(Built at Louisville, Ky., in 1875. Tonnage 189.47.)

1875. "Side-wheel river steamer, built at Louisville, Ky., in 1875, of white oak, poplar, and pine, fastened with iron bolts and spikes.

Length 163', beam 28', hold 4', draft forward light 2', draft forward loaded 4½', draft aft light 2', draft aft loaded 4'; shaft 5'; diameter of cylinder 15";

Tonnage 189.47;

Rate of speed in smooth water per hour, 9 miles.

Thoroughly repaired in May, 1879.

Length of cabin, 77 feet; Number of berths in cabin 23.

Consumption of coal per hour, moderate steaming, 1500 pounds.

1875. Note.-This steamer was built for the Board from plans, and possibly specifications furnished by the Board--and when finished and inspected, she was bought on July 12, 1875, of Mr. E.W. Gould for $25,000, after which she was fitted up at a large expense and paid for from the general appropriation for the Western Rivers for 1875. A.B.J.

1884. The Lily was burned while lying at wharf at Cincinnati, on 20 Sept. 1884. She was re-built by the Madison Marine Railway Co., at a cost of $10,850.

1888. She was employed in the 14th District until March, 1888, when she was transferred to the 15th District to take the place of the Ivy, wrecked."

An. Rep. 1876. "The steam-tender Lily, used for inspection and supply, is found to be economical and efficient."

1878. "The tender Lily is in good order and condition and is well adapted to her present service."

1879. The light-house tender Lily is in good repair, having recently been docked, calked, and sheathed with iron on the bow to protect her against the ice. 14th Dist.

1880 The steamer Lily has been repaired from time to time, as circumstances required, and is now in good condition. Do. do.

1881 The light-house tender Lily, attached to this district, was thoroughly overhauled and refitted during the year, and is now in good condition. Do. do.

1882. The light-house tender Lily, attached to this district, has received minor repairs, from time to time, and is in good working condition. Do. do.

1883.

The great rise in the river last winter did but little permanent damage to the light-stations. During this trying time the keepers were faithful and zealous in caring for the Government property left in their charge, and ingenious in maintaining the lights whenever boats could run, so that commerce had the benefit of these aids to navigation when they were needed.

14th Dist.

At the request of the proper authorities, the steam-tender for this district was used to distribute rations and supplies furnished by private bounty to the sufferers by the flood while she was on her regular inspection trip. This was permitted because the river had risen to the greatest height it has ever reached in the memory of man, 66 feet and 4 inches, and she was the only available boat able to run and adapted to the purpose. The Board was glad to do what it properly could to show its appreciation of the assistance the people on the river banks had shown the service in enabling it to maintain lights on their lands, and the general kindness they had shown to its employés.

The tender Lily has seen severe service in the last 8 years, and it has been found necessary to repair her throughout. This will have been done by the time she is needed for her next inspection and supply trip, and she will then be quite an efficient boat.

1884.

During the unprecedented high water in the Ohio River in February the tender Lily was used, at the request of the War Department, to distribute the rations and supplies appropriated for by Congress, and while the gas-works were under water the surplus lamps of the district were loaned to the city of Cincinnati for a short time.

Do. do.

On the spring inspection it was found that the flood had swept away many light-posts, with the lanterns and accessories. These were replaced immediately, which added somewhat to the expense of maintaining the lights for the year.

The keepers used many ingenious devices for exhibiting their lights during the high water.

The steam-tender Lily was thoroughly repaired and her speed was increased over two miles per hour. She is in good condition.

An. Rep. 1885.

On January 15, the Lily left Cincinnati with the inspector on board on a tour of inspection and supply to the southern Ohio. On account of the ice encountered and the severity of the weather she did not get back to Cincinnati until February 16. The weather in the Ohio Valley continued very severe throughout February and March, and the floating ice during six weeks greatly interfered with navigation. On April 16, the tender started up the Ohio River on an inspection and supply trip. She reached Pittsburgh on April 29, having painted and placed in good order all light-posts in the upper Ohio, and having trimmed trees and shrubs of all the foliage which intercepted the rays of light on the channel sides. Returning to Cincinnati, the Lily left that port on May 11, for Cairo and inspected, supplied, painted and put in good condition all the lights between those points. From this trip she returned to Cincinnati on May 29, and went directly to Fulton, where she now lies in good condition.

Do. do.

(Over.)

1885. Cont'd.

On the evening of July 4, the tender Lily returned to Cincinnati from a trip of inspection on the river, and was taken to Fulton, as is customary when not employed on inspection and supply trips, and laid up, with reduced force on board. She remained secured there until the morning of September 20, when fire, breaking out on board the steamer Morning Star, which was lying near her, quickly enveloped that boat in flames, which were communicated to the steamer Bonanza (also secured there), and to the tender Lily. Every effort was made to save the tender, but before the fire was extinguished her upper works were completely destroyed and she was otherwise seriously damaged. A court of inquiry was held to investigate the matter, and in its report it not only attached no blame to the officers and men of the Lily, but it commended them for their efforts to save Government property. An arrangement for restoring her hull and machinery for $10,850 was made with the Marine Railway Company of Madison, Ind. The work was well done, and on January 8, the tender was placed in the water completed. She went immediately to Cincinnati, where she received an equipment to replace that which had been destroyed by fire.

14th Dist.

An. Rep. 1886.

Each light-station was inspected three times during the year. While not employed on inspection duty, the steam-tender Lily was for more than half the time laid up, with reduced crew, at the wharf at Fulton, ~~Ill.~~ Ohio. This method of laying up and maintaining officers' mess, necessary under the present conditions of not owning property for a tender station, is expensive and should be changed. The engines and boilers of the tender have recently been thoroughly overhauled and placed in good condition.

Do. do.

1887

The tender *Lily*, when not on inspection tours, was laid up at Fulton, Ohio, with reduced crew. She was recently overhauled and painted, her carpets, curtains, etc., were renovated and put in excellent condition, the engines and boilers were overhauled and put in good order, and the old chimneys and breeching were replaced by new ones.

Do. do.

An. Rep. 1888.

The Lily.—On March 26, 1888, the tender *Lily* was transferred from the fourteenth district to this district, with such supplies, outfit, etc., as she had on board. Her officers and crew, with one exception, returned to Cincinnati, and the officers and crew of the *Ivy* were ordered to take charge of her. The authorized permanent complement of the *Lily* is four officers and ten men, with twelve extra men when employed. Her pay-roll varies from $810 to $1,074 per month. Repairs were made to her boilers, furnace, auxiliary engines, steam-pipes, electrical plant, cabin and saloon joiner work. She was thoroughly painted inside and outside, supplied with two swinging gangways, partly supplied with new carpets and curtains, furniture, glass and plated ware, china, bedding, etc., and a texas or upper cabin was built. The latter will add much to the comfort and convenience of the officers and to the efficiency of the tender, as it will provide sleeping apartments for the master and pilots near the pilot-house. Upon the completion of the repairs she will be in an efficient condition for the work of the district.

15th Dist.

(Over.)

1888. Cont'd

The repairs to the *Lily* since March 26 last cost as follows:

Upper works	$1,675.50
Painting	694.00
Engines, boilers, and appurtenances	622.47
Miscellaneous	128.64
Total	3,120.61

15th Dist.

During the year the *Ivy* made seven trips and the *Lily* two in the work of this district. The *Ivy* was employed eighty-nine days and steamed 4,990 miles. The *Lily* was employed thirty-three days and steamed 1,965 miles. The total for both tenders was one hundred and twenty-two days and 6,955 miles. This is much under the usual quantity of work annually performed in the district, as well as much under that which would have been accomplished had not the *Ivy* been lost and the *Lily* kept under repair for so long a time. The total loss of time, due to these two causes, was fully seventy-five working days, representing a distance of not less than 4,500 miles.

An. Rep. 1889.

The Lily.—The authorized permanent complement of the *Lily* is four officers and twelve men; and additional, when employed, nine men, making a total of four officers and twenty-one men. The pay-roll varies from $825 per month for the permanent complement to $1,326 per month when running. At the commencement of the fiscal year this steam-tender was undergoing repairs at St. Louis, which were completed July 19. These were authorized by the Board, but yet not quite finished, during the fiscal year ending June 30, 1888, and were paid for from the appropriation for that year. Minor repairs were made in June upon the engines, boilers, and electric and cooking apparatus. During the same month the tender was painted outside, and new deck screens and curtains for the pilot-house were received. The hull, engines, and boilers are now in efficient condition. The boilers were built in 1875, of iron, with punched holes. They were burned over once (when the *Lily* was damaged by fire several years since) and are fourteen years old. They are apparently sound and safe, and were inspected by the United States Inspector of Boilers, at St. Louis, June 21 last, who authorized a steam-pressure of 135 pounds to be carried. That, however, is insufficient in a case of emergency, when the safety of the boat and the lives of her people might depend upon her power to get to the bank to escape the disastrous effects of a sudden heavy squall, or to avoid being forced upon a reef by the united action of the current and wind. With the present boilers she has not sufficient power to make headway against a strong breeze and current, nor to handle properly, nor turn around in a fresh breeze, but is obliged to go to the bank until the wind moderates. She has been forced to back down stream several miles to seek shelter from a high wind, because she could not turn to steam head on. She has been compelled to go to the bank and tie up, because of insufficient power to handle her with safety or make headway when other boats were able to proceed upon their way. It will soon be necessary to supply her with a new set of modern steel boilers, to enable her to carry not less than 165 pounds of steam when required. During the year the tender made eighteen trips of all kinds, was employed two hundred and five days, steamed 9,383 miles, and consumed about 1,347 tons of coal and 38½ cords of wood in the work of this district, the limits of which were increased by about 315 miles by the addition of the Illinois River to La Salle, Ill.

Do. do.

WINTER QUARTERS. 13th District.

1890

The tender passed last winter at Paducah, Ky. The mouth of the Tennessee River is well adapted for an ice-harbor, as the river there does not freeze, and as no trouble is had there from floating ice. The climate is so mild that repairs can be made and painting can be done during the winter months at Paducah. Thus the tender becomes available for service earlier in the season than it would if it were laid up at a point farther north. There is no place on the Mississippi River, north of the mouth of the Ohio, that presents so many advantages for a winter harbor as Paducah.

15th Dist.

1890

The Lily.—This steamer was not laid up at all for repairs during the year. She made twelve trips of all kinds during the seasons of navigation, and moved 215 stations, reset 117, placed 93 day-marks, cut 2,134 trees of and exceeding 4 inches in diameter, cleared 21⅝ acres of willows, cottonwoods, brush, etc.; painted 453 post-light stations each time they were visited, and was employed 159 days, steaming during that time 6,589 miles in the work of the district, and consumed about 1,108 tons (of 2,240 pounds) of soft coal and 11 cords of wood.

Do. do.

The stations were all supplied to the end of the fiscal year and the keepers paid as follows, viz: to St. Paul to the close of navigation, 1889; to Cairo, to May 31, 1890; Missouri River, to the close of navigation, 1889; Illinois River, to June 30, 1890. The inspector was on board during each trip made by the tender.

Proposals were invited by public advertisement in May last, and contract was made for the construction of two steel boilers of high power and with all modern improvements for the *Lily*. The specifications require them to be completed by September 1 next and to be placed on board the steamer at any time between that date and December 1, when her services can best be spared.

1891.

The Lily.—This steamer was repaired in the fall of 1890 at Mound City, Ill., when her hull was put in good order. She was then laid up with reduced crew in winter quarters at Paducah, Ky., but she resumed her duty as soon as navigation opened. New boilers were put in in April, which have proved to be satisfactory. Her electric plant was renewed. Steam heat was substituted for stoves, thus reducing largely dangers from fire. During the year thirteen pay, inspection, and supply trips were made. The *Lily* steamed 6,200 miles, consuming about 1,165 tons of coal, and 3 cords of wood during the year.

Do. do.

1892.

The Lily.—This steamer made 16 inspection and supply trips, steamed some 7,700 miles, consuming about 1,773 tons of coal and 3½ cords of wood. Each year's service adds to her draft of water. At present she needs 4 feet of water in the channel, whereas for efficient work at all stages not more than 30 inches should be her greatest draft. Her present wooden hull is fast deteriorating, but her upper works are in good condition. The engines are in a fair state of efficiency. A new donkey boiler has replaced the old tubular boiler, and it gives satisfaction.

Do. do.

1893

The Lily.—This steamer made twelve trips during the year, steaming about 8,800 miles and consuming some 1,398 tons of coal and 6 cords of wood. The old upright engine was replaced by a new 5-horse power Westinghouse engine for the electric light. It gives satisfaction. The hurricane roof was recovered with No. 10 canvas. In making repairs the crew were utilized without calling in outside workmen. The hull is rapidly deteriorating; it is now thirteen years old, and it will be necessary after the fall work is ended that she be hauled out and thoroughly repaired.

15th Dist.

1894

The Lily.—This steamer is in good condition. The repairs made to the hull, new wheel-houses, etc., at Mound City, Ill., in December, the removal of the heavy stages and booms, the shifting of the coal bin forward, and changing her trim, rendered her more speedy and efficient. The tender made 12 trips, steaming about 6,187 miles, using some 955 tons of coal and 2 cords of wood.

Do. do.

1895

The Lily.—This wooden side-wheel steamer and her equipments, taking into account their length of service, are in good condition. In April, through the courtesy of the engineer officer in charge, she was placed in the Government dry dock at Keokuk, Iowa, to replace a couple of broken planks in the bottom, which was all that was found necessary to be done. Various minor repairs were made to the machinery. A new yawl was ordered in June to take the place of an old boat which had become unserviceable through long service and constant repairs. The color of the outside of the tender was changed from dark brown to white, making her more presentable in appearance and much cooler on board, besides making her uniform in color with the tenders in the lower river districts.

The year has been marked by an abnormally low stage of water, in consequence of which through navigation to St. Paul was suspended early in August and was not renewed until the middle of May, business in the interval being confined to raft boats and local packets. The winter was exceptionally severe, and the river below St. Louis was closed by ice the entire months of January and February, during which time the lights were extinguished. In other parts of the district the lights were stopped or started as navigation closed or opened. The *Lily* during the year steamed some 6,608 miles and consumed about 985 tons of coal.

1896

The Lily.—This wooden side-wheel steamer is in good condition except the hull. A quantity of outside planking, a number of frames, and a portion of the stem are rotten. During the year some repairs were made to the machinery and boiler. New smoke pipes for the galley, workshop, and laundry were also furnished. Nine round trips of the district were made, two on the Upper Mississippi, five on the Lower Mississippi, one on the Illinois River, and one on the Missouri River. On the April trip to St. Paul, by courtesy of the engineer officer in charge, the tender was placed in the Government dock at Keokuk, and some slight repairs were made to her bottom. From November 28, 1895, to March 1, 1896, the tender was laid up in winter quarters at Paducah, Ky., with reduced crew.

The boating season of 1895 was one of extremely low water. The spring rains had but little effect upon the rivers, and the stage, which was low at the beginning, became gradually less as the season advanced. The result was that through navigation to St. Paul was suspended

(over.)

1896 contd.

about the middle of August and to Keokuk the first part of November. The main volume of business was done by local packets running to nearby points. In the latter part of December a sudden rise took place in the Missouri River and its tributaries, which was directly felt in the Lower Mississippi, and the river at St. Louis rose 22 feet in less than four days, but it rapidly subsided. The present season opened with a good stage of water throughout the district, which has continued without interruption. The usual spring flood occurred during May, the river coming to a stand on the 26th, at 28 feet on the St. Louis gauge, or 2 feet below the danger point. On May 27 a violent storm swept over St. Louis, which was destructive to property on shore and afloat and caused much loss of life. The tender was in the locality at the time, but she escaped without injury, as she was somewhat out of the track of the storm center and was secured close to and under the lee of a high bluff, which afforded adequate protection. During the year she steamed 6,042 miles, and consumed about 956 tons of coal.

1897

The Lily.—This wooden side-wheel steamer is in fair condition. She was repaired in August, at Mound City, under contract. The repairs were confined to the hull, and consisted practically of a new bow and 1,300 running feet of outside planking and 400 running feet of frames. Rot was found to prevail to a great extent, and was progressing rapidly. All the rotten outside planking and the worst of the frame timbers that could be found were removed. The general condition of the hull did not warrant the additional expense due to a more thorough overhauling.

The repairs that were made were considered sufficient in extent to render the boat serviceable for about two years from the time she left the ways. In other respects, including upper works, boilers, and engines, she was in good condition. During the year new fire linings were fitted to the furnace doors, and repairs were made to the electric plant. On account of high water the tender was unable to start on her inspection and supply trip in the Upper Mississippi until the middle of May. While it required much time and labor to restore the lights to their former condition of efficiency, everything was successfully accomplished, and the tender completed the work to St. Paul on June 8, 1897, and she arrived at St. Louis on June 16. On June 17 she left for Cairo, and got back to St. Louis on June 26, having restored or replaced nearly every light between Cairo and St. Louis. The continued and extreme high water had thrown much extra labor upon the light keepers, a majority of whom showed judgment and intelligence in the ingenious expedients resorted to by them to preserve the posts and maintain the lights. On June 30 the tender was at St. Louis preparing for a pay and inspection trip to the Upper Mississippi. During the year her crew cut down 1,287 trees and cleared away 14 acres of underbrush which intercepted lights. She delivered 15,243 gallons of oil at light stations; she steamed about 4,889 miles, and to do this burned some 745 tons of coal.

1898 *The Lily.*—This wooden side-wheel steamer was built in 1875, and is of about 200 tons burden. She made 10 trips—3 on the Upper Mississippi, 4 on the Lower Mississippi, 2 on the Illinois River, and one on the Missouri River. She established 24 lights, discontinued 29 lights, cut down 1,229 trees of over 4 inches in diameter, cleared 15 acres of willows and underbrush, distributed 13,442 gallons of oil, and issued 38 gross of wicks. In doing this work she consumed about 908 tons of coal and 2 cords of wood. A 16-foot working boat was purchased to replace the old one, which was worn out with eight years' service. Her boilers and machinery are in good condition, and no repairs are required.

1899 *Lily.*—This wooden side-wheel steamer was built in 1875, and is of about 200 tons burden. She made 13 trips of supply and inspection, 4 on the Upper Mississippi, 7 on the Lower Mississippi River, and 2 on the Illinois River, in doing which she steamed about 6,731 miles and consumed some 1,096 tons of bituminous coal, or 27,397 bushels. Her hull was repaired at St. Louis in the spring of 1899, and the repairs consisted of replacing some rotten planks and putting in a number of false floor timbers, running fore and aft stringers under the deck beams, fitting 90 stanchions between the bottom binding strakes and the overhead stringers, fitting a new backing and foundation to the main keelson aft to secure the main hog chain, and calking a number of defective butts and knuckle seams. Minor repairs were made to the engines, boilers, and upper works.

1900 *Lily.*—This vessel is a wooden, side-wheel steamer, built in 1875, and is of about 507 gross tons burden. She made 10 trips of supply and inspection, 3 trips on the Mississippi River above St. Louis, 6 on the Mississippi River between St. Louis and Cairo, and 1 on the Illinois River. No lights were exhibited on the Missouri River. She steamed about 5,685 miles and consumed some 907 tons of coal. She was docked, her hull was calked, and some slight repairs were made upon the engines and upon the dynamo engine.

1901 *Lily.*—This is a wooden side-wheel steamer, built in 1875, and is about 507 tons gross burden. She made 11 trips of supply and inspection—3 trips on the Mississippi River above St. Louis, 6 on the Mississippi River between St. Louis and Cairo, and 2 on the Illinois River. The hull of the tender, which was repaired at Mound City in January and February, is now in excellent condition. The decks, wheelhouses, and upper works, and the main boilers are in good condition. The main engines, which have been in use since 1875, are old and worn. The tender ran about 5,916 miles and burned some 26,712 bushels of coal during the year.

The following is a recapitulation of the work done by the light-house tender: She was employed 178 days, was unemployed 187 days, and was under way about 1,506 hours. She issued 14,165 gallons of illuminating oil and 88 gross of wicks. She visited 1,849 light-stations, moved 272 light-stations, reset 52 light-stations, established 48 lights, discontinued 37 lights, established 95 day marks, and discontinued 40 day marks.

The number of lights on June 30, 1901, was 522. The number of day marks on June 30, 1901, was 178. The number of keepers June 30, 1901, was 346. Some 185 acres of willow and brush were cleared away and 2,489 trees of more than 4 inches in diameter were felled.

The light-keepers on the Mississippi and Illinois rivers have been attentive to their duties. Few complaints of lights being out have been received. The keepers who did not make satisfactory excuses had their pay accordingly reduced.

over

1901

The lights in the Missouri River were not shown this year, as no request was made for them. These lights have not been in operation since September, 1896, nor has the tender made a visit to the stations on that river since April, 1898. The outfits are still in charge of the former keepers.

It appears from the reports of masters and pilots of river steamers that they are satisfied that the lights have been maintained in an efficient manner.

1902

Lily.—This wooden side-wheel steamer was built in 1875 and is of about 507 tons gross burden. She made 13 trips of supply and inspection—3 trips on the Mississippi River above St. Louis, 8 on the Mississippi River between St. Louis and Cairo, and 2 on the Illinois River. The tender ran about 5,988 miles and burned some 28,708 bushels of coal during the year. She was employed 189 days, was unemployed 176 days, and was under way about 1,530 hours. She issued 12,651 gallons of illuminating oil and 34½ gross of wick. She made visits to 2,276 light-stations, moved 331 light-stations, reset 86 light-stations, established 39 lights, discontinued 32 lights, established 174 day marks, and discontinued 103 day marks. The number of lights on June 30, 1902, was 505. The number of day marks on June 30, 1902, was 249. The number of keepers on June 30, 1902, was 347. Some 126 acres of willow and brush were cleared away and 1,747 trees of more than 4 inches in diameter were felled.

TENDER.

1903

The *Lily* is a wooden side-wheel steamer, built in 1875, and is of about 507 tons gross burden. Extensive repairs were made to the upper works and to the machinery.

See Dry

It is inferred from the reports made from time to time by the masters and pilots navigating these waters that the efficiency of the district has been maintained and the work done was satisfactory.

1904

The tender *Lily*, built in 1875, is a wooden side-wheel steamer of about 507 tons gross burden. The condition of the hull, boilers, and their appurtenances is excellent.

She was employed 195 days and was unemployed 171 days. She was under way about 1,505 hours and visited 1,975 stations, moved 280 stations, and reset 192 stations. She established 60 lights and discontinued 60 lights, established 50 daymarks and discontinued 89 daymarks, cleared about 112 acres of willows and brush, cut 2,465 trees which were over 4 inches in diameter, and in doing so steamed about 5,689 miles, consuming about 1,274 long tons of coal. Various repairs were made.

1905

The *Lily* is a wooden side-wheel steamer of about 507 tons gross burden. In June she was dry docked at Keokuk, Iowa, where the bottom was examined, calked, and painted, and she received a new rudder. A new donkey boiler and a donkey pump and new chimney stumps were installed in April. She also received needed fitments, supplies, and other minor repairs.

1906

Lily.—The tender *Lily* is a wooden, side-wheel steamer, built at Louisville, Ky., in 1875, of about 507 tons burden. She was docked and repaired. Four 500-gallon oil tanks were installed in the hold to carry oil for delivery to light-keepers, and thus obviate the necessity for carrying it in barrels scattered around the decks and in the hold, with the consequent leaking and danger from fire. The coal bunkers were increased 50 per cent in capacity. This tender made 12 inspection and supply trips; established 38 and discontinued 37 lights; established 21 and discontinued 36 daymarks; cut down 5,190 trees over 4 inches in diameter; cut 118 acres of willows and underbrush; issued 14,769 gallons of oil; was employed 157 days; was unemployed 148 days; was unemployed 60 Sundays and holidays; steamed some 6,100 miles; was under way 1,476 hours; consumed about 1,290 short tons of coal; visited 1,613 stations; moved 167 stations and reset 120 stations. Her main boilers were under steam 4,190 hours and her donkey boiler under steam 2,930 hours.

1907.

THE TENDER LILY.

Lily.—The tender *Lily* is a wooden, side-wheel steamer of about 507 tons gross burden. This tender made 13 inspection and supply trips; established 56 and discontinued 50 lights; established 106 barrel buoys and discontinued 10 barrel buoys; established 127 diamond board daymarks, and discontinued 26 diamond board daymarks; cut down 8,474 trees over 4 inches in diameter; cut 107 acres of willows and underbrush; issued 12,101 gallons of oil; was employed 172 days; was unemployed for 136 days and 57 Sundays and holidays; steamed some 6,714 miles; was under way about 1,794 hours; consumed about 1,345 short tons of coal; visited 2,167 stations; moved 298 stations, and reset 192 stations. Her main boilers were under steam about 4,968 hours, and her donkey boiler was under steam about 2,216 hours.