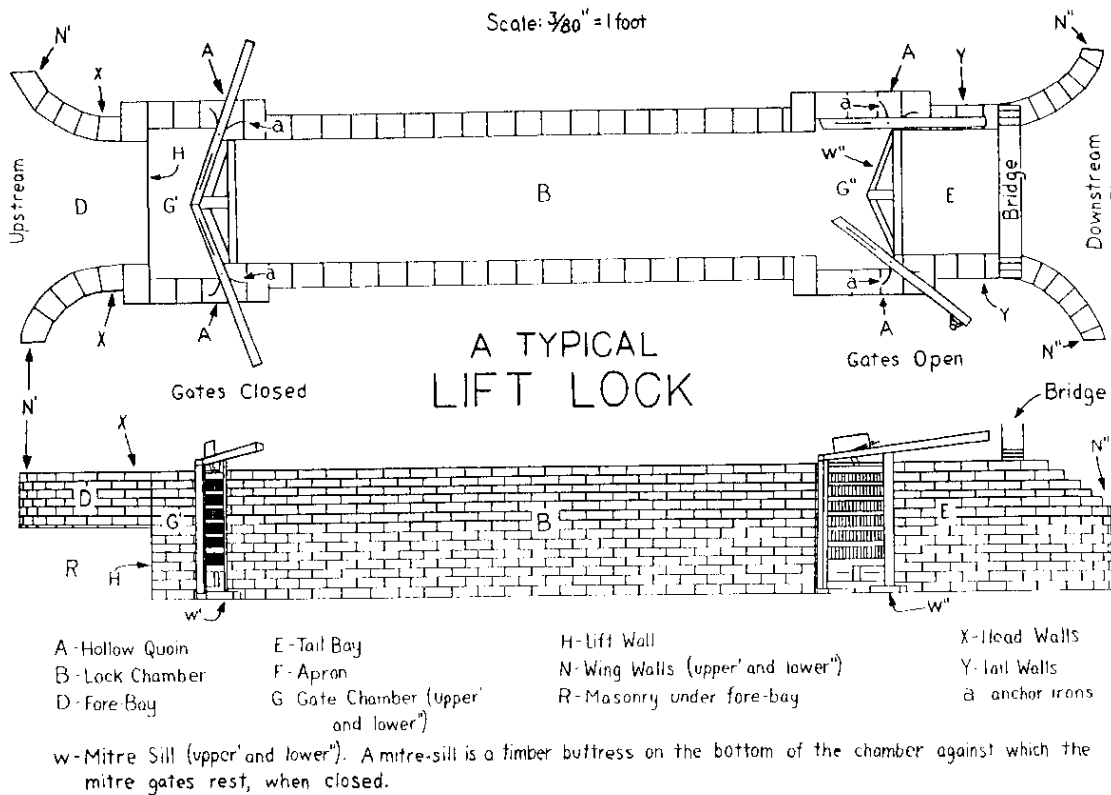
Digging the Canal. Very little has been written on the actual method by which the canal was excavated, but one sentence in the 1840 "Report of the Commissioners" briefly summarizes the entire process: "The mode of conducting the work has been in most cases to excavate to the bottom and then advance by making and falling. "In excavating to the bottom the pick and shovel were certainly used in the grubbing of sod and clay; a sledge hammer, chisel and wedge for quarrying stratified rock; and gunpowder for blasting through solid rock. ("Stratified rock" was considered rock that could be quarried without great difficulty.) Costs for the excavation varied according to the material removed: For hard clay, 65¢ to 75¢ per cubic yard; for stratified rock, about \$1.55 per cubic yard; and for solid rock, approximately \$2.55 per cubic yard.

Once loosened, the soil and clay were loaded into barrows and carried or wheeled out of the excavation. Rock was lifted out by cranes. All was loaded into carts that ran on railroad tracks and hauled from the area by teams of horses or mules. If the blocks of stratified rock were two to six inches thick, they were often used in some form of construction. For more substantial building projects, however, quarries had been opened along the line, where stone of a good quality had been mined. Water lime, or hydraulic cement, also necessary in construction, was found in inexhaustible quantities at Lockport and at several places along the western division.

Where shale was the type of rock to be excavated, contractor Jeremiah Crotty had a novel solution. Using a giant plow of his own design, pulled by four yoke of oxen, he literally plowed up the solid rock. Running day and night, with two sets of teams and men, he did ten times the amount of work that others did with the same outlay.

Because many of the canal contractors had little experience in building or construction, some of their estimates for the work fell short of the actual costs. When such occurred, many of these contractors abandoned the work, suffered a change in their prosecution of the work, sold their contract to another, or took other measures to avoid their obligation. (Other causes of contract abandonment were a failure to begin in the proper period of time, or not having enough capital to commence operations.) Ultimately contracts were awarded only to those firms having previous experience in excavating the canal, and not necessarily on the basis of the lowest bid. In fact, where rock cutting was part of the expected excavation, the commissioners awarded the contracts only to those firms whom they felt could reasonably complete the work at their projected estimate.

# Information for Lock Builders



Lock 14 is a typical lift lock with a narrow inner "chamber" measuring 110 feet long by 18 feet wide, and having a minimum water depth of 56 inches. At both ends of the chamber were two wooden gates, each 19.75 feet high (at their mitre-posts) by 11 feet wide. Because the gates were wider than the chamber they served, when closed they formed of "V-shaped" barrier pointing upstream. (The floor of the chamber was covered with oak planking.)

To lock a boat through--in an upstream direction--the lock-tender would first open one of the two downstream gates, across the canal on the closed upstream set of gates (or a bridge, if present), and then open the second of the downstream pair. The boat now entered the chamber and the gates closed in reverse order.

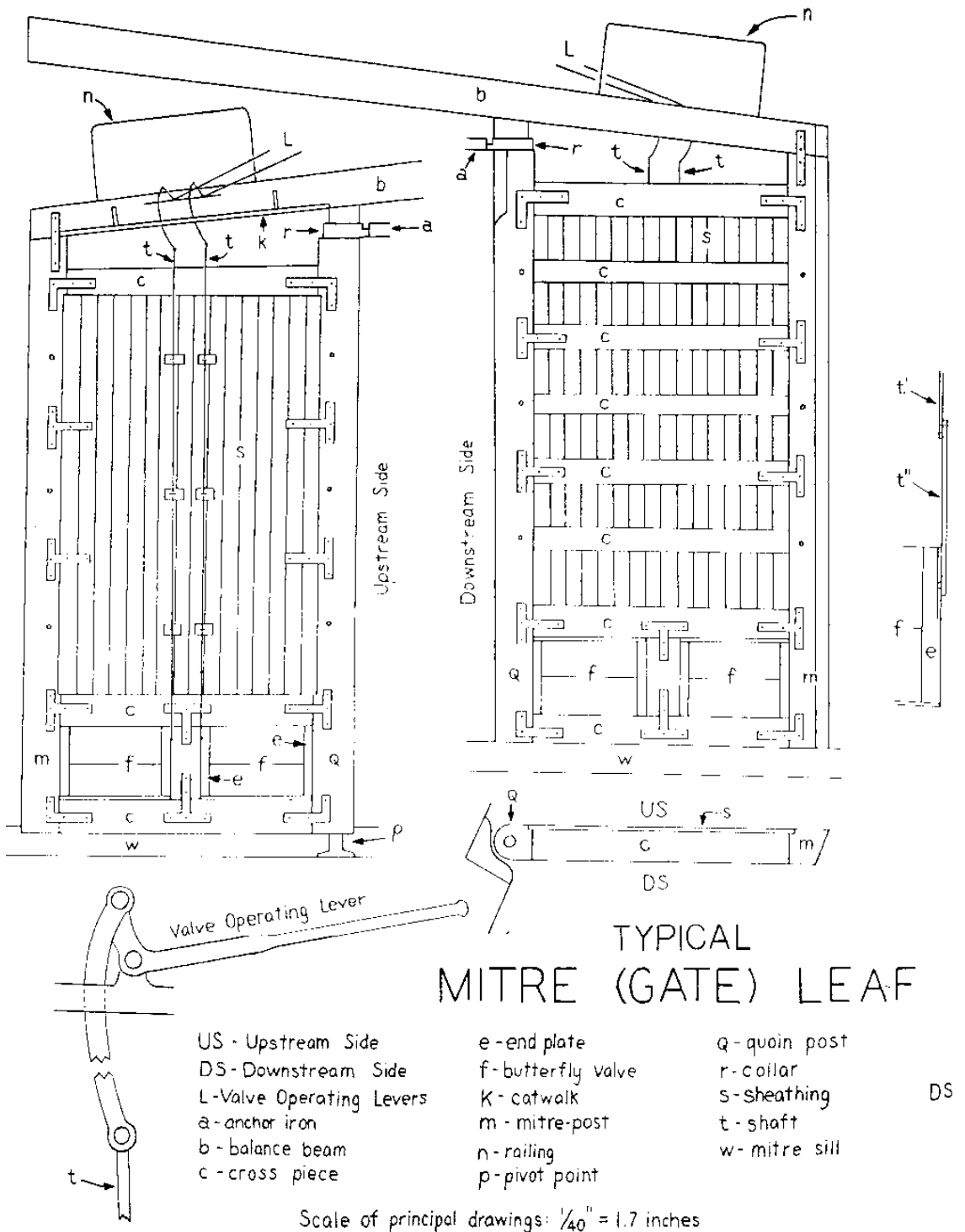
Moving to the upstream set the lock-tender now opened the butterfly valves (by way of control levers atop the gates) allowi

ng water to enter the chamber. When the level of that water reached the level of the water in the upstream channel, these valves were then closed and the upstream gate subsequently opened.

It took about 15 minutes to lock boats through, but only one boat could be locked through at a time. In contrast to the lift locks the canal also had "guard" locks, which were locks that passed boats through with no substantial change in water levels. Guard locks were constructed at dams when it was necessary for a canal, sharing an impoundment with a river, to exit from that river (see map 3 on page 7). The guard lock not only controlled the amount of water passing into the canal, but also prevented runoff from washing into its channel.

**(Vierling 1986,40-41, 45)**

# Information for Gate Builders



The lock's gates were of the simple "Mitre" type, framed by 12" X 12" timbers and diagonally (or vertically) sheathed on their upstream side. In the lower ¼ of each gate th

ere were two wooden "butterfly" valves by which water was admitted to (or from) the chamber after the gates were closed. (At Lock 14, a Hidreth Quadrant Slide Gate is used in place of the butterfly valves. This is a slightly curved, long, rectangular, iron gate, which slides up or down to regulate the water flow.) Each of the "Mitre" gates turned on a pivot point (about one-foot square) and was operated by pushing on the end of the 26-footlong balance-beam forming the top of the gate.

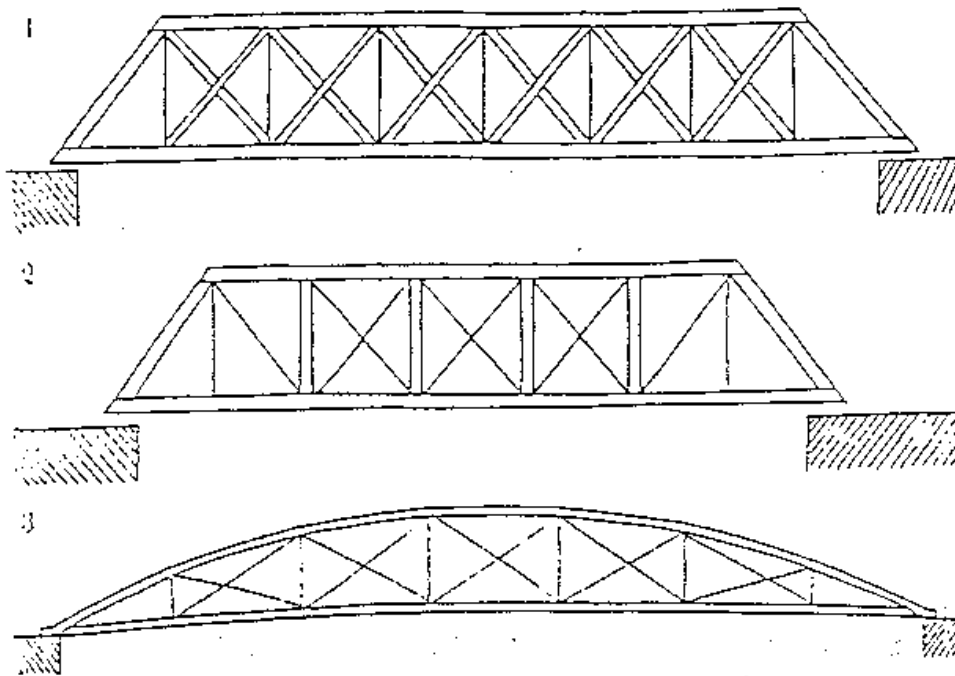
**(Vierling 1986, 42,45)**



## Information for Bridge Builders

Bridges. When opened in 1848, there were 25 bridges crossing the canal, each at a minimum height of 11.6 feet above the water. All were of the "Howe" truss type and had spans of 70 feet and upwards. In the Howe truss all the vertical members of the bridge are in tension while the inclined members are in compression. The vertical members were usually iron or steel rods while the inclined members (as well as the upper and lower chords of the bridge) were made of timber.

(The truss seen at the railroad bridge crossing the canal in Utica is of the "Pony" type. This is a truss low in height, spanning distances of between 30 and 80 feet.)



Above In North America many patent truss designs were developed during the transition from timber, through iron, to steel. (1) William Howe's patent was a timber

truss strengthened with vertical iron tension rods; (2) Thomas Pratt reversed this using diagonal tension members. His design became standard in steel trusses; (3) Squire Whipple's

bowstring truss was essentially similar in principle to Stephenson's High Level Bridge

(Hayden 1976, 83)

At one time or another at least four different bridges crossed the canal at Chestnut. In 1876 there was a swing bridge, in 1891 a 115-foot long draw bridge,

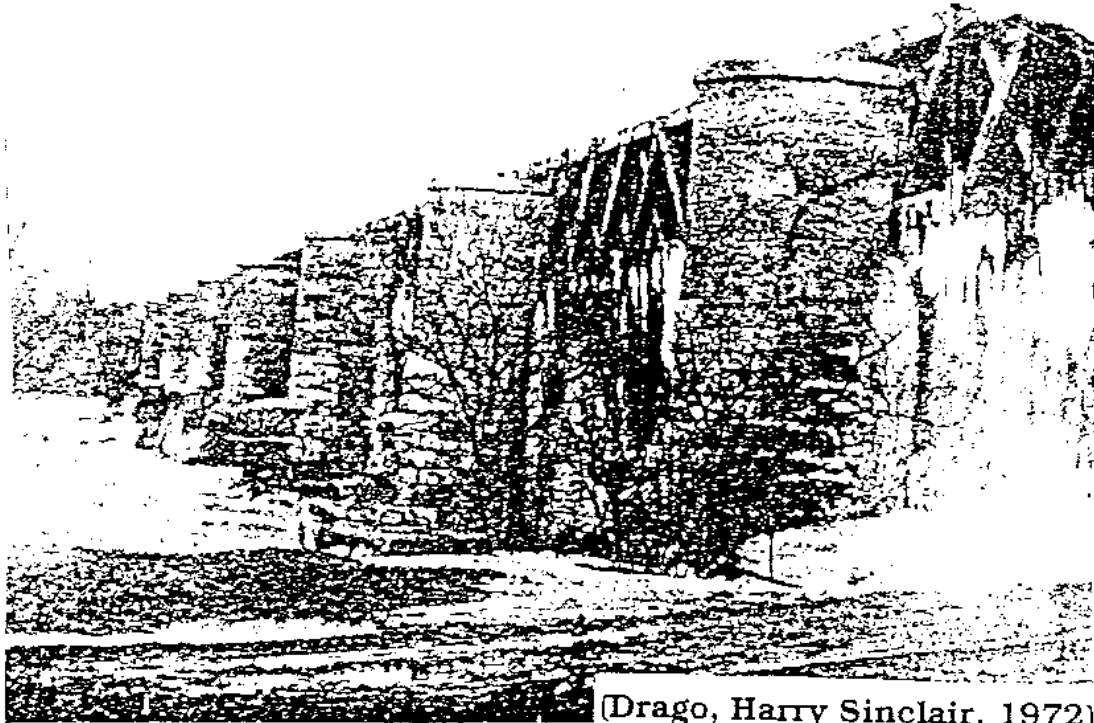
in 1907 an iron swing bridge, and in 1930 a hand-operated swing bridge constructed at cost of \$23,440.

The Walnut Street bridge of the "Chicago, Burlington and Quincy Railroad" has seen at least two types: A drawbridge in 1891 and an iron swing bridge in 1907.

Both LaSalle and Columbus streets have had at least three different bridges. At LaSalle Street there was a wooden draw bridge in 1891, an iron swing bridge in 1907, and the present concrete bridge. At Columbus Street there was a turn bridge in 1876, a drawbridge in 1891 and 1907, and the present concrete bridge.

**(Vierling 1986, 52)**

## Information for Aqueduct Builders



Fox River Aqueduct. The aqueduct crossing the Fox River was constructed about 1840-42 by the "David Sanger & Sons" construction company of Ottawa. Sanger, originally from Massachusetts, came to Lockport, Illinois, in 1836, and then to Ottawa in 1838. (He was awarded the contract to build the aqueduct on June 5, 1838.) Although construction may have commenced in 1839, by the end of 1840 the aqueduct's piers and abutments were only partially completed, and its wooden superstructure not yet begun. Since little work was done on any part of the canal in 1843, there was no mention of the aqueduct in 1844, it is assumed it was completed in 1841 or 42.

It was the longest aqueduct of the canal: 464 feet in total length (about 385 feet over open water), bridging the river in eight spans of about 50 feet each, supported by seven piers constructed of Joliet limestone. Both its piers and abutments were built on solid rock, with its west abutment against the rock face forming that side of the river. The river's depth at the construction site was only two or three feet deep. (The superstructure of the aqueduct, originally of wood, was rebuilt in 1901, and later replaced with an iron trough.)



## Information for Canal Laborers

The Irish Rebellion. During the early days of canal construction, a battle, of sorts, occurred in this vicinity, between Buffalo Rock and Ottawa, in which several men were killed, many wounded, and about 60 arrested. In the few resources detailing this event there are many contradictions and ambiguities which have only served to cloud the issue. Taking all these sources into consideration, as well as other information pertinent to the situation, the author proposes the following interpretation of the incident known as the "Irish Rebellion. "

In 1837 or '38, a quarrel between the Irish Catholic laborers (called the "Corkonians") and the Protestant Irish laborers ( called the "Far-Downs"), spilled over into the labor camps between Marseilles and LaSalle. Apparently a fight between the two factions, at Marseilles, ended with the Protestants being thoroughly beaten. Elated by their victory, The Corkonians took their bravado toward Ottawa where they commandeered a ferry boat and crossed the Fox River. At Ottawa's "Kerry Patch" they were joined by Edward Sweeney and 200 other Irishmen spoiling for a fight. Flushed with power and vowing to drive out the Far-Downs, the mob set off down the line, toward Peru, destroying the shanties of (and maltreating) any Far-Downs they came upon along the way.

In the meantime, Sheriff Woodruff, at Ottawa, sent a warning to his deputy, Zimri Lewis, in Peru, and himself began gathering a posse. Lewis, forewarned, immediately organized a noisy reception for the Corkonians, who, after a second day of unrestrained excesses, were surprised by the boisterous resistance than now confronted them. Intimidated by the noise, if not by the numbers, Sweeney's mob retreated to Camp Rock (Split Rock) where they spent their frustrations on contractor Durgan's employees. (Assuming the town to be secure, Lewis then spent the night recruiting additional men and arms.)

With the coming of the third day the Corkonians continued their retreat toward Ottawa, where at some point below Buffalo Rock they met Sheriff Woodruff's posse of 80 men--settlers and town folks--coming down the line. Woodruff read them the riot act and demanded that they lay down their arms and surrender. To this the mob responded with a charge. Although Major D. F. Hitt and M. E. Hollister had attempted to organize the posse into a quasi-

military group, the townsmen broke and ran, and by such the spirits of the malcontents were rejuvenated.

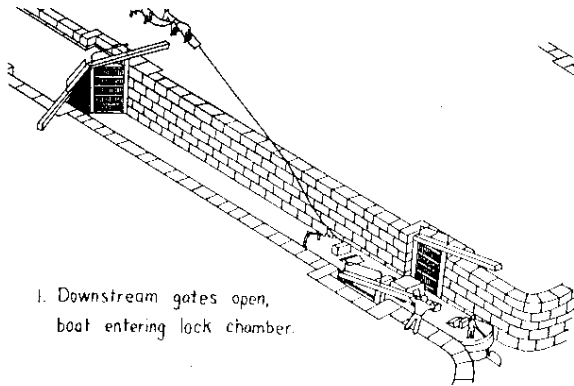
With the morning of that third day, Lewis' forces were joined by a company of Americans and Far-Downs led by contractor William Byrne, and together they set off up the line in-pursuit of Sweeney's Corkonians. Captain Ward B. Burnett had been appointed their military leader, but Lewis soon acceded him to that role. Upon nearing Buffalo Rock they certainly must have come upon remnants of Woodruff's posse, where, after hearing of their defeat, Lewis determined his own future course of action.

The rioters were overtaken between Buffalo Rock and Ottawa, and Lewis repeated his superior's demands. Again the Corkonians answered with defiance and hostile demonstrations, but instead of running in fear Lewis' men poured a volley into their midst and followed it with a cavalry charge by those who were mounted. This time the Corkonians broke and ran, scattering in all directions. Those fleeing toward the north bluffs were pursued by men on horseback; those fleeing toward Buffalo Rock were followed by those afoot. Some jumped into the river and were shot while in the water.

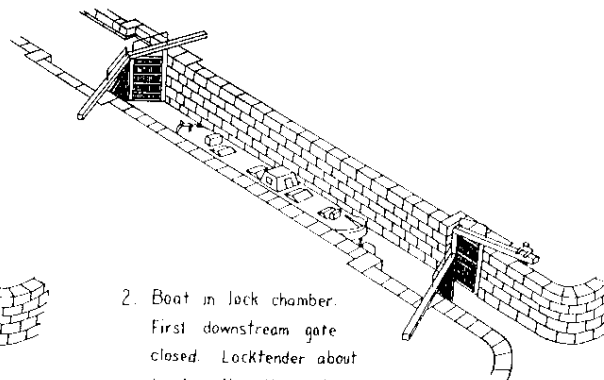
In all, about ten to fifteen were killed, many wounded, and many more captured. Some sixty were marched off to Ottawa where they were held for a while and then released for bail on their own recognizance. Thus ended the " Irish Rebellion. "

**(Vierling 1986, 249-250)**

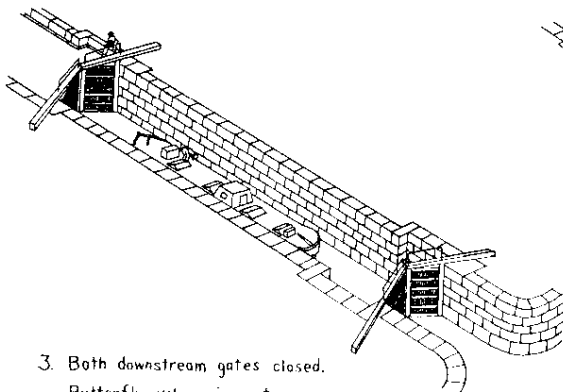
# Information for Locktender



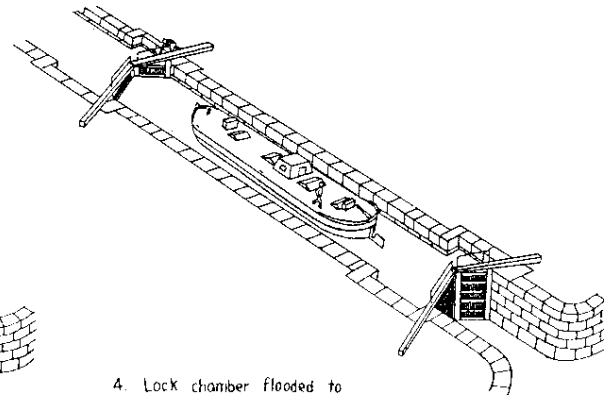
1. Downstream gates open,  
boat entering lock chamber.



2. Boat in lock chamber.  
First downstream gate  
closed. Locktender about  
to close the other gate.

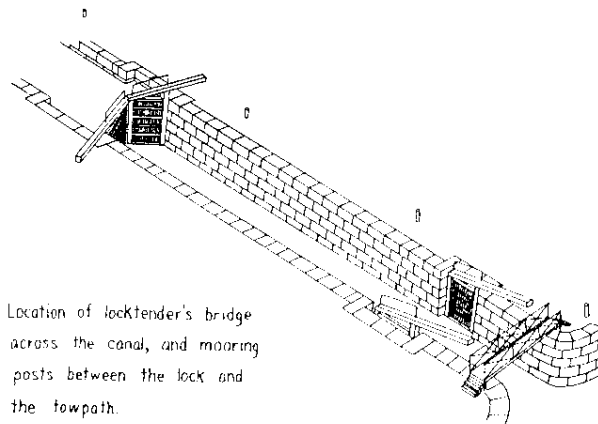
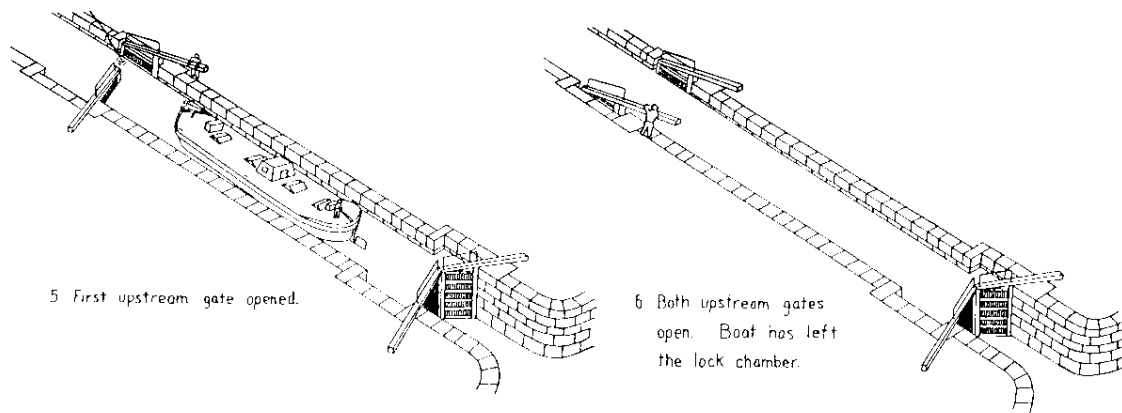


3. Both downstream gates closed.  
Butterfly valves in upstream  
gates opened.



4. Lock chamber flooded to  
level of upstream reach.  
Butterfly valves in upstream  
gates closed.

## LOCKING THROUGH A LOCK GOING UPSTREAM TOWARD CHICAGO



(Vierling 1986, 43-44)

## How an Illinois and Michigan Canal Lock Worked

Boats entered or left an I & M Canal lock through two large wooden gates that opened like double doors at either end of the lock. But the water that raised or lowered boats within the lock flowed through the small iron valve gates. There was one such valve gate in the bottom quarter of each of the four large wooden gates on an I & M Canal lock.

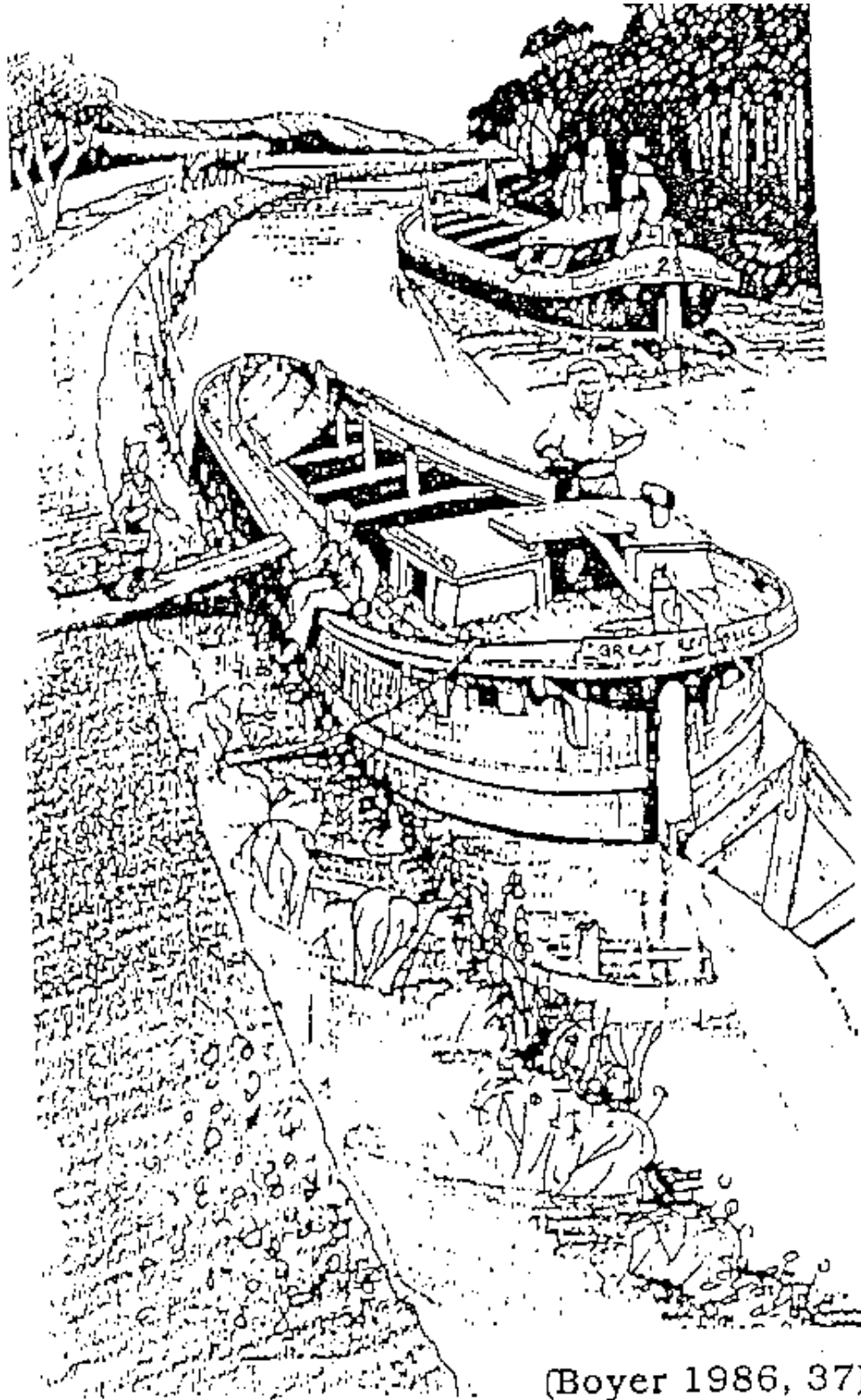
When "locking through" a boat approaching from upstream, the locktender began with the large wooden gates at the lock's downstream end closed and those at the upstream end wide open. After the boat moved into the lock, the locktender closed the upstream gates behind it. He then opened the downstream valves gates, allowing gravity to drain water from the lock chamber into the downstream pool. Within a few minutes, the water level inside the lock chamber was the same as that downstream from the lock, and the locktender could close the valve gates and open the large downstream gates, enabling the boat to leave the lock. When a "locking through" a boat approaching from downstream, the locktender simply reversed the process and allowed water to enter the lock from the upstream level via the two valve gates located in the upstream lock gates.

**(Illinois and Michigan Canal, no pp.)**

*Historic Illinois* December 1979

Mary Yeater Rathbun

## Information for Mule or Horse Team Drivers



(Boyer 1986, 37)

Towlines and towing. To pull boats along the canals a tow-rope about 270 to 350 feet long had one of its ends attached to the boat and the other end to a team of draft animals. The boat-end of the rope was actually attached to a "cleat," about 15 feet aft of the bow, on the gunwale facing the towpath, and the draft team-end to a strong, wooden bar, called a "single-tree," placed between the team members. Two to five draft animals were hitched to the single-tree by chain-traces running from the ends of the bar to the animal's harnesses. Thus when the animals pulled the single-tree, the single-tree pulled the towrope, and that towrope pulled the boat. Progress, however, was slow as speeds greater than five miles per hour produced a wake that would undermine the banks. Speeds greater than five miles per hour were therefore not allowed.

Horses were used to pull passenger boats; mules to pull freight boats. Generally three horses were attached to each passenger boat (packet boat), and three to five mules to each freight boat. Moving at a brisk, fast trot, the horses pulled the packets at about five miles per hour, while the slower mules pulled the freight boats at speeds of 1½ to 3 miles per hour. Each working period was called a "trick," and for the mules the tricks were about six hours long. To change the teams at the end of each trick, mule barns were located near every lock, or at ten to fifteen mile intervals when the distance between the locks was great.

When under tow, the towline pulling on the cleat would tend to draw the boats away from the towpath. To keep the barge in the center of the channel a "rudder-man" stood with his back to the tiller and his feet braced against wooden cleats nailed to the deck. To guide the draft animals, "mule tenders" either walked along the towpath or rode one of the animals. If riding, the last mule was saddled (the "saddlemule") and the others driven from that position. Five mules were needed against the current (toward Chicago), fewer with the current (toward LaSalle). When against the current the speed was about two miles per hour.

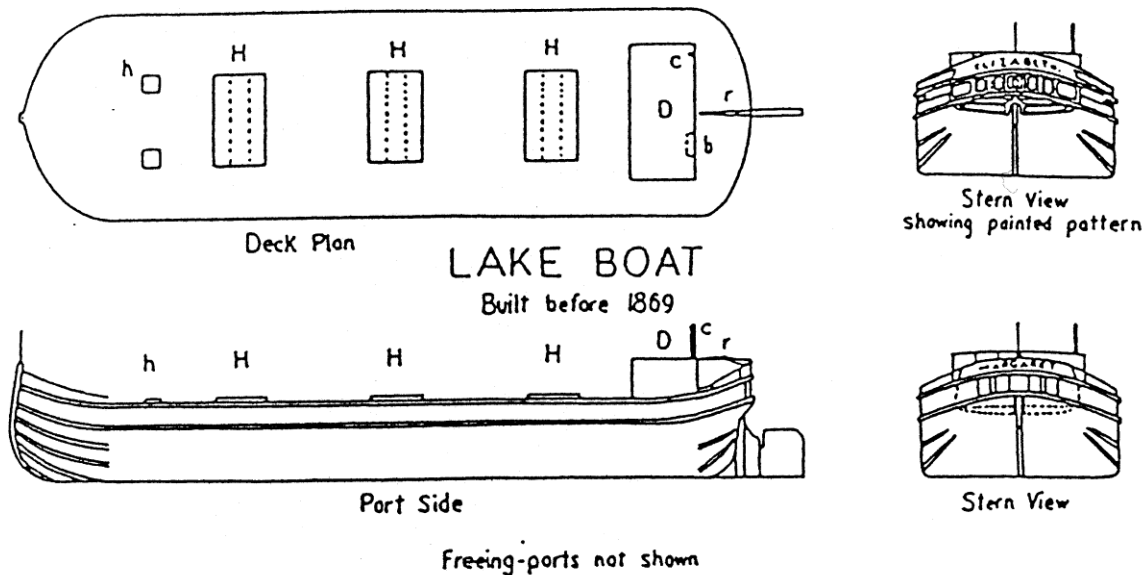
When two boats were to pass each other, the upstream (toward Chicago) boat had the right-of-way, but if one was a packet, then the packet had the right-of-way. To make a pass, the downstream team stepped away from the water and stopped. The downstream boat, however, continued drifting forward causing its towrope to go slack in the water and sink to the bottom. While this was occurring the steersman of the downstream boat guided it to the berm bank where it remained until the pass was completed. The upstream team simply stepped over the slack rope and the upstream boat floated over the same. That completed the pass.

**(Vierling 1986, 47-48)**





## Information for Lake Boat Crew



- |                    |                   |                |
|--------------------|-------------------|----------------|
| b - Bulkhead hatch | f - Fenders       | k - Cleats     |
| c - Chimney        | h - Hatch         | r - Tiller     |
| D - Deckhouse      | H - Cargo hatches | t - Tool chest |

Adopted from photographs in resource items #168, 251, 258, 260, and 262

Scale: 1 inch = 17.9 feet

Canal boats. Although many of the commercial boats using the canal were dissimilar in appearance, their dimensions were more uniformly standardized. All were no larger than 105 feet long by 17½ feet wide, and had a hull 6½ feet high, drawing a fully laden draft of four feet eight inches. All were also built close to the water with mostly straight lines from bow to stern. The deckhouses and hatches were suppressed in height, for easy passage under low bridges, and the boat's rails were of row of elongate freeing-ports along each gunwale. These size restrictions, of course, limited any boat's cargo capacity to a little over 100 tons. Although packets were built higher, they too were limited in height by the overhead obstructions. (Some of the steamboats had retractable smokestacks for passing under low bridges.)

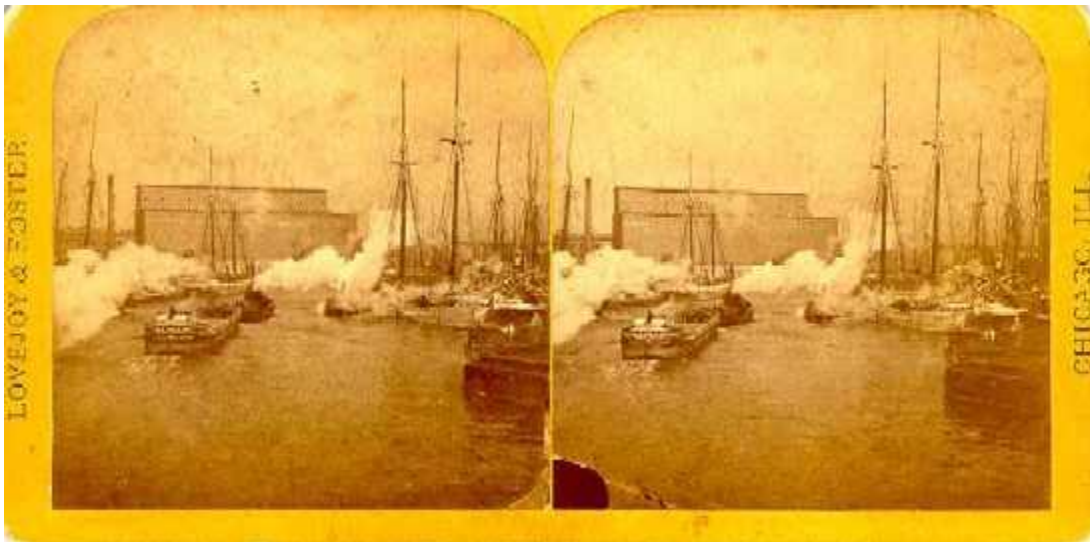
The crew of the freight boats included the captain, a steersman and a bowsman; while on most packets there was the captain, two helmsmen and a cook. Freight boats also h

and only one driver (to drive the animals along the towpath) while the packets had two.

Of the freight boats there were three basic types: The Lake Boat, the Grain Boat, and the Stone or Lime boat.

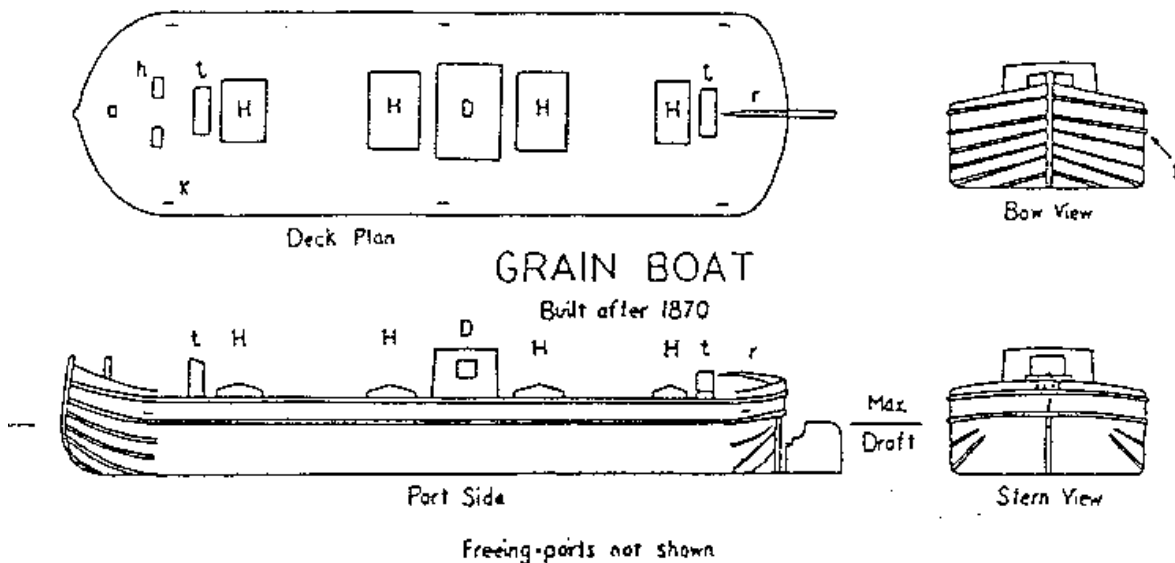
The "Lake Boat" was the earliest type and common in the late 1860s. It was about 60 feet long, nearly 17 feet wide, and had a hull height of 6' 6". Its cargo capacity was about a 150 tons. Its only cabin was in the stern, and the hatches were forward from the cabin to the bow. This stern was upswept and had two small windows on each side of the rudder. From the raised stern deck the steersman was able to see over the cargo area and safely steer the boat.

**(Vierling 1986, 48-49, 51)**



Lake Boat

## Information for Grain Boat Crew



- |                    |                   |                |
|--------------------|-------------------|----------------|
| b - Bulkhead hatch | f - Fenders       | K - Cleats     |
| c - Chimney        | h - Hatch         | r - Tiller     |
| D - Deckhouse      | H - Cargo hatches | t - Tool chest |

Adapted from photographs in resource items #168, 251, 258, 260, and 262

Scale: 1 inch = 17.9 feet

Canal boats. Although many of the commercial boats using the canal were dissimilar in appearance, their dimensions were more uniformly standardized. All were no larger than 105 feet long by 17½ feet wide, and had a hull 6½ feet high, drawing a fully laden draft of four feet eight inches. All were also built close to the water with mostly straight lines from bow to stern. The deckhouses and hatches were suppressed in height, for easy passage under low bridges, and the boat's rails were of row of elongate freeing-ports along each gunwale. These size restrictions, of course, limited any boat's cargo capacity to a little over 100 tons. Although packets were built higher, they too were limited in height by the overhead obstructions. (Some of the steamboats had retractable smokestacks for passing under low bridges.)

The crew of the freight boats included the captain, a steersman and a bowsman; while on most packets there was the captain, two helmsmen and a cook. Freight boats also had only one driver (to drive the animals along the towpath) the while the packets had two.

Of the freight boats there were three basic types: The Lake Boat, the Grain Boat, and the Stone or Lime boat.

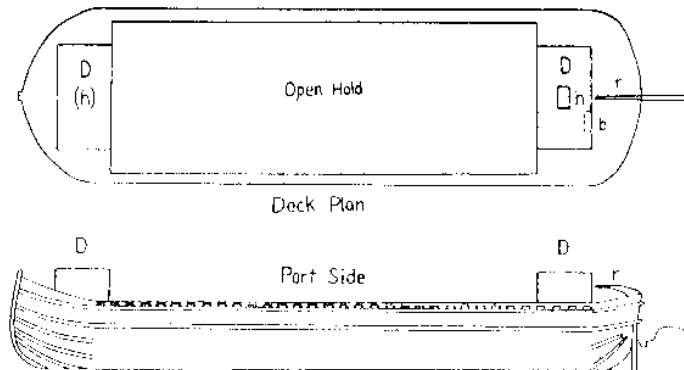
The "Grain Boat" was the common type used after 1870. Its dimensions were similar to the Lake Boat, but its main cabin was up amidship. It also had a small shed or crew's quarters in the bow. Two of its four hatches were between the bow-shed and the main cabin, and two after the main cabin.

**(Vierling 1986, 48-49, 51)**



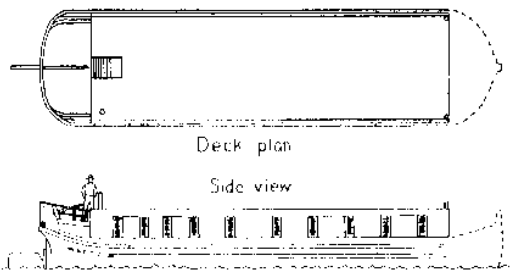
Grain Boat

# Information for Stone Boat Crew

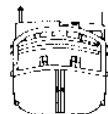
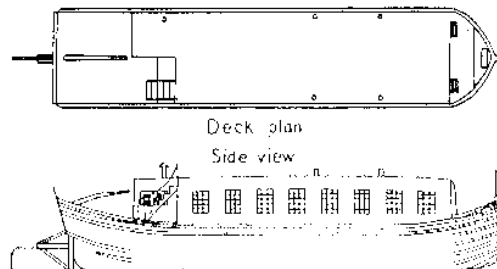


Rough estimate of the appearance of a  
**STONE BOAT**  
 as shown on a post card of an early canal scene near Lockport

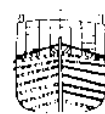
## CANAL BOATS OF THE ILLINOIS AND MICHIGAN CANAL



Sketch of the Packet boat,  
 "St. Louis". Adapted from a  
 photo on page 273 in  
 resource item # 254  
 Scale: 1 Inch = 19.7 feet.



Stern  
 View



Bow  
 View

A partially square-sterned Packet boat from the  
 "Miami and Erie Canal". Adapted from a painting  
 on page 218 in resource item # 254, with added  
 features from paintings and woodcuts in resource  
 item # 252. Scale: 1 Inch = 20 feet.

Canal boats. Although many of the commercial boats using the canal were dissimilar in appearance, their dimensions were more uniformly standardized. All were no larger than 105 feet long by 17½ feet wide, and had a hull 6½ feet high, drawing a fully laden draft of four feet eight inches. All were also built close to the water with mostly straight lines from bow to stern. The deckhouses and hatches were suppressed in height, for easy passage under low bridges, and the boat's rails were of row of

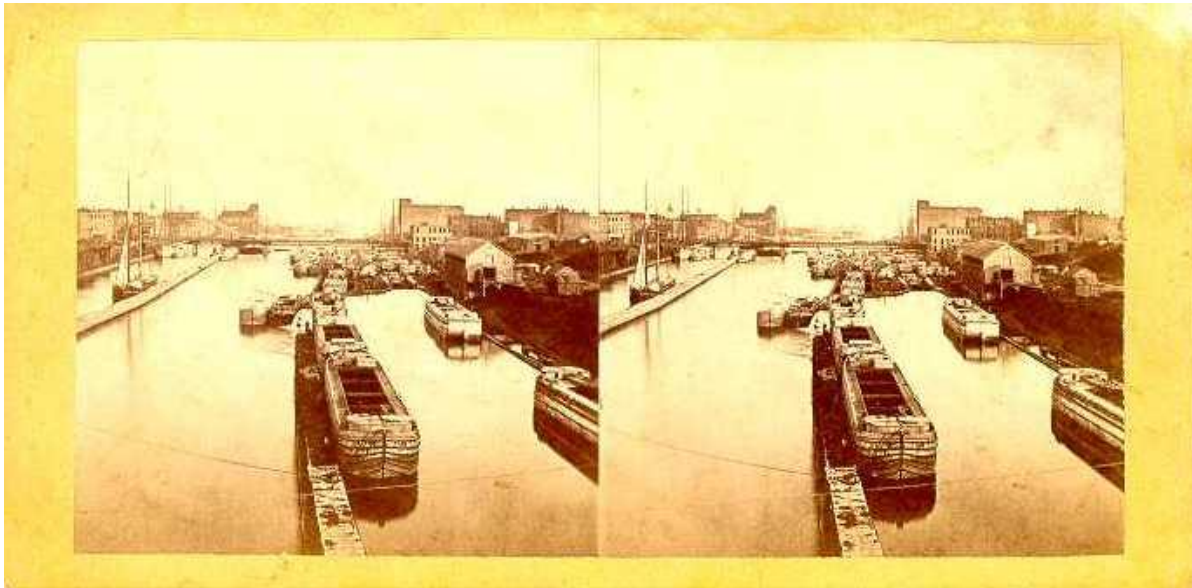
elongate freeing-ports along each gunwale. These size restrictions, of course, limited any boat's cargo capacity to a little over 100 tons. Although packets were built higher, they too were limited in height by the overhead obstructions. (Some of the steamboats had retractable smokestacks for passing under low bridges.)

The crew of the freight boats included the captain, a steersman and a bowsman; while on most packets there was the captain, two helmsmen and a cook. Freight boats also had only one driver (to drive the animals along the towpath) the while the packets had two.

Of the freight boats there were three basic types: The Lake Boat, the Grain Boat, and the Stone or Lime boat.

The "Stone" or "Lime Boat" had a hull similar to the preceding two, but its deck was open and its bulwarks built higher as an aid in hauling stone. It was used to carry rock from Lockport's quarries. Unlike the Lake and Grain boats, its deckhouse was in the bow.

**(Vierling 1986, 48, 50-51)**

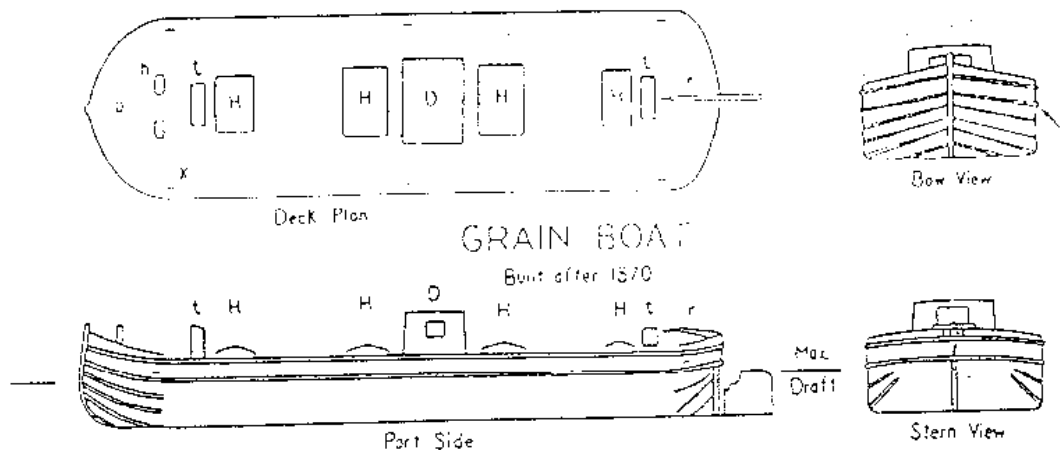


## Information for Steamboat Crew



(Drago 1972, 108)

Steamboats had a modified grain-boat superstructure. In its bow the steamboat had a storage cabin, followed by two hatches, and its main cabin amidships. Aft of the main cabin there was a large hatch; next an eight-foot high, seven-foot wide Pilot House; and finally a machine room about 12 feet wide and three feet high. Its stern overhung the water and had two twin screws for propulsion.



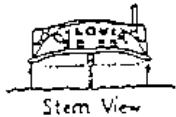
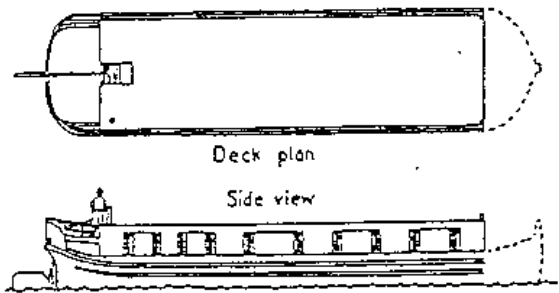
The "Grain Boat" was the common type used after 1870. Its dimensions were similar to the Lake Boat, but its main cabin was amidship. It also had a small shed or crew's quarters in the bow. Two of its four hatches were between the bow-shed and the main cabin, and two after the main cabin.

(Vierling 1986, 49, 51)

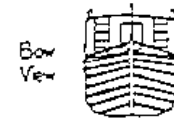
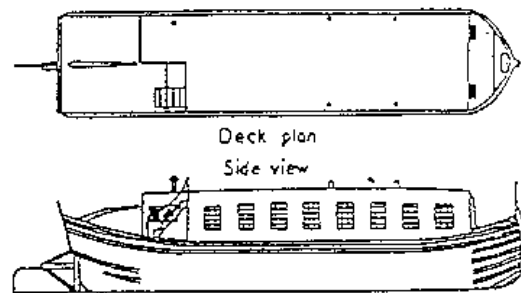
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(Vierling 1986, 49, 51)

## Information for Packet Boat Crew



Sketch of the Packet boat, "St. Louis." Adapted from a photo on page 223 in resource item #254. Scale: 1 Inch = 19.7 feet.



A partially square-sterned Packet boat from the "Miami and Erie Canal." Adapted from a painting on page 218 in resource item #254, with added features from paintings and woodcuts in resource item #252. Scale: 1 Inch = 20 feet.

- |                    |                   |                |
|--------------------|-------------------|----------------|
| b - Bulkhead hatch | f - Fenders       | k - Cleats     |
| c - Chimney        | h - Hatch         | r - Tiller     |
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Adapted from photographs in resource items #168, 251, 258, 260, and 262

Scale: 1 Inch = 17.9 feet

Canal boats. Although many of the commercial boats using the canal were dissimilar in appearance, their dimensions were more uniformly standardized. All were no larger than 105 feet long by 17½ feet wide, and had a hull 6½ feet high, drawing a fully laden draft of four feet eight inches. All were also built close to the water with mostly straight lines from bow to stern. The deckhouses and hatches were suppressed in height, for easy passage under low bridges, and the boat's rails were of row of elongate freeing-ports along each gunwale. These size restrictions, of course, limited any boat's cargo capacity to a little over 100 tons. Although packets were built higher, they too were limited in height by the overhead obstructions. (Some of the steamboats had retractable smokestacks for passing under low bridges.)



The crew of the freight boats included the captain, a steersman and a bowsman; while on most packets there was the captain, two helmsmen and a cook. Freight boats also had only one driver (to drive the animals along the towpath) the while the packets had two.

The packet boats were 60 to 80 feet long, ten to fifteen feet wide, and eight to fifteen feet high (from keel to deckhouse overhead) The cabin was about 50 feet long, nine feet wide, and seven feet high. It held about 90 passengers. There was only the one room for sitting, eating, and sleeping. At night a curtain partitioned that room into separate quarters for the men and women. About 50 berths were hung from the walls and ceiling in tiers of three (like library shelves) and the remaining passengers slept in berths on the floor. (During the daylight hours those berths were replaced by tables for the serving of meals.)

**(Vierling 1986, 48, 50-52)**



## Information for Passengers

### Travel on the Illinois and Michigan Canal

*Arthur Cunynghame, a British army officer stationed in Canada, obtained a few weeks' leave of absence for the purpose of making a tour of the United States.*

*Cunynghame embarked on the canal boat the "Queen of the Prairies", October 12th, 1850 at 5 P.M., enroute to LaSalle, 96 miles from Chicago. Cunynghame's rare and interesting narrative gives the reader a personal and rather humorous description of travel on an I & M canal boat. This mode of transportation lasted only a short period of time until the railroads offered faster and more comfortable transportation.*

The cabin of this canal boat was about 50 feet in length, 9 feet wide, and 7 feet high. About 90 passengers within this confined space, in which we were to sleep, eat, and live; the nominal duration of our passage was twenty hours, but it eventually proved to be twenty-five; our baggage was secured on the roof of the boat, and covered with canvas, to screen it from the effects of the weather. A sort of divan surrounded the cabin, the portion appropriated to the ladies being screened off during the night with a curtain.

For the first few miles we, in company with three more canal boats, were towed by a small steamer, but having passed the locks, not very distance from Chicago, three horses were attached, which towed us smoothly along at the rate of five miles an hour.

Soon after we had started, tea with its accompaniments made its appearance, the never-failing beef-steak being as tough as usual. As soon as this was disposed of, all the male passengers were ordered on deck, while the parlor should be transformed into a bed-room; in less than half-an-hour we received permission to return, in which short time no less than fifty sleeping places in this small space had been rigged up, and twenty more spread upon the floor; the remainder of the passengers, about twenty in number, for the most part children, being detailed off to share their tenements with their pa's and ma's. These sleeping-places consisted of shelves placed three deep, the entire length of the cabin, on either side, with a height of two feet between each.

### **(Illinois and Michigan Canal, no pp.)**

Into these berths we were ordered to get; and after some difficulty, especially amongst those to whom this mode of traveling was new, we obeyed; the remainder of the passengers, selecting their locations in succession, or according to the number on their tickets.

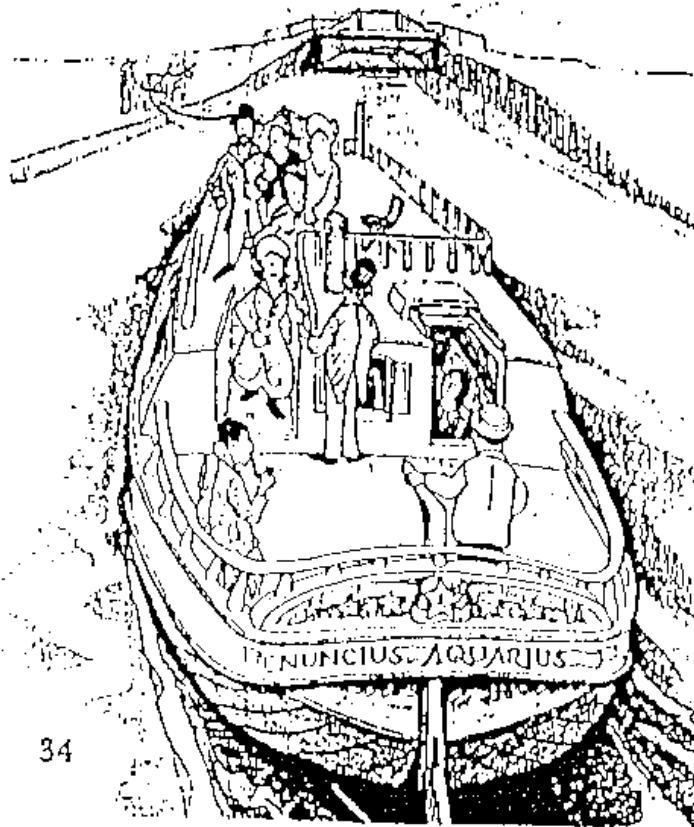
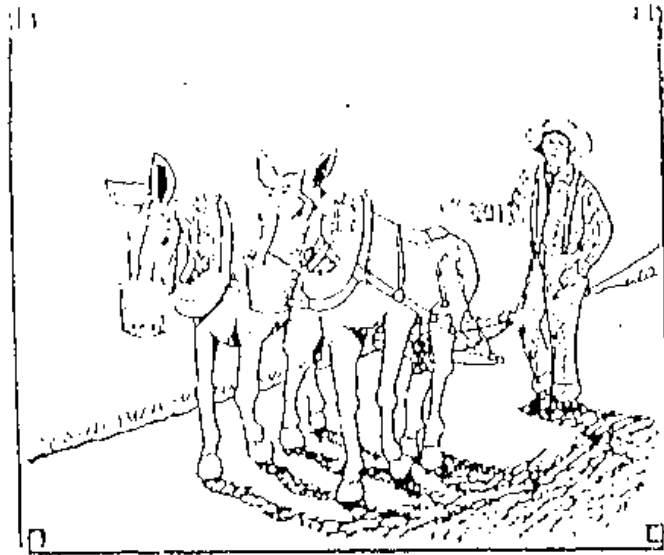
I soon became insensible to the uncomfortable position of which I occupied, although, only six inches above my face a tremendous man threatened every moment to burst through the sacking which supported him; and had the cords given way, I felt I must have been squeezed as flat as a pancake.

With so many passengers in so confined a space, no wonder that on the following morning I should awake with a severe headache, the effect of the heated nauseous vapours which surrounded us. Not a window was permitted to be opened; I made various endeavors to break through this rule during the night, but every window within my reach was fastened down. This, however, may be considered but a wise precaution; for the malaria from the surrounding mar-

shy land, and especially from Mud Lake, distance about fifteen miles from Chicago, which we passed within a very short distance, is very dangerous . . .

At six P.M., we reached LaSalle; here is the termination of the Illinois Canal, and the navigable portion of the Illinois river.

# Information for Townspeople

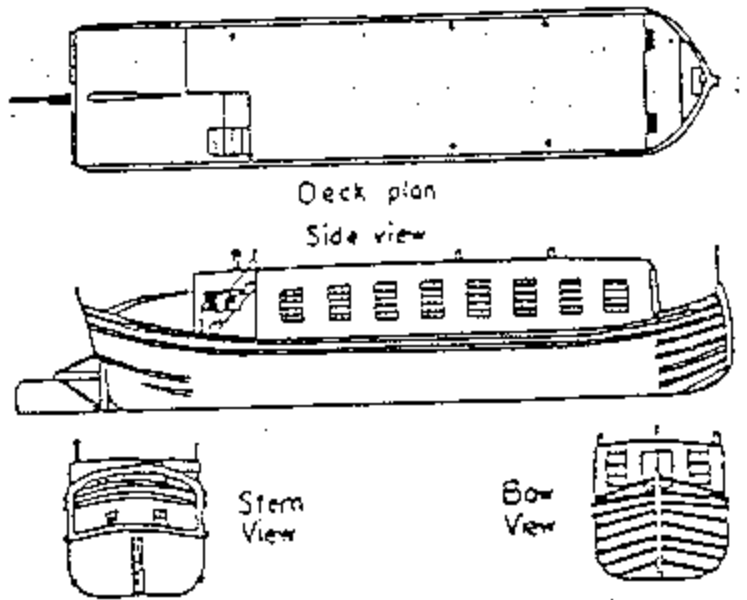


Then Nuncius Aquarius approached Little Falls locks. Passengers found the process of "locking through" a welcome break from the confinement of the boat. They could step ashore, stretch their legs, and observe the locking operations. It took most of an hour to get through the four locks at Little Falls, so there was time to sketch or talk to the lockkeeper's children and pet his dog. The locks were operated from six o'clock in the morning until eight in the evening, six days a week.

On Sundays, when the canal was shut down, the packet boats usually anchored near a town so that their passengers could spend the day on shore. Other boats lay by for a day of rest wherever they found themselves. The children might go to church if they were near one; more likely, they would find themselves on a quiet bend in the canal with nothing to do but fish or swim. For this reason, the ladies on the packet didn't consider canal boats very suitable for raising children. Canal boaters had a close community in spite of their always being on the move. Everyone on the canal knew each other, and their children usually found work on the canal when they grew up.

**(Boyer 1986,34)**

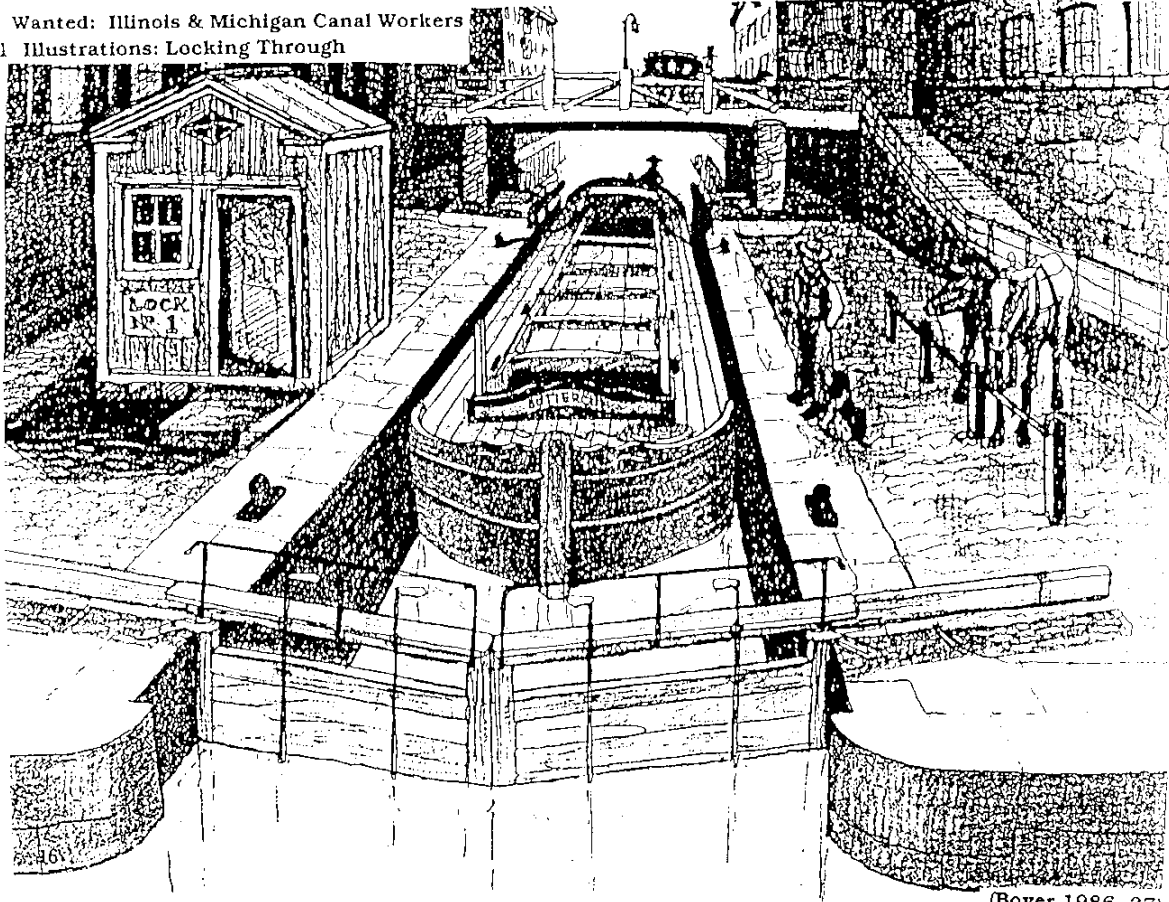




A partially square-sterned Packet boat from the "Miami and Erie Canal." Adopted from a painting on page 218 in resource item #254, with added features from paintings and woodcuts in resource item #252. Scale: 1 Inch = 20 feet

# A.1 Illustrations: Locking Through

Wanted: Illinois & Michigan Canal Workers  
A.1 Illustrations: Locking Through



(Boyer 1986, 37)

## A.2 Illustrations: Docked Canal Boats

Wanted: Illinois & Michigan Canal Workers

A.2 Illustrations: Docked Canal Boats

