

THE PENNSYLVANIA RAILROAD

No. 109-H

ISSUED ALTOONA, PA.

NOVEMBER 16, 1925

CLASSIFICATION AND DESCRIPTION OF LOCOMOTIVES AND TENDERS

(SUPERSEDING CLASSIFICATION AND DESCRIPTION OF LOCOMOTIVES No. 109-G, DATED NOVEMBER 1, 1919)

Locomotives—Classification and Description

In this classification, locomotives are grouped into typical classes according to the arrangement of the wheels used under them, irrespective of the service for which they are intended, using a primary letter to designate the type. Successive designs of a type are designated by numbers following the primary letter, and small suffix letters are used to indicate modifications of any particular class of locomotive. The suffix letter "s" after the numeral in a classification indicates that the locomotive is equipped with a fire tube superheater. The use of the letter "s" in classification has been discontinued for designs made after January 1st, 1923, although the superheater is used.

Heating surfaces given herein are actual areas. Arch tube heating surface is included in item number 27 for all superheated steam locomotives except those for which the arch tubes are not standard, but it is not included for saturated steam locomotives, although some are so equipped.

Except where otherwise noted, the tractive power given for steam locomotives is based on a mean effective pressure equal to 85 per cent. of the boiler pressure.

Class	Wheel Arrangement	Class	Wheel Arrangement
A 0-4-0		H 2-8-0	
B 0-6-0		I 2-10-0	
C 0-8-0		J 2-6-2	
D 4-4-0		K 4-6-2	
E 4-4-2		L 2-8-2	
F 2-6-0		M 4-8-2	
G 4-6-0		N 2-10-2	

Class	Wheel Arrangement
BB 0-6-6-0	
CC 0-8-8-0	
DD 4-4-4-4	
FF 2-6-6-2	
HC 2-8-8-0	
HH 2-8-8-2	

STEAM LOCOMOTIVE CLASSES

Class A 2 a, formerly class Q, 50" drivers, without tender.
 Class A 3, formerly class U.
 Class A 3 a.
 Class A 4.
 Class A 5 s.

Class B 4 a, formerly class M, type of 1893.
 Class B 4 b, formerly class B 4, with saddle tank applied.
 Class B 6.
 Class B 6 s.
 Class B 6 s a.
 Class B 6 s b.
 Class B 8.
 Class B 8 a, formerly class B 8, with saddle tank applied.
 Class B 22, formerly class VB 2, Vandalia Railroad.
 Class B 23, formerly class VB 3, Vandalia Railroad.
 Class B 28 s, formerly U. S. S. 0-6-0-a.
 Class B 29.

Class C 1.
 Class C 30.
 Class C 31.

Class D 16 b.
 Class D 16 d.
 Class D 16 s b.

Class E 2 a.
 Class E 2 b.
 Class E 2 c.
 Class E 2 d.
 Class E 2 s d.
 Class E 3.
 Class E 3 a.
 Class E 3 s a.
 Class E 3 s d.
 Class E 5 s.
 Class E 6 s.
 Class E 7 s, converted from class E 2 a, E 2 b or E 2 c.
 Class E 7 s a, converted from class E 2.
 Class E 22, formerly class VE 2, Vandalia Railroad.
 Class E 23 s, formerly class VE 3 s, Vandalia Railroad.

Class F 3.
 Class F 3 b.
 Class F 3 c.
 Class F 3 s c. Built for G. R. & I. R. R.
 Class F 24 a, formerly class VF 4 a, Vandalia Railroad.
 Class F 25, formerly class VF 5, Vandalia Railroad.
 Class F 26, formerly class VF 6, Vandalia Railroad.
 Class F 27 s, formerly class VF 7 s, Vandalia Railroad, converted from class VF 5 a (F 25 a.)

Class G 4.
 Class G 4 a.
 Class G 4 s.
 Class G 5 s.
 Class G 34, formerly class GG 4, G. R. & I. R. R.
 Class G 34 s, formerly class GG 4 s, G. R. & I. R. R.
 Class G 35, formerly class GG 5, G. R. & I. R. R.
 Class G 35 a, formerly class GG 5 a, G. R. & I. R. R.
 Class G 35 s, formerly class GG 5 s, G. R. & I. R. R.
 Class G 35 s a, formerly class GG 5 s a, G. R. & I. R. R.
 Class G 36 s, formerly class GG 6 s, G. R. & I. R. R.
 Class G 37 s, formerly class GG 7 s, G. R. & I. R. R.

Class H 4.
 Class H 5.
 Class H 6.
 Class H 6 a.
 Class H 6 b.
 Class H 6 s.
 Class H 6 s a.
 Class H 6 s b.
 Class H 8.
 Class H 8 a.
 Class H 8 b.

Class H 8 c.
 Class H 8 s.
 Class H 8 s a.
 Class H 8 s b.
 Class H 8 s c.
 Class H 9, converted from class H 8 b.
 Class H 9 s.
 Class H 9 s a, converted from class H 8 a.
 Class H 9 s c, converted from class H 8 c.
 Class H 10 s.
 Class H 28.
 Class H 34 s, formerly class GH 4 s, G. R. & I. R. R.
 Class H 34 s a, formerly class GH 4 s a, G. R. & I. R. R.

Class I 1 s.

Class K 2 s.
 Class K 2 s a.
 Class K 2 s b.
 Class K 3 s.
 Class K 4 s.
 Class K 21 s, formerly class VK 1 s, Vandalia Railroad.
 Class K 28 s.
 Class K 29 s.

Class L 1 s.
 Class L 2 s, formerly U. S. S. 2-8-2-a (G. R. & I. class GL 1 s.)

Class M 1.

Class N 1 s.
 Class N 2 s, formerly U. S. S. 2-10-2-b.
 Class N 2 sa, formerly U. S. S. 2-10-2-b—Modified.

Class CC 1 s.
 Class CC 2 s.

Class HC 1 s.
 Class HH 1 s.

ELECTRIC LOCOMOTIVE CLASSES

Engine No. 3951, formerly gearless, odd.
 Class DD 1.
 Engine Nos. 3996 to 3999, inclusive, odd DD.
 Class FF 1.
 Class L 5.
 Class L 5 a.

J. T. WALLIS,
Chief of Motive Power
Pennsylvania Railroad System

STEAM LOCOMOTIVES

	CLASSIFICATION	A 2 a	A 3	A 3 a	A 4	A 5 s			
1	Wheel Arrangement	0-4-0	0-4-0	0-4-0	0-4-0	0-4-0			1
2	Wheel Diameters In.	50	50	50	50	50			2
3	Journal, Engine Truck In.	—	—	—	—	—			3
4	“ Drivers In.	7 $\frac{1}{4}$ x 7 $\frac{5}{8}$	8 x 7 $\frac{5}{8}$	8 x 7 $\frac{5}{8}$	9 $\frac{3}{4}$ x 12	9 $\frac{3}{4}$ x 12			4
5	“ Trailer Truck In.	—	—	—	—	—			5
6	Wheel Base, Driver Ft. In.	7-0	7-0	7-0	7-0	7-3			6
7	“ “ Engine Ft. In.	7-0	7-0	7-0	7-0	7-3			7
8	“ “ Engine & Tender Ft. In.	—	37-4	—	42-9 $\frac{1}{2}$	43-8 $\frac{1}{2}$			8
9	Height, Deck Plate In.	43 $\frac{3}{4}$	51	51	66 $\frac{3}{4}$	66 $\frac{3}{4}$			9
10	“ Bottom of Drawbar Pocket In.	—	32 $\frac{1}{2}$	—	34 $\frac{1}{2}$	34 $\frac{1}{2}$			10
11	Cylinder Spread In.	81	84	84	86	86			11
12	“ Dimensions In.	15 x 24	17 x 24	17 x 24	18 $\frac{1}{2}$ x 24	20 x 24			12
13	Steam Port Dimensions In.	1 x 12	1 $\frac{1}{4}$ x 15 $\frac{1}{2}$	1 $\frac{1}{4}$ x 15 $\frac{1}{2}$	1 $\frac{1}{4}$ x 15 $\frac{1}{2}$	2 $\frac{1}{4}$ Wide			13
14	Valve Travel In.	4	5 $\frac{5}{8}$	5 $\frac{5}{8}$	5	5			14
15	“ Lap In.	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{5}{8}$			15
16	“ Type	D	D	D	D	8" Piston			16
17	“ Gear Type	Steph'n	Steph'n	Steph'n	Steph'n	Wals'h't			17
18	Steam Pressure Lb. per Sq. In.	125	160	160	185	185			18
19	Boiler Type	Straight Radial Stay	Belpaire Narrow Firebox	Belpaire Narrow Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox			19
20	“ Diam., Minimum Internal In.	42 $\frac{3}{8}$	51 $\frac{1}{8}$	51 $\frac{1}{8}$	60	60			20
21	Flues and Tubes, Number	97	144	144	247	140, 18, 72			21
22	“ “ “ O. Diam. In.	2	2	2	2	2, 5 $\frac{1}{2}$, 1 $\frac{1}{2}$			22
23	“ Length between Sheets In.	129 $\frac{3}{4}$	128 $\frac{3}{4}$	128 $\frac{3}{4}$	106 $\frac{1}{2}$	106 $\frac{1}{2}$			23
24	“ Fire Area Sq. Ft.	1.64	2.43	2.43	4.17	3.80			24
25	Heating Surface, Ext. Flues Sq. Ft.	549	809	809	1148	881			25
26	“ “ Int. Superh'ter Sq. Ft.	—	—	—	—	163			26
27	“ “ Firebox Sq. Ft.	53	90	90	97	130			27
28	“ “ Total Sq. Ft.	602	899	899	1245	1174			28
29	Grate Dimensions In.	34 $\frac{3}{8}$ x 50 $\frac{1}{4}$	34 $\frac{1}{2}$ x 59 $\frac{3}{8}$	34 $\frac{1}{2}$ x 59 $\frac{3}{8}$	66 x 60	80 x 69			29
30	“ Area Sq. Ft.	12.25	14.23	14.23	27.5	33.33			30
31	Wt. on Rail, Engine Truck Lb.	—	—	—	—	—			31
32	“ “ “ 1st Drivers Lb.	32400	37100	47600	60000	67000			32
33	“ “ “ 2nd Drivers Lb.	37600	45200	51000	56500	64750			33
34	“ “ “ 3rd Drivers Lb.	—	—	—	—	—			34
35	“ “ “ 4th Drivers Lb.	—	—	—	—	—			35
36	“ “ “ 5th Drivers Lb.	—	—	—	—	—			36
37	“ “ “ 6th Drivers Lb.	—	—	—	—	—			37
38	“ “ “ 7th Drivers Lb.	—	—	—	—	—			38
39	“ “ “ 8th Drivers Lb.	—	—	—	—	—			39
40	“ “ “ All Drivers Lb.	70000	82300	98600	116500	131750			40
41	“ “ “ Trailer Truck Lb.	—	—	—	—	—			41
42	“ of Engine, Working Order Lb.	70000	82300	98600	116500	131750			42
43	“ “ “ Empty Lb.	58530	72500	77600	105500	120850			43
44	Tractive Power Lb.	11475	18866	18866	25833	30192			44
45	Ratio: Wt. All Drivers to Tractive Power	6.10	4.36	5.23	4.51	4.36			45
46									46
47									47
48									48
49									49
50									50
51									51
52	Class of Tender	Saddle Tank	27 S 48	Saddle Tank	55 S 66	55 S 66b			52

STEAM LOCOMOTIVES

5

	B 4 a	B 4 b	B 6	B 6 s	B 6 s a	B 6 s b	B 8	B 8 a	B 22	
1	0-6-0	0-6-0	0-6-0	0-6-0	0-6-0	0-6-0	0-6-0	0-6-0	0-6-0	1
2	50	50	56	56	56	56	56	56	51	2
3	—	—	—	—	—	—	—	—	—	3
4	8 x 7 $\frac{1}{2}$	8 x 7 $\frac{1}{2}$	9 $\frac{1}{2}$ x 12	9 $\frac{1}{2}$ x 12	9 $\frac{1}{2}$ x 12	9 $\frac{1}{2}$ x 12	9 $\frac{1}{2}$ x 12	9 $\frac{1}{2}$ x 12	8 $\frac{1}{2}$ x 9	4
5	—	—	—	—	—	—	—	—	—	5
6	10-7	10-7	11-6	11-6	11-6	11-6	11-6	11-6	11-6	6
7	10-7	10-7	11-6	11-6	11-6	11-6	11-6	11-6	11-6	7
8	42-1 $\frac{1}{2}$	—	48-3 $\frac{1}{2}$	48-6 $\frac{1}{2}$	49-3 $\frac{1}{2}$	49-3 $\frac{1}{2}$	47-0 $\frac{1}{2}$	—	40-2 $\frac{1}{2}$	8
9	51	51	66 $\frac{1}{2}$	66 $\frac{1}{2}$	66 $\frac{1}{2}$	66 $\frac{1}{2}$	66 $\frac{1}{2}$	66 $\frac{1}{2}$	52	9
10	33	—	34 $\frac{1}{2}$	34 $\frac{1}{2}$	34 $\frac{1}{2}$	34 $\frac{1}{2}$	34 $\frac{1}{2}$	—	32 $\frac{1}{2}$	10
11	84	84	86	86	86	86	86	86	84	11
12	19 x 24	19 x 24	22 x 24	22 x 24	22 x 24	22 x 24	20 x 24	20 x 24	19 x 26	12
13	1 $\frac{1}{2}$ x 15 $\frac{1}{2}$	1 $\frac{1}{2}$ x 15 $\frac{1}{2}$	2 $\frac{1}{2}$ Wide	2 Wide	2 $\frac{1}{2}$ Wide	2 $\frac{1}{2}$ Wide	1 $\frac{1}{2}$ x 15 $\frac{1}{2}$	1 $\frac{1}{2}$ x 15 $\frac{1}{2}$	1 $\frac{1}{2}$ x 18	13
14	5	5	5	5	5	5	5	5	5 $\frac{1}{2}$	14
15	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{7}{8}$	15
16	D	D	10" Piston	10" Piston	8" Piston	8" Piston	D	D	D	16
17	Steph'n	Steph'n	Steph'n	Steph'n	Wals'h't	Wals'h't	Steph'n	Steph'n	Steph'n	17
18	150	150	205	205	205	205	205	205	180	18
19	Belpaire Narrow Firebox	Belpaire Narrow Firebox	Belpaire Sloping Top	Belpaire Sloping Top	Radial Stay Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Radial Stay Narrow Firebox	19
20	57	57	67 $\frac{1}{2}$	67 $\frac{1}{2}$	67 $\frac{1}{2}$	67 $\frac{1}{2}$	60	60	63	20
21	128	128	323	180, 26, 104	194, 26, 104	194, 26, 104	247	247	253	21
22	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2	2, 5 $\frac{1}{2}$, 1 $\frac{1}{2}$	2, 5 $\frac{1}{2}$, 1 $\frac{1}{2}$	2, 5 $\frac{1}{2}$, 1 $\frac{1}{2}$	2	2	2	22
23	177	177	166 $\frac{1}{2}$	166 $\frac{1}{2}$	148	148	163 $\frac{1}{2}$	163 $\frac{1}{2}$	131	23
24	3.57	3.57	5.46	5.12	5.35	5.35	4.17	4.17	4.27	24
25	1236	1236	2343	1824	1715	1715	1762	1762	1446	25
26	—	—	—	404	354	354	—	—	—	26
27	117	98	152	172	190	195	106	106	155	27
28	1353	1334	2495	2400	2259	2264	1868	1868	1601	28
29	34 $\frac{1}{2}$ x 74 $\frac{3}{8}$	34 $\frac{1}{2}$ x 62 $\frac{3}{8}$	66 x 90	66 x 90	80 x 111	79 $\frac{1}{2}$ x 111	66 x 69	66 x 69	33 $\frac{1}{2}$ x 102 $\frac{3}{8}$	29
30	17.82	14.94	41.25	41.25	61.67	61.57	31.62	31.62	23.5	30
31	—	—	—	—	—	—	—	—	—	31
32	35300	33800	60000	62500	63250	61400	48100	50400	40950	32
33	36900	44875	59500	56000	60870	62200	47100	59400	44800	33
34	35300	43425	50500	52000	56580	56700	48250	57900	38000	34
35	—	—	—	—	—	—	—	—	—	35
36	—	—	—	—	—	—	—	—	—	36
37	—	—	—	—	—	—	—	—	—	37
38	—	—	—	—	—	—	—	—	—	38
39	—	—	—	—	—	—	—	—	—	39
40	107500	122100	170000	170500	180700	180300	143450	167700	123750	40
41	—	—	—	—	—	—	—	—	—	41
42	107500	122100	170000	170500	180700	180300	143450	167700	123750	42
43	97000	101950	146000	150000	162450	161500	128100	139400	109800	43
44	22093	22093	36144	36144	36144	36144	29871	29871	28158	44
45	4.86	5.53	4.70	4.72	4.99	4.99	4.80	5.61	4.39	45
46	—	—	—	—	—	—	—	—	—	46
47	—	—	—	—	—	—	—	—	—	47
48	—	—	—	—	—	—	—	—	—	48
49	—	—	—	—	—	—	—	—	—	49
50	—	—	—	—	—	—	—	—	—	50
51	—	—	—	—	—	—	—	—	—	51
52	30 S 48	Saddle Tank	55 S 66c	55 S 66d	60 S 66	60 S 66a	55 S 66	Saddle Tank	45 S 51	52

STEAM LOCOMOTIVES

	CLASSIFICATION	B 23	B 28 s	B 29					
1	Wheel Arrangement	0-6-0	0-6-0	0-6-0					1
2	Wheel Diameters In.	51	51	51					2
3	Journal, Engine Truck In.	—	—	—					3
4	“ Drivers In.	9 x 12	9 x 12	9 x 10					4
5	“ Trailer Truck In.	—	—	—					5
6	Wheel Base, Driver Ft. In.	11-6	11-0	11-6					6
7	“ “ Engine Ft. In.	11-6	11-0	11-6					7
8	“ “ Engine & Tender Ft. In.	41-0 $\frac{3}{4}$	49-9 $\frac{1}{2}$	42-3 $\frac{1}{8}$					8
9	Height, Deck Plate In.	52 $\frac{3}{4}$	66	51 $\frac{1}{2}$					9
10	“ Bottom of Drawbar Pocket In.	33	31 $\frac{1}{2}$	31 $\frac{1}{2}$					10
11	Cylinder Spread In.	86	86	86					11
12	“ Dimensions In.	20 x 26	21 x 28	19 x 26					12
13	Steam Port Dimensions In.	1 $\frac{1}{4}$ x 18	1 $\frac{1}{2}$ Wide	1 $\frac{1}{4}$ x 18					13
14	Valve Travel In.	5 $\frac{1}{2}$	6	5 $\frac{1}{2}$					14
15	“ Lap In.	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{3}{4}$					15
16	“ Type	D	12" Piston	D					16
17	“ Gear Type	Steph'n	Baker	Steph'n					17
18	Steam Pressure Lb. per Sq. In.	180	190	180					18
19	Boiler Type	Radial Stay Narrow Firebox	Radial Stay Wide Firebox	Straight Radial Stay					19
20	“ Diam. Minimum Internal In.	70 $\frac{5}{8}$	64 $\frac{1}{2}$	65					20
21	Flues and Tubes, Number	311	158, 24, 96	*258					21
22	“ “ “ O. Diam. In.	2	2, 5 $\frac{1}{2}$, 1 $\frac{1}{2}$	2					22
23	“ Length between Sheets In.	131	178 $\frac{1}{8}$	131					23
24	“ Fire Area Sq. Ft.	5 25	4.59	4.36					24
25	Heating Surface, Ext. Flues Sq. Ft.	1778	1749	1475					25
26	“ “ Int. Superh'ter Sq. Ft.	—	416	—					26
27	“ “ Firebox Sq. Ft.	177	152	149					27
28	“ “ Total Sq. Ft.	1955	2317	1624					28
29	Grate Dimensions In.	41 $\frac{3}{4}$ x 108 $\frac{3}{8}$	66 $\frac{1}{2}$ x 72 $\frac{1}{8}$	40 x 107 $\frac{1}{8}$					29
30	“ Area Sq. Ft.	31.36	33 18	29.75					30
31	Wt. on Rail, Engine Truck Lb.	—	—	—					31
32	“ “ “ 1st Drivers Lb.	51600	47600	42600					32
33	“ “ “ 2nd Drivers Lb.	49900	57900	47487					33
34	“ “ “ 3rd Drivers Lb.	47200	61700	44913					34
35	“ “ “ 4th Drivers Lb.	—	—	—					35
36	“ “ “ 5th Drivers Lb.	—	—	—					36
37	“ “ “ 6th Drivers Lb.	—	—	—					37
38	“ “ “ 7th Drivers Lb.	—	—	—					38
39	“ “ “ 8th Drivers Lb.	—	—	—					39
40	“ “ “ All Drivers Lb.	148700	167200	135000					40
41	“ “ “ Trailer Truck Lb.	—	—	—					41
42	“ of Engine, Working Order Lb.	148700	167200	135000					42
43	“ “ “ Empty Lb.	131600	152000	117000					43
44	Tractive Power Lb.	31200	39102	28158					44
45	Ratio: Wt. All Drivers to Tractive Power	4.77	4.28	4.79					45
46									46
47									47
48									48
49									49
50									50
51									51
52	Class of Tender	50 S 51	80 S 65	46 S 51					52

* Prior to 1905, 274.

STEAM LOCOMOTIVES

7

	C 1	C 30	C 31		D 16 b	D 16 s b	D 16 d		E 2 a	
1	0-8-0	0-8-0	0-8-0		4-4-0	4-4-0	4-4-0		4-4-2	1
2	56	50	46		33.68	33.68	36.80		36, 80, 50	2
3	—	—	—		5½ x 10	5½ x 10	5½ x 10		5½ x 10	3
4	½ x 16	8½ x 8½	8 x 8½		9½ x 12½	9½ x 12½	9½ x 12½		9½ x 13	4
5	—	—	—		—	—	—		7 x 12	5
6	15-9	15-3	13-6		7-9	7-9	7-9		7-5	6
7	15-9	15-3	13-6		22-9½	22-9½	22-9½		30-9½	7
8	53-5½	—	—		54-8½	55-0½	54-8½		60-2½	8
9	66½	—	—		55½	55½	55½		58½	9
10	34½	—	—		37	37	37		34½	10
11	93	88	84		78	78	78		85½	11
12	27 x 30	22 x 28	20 x 24		18½ x 26	20½ x 26	18½ x 26		20½ x 26	12
13	2¼ WIDE ¼x1½ AUX.	1½ x 18	1½ x 16		1½ x 20	1½ & 1½ Wide	1½ x 20		1½ x 20	13
14	6	5	5		6	6	6		7	14
15	1½	1	¾		1½	1½	1½		1½	15
16	8" Piston	D	D		D	8" Piston	D		D	16
17	Wals'h't	Steph'n	Steph'n		Steph'n	Steph'n	Steph'n		Steph'n	17
18	250	145	140		175	175	175		195 205	18
19	Belpaire Wide Firebox	Belpaire	Wagon Top		Belpaire Narrow Firebox	Belpaire Narrow Firebox	Belpaire Narrow Firebox		Belpaire Wide Firebox	19
20	76½	60½	59½		58½	58½	58½		65½	20
21	269-40-160	220	243		310	159, 21.84	310		315	21
22	2-5½-1½	2	2		1½	1½, 5½, 1½	1½		2	22
23	180	160½	157½		136½	135½	136½		180	23
24	7.74	3.72	4.10		4.52	4.00	4.52		5.32	24
25	2977	1543	1670		1733	1219	1733		2474	25
26	741	—	—		—	253	—		—	26
27	237	141	138		166	181	166		166	27
28	3955	1684	1808		1899	1653	1899		2640	28
29	79½ x 111	42 x 93½	33½ x 107½		40 x 119½	40 x 119½	40 x 119½		72 x 111	29
30	61.57	27.27	24.96		33.23	33.23	33.23		55.5	30
31	—	—	—		40900	42600	40000		32000	31
32	74000	36000	26700		50400	51800	50000		60000	32
33	67000	38800	40700		46700	46700	48000		63000	33
34	71000	41700	41700		—	—	—		—	34
35	66000	37800	36700		—	—	—		—	35
36	—	—	—		—	—	—		—	36
37	—	—	—		—	—	—		—	37
38	—	—	—		—	—	—		—	38
39	—	—	—		—	—	—		—	39
40	278000	154300	145800		97100	98500	98000		123000	40
41	—	—	—		—	—	—		32000	41
42	278000	154300	145800		138000	141100	138000		187000	42
43	251800	118977	117000		121800	124900	121900		167000	43
44	*76154	33406	24834		19465	23902	16546		22638 23799	44
45	3.65	4.62	5.87		4.99	4.12	5.92		5.43 5.17	45
46	—	—	—		—	—	—		—	46
47	—	—	—		—	—	—		—	47
48	—	—	—		—	—	—		—	48
49	—	—	—		—	—	—		—	49
50	—	—	—		—	—	—		—	50
51	—	—	—		—	—	—		—	51
52	70 S 66	Saddle Tank	Saddle Tank		55 P 55	55 P 55a	55 P 55		55 P 58	52

* Based on formula $T = \frac{.78PC^2S}{D}$

STEAM LOCOMOTIVES

	CLASSIFICATION	E 2 b	E 2 c	E 2 d	E 2 s d	E 3	E 3 a	E 3 s a	
1	Wheel Arrangement	4-4-2	4-4-2	4-4-2	4-4-2	4-4-2	4-4-2	4-4-2	1
2	Wheel Diameters In.	36, 80, 50	36, 80, 50	36, 80, 50	36, 80, 50	36, 80, 50	36, 80, 50	36, 80, 50	2
3	Journal, Engine Truck In.	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	3
4	“ Drivers In.	9½ x 13	9½ x 13	9½ x 13	9½ x 13	9½ x 13	9½ x 13	9½ x 13	4
5	“ Trailer Truck In.	7 x 12	7 x 12	7 x 12	7 x 12	7 x 12	7 x 12	7 x 12	5
6	Wheel Base, Driver Ft. In.	7-5	7-5	7-5	7-5	7-5	7-5	7-5	6
7	“ “ Engine Ft. In.	30-9½	30-9½	30-9½	30-9½	30-9½	30-9½	30-9½	7
8	“ “ Engine & Tender Ft. In.	60-3½	60-3½	60-2½	60-6½	60-2½	60-2½	60-6½	8
9	Height, Deck Plate In.	58½	58½	58½	58½	58½	58½	58½	9
10	“ Bottom of Drawbar Pocket In	34½	34½	34½	34½	34½	34½	34½	10
11	Cylinder Spread In.	85½	85½	85½	85½	85½	85½	85½	11
12	“ Dimensions In.	20½ x 26	20½ x 26	20½ x 26	20½ x 26	22 x 26	22 x 26	22 x 26	12
13	Steam Port Dimensions In.	1½ Wide	1½ x 20	2 & 1½ Wide	2 & 1½ Wide	1½ x 20	1½ x 20	2½ & 2½ Wide	13
14	Valve Travel In.	7	7	7	7	7	7	7	14
15	“ Lap In.	1½	1½	1½	1½	1½	1½	1½	15
16	“ Type	12" Piston	D	12" Piston	12" Piston	D	D	12" Piston	16
17	“ Gear Type	Steph'n	Steph'n	Wals'h't	Wals'h't	Steph'n	Steph'n	Wals'h't	17
18	Steam Pressure Lb. per Sq. In.	195 205	195 205	195 205	195 205	195 205	195 205	195 205	18
19	Boiler Type	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Radial Stay Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	19
20	“ Diam. Minimum Internal In.	65½	65½	65½	65½	65½	65½	65½	20
21	Flues and Tubes, Number	315	315	315	170, 24, 96	315	315	170, 24, 96	21
22	“ “ “ O. Diam. In.	2	2	2	2, 5½, 1½	2	2	2, 5½, 1½	22
23	“ Length between Sheets In.	180	180	180	180	180	180	180	23
24	“ Fire Area Sq. Ft.	5.32	5.32	5.32	4.79	5.32	5.32	4.79	24
25	Heating Surface, Ext. Flues Sq. Ft.	2474	2474	2474	1854	2474	2474	1854	25
26	“ “ Int. Super'h'ter Sq. Ft.	—	—	—	412	—	—	412	26
27	“ “ Firebox Sq. Ft.	166	166	166	187	166	166	187	27
28	“ “ Total Sq. Ft.	2640	2640	2640	2453	2640	2640	2453	28
29	Grate Dimensions In.	72 x 111	72 x 111	72 x 111	72 x 111	72 x 111	72 x 111	72 x 111	29
30	“ Area Sq. Ft.	55.5	55.5	55.5	55.5	55.5	55.5	55.5	30
31	Wt. on Rail, Engine Truck Lb.	32000	32000	34000	34000	34500	35500	35000	31
32	“ “ “ 1st Drivers Lb.	60000	60000	60600	62500	57700	56700	62200	32
33	“ “ “ 2nd Drivers Lb.	63000	62000	62300	63300	57600	61700	63900	33
34	“ “ “ 3rd Drivers Lb.	—	—	—	—	—	—	—	34
35	“ “ “ 4th Drivers Lb.	—	—	—	—	—	—	—	35
36	“ “ “ 5th Drivers Lb.	—	—	—	—	—	—	—	36
37	“ “ “ 6th Drivers Lb.	—	—	—	—	—	—	—	37
38	“ “ “ 7th Drivers Lb.	—	—	—	—	—	—	—	38
39	“ “ “ 8th Drivers Lb.	—	—	—	—	—	—	—	39
40	“ “ “ All Drivers Lb.	123000	122000	122900	125800	115300	118400	126100	40
41	“ “ “ Trailer Truck Lb.	32000	31000	33500	33400	33700	36700	33900	41
42	“ of Engine, Working Order Lb.	187000	185000	190400	193200	183500	190600	195000	42
43	“ “ “ Empty Lb.	167000	163100	170400	172900	163200	171100	175000	43
44	Tractive Power Lb.	22638 23799	22638 23799	22638 23799	22638 23799	26072 27409	26072 27409	26072 27409	44
45	Ratio: Wt. All Drivers to Tractive Power	5.43 5.17	5.39 5.12	5.43 5.16	5.56 5.29	4.42 4.21	4.54 4.32	4.66 4.44	45
46									46
47									47
48									48
49									49
50									50
51									51
52	Class of Tender	70 P 58d	70 P 58d	55 P 58	55 P 58a	55 P 58	55 P 58	55 P 58a	52

STEAM LOCOMOTIVES

9

	E 3 s d	E 5 s	E 6 s	E 7 s	E 7 s a	E 22	E 23 s 1910			
1	4-4-2	4-4-2	4-4-2	4-4-2	4-4-2	4-4-2	4-4-2			1
2	36, 80, 50	36, 80, 50	36, 80, 50	36, 80, 50	36, 80, 50	36, 79, 49	36, 79, 49			2
3	5½ x 10	5½ x 10	6½ x 12	5½ x 10	5½ x 10	6 x 10	6 x 10			3
4	9½ x 13	9½ x 13	9½ x 13	10½ x 14	10½ x 14	9½ x 13	9½ x 13			4
5	7 x 12	6½ x 12	6½ x 12	7 x 12	7 x 12	7½ x 12	7½ x 12			5
6	7-5	7-5	7-5	7-5	7-5	7-0	7-0			6
7	30-9½	29-7½	29-7½	30-9½	30-9½	27-3	27-3			7
8	60-6⅞	63-6⅞	63-10½	60-3⅞	60-3⅞	57-10½	57-10½			8
9	58½	58½	66½	58½	58½	68½	67½			9
10	34½	34½	34½	34½	34½	36	36			10
11	85½	85½	85½	85½	85½	86	86			11
12	22 x 26	22 x 26	23½ x 26	22½ x 26	22½ x 26	21 x 26	21½ x 26			12
13	2½ & 2⅞ Wide	2½ & 2⅞ Wide	2½ & 2⅞ Wide	1½ Wide	1½ Wide	1½ x 18	1½ Wide			13
14	7	7	7	7	7	6	6			14
15	1⅞	1⅞	1⅞	1½	1½	1½	1½			15
16	12" Piston	12" Piston	12" Piston	12" Piston	12" Piston	D	12" Piston			16
17	Wals'h't	Wals'h't	Wals'h't	Steph'n	Steph'n	Steph'n	Steph'n			17
18	195 206	205	205	195 206	195 206	200	200			18
19	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Radial Stay Wide Firebox	Radial Stay Wide Firebox	Radial Stay Wide Firebox			19
20	65½	65½	76½	65½	65½	70½	70½			20
21	170, 24, 96	170, 24, 96	242, 36, 144	170, 24, 96	170, 24, 96	351	†199, 28, 112			21
22	2, 5½, 1½	2, 5½, 1½	2, 5½, 1½	2, 5½, 1½	2, 5½, 1½	2	2, 5½, 1½			22
23	180	180	180	180	180	190½	190½			23
24	4.79	4.79	6.96	4.79	4.79	5.93	5.60			24
25	1854	1854	2678	1854	1854	2923	2299			25
26	412	412	613	412	412	—	512			26
27	187	187	218	187	187	196	196			27
28	2453	2453	3509	2453	2453	3119	3007			28
29	72 x 111	72 x 111	72 x 110½	72 x 111	72 x 111	75½ x 96½	75½ x 96½			29
30	55.5	55.5	55.19	55.5	55.5	50.24	50.24			30
31	35500	39300	55200	35000	35000	40000	43575			31
32	62700	61500	68000	57000	57000	52500	51625			32
33	64500	67400	68000	64000	63000	55500	54975			33
34	—	—	—	—	—	—	—			34
35	—	—	—	—	—	—	—			35
36	—	—	—	—	—	—	—			36
37	—	—	—	—	—	—	—			37
38	—	—	—	—	—	—	—			38
39	—	—	—	—	—	—	—			39
40	127200	128900	136000	121000	120000	108000	106600			40
41	33900	40500	52400	35000	34500	36000	37525			41
42	196600	208700	243600	191000	189500	184000	187700			42
43	175400	188800	215000	170000	169000	162400	167100			43
44	28072 27409	27409	31275	27271 26670	27271 26670	24674	25862			44
45	4.88 4.66	4.70	4.35	4.44 4.22	4.41 4.19	4.38	4.12			45
46										46
47										47
48										48
49										49
50										50
51										51
52	55 P 58a	70 P 58a	70 P 66	70 P 58d	70 P 58d	75 P 68	75 P 68			52

† 1906 and 1907—216.

STEAM LOCOMOTIVES

	CLASSIFICATION	F 3	F 3 b	F 3 c	F 3 s c	F 24 a	F 25	F 26	
1	Wheel Arrangement	2-6-0	2-6-0	2-6-0	2-6-0	2-6-0	2-6-0	2-6-0	1
2	Wheel Diameters In.	33, 62	33, 62	33, 62	33, 62	33, 63	33, 63	30, 51	2
3	Journal, Engine Truck In.	5½ x 10	5½ x 10	5½ x 10	5½ x 10	6 x 10	6½ x 12	6½ x 12	3
4	“ Drivers In.	8¼ x 12	8¼ x 12	8¼ x 12	8¼ x 12	8½ x 11	9½ x 12	9 x 12	4
5	“ Trailer Truck In.	—	—	—	—	—	—	—	5
6	Wheel Base, Driver Ft. In.	14-9	14-9	14-9	14-9	14-2	14-9	11-6	6
7	“ “ Engine Ft. In.	23-10	23-10	23-10	23-10	22-5	23-10	19-3½	7
8	“ “ Engine & Tender Ft. In.	54-5½	55-7½	55-8½	55-8½	54-0½	57-2	48-10½	8
9	Height, Deck Plate In.	58½	66½	66½	66½	68½	66½	52½	9
10	“ Bottom of Drawbar Pocket In.	35	35	35	35	33	33	33	10
11	Cylinder Spread In.	86	86	86	86	87	86	86	11
12	“ Dimensions In.	20 x 28	20 x 28	20 x 28	20 x 28	20 x 26	21 x 28	20 x 26	12
13	Steam Port Dimensions In.	1½ x 18	1½ x 18	1½ x 18	1½ Wide	1½ x 18	1½ x 18	1½ x 18	13
14	Valve Travel In.	6	6	6	5½	5½	6	5½	14
15	“ Lap In.	1	1	1	1	1½	1	¾	15
16	“ Type	D	D	D	8" Piston	D	D	D	16
17	“ Gear Type	Steph'n	Steph'n	Steph'n	Steph'n	Steph'n	Steph'n	Steph'n	17
18	Steam Pressure Lb. per Sq. In.	205	205	205	205	185	200	180	18
19	Boiler Type	Radial Stay Narrow Firebox	Radial Stay Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Radial Stay Wide Firebox	Radial Stay Wide Firebox	Radial Stay Narrow Firebox	19
20	“ Diam., Minimum Internal In.	67½	67½	67½	67½	61	75	70½	20
21	Flues and Tubes, Number	356	364	364	197, 28, 112	305	390	311	21
22	“ “ “ O. Diam. In.	2	2	2	2, 5½, 1½	2	2	2	22
23	“ Length between Sheets In.	145½	145½	145½	145½	143	161½	131	23
24	“ Fire Area Sq. Ft.	6.01	6.15	6.15	5.56	5.15	6.59	5.25	24
25	Heating Surface, Ext. Flues Sq. Ft.	2264	2315	2315	1743	1903	2755	1778	25
26	“ “ Int. Superh'ter Sq. Ft.	—	—	—	375	—	—	—	26
27	“ “ Firebox Sq. Ft.	167	154	154	175	170	180	177	27
28	“ “ Total Sq. Ft.	2431	2469	2469	2293	2073	2935	1955	28
29	Grate Dimensions In.	39½ x 111½	66 x 102½	66 x 102½	66 x 102½	65½ x 102½	69½ x 108½	41½ x 108½	29
30	“ Area Sq. Ft.	30.87	47.07	47.07	47.07	46.63	52.0	31.37	30
31	Wt. on Rail, Engine Truck Lb.	20950	22200	23000	23500	18600	26000	16000	31
32	“ “ “ 1st Drivers Lb.	48700	49050	49000	50500	34900	52000	44000	32
33	“ “ “ 2nd Drivers Lb.	48350	47450	48200	49200	45100	54500	47500	33
34	“ “ “ 3rd Drivers Lb.	45000	43800	45700	45400	42950	50000	44000	34
35	“ “ “ 4th Drivers Lb.	—	—	—	—	—	—	—	35
36	“ “ “ 5th Drivers Lb.	—	—	—	—	—	—	—	98
37	“ “ “ 6th Drivers Lb.	—	—	—	—	—	—	—	37
38	“ “ “ 7th Drivers Lb.	—	—	—	—	—	—	—	38
39	“ “ “ 8th Drivers Lb.	—	—	—	—	—	—	—	39
40	“ “ “ All Drivers Lb.	142050	140300	142900	145100	122950	156500	135500	40
41	“ “ “ Trailer Truck Lb.	—	—	—	—	—	—	—	41
42	“ of Engine, Working Order Lb.	163000	162500	165900	168600	141550	182500	151500	42
43	“ “ “ Empty Lb.	145250	146300	147000	150600	128200	161700	134400	43
44	Tractive Power Lb.	31477	31477	31477	31477	25959	33320	31200	44
45	Ratio: Wt. All Drivers to Tractive Power	4.51	4.46	4.54	4.69	4.74	4.70	4.34	45
46									46
47									47
48									48
49									49
50									50
51									51
52	Class of Tender	60 F 50	70 F 66	70 F 66	70 F 66	70 F 68	75 F 67	50 S 51	52

	F 27 s		G 4	G 4 a	G 4 s	G 5 s	G 34	G 34 s	G 35	
1	2-6-0		4-6-0	4-6 0	4-6-0	4-6-0	4-6-0	4-6-0	4-6-0	1
2	33, 63		36, 72	30, 62	36, 72	33, 68	30, 62	30, 62	30, 62	2
3	6½ x 12		5½ x 10	5½ x 10	5½ x 10	6½ x 12	5 x 10	5 x 10	5½ x 10	3
4	9½ x 12		9½ x 13	9½ x 13	9½ x 13	9½ x 13	8½ x 10	8½ x 10	8½ x 10	4
5	—		—	—	—	—	—	—	—	5
6	14-9		13-10	13-10	13-10	14-3	13-6	13-6	13-6	6
7	23-10		25-5	25-5	25-5	26-6	24-4	24-4	24-4	7
8	57-2		57-6½	57-6½	57-6½	62-7½	49-8	49-8	50-2½	8
9	70½		58½	58½	58½	83	50½	50½	50½	9
10	33½		35	35	35	34½	31½	31½	31½	10
11	86		90	90	90	85½	84½	84½	84½	11
12	21½ x 28		20 x 28 22 x 28	20 x 28 22 x 28	23 x 28	24 x 28	19 x 26	19 x 26	19 x 26	12
13	1½ Wide		1½ x 20	1½ x 20	2½ & 2½ Wide	2½ & 2½ Wide	1½ x 16	1½ Wide	1½ x 16	13
14	6		6	6	7	7	5½	5½	5½	14
15	1½		1	1	1½	1½	¾	¾	¾	15
16	12" Piston		D	D	12" Piston	12" Piston	D	8" Piston	D	16
17	Wals'h't		Steph'n	Steph'n	Wals'h't	Wals'h't	Steph'n	Steph'n	Steph'n	17
18	200		*225 205	*225 205	205	205	185	185	200	18
19	Radial Stay Wide Firebox		Radial Stay Narrow Firebox	Radial Stay Narrow Firebox	Radial Stay Narrow Firebox	Belpaire Wide Firebox	Radial Stay Narrow Firebox	Radial Stay Narrow Firebox	Radial Stay Narrow Firebox	19
20	75		67	67	67	76½	62	62	60½	20
21	230, 32, 128		356	356	193, 26, 104	242, 36, 144	276	147, 21, 84	266	21
22	2, 5½, 1½		2	2	2, 5½, 1½	2, 5½, 1½	2	2, 5½, 1½	2	22
23	161½		170½	170½	170½	180	172	172	172	23
24	6.44		6.01	6.01	5.34	6.96	4.66	4.16	4.49	24
25	2246		2654	2654	1972	2678	2071	1537	1996	25
26	486		—	—	417	613	—	338	—	26
27	208		162	162	175	177	148	148	148	27
28	2940		2816	2816	2564	3468	2219	2023	2144	28
29	69½ x 108½		39½ x 111½	39½ x 111½	39½ x 111½	72 x 110½	42 x 96	42 x 96	42 x 96½	29
30	52.0		30.79	30.79	30.79	55.19	28	28	28.11	30
31	28400		45360	41000	47200	59000	32800	33600	29600	31
32	54950		44640	48000	55900	59000	32500	34000	38300	32
33	56025		51360	49000	50600	63000	36175	36975	35700	33
34	52275		46480	45000	43400	56000	32855	32855	35700	34
35	—		—	—	—	—	—	—	—	35
36	—		—	—	—	—	—	—	—	36
37	—		—	—	—	—	—	—	—	37
38	—		—	—	—	—	—	—	—	38
39	—		—	—	—	—	—	—	—	39
40	163250		142480	142000	149900	178000	101530	103830	109700	40
41	—		—	—	—	—	—	—	—	41
42	191650		187840	183000	197100	237000	134330	137430	139300	42
43	170000		168200	163000	177500	212000	121330	124430	126650	43
44	34925		*32750 32750	*34540 33080	35847	41328	23806	23806	25736	44
45	4.67		*4.79 4.36	*4.11 3.73	4.18	4.31	4.26	4.36	4.26	45
46	—		—	—	—	—	—	—	—	46
47	—		—	—	—	—	—	—	—	47
48	—		—	—	—	—	—	—	—	48
49	—		—	—	—	—	—	—	—	49
50	—		—	—	—	—	—	—	—	50
51	—		—	—	—	—	—	—	—	51
52	75 F 70		70 P 58c	70 P 58c	70 P 58c	70 P 82a	45 P 50a	45 P 50a	45 P 50a	52

*For engines with 20" cylinders.

STEAM LOCOMOTIVES

	CLASSIFICATION	G 35 a	G 35 s	G 35 s a	G 36 s	G 37 s			
1	Wheel Arrangement	4-6-0	4-6-0	4-6-0	4-6-0	4-6-0			1
2	Wheel Diameters In.	33, 68	30, 62	33, 68	33, 68	33, 68			2
3	Journal, Engine Truck In.	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10			3
4	“ Drivers In.	8½ x 10	8½ x 10	8½ x 10	9 x 12	9½ x 12			4
5	“ Trailer Truck In.	—	—	—	—	—			5
6	Wheel Base, Driver Ft. In.	13-6	13-6	13-6	14-0	14-0			6
7	“ “ Engine Ft. In.	24-4	24-4	24-4	25-9	25-9			7
8	“ “ Engine & Tender Ft. In.	50-2½	50-2½	50-2½	55-1½	55-1½			8
9	Height, Deck Plate In.	50½	50½	50½	76½	76½			9
10	“ Bottom of Drawbar Pocket In.	31½	31½	31½	29½	29½			10
11	Cylinder Spread In.	84½	84½	84½	86	86			11
12	“ Dimensions In.	19 x 26	19 x 26	19 x 26	20 x 26	22 x 26			12
13	Steam Port Dimensions In.	1½ x 16	1½ Wide	1½ Wide	1½ Wide	1½ Wide			13
14	Valve Travel In.	5½	5½	5½	5½	5½			14
15	“ Lap In.	⅞	⅞	⅞	1	1			15
16	“ Type	D	8" Piston	8" Piston	11" Piston	11" Piston			16
17	“ Gear Type	Steph'n	Steph'n	Steph'n	Steph'n	Steph'n			17
18	Steam Pressure Lb. per Sq. In.	200	200	200	200	200			18
19	Boiler Type	Radial Stay Narrow Firebox	Radial Stay Narrow Firebox	Radial Stay Narrow Firebox	Radial Stay Wide Firebox	Radial Stay Wide Firebox			19
20	“ Diam. Minimum Internal In.	60½	60½	60½	62½	62½			20
21	Flues and Tubes, Number	266	147, 21, 84	151, 21, 84	163, 24, 96	163, 24, 96			21
22	“ “ “ O. Diam. In.	2	2, 5½, 1½	2, 5½, 1½	2, 5½, 1½	2, 5½, 1½			22
23	“ Length Between Sheets In.	172	172	172	179	179			23
24	“ Fire Area Sq. Ft.	4.49	4.16	4.23	4.67	4.67			24
25	Heating Surface, Ext. Flues Sq. Ft.	1996	1537	1567	1789	1789			25
26	“ “ Int. Superh'ter Sq. Ft.	—	338	338	404	404			26
27	“ “ Firebox Sq. Ft.	148	148	148	149	149			27
28	“ “ Total Sq. Ft.	2144	2023	2053	2342	2342			28
29	Grate Dimensions In.	42 x 96½	42 x 96½	42 x 96½	65½ x 102½	65½ x 102½			29
30	“ Area Sq. Ft.	28.11	28.11	28.11	46.27	46.27			30
31	Wt. on Rail, Engine Truck Lb.	29600	30400	30400	44400	44600			31
32	“ “ “ 1st Drivers Lb.	38300	39800	39800	40600	44400			32
33	“ “ “ 2nd Drivers Lb.	35700	36500	36500	44550	46650			33
34	“ “ “ 3rd Drivers Lb.	35700	35700	35700	42350	42350			34
35	“ “ “ 4th Drivers Lb.	—	—	—	—	—			35
36	“ “ “ 5th Drivers Lb.	—	—	—	—	—			36
37	“ “ “ 6th Drivers Lb.	—	—	—	—	—			37
38	“ “ “ 7th Drivers Lb.	—	—	—	—	—			38
39	“ “ “ 8th Drivers Lb.	—	—	—	—	—			39
40	“ “ “ All Drivers Lb.	109700	112000	112000	127500	133400			40
41	“ “ “ Trailer Truck Lb.	—	—	—	—	—			41
42	“ of Engine, Working Order Lb.	139300	142400	142400	171900	178000			42
43	“ “ “ Empty Lb.	126650	129750	129750	152700	158800			43
44	Tractive Power Lb.	23465	25736	23465	26000	31460			44
45	Ratio: Wt. All Drivers to Tractive Power	4.68	4.35	4.77	4.90	4.24			45
46									46
47									47
48									48
49									49
50									50
51									51
52	Class of Tender	45 P 50a	45 P 50a	45 P 50a	62 P 77	62 P 77			52

	H 4	H 5	H 6	H 6 a	H 6 b	H 6 s	H 6 s a	H 6 s b	H 8	
1	2-8-0	2-8-0	2-8-0	2 8-0	2-8-0	2-8-0	2-8-0	2-8-0	2-8-0	1
2	30, 56	30, 56	30, 56	30, 56	30, 56	30, 56	30, 56	30, 56	33, 62	2
3	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	3
4	9½ x 10	9 x 13	9 x 13	9 x 13	9 x 13	9 x 13	9 x 13	9 x 13	9½ x 13	4
5	—	—	—	—	—	—	—	—	—	5
6	16-11	17-6	16-6½	16-6½	16-3	16-6½	16-6½	16-3	17-0½	6
7	25-5	25-11½	24-9	24-9	24-9	24-9	24-9	24-9	25-9½	7
8	56-0½	57-3	56-8½	57-11½	57-11½	56-8½	57-11½	57-11½	59-5½	8
9	51	51	51	66½	66½	51	66½	66½	70½	9
10	35	35	34½	34½	34½	34½	34½	34½	34½	10
11	88	90	88	88	88	88	88	88	90	11
12	22 x 28	23½ x 28	22 x 28	22 x 28	22 x 28	23 x 28	23 x 28	23 x 28	24 x 28	12
13	1½ x 21	1½ x 21	1½ x 21	1½ x 21	2¼ & 2½ Wide	2 & 1½ Wide	2 & 1½ Wide	2¼ & 2½ Wide	2¼ Wide	13
14	6	6	6	6	6	6	6	6	6	14
15	1	1	1	1	7	1	1	7	7	15
16	D	D	D	D	12" Piston	12" Piston	12" Piston	12" Piston	12" Piston	16
17	Steph'n	Steph'n	Steph'n	Steph'n	Wals'h't	Steph'n	Steph'n	Wals'h't	Wals'h't	17
18	205	185	205	205	205	190	195	205*	205	18
19	Belpaire Narrow Firebox	Belpaire Narrow Firebox	Belpaire Narrow Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Narrow Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	19
20	68	69½	69½	69½	69½	69½	69½	69½	76½	20
21	316 or 263	369 or 306	369	373	373	204, 28, 112	208, 28, 112	208, 28, 112	465	21
22	2 or 2¼	2 or 2¼	2	2	2	2, 5½, 1½	2, 5½, 1½	2, 5½, 1½	2	22
23	168	168	163½	164½	164½	163½	164½	164½	180	23
24	5.34 or 5.79	6.23 or 6.74	6.23	6.30	6.30	5.68	5.75	5.75	7.85	24
25	2316 or 2169	2705 or 2523	2632	2677	2677	2005	2046	2046	3652	25
26	—	—	—	—	—	429	429	429	—	26
27	154	197	180	167	167	194	188	188	190	27
28	2470 or 2323	2902 or 2720	2812	2844	2844	2628	2663	2663	3842	28
29	40 x 106	40 x 120	40 x 120	65½ x 107	65½ x 107	40 x 120	65½ x 107	65½ x 107	71½ x 110½	29
30	29.44	33.33	33.33	48.95	48.95	33.33	48.95	48.95	55.09	30
31	18000	20800	20100	18800	22000	22000	20700	23900	32200	31
32	36000	41600	43800	43000	45000	45800	45000	47000	48500	32
33	42000	43000	40200	44000	44000	41300	45100	45100	51400	33
34	45000	45600	41500	46000	46000	40900	45400	45400	56100	34
35	38000	45500	40900	42700	43700	40600	42400	43400	53800	35
36	—	—	—	—	—	—	—	—	—	36
37	—	—	—	—	—	—	—	—	—	37
38	—	—	—	—	—	—	—	—	—	38
39	—	—	—	—	—	—	—	—	—	39
40	161000	175700	166400	175700	178700	168600	177900	180900	209800	40
41	—	—	—	—	—	—	—	—	—	41
42	179000	196500	186500	194500	200700	190600	198600	204800	242000	42
43	154950	173100	162900	171600	179000	170100	177800	185200	213180	43
44	42168	43421	42168	42168	42168	42717	43841	*42168 43841	45327	44
45	3.82	4.05	3.95	4.17	4.24	3.94	4.06	*4.17 4.17	4.63	45
46	—	—	—	—	—	—	—	—	—	46
47	—	—	—	—	—	—	—	—	—	47
48	—	—	—	—	—	—	—	—	—	48
49	—	—	—	—	—	—	—	—	—	49
50	—	—	—	—	—	—	—	—	—	50
51	—	—	—	—	—	—	—	—	—	51
52	60 F 50	60 F 50	60 F 50	70 F 66	70 F 66	60 F 50	70 F 66	70 F 66	70 F 70	52

* For Engines Equipped with 22" Cylinders.

STEAM LOCOMOTIVES

	CLASSIFICATION	H 8 a	H 8 b	H 8 c	H 8 s	H 8 sa	H 8 sb	H 8 sc	
1	Wheel Arrangement	2-8-0	2-8-0	2-8-0	2-8-0	2-8-0	2-8-0	2-8-0	1
2	Wheel Diameters In.	33, 62	33, 62	33, 62	33, 62	33, 62	33, 62	33, 62	2
3	Journal, Engine Truck In.	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	3
4	“ Drivers In.	10½ x 13	9¾ x 13	10½ x 13	9¾ x 13	9¾ x 13	9¾ x 13	10½ x 13	4
5	“ Trailer Truck In.	—	—	—	—	—	—	—	5
6	Wheel Base, Driver Ft. In.	17-0½	17-0½	17-0½	17-0½	17-0½	17-0½	17-0½	6
7	“ “ Engine Ft. In.	25-9½	25-9½	25-9½	25-9½	25-9½	25-9½	25-9½	7
8	“ “ Engine & Tender Ft. In.	59-5½	59-5½	59-2½	59-5½	59-5½	62-4½	59-2½	8
9	Height, Deck Plate In.	70½	70½	70½	70½	70½	70½	70½	9
10	“ Bottom of Drawbar Pocket In.	34½	34½	34½	34½	34½	34½	34½	10
11	Cylinder Spread In.	90	90	90	90	90	90	90	11
12	“ Dimensions In.	24 x 28	24 x 28	24 x 28	24 x 28	24 x 28	24 x 28	24 x 28	12
13	Steam Port Dimensions In.	2½ Wide	2½ Wide	2½ Wide	2½ Wide	2½ Wide	2½ Wide	2½ Wide	13
14	Valve Travel In.	6	6	6	6	6	6	6	14
15	“ Lap In.	⅞	⅞	⅞	⅞	⅞	⅞	⅞	15
16	“ Type	*12" Piston	12" Piston	*12" Piston	12" Piston	*12" Piston	12" Piston	*12" Piston	16
17	“ Gear Type	Wals'h't	Wals'h't	Wals'h't	Wals'h't	Wals'h't	Wals'h't	Wals'h't	17
18	Steam Pressure Lb. per Sq. In.	205	205	205	205	205	205	205	18
19	Boiler Type	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	19
20	“ Diam., Minimum Internal In.	76½	76½	76½	76½	76½	76½	76½	20
21	Flues and Tubes, Number	465	465	465	265, 36, 144	265, 36, 144	265, 36, 144	265, 36, 144	21
22	“ “ “ O. Diam. In.	2	2	2	2, 5½, 1½	2, 5½, 1½	2, 5½, 1½	2, 5½, 1½	22
23	“ “ Length between Sheets In.	180	180	180	180	180	180	180	23
24	“ Fire Area Sq. Ft.	7.85	7.85	7.85	7.35	7.35	7.35	7.35	24
25	Heating Surface, Ext. Flues Sq. Ft.	3652	3652	3652	2859	2859	2859	2859	25
26	“ “ Int. Superh'ter Sq. Ft.	—	—	—	613	613	613	613	26
27	“ “ Firebox Sq. Ft.	190	190	190	211	211	211	211	27
28	“ “ Total Sq. Ft.	3842	3842	3842	3683	3683	3683	3683	28
29	Grate Dimensions In.	71½ x 110½	71½ x 110½	71½ x 110½	71½ x 110½	71½ x 110½	71½ x 110½	71½ x 110½	29
30	“ Area Sq. Ft.	55.09	55.09	55.09	55.09	55.09	55.09	55.09	30
31	Wt. on Rail, Engine Truck Lb.	24000	29800	25000	27200	24000	27500	24500	31
32	“ “ “ 1st Drivers Lb.	52000	57700	52000	59700	52000	61000	52600	32
33	“ “ “ 2nd Drivers Lb.	53000	47600	54000	53400	55500	55000	57300	33
34	“ “ “ 3rd Drivers Lb.	54000	54600	56000	55300	57000	59000	58700	34
35	“ “ “ 4th Drivers Lb.	52000	51000	52500	49200	55000	50000	56400	35
36	“ “ “ 5th Drivers Lb.	—	—	—	—	—	—	—	36
37	“ “ “ 6th Drivers Lb.	—	—	—	—	—	—	—	37
38	“ “ “ 7th Drivers Lb.	—	—	—	—	—	—	—	38
39	“ “ “ 8th Drivers Lb.	—	—	—	—	—	—	—	39
40	“ “ “ All Drivers Lb.	211000	210900	214500	217600	219500	225000	225000	40
41	“ “ “ Trailer Truck Lb.	—	—	—	—	—	—	—	41
42	“ of Engine, Working Order Lb.	235000	240700	239500	244800	243500	252500	249500	42
43	“ “ Engine, Empty Lb.	204000	216000	207800	219900	211800	225500	224800	43
44	Tractive Power Lb.	45327	45327	45327	45327	45327	45327	45327	44
45	Ratio: Wt. All Drivers to Tractive Power	4.66	4.65	4.73	4.80	4.84	4.96	4.84	45
46									46
47									47
48									48
49									49
50									50
51									51
52		70 F 70	70 F 70	70 F 70c	70 F 70	70 F 70	70 F 70a	70 F 70c	52

* Originally Equipped with 14" Piston Valve.

	H 9	H 9 s	H 9 sa	H 9 sc	H 10 s	H 28	H 34 s	H 34 sa		
1	2-8-0	2-8-0	2-8-0	2-8-0	2-8-0	2-8-0	2-8-0	2-8-0		1
2	33, 62	33, 62	33, 62	33, 62	33, 62	33, 63	30, 56	30, 56		2
3	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	6 x 10	5½ x 12	5½ x 12		3
4	9½ 10½ x 13	9½ 10½ x 13	10½ x 13	10½ x 13	10½ x 13	9½ 10 x 13	9 9½ x 12	9 9½ x 12		4
5	—	—	—	—	—	—	—	—		5
6	17-0½	17-0½	17-0½	17-0½	17-0½	17-6	15-6	15-6		6
7	25-9½	25-9½	25-9½	25-9½	25-9½	26-5	24-6	24-6		7
8	59-2½	62-4½	59-2½	59-2½	62-4½	60-1½	56-0	56-0		8
9	70½	70½	70½	70½	81	66½	76½	76½		9
10	34½	34½	34½	34½	34½	33½	26½	26½		10
11	90	90	90	90	90	88	86	86		11
12	25 x 28	25 x 28	25 x 28	25 x 28	26 x 28	23 x 32	21 x 28	21 x 28		12
13	2½ Wide	2½ Wide	2½ Wide	2½ Wide	2½ Wide	1½ Wide	2 Wide	2 Wide		13
14	6	6	6	6	6	6	5½	5½		14
15	7	7	7	7	7	7	1	1		15
16	12" Piston	12" Piston	*12" Piston	*12" Piston	*12" Piston	14" Piston	11" Piston	11" Piston		16
17	Wals'h't	Wals'h't	Wals'h't	Wals'h't	Wals'h't	Steph'n	Steph'n	Wals'h't		17
18	205	205	205	205	205	200	200	200		18
19	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Radial Stay Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox		19
20	76½	76½	76½	76½	76½	80	64½	64½		20
21	465	265, 36, 144	265, 36, 144	265, 36, 144	265, 36, 144	446	183, 27, 108	183, 27, 108		21
22	2	2, 5½, 1½	2, 5½, 1½	2, 5½, 1½	2, 5½, 1½	2	2, 5½, 1½	2, 5½, 1½		22
23	180	180	180	180	180	184½	172½	172½		23
24	7.85	7.35	7.35	7.35	7.35	7.53	5.25	5.25		24
25	3652	2859	2859	2859	2859	3597	1940	1939		25
26	—	613	613	613	613	—	441	441		26
27	190	211	211	211	211	182	160	160		27
28	3842	3683	3683	3683	3683	3779	2541	2540		28
29	71½ x 110½	71½ x 110½	71½ x 110½	71½ x 110½	71½ x 110½	75½ x 106½	62½ x 102	62½ x 102		29
30	55.09	55.09	55.09	55.09	55.09	55.42	44.09	44.09		30
31	29900	27700	26625	24495	24500	20000	26400	26400		31
32	57700	62300	62575	52800	56000	49000	33400	33400		32
33	47700	54600	48200	54750	57000	50000	37700	37700		33
34	54600	55700	49025	53900	60000	52500	44350	44350		34
35	51000	50700	50775	55000	50000	50000	39550	39550		35
36	—	—	—	—	—	—	—	—		36
37	—	—	—	—	—	—	—	—		37
38	—	—	—	—	—	—	—	—		38
39	—	—	—	—	—	—	—	—		39
40	211000	223300	210575	216450	223000	201500	155000	155000		40
41	—	—	—	—	—	—	—	—		41
42	240900	251000	237200	240945	247500	221500	181400	181400		42
43	214000	225500	211100	209450	216400	193000	164700	164700		43
44	49183	49183	49183	49183	53197	45679	37485	37485		44
45	4.29	4.54	4.28	4.40	4.19	4.41	4.13	4.13		45
46	—	—	—	—	—	—	—	—		46
47	—	—	—	—	—	—	—	—		47
48	—	—	—	—	—	—	—	—		48
49	—	—	—	—	—	—	—	—		49
50	—	—	—	—	—	—	—	—		50
51	—	—	—	—	—	—	—	—		51
52	70 F 70c	70 F 70a	70 F 70c	70 F 70c	80 F 81	70 F 66	62 F 77	62 F 77		52

* Originally Equipped with 14" Piston Valve.

	CLASSIFICATION	1 1 s TYPE "A" Superheater	1 1 s TYPE "E" Superheater				K 2 s	K 2 s a	
1	Wheel Arrangement	2-10-0	2-10-0				4-6-2	4-6-2	1
2	Wheel Diameters In.	33, 62	33, 62				36, 80, 56	36, 80, 56	2
3	Journal, Engine Truck In.	6½ x 12	6½ x 12				6½ x 12	6½ x 12	3
4	“ Drivers In.	1½ x 16	1½ x 16				10½ x 15	10½ x 15	4
5	“ Trailer Truck In.	—	—				8 x 14	8 x 14	5
6	Wheel Base, Driver Ft. In.	22-8	22-8				13-10	13-10	6
7	“ “ Engine Ft. In.	32-2	32-2				35-2½	35-2½	7
8	“ “ Engine & Tender Ft. In.	73-4½	73-4½				70-3	70-3	8
9	Height, Deck Plate In.	83	83				66½	78	9
10	“ Bottom of Drawbar Pocket In.	34½	34½				33½	33½	10
11	Cylinder Spread In.	91½	91½				88	88	11
12	“ Dimensions In.	30½ x 32	30½ x 32				24 x 26	24 x 26	12
13	Steam Port Dimensions In.	2¼ Wide ¼ x 1½ (Aux.)	2¼ Wide ¼ x 1½ (Aux.)				1½ Wide	1½ Wide	13
14	Valve Travel In.	6	6				7	7	14
15	“ Lap In.	2	2				1½	1½	15
16	“ Type	12" Piston	12" Piston				†12" Piston	†12" Piston	16
17	“ Gear Type	Wals'h't	Wals'h't				Wals'h't	Wals'h't	17
18	Steam Pressure Lb. per Sq. In.	250	250				205	205	18
19	Boiler Type	Belpaire Wide Firebox	Belpaire Wide Firebox				Belpaire Wide Firebox	Belpaire Wide Firebox	19
20	“ Diam., Minimum Internal In.	82	82				78	78	20
21	Flues and Tubes, Number	244, 48, 192	120, 170, 340				202, 32, 128	202, 32, 128	21
22	“ “ “ O. Diam. In.	2½, 5½, 1½	2½, 3½, 1½				2½, 5½, 1½	2½, 5½, 1½	22
23	“ Length between Sheets In.	228	228				†252½	250½	23
24	“ Fire Area Sq. Ft.	9.21	8.73				7.00	7.00	24
25	Heating Surface, Ext. Flues Sq. Ft.	4044	4303				3471	3450	25
26	“ “ Int. Superh'ter Sq. Ft.	1133	1634				791	791	26
27	“ “ Firebox Sq. Ft.	287	287				220	220	27
28	“ “ Total Sq. Ft.	5464	6224				4482	4461	28
29	Grate Dimensions In.	79½ x 126	79½ x 126				72 x 110½	72 x 110½	29
30	“ Area Sq. Ft.	69.89	69.89				55.38	55.38	30
31	Wt. on Rail, Engine Truck Lb.	30000	33600				42500	46000	31
32	“ “ “ 1st Drivers Lb.	66000	71500				62000	62000	32
33	“ “ “ 2nd Drivers Lb.	66000	67000				64000	65000	33
34	“ “ “ 3rd Drivers Lb.	73000	72600				62000	64000	34
35	“ “ “ 4th Drivers Lb.	68000	68800				—	—	35
36	“ “ “ 5th Drivers Lb.	68000	72600				—	—	36
37	“ “ “ 6th Drivers Lb.	—	—				—	—	37
38	“ “ “ 7th Drivers Lb.	—	—				—	—	38
38	“ “ “ 8th Drivers Lb.	—	—				—	—	39
40	“ “ “ All Drivers Lb.	341000	352500				188000	191000	40
41	“ “ “ Trailer Truck Lb.	—	—				52500	60000	41
42	“ of Engine, Working Order Lb.	371000	386100				283000	297000	42
43	“ “ “ Empty Lb.	336900	354250				252500	265400	43
44	Tractive Power Lb.	Δ90024	Δ90024				32620	32620	44
45	Ratio: Wt. All Drivers to Tractive Power	3.79	3.92				5.76	5.86	45
46									46
47									47
48									48
49									49
50									50
51									51
52	Class of Tender	90 F 82	90 F 82				70 P 66	70 P 77e	52

† Former Lines West 250½.

‡ Former Lines West 16" Piston Valve.

ΔBased on formula $T = \frac{.75 PC^2 S}{D}$

STEAM LOCOMOTIVES

17

	K 2 s b	K 3 s	K 4 s	K 21 s	K 28 s	K 29 s				
1	4-6-2	4-6-2	4-6-2	4-6-2	4-6-2	4-6-2				1
2	33, 72, 50	36, 80, 56	36, 80, 50	36, 80, 55	36, 80, 54	36, 80, 54				2
3	6½ x 12	6½ x 12	6½ x 12	6½ x 12	6½ x 12	6½ x 12				3
4	10½ x 15	10½ x 15	11 x 15	10½ x 14	10½ x 14	11½ x 14				4
5	6½ x 12	8 x 14	6½ x 12	8 x 14	8 x 14	9 x 14				5
6	13-10	13-10	13-10	13-10	13-10	13-10				6
7	35-4½	35-2½	36-2	34-8½	35-2½	36-5				7
8	70-5	69-11½	72-4	66-9½	66-11½	71-5½				8
9	66½	79½	70½	70	66½	84½				9
10	33½	33½	34½	35½	35½	27½				10
11	88	88	89	90	88	89				11
12	24 x 26	26 x 26	27 x 28	24 x 26	24 x 26	27 x 28				12
13	1½ Wide	1½ Wide	2½ & 2½ Wide	1½ Wide	1½ Wide	1½ Wide				13
14	7	7	7	6½	7	7				14
15	1½	1½	1½	1½	1½	1½				15
16	12" Piston	*12" Piston	12" Piston	△ 12" Piston	*12" Piston	16" Piston				16
17	Wals'h't	Wals'h't	Wals'h't	Wals'h't	Wals'h't	Wals'h't				17
18	205	205	205	200	205	200				18
19	Belpaire Wide Firebox	Belpaire Wide Firebox	Belpaire Wide Firebox	Radial Stay Wide Firebox	Radial Stay Wide Firebox	Belpaire Wide Firebox				19
20	78	78	76½	75	78	80				20
21	202, 32, 128	202, 32, 128	236, 40, 160	233, 30, 120	200, 30, 120	241, 40, 160				21
22	2½, 5½, 1½	2½, 5½, 1½	2½, 5½, 1½	2, 5½, 1½	2½, 5½, 1½	2½, 5½, 1½				22
23	252½	250½	228	250½	250½	262½				23
24	7.00	7.00	8.39	6.33	6.80	8.50				24
25	3471	3450	3736	3454	3365	4372				25
26	791	791	943	748	748	1047				26
27	220	220	305	223	228	231				27
28	4482	4461	4984	4425	4341	5650				28
29	72 x 110½	72 x 110½	79½ x 126	75½ x 108½	80½ x 111	79½ x 121½				29
30	55.38	55.38	69.89	56.89	61.86	66.86				30
31	46200	43000	53640	49700	42800	50500				31
32	61200	66600	67550	54400	62100	66000				32
33	65400	68850	67630	58400	64600	65800				33
34	65900	60850	66650	54400	55400	66000				34
35	—	—	—	—	—	—				35
36	—	—	—	—	—	—				36
37	—	—	—	—	—	—				37
38	—	—	—	—	—	—				38
39	—	—	—	—	—	—				39
40	192500	196300	201830	167200	182100	197800				40
41	47900	54300	53420	46100	48700	68700				41
42	286600	293600	308890	263000	273600	317000				42
43	257000	263050	274500	234300	240200	280600				43
44	36244	38283	44460	31824	32620	43375				44
45	5.31	5.13	4.54	5.25	5.58	4.56				45
46										46
47										47
48										48
49										49
50										50
51										51
52	70 P 66	80 P 79	70 P 70d	75 P 70	70 P 66c	80 P 83				52

* Originally Designed with 16" Piston Valve.

△ Former Lines West 14" Piston Valve.

	CLASSIFICATION	L 1 s	L 2 s		M 1 No. 4700	M 1		N 1 s	
1	Wheel Arrangement	2-8-2	2-8-2		4-8-2	4-8-2		2-10-2	1
2	Wheel Diameters In.	33, 62, 50	33, 63, 43		33, 72, 50	33, 72, 50		33, 62, 36	2
3	Journal, Engine Truck In.	6½ x 12	6½ x 12		6½ x 12	6½ x 12		6½ x 12	3
4	“ Drivers In.	11 x 15	11 x 13		1½ x 16	1½ x 16		1½ x 15	4
5	“ Trailer Truck In.	6½ x 12	9 x 14		6½ x 12	6½ x 12		7½ x 14	5
6	Wheel Base, Driver Ft. In.	17-0½	16-9		18-10	18-10		22-2	6
7	“ “ Engine Ft. In.	36-4½	36-1		41-0½	41-0½		41-11½	7
8	“ “ Engine & Tender Ft. In.	73-3½	71-4½		78-10½	79-3½		82-9½	8
9	Height, Deck Plate In.	66½	79		83	83		84	9
10	“ Bottom of Drawbar Pocket In.	34½	31½		34½	34½		33½	10
11	Cylinder Spread In.	90	89		91½	91½		92	11
12	“ Dimensions In.	27 x 30	26 x 30		27 x 30	27 x 30		30 x 32	12
13	Steam Port Dimensions In.	2½ Wide	1½ Wide		2 Wide	2 Wide		2 Wide	13
14	Valve Travel In.	6	6½		7	7		8½	14
15	“ Lap In.	⅞	1		1⅞	1⅞		1½	15
16	“ Type	12" Piston	14" Piston		12" Piston	12" Piston		14" Piston	16
17	“ Gear Type	Wals'h't	Wals'h't		Wals'h't	Wals'h't		Wals'h't	17
18	Steam Pressure Lb. per Sq. In.	205	200		250	250		215	18
19	Boiler Type	Belpaire Wide Firebox	Radial Star Wide Firebox		Belpaire Wide Firebox	Belpaire Wide Firebox		Belpaire Wide Firebox	19
20	“ Diam., Minimum Internal, In.	76½	76½		82	82½		88½	20
21	Flues and Tubes, Number	236, 40, 160	216, 40, 160		114, 200, 400	120, 170, 340		196, 54, 216	21
22	“ “ “ O. Diam. In.	2½, 5½, 1½	2½, 5½, 1½		2½, 3½, 1½	2½, 3½, 1½		2½, 5½, 1½	22
23	“ Length between Sheets In.	228	226½		228	228		250½	23
24	“ Fire Area Sq. Ft.	8.39	7.95		8.51	8.73		9.77	24
25	Heating Surface, Ext. Flues Sq. Ft.	3736	3495		4509	4303		4305	25
26	“ “ Int. Superh'ter Sq. Ft.	943	901		1800	1634		1364	26
27	“ “ Firebox Sq. Ft.	305	253		395	395		422	27
28	“ “ Total Sq. Ft.	4984	4649		6704	6332		6091	28
29	Grate Dimensions In.	79½ x 126	84½ x 114½		79½ x 126	79½ x 125½		80 x 143½	29
30	“ Area Sq. Ft.	69.89	66.77		69.89	69.86		79.93	30
31	Wt. on Rail, Engine Truck Lb.	29600	20100		50800			25000	31
32	“ “ “ 1st Drivers Lb.	56200	55200		76000			70300	32
33	“ “ “ 2nd Drivers Lb.	57200	54800		76100			69000	33
34	“ “ “ 3rd Drivers Lb.	62000	55200		69400			75600	34
35	“ “ “ 4th Drivers Lb.	64800	54800		63600			65500	35
36	“ “ “ 5th Drivers Lb.	—	—		—	—		70600	36
37	“ “ “ 6th Drivers Lb.	—	—		—	—		—	37
38	“ “ “ 7th Drivers Lb.	—	—		—	—		—	38
39	“ “ “ 8th Drivers Lb.	—	—		—	—		—	39
40	“ “ “ All Drivers Lb.	240200	220000		285100			351000	40
41	“ “ “ Trailer Truck Lb.	50900	51900		48400			59000	41
42	“ of Engine, Working Order Lb.	320700	292000		384300			435000	42
43	“ “ “ Empty Lb.	286500	261000		332250			389000	43
44	Tractive Power Lb.	61465	54724		64550	64550		84890	44
45	Ratio: Wt. All Drivers to Tractive Power	3.91	4.01		4.42			4.13	45
46									46
47									47
48									48
49									49
50									50
51									51
52	Class of Tender	90 F 66	100 F 78		110 P 82	110 P 82		100 F 85	52

	N 2 s	N 2 s a		CC 1 s	CC 2 s		HC 1 s		HH 1 s	
1	2-10-2	2-10-2		0-8-8-0	0-8-8-0		2-8-8-0		2-8-8-2	1
2	33, 63, 43	33, 63, 43		56	51		33, 62		30, 56, 30	2
3	6½ x 12	6½ x 12		—	—		6½ x 12		5½ x 12	3
4	10½ x 13	10½ x 13		9½ x 13	10½ x 14		1½ x 16		10½ x 13	4
5	9 x 14	9 x 14		—	—		—		5½ x 12	5
6	22-4	22-4		15-0 x 9-6 x 15-0	14-9 x 10-7½ x 14-9		17-1½ x 10-11½ x 17-1½		15-6 x 10-10 x 15-6	6
7	42-2	42-2		39-6	40-1½		54-8½		57-5	7
8	82-10	82-10		71-10½	78-8½		97-3½		88-1	8
9	79	79		90	84		83		87½	9
10	31½	31½		32½	33½		34½		31½	10
11	92	92		84	88		91½		86	11
12	30 x 32	30 x 32		25 x 30 H. F. 39 x 30 L. F.	26 x 28 H. F. 40 x 28 L. F.		30½ x 32		27 x 28	12
13	1½ Wide	1½ Wide		2½ Wide	2½ Wide H. F. 2½ Wide L. F.		2½ Wide ¾ x 1½ (Aux.)		1½ Wide	13
14	7	7					6		6	14
15	1½	1½					2		1	15
16	14" Piston	14" Piston		14" Piston	14" Piston		12" Piston		14" Piston	16
17	Wals'h't	Wals'h't		Wals'h't	Wals'h't		Wals'h't		Wals'h't	17
18	190	190		205	225		205		160	18
19	Radial Stay Wide Firebox	Belpaire Wide Firebox		Belpaire Wide Firebox	Radial Stay Wide Firebox		Belpaire Wide Firebox		Radial Stay Wide Firebox	19
20	86½	86½		82½	86½		93½		86	20
21	271, 50, 200	257, 50, 200		259, 36, 144	209, 52, 208		162, 264, 528		282, 45, 180	21
22	2½, 5½, 1½	2½, 5½, 1½		2½, 5½, 1½	2½, 5½, 1½		2½, 3½, 1½		2½, 5½, 1½	22
23	244½	244½		275	262½		228		296½	23
24	9.96	9.65		8.58	9.98		11.49		9.80	24
25	4728	4560		4684	4635		6081		5712	25
26	1222	1222		988	1379		2260		1319	26
27	429	420		237	378		531		404	27
28	6379	6202		5909	6392		8872		7435	28
29	96½ x 132½	96½ x 132½		96 x 117	96 x 144		96 x 168		96½ x 144½	29
30	88.31	88.27		78	96		112		96.33	30
31	28500	26700		—	—		—		22500	31
32	56400	57400		45900	61550		—		53500	32
33	55900	55600		52800	56000		—		55000	33
34	60600	60400		54800	58400		—		56000	34
35	59800	63200		53500	62100		—		52000	35
36	60300	60400		49600	60300		—		52000	36
37	—	—		52500	55680		—		53000	37
38	—	—		51600	54920		—		63500	38
39	—	—		48000	49200		—		52500	39
40	293000	297000		408700	458150		553000 Estimated		437500	40
41	58500	57000		—	—		—		22500	41
42	380000	380700		408700	458150		586500 Estimated		482500	42
43	343600	336900		359100	409800		524000 Estimated		425700	43
44	73829	73829		†82716	†99792		*147640		△99144	44
45	3.97	4.02		4.94	4.59		—		4.41	45
46										46
47										47
48										48
49										49
50										50
51										51
52	120 F 78	120 F 78		90 F 90	100 F 85		130 F 82		90 F 86	52

† Based on formula, $T = \frac{1.7 P c^2 S}{(C^2 + 1) D}$

* Based on formula, $T = \frac{1.5 P C^2 S}{D}$

△ Based on formula, $T = \frac{1.7 P C^2 S}{D}$

ELECTRIC LOCOMOTIVES

	CLASSIFICATION	Odd 3951	Odd DD 3996 to 3999 Incl.	DD 1	FF 1		L 5	L 5 a	
1	Wheel Arrangement	0-4-4-0	4-4-4-4	4-4-4-4	2-6-6-2		2-8-2	2-8-2	1
2	Wheel Diameters In.	56	36-68-36	36-72-36	36-72-36		33, 80, 33	33, 80, 33	2
3	Journal, End Trucks In.	—	5½ x 10	6½ x 12	6½ x 12		7 x 12	7 x 12	3
4	“ Drivers In.	6 x 11	10 x 13½	10 x 13½	11 x 15		11 x 15	11 x 15	4
5	“ Inside Trucks In.	—	—	—	—		—	—	5
6	Wheel Base, Driver Ft. In.	26-1	24-1	24-1	38-8		22-3	22-3	6
7	“ Base, Total Ft. In.	26-1	55-11	55-11	63-11		54-11	54-11	7
8	Length Coupled Ft. In.	38-9	64-11	64-11	76-6½		68-2½	68-2½	8
9	Width, Maximum Ft. In.	10-1½	10-7	11-2½	10-1½		10-7	10-7	9
10	Height Over Cab Roof Ft. In.	13-4	13-1	13-1½	14-8		13-4½	13-4½	10
11	“ Maximum, Trolley Down Ft. In.	14-6½	14-8½	14-8½	15-6		15-6	14-8½	11
12	Drive, Type of	Gearless	Jack Shaft	Jack Shaft	Gears and Jack Shaft		Gears and Jack Shaft	Gears and Jack Shaft	12
13	Current Collectors	3rd Shoes and Collector	3rd Shoes and Collector	3rd Shoes and Collector	Pantograph		Pantograph	Pantograph and 3rd Rail Shoes	13
14	Line Voltage	650 D. C.	650 D. C.	650 D. C.	11000 A. C.		11000 A. C.	650 D. C.	14
15	Main Motors, Class and Voltage	D. C. 300	D. C. 650	D. C. 650	3 Phase 850		A. C. 350	D. C. 325	15
16	“ “ Make and Type	Westinghouse 2-103, 2-129	Westinghouse 315	Westinghouse 315-A	Westinghouse 451		Westinghouse 418	Westinghouse 418	16
17	“ “ Number of	4	2	2	4		4	4	17
18	“ “ Ventilation	Forced	Natural	Natural	Forced		Forced	Forced	18
19	“ “ Gear Ratio	—	—	—	21 to 106		30 to 118	50 to 98	19
20	“ “ Gear Type of	—	—	—	Double Helical		Spur	Spur	20
21	“ “ Rotor, Diameter In.	—	56	56	41½		55	55	21
22	“ “ Rotor, Weight, Lb.	—	—	—	—		12000	12000	22
23	“ “ Weight Lb.	—	—	—	—		25000	25000	23
24	Control, Master Type	Electro Pneumatic	Electro Pneumatic	Electro Pneumatic	Electro Pneumatic		Electro Pneumatic	Electro Pneumatic	24
25	“ Master Oper't'g Current	20 V	20 V	20 V	30 V		32V	82 V	25
26	“ Main Type	Grids	Grids	Grids	Transformer		Transformer Switches	Grids	26
27	Compressors, Number and Type	1-C-60 2-Stage	2-C-60 2-Stage	2-C-60 2-Stage	2-Vertical 2-Stage		1-Vertical 2-Stage	1-Vertical, 2 Stage	27
28	“ Capacity Cu. Ft.	60	60	60	150		150	150	28
29	Blowers, Number and H. P.	—	—	—	2-50		2-24	2-24	29
30	“ Capacity Cu. Ft.	—	—	—	—		8000	8000	30
31	Wt. on Rail, End Truck Lb.	—	62000	57000	38000		50000	—	31
32	“ “ “ 1st Drivers Lb.	51090	52000	49750	73000		79000	—	32
33	“ “ “ 2nd Drivers Lb.	47950	52000	49750	72000		76000	—	33
34	“ “ “ 3rd Drivers Lb.	45180	52000	49750	70500		75300	—	34
35	“ “ “ 4th Drivers Lb.	50920	52000	49750	73000		78300	—	35
36	“ “ “ 5th Drivers Lb.	—	—	—	74500		—	—	36
37	“ “ “ 6th Drivers Lb.	—	—	—	76500		—	—	37
38	“ “ “ 7th Drivers Lb.	—	—	—	—		—	—	38
39	“ “ “ 8th Drivers Lb.	—	—	—	—		—	—	39
40	“ “ “ All Drivers Lb.	195140	208000	199000	439500		308600	—	40
41	“ “ “ Inside Truck Lb.	—	—	—	—		—	—	41
42	Wt. of Engine, Total Lb.	195140	332000	313000	516000		408600	—	42
43	“ “ Mechanical Parts Lb.	100000	205000	194000	258400		208600	—	43
44	“ “ Equipment Parts* Lb.	95140	127000	119000	257600		200000	—	44
45	Rating Continuous H. P.	423	1680	1580	4000		3070	3730	45
46	“ “ Tractive Power Lb.	10940	10800	10200	73000		50000	37000	46
47	“ “ Speed M. P. H.	14.5	54.8	58	20.5		23.0	37.8	47
48	Ratio: Wt. on Drivers to Continuous T. P.	17.8	19.2	19.5	6.02		6.18	8.34	48
49	Maximum Tractive Power Lb.	38400	66000	50000	140000		100000	82500	49
50	Ratio: Wt. on Drivers to Max. Trac. Power	5.08	3.15	3.98	3.14		3.09	3.74	50
51	Compressor H. P. Rating	—	—	—	—		35	35	51
52									52

* Includes All Electrical Equipment, and Air Brake Parts Except Foundation Brake and Air Brake Cylinder.

1										1
2										2
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Tenders—Classification and Description

In this classification, tenders are given a primary number to designate the approximate water capacity in hundreds of gallons for the original design, a letter to denote the service, another number to indicate the height of deck in even inches above the rail, small suffix letters are used to indicate modifications in class of tender.

Thus: 70 F 66 indicates 7000 gallons of water, freight tender, and 66" deck; while 70 F 66a indicates a change of original design.

Heights given above rail are for empty tenders.

Coal capacity is heaped load.

The letter "P" represents "Passenger Service."

The letter "F" represents "Freight Service."

The letter "S" represents "Switching Service."

Tender trucks are classified with five symbols as follows:

1. Number of axles per truck.

2. A. R. A. Axle classification as follows:

A. R. A. Class	A	B	C	D	E	F
Size of Journal	3½" x 7"	4½" x 8"	5" x 9"	5½" x 10"	6" x 11"	6½" x 12"
Capacity per Axle	15000	22000	32000	40000	50000	60000

3. Dash for standard A. R. A. axle or number for deviation therefrom.

4. "T" indicating tender truck.

5. Serial number of design.

Thus: 2F-T2 indicates truck with two axles having 6½" x 12" journals A. R. A. standard, designed for tender service and the second design for same capacity and service.

Class 27 S 48, formerly 2700 gallons sloping, 47½" deck.—Lines East.

Class 30 S 48, formerly 3000 gallons sloping, 47½" deck—Lines East.
Class 30 S 48a, formerly "Odd Shifting"—Cornwall & Lebanon Railroad.

Class 36 F 48, formerly 3600 gallons, 47½" deck—Lines East.
Class 36 S 52, formerly 3600 gallons, 51¼" deck—Lines East.—Switching Service.

Class 45 F 50, formerly 4500 gallons, 49¾" deck—Lines East.
Class 45 F 50b, formerly class 1G—Lines West.
Class 45 P 50, formerly 4500 gallons, 49¾" deck—Lines East.
Class 45 P 50a, formerly 4500 gallons, G. R. & I.
Class 45 P 50b, formerly class 1G—Lines West.
Class 45 S 51, formerly class B22—Vandalia.

Class 46 S 51, formerly class 4C—Lines West.
Class 46 S 51a, formerly class 4C—Lines West.
Class 46 S 51b, formerly class 4C—Lines West—(2C-F1 Trucks.)

Class 50 F 50, formerly class 2E—Lines West.
Class 50 S 51, formerly class B22, B23, F26—Vandalia.

Class 52 F 50, formerly class 1H—Lines West.
Class 52 P 60, formerly 5200 gallons—Vandalia.

Class 55 P 55, formerly 5500 gallons, 54½" deck. 14'-8" T. C. Narrow Frame—Lines East. Also class 3A Lines West.
Class 55 P 55a, formerly 5500 gallons, 54½" deck. 14'-8" T. C. Channel Frame—Lines East.
Class 55 P 58, formerly 5500 gallons, 58" deck. 14'-8" T. C. Narrow Frame—Lines East.

Class 55 P 58a, formerly 5500 gallons, 58" deck, 14'8" T. C. Channel Frame—Lines East.
 Class 55 P 58b, formerly 5500 gallons, 58" deck, 14'8" T. C. H-Beam Frame—Lines East.
 Class 55 F 66, formerly 5500 gallons, 66" deck, 14'-8" T. C. Narrow Frame—Lines East.
 Class 55 S 66, formerly 5500 gallons sloping, 66" deck. Narrow Frame—Lines East. Also 5A Lines West.
 Class 55 S 66a, formerly 5500 gallons sloping, 66" deck. Channel Frame—Lines East. Also 5A Lines West.
 Class 55 S 66b, formerly 5500 gallons sloping, 66" deck. H-Beam Frame—Lines East.
 Class 55 S 66c, formerly class 3A—Lines West—Straight Tender.
 Class 55 S 66d, formerly class 3A—Lines West—Straight Tender.
 Class 55 S 66e, formerly class 5A—Lines West—24" Steel Side boards.

Class 60 F 50, formerly 6000 gallons, 49¾" deck—Lines East.
 Class 60 F 50a, formerly class 1J—Lines West.
 Class 60 F 50b, formerly 6000 gallons, 49¾" deck. Channel Frame—Lines East.
 Class 60 P 50, formerly 6000 gallons, 49¾" deck—Lines East.
 Class 60 P 50a, formerly class 1J—Lines West.
 Class 60 F 52, formerly 6000 gallons, 51¾" deck—Lines East.
 Class 60 F 52b, formerly 6000 gallons, 51¾" deck. Narrow Frame—Lines East.
 Class 60 F 52c, formerly 6000 gallons, 51¾" deck. Channel Frame—Lines East.
 Class 60 P 52, formerly 6000 gallons, 51¾" deck—Lines East.
 Class 60 P 52b, formerly 6000 gallons, 51¾" deck. Narrow Frame—Lines East.
 Class 60 S 66, formerly 6000 gallons sloping, 66" deck. Channel Frame—Lines East.
 Class 60 S 66a, formerly 6000 gallons sloping, 66" deck. H-Beam Frame—Lines East.

Class 62 P 77, formerly 6200 gallons, G. R. & I.
 Class 62 F 77, formerly 6200 gallons, G. R. & I.

Class 65 F 51, formerly class 2F—Lines West.
 Class 65 P 51, formerly class 2F—Lines West.

Class 70 P 55, formerly 7000 gallons, 54½" deck, 14'-8" T. C. Channel Frame—Lines East.
 Class 70 P 55a, formerly 7000 gallons, 54½" deck, 17'-8" T. C. Channel Frame—Lines East.
 Class 70 P 55b, C. Channel Frame—Lines East.
 Class 70 P 56, formerly Class D26, D26a Vandalia.
 Class 70 P 58, formerly 7000 gallons, 58" deck, 14'-8" T.
 Class 70 P 58a, formerly 7000 gallons, 58" deck, 17'-8" T. C. Channel Frame—Lines East.
 Class 70 P 58b, formerly 7000 gallons, 58" deck, 17'-8" T. C. H-Beam Frame—Lines East.
 Class 70 P 58c, formerly 3B—Lines West.
 Class 70 P 58d, formerly 3B1, 3B2—Lines West—Narrow Frame.
 Class 70 P 58e, formerly 3B1, 3B2—Lines West—Channel Frame.
 Class 70 P 58f, formerly 7000 gallons, 66" deck, 14'-8" T. C. Narrow Frame—Lines East.
 Class 70 F 66, formerly 7000 gallons, 66" deck, 14'-8" T. C. Channel Frame—Lines East.
 Class 70 F 66a, formerly 7000 gallons, 66" deck, 17'-8" T. C. Channel Frame—Lines East.
 Class 70 F 66b, formerly 7000 gallons, 66" deck, 17'-8" T. C. Channel Frame—Lines East.
 Class 70 F 66c, formerly 3C—Lines West.
 Class 70 F 66d, formerly 3C1, 3C2—Lines West—Narrow Frame.
 Class 70 F 66e, formerly 3C1, 3C2—Lines West—Channel Frame.
 Class 70 F 66f, formerly 7000 gallons, 66" deck, 14'-8" T. C. Narrow Frame—Lines East.
 Class 70 F 66g, formerly 7000 gallons, 66" deck, 14'-8" T. C. Channel Frame—Lines East.
 Class 70 F 66h, formerly 7000 gallons, 66" deck, 14'-8" T. C. H-Beam Frame—Lines East.
 Class 70 F 66k, formerly 7000 gallons, 66" deck, 14'-8" T. C. H-Beam Frame—Lines East.
 Class 70 F 66m, formerly 7000 gallons, 66" deck, 14'-8" T. C. H-Beam Frame—Lines East.
 Class 70 F 66n, formerly 7000 gallons, 66" deck, 17'-8" T. C. H-Beam Frame—Lines East.

Class 70 P 66, formerly 7000 gallons, 66" deck, 17'-8" T. C. Channel Frame—Lines East.
 Class 70 P 66a, formerly 7000 gallons, 66" deck, 17'-8" T. C. H-Beam Frame—Lines East.
 Class 70 P 66b, formerly 3C—Lines West—Narrow Frame.
 Class 70 P 66c, formerly 3C1, 3C2—Lines West—Channel Frame. Also K28s.
 Class 70 P 66d, formerly 7000 gallons, 66" deck, 14'-8" T. C. Narrow Frame—Lines East.
 Class 70 P 66e, formerly 7000 gallons, 66" deck, 14'-8" T. C. Channel Frame—Lines East.
 Class 70 P 66f, formerly 7000 gallons, 66" deck, 14'-8" T. C. Channel Frame—Lines East.
 Class 70 P 66g, formerly 7000 gallons, 66" deck, 14'-8" T. C. Channel Frame—Lines East.
 Class 70 P 66h, formerly 7000 gallons, 66" deck, 14'-8" T. C. H-Beam Frame—Lines East.

Class 70 S 66 }
 Class 70 S 66a }
 Class 70 S 66b } converted for switching service with "C1" Locomotives.
 Class 70 S 66c }
 Class 70 S 66d }

Class 70 F 68, formerly F24a—Vandalia.

Class 70 F 70, formerly 7000 gallons, 70" deck. 14'-8" T. C. Channel Frame—Lines East.
 Class 70 F 70a, formerly 7000 gallons, 70" deck. 17'-8" T. C. Channel Frame—Lines East.
 Class 70 F 70b, formerly 7000 gallons, 70" deck. 17'-8" T. C. H-Beam Frame—Lines East.
 Class 70 F 70c, formerly 3D—Lines West.
 Class 70 F 70d, formerly 7000 gallons, 70" deck. 14'-8" T. C. H-Beam Frame—Lines East.
 Class 70 F 70e
 Class 70 F 70f
 Class 70 P 70, formerly 7000 gallons, 70" deck. 17'-8" T. C. Channel Frame—Lines East.
 Class 70 P 70a, formerly 7000 gallons, 70" deck. 17'-8" T. C. H-Beam Frame—Lines East.
 Class 70 P 70b, formerly 7000 gallons, 70" deck. 17'-8" T. C. H-Beam Frame—Lines East.
 Class 70 P 70c, formerly 7000 gallons, 70" deck. 14'-8" T. C. Channel Frame—Lines East.
 Class 70 P 70d,

 Class 70 F 77, formerly 6A—Lines West—Channel Frame.
 Class 70 F 77a, formerly H9SC—Vandalia.
 Class 70 F 77b, formerly 6A—Lines West—H-Beam Frame.
 Class 70 P 77, formerly 7000 gallons, 77¼" deck. 17'-8" T. C. Channel Frame—Lines East.
 Class 70 P 77a, formerly 6A—Lines West.
 Class 70 P 77b, formerly 7000 gallons, 77¼" deck. (Converted from 70-P-66a.)
 Class 70 P 77c, formerly 7000 gallons, 77¼" deck. 17'-8" T. C. H-Beam Frame—Lines East.
 Class 70 P 77d,
 Class 70 P 77e,

 Class 70 P 78, formerly 7A—Lines West.

 Class 70 P 82, formerly 7000 gallons, 82¼" deck. 17'-8" T. C.—Lines East.
 Class 70 P 82a,

 Class 75 P 64, formerly E21—Vandalia.
 Class 75 F 67, formerly F25—Vandalia.
 Class 75 P 68, formerly E22, E23s—Vandalia.
 Class 75 P 70, formerly K21s—Vandalia.
 Class 75 F 70, formerly F27s—Vandalia.
 Class 75 F 70a, formerly 7500 gallons—Vandalia.

 Class 80 S 65, formerly 8A, U. S. Standard—Straight Tender.
 Class 80 P 79, formerly (7B, Columbus)—Lines West.
 Class 80 F 81, formerly (7B, Fort Wayne)—Lines West.
 Class 80 P 81, formerly (7B, Fort Wayne)—Lines West.
 Class 80 P 83, formerly K29s.

 Class 90 F 66, formerly 9000 gallons, 66" deck—Lines East.
 Class 90 F 66a,
 Class 90 F 75, formerly 9000 gallons, with Standard or Duplex Stoker. (Converted from 90-F-66.)
 Class 90 F 80, formerly 7D—Lines West.
 Class 90 F 82, formerly 9000 gallons, 82¼" deck. Lines East.
 Class 90 F 84, formerly 9000 gallons, with Elvin Stoker. (Converted from 90-F-66.)
 Class 90 P 84, formerly 7E—Lines West.
 Class 90 F 86, formerly HH1s.
 Class 90 F 90, formerly CC1s.

 Class 100 F 78, formerly 8C, U. S. Standard.
 Class 100 F 85, formerly 7F—Lines West. Also CC2s.

 Class 110 P 70,
 Class 110 P 82,

 Class 120 F 78, formerly 8B, U. S. Standard.

 Class 130 F 82, formerly 13000 gallons, 82¼" deck—Lines East.

 Class 130 F 82a,
 Class 130 P 82,

J. T. WALLIS,
Chief of Motive Power
Pennsylvania Railroad System

TENDERS

	CLASSIFICATION	27 S 48		30 S 48	30 S 48a		36 F 48	36 S 52	
1	Water Capacity, Gallons	2700		3000	3000		3600	3600	1
2	Coal " Pounds	7700		7700	12000		21700	21700	2
3	Frame, Type of	Wooden		Wooden	Channel		Wooden	Wooden	3
4	" Width Ft.In.	8-8		8-8	8-0		8-8	8-8	4
5	" Length Ft.In.	21-8		21-8	21-0		21-8	21-8	5
6	Truck Classification	2B1T2		2B1T2	2B1T3		2B1T2	2B1T2	6
7	" Type of	Diamond		Diamond	Diamond		Diamond	Diamond	7
8	" Wheel Diameter In.	33		33	33		33	33	8
9	" " Base Ft.In.	5-7		5-7	5-2		5-7	5-7	9
10	" Size of Journal In.	4½ x 8		4½ x 8	4½ x 8		4½ x 8	4½ x 8	10
11	Length of Truck Centers Ft.In.	10-6		10-6	10-0		10-6	10-6	11
12	" Front Truck to Chafing Plate Ft.In.	6-9		6-9			6-9	6-9	12
13	" Rear Truck to Face of Coupler Ft.In.	6-4		6-4			6-4	6-4	13
14	" of Tender, Total Ft.In.	23-7		23-7			23-7	23-7	14
15	" " Wheel Base Ft.In.	16-1		16-1	15-2		16-1	16-1	15
16	Height Rail to Center Plate In.	33½		33½			33½	3½	16
17	" " " Bottom of Frame In.	35½		35½			35½	40	17
18	" " " Bottom of Tank In.	47½		47½	48		47½	51½	18
19	" " " Deck Plate In.	47½		47½	48		47½	51½	19
20	Weight, Empty Lb.	40800		41300			28800	28800	20
21	" Loaded Lb.	71000		74000			80500	80500	21
22									22
23									23
24									24
25									25

TENDERS

	CLASSIFICATION	45 F 50	45 F 50b	45 P 50	45 P 50a	45 P 50b	45 S 51	
1	Water Capacity, Gallons	5100	4700	5100	4500	4700	4500	1
2	Coal " Pounds	17000	21200	17000	23200	21200	16300	2
3	Frame, Type of	Wooden	Wooden	Wooden	Channel	Wooden	Channel	3
4	" Width Ft.In.	8-8	8-8	8-8	8-4	8-8	8-0	4
5	" Length Ft.In.	21-8	21-8	21-8	19-9	21-8	22-7½	5
6	Truck Classification	2C-F1	2C-F1	2C-T2	2C-T2	2C-T2	2D-F1	6
7	" Type of	Diamond	Diamond	Pedestal	Pedestal	Pedestal	Diamond	7
8	" Wheel Diameter In.	33	33	36	36	36	33	8
9	" " Base Ft.In.	5-6	5-6	5-10	5-10	5-10	5-6	9
10	" Size of Journal In.	5 x 9	5 x 9	5 x 9	5 x 9	5 x 9	5½ x 10	10
11	Length of Truck Centers Ft.In.	10-6	10-6	10-6	9-4	10-6	11-0	11
12	" Front Truck to Chafing Plate Ft.In.	6-9	6-9	6-9	6-9	6-9	5-2½	12
13	" Rear Truck to Face of Coupler Ft.In.	6-4	6-4	6-4	6-4	6-4	8-6	13
14	" of Tender, Total Ft.In.	23-7	23-7	23-7	22-5	23-7	24-8½	14
15	" " Wheel Base Ft.In.	16-0	16-0	16-4	15-2	16-4	16-6	15
16	Height Rail to Center Plate In.	33½	33½	33½	33½	33½	28	16
17	" " " Bottom of Frame In.	38	38	38	38	38	38½	17
18	" " " Bottom of Tank In.	48	48	48	48	48	48½	18
19	" " " Deck Plate In.	49½	50	49½	50	49½	50½	19
20	Weight, Empty Lb.	36900	34000	41700	39800	40000	44400	20
21	" Loaded Lb.	96400	94450	101200	100500	100450	98200	21
22								22
23								23
24								24
25								25

TENDERS

27

	46 S 51	46 S 51 a	46 S 51 b		50 F 50	50 S 51		52 F 50	52 P 60	
1	4350	4350	4350		3900	4300		5350		1
2	12400	12400	12400		21400	18500		19000		2
3	Wood & Channel	Wood & Channel	Wood & Channel		Wooden	Channel		Wooden	Channel	3
4	8-0	8-0	8-0		8-11	8-0		8-8	8-7	4
5	22-7 $\frac{1}{2}$	22-7 $\frac{1}{2}$	22-7 $\frac{1}{2}$		21-8	22-7 $\frac{1}{2}$		21-8	22-0	5
6	2C-T3	2C-T3	2C-F1		2C-F1	2C-T1		2C-F1	2C-T2	6
7	Diamond	Diamond	Diamond		Diamond	Diamond		Diamond	Pedestal	7
8	33	33	33		33	33		33	36	8
9	5-2	5-2	5-6		5-6	5-8		5-6	5-10	9
10	5 x 9	5 x 9	5 x 9		5 x 9	5 x 9		5 x 9	5 x 9	10
11	11-0	12-0	12-0		10-6	11-0		10-6	10-6	11
12	6-0 $\frac{1}{2}$	6-0 $\frac{1}{2}$	6-0 $\frac{1}{2}$		6-9	5-2 $\frac{1}{2}$		6-9	6-9	12
13	8-3	7-3	7-3		6-4	8-6		6-4	6-4	13
14	25-3 $\frac{1}{2}$	25-3 $\frac{1}{2}$	25-3 $\frac{1}{2}$		23-7	24-8 $\frac{1}{2}$		23-7	23-7	14
15	16-2	17-2	17-6		16-0	16-8		16-0	16-4	15
16	28	28	28		29 $\frac{1}{2}$	28		29 $\frac{1}{2}$	28	16
17	36	36	36		38	38 $\frac{1}{2}$		38	40	17
18	48	48	48		48	48 $\frac{1}{2}$		48	51 $\frac{1}{2}$	18
19	51	51	51		49 $\frac{1}{2}$	5- $\frac{1}{2}$		49 $\frac{1}{2}$	60	19
20	40900	40900	40500		43500	42850		33700		20
21	89550	89550	89150		97400	97200		97300		21
22										22
23										23
24										24
25										25

TENDERS

	55 P 55	55 P 55a	55 P 58	55 P 58a	55 P 58b	55 F 66	55 S 66	55 S 66a	55 S 66b	
1	5600	5600	5800	5800			5550	5700	5700	1
2	21700	26000	27600	31200			13250	15150	14700	2
3	Narrow	Channel	Narrow	Channel	H-Beam	Narrow	Narrow	Channel	H-Beam	3
4	7-0	9-8	7-0	9-8	9-8	7-0	7-0	9-8	9-8	4
5	26-3	26-3	26-3	26-3	26-3	26-3	26-3	26-3	26-3	5
6	2D-T3	2D-T4	2D-T3	2D-T4	2D-T4	2D-F1	2D-F1	2D-T1	2D-T1	6
7	Pedestal	Pedestal	Pedestal	Pedestal	Pedestal	Diamond	Diamond	Diamond	Diamond	7
8	36	36	36	36	36	33	33	36	36	8
9	5-10	6-5	5-10	6-5	6-5	5-6	5-6	6-0	6-0	9
10	5 $\frac{1}{2}$ x 10	5 $\frac{1}{2}$ x 10	5 $\frac{1}{2}$ x 10	5 $\frac{1}{2}$ x 10	5 $\frac{1}{2}$ x 10	5 $\frac{1}{2}$ x 10	5 $\frac{1}{2}$ x 10	5 $\frac{1}{2}$ x 10	5 $\frac{1}{2}$ x 10	10
11	14-8	14-8	14-8	14-8	14-8	14-8	14-8	14-8	14-8	11
12	6-10	6-10	6-10	6-10	6-10	6-10	7-4	7-4	7-4	12
13	6-8 $\frac{1}{2}$	6-8 $\frac{1}{2}$	6-8 $\frac{1}{2}$	6-8 $\frac{1}{2}$	6-8 $\frac{1}{2}$	6-8 $\frac{1}{2}$	6-8 $\frac{1}{2}$	6-8 $\frac{1}{2}$	6-8 $\frac{1}{2}$	13
14	28-2 $\frac{1}{2}$	28-2 $\frac{1}{2}$	28-2 $\frac{1}{2}$	28-2 $\frac{1}{2}$	28-2 $\frac{1}{2}$	28-2 $\frac{1}{2}$	28-2 $\frac{1}{2}$	28-2 $\frac{1}{2}$	28-2 $\frac{1}{2}$	14
15	20-6	21-1	20-6	21-1	21-1	20-2	20-2	20-8	20-8	15
16	28	27 $\frac{1}{2}$	28	27 $\frac{1}{2}$	27 $\frac{1}{2}$	28	28	27 $\frac{1}{2}$	27 $\frac{1}{2}$	16
17	32 $\frac{1}{2}$	31	32 $\frac{1}{2}$	31	31	32 $\frac{1}{2}$	32 $\frac{1}{2}$	31	31	17
18	43 $\frac{1}{2}$	44	43 $\frac{1}{2}$	44	44	43 $\frac{1}{2}$	43 $\frac{1}{2}$	44	44	18
19	54 $\frac{1}{2}$	54 $\frac{1}{2}$	58	58	58	66	66	66	66	19
20	53300	66800	59050	72350			6000	58500	59300	20
21	121700	139900	135000	151900			105500	121150	121500	21
22										22
23										23
24										24
25										25

TENDERS

	CLASSIFICATION	55 S 66c	55 S 66d	55 S 66e			60 F 50	60 F 50a	
1	Water Capacity, Gallons	6000	6150	5700			5500	5500	1
2	Coal " Pounds	22300	24400	1 200			27500	22800	2
3	Frame, Type of	Narrow	Channel	Channel			Wooden	Wooden	3
4	" Width Ft.In.	7-0	9-8	9-8			8-8	8-8	4
5	" Length Ft.In.	26-3	26-3	26-3			25-2	25-2	5
6	Truck Classification	2D-F1	2D-T1	2D-T1			2D-F1	2D-F1	6
7	" Type of	Diamond	Diamond	Diamond			Diamond	Diamond	7
8	" Wheel Diameter In.	33	36	36			33	33	8
9	" " Base Ft.In.	5-6	6-0	6-0			5-6	5-6	9
10	" Size of Journal In.	5½ x 10	5½ x 10	5½ x 10			5½ x 10	5½ x 10	10
11	Length of Truck Centers Ft.In.	14-8	14-8	14-8			13-6	13-6	11
12	" Front Truck to Chafing Plate Ft.In.	6-10	6-10	6-10			6-9	6-9	12
13	" Rear Truck to Face of Coupler Ft.In.	6-8½	6-8½	6-8½			6-10½	6-10½	13
14	" of Tender, Total Ft.In.	28-2½	28-2½	28-2½			27-1½	27-1½	14
15	" " Wheel Base Ft.In.	20-2	20-8	20-8			19-0	19-0	15
16	Height Rail to Center Plate In.	28	27½	27½			33½	33½	16
17	" " " Bottom of Frame In.	32½	31	31			38	38	17
18	" " " Bottom of Tank In.	43½	44	44			49½	49½	18
19	" " " Deck Plate In.	66	66	66			4½	49½	19
20	Weight, Empty Lb.	46800	61900	58100			36300	38950	20
21	" Loaded Lb.	119100	137550	122800			109650	107750	21
22									22
23									23
24									24
25									25

TENDERS

	CLASSIFICATION	60 F 50b	60 P 50	60 P 50a	60 F 52	60 F 52b	60 F 52c	60 P 52	
1	Water Capacity, Gallons		5500	5500	5500	5500		5500	1
2	Coal " Pounds		27500	22800	27500	25350		27500	2
3	Frame, Type of	Channel	Wooden	Wooden	Wooden	Narrow	Channel	Wooden	3
4	" Width Ft.In.	9-8	8-8	8-8	8-8	7-0	9-8	8-8	4
5	" Length Ft.In.	26-3	25-2	25-2	25-2	26-3	26-3	25-2	5
6	Truck Classification	2D-T1	2D-T3	2D-T3	2D-F1	2D-F1	2D-F1	2D-T3	6
7	" Type of	Diamond	Pedestal	Pedestal	Diamond	Diamond	Diamond	Pedestal	7
8	" Wheel Diameter In.	36	36	36	33	33	33	36	8
9	" " Base Ft.In.	6-0	5-10	5-10	5-6	5-6	5-6	5-10	9
10	" Size of Journal In.	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	10
11	Length of Truck Centers Ft.In.	14-8	13-6	13-6	13-6	14-8	14-8	13-6	11
12	" Front Truck to Chafing Plate Ft.In.	6-10	6-9	6-9	6-9	6-10	6-10	6-9	12
13	" Rear Truck to Face of Coupler Ft.In.	6-8½	6-10½	6-10½	6-10½	6-8½	6-8½	6-10½	13
14	" of Tender, Total Ft.In.	28-2½	27-1½	27-1½	27-1½	28-2½	28-2½	27-1½	14
15	" " Wheel Base Ft.In.	20-8	19-4	19-4	19-0	20-2	20-2	19-4	15
16	Height Rail to Center Plate In.	27½	33½	33½	35½	28	27½	35½	16
17	" " " Bottom of Frame In.	31	38	38	40	32½	31	40	17
18	" " " Bottom of Tank In.	44	49½	49½	51½	43½	44	51½	18
19	" " " Deck Plate In.	49½	49½	49½	51½	51½	51½	51½	19
20	Weight, Empty Lb.		43600	46250	36300	45450		37800	20
21	" Loaded Lb.		116950	115050	109650	116800		111150	21
22									22
23									23
24									24
25									25

TENDERS

29

	60 P 52b			60 S 66	60 S 66a			62 P 77	62 F 77	
1				6300	6350			6100	6100	1
2				12950	13200			24300	24300	2
3	Narrow			Channel	H-Beam			Channel	Channel	3
4	7-0			9-8	9-8			8-7	8-7	4
5	26-3			26-3	26-3			23-10	23-10	5
6	2D-T3			2D-T1	2D-T1			2D-T3	2D-T1	6
7	Pedestal			Diamond	Diamond			Pedestal	Diamond	7
8	36			36	36			36	36	8
9	5-10			6-0	6-0			5-10	6-0	9
10	$5\frac{1}{2} \times 10$			$5\frac{1}{2} \times 10$	$5\frac{1}{2} \times 10$			$5\frac{1}{2} \times 10$	$5\frac{1}{2} \times 10$	10
11	14-8			14-8	14-8			12-8	12-8	11
12	6-10			7-4	7-4			6-10	6-10	12
13	$6-8\frac{1}{2}$			$6-8\frac{1}{2}$	$6-8\frac{1}{2}$			$6-8\frac{1}{2}$	$6-8\frac{1}{2}$	13
14	$28-2\frac{1}{2}$			$28-8\frac{1}{2}$	$28-8\frac{1}{2}$			$26-2\frac{1}{2}$	$26-2\frac{1}{2}$	14
15	20-6			20-8	20-8			18-6	18-8	15
16	28			$27\frac{1}{2}$	$27\frac{1}{2}$			28	$27\frac{1}{2}$	16
17	$32\frac{1}{2}$			31	31			34	34	17
18	$43\frac{5}{8}$			44	44			49	49	18
19	$51\frac{1}{2}$			66	66			77	77	19
20				57950	58900			50250	46050	20
21				123500	125000			125400	121200	21
22										22
23										23
24										24
25										25

TENDERS

	65 F 51	65 P 51		70 P 55	70 P 55a	70 P 55b	70 P 56	70 P 58	70 P 58a	
1	6600	6400		7000	6700				6800	1
2	28550	28550		37900	25900				34200	2
3	Wooden	Wooden		Channel	Channel	H-Beam	Channel	Channel	Channel	3
4	8-8	8-8		9-8	9-8	9-8	9-0	9-8	9-8	4
5	25-2	25-2		26-3	29-3	29-3	$25-9\frac{1}{8}$	26-3	29-3	5
6	2D-F1	2D-T3		2D-T3	2D-T4	2D-T4	2D-T3	2D-T4	2D-T4	6
7	Diamond	Pedestal		Pedestal	Pedestal	Pedestal	Pedestal	Pedestal	Pedestal	7
8	33	36		36	36	36	36	36	36	8
9	5-6	5-10		5-10	6-5	6-5	5-10	6-5	6-5	9
10	$5\frac{1}{2} \times 10$	$5\frac{1}{2} \times 10$		$5\frac{1}{2} \times 10$	$5\frac{1}{2} \times 10$	$5\frac{1}{2} \times 10$	$5\frac{1}{2} \times 10$	$5\frac{1}{2} \times 10$	$5\frac{1}{2} \times 10$	10
11	13-7	13-7		14-8	17-8	17-8	$15-2\frac{1}{2}$	14-8	17-8	11
12	6-9	6-9		6-10	6-10	6-10	$5-6\frac{3}{4}$	6-10	6-10	12
13	$6-10\frac{1}{2}$	$6-10\frac{1}{2}$		$6-8\frac{1}{2}$	$6-8\frac{1}{2}$	$6-8\frac{1}{2}$	$6-8\frac{1}{2}$	$6-8\frac{1}{2}$	$6-8\frac{1}{2}$	13
14	$27-2\frac{1}{2}$	$27-2\frac{1}{2}$		$28-2\frac{1}{2}$	$31-2\frac{1}{2}$	$31-2\frac{1}{2}$	$27-5\frac{1}{2}$	$28-2\frac{1}{2}$	$31-2\frac{1}{2}$	14
15	19-1	19-5		20-6	24-1	24-1	$21-0\frac{1}{2}$	21-1	24-1	15
16	$27\frac{1}{2}$	28		$27\frac{1}{2}$	$27\frac{1}{2}$	$27\frac{1}{2}$	32	$27\frac{1}{2}$	$27\frac{1}{2}$	16
17	38	38		31	31	31	40	31	31	17
18	49	49		44	44	44	52	44	44	18
19	$50\frac{1}{2}$	$50\frac{1}{2}$		$54\frac{1}{2}$	$54\frac{1}{2}$	$54\frac{1}{2}$	$55\frac{1}{2}$	58	58	19
20	43850	51150		66100	74500				75800	20
21	127400	134700		162350	156200				166700	21
22										22
23										23
24										24
25										25

TENDERS

	CLASSIFICATION	70 P 58b	70 P 58c	70 P 58d	70 P 58e	70 P 58f			
1	Water Capacity, Gallons	6800	7050	7250	7300	7050			1
2	Coal " Pounds	34700	25300	32100	33300	26200			2
3	Frame, Type of	H-Beam	Narrow	Narrow	Channel	H-Beam			3
4	" Width Ft.In.	9-8	7-0	7-0	9-8	9-8			4
5	" Length Ft.In.	29-3	26-3	26-3	26-3	29-3			5
6	Truck Classification	2D-T4	2D-T3	2D-T3	2D-T3	2E-T4 2D-T4			6
7	" Type of	Pedestal	Pedestal	Pedestal	Pedestal	Pedestal			7
8	" Wheel Diameter In.	36	36	36	36	36			8
9	" " Base Ft.In.	6-5	5-10	5-10	5-10	6-5			9
10	" Size of Journal In.	5½ x 10	5½ x 10	5½ x 10	5½ x 10	6 x 11 5½ x 10			10
11	Length of Truck Centers Ft.In.	17-8	14-8	14-8	14-8	17-8			11
12	" Front Truck to Chafing Plate Ft.In.	6-10	6-10	6-10	6-10	6-10			12
13	" Rear Truck to Face of Coupler Ft.In.	6-8½	6-8½	6-8½	6-8½	6-8½			13
14	" of Tender, Total Ft.In.	31-2½	28-2½	28-2½	28-2½	31-2½			14
15	" " Wheel Base Ft.In.	24-1	20-6	20-6	20-6	24-1			15
16	Height Rail to Center Plate In.	27½	28	28	27½	27½			16
17	" " " Bottom of Frame In.	31	32½	32½	31	31			17
18	" " " Bottom of Tank In.	44	48½	43½	44	44			18
19	" " " Deck Plate In.	58	58	58	58	58			19
20	Weight, Empty Lb.	77800	58450	59500	68200	77750			20
21	" Loaded Lb.	169200	142500	152000	162300	162650			21
22									22
23									23
24									24
25									25

TENDERS

	CLASSIFICATION	70 F 66	70 F 66a	70 F 66b	70 F 66c	70 F 66d	70-F-66e	70-F-66f	
1	Water Capacity, Gallons	7200	7200	7100	7300	7300	7300	7400	1
2	Coal " Pounds	29200	34350	36800	30400	32400	30800	29500	2
3	Frame, Type of	Narrow	Channel	Channel	Narrow	Narrow	Channel	Narrow	3
4	" Width Ft.In.	7-0	9-8	9-8	7-0	7-0	9-8	7-0	4
5	" Length Ft.In.	26-3	26-3	29-3	26-3	26-3	26-3	26-3	5
6	Truck Classification	2D-F1	2D-F1	2E-T2	2D-F1	2D-F1	2D-F1	2D-F1	6
7	" Type of	Diamond	Diamond	Crown S. C.	Diamond	Diamond	Diamond	Diamond	7
8	" Wheel Diameter In.	33	33	33	33	33	33	33	8
9	" " Base Ft.In.	5-6	5-6	5-10	5-6	5-6	5-6	5-6	9
10	" Size of Journal In.	5½ x 10	5½ x 10	6 x 11	5½ x 10	5½ x 10	5½ x 10	5½ x 10	10
11	Length of Truck Centers Ft.In.	14-8	14-8	17-8	14-8	14-8	14-8	14-8	11
12	" Front Truck to Chafing Plate Ft.In.	6-10	6-10	6-10	6-10	6-10	6-10	6-10	12
13	" Rear Truck to Face of Coupler Ft.In.	6-8½	6-8½	6-8½	6-8½	6-8½	6-8½	6-8½	13
14	" of Tender, Total Ft.In.	28-2½	28-2½	31-2½	28-2½	28-2½	28-2½	28-2½	14
15	" " Wheel Base Ft.In.	20-2	20-2	23-6	20-2	20-2	20-2	20-2	15
16	Height Rail to Center Plate In.	23	27½	27½	28	28	27½	28	16
17	" " " Bottom of Frame In.	32½	31	31	32½	32½	31	32½	17
18	" " " Bottom of Tank In.	43½	44	44	43½	43½	44	43½	18
19	" " " Deck Plate In.	66	66	66	66	66	66	66	19
20	Weight, Empty Lb.	49600	58650	68500	49050	54000	58400	51000	20
21	" Loaded Lb.	138800	153000	164400	140250	147200	150000	142200	21
22									22
23									23
24									24
25									25

TENDERS

31

	70 F 66g	70 F 66h	70 F 66k	70 F 66m	70 F 66n			70 P 66	70 P 66a	
1	7200	7400						7150	7100	1
2	29500	31900						31600	32200	2
3	Channel	H-Beam	H-Beam	H-Beam	H-Beam			Channel	H-Beam	3
4	9-8	9-8	9-8	9-8	9-8			9-8	9-8	4
5	26-3	26-3	26-3	26-3	29-3			29-3	29-3	5
6	2D-F1	2D-F1	2D-F1	2D-F1	2E-T2			2D-T4	2D-T4	6
7	Diamond	Diamond	Diamond	Diamond	Crown S. C.			Pedestal	Pedestal	7
8	33	33	33	33	33			36	36	8
9	5-6	5-6	5-6	5-6	5-10			6-5	6-5	9
10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	6 x 11			5½ x 10	5½ x 10	10
11	14-8	14-8	14-8	14-8	17-8			17-8	17-8	11
12	6-10	6-10	6-10	6-10	6-10			6-10	6-10	12
13	6-8½	6-8½	6-8½	6-8½	6-8½			6-8½	6-8½	13
14	28-2½	28-2½	28-2½	28-2½	31-2½			31-2½	31-2½	14
15	20-2	20-2	20-4	20-2	23-6			24-1	24-1	15
16	27½	27½	27½	27½	27½			27½	27½	16
17	31	31	31	31	31			31	31	17
18	44	44	44	44	44			44	44	18
19	66	66	66	66	66			66	66	19
20	56500	54500						76450	77650	20
21	146000	148300						167650	169100	21
22										22
23										23
24										24
25										25

TENDERS

	70 P 66b	70 P 66c	70 P 66d	70 P 66e	70 P 66f	70 P 66g	70 P 66h	70 S 66	70 S 66a	
1	7300	7300	7200	7200	7400	7200	7400			1
2	30400	30800	29200	34350	26900	29500	31900			2
3	Narrow	Channel	Narrow	Channel	H-Beam	Channel	H-Beam	Channel	Narrow	3
4	7-0	9-8	7-0	9-8	9-8	9-8	9-8	9-8	7-0	4
5	26-3	26-3	26-3	26-3	29-3	29-3	26-3	26-3	26-3	5
6	2D-T3	2D-T3	2D-T3	2D-T3	2E-T4 2D-T4	2D-T3	2D-T3	2D-T3	2D-F1	6
7	Pedestal	Pedestal	Pedestal	Pedestal	Pedestal	Pedestal	Pedestal	Pedestal	Diamond	7
8	36	36	36	36	36	36	36	36	33	8
9	5-10	5-10	5-10	5-10	6-5	5-10	5-10	5-10	5-6	9
10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	6 x 11 5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	10
11	14-8	14-8	14-8	14-8	17-8	14-8	14-8	14-8	14-8	11
12	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10	7-4	12
13	6-8½	6-8½	6-8½	6-8½	6-8½	6-8½	6-8½	7-4	6-8½	13
14	28-2½	28-2½	28-2½	28-2½	31-2½	28-2½	28-2½	28-8½	28-8½	14
15	20-6	20-6	20-6	20-6	24-1	20-6	20-6	20-6	20-2	15
16	28	27½	28	27½	27½	27½	27½	27½	28	16
17	32½	31	32½	31	31	31	31	31	32½	17
18	43½	44	43½	44	44	44	44	44	43½	18
19	66	66	66	66	66	66	66	66	66	19
20	56300	65650	56800	65650	80650	63750	61750			20
21	147500	157250	146000	160300	169150	153300	155550			21
22										22
23										23
24										24
25										25

TENDERS

	CLASSIFICATION	70 S 66b	70 S 66c	70 S 66d	70 F 68	70 F 70	70 F 70a	70 F 70b	
1	Water Capacity, Gallons				7100	7400	7150	7150	1
2	Coal " Pounds				24000	35000	34000	34000	2
3	Frame, Type of	H-Beam	Channel	Narrow	Channel	Channel	Channel	H-Beam	3
4	" Width Ft.In.	9-8	9-8	7-0	8-7	9-8	9-8	9-8	4
5	" Length Ft.In.	26-3	26-3	26-3	26-1½	26-3	29-3	29-3	5
6	Truck Classification	2D-T1	2D-T1	2D-T3	2D-F1	2D-T1	2E-T2	2E-T2	6
7	" Type of	Diamond	Diamond	Pedestal	Diamond	Diamond	Crown S. C.	Crown S. C.	7
8	" Wheel Diameter In.	36	36	36	33	36	33	33	8
9	" " Base Ft.In.	6-0	6-0	5-10	5-6	6-0	5-10	5-10	9
10	" Size of Journal In.	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	6 x 11	6 x 11	10
11	Length of Truck Centers Ft.In.	14-8	14-8	14-8	13-10	14-8	17-8	17-8	11
12	" Front Truck to Chafing Plate Ft.In.	7-4	7-4	7-4	6-7½	6-10	6-10	6-10	12
13	" Rear Truck to Face of Coupler Ft.In.	6-8½	6-8½	6-8½	7-8½	6-8½	6-8½	6-8½	13
14	" of Tender, Total Ft.In.	28-8½	28-8½	28-8½	28-2	28-2½	31-2½	31-2½	14
15	" " Wheel Base Ft.In.	20-8	20-8	20-6	19-4	20-8	23-6	23-6	15
16	Height Rail to Center Plate In.	27½	27½	28	28	27½	27½	27½	16
17	" " " Bottom of Frame In.	31	31	32½	41½	31	31	31	17
18	" " " Bottom of Tank In.	44	44	43½	51½	44	44	44	18
19	" " " Deck Plate In.	66	66	66	68	70	70	70	19
20	Weight, Empty Lb.				53650	62450	67200	68900	20
21	" Loaded Lb.				136850	159100	160600	162500	21
22									22
23									23
24									24
25									25

TENDERS

	CLASSIFICATION	70 F 70c	70 F 70d	70 F 70e	70 F 70f	70 P 70	70 P 70a	70 P 70b	
1	Water Capacity, Gallons	7250				7300	7300	7150	1
2	Coal " Pounds	30100				32600	33900	32000	2
3	Frame, Type of	Channel	H-Beam	Channel	H-Beam	Channel	H-Beam	H-Beam	3
4	" Width Ft.In.	9-8	9-8	9-8	9-8	9-8	9-8	9-8	4
5	" Length Ft.In.	26-3	26-3	29-3	29-3	29-3	29-3	29-3	5
6	Truck Classification	2D-F1	2D-T1	2E-T2	2E-T2	2D-T3	2E-T4	2E-T4	6
7	" Type of	Diamond	Diamond	Crown S. C.	Crown S. C.	Pedestal	Pedestal	Pedestal	7
8	" Wheel Diameter In.	33	36	33	33	36	36	36	8
9	" " Base Ft.In.	5-6	6-0	5-10	5-10	5-10	6-5	6-5	9
10	" Size of Journal In.	5½ x 10	5½ x 10	6 x 11	6 x 11	5½ x 10	6 x 11 5½ x 10	6 x 11 5½ x 10	10
11	Length of Truck Centers Ft.In.	14-8	14-8	17-8	17-8	17-8	17-8	17-8	11
12	" Front Truck to Chafing Plate Ft.In.	6-10	6-10	6-10	6-10	6-10	6-10	6-10	12
13	" Rear Truck to Face of Coupler Ft.In.	6-8½	6-8½	6-8½	6-8½	6-8½	6-8½	6-8½	13
14	" of Tender, Total Ft.In.	28-2½	28-2½	31-2½	31-2½	31-2½	31-2½	31-2½	14
15	" " Wheel Base Ft.In.	20-2	20-8	23-6	23-6	23-6	24-1	24-1	15
16	Height Rail to Center Plate In.	27½	27½	27½	27½	27½	27½	27½	16
17	" " " Bottom of Frame In.	31	31	31	31	31	31	31	17
18	" " " Bottom of Tank In.	44	44	44	44	44	44	44	18
19	" " " Deck Plate In.	70	70	70	70	70	70	70	19
20	Weight, Empty Lb.	56650				69150	79850	79250	20
21	" Loaded Lb.	147150				162800	174600	170850	21
22									22
23									23
24									24
25									25

TENDERS

33

	70 P 70c	70 P 70d		70 F 77	70 F 77a	70 F 77b		70 P 77	70 P 77a	
1	7400	7850		7100	7100			6800	7100	1
2	35000	27100		32500	30000			32300	32500	2
3	Channel	H-Beam		Channel	Channel	H-Beam		Channel	Channel	3
4	9-8	9-8		9-8	9-8	9-8		9-8	9-8	4
5	26-3	29-3		26-3	26-3	26-3		29-3	26-3	5
6	2D-T3	$\frac{2E-T4}{2D-T4}$		2D-T1	2D-T1	2D-T1		$\frac{2E-T4}{2D-T4}$	2D-T4	6
7	Pedestal	Pedestal		Diamond	Diamond	Diamond		Pedestal	Pedestal	7
8	36	36		36	36	36		36	36	8
9	5-10	6-5		6-0	6-0	6-0		6-5	6-5	9
10	$5\frac{1}{2} \times 10$	$\frac{6 \times 11}{5\frac{1}{2} \times 10}$		$5\frac{1}{2} \times 10$	$5\frac{1}{2} \times 10$	$5\frac{1}{2} \times 10$		$\frac{6 \times 11}{5\frac{1}{2} \times 10}$	$5\frac{1}{2} \times 10$	10
11	14-8	17-8		14-8	14-8	14-8		17-8	14-8	11
12	6-10	6-10		6-10	6-10	6-10		6-10	6-10	12
13	$6-8\frac{1}{2}$	$6-8\frac{1}{2}$		$6-8\frac{1}{2}$	$6-8\frac{1}{2}$	$6-8\frac{1}{2}$		$6-8\frac{1}{2}$	$6-8\frac{1}{2}$	13
14	$28-2\frac{1}{2}$	$31-2\frac{1}{2}$		$28-2\frac{1}{2}$	$20-2\frac{1}{2}$	$28-2\frac{1}{2}$		$31-2\frac{1}{2}$	$28-2\frac{1}{2}$	14
15	20-6	24-1		20-8	20-8	20-8		24-1	21-1	15
16	$27\frac{1}{2}$	$27\frac{1}{2}$		$27\frac{1}{2}$	$27\frac{1}{2}$	$27\frac{1}{2}$		$27\frac{1}{2}$	$27\frac{1}{2}$	16
17	31	31		31	31	31		31	31	17
18	44	44		44	44	44		44	44	18
19	70	70		$77\frac{1}{2}$	$77\frac{1}{2}$	$77\frac{1}{2}$		$77\frac{1}{2}$	$77\frac{1}{2}$	19
20	66650	78800		63950	69500			81250	75350	20
21	163300	171400		155650	158950			170200	167050	21
22										22
23										23
24										24
25										25

TENDERS

	70 P 77b	70 P 77c	70 P 77d	70 P 77e		70 P 78		70 P 82	70 P 82a	
1						6500		7700	8300	1
2						32600		31800	24100	2
3	H-Beam	H-Beam	Channel	H-Beam		Channel		H-Beam	H-Beam	3
4	9-8	9-8	9-8	9-8		9-8		9-8	9-8	4
5	29-3	29-3	29-3	29-3		29-3		29-3	29-3	5
6	2D-T4	$\frac{2E-T4}{2D-T4}$	$\frac{2E-T4}{2D-T4}$	$\frac{2E-T4}{2D-T4}$		2E-T1		$\frac{2E-T4}{2D-T4}$	$\frac{2E-T4}{2D-T4}$	6
7	Pedestal	Pedestal	Pedestal	Pedestal		Pedestal		Pedestal	Pedestal	7
8	36	36	36	36		36		36	36	8
9	6-5	6-5	6-5	6-5		5-10		6-5	6-5	9
10	$5\frac{1}{2} \times 10$	$\frac{6 \times 11}{5\frac{1}{2} \times 10}$	$\frac{6 \times 11}{5\frac{1}{2} \times 10}$	$\frac{6 \times 11}{5\frac{1}{2} \times 10}$		6 x 11		$\frac{6 \times 11}{5\frac{1}{2} \times 10}$	$\frac{6 \times 11}{5\frac{1}{2} \times 10}$	10
11	17-8	17-8	17-8	17-8		17-8		17-8	17-8	11
12	6-10	6-10	6-10	6-10		6-10		6-10	6-10	12
13	$6-8\frac{1}{2}$	$6-8\frac{1}{2}$	$6-8\frac{1}{2}$	$6-8\frac{1}{2}$		$6-8\frac{1}{2}$		$6-8\frac{1}{2}$	$6-8\frac{1}{2}$	13
14	$31-2\frac{1}{2}$	$31-2\frac{1}{2}$	$31-2\frac{1}{2}$	$31-2\frac{1}{2}$		$31-2\frac{1}{2}$		$31-2\frac{1}{2}$	$31-2\frac{1}{2}$	14
15	24-1	24-1	24-1	24-1		23-6		24-1	24-1	15
16	$27\frac{1}{2}$	$27\frac{1}{2}$	$27\frac{1}{2}$	$27\frac{1}{2}$		$27\frac{1}{2}$		$27\frac{1}{2}$	$27\frac{1}{2}$	16
17	31	31	31	31		31		31	31	17
18	44	44	44	44		44		44	44	18
19	$77\frac{1}{2}$	$77\frac{1}{2}$	$77\frac{1}{2}$	$77\frac{1}{2}$		$77\frac{1}{2}$		$82\frac{1}{2}$	$82\frac{1}{2}$	19
20						70600		80750	79600	20
21						160750		176750	172900	21
22										22
23										23
24										24
25										25

TENDERS

	CLASSIFICATION	75 P 64	75 F 67	75 P 68	75 P 70	75 F 70	75 F 70a		
1	Water Capacity, Gallons	6900	7450	7450	7350	7450	7800		1
2	Coal " Pounds	27400	26200	27700	25600	28400	34250		2
3	Frame, Type of	Channel	Channel	Channel	Cast Steel	Channel	Channel		3
4	" Width Ft.In.	9-0	8-7	9-0	9-2	8-7	9-8		4
5	" Length Ft.In.	25-11½	26-5½	25-11½	26-4	26-5½	26-3		5
6	Truck Classification	2D-T3	2D-T1	2D-T3	2D-T3	2D-T1	2D-T1		6
7	" Type of	Pedestal	Diamond	Pedestal	Pedestal	Diamond	Diamond		7
8	" Wheel Diameter In.	36	36	36	36	36	36		8
9	" " Base Ft.In.	5-10	6-0	5-10	5-10	6-0	6-0		9
10	" Size of Journal In.	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10	5½ x 10		10
11	Length of Truck Centers Ft.In.	15-2½	13-10	15-2½	15-2½	13-10	14-8		11
12	" Front Truck to Chafing Plate Ft.In.	5-10¾	6-10¼	5-10¾	6-4	6-10¼	6-10		12
13	" Rear Truck to Face of Coupler Ft.In.	6-10	8-3¾	6-10	6-10	8-3¾	6-8½		13
14	" of Tender, Total Ft.In.	27-11¼	29-0	27-11¼	28-4½	29-0	28-2½		14
15	" " Wheel Base Ft.In.	21-0½	19-10	21-0½	21-0½	19-10	20-8		15
16	Height Rail to Center Plate In.	29	34	31	31	34	27½		16
17	" " " Bottom of Frame In.	39	37	35	35	37	31		17
18	" " " Bottom of Tank In.	51	51	51	51	51	44		18
19	" " " Deck Plate In.	64	67	68	70	70	70		19
20	Weight, Empty Lb.	58700	55100	58400	61050	57150	66350		20
21	" Loaded Lb.	143500	143400	148200	147800	147650	165400		21
22									22
23									23
24									24
25									25

TENDERS

	CLASSIFICATION	80 S 65	80 P 79	80 F 81	80 P 81	80 P 83			
1	Water Capacity, Gallons	7800	8100	8100	8100	8280			1
2	Coal " Pounds	17100	34350	34350	34350	27500			2
3	Frame, Type of	Cast Steel	Channel	Channel	Channel	Channel			3
4	" Width Ft.In.	8-4½	9-8	9-8	9-8	8-10			4
5	" Length Ft.In.	30-2	29-3	29-3	29-3	29-3½			5
6	Truck Classification	2E-T5	2E-T1	2E-T2	2E-T1	2D-T3			6
7	" Type of	Crown S. C.	Pedestal	Crown S. C.	Pedestal	Pedestal			7
8	" Wheel, Diameter In.	33	36	33	36	36			8
9	" " Base Ft.In.	5-10	5-10	5-10	5-10	5-10			9
10	" Size of Journal In.	6 x 11	6 x 11	6 x 11	6 x 11	5½ x 10			10
11	Length of Truck Centers Ft.In.	15-10	17-8	17-8	17-8	17-0			11
12	" Front Truck to Chafing Plate Ft.In.	7-6	6-10	6-10	6-10	7-8¼			12
13	" Rear Truck to Face of Coupler Ft.In.	8-6¾	6-9½	6-9½	6-9½	7-9½			13
14	" of Tender, Total Ft.In.	31-10¾	31-3½	31-3½	31-3½	32-5¾			14
15	" " Wheel Base Ft.In.	21-8	23-6	23-6	23-6	22-10			15
16	Height Rail to Center Plate In.	27½	27½	27½	27½	26			16
17	" " " Bottom of Frame In.	32½	31½	31½	31½	31½			17
18	" " " Bottom of Tank In.	47	44½	44½	44½	47			18
19	" " " Deck Plate In.	65	79½	80½	80½	82½			19
20	Weight Empty Lb.	61300	76700	74700	76700	79200			20
21	" Loaded Lb.	143400	178550	176550	178550	175700			21
22									22
23									23
24									24
25									25

TENDERS

85

	90 F 66	90F 66a	90 F 75	90 F 80	90 F 82	90 F 84	90 P 84	90 F 86	90 F 90	
1	9100			8900	10300		8800	9000	9000	1
2	31800			26800	37400		28600	30000	28000	2
3	H-Beam	H-Beam	H-Beam	H-Beam	H-Beam	H-Beam	H-Beam	Channel	Channel	3
4	9-8	9-8	9-8	9-8	9-8	9-8	9-8	8-10	8-10	4
5	30-7	30-7	30-7	30-7	30-7	30-7	30-7	29-5½	27-3½	5
6	2E-T2	2E-T2	2E-T2	2E-T2	2E-T2	2E-T2	2E-T4	2E-T2	2E-T2	6
7	Crown S. C	Crown S. C.	Crown S. C.	Crown S. C	Crown S. C.	Crown S. C.	Pedestal	Crown S. C.	Crown S. C.	7
8	33	33	33	33	33	33	36	33	33	8
9	5-10	5-10	5-10	5-10	5-10	5-10	6-5	5-10	5-10	9
10	6 x 11	6 x 11	6 x 11	6 x 11	6 x 11	6 x 11	6 x 11	6 x 11	6 x 11	10
11	19-0	19-0	19-0	19-0	19-0	19-0	19-0	17-0	15-0	11
12	6-10	6-10	6-10	6-10	6-10	6-10	6-10½	7-8½	7-8½	12
13	6-8½	6-8½	6-8½	6-8½	6-8½	6-8½	6-9½	7-10½	7-9½	13
14	32-6½	32-6½	32-6½	32-6½	32-6½	32-6½	32-8	32-7½	30-5½	14
15	24-10	24-10	24-10	24-10	24-10	24-10	25-5	22-10	20-10	15
16	27½	27½	27½	27½	27½	27½	27½	27½	26	16
17	31	31	31	31	31	31	31	31	31½	17
18	44	44	44	44	44	44	44	47	47	18
19	66	66	75½	80½	82½	84½	84½	85½	89½	19
20	68700			73900	81450		84150	81400	83400	20
21	176350			174800	204700		186050	186400	186400	21
22										22
23										23
24										24
25										25

TENDERS

	100 F 78	100 F 85	110 P 70		110 P 82	120 F 78	130 F 82	130 F 82a	130 P 82	
1	10150	9600	12150		12075	12000	12900			1
2	31700	39300	36000		34700	33800	27900			2
3	Cast Steel	Cast Steel	Cast Steel		Cast Steel	Cast Steel	H-Beam	Cast Steel	Cast Steel	3
4	8-4½	9-8	2-0		2-0	8-4½	9-8	2-0	2-0	4
5	32-0	32-5½	32-1½		32-1½	36-4½	34-7	36-1½	36-1½	5
6	2E-T5	2E-T2	2F-T2		2F-T2	2E-T5	2F-T1	2F-T2	2F-T2	6
7	Crown S. C.	Crown S. C.	Side Frame Ell. Spring		Side Frame Ell. Spring	Crown S. C.	Crown S. C.	Side Frame Ell. Spring	Side Frame Ell. Spring	7
8	33	33	36		36	33	33	36	36	8
9	5-10	5-10	6-5		6-5	5-10	5-10	6-5	6-5	9
10	6 x 11	6 x 11	6½ x 12		6½ x 12	6 x 11	6½ x 12	6½ x 12	6½ x 12	10
11	17-8	20-10½	20-0		20-0	22-0½	23-0	24-0	24-0	11
12	7-6	7-1½	6-10		6-10	7-6	6-10	6-10	6-10	12
13	8-6½	6-8½	6-9½		6-9½	8-6½	6-8½	6-9½	6-9½	13
14	33-8½	34-7½	33-7½		33-7½	38-1½	36-6½	37-7½	37-7½	14
15	23-6	26-8½	26-5		26-5	27-10½	28-10	30-5	30-5	15
16	27½	27½	26½		26½	27½	27½	26½	26½	16
17	32½	31	30		30	32½	31	30	30	17
18	47	44	43		43	47	44	43	43	18
19	78	84½	70		82½	78	82½	82½	82½	19
20	70700	86800	75500		82600	77400	83800			20
21	187000	206100	212725		217900	211200	219200			21
22										22
23										23
24										24
25										25

TENDERS

	CLASSIFICATION								
1	Water Capacity, Gallons								1
2	Coal " Pounds								2
3	Frame, Type of								3
4	" Width Ft.In.								4
5	" Length Ft.In.								5
6	Truck Classification								6
7	" Type of								7
8	" Wheel Diameter In.								8
9	" " Base Ft.In.								9
10	" Size of Journal In.								10
11	Length of Truck Centers Ft.In.								11
12	" Front Truck to Chafing Plate Ft.In.								12
13	" Rear Truck to Face of Coupler Ft.In.								13
14	" of Tender, Total Ft.In.								14
15	" " Wheel Base Ft.In.								15
16	Height Rail to Center Plate In.								16
17	" " " Bottom of Frame In.								17
18	" " " Bottom of Tank In.								18
19	" " " Deck Plate In.								19
20	Weight, Empty Lb.								20
21	" Loaded Lb.								21
22									22
23									23
24									24
25									25

TENDERS

	CLASSIFICATION								
1	Water Capacity, Gallons								1
2	Coal " Pounds								2
3	Frame, Type of								3
4	" Width Ft.In.								4
5	" Length Ft.In.								5
6	Truck Classification								6
7	" Type of								7
8	" Wheel Diameter In.								8
9	" " Base Ft.In.								9
10	" Size of Journal In.								10
11	Length of Truck Centers Ft.In.								11
12	" Front Truck to Chafing Plate Ft.In.								12
13	" Rear Truck to Face of Coupler Ft.In.								13
14	" of Tender, Total Ft.In.								14
15	" " Wheel Base Ft.In.								15
16	Height Rail to Center Plate In.								16
17	" " " Bottom of Frame In.								17
18	" " " Bottom of Tank In.								18
19	" " " Deck Plate In.								19
20	Weight, Empty Lb.								20
21	" Loaded Lb.								21
22									22
23									23
24									24
25									25