

FISHBELLY HOPPER CARS

MODELING MONON BOX CAR No. 1

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-Cover Photo-

Baltimore & Ohio 22811, built by Pressed Steel Car in February, 1901. This and similar cars are featured in this issue. This is a "Type VII" fishbelly hopper noted by the author in the as article beginning on page 2. (PSC, Metzger Collection)

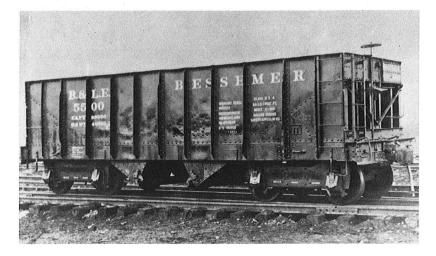
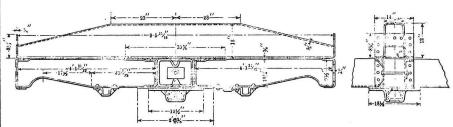


Figure 1. Type I - One of two experimental cars built in 1896, photographed on its 20th anniversary. A.J. Colantuono.



Figure 2. Type II - Production version of the Type I, one of 400 built in 1897. Shown as rebuilt in 1915; 50-ton capacity, 28 foot inside. A.J. Colantuono.



BODY BOLSTEE CONSTRUCTION-CLASS GL STEEL CARS. PENNSYLVANIA BAILBOAD.

(Above) A drawing from the December 1903, American Engineer and Railroad Journal shows the body bolster construction used on the Pennsylvania Railroad GL series (Type V fishbelly hopper)

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FISHBELLY HOPPER CARS by Al Westerfield

The first all-steel hopper cars were built by Carnegie Steel Co. in its Keystone Bridge Works in 1896. The photo (fig.1) shows one of the pair built on the occasion of its 20th anniversary. At the time, Carnegie owned the Pittsburgh, Bessemer & Lake Erie. Quite naturally the cars were tested on this road and deemed such a success that an order for 600 steel cars was placed with the Schoen Pressed Steel Co. in 1897. Two different types were ordered. The first were 400 50-ton cars of the (slightly modified) original design built from structural steel shapes. The second were 200 40-ton cars as shown in figure 3. The pressed steel car proved much easier to build and maintain and became the standard design for years come. Although nominally to 40- and 50-ton capacity, they were small in size because all they carried was iron ore.

In 1898, the company offered the pressed steel car to the trade. Twenty-eight feet long inside, they were rated at 40-tons of coal. Shown in figure 4 is a Pittsburgh & Lake Erie car of this type with the door locks that were to become standard on most hopper cars of this period. However, the Pennsylvania RR wanted a 50-ton coal car Pennsylvania and, working closely with the manufacturer, came up with a 31 foot 6 inch inside length design, designated the GL. Shown in figure 5 is the first car delivered in August of 1898. Except for a switch from the standard PSC diamond arch bar trucks to regular arch bars after the first 100 cars, GL manufacture remained the same through over 20,000 cars. Pennsy used its highly individualistic Simonton door locks until replaced by Wine locks beginning in 1927. Pennsy also provided specs and perhaps bulk purchasing for the industries it serviced. We have identified seven industries using cars identical to the GL. Shown in figure 6 is a typical car in service.

The car company was reorganized in 1899 as the Pressed Steel Car Co. PSC redesigned their for 50-ton capacity coal car use and offered it to the trade. This version was purchased by many roads as their first standard steel car. It was 30 feet inside, taking advantage of a lower crossridge than the GL to provide equal capacity in car. Unfortunately, а smaller I don't have a good photo of the car to reproduce here, my model being built from photocopies. Some railroads, notably the Baltimore & Ohio, required narrower cars. Their N-8 was the same standard design but almost-foot-narrower width the resulted in a 47.5-ton car. Later, however, they ordered a 50-ton car by increasing the height of the sides and ends. In a 1901 photo (front cover), it shows such a design with minor imthe earlier provements over cars, including changes in end sills and corner posts. The last design change I am aware of was substitution of T-section Bettendorf trucks on cars delivered to the B&O in 1904 (see figure 8). By this time Pressed Steel Car and other companies were experimenting with cars whose side sheets could bear the entire load. Because of their lighter weight, they completely supplanted the fishbelly design by 1905. In fact, Pressed Steel Car designed an experimental car of this type at the turn of the Century. Examining the photo closely, you will see that the car is identical to the fishbelly car except for lack of side sill and inclusion of an improved body bolster (see figure 9). Cars of this type were delivered to the Western New York & Pennsylvania and the Delaware, Lackawanna & Western, "modern" probably the first hopper cars produced in quantity. To get some idea of how poor the competing car company designs were, I provide two American Car & Foundry

products for comparison. The first, (figure 10) a one of a kind built in 1900 for Northern Pacific, is a primitive attempt at side sheet support. The second is one of 4000 40-ton side sill hoppers built for Central RR of New Jersey in 1902 (see figure 11). Both styles look like bears to contruct and maintain.

In the eight years that the fishbelly hopper car was mass produced, at least 32,000 and perhaps as many as 40,000 cars flooded the nation's railroads, bringing in the age of steel with a magnificent clang. Since virtually all of the cars were produced by Pressed Steel Car Co., we can see how a company, starting from virtually nothing but with a great product, could become a leader in its field. Assuming a 6-day work week, 10 hour day and five holidays a year, a little math shows that the company produced 12 hoppers a day or more than one an hour for eight years! And, of course, Pressed Steel Car made many other car types during this period.

Following the photo section is a table showing all of the fishbelly hopper cars known to me. In addition I list the series of cars that I feel may possibly cars of the fishbelly type. If any readers can supplement this list particularly with photos, please let know. I plan to do kits of many of the types V and VI cars in the future.

Figure 1Type	I
Figure 2Type	ΙI
Figure 3Type	
Figure 4Type	IV
Figures 5,6Type	V
	VI
Figure 8Type	VII

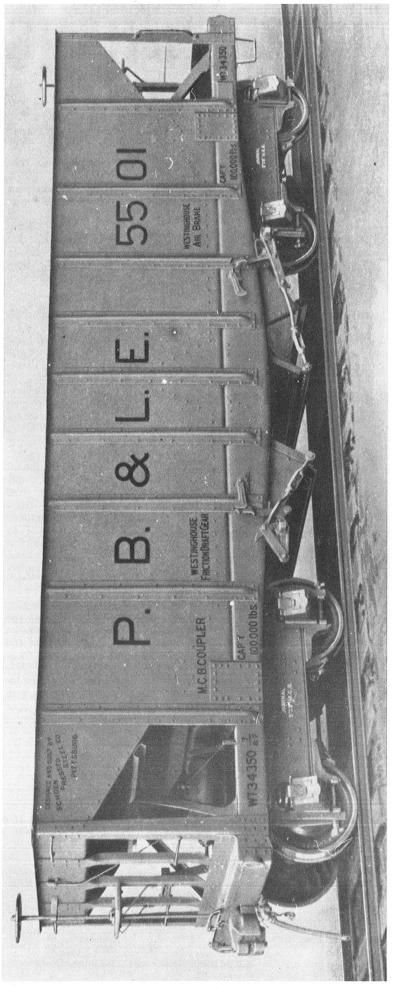




Figure 3: (Above) TYPE III- First pressed steel car, 40-tons capacity, 28 foot inside length as delivered in 1897. Photo courtesy Ian S. Fischer.

Figure 4: (Right) TYPE IV- First general production version, 40-ton capacity, 28-foot inside length. Photo courtesy of A.J. Colantuono.

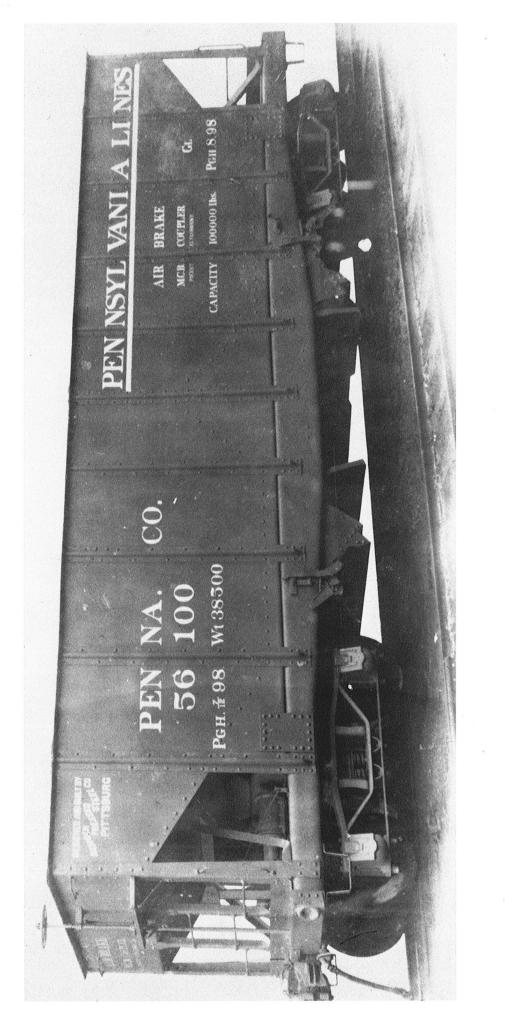


Figure 5: Type V- First GL hopper car as delivered August 1898; 50-ton capacity, 31 foot 6 inch inside length. PSC, Metzger Collection



PAGE 6



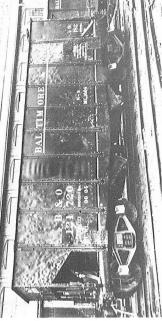


Figure 7: Type VI- Standard car (with exception of width) sold to many roads beginning in 1898; 50-ton (here 47.5) capacity, 30 ft. inside. B&O Historical Society, courtesy Gary Schlerf.

Figure 8. Type VII- 1904 deliveries had T-section Bettendorf trucks. B&O Historical Society, courtesy, Gary Schlerf.

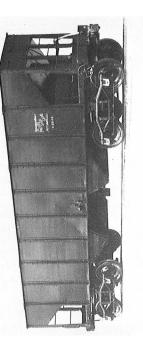


Figure 9. Early experimental car without side sills spelled demise of fishbelly production. PSC, Metzger Collection.

AMERICAN CAR & FOUNDRY CO.

EVERY CLASS of PASSENCER and FREICHT TRAIN CARS

on hes Stepter. Chart, Cris. During Combination, Mail, Rugging and Express Cars, Wooden Freight Cars, Structura Reef Freight Cars. Composite Freight Cars. Seel Underframing for Freight Cars. Exclusive Reiders of the Carda Ca

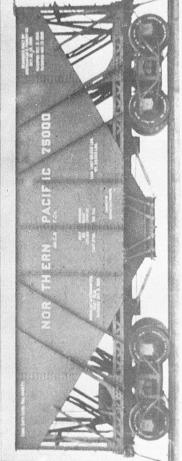
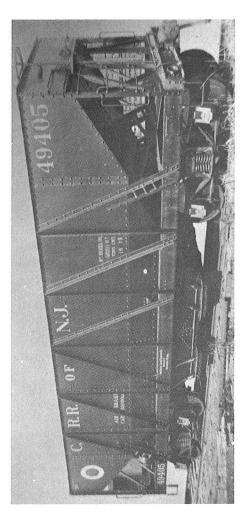


Figure 10. Competing AC & F product suffers by comparison. A.J. Colantuono.

Figure 11 (Right): Competing side sill car has same complexity-of-design problems. CNJ, Crater, courtesy B.H. Poppenga



	ORIGINAL	CAR	CAPACITY		NUMBER
ROAD/OWNER	NUMBERING	TYPE	(tons)	BUILT	OF CARS
ROAD / UWINER					0
Pittsburgh, Bessemer & Lake Erie	5499-5500	Ι	40	1896	2 400
Pittsburgh, Bessemer & Lake Erie	5701-6100	ΙI	50	1897	
Pittsburgh, Bessemer & Lake Erie	5501-5700	III	40	1897	200
Pittsburgh, Bessemer & Lake Erie	6101-6500	111	40	1897	400 50
Pittsburgh & Lake Erie	13500-13549	IV	40	1898	600
Pennsylvania	31475-32074	V	50	1899	1115
Pennsylvania	33001-34115	V	50	1898+ 1899+	1000
Pennsylvania	40001-42000	V	50 50	1899+	1000
Pennsylvania	43001-44000	V	50	post-1899	1100
Pennsylvania	48501-48600	V V	50	post-1899	500
Pennsylvania	54501-55000	vv	50	post-1899	1000
Pennsylvania	59001-60000	v	50	post-1899	1829
Pennsylvania	130001-131829	v	50	post-1899	500
Western New York & Pennsylvania	10250-10749 56001-56925	v	50	1898	925
Pennsylvania Co.	4476-4775*	v	50	1899+	100
Cleveland & Pittsburgh	5101-5625	v	50	1899+	125
Cleveland & Pittsburgh	350-351*	v	50	post-1899	2
Cleveland & Marietta Toledo, Walhounding Valley & Ohio	1001-2020*	v	50	post-1899	20
Pittsburgh, Ft Wayne & Chicago	9601-10000*	v	50	1899	400
Pittsburgh, Ft. Wayne & Chicago	12001-12500	V	50	post-1899	500
Erie & Pittsburgh	1526-1925*	V	50	1899	400
Pittsburgh, Youngstown & Ashtabula	2426-2775*	V	50	1899	350
Pitt., Cincinatti, Chicago & St.Louis	17001-17300*	V	50	1899	300
Pitt., Cincinatti, Chicago & St.Louis	21001-23300	V	50	post-1899	2300
Berwind White	1981-3000*	V	50	1902	1020
Westmoreland	1497-1688 (a)	V	50	?	?
Westmoreland	2649-2932 (a)	V	50	?	?
Penn Gas Coal co.	2001-3309 (a)	V	50	?	?
New York Coal & Transportation	107-108 (b)	V	50	1902	2
Lehigh Portland Cement	17 (b)	V	50	1903	1
Ellsworth	1001-2000*	V	50	?	1000
Keystone Coal & Coke	1001-1500*	V	50	1899	500 220
Union Pacific	12500-12720	VI	50	1899-1900	700
Oregon Short Line	20000-20700	VI VI	50 50	1899-1900	50
Oregon Rwy & Navigation	50000-50049*	VI VI	50	1899	500
Lake Shore & Michigan Southern	29000-29499	VI	50	1899-1904	1900
Pittsburgh & Lake Erie	10000-11899*	VI	50	1900	200
Pittsburgh, McKeesport & Youghiogheny	13550-13479*	VI	47.5	1899	1000
Baltimore & Ohio	44000 - 44999 20000 - 21999	VI	50	1900	2000
Baltimore & Ohio	1227-1276*	VI	50	1900	50
Rio Grande Western	17001-18000? *	VI	50	post-1899	?
Lehigh Valley	1000-1019	VI	50	?	20
Pittsburgh & Buffalo Coal	22000-23999	VII	50	1901	2000
Baltimore & Ohio Baltimore & Ohio	120000-123999	VII	50	1904	4000
baltimore & Onto	120000 120000				
			Approximate	e total known	31775
			••		
-Assumed Fishbellies-					
	6501 0100*	VI	50	1899-1901	2600
Pittsburgh, Bessemer & Lake Erie	6501-9100*	V1 ?	50	2035-1301	1500
Philadelphia & Reading	`80000-81499* 49000-49999*	?	50	post-1899	1000
Erie	49000-49999* 14000-14149*	?	50	1899	150
Buffalo Rochester & Pittsburgh	14450-14649	?	50	?	200
Buffalo Rochester & Pittsburgh	1101-1600*	?	50	?	500
Union RR Wheeling & Loke Frie	55001-55500*	?	50	post-1899	500
Wheeling & Lake Erie Delaware, Lackawanna & Western	? *	?	50	1900	100
Deraware, Lackawanna & Western					
			Total	Possibles	6550

GRAND TOTAL KNOWN AND POSSIBLE FISHBELLY HOPPER CARS

37225

* Photos Needed

(a) GL series not identified among total rolling stock(b) Cars of this company were never registered: car numbers from photos

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MODELING MONON BOX CAR No. 1 by Staffan Ehnbom

For years I erroneously thought that the Monon box car with the intriguing number "1" had the modelling project inspiring combination of improved dreadnought ends and improved Youngstown doors. This erroneous assumption was based on a doctored photograph of a Monon 251-500 series box in a September 1948 Trains magazine ad. In this blatant, presumably unintentional, case of "obstruction of prototype research", the side number of the car had been retouched into a "1". The blurred end number, however, barely showed a three digit shape. I had viewed with consternation other pictures of the much featured Monon N° 1 showing a Superior type door until finally modellers Montford Switzer and William Darnaby cleared things up in the April 1979 Prototype Modeler and then again in the October 1982 Mainline Modeler with articles on these cars.

The articles clarified that cars $N^{\circ}s$ 1-250 had Superior type doors, Improved 4/4 dreadnought ends and that the roof panels were of the rectangular type. So with a way of providing the correct improved dreadnought ends worked out,

I was set to build this foreign car for my Great Northern layout and specifically for use in my "One Spot Special" consisting of G.N. diesel Nº1, the Monon box and G.N. caboose Nº X-1 In the Prototype Modeler and Mainline Modeler articles Athearn and MDC box cars had been used with their "unimproved" dreadnought ends. I wanted to go a step further by using improved 4/4 dreadnought ends. These were built up using Athearn 40' reefer ends. An "A" end is cut off from an Athearn roofand-ends assembly by a horizontal cut through the center of the dreadnought bulge. From another Athearn reefer "B" end is taken the top down to a cut through the center of the second bulge from the top. This top is fitted to the first bottom part. The end assembly now has four bulges in the top half and four in the bottom half. The ladders were removed. The end can be used as a master in casting more ends.

The body is an Athearn 40' steel box car. Both top and bottom door guides, side ladders and grabs are removed and the sides sanded smooth for this welded car saving the rivets around the door opening. The weld seams are scored with a knife. The ends are cut off and the new 4/4 ends fitted.

The Superior 7-panel doors were built up on a scale 9 ft. 11-inch by 6-ft.2-inch sheet of .01" styrene. The ribs around the edges are 2" x 2" Evergreen styrene strips and the six horizontal intermediate ribs are $2" \times 3"$. The tack boards are $24" \times 18"$ pieces of .01" styrene. Pieces of scrap styrene strips make up the rest of the door hardware details. The doors are mounted in door guides made from strips of 2" x 2" and 1" x 3" strip styrene as described for the S.P. box car in Freight Cars Journal N° 10. Side ladders are built up from 2" x 2" risers mounted on small blocks of 1" x 2" strip as spacers from the car side. The end ladder risers are mounted directly to the end bulges with ACC cement. The ladder grabs are



Model of Monon box car $N^{\circ}1$ using an Athearn 40' box car body with reworked sides to simulate welded construction, ends built up from Athearn 40' reefer ends and scratch built doors. The prototype was built by Pullman-Standard in 1947. Pictures of Monon N° 1, and sometimes of cars with their number retouched to "1" by an ambitious PR department, were used to advertise the innovative management the Monon had in the late 1940's and 1950's. In the late 1960's Monon N° 1 was renumbered 10053. Staffan Ehnbom. Grandt Line no. 3901 .010 plastic rodding. The side grabs are Detail Associates bracket grabs no. 6209. One such grab can be used on each end although I formed brass The Athearn wire grabs here. sill steps were filed to a narrow running The Athearn profile. board was sanded thin after the removed. lugs were mounting Abrass grab replaced the cast on corner grabs. After mounting the running board an 18" length of 1" x 6" strip styrene was cemented to the top of the car end supporting the running board. The angled running board end brace was made from a piece of brass ladder stock. Cal Scale end brake gear was mounted. The brake platform is a 30" x 9" piece of thinned plastic running Athearn underbody The board. was used with a Cal Scale brake gear set, brass wire piping and rodding and a built up slack adjuster.

My model was painted with a 50/50 mixture of Floquil roof brown and box car red suggested in the mentioned modeling articles. The several lettering variations and decal sources are decribed in the April 1979 PM article (now seemingly out-of-print). Correct Monon decals are available from Model Railroad Supply, 6470 West Smith Road, Medina, Ohio 44256. My model uses capacity data and the "Hoosier Line" logo from Champ set no. HB-143. Road name, reporting marks and number are from HN-27 and dimensional data from HB-309.

Sources:

- "Modeling The Monon's Early Welded Box Cars" by Montford Switzer and William Darnaby, April 1979 Prototype Modeler.
- 2. "The Monon Box Car" by Montford Switzer, October 1982 Mainline Modeler.
- 3. Monon ad, p 69, August 1947 Trains.
- Monon ad, p 56 September 1948, Trains
- 5. "Railway Post Office" feature, p 60, July 1949 Trains.

Materials List:

Athearn no. 15990 40' reefer bodies. Two needed for one end.

Athearn no. 1200 40' single door steel box kit.

Evergreen #8102 1" x 2" strip Evergreen #8103 1" x 3" strip Evergreen #8202 2" x 2" strip Evergreen #8203 2" x 3" strip .01 styrene sheet

Grandt Line no. 3901 .010 plastic rodding.

Calscale no. 283 AB brake set.

Detail Associates no. 6209 bracket grabs.

.3 mm brass wire for grabs, brake piping and rodding.

brass freight car ladder stock.

Staffan Ehnbom

FREIGHT CAR EQUIPMENT NEWS

CLASS 1 & 2 RAILROAD NEWS

Burlington Northern has acquired a number of Arkansas & Louisiana Missouri Railway 60'10" series ALM 1000-1149 boxcars. The cars were orignally built by FMC in 1978 for the A&LM. Burlington Northern has numbered the cars in the 377300's (BN 377385 sighted). Presently the cars retain their A&LM livery, -David G. Casdorph

Chessie System/ C&O has acquired 1000 open hopper coal cars from the Pittsburgh and Lake Erie RR series 61000-64869. The 70-ton 40'7" cars are being numbered into the C & O series 142000-142999 - Carl W. Shaver

Chicago & North Western received 150 1980 Thrall built 52'6" gondola cars formerly lettered Wisconsin & Southern RR, Co. The C&NW has assigned these cars numbers 130400-130549. -David G. Casdorph

Denver & Rio Grande Western recently acquired a number of 89'4" intermodal flat cars from the Western Pacific RR Co. (from WP 8801-9000 series). The D&RGW has not renumbered, only relettered, the cars for service. -David G. Casdorph Kansas City Southern picked up 300 ex Warwick Railway (originally Providence & Worcester) 60' boxcars built by AC&F in 1978. The KCS has numbered these cars 755001-757993 (last number is a check digit-read as 75500-75799, but the full six-digit number is stencilled on the car). -Carl W. Shaver

Missouri-Kansas-Texas joins the "autorack club" and has purchased a number of new auto racks from Thrall Car of the Whitehead & Kales design. These are bi-level racks with clam doors and were built in 4-85 and placed on Trailer Train TTGX type flat cars. -David G. Casdorph

Oklahoma, Kansas and Texas RR Co. has acquired a number of covered hoppers from a variety of series this year. Most are former North American cars. Included are OKKT numbers 87085 to 88109 with North American serials 487085 to 488109 (not all numbers included but there are about 588± in this group). Most of these cars were built by Ingalls for NACC in 1981. All are of the 4750 cube design.

Another group is the OKKT series 53516 and 53530-53711 (total 16 cars between the two series) also appear to be ex- North American Car (?). These cars do not appear to have been renumbered, -David G. Casdorph Seaboard System, not to be left out of the new auto rack race has purchased a number of new tri-level auto racks built by Thrall Car (Whitehead & Kales design) in October 1985. The racks have Seaboard numbers in the T-2500s and T-2600s. Thrall job number is 869. Racks are mounted on Trailer Train ETTX type flat cars. -David G. Casdorph

Southern Pacific has finally renumbered those Wisconsin & Southern RR 100-ton gondolas they've been using into the SP 339102-339200 series. The gons are from the WSOR 5000+ series built by Thrall Car (job 782) in 1980. -David G, Casdorph

Union Pacific Railroad acquired within the last year and a half, twelve 86'6" high cube box cars from Conrail. These were apparently originally Penn Central cars built in 1968. Former class X60M. UP 980331-980342 - Carl W. Shaver

SHORTLINE NEWS

Mississippi Export RR Co. acquired its MSE series 1800-1849 boxcars from the Apache Railway Co. recently. The 50'6" cars were built by FMC in 1976 as part of the Apache Railway's 1800-1949 series boxcars. -Carl W. Shaver

STACK CAR UPDATE

American President Lines has been very active this last year. The APLX 4500's Thrall built container cars have now been seen with build dates up to October 1985 (10-85). There appears to be three Thrall job numbers for these cars; job 863, 865 and 866 (these are hard to read though -so some additional confirmation would be helpful here).

This APLX 4500 series stack cars are unique in several ways. Bascially, they're designed to carry 45' containers in the bottom of the middle three wells. The end wells can take only 40 foot of container; the "B" end can handle 40'ers only (no 20'ers) and the "A" end will accept both two 20'ers or one 40' container(s). In addition, these cars have larger brake cylinders than those on the other APLX's or DTTX's. Thus, allowing increased speeds if 4500's were used as a solid consist.

If you've seen some of the earlier 2000/2100 series stack cars bearing areas of red paint alternating in square patches with the original blue on the side sills....yes there is a reason. APL is using some of its cars for "mate" cars with their red generator cars to increase the capacity of refrigerated containers on the train. The "blue & red" cars do not have generators, but are coupled next to a red generator car and power lines rigged to run the reefers on the containers of these units as well. Thus, the generator on the one adjacent to it.

APL's container fleet continues to expand as well. 750 new 45' high cube (ISO 9520) insulated, interior post (smooth side) containers built by Nippon Trailmobile have been recently placed in service with numbers APLU 458000-458749. Also, APL has received its first order of 48' containers. They too have interior posts (smooth sides) and these are built by Neptune. Series appears to start at APLU 480000. These are also interesting in that they are 102" wide...the first CONTAINERS that I know of being 102" wide.

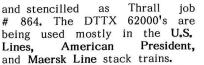
FCJ has mentioned the impending delivery of the Canadian National articulated stack cars. We now finally have the numbers. It appears as though CN has numbered each WELL. Thus, there are 260 numbers, 683200-683589, making the total of 52 sets each of five wells. The cars were built by National Steel Car and delivered in 1985. This is the first large delivery of this type of car capable of carrying containers or trailers.

The New York, Susquehanna and Western Railway has the honor of its reporting marks on the 83 Gunderson built cars for the Sea-Land stack train. The bright red cars with a large Sea-Land logo are numbered NYSW 6601-6683 and were built in May and June 1985. These cars will accept Sea-Land's unique 35' container as well as other sizes. However, the 35' containers can only be loaded in the "A" end well only. The other four wells will not accept 35' containers.

An update on the **Greenbrier** Leasing Corporation Gunderson built stack cars as follows. There are a total of twenty (20) numbered cars (or 100 wells) in the series GBRX 2000-2019.

Trailer Train Company has been very active in purchasing new stack cars.

Latest date for for the DTTX 62000's sighted so far is 7-85



DTTX 110021 is, so far, a one of a kind container stack car built by Pullman-Standard Manufacturing at Bessermer, Alabama and stencilled lot #2002. It was built in June, 1985 and is class RWG 50P. Its design is unique compared to its similar looking Thrall built cars in having "smooth sides".

More DTTX cars were ordered and placed in service with the Southern Pacific's decision to go through Trailer Train. Southern Pacific's cars are numbered in the DTTX 63100-63174 series built by Gunderson 10=12-85. The cars have large "Southern Pacific Versa-Tainer" logos on and them. This series is interesting in several ways. There are two kinds of cars. One, is the standard looking Gunderson car with the usual bulkheads. The other, is the standard car but with very obvious and rather bizzare looking "extensions" or high bulkheads used for testing to see if this helps the aerodynamics of the train. There is a 5000 pound loss of nominal capacity on these later cars. These are Trailer Train class GWG 50A. Southern Pacific is using these on the various container stack trains including the newly launched Mitsui O.S.K. Lines train from Los Angeles (City of Industry) to East St. Louis.

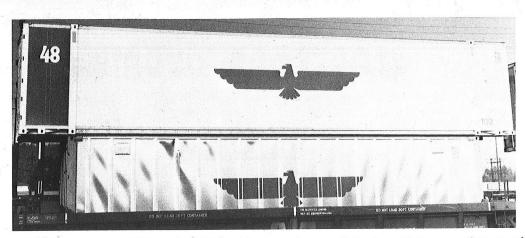
Contributors: Ed Flaugher, Carl W. Shaver, Gary A. Smith, Don McQueen and David G. Casdorph.



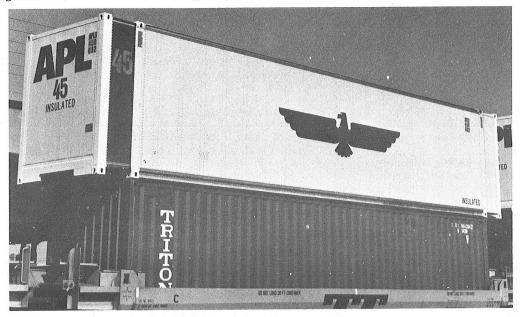
DTTX 63108, basically a standard Gunderson car. Shown is the "A" unit. (Ed Flaugher photo)



DTTX 63122, like the one on the left, but with the bulkhead "extensions" (David G. Casdorph photo)



(ABOVE) APLU 480035, the new 48'long by 102" wide containers. Note how this one sits on the lower 40' container. Colors are white container with red and front band, white 48 on side. All other lettering is blue including numbers, data, etc. (Ed Flaugher photo)



(ABOVE) APLU 458032, one of the 750 new insulated 45' containers. These too are white, but have the blue band with gold 45 bands. The "smooth" sides of this series and the new 48'ers are a contrast to the many corrugated containers so frequently seen on the rails today. (Ed Flaugher photo)



(ABOVE) DTTX 110021 - C unit with a load of APL containers. Notice the sides on this interesting car. The car was built by Pullman-Standard Manufacturing in June, 1985. It too is a five-unit articulated container car. Seen here on the Espee at Industry, CA. (David G. Casdorph photo)