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International Exhibition of 1876.

HOSPITAL

OF THE

Medical Department, United States Army.

No. 4.

DESCRIPTION

OF THE

MODELS OF HOSPITAL STEAM-VESSELS

EXHIBITED IN ROOM NO. 2.

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IN CHARGE OF THE REPRESENTATION OF THE MEDICAL DEPARTMENT, U. S. A.

Philadelphia, 1876.

INTERNATIONAL EXHIBITION OF 1876.

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DESCRIPTION OF THE MODELS OF HOSPITAL STEAM-VESSELS.

THESE models are intended to illustrate the plans actually employed during the war of 1861-5 for adapting the ordinary steamboats of the interior rivers of the United States, and the merchant steam-vessels of the Atlantic coast, to the transportation of sick and wounded soldiers.

It was, of course, on the Mississippi river and its tributaries, in the rear of the great western armies, that the methods of fitting up river-boats were brought to the greatest perfection. The military operations in the Mississippi valley, during the greater part of the war, were so related to these streams that they offered the most convenient and economical routes of transportation, and the numerous large river-steam-boats, which in times of peace are occupied in transporting merchandise and passengers on these waters, required comparatively little alteration to convert them into commodious hospital-boats, well adapted to the transportation of the sick and wounded.

From the capacious dimensions of these boats, and their smooth motion through the waters of the broad streams on which they floated, his method of transportation undoubtedly secured greater comfort to the patients than was possible in the case of the railroads, or of coast-wise transportation. Indeed, on emergencies, as after battles, these boats often served, without any special fitting up, to convey the wounded in comparative comfort to the base hospitals. But early in the war several of the most spacious and commodious of the Mississippi river passenger steamboats were specially devoted to the service of the sick

and wounded, and were specially fitted up as hospital-boats, or indeed it may be said as *floating hospitals*; placed under the command of a surgeon in charge, and making frequent trips between the army in the field and the base hospitals, most of which were accessible by the river or its branches. The model of the hospital steamboat *D. A. January* is intended to illustrate this class of vessels.

Model of the U. S. Army Hospital Steamboat D. A. January.—This model was constructed under the immediate supervision of Assistant Surgeon A. H. Hoff, U. S. Army, who was for a long time surgeon-in-charge. It is five feet long, being on the scale of one-fourth of an inch to the foot, and represents the whole vessel, with beds, &c., in position, all details being carefully worked out. The following statement with regard to this vessel was furnished by Dr. Hoff:

“The hospital steamer, *D. A. January*, was built in Cincinnati, Ohio, in 1856. She was a side-wheel steamboat of 450 tons burthen, 235 feet in length, 35 feet beam, and extreme width 65 feet. She had two high pressure engines, 22-inch cylinders, and seven feet stroke; also a donkey-engine connecting with a steam-pump as a protection against fire.

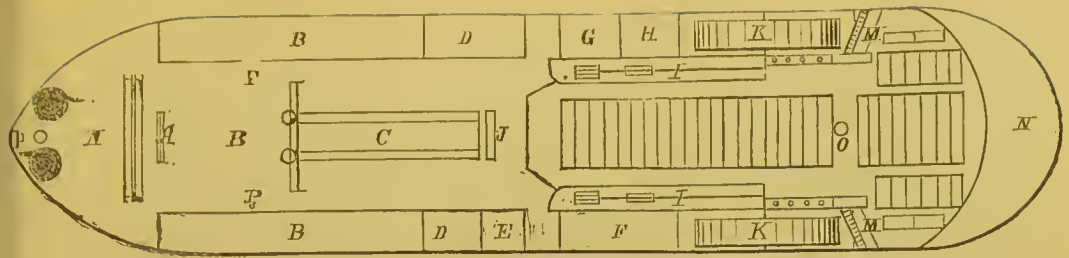
“She was purchased by the Government in the spring of 1862; underwent some alterations, and made her first trip in April, 1862, arriving at Pittsburg Landing in the midst of the battle of Shiloh, loaded with a large supply of hospital stores for the purveyor at that point.

“In the fall of 1862 she was completely fitted up, as shown in the model, with all the requirements of a general hospital, with a capacity of 400 beds. (See *Fig. 1*.)

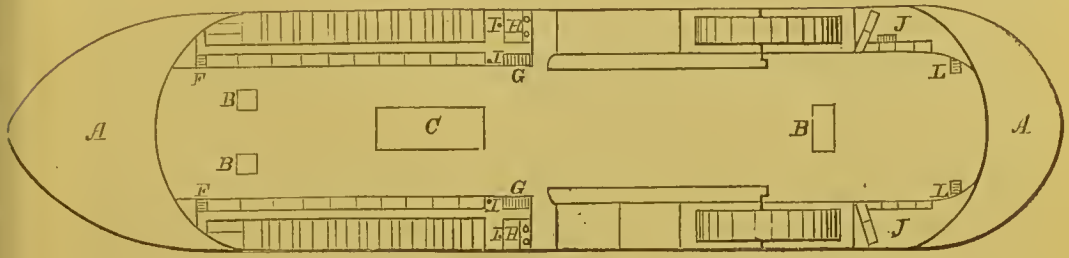
“The medical officers consisted of one surgeon and three assistant-surgeons, with the necessary attendants, nurses, cooks, &c.

“The Commanding-General, by order, arranged the running of all hospital steamers so that they could not be interfered with by the subordinate commanders, and once under way with their load of sick and wounded were not disturbed until their destination was reached. Our flag was considered a flag of truce, fully protected us, and gave us an opportunity of keeping the hospitals always in order. No persons were allowed passage on the steamers except those connected directly with the medical department of the army.

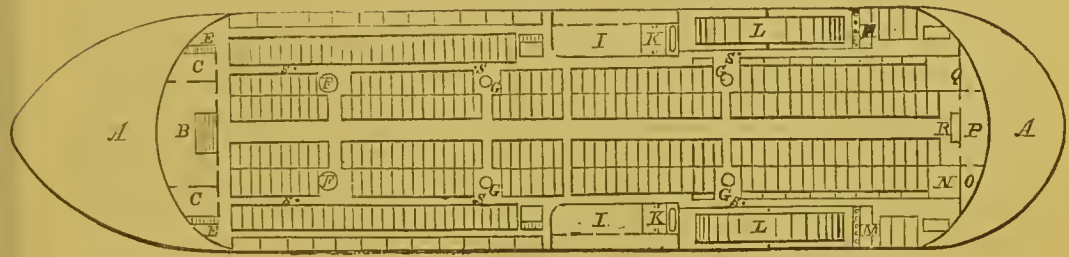
“To overcome the difficulty as to supplies, and the prompt payment of men employed on the boat, the ‘surgeon-in-charge’ was made an ‘acting assistant quartermaster’ and ‘commissary of subsistence,’ and this arrangement worked most satisfactorily, and enabled the boat to be always in readiness to leave at a moment’s notice.



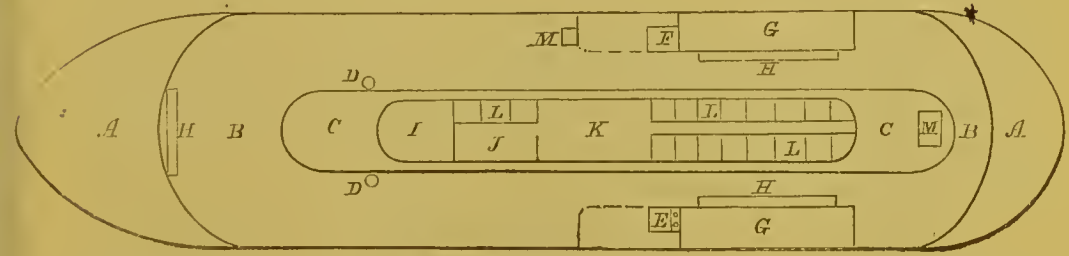
BOILER DECK.



MIDDLE DECK.



CABIN FLOOR.



UPPER DECK OR TEXAS.

FIG. 1.—DECK PLANS OF THE HOSPITAL STEAMBOAT D. A. JANUARY. Scale, 54 feet to the inch.

Boiler Deck—A, Foot of the stairs. B B B Space for wood and coal. C, Boilers. D D, Stores. E, Pastry-room. F, Kitchen. G, Carpenter's shop. H, Blacksmith shop. I I, Engines. J, Doctor. K K, Wheels. M M, Water-closets. N N, Deck. O, Space for beds. P P P, Ice-water stands.

Middle Deck—A A, Lower deck. B B B, Hatchways. C, Boilers. F F, Beds for patients; stairs to lower deck near the letters. G G, Stairs to upper deck. H H, Water-closets. I I I, Ice-water stands. J J, Nurses' quarters. L L, Stairs to lower deck.

Cabin Floor—A A, Lower deck. B, Office; main stairs by the letter. C C, Private rooms. E E, Texas stairs. F F, Steamboat smoke-stacks. G G G G, Stoves. I, Nurses' dining-room. J, Kitchen. K K, Bath-rooms, with hot and cold water. L L, Steamboat wheels. M M, Water-closets. N, Private room. O, Drug-store. P, Surgery. Q, Linen-room. R, Looking-glass. S S S S, Ice-water stands. The parallel telegrams indicate the position of the beds.

Upper Deck, or Texas—A A, Lower Deck. B B, Roof. C C, Cabin roof above the skylights. D D, Smoke-stacks. E, Water-closet. F, Wash-room. G G, Wheels. H H H, Water-tanks. I, Captain's room. J, Social hall. K, Texas dining-room. L L L, Rooms for steamboat officers. M, Private room.

"A large quantity of ice was carried in the hold of the vessel; this was taken advantage of by an arrangement of pipes to convey 'ice water' to the different parts of the hospital. A tank was placed on the upper deck forward, connected with the steam-pump, and kept constantly filled with water; pipes from this ran down into the hold of the vessel to a coil embedded in the ice, whence the cold water made its way through pipes to the several parts of the boat where it was required. This worked admirably, giving all hands plenty of ice water, and with great economy in the use of the ice.

A fan ran through the whole length of the main ward, worked by the machinery below; it made about ninety revolutions a minute, and as the transom-windows opened just above it at the sides, it created a pleasant current of air, and had besides another effect that was not taken in consideration at the time the fan was ordered, viz., that it drove out all flies and mosquitos. The fan is seen in the model, but the water-pipes could not be shown."

Assistant-Surgeon A. H. Hoff, U. S. Army, then surgeon U. S. volunteers, was assigned to the command of this boat by order of Major-General Halleck, April 6, 1862, and continued to render efficient service as the surgeon-in-charge until February, 1864, when he was succeeded by Surgeon Lewis C. Rice, U. S. volunteers, who continued in charge until the boat made her last trip and was turned over to the quartermaster at St. Louis, Missouri, September 25, 1865.

During this period the boat made numerous trips from the rear of the western armies to St. Louis, Cincinnati, Mond City, Keokuk, and other points. Moreover, during the months of March, April, May, and June, 1863, she lay near Milliken's Bend, Louisiana, and served as a floating hospital for the armies under General Grant. Altogether 23,738 patients were carried by her, of whom 530 died *en route*, as is shown by the following list of trips:

List of Trips of the Hospital Steamer D. A. January.

PLACE AND DATE OF EMBARKATION.		PLACE AND DATE OF LANDING.		Number carried.	Died on the way.
	1862.		1862.		
Pittsburg Landing, Tenn.....	April 11...	St. Louis, Mo.....	April 14...	431	17
Pittsburg Landing, Tenn.....	April 18..	Keokuk, Iowa.....	April 23..	284	4
Pittsburg Landing, Tenn.....	May 2...	(New Albany, Ind.....	May 4....	300	30
		(Cincinnati, Ohio.....	May 6....		
Pittsburg Landing, Tenn.....	May 10...	Jefferson Barracks, Mo.....	May 14...	284	7
Total.....				1709	67

PLACE AND DATE OF EMBARKATION.		PLACE AND DATE OF LANDING.		Number Carried.	Died on the way.
		Brought forward.....		1299	67
Pittsburg Landing, Tenn.....	1862. June 9 ...	Jefferson Barracks, Mo.....	1862. June 12...	375	1
Pittsburg Landing, Tenn.....	June 19...	{ Paducah, Ky.....	June 20..	459	3
		{ Jefferson Barracks, Mo.....	June 22..		
		{ Keokuk, Iowa.....	June 23..		
Paducah, Ky.....	July 6 ...	{ Evansville, Ind.....	July 7.....	287	2
		{ Louisville, Ky.....	July 8.....		
Helena, Ark.....	July 17...	Jefferson Barracks, Mo.....	July 21...	317	10
Paducah, Ky.....	July 25...	Jefferson Barracks, Mo.....	July 27...	298	.....
Paducah, Ky.....	Aug. 4 ...	St. Louis, Mo.....	Aug. 6...	144	.....
Helena, Ark.....	Aug. 20...	Mound City, Ill.....	Aug. 23...	160	1
Paducah, Ky.....	Aug. 23...	Mound City, Ill.....	Aug. 23...	30	.....
Helena, Ark.....	Sept. 29..	St. Louis, Mo.....	Oct. 3....	386	14
Helena, Ark.....	Oct. 7 ...	Stmr. <i>T. L. McGill</i> , Colum- bus, Ky.	Oct. 10...	273	6
Columbus, Ky.....	Oct. 12...	St. Louis, Mo.....	Oct. 15...	372	.....
Columbus, Ky.....	Oct. 21...	Mound City, Ill.....	Oct. 23...	88	.....
Columbus, Ky.....	Oct. 30...	Keokuk, Iowa.....	Nov. 4 ...	378	1
Columbus, Ky.....	Nov. 18..	St. Louis, Mo.....	Nov. 21...	410	2
Columbus, Ky.....	Nov. 28..	Jefferson Barracks, Mo.....	Nov. 30...	435	.....
Helena, Ark.....	Dec. 9 ...	St. Louis, Mo.....	Dec. 16...	440	13
Arkansas Post, Ark.....	1863. Jan. 14...	{ Memphis, Tenn.....	1863. Jan. 18...	432	54
		{ St. Louis, Mo.....	Jan. 28...		
Served as receiving hospital at Milliken's Bend, La, during the months of.....	{ March.....	Transferred to other hospi- tal steamers, etc.....	{	1174	46
	{ April.....		{	1460	79
	{ May.....		{	736	19
	{ June.....		{	1195	55
Milliken's Bend, La.....	Aug. 11...	St. Louis, Mo.....	Aug. 18...	378	16
Vicksburg, Miss.....	Aug. 27...	Memphis, Tenn.....	Aug. 31...	387	2
Vicksburg, Miss.....	Sept. 5...	Memphis, Tenn.....	Sept. 8...	377	9
Vicksburg, Miss.....	Sept. 15...	Memphis, Tenn.....	Sept. 18...	244	5
Vicksburg, Miss.....	Sept. 29..	Memphis, Tenn.....	Oct. 7....	78	1
New Orleans, La.....	Oct. 28...	Cairo, Ill.....	Nov. 2....	100	2
Memphis, Tenn.....	Nov. 23..	{ Cairo, Ill.....	Nov. 25..	345	3
		{ St. Louis, Mo.....	Nov. 27, 28		
Nashville, Tenn.....	Dec. 9....	Evansville, Ind.....	Dec. 12...	344	.....
		Total.....		13401	411

PLACE AND DATE OF EMBARKATION.		PLACE AND DATE OF LANDING.		Number Carried.	Died on the way.
		Brought forward		13401	411
New Albany, Ind.....	} 1864. Feb. 11...	Jefferson Barracks, Mo.....	1864. Feb. 15...	97	.....
Louisville, Ky.....					
Louisville, Ky.....	Mar. 18, 19	Madison, Ind.....	March 19	463	.....
Louisville, Ky.....	} April 7...	Madison, Ind.....	April 8...	382	.....
New Albany, Ind.....					
Jeffersonville, Ind.....					
Vicksburg, Miss.....	April 27..	Memphis, Tenn.....	May 1, 2.	} 398	} 1
Memphis, Tenn.....	May 1...	Cairo, Ill.....	May 3...		
Cairo, Ill.....	May 3...	Louisville, Ky.....	May 8...		
Mound City, Ill.....	May 3...	New Albany, Ind.....	May 9...		
Mound City, Ill.....	May 14..	Jefferson Barracks, Mo.....	May 17...	289	.....
Nashville, Tenn.....	May 22...	New Albany, Ind.....	May 26...	239	.....
Mound City, Ill.....	June 10...	Jefferson Barracks, Mo.....	June 12...	120	.....
Louisville, Ky.....	June 21...	Evansville, Ind.....	June 22...	} 498	}
Evansville, Ind.....	June 22...	Jefferson Barracks, Mo.....	June 25...		
Memphis, Tenn.....	Aug. 10...	Jefferson Barracks, Mo.....	Aug. 16...	345	6
Memphis, Tenn.....	Aug. 22..	Jefferson Barracks, Mo.....	Aug. 27...	309	1
Helena, Ark.....	Sept. 2...	Jefferson Barracks, Mo.....	Sept. 9...	332	5
Helena, Ark.....	Sept. 19..	} Jefferson Barracks, Mo.....	Sept. 24...	229	4
Memphis, Tenn.....	Sept. 20..				
Duval's Bluff, Ark.....	Oct. 12...	{ Mound City, Ill.....	Oct. 19, 20	} 407	} 21
		{ Jefferson Barracks Mo.....	Oct. 22...		
Mouth of the White river, Ark.....	Nov. 3..	Cairo, Ill.....	Nov. 6...	127	.....
Mouth of the White river, Ark.....	Nov. 10..	Mound City, Ill.....	Nov. 14...	48	.....
Nashville, Tenn.....	Nov. 25..	Evansville, Ind.....	Nov. 29...	361	1
Nashville, Tenn.....	Dec. 1...	Jefferson Barracks, Mo.....	Dec. 5...	416	2
Louisville* Ky.....	} Dec. 19...	{ Covington, Ky.....	} Dec. 21...	545	.....
Jeffersonville, Ind.....		{ Cincinnati, Ohio.....			
		{ Camp Dennison, Ohio.....			
Louisville, Ky.....	} Dec. 26...	{ Cincinnati, Ohio.....	} Dec. 27...	496	.....
Jeffersonville, Ind.....		{ Covington, Ky.....			
Louisville, Ky.....	} 1865. Jan. 5....	Cairo, Ill., (for transfer to St. Louis.)	1865. Jan. 8....	} 426	} 1
Jeffersonville, Ind.....			Evansville, Ind.....			Jan. 9....
Eastport, Miss.....	} Jan. 27, to Feb. 4..	Mound City, Ill.....	Feb. 5....	} 373	} 30
Waterloo, Ala.....			Memphis, Tenn.....			Feb. 8....
Total				20301	483

PLACE AND DATE OF EMBARKATION.		PLACE AND DATE OF LANDING.		Number Carried.	Died on the way.
		Brought forward.....				20301	483
		1865.			
Eastport, Miss.....	1865. Feb. 12..		1865.		
Waterloo, Ala.....	Feb. 14..	New Albany, Ind.....	Feb. 19..	318	5
Johnsonville, Tenn.....	Feb. 14..					Jeffersonville, Ind.....
Nashville, Tenn.....	Feb. 16..				
Chickasaw, Ala.....	Mar. 12-19	Jeffersonville, Ind.....	March 23	554	8
New Orleans, La.....	April 13..	Baton Rouge, La.....	April 14.	192	
New Orleans, La.....	Apr. 17, 18	{ Stmr. <i>Eleanor Carroll</i> at New Orleans, La. Vicksburg, Miss.....	April 24.	169	
			April 25.		
Selma, Ala.....	May 6...				
Mobile, Ala.....	May 8...	New Orleans, La.....	May 15..	389	12
Fort Gaines, Ala.....	May 9...		Mound City, Ill.....			May 25..
New Orleans, La.....	May 18..				
New Orleans, La.....	May 31.	Vicksburg, Miss.....	June 5...	560	
	June 2.	Memphis, Tenn.....	June 8...		
Vicksburg, Miss.....	June 5...	Stmr. <i>W. Butler</i> at Cairo, Ill., (for transfer to Nashville	June 10..		
New Orleans, La.....	June 20..		June 28..	229	7
Baton Rouge, La.....	June 21..	Cairo, Ill.....	June 29..		
Vicksburg, Miss.....	June 23..	Jefferson Barracks, Mo.....			
New Orleans, La.....	July 17..				
Baton Rouge, La.....	July 18..	Cairo, Ill.....	July 24...	328	3
Cairo, Ill.....	July 24..		Jefferson Barracks, Mo.....			July 26..
New Orleans, La.....	Aug. 3, 9				
Baton Rouge, La.....	Aug. 10..	Cairo, Ill.....	Aug. 16..	439	11
Vicksburg, Miss.....	Aug. 12..		Jefferson Barracks, Mo.....			Aug. 18..
New Orleans, La.....	Aug. 26..				
Baton Rouge, La.....	Aug. 27.	Cairo, Ill.....	Sept. 3...	259	1
Vicksburg, Miss.....	Aug. 28..		Jefferson Barracks, Mo.....			Sept. 4...
Total.....				23,738	530

Model of the U. S. Army Hospital Steamship J. K. Barnes.—On the Atlantic coast a certain number of river steamboats were employed in the transportation of the sick and wounded, especially from the Army of the Potomac to Alexandria, Washington, D. C., and Baltimore. But it was also necessary to employ ocean transportation on a very considerable scale, and both in the conveyance of patients from the Army of the Potomac and from the various coast expeditions, the merchant steamships ordinarily used in the coastwise trade served for this purpose. Here, too, in times of emergency, the vessels chartered by the quartermaster's department for the transportation of stores often served to transport the sick and wounded, but a number of vessels were also devoted exclusively to this service and were fitted up as hospital steamships. The model of the U. S. Army hospital steamship *J. K. Barnes* is intended to illustrate the mode of fitting up vessels of this class which was found most convenient.

This model was constructed by Mr. Charles Hemjé, of New York, under the supervision of Assistant-Surgeon A. H. Hoff, U. S. Army, who also directed the original fitting up of the vessel. The model is seven feet long, being on a scale of three-eighths of an inch to the foot, and represents one lateral half of the vessel, the section being made longitudinally through the median line, thus permitting the display of the interior arrangement of bunks, &c.

The U. S. Army hospital steamship *J. K. Barnes* was fitted up in New York city during the latter part of 1864, and on her completion Assistant-Surgeon Thomas McMillin, U. S. A., was assigned as surgeon-in-charge, December 5, 1864. December 23d, the *Barnes* was ordered to report to the Medical Director of the Department of the South, at Hilton Head, S. C., where she took her first load of sick on board January 1, 1865.

The *Barnes* was 223 feet in length, beam 35 feet 2 inches, depth of hold 22 feet 9 inches. She was of 1,253 tons burthen. Diameter of cylinder 60 inches, stroke of piston 10 feet. In fitting her up, an orlop deck was introduced, and a mess-room was built on the forward deck, in front of the galley. The arrangement of bunks, &c., is shown in Figure 2.

Assistant-Surgeon Thomas McMillin, U. S. A., continued to act as surgeon-in-charge of this vessel until November, 1865. During this time 3,655 patients were carried, of whom 29 died *en route*. The following is a list of the trips:

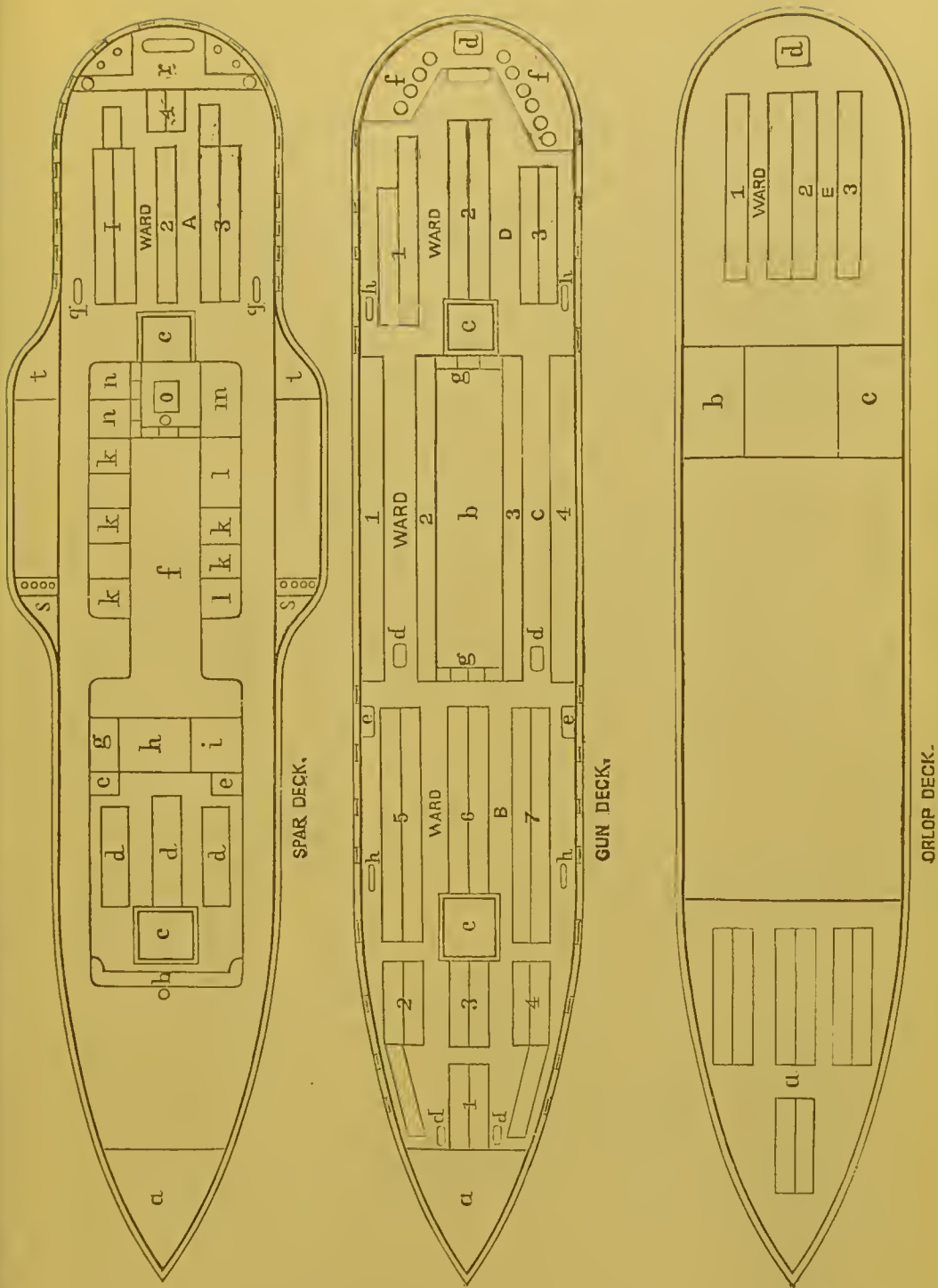


FIG. 2.—DECK-PLAN OF THE U. S. ARMY HOSPITAL STEAMSHIP J. K. BARNES. Scale, 38½ feet to the inch.

Spar Deck.—a, Fore-castle. b, Table. cc, Hatches. ddd, Mess-tables and mess-room. ee, Pantries. g, Officers' mess. h, Galley. i, Ice house. kkkkk, Quarters of medical officers. ll, Linen-room. m, Saloon. nn, Wine-room and office. o, Table. qqq, Heaters. r, Bath-room and water-closet. ss, Water-closets. tt, Guard room. Ward A, 1, 2, 3, 72 bunks.

Gun Deck.—a, Commissary store-room. b, Engine. cc, Hatches. ddddd, Ventilators. ee, Wash-tables. ff, Water-closets. gg, Closets. hhhh, Steam heaters. Ward B, (forward,) 1, 2, 3, 4, 5, 6, 7, 138 bunks. Ward C, (midships,) 1, 2, 3, 4, 42 bunks. Ward D, (aft,) 1, 2, 3, 63 bunks.

Orlop Deck.—a, Quarters for nurses. b, Knapsack-room. c, Baggage-room. d, Ventilator. Ward E, 1, 2, 3, 48 bunks.

List of Trips of the Hospital Steamer J. K. Barnes.

PLACE AND DATE OF EMBARKATION.		PLACE AND DATE OF LANDING.		Number Carried.	Died on the way.
	1865.		1865		
Hilton Head and Beaufort, S. C.	Jan. 1....	David's Island, De Camp G. H., N. Y.	Jan. 5, 6	368	2
New Orleans, La.....	Jan. 31...	Willett's Point, Grant G. H., N. Y.	Feb. 9....	119	0
Savannah, Ga.....	Feb. 25...	Beaufort, S. C.....	Feb. 26...	9	.....
Beaufort, S. C.....	" 26...	St'm'r <i>Northern Light</i> , Port Royal.	" 27...	68	.....
Beaufort, S. C.....	Mar. 14.)	Fort Schuyler, McDougall G. H., N. Y.	Mar. 19...	320	1
" (St'mrs. <i>Spaulding & Atlantic</i>)	" 15.)				
Wilmington and Morehead City, N. C.	April 5...	David's Island, De Camp G. H., N. Y.	April 11.	439	6
Beaufort, Newberne, and Morehead City, N. C.	Apr. 24, 25	{ David's Island, De Camp G. H., N. Y., Willett's Point, Grant G. H., N. Y., Fort Schuyler, McDougall G. H., N. Y. ... }	April 28..	449	2
Hilton Head and Beaufort, S. C.	May 7...	Washington, D. C.	May 11...	385	.....
Savannah, Ga., Hilton Head, S. C.	May 19...	Alexandria, Va.....	May 23...	375	1
New Orleans, La	June 9 ...	Philadelphia, Pa	June 17...	217	.....
New Orleans, La.....	July 8....	New York city.....	July 10...	25	.....
Key West, Fla.....	Aug 5....	{ David's Island, De Camp G. H., N. Y. }	Aug. 23...	345	5
Barrancas and Fort Pickens, Fla.	" 10....				
Mobile, Ala.....	" 12....				
Beaufort, S. C.....	" 16....				
Hilton Head, S. C.....	" 17....				
Charleston, S. C.....	" 19....				
Morehead City and Newbern, N. C.	" 21....				
New Orleans, La.....	Sept. 19.				
Savannah, Ga.....	" 26.	{ David's Island, De Camp G. H., N. Y. }	Oct. 1....	338	0
Hilton Head, S. C.....	" 27..				
New Orleans, La	Oct. 23...				
Pensacola, Fla.....	" 25...				
Key West, Fla.....	" 27...	{ David's Island, De Camp G. H., N. Y. }	Nov. 4....	198	4
Savannah, Ga.....	" 30...				
Hilton Head, S. C.....	" 31...				
Morehead City, N. C.....	Nov. 2 ...				
Total.....				3655	20

PLANS
of a
POST HOSPITAL
for 24 beds.

