



The first "PT" tender, PT-1 for 5418 at Beech Grove Shop where it was built. Note the oil skimmer for the Elesco feed water heater return on the near rear corner of the deck, and the booster exhaust muffler to the right of the coal pusher cylinder. The Pyle-National light is mounted on the muffler. NYC RR photo, 4-30-43.



The second PT-1 tender, as new. First applied to class J3a #5453. Note no expansion chamber or overflow pipes. NYC RR photo, 5-26-43.

PT Tenders

From the records of W.D. Edson

By H.L. Vail, Jr.

The roster charts showing the locomotives to which these PT tenders were assigned during their service lives were compiled from the NYC tender historical record cards, which, fortunately, exist these many years later.

The "T" numbers in the left column are the numbers on the "Tender Plates" applied by the railroad to provide a continuous record of the particular tender as it went from one locomotive to another. Not all tenders, according to the record cards, received such plates. Plates were to be applied when the tender came from the builder, but this was not always done. They may have been applied, however, and not have been noted on the record cards. If any reader has any information to complete the data presented, he is asked to send it to W.D. Edson, c/o the "Headlight."

From the photographs certain details will be noted:

PT-1 as originally built: No overflow pipes below the tank and thus no syphon breaker vents on the tank collar. The one vent up front is just that, a vent.

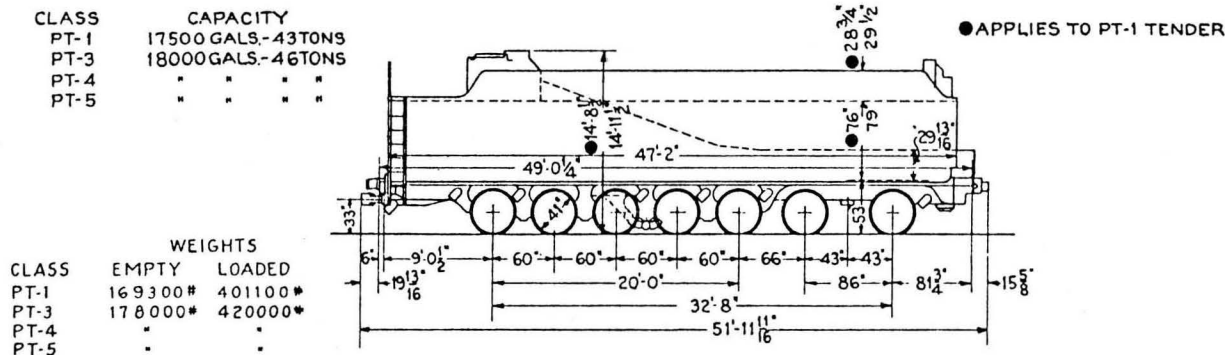
In August, 1945, the PT-1 tenders were sent to the Beech Grove, Indiana, locomotive shop for addition of the overflow control system invented by Carl F. Kantola. (See his article "High Speed Water Scoop and Locomotive Tender Design", 2nd Q 1982 "Central Headlight.") When the PT-3, -4, -5, and -6 tenders were built, this system was integrated into the design, and incorporated at time of construction.

An Elesco oil skimmer was required on all locomotives equipped with the Elesco water heater to separate the oil from the condensate return. This device is identified by a raised cylindrical projection above the rear deck near the filling hole.

PT-1 (4) Built by Beech Grove Shop 4/1943 17,500 Gals., 43 Tons, 169,300# Empty Weight

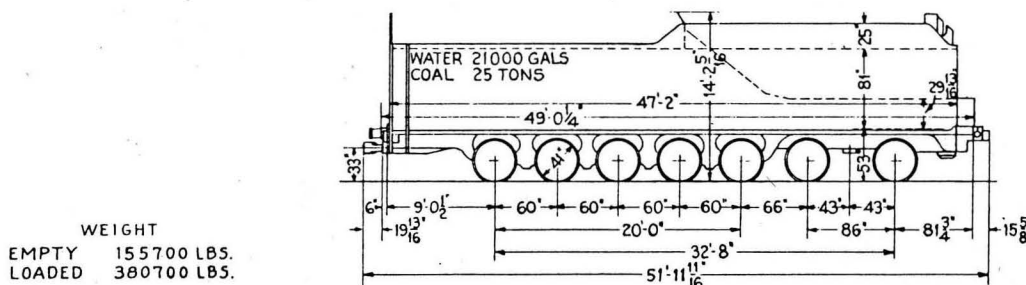
T Plate No.	Built	Applied To	Retired
T-3152	4/30/43	to 5418, to 5451 6/9/43, AtBG* 8/45 to 8/46, to 5274 8/46	5/54
T-3635	5/26/43	to 5453, At BG* 8/45 to 12/45, to 5408 (WA) 12/45 to 5426 11/50	2/56
T-3712	7/43	to 5452, At BG* 8/45 to 8/46, to 5271 8/46**	?
T-3113	8/43	to 5450, wrecked 9/43, to 5447 5/44, At BG* 8/45 to 2/46, to 5412 (WA) 2/46	9/55

*All PT-1's sent to Beech Grove Shop 8/45 for overflow changes.
**By 1954, 5271 had a PT-4 Tender.



PT-2 (1) Built by Beech Grove Shop 8/1943 21,000 Gals., 25 tons, 155,700# Empty Weight

T Plate No.	Built	Applied To	Retired
?	8/43	to 5401	?





The second PT-1 (T-3635) with "overflow control." Note the overflow pipes descending from the tank side just above the steam train line, which has been moved outward, and the syphon breakers on the collar. On class J3A #5426 at Harmon, N.Y., 8-5-51. Robert J. Foster photo, from R. S. Curl collection.



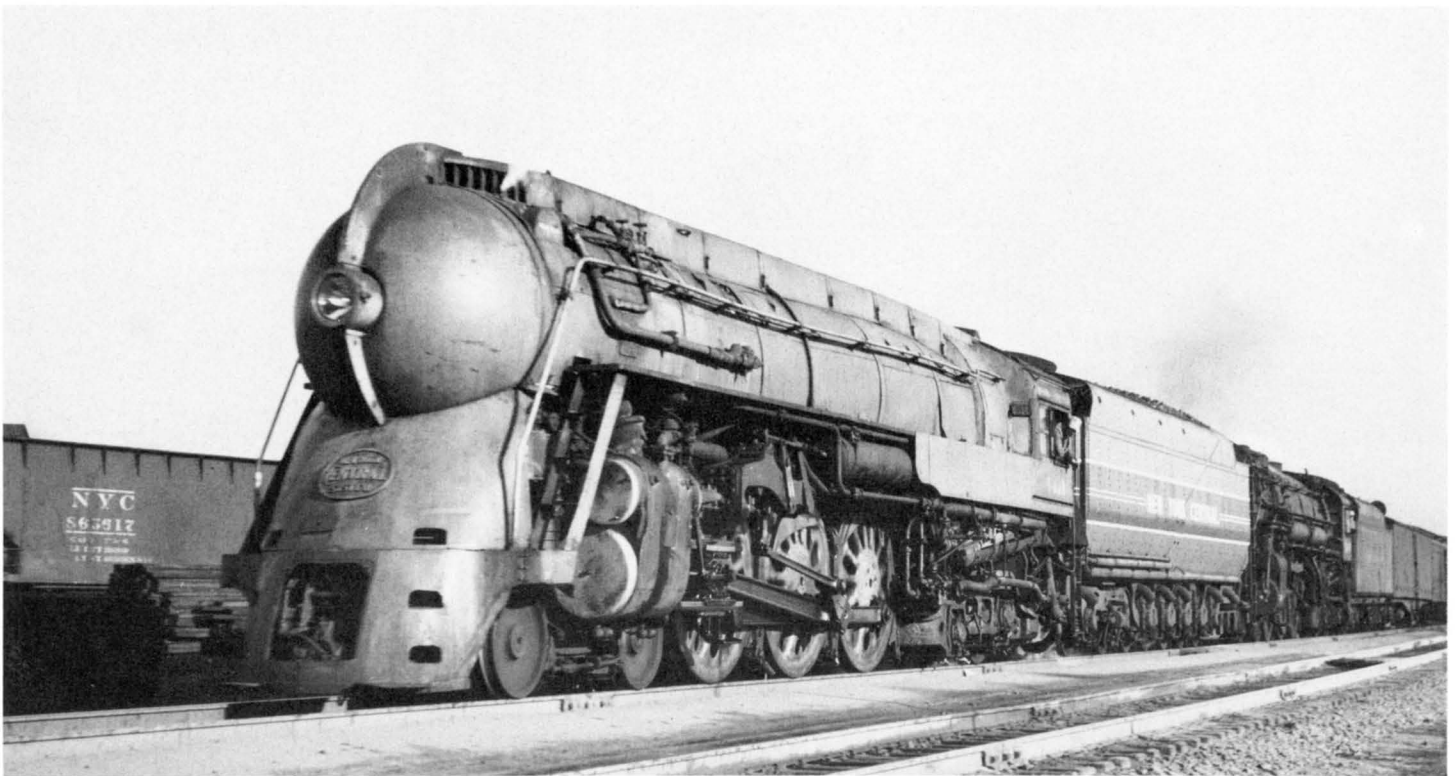
The last PT-1 (T-3113) with "overflow control," showing the expansion chamber behind the coal space, the booster exhaust pipe hole on its top side, and no Elesco skimmer since the feed water heater was the Worthington type. Note also the overflow pipes external to the tank, and the outward joggle in the conduits and pipes along the frame to clear them. Class J3a #5412 on a railfan special at Goose Lake, Mich., 10-17-54. Photo from M. D. McCarter collection.



Class J1e #5401 with the only PT-2 (no plate number on record) ready to leave Cincinnati in September 1951 with the "James Whitcomb Riley." Photo by H. O. Lewis.



Class J1e 5401 with the PT-2 leaving Bellefontaine, Ohio with #5, the "Queen City," for Cincinnati, at 3:10 P.M. in September of 1955. Note that the booster has been removed. Photo by Tom Mulaniff.



Class J3a #5448 at Chicago, Ill. March 6, 1945 with PT-3 #T-3081. The almost new tender was built and applied in November 1944. Photo by P. Slager, collection of Lee A. Hastman.



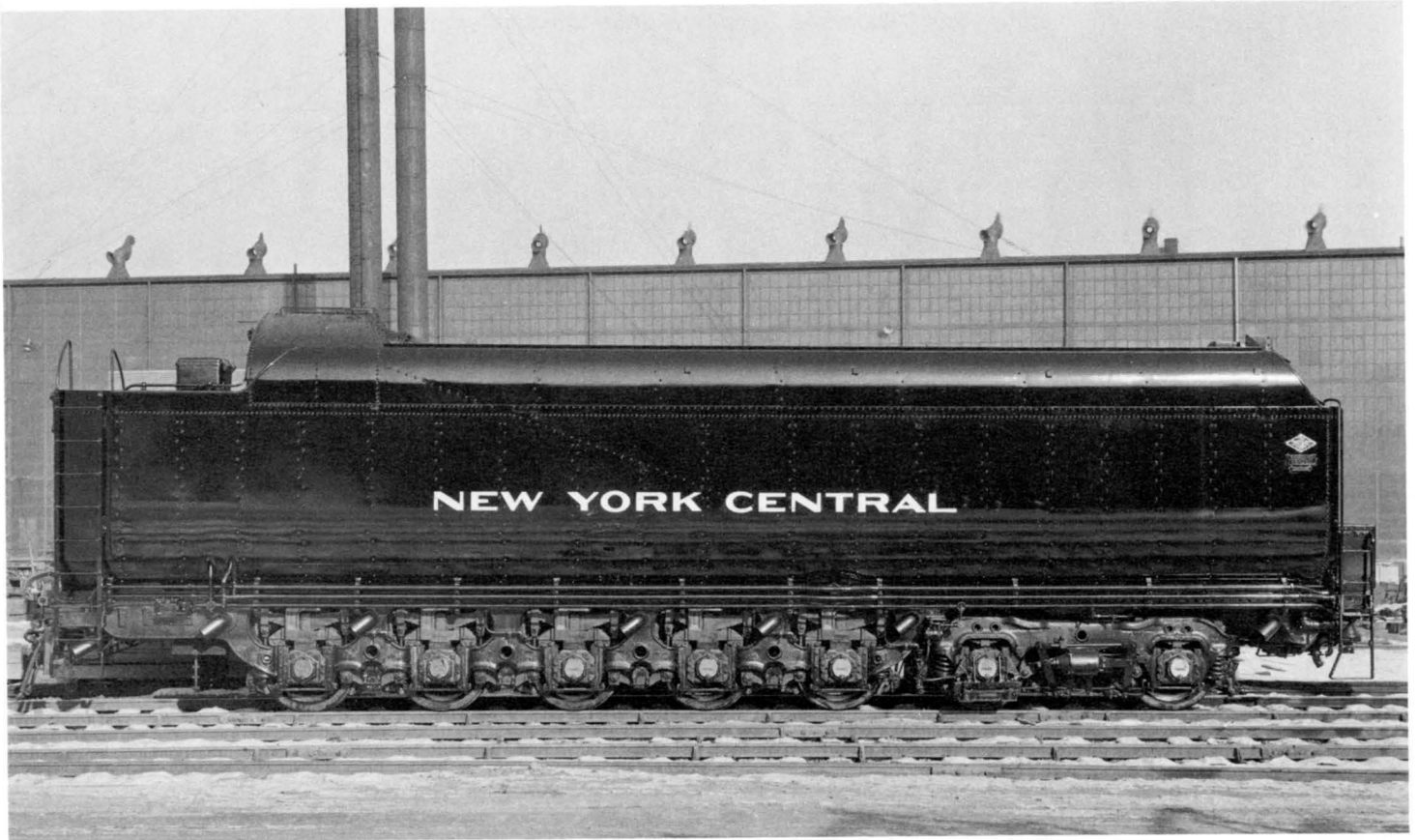
Class J1c #5268 with a PT-3 tender rolling westbound through Wauseon, Ohio in 1952. Note the mail bag on the mail crane. Photo by Gustave W. Ehrhardt, collection of Howard W. Ameling.

**PT-3 (10) Built by Beech Grove Shop 5/1944 - 7/1945
18,000 Gals., 46 Tons, 178,000# Empty Weight**

<u>T Plate No.</u>	<u>Built</u>	<u>Applied To</u>	<u>Retired</u>
T-3799	5/44	to 5264	4/53
T-3701	8/44	to 5446, to 5422 by 8/47, to 5436 7/48	10/55
T-3834	9/44	to 5454, to 5442 7/48, stored at BG 12/53	11/54
T-3081	11/44	to 5448	4/53
T-3815	12/44	to 5445	11/55
T-3643	2/45	to 5449	?
T-3083	3/45	to 5271, to 5272 10/46, to 5450 10/49	8/55
T-4588	4/45	to 5268	?
T-3599	6/45	to 5270	?
T-3598	7/45	to 5273	?

**PT-4 (50) Built by Lima Locomotive Works 11/1944 - 7/1945
18,000 Gals., 46 Tons, 178,000# Empty Weight**

<u>T Plate No.</u>	<u>LLW No.</u>	<u>Built</u>	<u>Applied To</u>	<u>Retired</u>
?	T-1035	11/44	to 5291 by 1/49	?
T-4105	T-1036	11/44	to 5422, to 5443 by 8/47, to 6006 2/48, to 6024 10/51	3/56
?	T-1037	11/44	to 5441	?
T-3591	T-1038	11/44	to 5405	?
T-4154	T-1039	11/44	to 5420 3/45 stored (LW) 4/49 to 2/50, to 5406 2/50	2/56
T-4155	T-1040	11/44	to 5424 3/45	11/55
?	T-1041	?	to 5413 (damaged 5/2/45), to 5333 9/46	?
?	T-1042	12/44	to 5427	?
T-4156	T-1043	12/44	to 5438, to 5344 8/48, stored 7/53	10/54
T-4157	T-1044	12/44	to 5267 (CD) 7/45, to 5263 10/49, to 5447 2/53	2/56
T-3077	T-1045	12/44	to 5411, to 6023 4/53	3/56
?	T-1046	12/44	to 5425, to 5204 8/48	?
T-4158	T-1047	1/45	to 5434, stored 4/49 to 10/49, to 5430 10/49	1/55
T-4159	T-1048	1/45	to 5418 2/45	3/55
T-2821	T-1049	1/45	to 5414, stored 6/53	10/54
T-2801	T-1050	1/45	to 5439, to 5421 10/48	11/54
T-3782	T-1051	1/45	to 5416 6/45, stored 4/54	10/54
T-3785	T-1052	1/45	to 5436 6/45, to 5344 7/48, stored 8/48 to 5/49, to 5454 5/49	10/54
?	T-1053	1/45	to 5437	?
T-3596	T-1054	?	to 5406 10/45, stored W.A. 2/49	?
T-4034	T-1055	2/45	to 5450 5/45, to 5453 9/49	8/55
T-4038	T-1056	2/45	to 5263, to 5444 10/49	10/54
T-3597	T-1057	2/45	to 5419, to 5222 9/48	8/55
T-3592	T-1058	2/45	to 5426 4/45, to 5215 8/47, stored 3/54	10/54
T-4073	T-1059	2/45	to 5440 4/45, to ? 10/50	?
T-4031	T-1060	2/45	to 5442, to 5446 8/48, stored 12/53	11/54
T-2811	T-1061	3/45	to 5423	2/56
T-3499	T-1062	3/45	to 5410 4/45, stored 11/53	11/54
T-4032	T-1063	3/45	to 5430 5/45, to 5420 4/49, to 5428 6/51, stored 4/53	11/54
T-4075	T-1064	3/45	to 5432, stored 4/53	11/54
?	T-1065	4/45	to 5415	?
T-3079	T-1066	4/45	to 5407, stored 5/54	10/54
T-3765	T-1067	4/45	to 5444 5/45, to ? by 8/49	?
T-3777	T-1068	4/45	to 5428 6/45, to 5420 6/51	11/54
?	T-1069	5/45	?, to 5413 after 9/46	?
?	T-1070	5/45	to 5435, to ? by 4/54	?
?	T-1071	5/45	to 5429, to 5211 7/47	?
?	T-1072	/45	to 5266	?
T-2806	T-1073	6/45	to 5433, to 5451 after 9/10/53	?
T-2864	T-1074	6/45	to 5417, to 5214 8/48, stored 3/54	10/54
T-3856	T-1075	6/45	Spare, to 6004 6/47	8/55
T-3857	T-1076	6/45	to 5431 9/46 (also used on 6013?)	10/54
T-2801	T-1077	6/45	to 5421, to 5439 by 10/48, to 5203 1/49	?
?	T-1078	6/45	to 5447, to ? by 2/53	?
T-3767	T-1079	7/45	to 5269, to 5440 12/50, stored 4/53	11/54
T-3808	T-1080	7/45	to 5344 10/45, to 5422 7/48	?
T-3498	T-1081	7/45	to 5453, to 5451 6/49, stored 11/53	11/54
?	T-1082	7/45	to 5409	?
?	T-1083	7/45	to 5452	?
T-3741	T-1084	7/45	to 5451, to ? by 6/49	?



Right side of PT-4 tender built by the Lima Locomotive Works, December 1944. LLW Photo.



Right side of PT-5 tender built by the American Locomotive Co., November 1945. Note train control equipment compartment at rear of tender, and vent valve compartment below letter "O." Photo from Alco Historic Photo collection.

**PT-5 (26) Built by American Locomotive Co. for S1 Niagaras
18,000 Gals., 46 Tons, 178,000# Empty Weight**

<u>T Plate No.</u>	<u>Built</u>	<u>Applied To</u>	<u>Retired</u>
T-3323	*2/46	to 6000, at WA 1/52, to 6012 4/52	8/55
T-3100	10/45	to 6001	8/55
T-3103	10/45	to 6002, stored 12/48, to 6005 10/49, to 6023 1/50, to 6025 1/50	8/55
T-3117	10/45	to 6003, to ? by 3/50	?
T-3122	11/45	to 6004, to 5443 2/48, to 5236 6/53 (stored)	8/56
T-3128	10/45	to 6005, stored 10/49, to 6018 3/50	8/55
T-3595	11/45	to 6006, to 6008 10/48	8/55
T-3593	11/45	to 6007	11/55
T-3125	11/45	to 6008, to 6016 4/48	8/55
T-3154	11/45	to 6009	8/55
T-3112	11/45	to 6010, to 6003 1/55	8/55
T-3118	11/45	to 6011, to 6023 1/53, stored 4/53, to 5451 11/53, to 5257 stored	2/56
?	11/45	to 6012, to ? by 4/52	?
T-3129	11/45	to 6013, to 6015 10/48, to 6021 8/50	8/55
T-3470	12/45	to 6014, to 6024 4/50, to 6006 10/51	8/55
T-3127	11/45	to 6015, to 6013 10/48, stored 10/48, to 6002 12/48	8/55
T-3438	12/45	to 6016, stored 4/48, to 6013 10/48	8/55
T-3436	12/45	to 6017	8/55
T-3437	12/45	to 6018, stored (WA) 3/50, to 6022 6/50	8/55
T-3545	12/45	to 6019, to 6023 5/49, to 6005 1/50, to 6003 3/50, to 6010 1/55	8/55
T-3546	12/45	to 6020	3/56
T-3466	1/46	to 6021, to ? by 8/50	?
T-3309	1/46	to 6022, to 6014 6/50	8/55
T-3373	4/46	to 6023, to 6019 5/49	3/56
?	1/46	to 6024, to ? by 4/50	?
T-4615	5/46	6025, to 6023 1/50, to 6011 1/53	8/55

* Date T plate applied. Loco. #6000 built 3/45.



Left side of PT-5 tender built by the American Locomotive Co. Note stoker engine compartment below letters "ORK." Photo from Alco Historic Photo collection.



Class J3a #5447, destreamlined with original flat smokebox front, Worthington feedwater heater, booster, and PT-4 tender, on the "Advance Empire State Express." Since the photo is not dated tender could be LLW T-1078 or T-4157. Note well the Boxpok drivers and Timken rods. Neither the photographer nor the print owner noticed this, but it is the only such driver-rod combination that the author has ever seen on a Hudson. Photo by Robert Whitbeck.



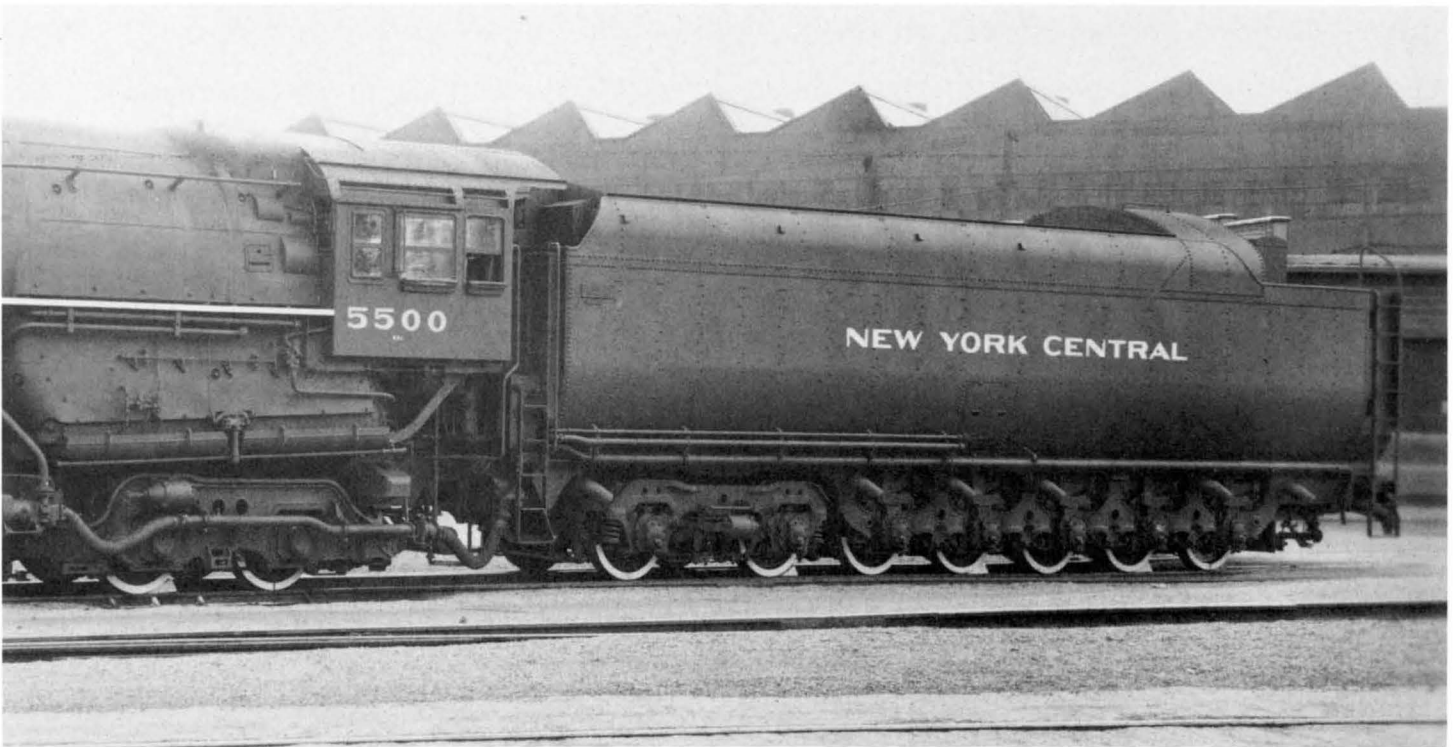
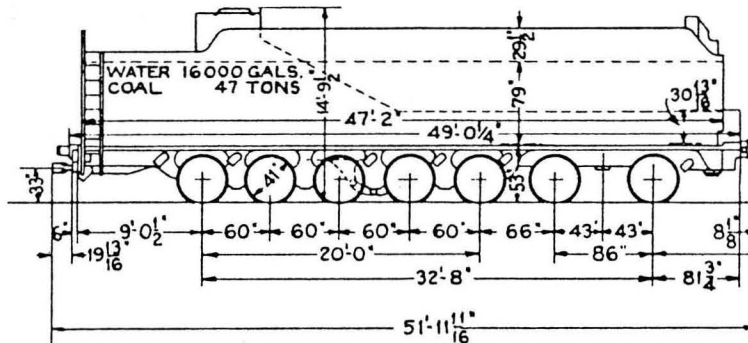
Class J3a 5422 at Harmon, N.Y. 8-31-47. Tender is PT-3 #3701. Records do not indicate when this tender replaced the PT-4. Photo by Paul Stringham, collection of William A. Raia.

**PT-6 (1) Built by American Locomotive Company for S2 Niagara
16,000 Gals., 47 Tons, 179,400# Empty Weight**

<u>T Plate No.</u>	<u>Built</u>	<u>Applied To</u>	<u>Retired</u>
T-3208	6/46	to 5500**, to 6000 5/52	3/56

**5500 retired 5/51

PT-6 TENDER



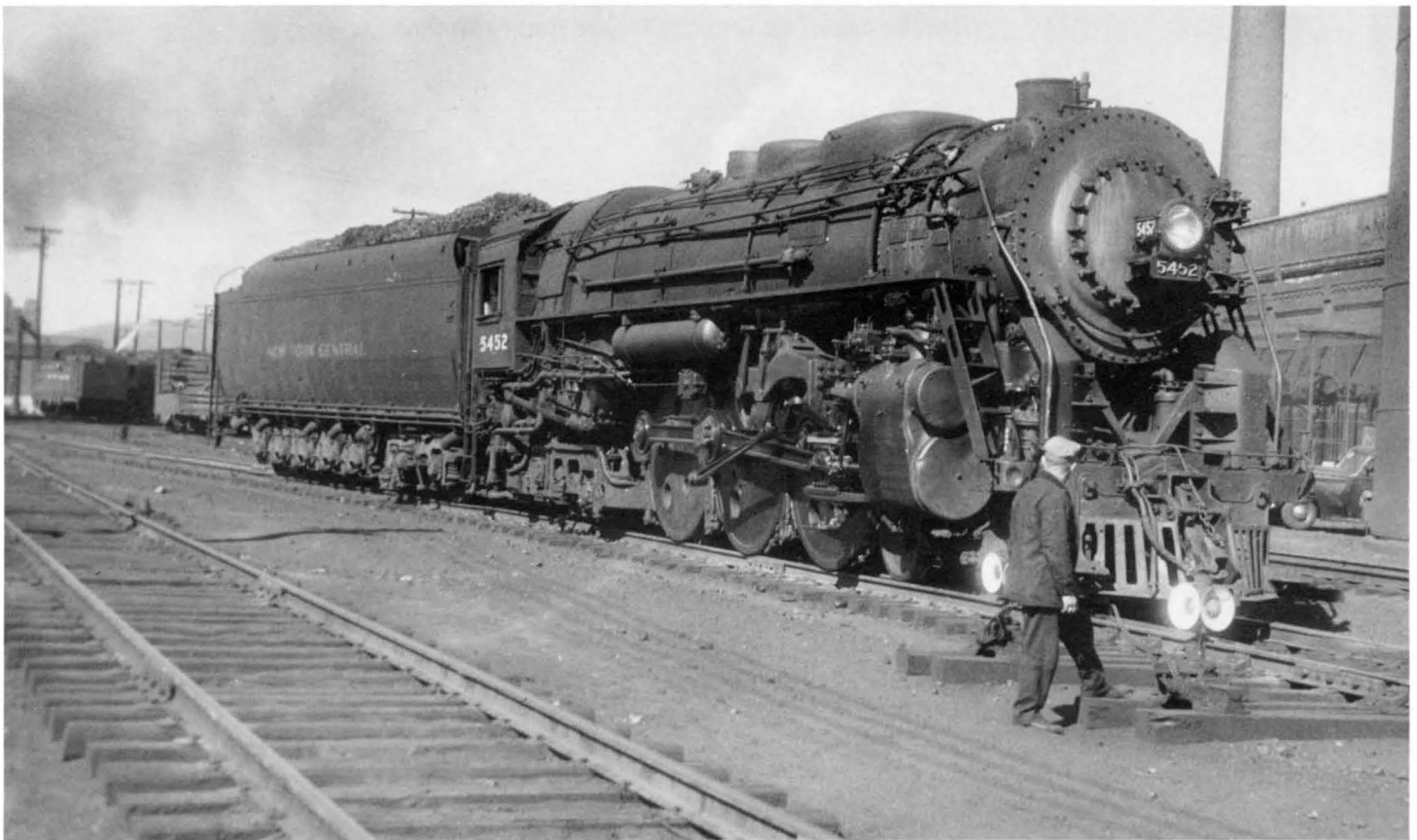
Left side of the only PT-6 tender, for class S2a Niagara #5500. Note that "New York Central" on tender is aligned with "5500" on cab. American Locomotive Co. photo.

The main reason for building the PT's (except PT-2) was to reduce the number of stops for coal made by main line trains between Harmon and Chicago. As a result of their implementation, the only eastbound stop from Chicago usually necessary was at Wayneport, N.Y. and westbound from Harmon the run could be made to Mina, Ohio, five miles from the Ohio-Indiana State line. The other coal docks over the main line at Elyria, Ohio, and Wesleyville (Erie), Pa. were not patronized thereafter as often as previously. The 21,000 gallon water capacity PT-2 applied to 5401, usually assigned to the "James Whitcomb Riley", eliminated the necessity for a water stop at Greensburg, Indiana (between Cincinnati and Indianap-

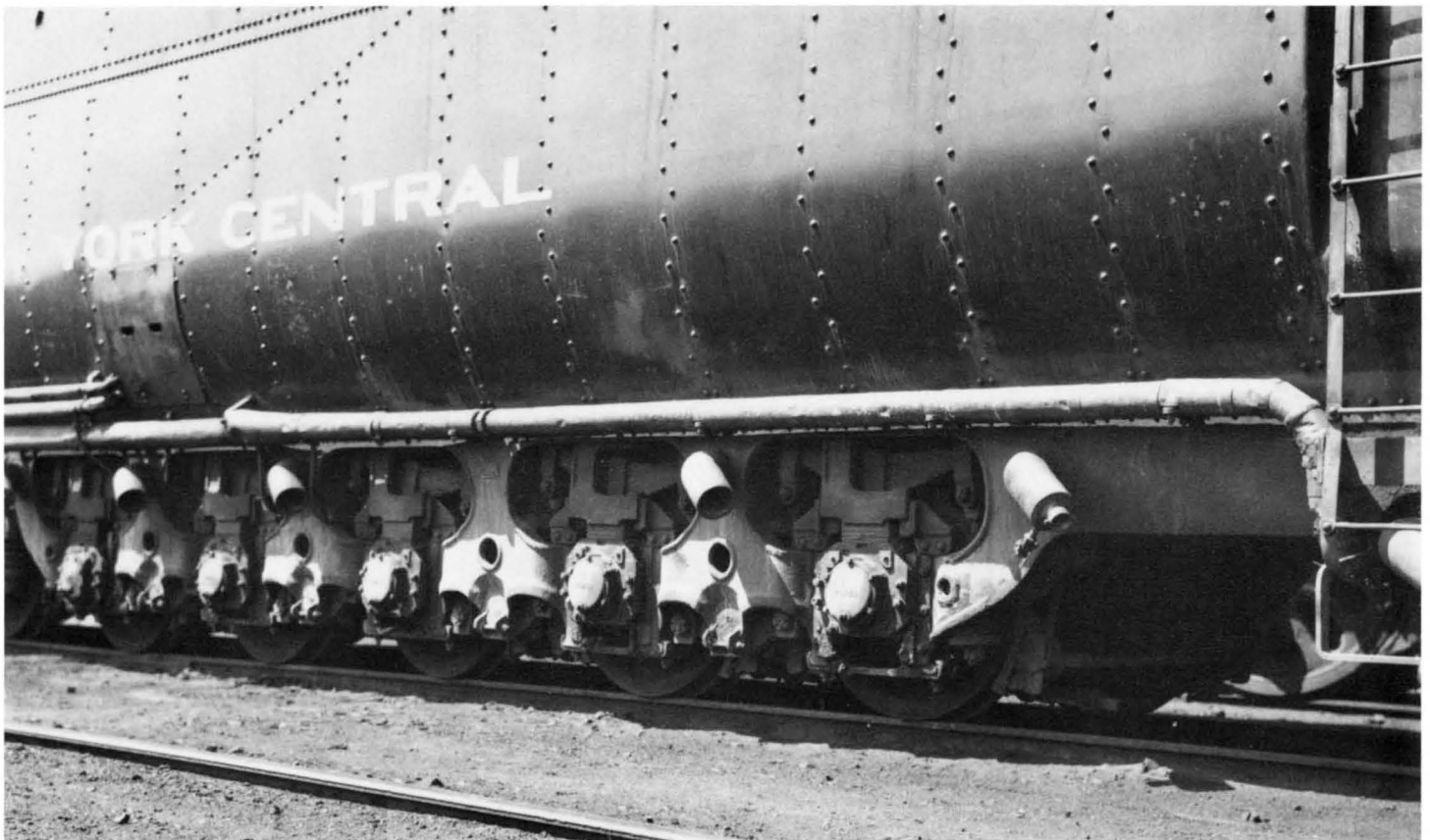
olis), because the regular station water stop at Indianapolis was sufficient. Between Chicago and Indianapolis a water stop at Kankakee did not affect the schedule since this was a well-patronized passenger stop.

The first N.Y.C. objective was to apply the PT-1, -3 and -4 tenders to all J3a locomotive. In actuality, however, this apparently never took place. Analyzing the data for the locomotives to which they were attached, brings certain interesting facts to light.

- a) All J3a locomotives eventually received PT tenders, but only because the 5443 received PT-5, T-3122 from S1b 6004 in February, 1948.



Class J3a #5452, destreamlined with Elesco feedwater heater, booster (exhaust to tender), and PT-4 tender LLW T-1083, at Harmon, N.Y. Photo by G. R. Waring.



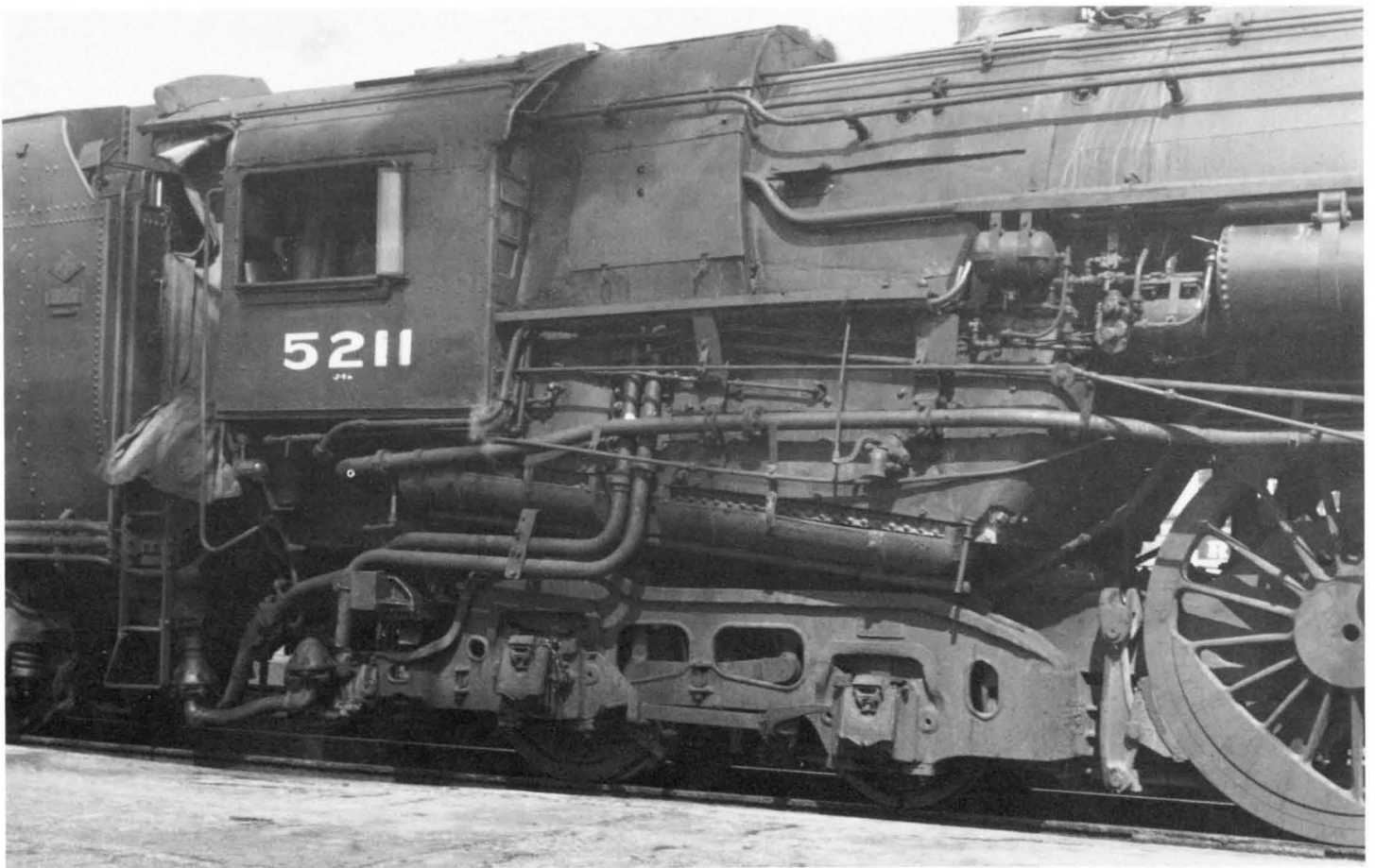
Left side of PT-4 tender on class J3a #5423 at Collinwood, April 1954. Note fire hose connections on the no. 2 and no. 6 overflow pipes. Although not printed, the negative shows the rear (no. 7) pipe (behind the ladder) to be open. Note the drain cock on the no. 6 pipe. Its use can only be surmised. Photo by H. L. Vail, Jr.



Right side of class J1e #5401, with PT-2 tender. Photo by M.D. McCarter.



Class J3a #5422 at Chicago, Ill., July 7, 1946. PT-4 tender #T-4105 applied 11-44, the first PT on this engine. Photo by C. T. Felstead, collection of Lee A. Hastman.



Class J1b #5211 at Erie, Pa. station, June 1950, with PT-4 tender LLW #T-1071. Booster exhaust is on tender. Photo by H. L. Vail, Jr.



Class J1c #5272 leaving Syracuse, N.Y. with train #9, 2:55 P.M., May 5, 1950. The tender is a PT-4, although the records do not indicate that 5272 had one. The PT-3 tender previously on this engine was off by 10-49. Photo by Tom Mulaniff.

- b) The unique PT-6, T-3208, delivered with S2a No. 5500 in 1946 was attached to S1a 6000 in May, 1952, after the 5500 was retired in May, 1951.
- c) 6023 had at least five different PT tenders attached: PT-5, T-3173 4/46 - 5/49; Pt-5, T-3545 5/49 - 1/50; PT-5 T-3103 1/50 - 1/50; PT-5 T-4615 1/50 - 1/53; (?); PT-4 T-3077 4/53 - 3/56. (From 1/53 - 4/53 this locomotive was probably shopped.)
- d) 5451 had four different PT tenders attached; PT-1 T-3152 6/9/43 - 7/45; PT-4, T-3741, 7/45 - 6/49; PT-4, T-3498, 6/49 - 11/53; PT-5, T-3118, 11/53 to some time before 2/56.
- e) Six Hudsons had three different PT's: 5420 (all PT-4); 5422 (PT-4, -3, -4); 5447 (PT-1, -4, -4) 5450 (PT-1, -4, -3); 5453 (PT-1, -4, -4); 5344 (all PT-4).
- f) At least four Niagaras and perhaps two more had three different PT tenders: 6003 (all PT-5); 6006 (all PT-5); 6013 (all PT-5); 6024 (PT-5, -5, -4); 6008 (PT-5, -?, -5); 6015 (PT-5, -5 to 8/50, and one more thereafter).
- g) One Niagara may have had more than 3 PT tenders: 6005 (PT-5, -5, -5 to 3/1950) and something else thereafter.
- h) Four Niagaras had PT-4 tenders during part of their service lives: 6004, 6006, 6023, 6024.
- i) Six Niagaras had the same tender during their entire service lives; 6001, 6007, 6009, 6017, 6020, and 5500.
- j) Neither the J1a 5200 nor any J1d engines received a PT tender.

As some J3 locomotives were transferred to the Michigan Central, it became necessary to remove the PT tenders and re-apply standard tenders since not all MC turntables could handle the additional length. Thus some PT's went to J1's and others were stored.

When J3a 5433 was selected for a special exhibit in

Grand Central Terminal on September 10, 1953, (PT-4 (LLW T-1073) was removed and an original 14,000 gal. 30-ton tender (with overflow control) was attached. The PT would not quite clear things in GCT. It was also necessary to lower the J3a by applying special gibs in the spring rigging, and worn (34") engine truck wheels in place of full (36") wheels.

All J3a locomotives had their booster exhaust at the rear of the tender when built, so when the PT tenders were applied, the exhaust continued to go to the tender. Although apparently not a universal practice on J1's equipped with PT-1, PT-3 or PT-4 tenders, the booster exhaust was, on some, connected to the tender, with the former forward running booster exhaust pipe being removed from the right side of the engine. PT-5 tenders had no booster exhaust piping, and the J's receiving these tenders had already had their boosters removed.

Quite a bit of information is missing from the record cards which, if available, would assist in completing the roster chart. A review of photographs reveals that 5272 had a PT-4 on 5/5/1950, whereas the record is incomplete after 10/1949. Thus, the T number of that PT-4 is a question.

One of the contributing factors to exchanging Niagara tenders was the boiler shell replacement program which began at Beech Grove in the summer of 1947.

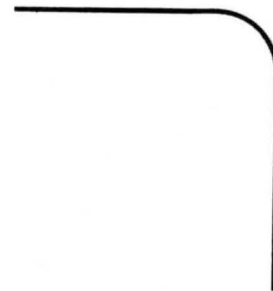
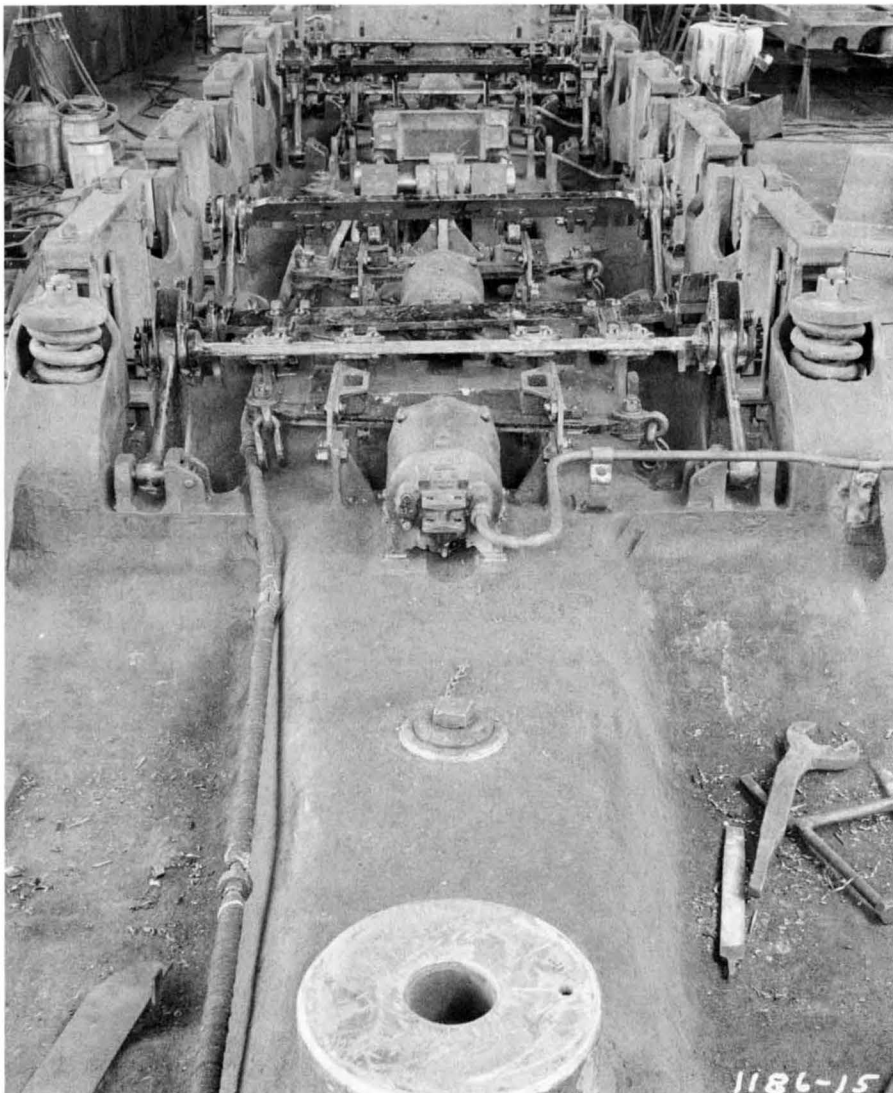
Most reviewers consider the PT tenders to have been a success. Some consider applying a 420,000 lb. (loaded) tender to a 360,000 lb locomotive as questionable practice, but the NYC was happy with fewer coal stops, larger water capacity, an ability to take water at over 550 gallons per second (85 mph) or higher, and better weight distribution. This took place in a day when the passenger traffic was so dense and fast that the elimination of a coal or water (PT-2) stop was meaningful to operating personnel as well as to the accountants. These tenders were unique, and the like will not be seen again unless we somehow return to the days of coal at \$3.50 per ton.



Class J1b #5204 with train #708 at Osceola, Ind. in the early 1950's. PT-4 tender LLW #T-1046 was applied 8-48. The 4-car train weighing 481,000 lbs. is almost outweighed by the fully loaded tender at 420,000 lbs. Photo from M. D. McCarter collection.



Right side/front view of PT-4 tender built by the Lima Locomotive Works. LLW Photo.



PT-4 tender underframe under construction, looking to rear from truck center plate. Lagged pipe to left of center plate is waterscoop steam thaw pipe. Lima Locomotive Works photo.



The PT tender frames were of the water bottom type, and were designed to maximize capacity and to carry water as close to the rail as possible, thus lowering the center of gravity. The only apparatus between the wheels was the water scoop, and the brake rigging for the rigid frame wheel sets. All piping for tender-mounted equipment was carried along the sides, which also provided complete accessibility for maintenance.

Along the right side are six pipes beginning at the front of the tender, as shown in Figure 1.

From the right side photographs it will be noted that above the first rigid wheel set, all the piping is offset outward between the brackets, this being necessary to clear the "Tender Drain Cup" in the 1 1/4" brake pipe. Further rearward, just ahead of the third rigid wheel set and to the rear of the third overflow pipe, a tee in the brake pipe connects a branch pipe to the compartment in the tank side containing the "Brake Pipe Vent Valve."

The 3/4" tender brake cylinder pipe ends between the last two axles with an elbow, cutout cock and a drop to the last cylinder on the tank frame bottom, having fed the other cylinders through tees and cutout cocks at various points along the side, including the two truck-mounted cylinders from one connection just ahead of the truck center.

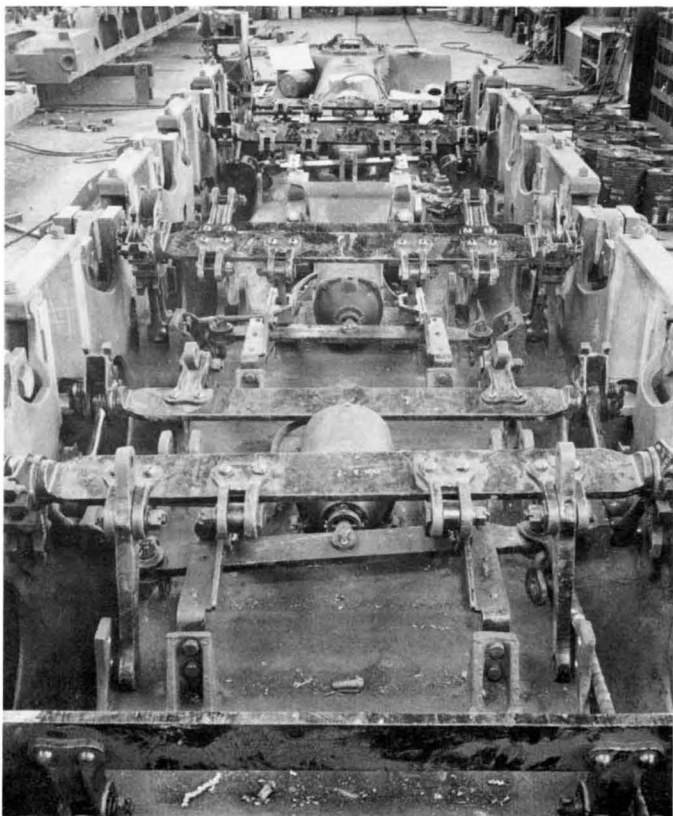
Both coal pusher steam lines, at their rear end, feed upward via tee traps, and the electrical conduit via a

Pyle-National junction box, through separate tubes in the tank cistern, with the conduit finally terminating longitudinally in the "Train Control Reset Box." The brake pipe and air signal line continue on behind the ladder, ducking down and under the frame, then rearward by the coupler, where they terminate.

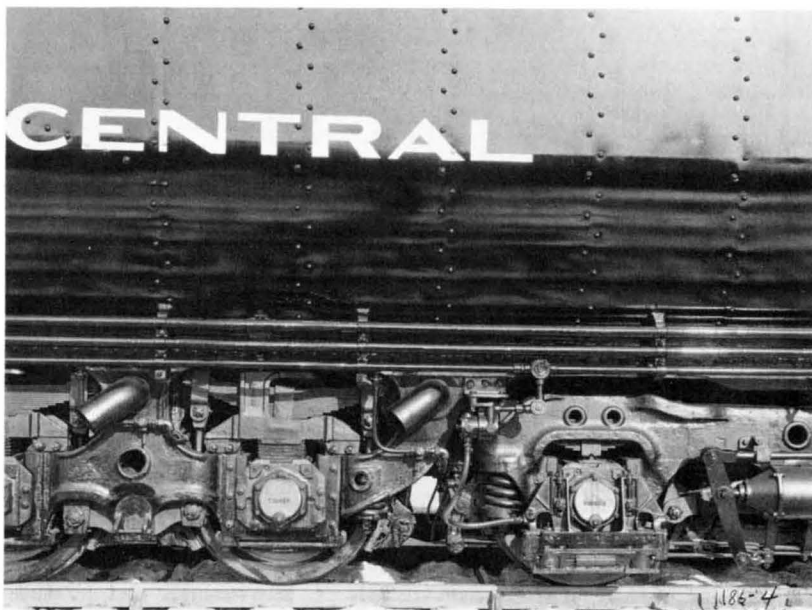
The left side has two air lines to the water scoop cylinder, two steam lines to the stoker engine, and the 2 1/2" train steam heat line, with the arrangement shown as Figure 2.

The stoker steam lines come from the stoker reversing valve under the front tender deck, and go into the stoker engine compartment. The water scoop lines go farther back and drop down and through the frame openings one on each side between the second and third rigid wheel sets, the train steam heat pipe, then, offsetting inward closer to the frame, continues to the rear where it ducks under to the steam connector under the coupler.

A few modifications were made. The drawings indicate three different arrangements of the front (#1) overflow pipe, ahead of the truck. Close up photos of PT-3, -4, and -5 show the differences, however slight. Lastly, however, this pipe was removed beginning (per drawing) 10/9/1948. Whether the entire pipe was, in practice, removed, is questionable, but the lower discharge end was certainly cut off and the remainder blocked on most tenders.



PT-4 tender underframe under construction, looking forward from rear. Waterscoop is not yet installed. Lima Locomotive Works photo.



PT-4 tender, right side. Note tender drain cup behind piping above first rigid wheel set. Lima Locomotive Works photo.

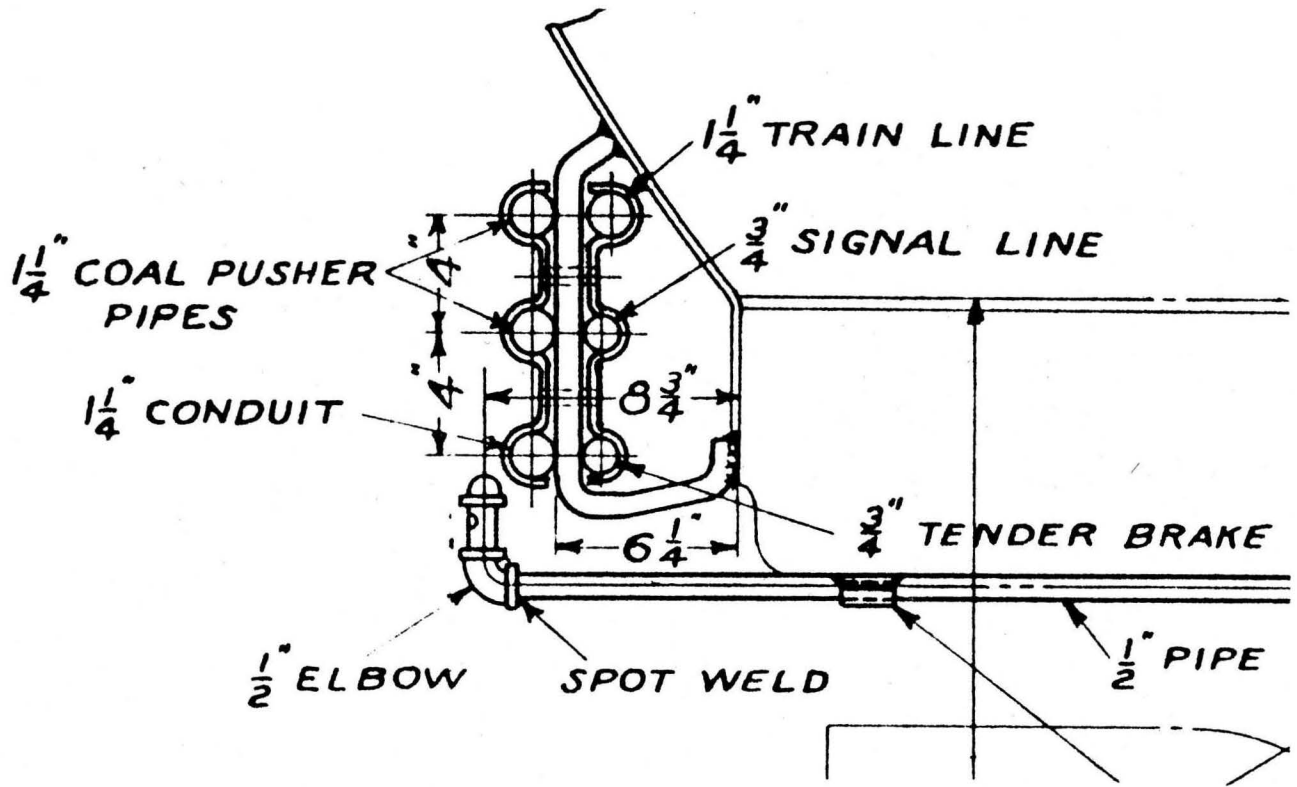


Figure 1 Right side piping, from drawing L-72086

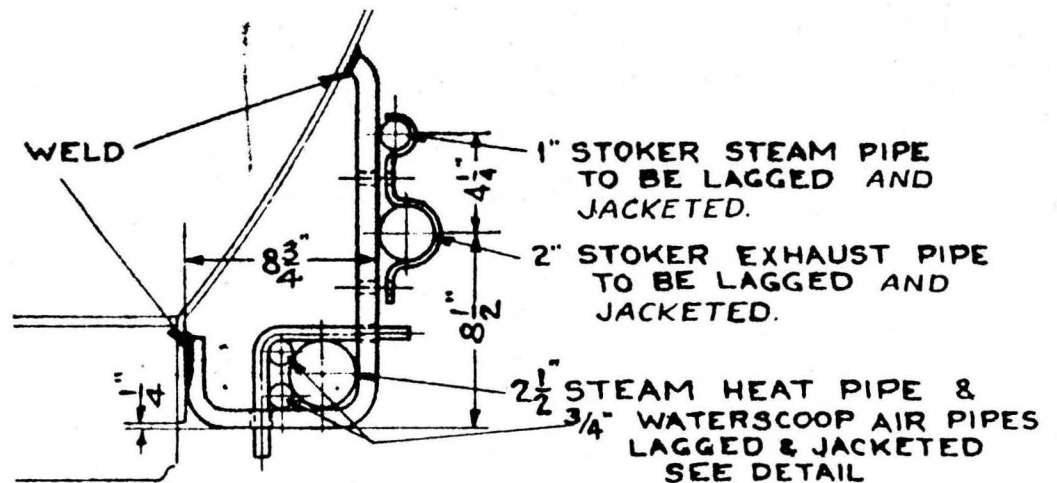
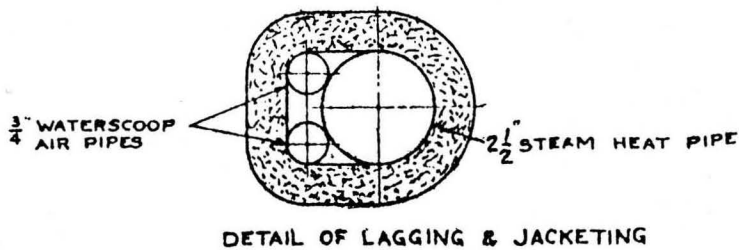
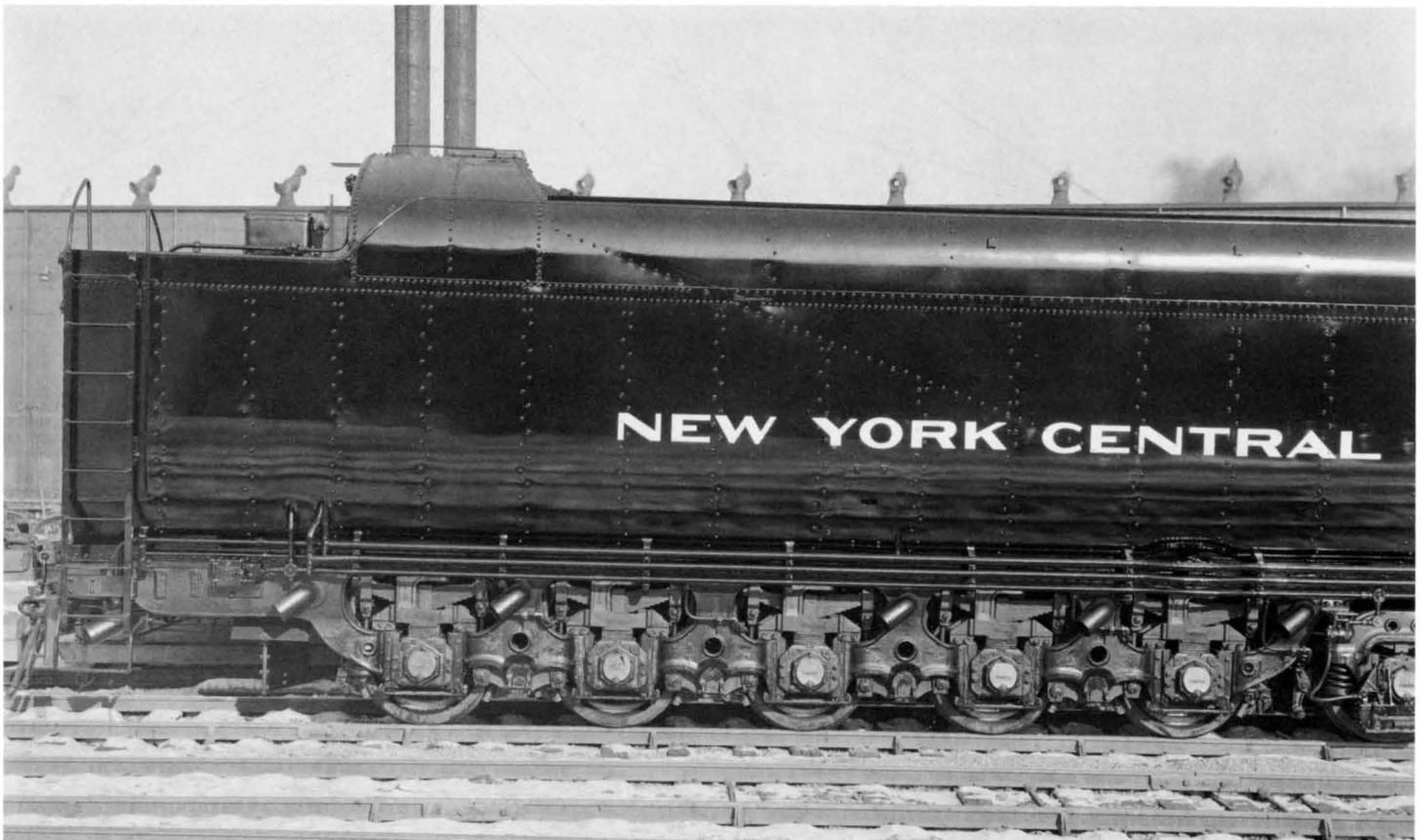


Figure 2 Left side piping, from drawing L-72087



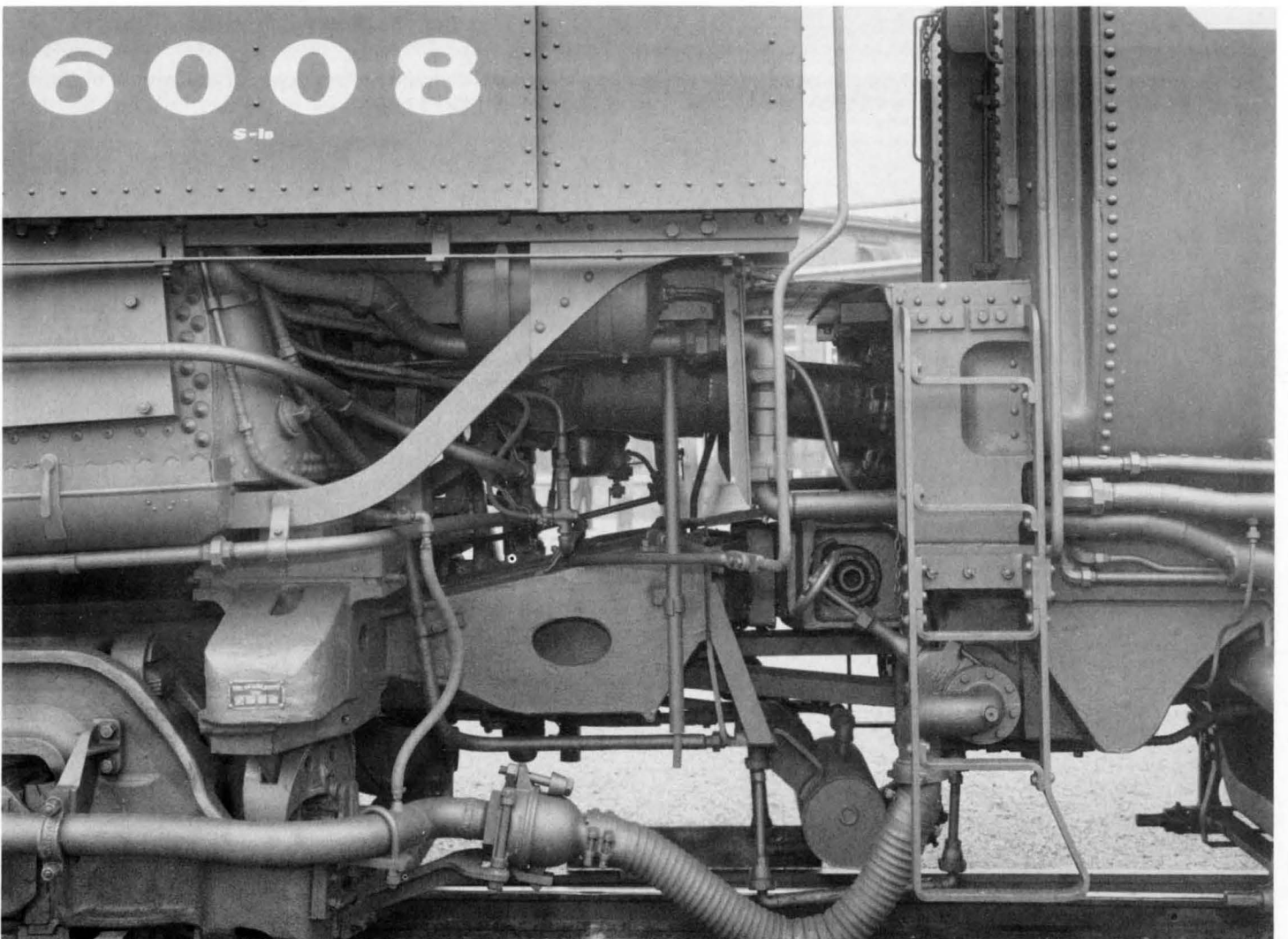
PT-4 tender, right side. Note that there are no brake beams and shoes behind second rigid wheel and ahead of third rigid wheel, due to interference with the water scoop. Lima Locomotive Works photo.



Right side/rear view of PT-4 tender. Note train control equipment box on top of tender tank, behind expansion chamber. Lima Locomotive Works photo.



PT-4 tender, left side. Lima Locomotive Works photo.

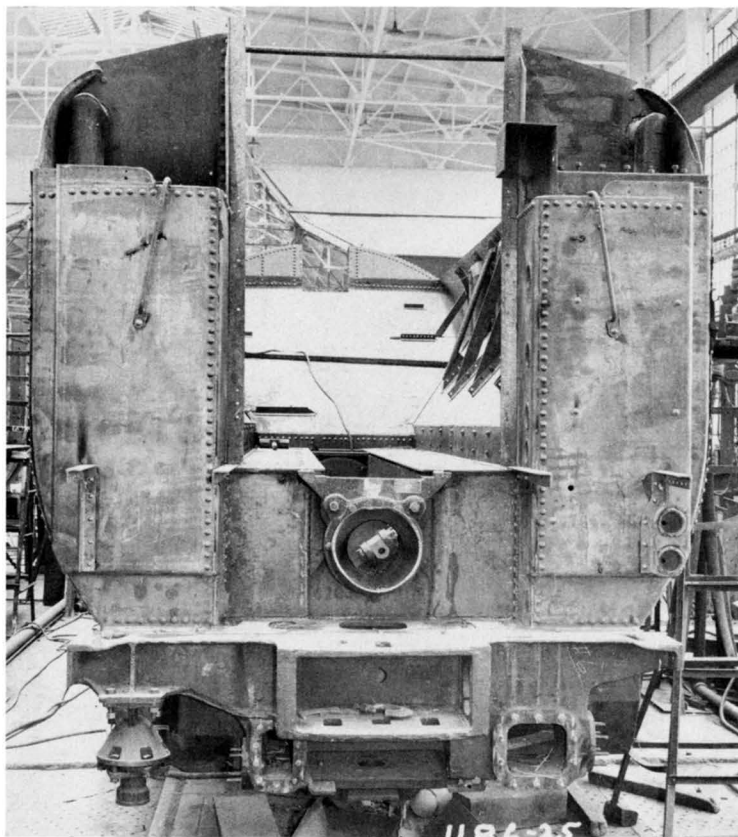


Left side of PT-5 tender showing front end piping and connections to class S1b #6008. American Locomotive Co. photo, NYCSHS collection.

In the later days, the overflow pipes on right and left at the next to rear (#6) were partially covered and fitted with a male fire hose nipple. Also modified on some were the #2 pipes, and on some tenders (PT-4, #5409, 5426, and 5266) both. Thus the tenders could be watered during station stops along the line. This was particularly helpful after water stations and pans were closed. Also, electro-pneumatic operation of the water scoop replaced straight pneumatic control.

The PT-6 tender was built without a coal pusher as it had a nearly vertical back slope sheet, and thus did not have the two steam lines on the right side. The stoker was arranged with two screws, one in the usual position, and one to the rear to feed coal from the back of the coal space. The rear portion was activated through a clutch, and used only when necessary. On the tender last on #6000, a steep slope sheet was later installed from the bottom of the collar downward covering the rear section of the stoker screw, making the maintenance of that screw and clutch—since they were no longer required—unnecessary. This slope sheet is shown on the diagram.

Certain characteristics set out the differences between each sub class. The PT-1, as built, had no overflow control. When rebuilt, the overflow pipes came downward through the lower tank side rather than through the frame as on all others. The PT-2, of course, was unique. The PT-3 and PT-4 though similar, differed in that only the PT-4 had a Lima diamond builders plate and trust plates at the upper side at the front, the PT-3's having none. The PT-3 also had a slightly higher mounted back-up light and associated horizontal conduit to marker light plug receptacles and junction box on the rear. PT-5 and PT-6 tenders had a compartment ahead of the right side rear ladder for the train control relay box while all others had the box on the rear deck, right side.



Front view of PT-4 tender under construction. Note ball joint for booster exhaust piping to tender. Lima Locomotive Works photo.



Class S2a #5500 with PT-6 tender. Photo printed by John Krause, from collection of H. L. Vail, Jr.



Class J1e #5333, the only J1e other than 5344 and 5401 to receive a PT tender, on train #415 westbound out of Lafayette, Ind. in February 1950. Although there is no Lima diamond builder's plate or trust plate on the tank side, the record indicates that this is a PT-4. The LLW #T-1041 was damaged 5-2-45, repaired and applied to 5333 in 9-1946, which may account for the missing plates. However, the high location of the tender lettering for a Niagara may indicate that the tender was recently changed. Note also the slightly high headlight position. Photo by H. D. Lewis.



Class J1c #5273 leaving LaPorte, Ind. on 3-19-56. Tender is PT-3 #T-3598 originally applied in July 1945 when new, and never changed. Booster and #1 overflow pipe have been removed. Photo from M. D. McCarter collection.

Although the original PT-5 on #6000 had the usual backward slope to the upper back sheet, above the collar, the rest of the PT-5s and the PT-6 had vertical sheets. PT-5s and the PT-6 have trust plates (two, the upper for the trust owner, the smaller and lower for the owner's number) but no builders plate as on the Lima PT-4's. All Beech Grove-built tenders have no plates and only a single rivet at the top of the vertical rows of staggered rivets on the sides, whereas both the Lima and Alco-built tenders have a pair (one in each leg of the T) at the top on the sides. On the rear sheet, Alco's have only the single rivet at the top of the two vertical lines of staggered rivets, the Lima's, a pair, the Beech Grove PT-1's a pair.

The PT-4 was built with longitudinally mounted deflector plates, sloped downward toward the outside in conjunction with the vertical one just ahead of the rear coupler. These are not on PT-1 and PT-3 as built, but are on modified PT-1, and on the PT-5 and PT-6 as built.

PT-1, -3 and -4 were equipped with booster exhaust piping, since they were to be applied to Hudsons, but PT-5 and -6 were not, and thus when PT-5's were found on a Hudson, the booster had been removed.

The PT-2 had no coal pusher, stoker engine (this was kept on the locomotive), or water scoop (or overflow control) and associated piping. The PT-2 had no booster exhaust piping; this went forward to the locomotive smoke box. The N.Y.C. 1/1/1946 classification book indicates that the 5401 had a booster when the PT-2 was applied.

Lastly, a word about the "PT" designation. Many persons assume incorrectly that it is the abbreviation for "pedestal tender". The 1/1/46 classification book had the following to say: "Bed type tenders are the only tenders having a tender classification. These tenders are classified as 'PT' with a number following the class letter. 'PT' tenders are designed for passenger service and the classification 'PT' indicates passenger tender. The figure following the class letters indicate differences."

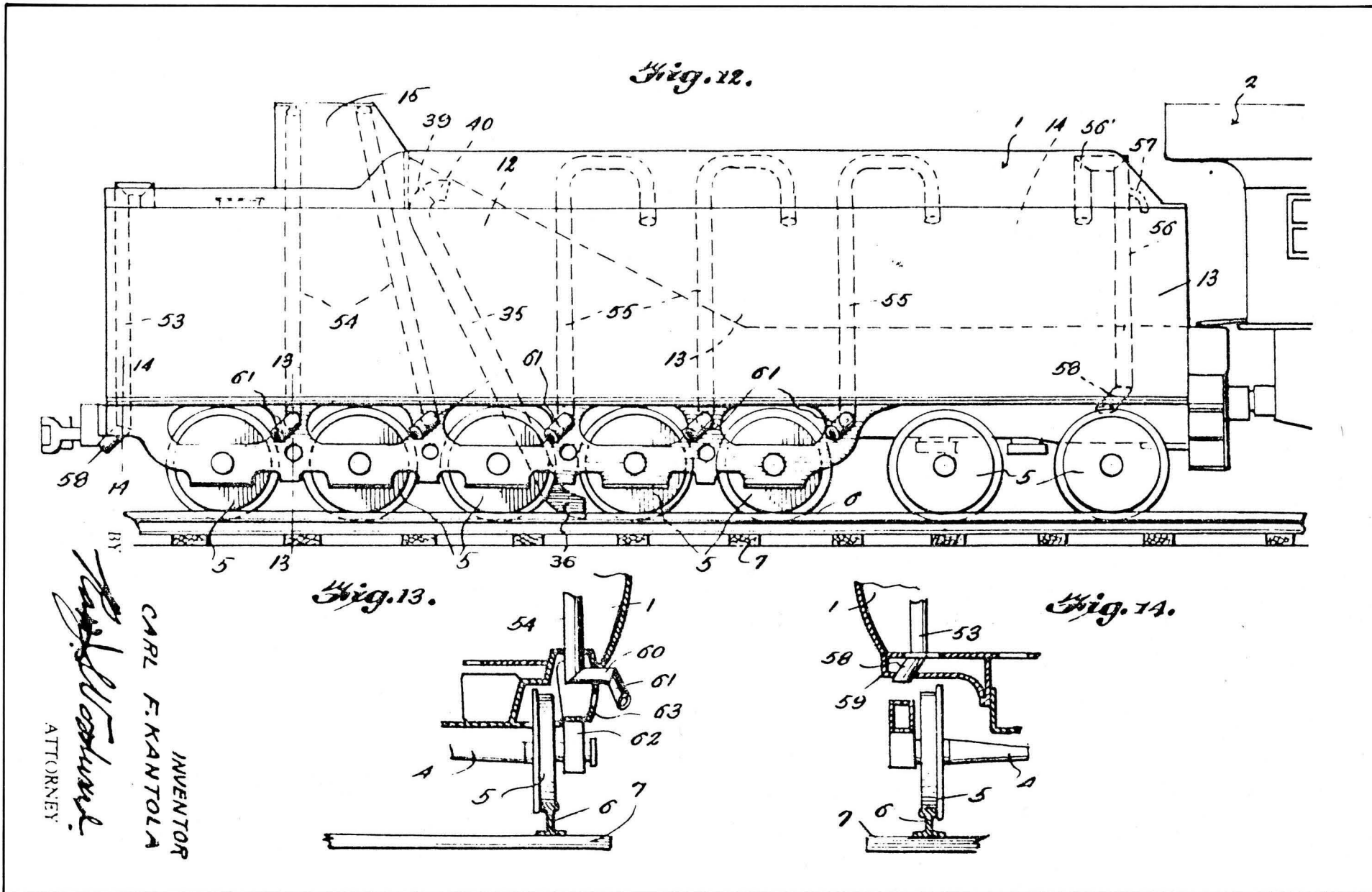
If the steam classification book had been re-issued after 1948, which it was not, the above description would have required change, for the truck-type tenders built for the P&LE class A2a 2-8-4 locomotives received the classification "FT-1," denoting a freight service tender.

It is regrettable that we can no longer simply go out to see a PT tender whenever we wish, but we probably would not do so, since we always think "they will always be there." Thus the lament of all historians, whether the subject is tenders, locomotives, cars, buildings, or even Mt. St. Helen. This article, like all technical dissertations, is not to be considered the last work and all inclusive. If anyone can add to our knowledge, please come forth.

All Lima Locomotive Works photographs are from the collection of H.L. Vail, Jr., obtained from the late Perry E. Percy, Estimating Engineer of the Lima Locomotive Works.



Class J3a #5445 with PT-5 tender #T-3122 near Toledo, Ohio station, 1950. Note no booster, but that #1 overflow pipe is intact. Photo from Bob Lorenz collection.



Carl F. Kantola
 CARL F. KANTOLA
 INVENTOR
 ATTORNEY

Drawing from Carl F. Kantola's patent for the high speed water scoop apparatus, showing arrangement of scoop, vents and expansion chamber on the PT tender.

Central Memories



An eastbound passenger train powered by class 1d Atlantic #3910 meets a westbound at Marble Hill in New York City, about 1907 or 1908, on the then-new cutoff. "FH" tower is in the background. Note that although third rail is in place both trains are steam-powered. Photo by Emil Buchert, from the collection of his son, Philip E. Buchert.



Class J1d #5394 and class J1e #5323 being serviced at Linndale, Ohio on September 17, 1949. Photo by Lou Sabetto.