TTX

AN UNNOTICED GIANT

PORTLAND DAYLIGHT EXPRESS
NMRA NATIONAL CONVENTION
2015

Nearly 60 years of Trailer Train.

We see the cars everywhere!

nmra.org

Do we notice that TTX is today the largest single railroad fleet, and 1/6 of total U.S. freight car inventory?

A clinic by Paul Hobbs

TOPICS TO DISCUSS

- **Beginnings**
- **Growth and change**
- **Railbox and Railgon**
- **Emerging opportunities**
- **Fleet analyses**
- **A gallery of reporting marks**

CONDITIONS LEADING TO TRAILER TRAIN

- **In the 1950s railroads were gaining increasing volumes of Trailer on Flat Car (TOFC) business.**

- **Much of the traffic was dedicated in certain markets, and frequently aboard railroad owned trucks and trailers – like Maine Central's trailers for grocery distribution.**

CONDITIONS LEADING TO TRAILER TRAIN

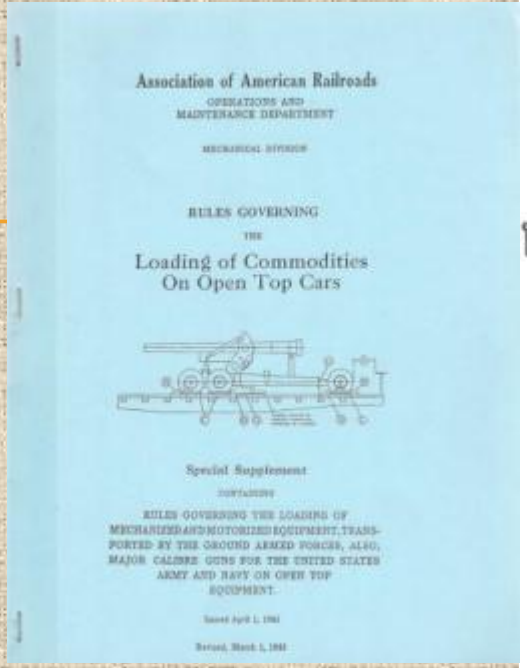
- **Loading and securing trailers was laborious and expensive.**

- **Eventually it was proven that trailers were reliably transported on their own wheels and riding the trailer hitch – as on the highway.**

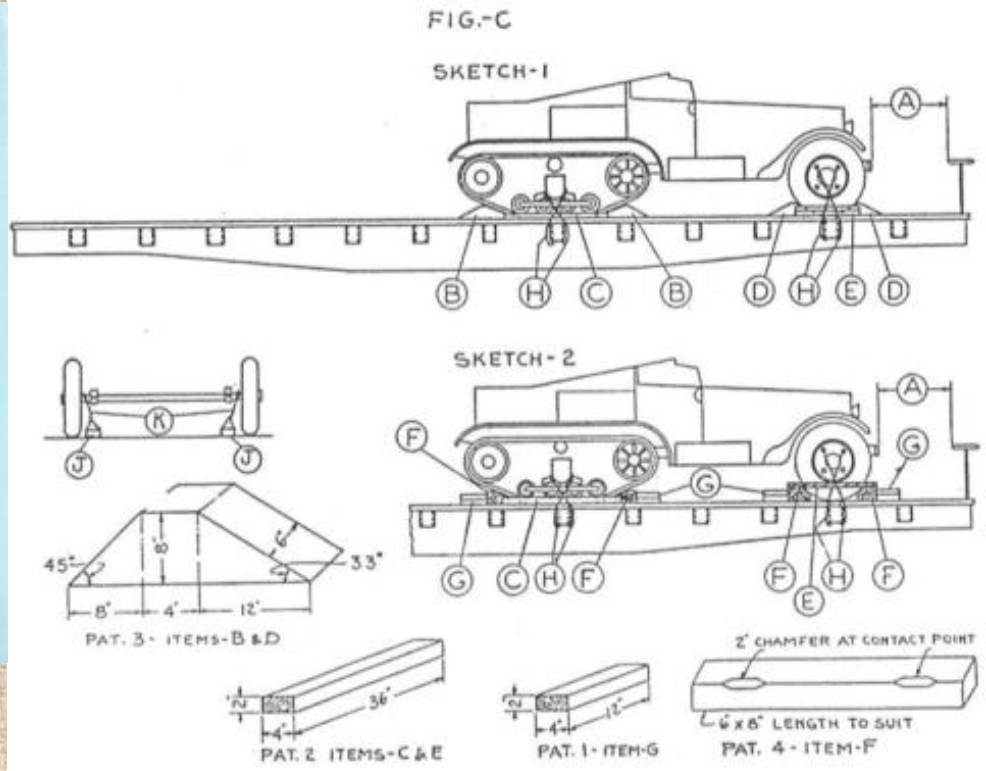
thecircusblog.com

Railroads had been carrying carts, wagons, motor trucks, buses on flat cars from earliest times.

Circus trains were regular traffic for the railroads.


Association of American Railroads
OPERATIONS AND MAINTENANCE DEPARTMENT
MECHANICAL DIVISION
RULES GOVERNING THE
Loading of Commodities On Open Top Cars
Special Supplement
CONTAINING
RULES GOVERNING THE LOADING OF MECHANIZED AND MOTORIZED EQUIPMENT, TRANSPORTED BY THE GROUND ARMED FORCES, ALSO, MAJOR CALIBRE GUNS FOR THE UNITED STATES ARMY AND NAVY ON OPEN TOP EQUIPMENT.
Issued April 1, 1941
Revised, March 1, 1943

Scanned from reproduction by Ralphs Rosters



http://military-vehicle-photos.com.s3.amazonaws.com/354.jpg

1941 White M2A1

Railroads have always carried materiel for the military.

Carefully developed procedures provide for loading equipment for transportation.

The half-track demonstrates the blocking procedures for both tracked and wheeled vehicles.

http://www.flickr.com/photos/mbernero/6821163465/sizes/l/in/photostream/

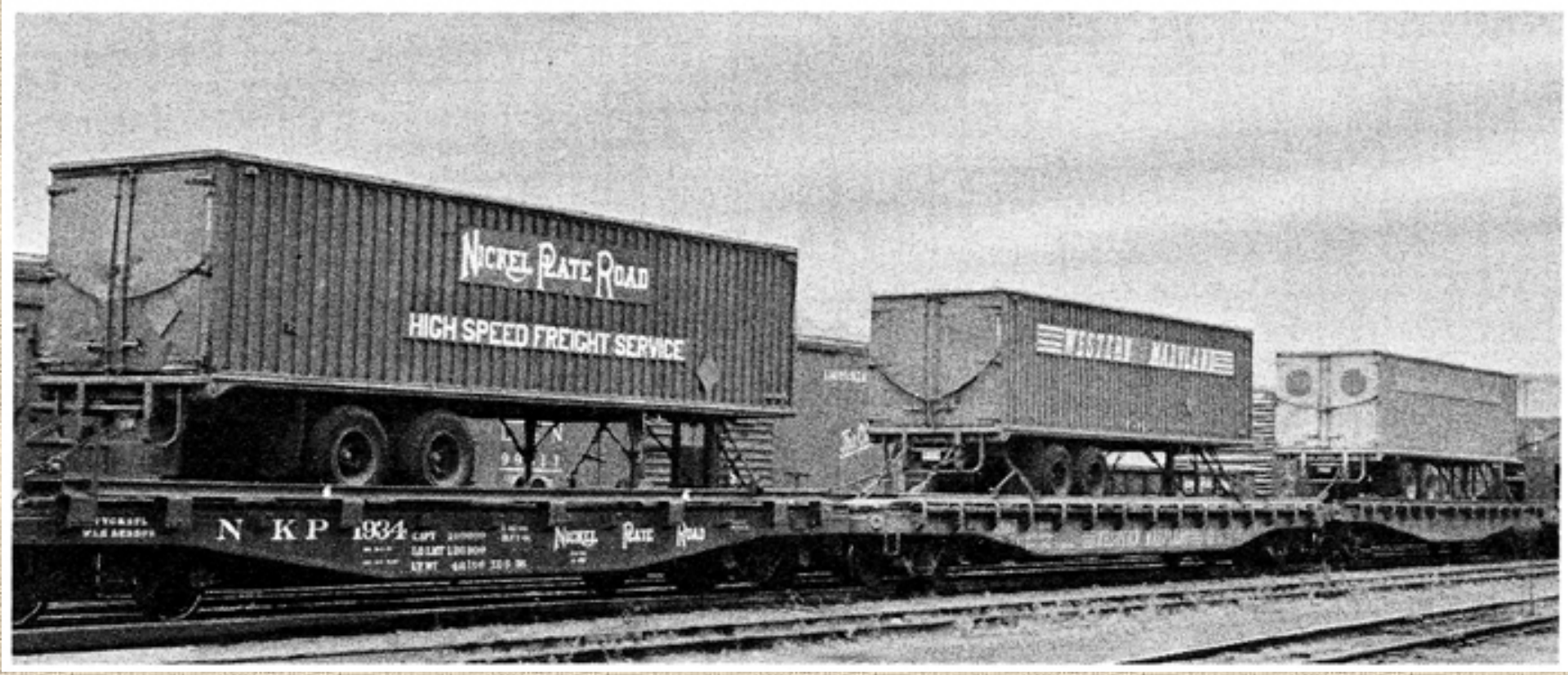
A unique “Super Twin” trolley-bus from Twin Coach of Kent, Ohio being delivered new for Chicago Transit Authority in 1948.
This, and another for Cleveland, were demonstrators of articulated bus design.
No production orders eventuated, this unit now at Illinois Railway Museum.

Marmon-Herrington TC-44 and TC-48 trolly busses are loaded on flatcars awaiting shipment out of San Francisco in August, 1977.

Steve Sloan Photo

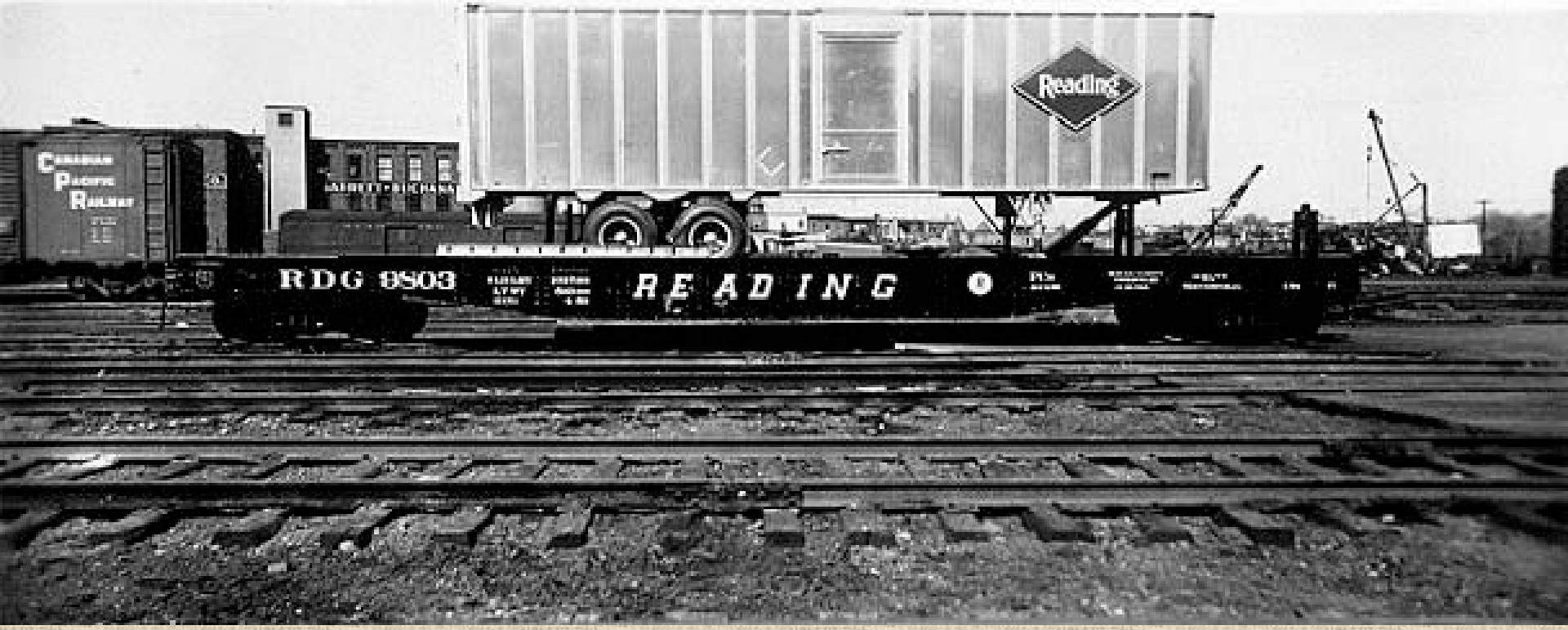
http://www.sfu.ca/person/dearmond/agr/SF-MH-flatcar-1.jpg

Railroads also carried away retired buses, as these at San Francisco in 1977.



http://www.thepwvhiline.com/Aug05HistoricUpdate/images/TV3FlatCarsRookNet.jpg

Early loading of highway trailers on standard flat cars involved multiple anchor points, a time-consuming process.



http://www.readingrr.com/rs/flat/9803.jpg

Most early TOFC cars were converted from existing fleets of 50-foot flat cars.

Loads were often railroad trailers on home-road cars, with online market.

Growth of Trailer on Flat car loads

Year	No. of Railroads	Carloads
1954	18	
1955	32	168,150
1956	38	207,783
1957	40	249,065
1958	42	276,767
1959	50	415,156

The A.A.R. began compiling TOFC carloadings in mid-1954, the year that the number of railroads offering some form of piggyback service jumped from 6 to 18. In 1955 32 roads reported 168,150 piggyback carloadings; in 1956 38 roads loaded 207,783 cars; in 1957 40 roads loaded 249,065 cars; in 1958 42 roads loaded 276,767 cars. The explosion took place last year when TOFC carloadings jumped 50 per cent as 50 railroads (including all major class 1 lines except Southern) finished 1959 with 415,156 loads, perhaps a third of them cars carrying two trailers. The fire became even hotter this year. In January 1960 trailer-on-flat-car traffic ran 46.8 per cent ahead of that for the same month last year.

TOFC car loadings compiled from AAR data.

Extracted from article in Trains Magazine May 1960.

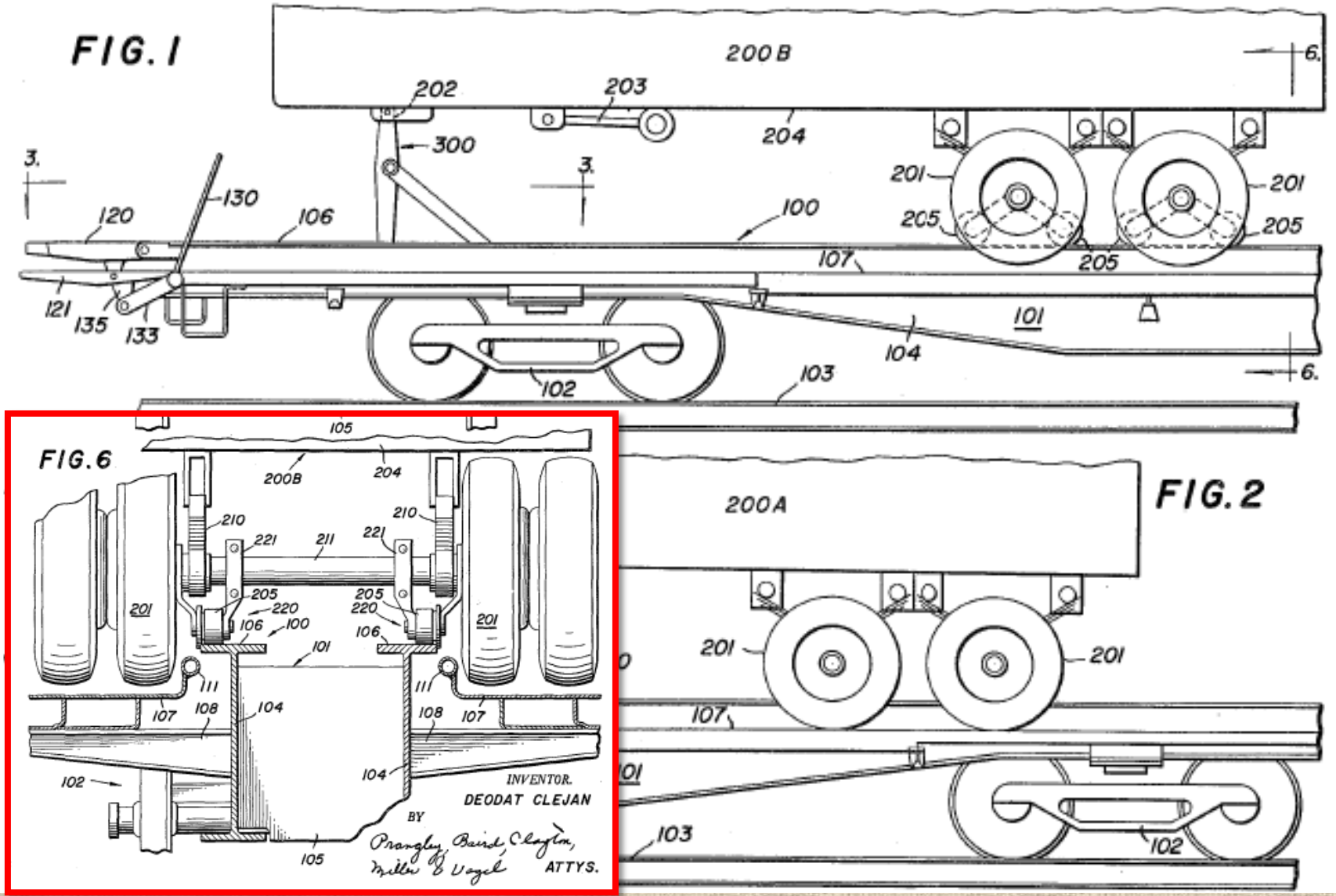
http://www.nscalekits.co.uk/Flexi_Van_3.jpg

New York Central initiated Flexi-Van service from 1958, with containers that were moved from trailer chassis onto the flat-car from the side and rotated onto the car. Several railroads participated in the operation.

The hydraulic equipment proved to be complex and high maintenance, turntables froze in Winter. Popular on U.S. Mail services. Eventually became outmoded by standard ISO Containers.

Recently available models in HO and N Scales, with representative catalog number shown where known

HO Walthers 932-3925



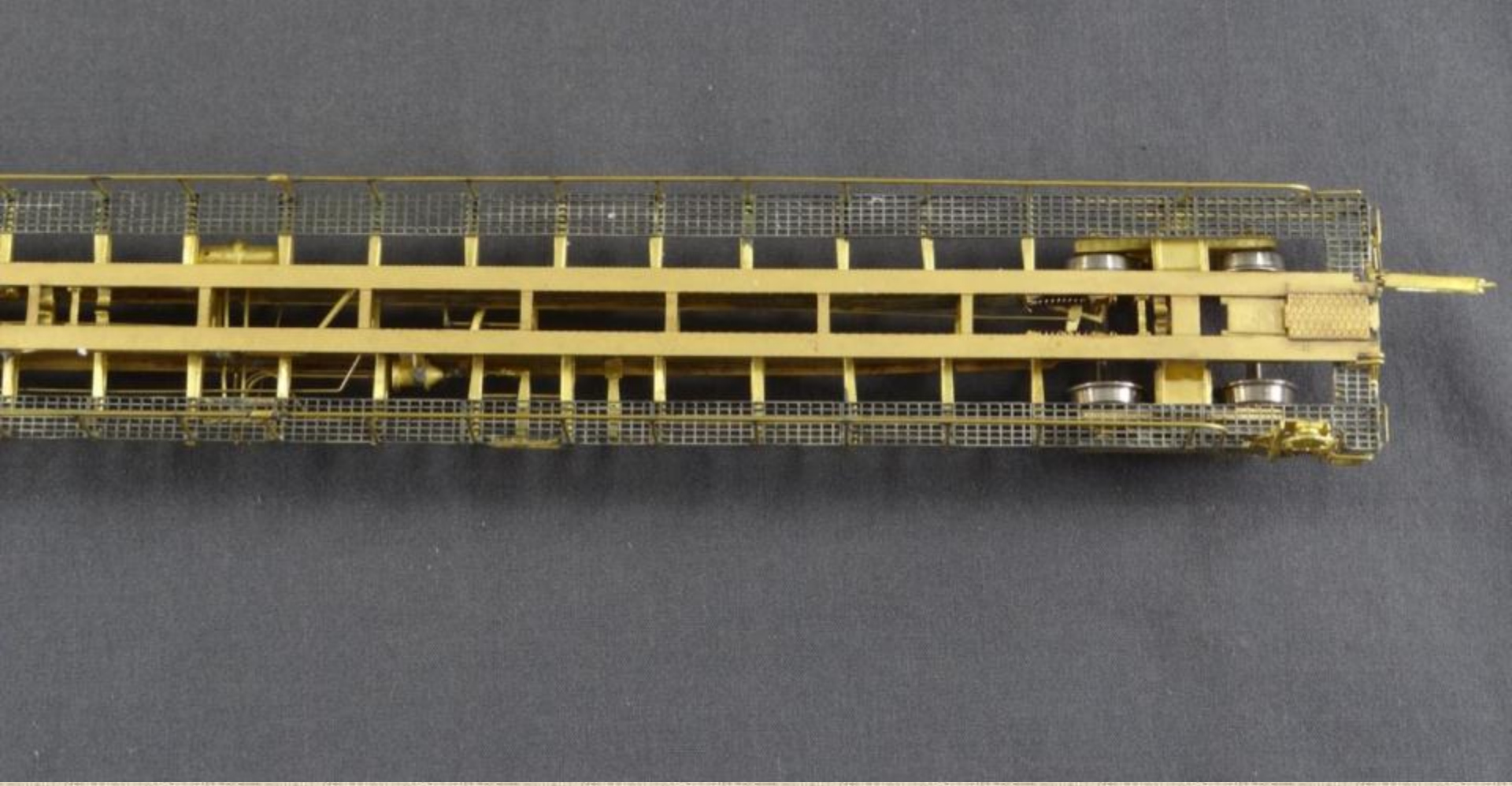
Aug. 21, 1962 D. CLEJAN 3,050,320

FIFTH-WHEEL MECHANISMS FOR HITCHES CARRIED BY RAILWAY CARS

Original Filed Dec. 22, 1959 14 Sheets-Sheet 1

US3050320books_google_co_uk_patents_US3050320

Diagrams from the Clejan patent.
Popular with Southern Pacific and Erie, the system made circus loading easier, and secured the trailer to central rails.



http://www.brasstrains.com/images/products/036113/DSC06381.jpg

View of Overland Brass Model of Clejan flat car.
Advantage was lighter tare-weight of car.
Disadvantage was trailers must have roller equipment to ride the central rails.

System was discontinued in early 1970s in favor of standard trailers on trailer hitch.

http://www.chicago-l.org/operations/freight/images/MontrosePiggybackRamp02.jpg

Chicago North Shore & Milwaukee loading ramp near “The Loop”.

http://www.gingerb.com/CNJ%20PRR%20Buttonwood%20Piggyback%20Ramp%20JUN%2021,%201966.jpg

Early Central Railroad of New Jersey piggyback ramp

End and side loading ramps were available at almost every yard on any railroad.

Support Infrastructure

- With Circus loading a car could be loaded at any end-ramp in any yard.
- Circus loading of trailers onto flat cars was inefficient at busy terminals.
- Specialized loading areas were built.
- Two major loader styles evolved.
- 1) the Piggypacker
- 2) the vertical lift straddle crane.

http://www.siteselection.com/issues/2012/nov/images/PiggyPacker_Tucson.jpg

http://worldbusinesschicago.dreamhosters.com/files/inlineimages/TTX.png

Piggy Packer at Tucson

Mi-Jack straddle carrier

Both are capable of lifting Trailers and Containers

http://www.northeast.railfan.net/images/tr_prr420815.jpg

PRR 420815 75-ft flat car for 2x 35-ft trailers (on dolly wheels, secured with chains) Pennsylvania Railroad introduced “Truc Train” service in July 1954.

This was the concept that grew and became standard (but with ACF designed trailer-hitches).

The founding of TRAILER TRAIN

- **On November 9, 1955, Trailer Train Company is formed with three owners:**
  Pennsylvania Railroad,
  Norfolk & Western (partially owned by the PRR)
  and Rail-Trailer Corporation.

- **The name "Trailer Train" was chosen from 6,000 entries in a Pennsylvania RR employee contest.**

The founding of TRAILER TRAIN

- **Trailer Train's first rail cars, 500 x 75-foot flat cars capable of hauling two standard 35' trailers were purchased from the Pennsylvania Railroad.**

- **Operations began March 17, 1956.**

- **First mention in Trains Magazine is in March 1956 issue, stating "*a new company formed to build up a pool of interline piggyback equipment*" reporting an order on ACF for 1000 Adapto cars - later cancelled.**

Early growth of TRAILER TRAIN

- **3/56 TT begins operations using 500 existing PRR class F39 75ft flats and orders 330 more; tests ACF's 2-axle Adapto flat and orders 1,000 cars (later canceled); B&M, CB&Q, MKT, MP, SLSF, and WAB join; CB&Q and WAB sell their 75-foot cars to TT**

- **1957 Begins fitting 200 existing 75ft flats with ACF hitches; begins converting 286 PRR 50ft flats with ACF hitches to carry single 40-foot trailers (class F30G); issues design specifications for 85-foot flats capable of handling two 40-footers or one 40 and one 45-footer; C&NW joins**

- **1958 Orders 800 85-foot flats from ACF and Pullman-Standard; B&O, RI and U.S. Freight (a freight consolidator and forwarder) join**

- **1959 Takes delivery of its first 85-foot class F85 TOFC flats from ACF and Pullman; ACL, GM&O, IC, L&N, NKP, SAL and SSW join**

http://www.billspennsyphotos.com/photos/Other-Roads---NYC-Bamp/ACF%20Trailer%20Train%20Co%20F89%20Trailer%20Train%20Flat%20Car%20T.T.X.550011%209-61%20800x.jpg

TTX 550011 ACF built this F89 Class car in September 1961, among the early new purchases by Trailer Train.

Paul Hobbs slide TTX601600_s751408p

TTX 601600 on Boston & Maine train at Fitchburg, Massachusetts in July 1975
Among 1200 F89J class in this series.

Responding to change

- Highway trailers were usually 35-feet long (or shorter) at the time Trailer Train started. 75-foot cars would accommodate two trailers.
- Within a few years (before 1960) trailer length increased to 40-foot.
- Then 45-foot (early 1980s)
- Then 48-foot (1982)
- Then 53-foot (1991)
- Each change required a reconfiguration of flat car capacity.
- Average life of a highway trailer is 10-years.
- Usual life of a railroad freight car is 40-years.
- Thus the railroad equipment needed to be adapted to the changing trailer fleet.

- Note that container lengths in the domestic market paralleled trailer lengths.
- International containers continue at maximum 40-foot length.

Responding to change

- **The boom in U.S. rail-truck intermodalism can largely be attributed to two factors:**
- **1) growth in international trade and**
- **2) issues with highway transportation that have affected cost and availability of service such as**
  - **increasing fuel costs,**
  - **driver shortages,**
  - **a decrease in productivity due to new rules in hours of service,**
  - **tight capacity in the truckload sector,**
  - **and consolidation and attrition in the carrier base.**

- **Expedited and dedicated TOFC trains provided fast service.**
- **First premium service was Santa Fe's *Super C* between 1968 and 1976.**

Enter the AUTORACK

- **Railroads had been carrying automobiles from the beginning, usually in box cars with wide door openings, and loaders to raise one car above another to utilize air space.**

- **By the 1950s, highway trucks with special trailers had gained market share – most of it!**

- **Volkswagen developed an autorack in Germany in 1957.**

- **Autoracks appear in the United States from 1960 in 2 and 3 deck versions. Trailer Train usually provided the flat car; railroad the rack. In time Autoracks are enclosed, as seen today.**

Figure 1 Early 50s Buicks being loaded in a 50' DD Auto box car. Note the holes in the floor for storing the chains in the under floor tubes. Chet French collection

Evans Automobile loaders provided for carrying 4 automobiles in each 40-foot or 50-foot box car.

This M&StL example from C&NW Historical Society magazine.

At November 1938, 34,475 cars were equipped with Evans Loaders. *Railroad Prototype Cyclopedia #22*

www.cnwhs.org/articles/1196892988.pdf

TWO FLATS with identical numbers form 90-foot underbody on Milwaukee Road for Chicago-Spokane load of 8 Chrysler Valiants and Plymouths.

Carrying multi-deck highway trailers likely led to the elimination of the trailer in favor of the multi-deck frame directly on a car –

the Autorack.

Trains Magazine May 1960 page 8

http://www.bundesbahnzeit.de/galerien/Lehrte%20-%20Braunschweig/jpg-Bilder/b19-044%20525.jpg

A German train with autoracks carrying new Volkswagen cars.

Ein Autozug mit fabrikneuen Volkswagen

http://swrails.files.wordpress.com/2012/08/ttx-904697-detroit-10-75.jpg

TTX 904697 in Detroit in October 1975

Triple deck autorack with a load of 18 Ford Pinto cars.

http://swrails.files.wordpress.com/2012/08/ttrx-962700-detroit-10-76.jpg

TTRX 962700 in Detroit in October 1976

Triple deck autorack with a load of 15 Chevrolet Camaro automobiles.

http://crcyc.railfan.net/crrs/auto/ttx-pc801270.jpg

TTKX 801270

Partially enclosed load.

www.drgw.net

TTGX 982500 at Transportation Technology Center Test Track
Pueblo, Colorado April 19, 2008

Without usual side panels demonstrates loading of 2-deck autorack.

Winning back the Business

- **Railroads delivered 8 per cent of the average 7,000,000 automobiles built in 1958.**
- **Carrying that 560,000 cars would require 140,000 box car loads, at 4 autos per car.**
- **Average car cycle of 22 days would require 8438 cars.**

- **By 1963 the railroads had won back 28% of the traffic.**
- **That was near 2,000,000 autos.**
- **At 12 per car, 163,333 carloads are needed.**

- **If a car turns twice a month, the fleet needed is 6805 cars!**

- **November 2013 *Trains* magazine features the Automotive transportation business in several fine articles.**

Google Maps Satellite view

Ford plant at Dearborn, Michigan autorack loading facility.

Autoracks in groups of 5 on 8 tracks. One loading ramp per group of cars.

Google Maps Satellite view

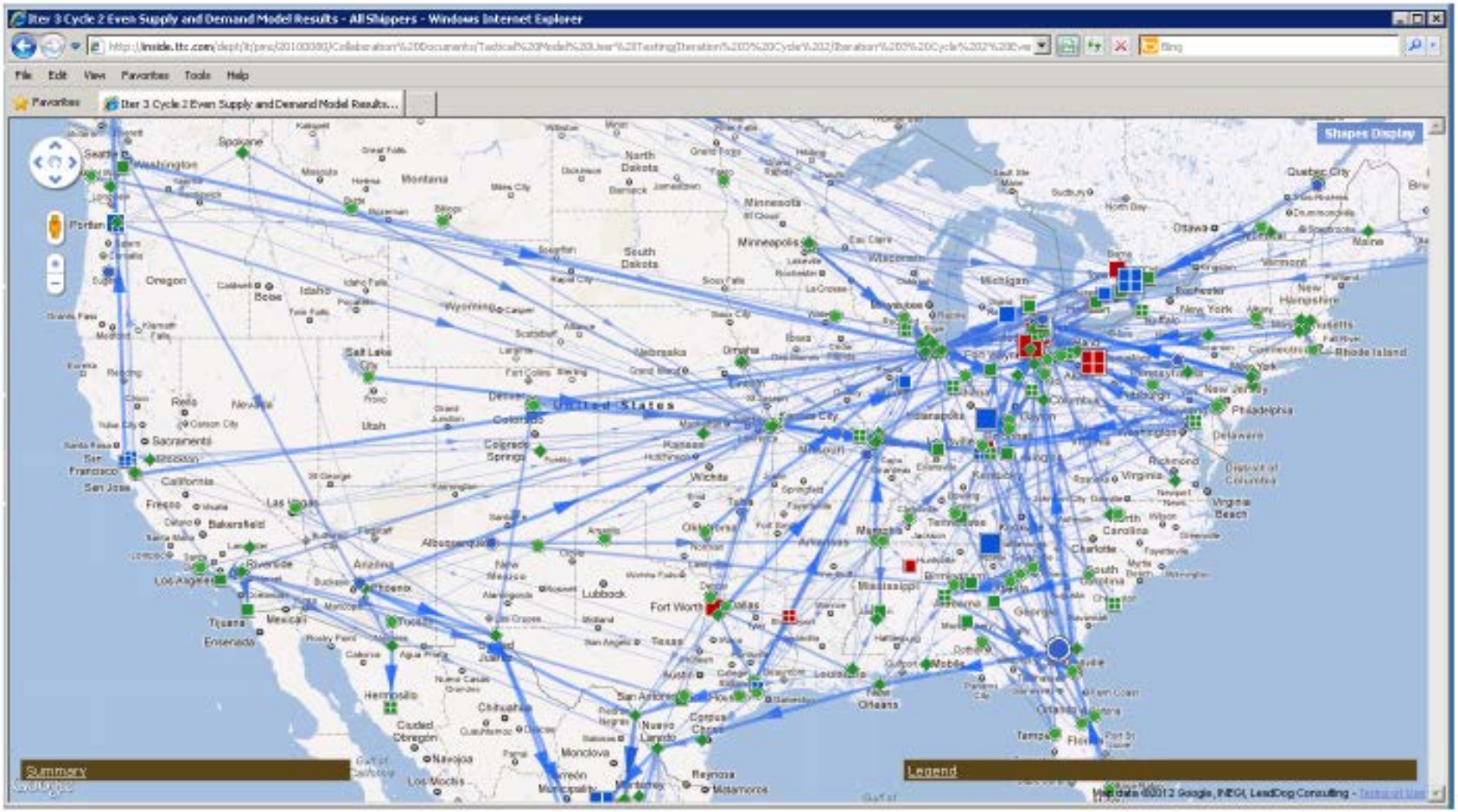
Ford plant at Dearborn, Michigan autorack loading facility.

Each line of automobiles is 8-vehicles.

http://www.trainweb.org/oldmainline/was/079ramp.jpg

Mobile automobile loading and unloading ramp

TTX and Reload – RTM Model



Automotive traffic lanes in 2012 – from TTX planning document/presentation of 2012

Trailer Train subsidiary RAILBOX

After a shortage of good box cars, and a period of "Per-Diem" cars owned by investors, Trailer Train introduced a fleet of free-running Railbox cars in 1974.

- **They were standardized 50-foot XM cars in a distinctive paint scheme.**

  Some cars were later sold to railroads.

- **Current fleet is about 14,000 cars in several styles.**

Paul Hobbs slide RBOX036205_s811133p

RBOX 36205 in Baltimore, Maryland in July 1981

RBOX cars feature wide single sliding door on basic 50-foot XM box car.

HO Athearn 96620

Paul Hobbs slide ABOX051256_s820324p

ABOX 51256 at Barstow, California in March 1982

ABOX cars feature sliding plus plug door for wider opening when needed.

Paul Hobbs slide ABOX051920_s990534p

ABOX 51920 on Soo Line train in Minneapolis, Minnesota July 1999.

Different lettering scheme.

HO ExactRail EE-1804

http://seaboardcoast.com/yahoo_site_admin/assets/images/FBOX_505608_on_CSX_in_Manchester_GA_07-03-11.185174108_std.jpg

FBOX 505608 on CSX train in Manchester, Georgia July 3, 2011.

Single plug door.

N ExactRail EN-51302

HO ExactRail EE-1401

Paul Hobbs TBOX665826_DSCF6254

TBOX 665826 at TTX Calpro facility in July 2008.

TBOX cars are hi-cube with double-plug doors.

Trailer Train subsidiary RAILGON

- **On the success of Railbox a similar fleet of 50-foot gondolas was instituted in 1979.**
- **Railgon was never the fleet size of Railbox.**
- **Current fleet is under 1200 cars in two styles.**

Paul Hobbs slide GONX310640_s810733p

GONX 310640 at Baltimore, Maryland in July 1981.

HO Athearn 96987

By MN Transfer on http://www.flickr.com/photos/47914832@N02/6091882490/sizes/o/in/photostream/

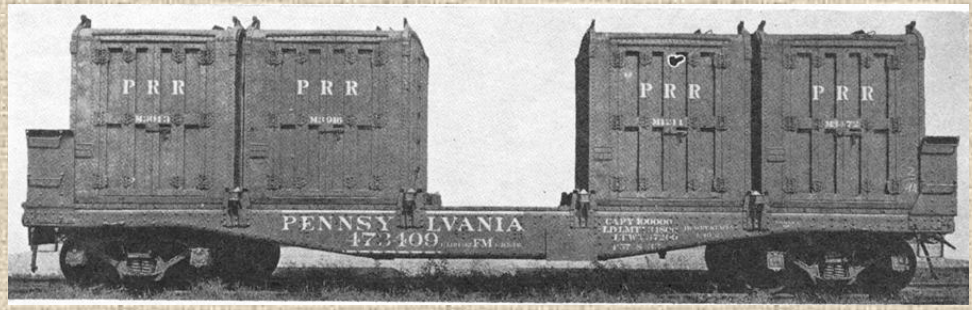
GNTX 295040 on Union Pacific at Boone, Iowa in August 2011.

HO ExactRail EP-80704

The Container Business

- **Containerization was achieved as a gradual process, with several designs popular on New York Central and Pennsylvania Railroads for certain products – Bricks, Crockery, Cement, Sand.**

http://www.canadasouthern.com/caso/images/nyc-5996.jpg



http://www.mountvernonshops.com/PRR_473409_FM_containercar.jpg

- **Standardization was achieved in International shipping, with ISO in 1968, bringing about Intermodal boxes carried equally well by ship, highway truck or railroad car.**

- **Domestic container traffic was slow to compete with the TOFC trailer, but eventually proved its efficiency.**

http://spec.lib.vt.edu/imagebase/norfolksouthern/full/ns1813.jpeg

N&W 70551 14 containers in a G-4 Class 50-foot gondola dated November 1950.

Designed to be lifted by a small crane.

20' Standard Steel Container Top

20' standard steel containers are closed weather-tight containers that are suitable for any general cargo. 20' standard steel containers operated by APL have a payload capacity of up to 28,160 kg, close to the payload capacity of most 40' standard steel containers. This makes 20' standard steel containers especially suitable for high-density, heavyweight cargo.

larger view

In addition, 11 or more APL standard garment hanger bars* can be installed on most APL-owned 20' containers. Forklift pockets* are also available on almost all 20' containers.

Description	Metric	U.S.
Cubic Capacity	33.200 cubic meters	1,170 cubic feet
Payload (Weight)	21,850 kg - 28,160 kg	48,171 lb - 62,082 lb
Tare Weight	2,150 kg - 2,220 kg	4,740 lb - 4,894 lb
Max Gross Weight	24,000 kg - 30,480 kg	52,911 lb - 67,197 lb
Internal Length	5.898 m	19'4"
Internal Width	2.352 m	7'9"
Internal Height	2.392 m	7'10"
External Length	6.058 m	19'10 1/2"
External Width	2.438 m	8'0"
External Height	2.591 m	8'6"
Door Opening Width	2.340 m	7'8"
Door Opening Height	2.280 m	7'6"
Lashing Rings	Five on each top and bottom rails, capacity 2,000 kg; Three on each corner post, capacity 1,500 kg	

40' Standard Steel Container Top

40′ standard steel containers are closed weather-tight containers that can be used to transport any general cargo. Most of APL's 40′ containers have a payload capacity of 28,760 kg with a gross weight of 32,500 kg. This exceeds the payload capacity of 26,760 kg (gross weight of 30,480 kg) required by ISO standards. Almost all 40′ containers have a recess at the bottom called the gooseneck tunnel*. 22 or more APL standard garment hanger bars* can be installed on most APL-owned 40′ containers.

larger view

Description	Metric	U.S.
Cubic Capacity	67.700 cubic meters	2,391 cubic feet
Payload (Weight)	26,760 kg - 28,760 kg	58,996 lb - 63,405 lb
Tare Weight	3,720 kg - 3,740 kg	8,201 lb - 8,245 lb
Max Gross Weight	30,480 kg - 32,500 kg	67,197 lb - 71,650 lb
Internal Length	12.032 m	39'6"
Internal Width	2.352 m	7'9"
Internal Height	2.392 m	7'10"
External Length	12.192 m	40'0"
External Width	2.438 m	8'0"
External Height	2.591 m	8'6"
Door Opening Width	2.340 m	7'8"
Door Opening Height	2.280 m	7'6"
Lashing Rings	Ten on each top and bottom rails, capacity 2,000 kg; Three on each corner post, capacity 1,500 kg	

http://www.apl.com/equipment/html/equipment_specs_standard.html

APL (American President Lines) specifications for standard shipping containers.

ISO specifications for sea containers were published between 1968 and 1970.

http://southern.railfan.net/ties/1961/61-6/cont.jpg

Southern Railway was using containers on flat cars and highway trailers in 1961.

Single level container at a maximum of 30-tons each was not an efficient use of carrying capacity of railroad cars.

The Double Stack

- Containers have a maximum loaded weight of 35-tons.
- On single flat car or articulated cars like Fuel Foiler the load is inefficient use of available capacity.
- Two containers on the same car would improve the efficiency.
- There were considerations like the loading gauge.

PIGGYBACK COFC: Southern Pacific is testing a flat car that will carry two stacked 40-foot containers. Built by ACF, No. 513300 is 18½ feet high over the load.

RAILROAD NEWS PHOTOS

Trains Magazine DVD February 1978 page 16

Experimental double stack as reported in February 1978 *Trains* magazine.

MORE CARS, NEW NAME: Santa Fe will build 43 more lightweight piggyback cars for captive service. "Ten Packs" now are termed "Fuel Foilers." Conrail may participate in service.

Trains Magazine DVD September 1979 page 13

OVERLAND CONTAINERS: Chicago & North Western, in conjunction with traditional Overland Route partners SP and UP, plus Conrail, has contracted to move 12,000 Seatrain containers annually from Oakland, Calif., to the east coast in unit trains, on five-day schedules.

Trains Magazine DVD October 1980 page 13

INTERMODAL INFINITY?: RoadRailer, flat-car-less TOFC concept, is in revenue service on Family Lines. Santa Fe runs Fuel Foiler, or 10-pack, articulated, lightweight, non-interchange cars between Chicago and West Coast. Now enter 4-Runner, articulated set of four 45-foot, four-wheel decks for interchange designed by Trailer Train for Union Pacific, which will get 100 of ACF-built cars.

Trains Magazine DVD May 1981 page 13

Budd

NEW from Budd, as competition for Santa Fe's Fuel Foiler and BiModal's RoadRailer, is the Lo-Pac 2000 car (above right), a deep-well flat designed to carry piggyback trailers or container boxes as high as 13 feet, 6 inches through "the most restrictive overhead clearances [in North America]."

Trains Magazine DVD March 1981 page 17

The Lo-Pac 2000 by Budd in March 1981 *Trains* magazine.

TOFC TIDBITS: Itel Corp. has bought patent rights for Santa Fe's lightweight, articulated Ten-Pack TOFC cars, is marketing concept as Impact (Intermodal Package). Ten-unit car sells for $300,000. . . . ACF is building 42 double-deck container cars for SP.

Trains Magazine DVD August 1981 page 13

248. LOOKING AROUND: Trailer Train will test prototype intermodal cars from Pullman Standard (four decks) and Whitehead & Kales (Arc 3, three decks) to compare with TT's four-deck 4-Runner design abuilding by Amcar Division of ACF.

Trains Magazine DVD September 1981 page 13

. BN TRIES: BN is first customer for Itel's Impack lightweight TOFC car (Santa Fe Ten Pack design), testing two FMC-built 10-car sets.

Trains Magazine DVD July 1982 page 13

AT&SF

EACH of these new double-stacked intermodal containers developed by Santa Fe can accommodate up to 55 tons of bulk lading, palletized packaged goods, or liquids; are made of fiberglass or aluminum; and ride on the railroad's Fuel-Foiler articulated cars.

Trains Magazine DVD October 1982 page 22

Containers designed for double stack loading on Fuel-Foiler cars on Santa Fe,

IMPACK ITEMS: Itel has sued Thrall Car for patent infringement by Thrall's Arc-5 intermodal flat car on the lightweight Impack TOFC car, a design Itel bought from Santa Fe (Fuel Foiler). Southern Pacific has ordered 200 Impacks to be built by FMC.

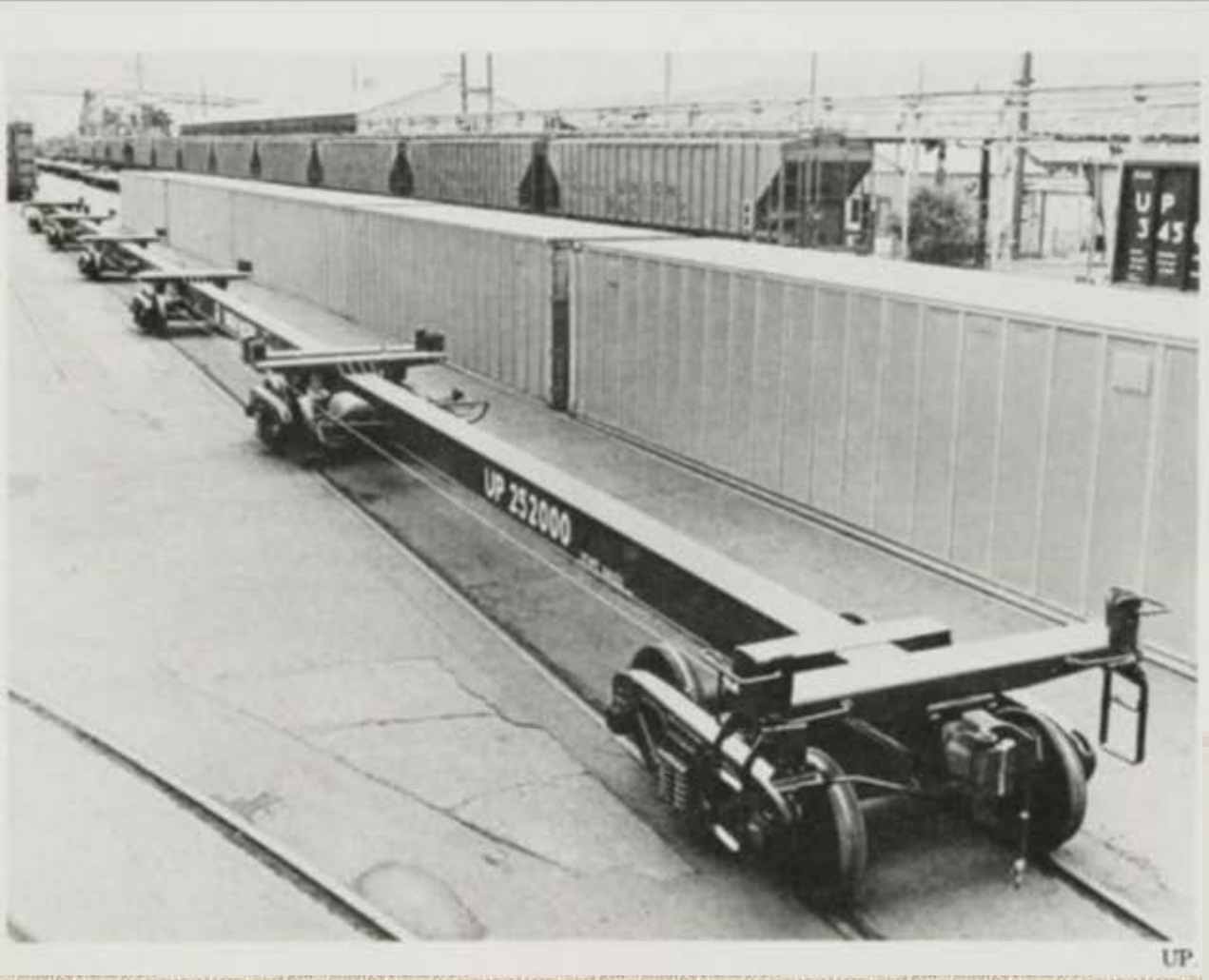
Trains Magazine DVD January 1983 page 15

DOUBLE STACK: High-wide clearance of former Erie Railroad (originally 6-foot gauge) helps Conrail on Buffalo-Kearny (N.J.) portion of its Chicago-Jersey haul of new double-deck American President Lines Seattle-New York (UP-C&NW-CR) land-bridge container train.

Trains Magazine DVD November 1984 page 18

BEYOND THE BOX CAR: Burlington Northern will buy 100 double-stack COFC cars for daily Seattle-Chicago trains aimed at increasing Port of Seattle international trade. Sea-Land and American President Lines are major shippers. Separately, BN is considering leasing from Bi-Modal 250 RoadRailer trailers used in defunct Buffalo-New York

Trains Magazine DVD May 1985 page 18



UP

RAILROAD NEWS PHOTOS

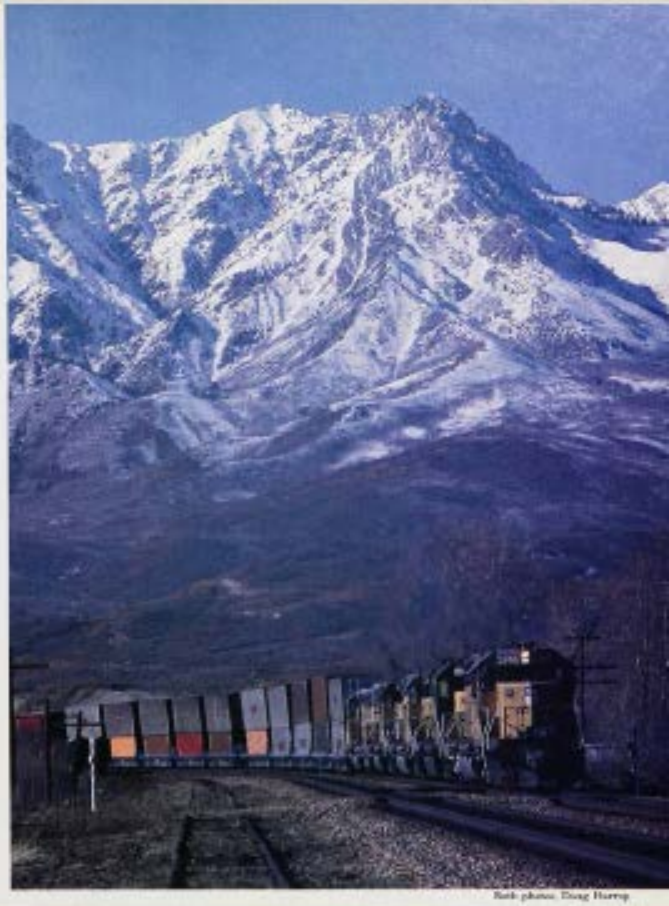
ARTICULATED SK (for skeleton) container car built by Union Pacific's Albina Shop in Portland, Ore., can carry five boxes, weighs only slightly more than 42 tons because of elimination of decks, other hardware of conventional piggyback flats. Press release says "Early day loggers wouldn't recognize their skeleton railroad car idea," but we disagree.

Union Pacific introduced skeleton container cars in 5-car sets in 1983.

AMONGST Utah's Wasatch Mountains between Strawberry and Peterson in Weber Canyon November 5, 1984, is an extraordinary cabooseless Union Pacific consist: run-through power propelling 200 40- and 45-foot boxes double-stacked on 20 articulated flats at 60 mph. The train is APLE (locally, the Big Apple)—American President Lines containers in a transcontinental service via UP-Chicago & North Western-Conrail. Pacing the train on parallel I-84, the photographer spotted the driver and co-driver of a parallel 18-wheeler tractor-trailer rig looking at the APLE with grim "What's the competition coming to!" expressions.

"I THINK they'd be a good pair to run in 'Photo Section'—the same engine doing the same job for two different railroads 900 miles apart," wrote photographer Hartley of these shots of F7 420, an EMD graduate of 1949 (as 4257C). At top left the cab unit takes Chicago commuters home through Arlington Heights, Ill., June 10, 1977, while in the employ and dress of owner Chicago & North Western; at lower left, the same locomotive under lease to and in paint of NJ Transit leaves Hoboken, N.J., on a westbound commuter schedule on August 15, 1984.

AMONGST Utah's Wasatch Mountains between Strawberry and Peterson in Weber Canyon November 5, 1984, is an extraordinary cabooseless Union Pacific consist: run-through power propelling 200 40- and 45-foot boxes double-stacked on 20 articulated flats at 60 mph. The train is APLE (locally, the Big Apple)—American President Lines containers in a transcontinental service via UP-Chicago & North Western-Conrail. Pacing the train on parallel I-84, the photographer spotted the driver and co-driver of a parallel 18-wheeler tractor-trailer rig looking at the APLE with grim "What's the competition coming to!" expressions.



Both photos, Doug Harvey

This is the first news photograph in *Trains* featuring a dedicated double-stack train.

http://pageproducer.arczip.com/markpan/DTTX%20Eola%2002.jpg

DTTX 63182 at Eola, Illinois in 2002.

Gunderson began building the "Twin-Stack" five-well 40-foot double-stack car in 1985. This design provided support for the upper container – the IBC proved sufficient!

Note: Correct order of platforms in 5-platform car is B-C-D-E-A.

THE PROFESSIONAL ICONOCLAST

JOHN G. KNEILING, P.E. Consulting Engineer

APL's Liner Trains: some more progress

I THE "Liner Trains" of American President Lines (APL), widely publicized in the trade press [*e.g., Railway Age*, April 1985], have two items of basic interest. One is business-related and the other is about hardware. Business first.

APL provides the trains and schedules and gets the traffic. Railroads (Union Pacific, Chicago & North Western, and Conrail) drive the trains. A railroader—UP's General Manager-Transportation James R. Ferney—spoke for attribution. He was proud that his company had been able to do what the customer (APL) demanded. Nothing about management or traffic, just a skilled labor job—drive the train and let someone else do the heavy thinking.

At the same time, APL senior management said the operation is "more management-intensive than we expected." This is not surprising, to me anyway, even if it is to him. Someone has to steer the boat, and he was elected.

Most transport buyers make a serious error in this area. They assume railroad management is as skilled as they are, and that is just not the case, which helps explain railroads' persistent economic ills. Remember, a shipper is one who has made a sale and now wants to deliver so he can make more sales. He is a successful businessman to some degree, else he will not be there to be a shipper harder to divert to other uses, as well as having some mechanical benefits.

On the double-stacking . . .

On the plus side, along with the articulation, it gets closer to full loads on the wheels—a real consideration with light-loading general cargo. That can lead to less car tare. Fewer wheels and all that goes with that, fewer and shorter "platform" frames, etc. On light-loading cargo, lower tare pays in incremental cost. There is less incentive than on heavy-loading cargo where tare displaces revenue, but far from zero. And the intangible—shorter trains for the railroader who still says, "Where can I park it?"

And on the negative side . . .

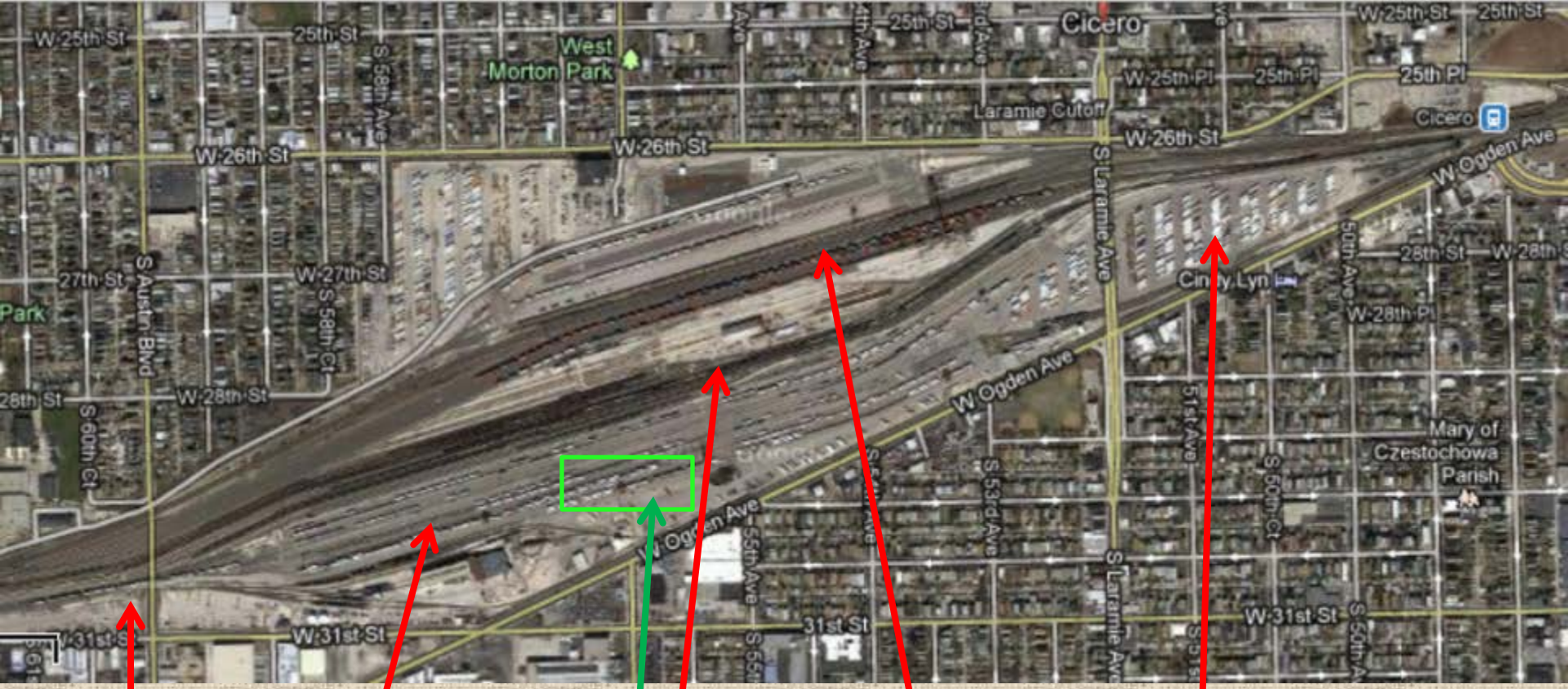
One big item: double-stacking demands lift-on/lift-off terminals. It cannot use the less costly slide-on/slide-off systems. This cost comes in several ways.

One lift-on/lift-off system uses rail-borne or rubber-tired gantry cranes supplemented by fleets of trucks. This scheme needs either a fantastic number of trailers to use as expensive racks (and vast parking lots) or it calls for more lifting gear to handle the boxes at least once more (each way).

Another system uses a "piggy-packer"—a huge fork lift. That

Trains Magazine DVD December 1985 page 5

The first feature in *Trains* chronicling the emerging Double-Stack business.



Cut of cars to be unloaded

Container Load/unload area

Double-stack cars stored

Train make-up yard

Containers

Google Maps

Zone to inspect next

BNSF Cicero Yard, Chicago, Illinois.

This site was once Clyde Yard, the CB&Q hump classification facility for Chicago.

BNSF Cicero Yard, Chicago, Illinois.
Essential Elements.

Partnerships with Truckers

- **Intermodal trailers and containers always involved some relationship with truck companies. However, they always remained competitors.**

- **From 1989 J.B. Hunt partnered with the Santa Fe Railway for the movement of trailers and later containers on the Los Angeles – Chicago Transcon.**

- **Many railroads and truck companies have joined in other lanes to become important business for all.**

http://www.thetruckersreport.com/images/jbhunt-rails.jpg

http://siissalo.it.helsinki.fi/4rmedia/nam/usa_bnsf_stacktrain_trailers_ttxspinecars_schneider_stevenstransport_cavalley_o8157_2008_600.jpg

Intermodal Terminals in Metropolitan Areas, 2005.

City	Number of Intermodal Terminals Container	Terminals with 500,000+ Container Lifts
Chicago	19	4
Los Angeles	8	4
Kansas City	6	
Memphis	6	
New York	6	
Houston	5	
St. Louis	5	
Atlanta	4	
Dallas/Ft. Worth	4	1
Detroit	4	
New Orleans	4	
Portland	4	
Seattle/Tacoma	4	1
Cincinnati	3	
Jacksonville	3	
Montreal	3	1
Oakland	3	
Toronto	3	1

Source: Trains, September 2006, Map of the Month: Intermodal Yards.

Containers, particularly International Shipping traffic, operates in very specific, high-volume lanes.

Twelve terminals had 500,000 plus lifts, most in Chicago and Los Angeles.

On the West Coast the ports of Seattle/Tacoma and Portland are primarily export ports, Los Angeles is primarily import traffic.

Numerous "bare-table" trains shuttle empty double-stack cars from Washington and Oregon to California to balance the traffic.

Fleet mileposts

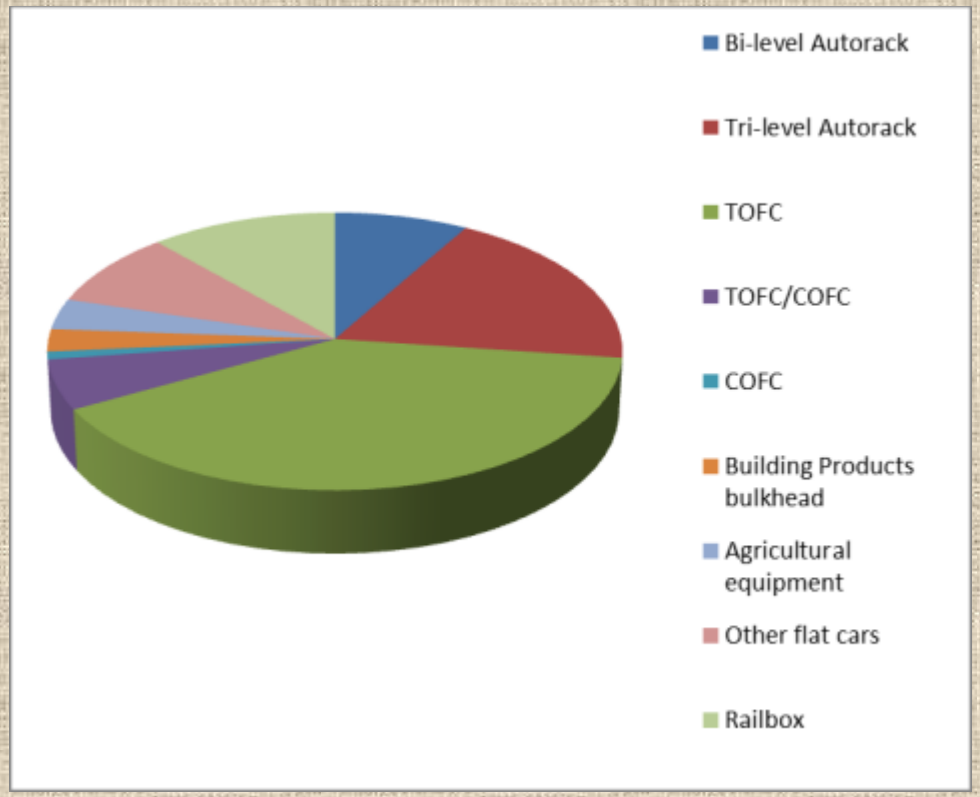
- 1965 – 25,000 cars
- 1969 – 50,000 cars
- 1971 Car color changes from PRR Red to Yellow
- 1974 Railbox formed
- 1975 – 75,000 cars
- 1979 – 100,000 cars Trailer Train/Railbox, Railgon formed
- 1991 – 125,000 cars – Name changed to TTX Company
- 2012 – 200,000 cars

Fleet analysis 1968 ORER

- From the July 1968 Official Railway Equipment Register

• Fleet	42,674 cars
• Trailer service	55%
• Autoracks	33%
• Pole/Military/Other	11%
• Owning railroads	38

Fleet snapshot April 1977



SUMMARY	
Bi-level Autorack	7,099
Tri-level Autorack	16,390
TOFC	34,335
TOFC/COFC	5,008
COFC	786
Building Products bulkhead	2,260
Agricultural equipment	3,099
Other flat cars	7,558
Railbox	9,965
TOTAL	**86,500**

http://groups.yahoo.com/group/modelintermodal/files/4-77%20ORER%20TT%20Summary/

Fleet utilization and maintenance

- From a 1991 review

- Cars are serviced every 400,000 miles (about 4-years)

- Average mileage Double Stack, per day 300
- Average mileage TOFC car, per day 240
- Average mileage Intermodal, per day 264

- Average mileage of other freight cars, per day 100

Fleet snapshot 1991

DTTX - five-unit articulated double stack	(3201)
DTTX - stand-alone, heavy- lift double stack	(453)
DTTX - three- and four-unit heavy- lift double stack	(444)
TTAX - five-unit, articulated all-purpose spine car	(2336)
TTWX - 89 ft 4 in all-purpose "Twin 45" car	(14,030)
TTCX (VTrx) - modified 60 ft COFC car	(1298)
ETTX - 89 ft 4in, flatcar with rr-owned tri-level auto rack	(18,139)
and bi-level	(13,862)
TTZX - 60 ft & 73 ft, center-partitioned bulkhead flat car	(2001)
OTTX - 60 ft flatcar for military and agriculture equipment	(2317)
QTTX - 50 ft and 55 ft heavy duty flat cars and 25 ft and 47 ft depressed center flatcars with a load capacity from 223,000 to 485,000 lbs.	(21)

Double-stack cars	4098 (17790 platforms approx.)
Autoracks	32001 (56% tri-level)
Trailers	16366

National Double Stack Fleet 2008

Total fleet			**54184**
DTTX			**30945**
DTTX Per Cent			**0.57111**
Owners			**32**

http://groups.yahoo.com/group/modelintermodal/files/

Trailer Train operated 57% of the fleet in operation

Fleet analysis 6 decades

Trailer Train fleet at Official Railway Equipment Register issue dates

ORER Date	Number of Railroad Owners	total	Reporting Marks
Jul-59	9	2014	2
Jul-68	**38**	42674	24
Jul-78	30	79230	30
Oct-88	19	84736	42
Oct-98	11	105390	41
Oct-08	9	**145592**	**46**

Data for 1959 and 1968 from ORER in Paul Hobbs Collection
Data from 1978 onwards provided by Kalmbach Memorial Library, Chattanooga, Tennessee

Industry Comparisons

- At June 2011
- TTX 199,000 cars
- GE Capital Rail Services 150,000 cars
- GATX Corp (North America) 121,000 cars

Major Railroad fleets:

- Norfolk Southern 84,428 cars
- BNSF Railway Co. 81,669 cars
- Union Pacific Railroad 76,628 cars
- CSX Transportation 65,021 cars

A gallery of reporting marks

- **Earliest reporting marks were TTX for the initial fleet of flat cars. Soon STTX mark is added for free-running cars.**
- **Unlike railroads, who group their cars type by number within their single (or few) reporting mark(s), TTX adopts a mark for each type of car in service.**
- **ATTX through ZTTX, then TTAX through TTZX with gaps.**
- **Some marks, retired as one class, are reused later as another car type.**

Recently available models in HO and N are noted.
A number of images are from rrarchives.net.
This gallery is by no means definitive, just representative.

http://www.qstation.org/Trailer_Train_Cars/jpeg/ATTX-470860_Campo,_CA_04-13-1997.jpg

60 70 80 90 00 10

ATTX 470860 at Campo, California, April 13, 1997

Original style of Trailer Train TOFC car (the rack on the car is a load).

http://freightcars.midatlanticrr.com/var/albums/Reporting-Marks-A-F/ATTX/ATTX%2095157.JPG?m=1308683731

	60		70		80		90		00		10	

ATTX 95157 in Elk Mills, Maryland August 21, 2010

60-foot container car.

http://www.northeast.railfan.net/images/coBTTX10499.jpg

	60		70		80		90		00		10	

BTTX 10499 in 1965

Two deck auto rack.

http://www.northeast.railfan.net/images/bttx880304.jpg

	60		70		80		90		00		10	

BTTX 880304 in Minneapolis, Minnesota May 19, 2002

Articulated auto rack.

HO Atlas 20001134

http://freight.railfan.ca/ttx/cttx853929detail.jpg

	60		70		80		90		00		10	

CTTX 853929 in Chicago, Illinois October 1979.

Tri-level partially enclosed auto rack.

http://www.flickr.com/photos/freightcarkid/9764964975/

60 70 80 90 00 10

CTTX 690161 photographed September 13, 2013.

Greenbrier Multi-Max car which can be adjusted for Tri-level or Bi-level.

Paul Hobbs slide DTTX075030_s960536p

	60		70		80		90		00		10	

DTTX 75030 on Burlington Northern train on bridge over Lake Pend Orielle, Idaho in July 1996

Five well 48-foot double-stack car.

Paul Hobbs DTTX750367_DSCF6214

60 70 80 90 00 10

DTTX 750367 at TTX Calpro facility in July 2008

Three well 48-foot double-stack car, in shop for conversion to 40-foot well cars.
(Prototype tour during NMRA National at Anaheim)

Paul Hobbs DTTX758020_IMG_1011

	60		70		80		90		00		10	

DTTX 758020 on Norfolk Southern train at Cresson, Pennsylvania in July 2011

Single well 40-foot double-stack car.

N Athearn (53') 23146
HO

Paul Hobbs DTTX765705_IMG_1133

	60		70		80		90		00		10	

DTTX 765705 on Norfolk Southern train at Cresson, Pennsylvania in July 2011

Three well 53-foot double-stack car.

Model opportunities DTTX

HO Intermountain 47201

HO Intermountain 47301

HO Intermountain 47355

HO Intermountain 47615

HO Atlas 20001276

HO Atlas 20000826

HO Con-Cor 199201

N Kato 106-6140

N Kato 106-6161

HO Kato 30-9032

N Walthers 932-8109

N Con-Cor 14721

Paul Hobbs ETTX702114_IMG_1090

	60		70		80		90		00		10	

ETTX 702114 on Norfolk Southern train at Cresson, Pennsylvania in July 2011

Tri-level Autorack.

N Con-Cor 14699

HO Walthers 920-101403

Paul Hobbs FTTX603640_s811201p

	60		70		80		90		00		10	

FTTX 603640 on Baltimore & Ohio in Baltimore, Maryland in July 1981

Automobile frame carrier.

http://www.flickr.com/photos/hunter1828/7153591643/

	60		70		80		90		00		10	

GTTX 300577 on Louisville & Nashville at Dossett, Tennessee April 1977

Trailer Flat.

Paul Hobbs HTTX093160_s930923p

	60		70		80		90		00		10	

HTTX 93160 on Burlington Northern's Northtown hump, Minneapolis, Minnesota in July 1993

General Service.

Paul Hobbs HTTX033776_dscf6023

	60		70		80		90		00		10	

HTTX 93776 with BB-BB 42” Gauge trucks for Mozambique bound locomotives behind at General Electric, Erie, Pennsylvania July 2014

General Service.

http://bnsfman.rrpicturearchives.net/pictures%5C26809%5CITTX981584_David%20H.%20Anderson_2011_10_06.jpg

	60		70		80		90		00		10	

ITTX 981584 at West Colton, California in October 6, 2011

General Service.

http://freightcars.midatlanticrr.com/var/albums/Reporting-Marks-G-L/JTTX/JTTX%2090787%20F60AH.JPG?m=1337818612

JTTX 90787 at Marysville, Pennsylvania on April 7, 2012

General Purpose flat cars

	60		70		80		90		00		10	

JTTX 160198 at Neenah, Wisconsin December 29, 2007 http://www.yardoffice.com/frtcarptos/2007/12/JTTX160198.jpg

HO BLMA F89JHO-5

Paul Hobbs slide KTTX153840_s910334p

	60		70		80		90		00		10								

KTTX 153840 on Santa Fe train on Cajon Pass, California in July 1991

Two hitch TOFC flat car.

HO Walthers 932-40321

http://www.steelwheelstrainphotos.com/wp-content/uploads/2010/10/LTTX-136-343.jpg

	60		70		80		90		00		10	

LTTX 136343 October 27, 2010

Pole car.

Paul Hobbs MTTX912905_DSCF1354.jpg

	60		70		80		90		00		10	

MTTX 912905 in Union Pacific Dupo yard in July 2012

General Service with stake pockets.

Paul Hobbs slide NTTX067029_s931208p

	60		70		80		90		00		10	

NTTX 67029 on Burlington Northern train at Northtown, Minnesota in July 1993

Multiple platform container car.

Paul Hobbs OTTX093356_IMG_1108

	60		70		80		90		00		10	

OTTX 93356 on Norfolk Southern train at Cresson, Pennsylvania in July 2011

General Service.

N Intermountain 66401

HO Intermountain 46401

http://freight.railfan.ca/ttx/pttx911789.jpg

	60		70		80		90		00		10	

PTTX 911789 at Kitchener, Ontario on May 27, 2006

Pipe Service.

N BLMA 13024
HO BLMA F89JHO-4

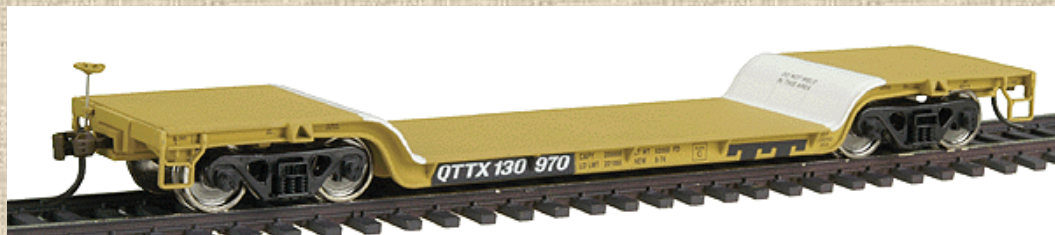
http://www.michaeltaylor.ca/freight/freight-us/qttx130732-09-23-10-mt.jpg

	60		70		80		90		00		10	

QTTX 130732 in train 421 passing Bayview, Ontario on September 23, 2010

General Service.

HO Wathers 932-7882



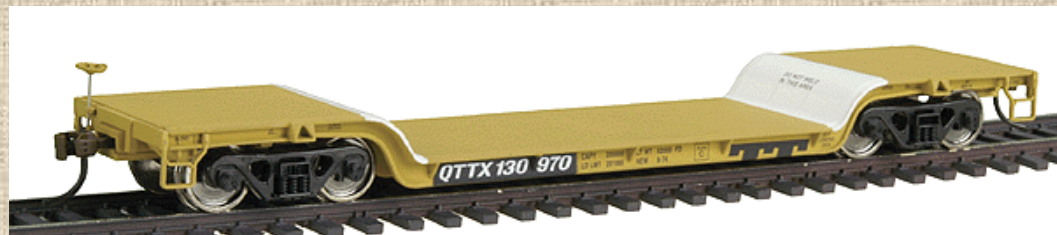
Paul Hobbs image qttx131332_dscf6020

	60		70		80		90		00		10	

QTTX 131332 with GE BB40-9WM load for Mozambique at Erie, Pennsylvania, July 2014

General Service.

HO Wathers 932-7882



Paul Hobbs slide RTTX975450_s971423p

60 70 80 90 00 10

HO Walthers 932-40316

N Athearn 602068

N BLMA 13006

HO BLMA 51002

HO Athearn ATHG29528

RTTX 975450 on Norfolk Southern train at Horseshoe Curve, Pennsylvania in July 1997

Three hitch for 3 28-foot trailers, or 2 45-foot trailers back-to-back.

http://rrpicturearchives.net/showPicture.aspx?id=2998477

	60				70				80				90				00				10		

STTX 981160 at Hanford, California on February 26, 2012

General Purpose with military load.

http://www.rrpicturearchives.net/showPicture.aspx?id=3307007

	60		70		80		90		00		10	

UTTX 61001 at Binghampton, New York on July 1, 1980

Spine car.

http://freightcars.midatlanticrr.com/var/albums/Reporting-Marks-S-Z/VTTX/VTTX%2097613.JPG?m=1308803479

	60		70		80		90		00		10	

VTTX 97613 at Elk Mills, Maryland on August 21, 2010

Container Flat Car. Some used in trash train service.

http://www.rrpicturearchives.net/pictures%5C1402%5CWTTX%20941222_Folkston%20GA_Joe%20Pusey_2005-05-25_18013.jpg

	60		70		80		90		00		10	

WTTX 941222 at Folkston, Georgia on May 25, 2005

Twin 45 Trailer Flat Car.

http://www.flickr.com/photos/25409219@N02/3733287817/sizes/l/in/photostream/

	60		70		80		90		00		10	

XTTX 137653 at New Westminster, British Columbia on July 18, 2009

General Purpose.

http://www.rrpicturearchives.net/showPicture.aspx?id=544591

	60		70		80		90		00		10	

ZTTX 650821 at Albany, Oregon on October 24, 2006

Flat car equipped with 30 stake pockets for transporting long poles.

END xTTX

BEGIN TTxX

Paul Hobbs TTAX753160_IMG_0969

	60		70		80		90		00		10								

TTAX 753160 on Norfolk Southern train at Cresson, Pennsylvania in July 2011

Multiple platform spine car for up to 53-foot trailer or container.

N BLMA 12005
HO Bowser 40860

http://canadianfreightcargallery.ca/ttx/ttbx941111.jpg

	60		70		80		90		00		10	

TTBX 941111 at Aurora, Illinois in October 1979

Bi-level auto rack with 10 pickup trucks and vans.

HO Accurail 9210

http://www.rrpicturearchives.net/showPicture.aspx?id=2459538

60 70 80 90 00 10

TTCX 977058 at Galesburg, Illinois on June 1, 1981

Container flat car.

http://www.trainweb.org/marcrailfan/ttdx930385.jpg

	60		70		80		90		00		10	

TTDX 930385 at Fort Knox, Kentucky 2001

Chain tie-down flat car.

Paul Hobbs slide TTEX353690_s971421p

	60		70		80		90		00		10	

TTEX 353690 on Norfolk Southern train at Horseshoe Curve, Pennsylvania in July 1997

Two 89-foot cars draw-barred together and equipped for 3 45-foot trailers.

http://www.rrpicturearchives.net/showPicture.aspx?id=1620628

	60		70		80		90		00		10	

TTFX 60099 at Dolton, Illinois on September 8, 1984

Single axle TOFC car.

http://www.rrpicturearchives.net/showPicture.aspx?id=1620628

TTFX 611119 at Palmer, Massachusetts on May 29, 2007

Bulkhead Flat car.

Paul Hobbs TTGX982065_IMG_1087

	60		70		80		90		00		10	

TTGX 982065 on Norfolk Southern train at Cresson, Pennsylvania in July 2011

Two-deck enclosed autorack. Rack is railroad owned.

A selection of modern lettering schemes on ETTX and TTGX autoracks.

Paul Hobbs photos

TTHX 92432 at Austell, Georgia on March 7, 2012

General Purpose Flat Car.

http://www.rrpicturearchives.net/showPicture.aspx?id=2939988

	60		70		80		90		00		10	

TTIX 32628 at Folkston, Georgia on September 20, 2010

General Purpose Flat Car.

http://www.krunk.org/~joeshaw/pics/ttx/ttjx/ttjx80437.jpg

	60		70		80		90		00		10	

TTJX 80437 at Salem, Virginia on 23 April 2001

Finger Rack Flat Car with rebar load.

http://www.rrpicturearchives.net/showPicture.aspx?id=3122706

60 70 80 90 00 10

TTKX 800287 on Santa Fe train at Cajon, California in October 18, 1980

Tri-level autorack.

Paul Hobbs slide TTLX060598_s910308p

60 70 80 90 00 10

TTLX 60598 on Santa Fe train at Caliente, California in July 1991

Multiple platform spine car for trailers.

	60		70		80		90		00		10	

http://www.flickr.com/photos/23065916@N04/3116649181/

TTMX 80488 on Burlington Northern Santa Fe at Edmonds, Washington in 1990s

Boeing 737 fuselage transport.

http://www.rrpicturearchives.net/showPicture.aspx?id=1582744

TTNX 81173 on CSX at Ridgefield, New Jersey on April 26, 2009

General Purpose flat car.

Paul Hobbs slide TTOX145628_s950415p

	60		70		80		90		00		10	

TTOX 145628 on CSX near Baltimore, Maryland in July 1995

Four-wheeled "Front Runner" car capable of 1 x 40 to 48-foot trailer

HO Walthers 910-5001

Paul Hobbs TTPX804387_s970306p

	60		70		80		90		00		10	

TTPX 804387 new at Gunderson plant in Portland, Oregon in July 1997

Bulkhead flat car.

N ExactRail EN-51603

HO ExactRail EP-81153

http://seaboardcoast.com/yahoo_site_admin/assets/images/UP-TTQX_802854_89_Auto_Rack_River_Rouge_Plant_Bellevue_OH_08-2005.158155549_std.jpg

	60		70		80		90		00		10	

TTQX 802854 at Ford's River Rouge plant in Dearborn, Michigan, August 2005

Excessive height tri-level enclosed autorack.

http://www.northeast.railfan.net/images/ttrx901501.jpg

	60		70		80		90		00		10	

TTRX 901501 at Houston, Texas 1976

Tri-level autorack with side panels added.

HO Accurail 9317

Paul Hobbs TTRX371109_IMG_0984

	60		70		80		90		00		10	

TTRX 371109 on Norfolk Southern train at Cresson, Pennsylvania in July 2011

Spine car with long platform for variable trailer length, or containers.

http://www.rrpicturearchives.net/showPicture.aspx?id=68974

	60		70		80		90		00		10	

TTSX 803092 at Marshalltown, Iowa in 1962

Flat Car.

http://shastaroute.railfan.net/Photos/Front_Runner/04672.jpg

	60		70		80		90		00		10	

TTUX 130362 new at Union Pacific yard, Albina, Portland, Oregon in 1987

Front Runner for single trailer.

HO Walthers 910-5005

http://www.krunk.org/~joeshaw/pics/ttx/ttux/ttux110100-rf1.jpg

	60		70		80		90		00		10	

TTUX 110100 at Christiansburg, Virginia in October 2003

“Unilevel” enclosed autorack for transporting trucks, school buses and similar.

http://img709.imageshack.us/img709/2015/12143130157722155212940.jpg

	60		70		80		90		00		10	

TTVX 810xxx at unknown location/date

Vert-a-Pac was designed for the Chevy Vega, carried nose down on the door panels.

N ExactRail EN-50501-1

HO ExactRail EE-1202-1

http://www.rrpicturearchives.net/showPicture.aspx?id=3125394

	60		70		80		90		00		10	

TTVX 852208 at Devore, California on September 1, 1984

Tri-level autorack without end doors.

Paul Hobbs TTWX970837_DSCF2445

TTWX 970837 at National Railway Museum, Green Bay, Wisconsin in July 2010

Trailer hitches set-up for twin 45-foot trailers with single 53-foot trailer.

Paul Hobbs slide TTWX971435_s910309p

	60		70		80		90		00		10								

TTWX 971435 on Burlington Northern train near Minot, North Dakota in July 1991

Trailer hitches set-up for twin 45-foot trailers.

HO Walthers 932-40804

http://f1.grp.yahoofs.com/v1/8NsAUVEpmSIBBbgMmAmXitTro8gu45OUnZnFyi92qehDUILXoXl8jLoyQ9gWHdnH13e8gThYiuAehxsR_w7Sz03qRqF_/
TTX473983%20F85B%20Spokane%20WA%2013%20Oct%201985.JPG

	60		70		80		90		00		10	

TTX 473983 F85B in Spokane, Washington, October 13, 1985

Flat car with collapsible hitches for the transportation of trailers.

http://www.rrpicturearchives.net/showPicture.aspx?id=2521804

	60		70		80		90		00		10										

TTYX 77086 on BNSF at Minneapolis, Minnesota on May 4, 2011

Flat car used for windmill components.

Paul Hobbs slide TTZX035666_s950535p

	60		70		80		90		00		10	

TTZX 35666 on Burlington Northern train at East Dubuque, Illinois in July 1995

Centerbeam car

N Red Caboose 16501

HO Atlas 20000947

Paul Hobbs slide TTZX086332_s911338p

	60		70		80		90		00		10	

TTZX 86332 on Burlington Northern train near Minot, North Dakota in July 1991

Centerbeam car

HO Walthers 932-61254

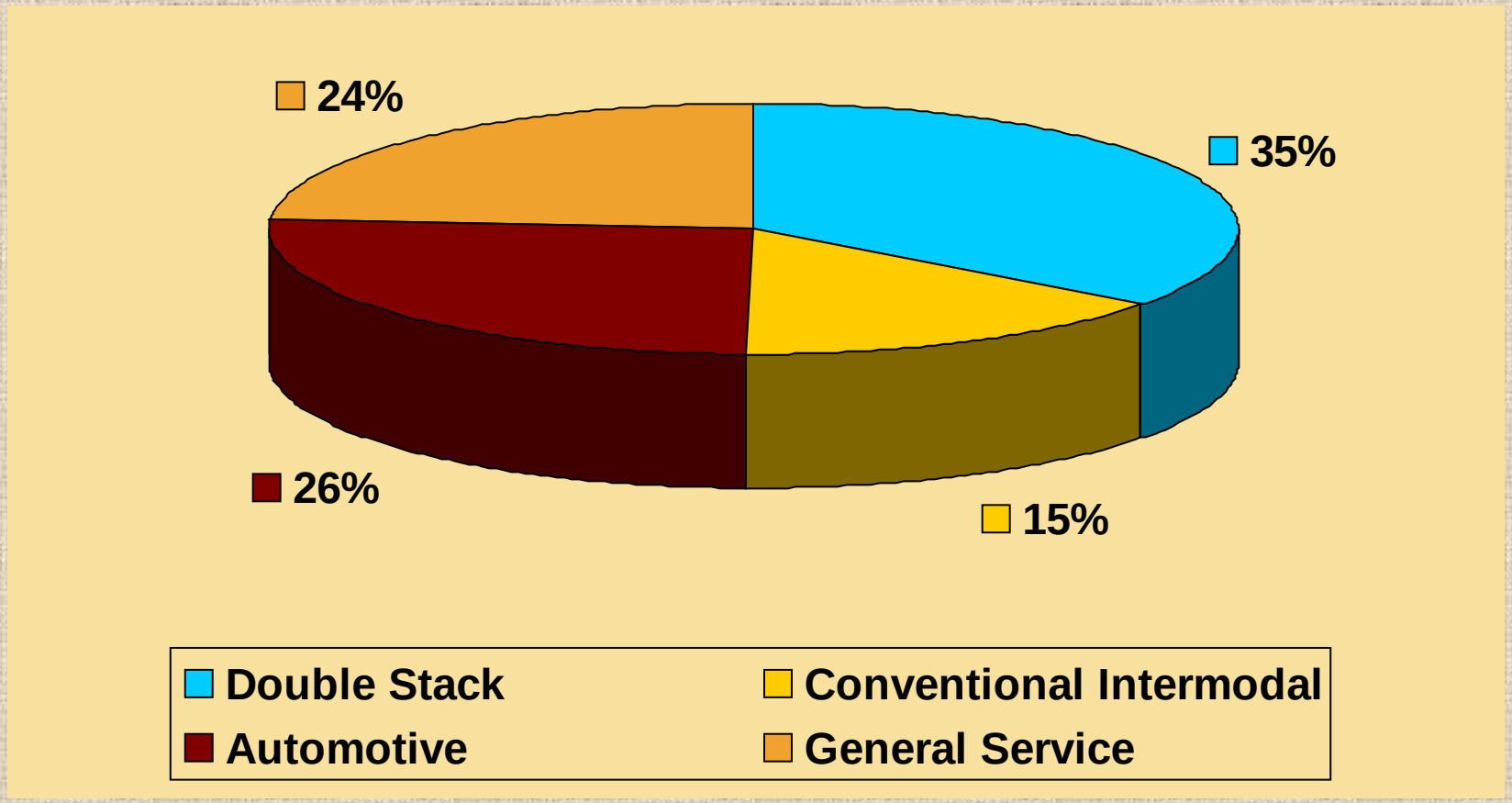
ACHIEVEMENTS OF TRAILER TRAIN / TTX

- **In near 60 years Trailer Train (now TTX Company) has managed ever growing fleets of cars in several markets as they emerged and grew.**

- **Trailers**
- **Automobiles**
- **Containers {Double Stacks}**
- **Poles**
- **Pipes**
- **Trash**
- **Anything on flat cars……..**
- **TTX is now a Billion dollar per year business**

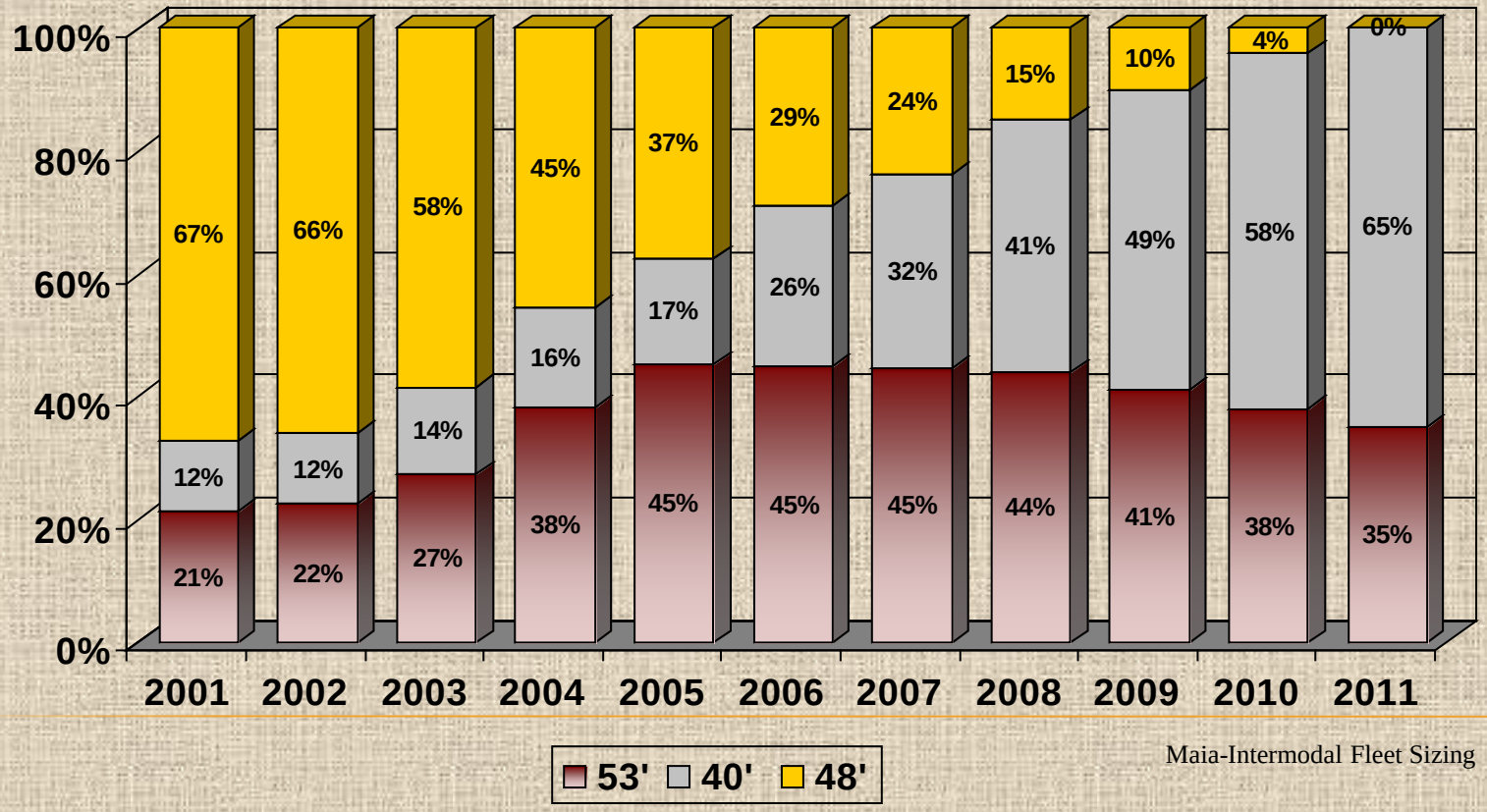
Planning for fleet requirements never ends

TTX Total Fleet (April 1, 2005)



www.acacso.org/meetings/may05/presentation/19-Car_Supply.ppt

Planning for fleet requirements never ends



Maia-Intermodal Fleet Sizing

TTX presentation discussing container traffic and mix over a decade.

TTX
An unnoticed giant

Nearly 60 years of Trailer Train.

The End

Thank you for visiting