Introduction

Railroad passenger car truck designs evolved over the years as passenger cars grew longer and heavier and the quality of the trucks was the key to safe, comfortable and reliable operation. Choosing a correct model truck for HO scale models has often been a challenge, so the following document has been prepared to help make those choices.

The primary criteria is that the model trucks are reasonably accurate scale models and readily available on the current, new or resale markets. A few imported brass models have been included for reference or comparison purposes.

The time period covered is roughly the turn of the 20th Century up to the beginnings of the Amtrak era.

The models are, somewhat, grouped by heavyweight, pre-WWII lightweight, post-WWII lightweight and express.

Both prototype and model photos are provided for comparison purposes. A "generic" name is shown above each prototype photo group, while a detailed Extended Universal Truck Code (EUTC) is attached, in red, to the model photo. Details on the EUTC will be provided in the Appendix following the main document.

In the wooden passenger car era, car builder's built trucks with heavy wood frames and various pieces of steel hardware. As the 20th Century dawned, fully steel trucks began to predominate. Both car builders and steel casting fabricators built and sold passenger car trucks as can be seen in Car Builder's Cyclopedias.

As an industry leader, The Pullman Company had a series of "standard" trucks used under their sleepers and parlor cars, as well as other types of cars they built for individual railroads. American Car and Foundry and other builders used similar trucks, including those built by third parties. It is not the purpose of this document to cover this topic in any detail.

With the advent of the streamline era, in the 1930's, The Pullman Company (the operator of the sleepers and parlor cars) began to use a relatively simple code to describe the varieties of new trucks being developed to match the lightweight cars. See the appendix for an outline of this coding system.

Following WWII, with the rapid explosion of lightweight car construction was accompanied by more new truck designs and a further expansion of the Pullman codes. Details of these codes will also be provided in the appendix.

However, modelers have found a need to expand on the Pullman codes to cover additional variations, much like the "phases" adopted for diesel locomotive models. In particular, W. Gordon Anderson in *Mainline Modeler* proposed a more Universal Truck Code. Later, John Fiscella developed an Extended Universal Truck Code and shared it in clinics and via the Passenger Car List.

To construct this document, I have had helpful consultations from Bob Webber of the Pullman Library and John Fiscella and made continual references to Anderson's *Mainline Modeler* articles (January/February and March 1982) as well as Pat Wider's exhaustive article in *Railway Prototype Cyclopedia 6*. John Fiscella has provided copies of his Extended Universal Truck Code identification document as well as a massive clinic from an NMRA national meet on passenger truck identification. Jeff Cauthen and Jim Gerstley, as well as Jim Langston, have shared copies of truck clinics from Prototype Rails. I am indebted to all of these men in the creation of this document.

I will presume that it is a living document and will willingly accept corrections and additions. <u>With this update, I have added portions of typical truck drawings, which are available from the Pullman Library as well as adding some material regarding the 41-ER lightweight trucks.</u>

Steve Hile





















		Typical Drawing
43-R	D&G Models P31J //43-R ASF Roller Bearings	
	D&G Models P31R //43-R	
	SKF Roller Bearings	Pullman Standard 96-F-96
4 wheels – 8' -6'' wheel base – 5 ½''x10'' roller bearings – Triple bolsters with elliptic bolster springs.		(Related to GSC 24400)
	Walthers 920-2120 //43-R	
43-RV or SP 4-TC-4,5 or 6		GSC Drawing 23926 or 23927
SP 4-TC-5	D&G Models P11J //SP-43-V-11 1937-39 Davlight and Support	
4 wheels $-\delta - \delta$ wheel base $-\delta \times 11^{\circ}$ roller bearings $-$ Triple bolsters with elliptic bolster springs $-$ Bolster apphor		
- 4 brake cylinders.		









41-CNS Fullman Library P53046 4 Wheels – Drop Equalizers – 9' – 0" wheel base – 5 ½ x10" roller bearings – 13-3/8" pedestal opening liners – single bolster with helical bolster springs and roll stabilizer – Clasp brakes.	Walthers 920-2107 (Silver) Discontinued //41-CNS-11 920-2106 (Black) both not CIB as claimned	Typical Drawing GSC Drawing 26395 Contact MOT in St. Louis for details
	No known model available	
Files Fi		







P-S Super Dome			Typical Drawing
Pullman Library Image P62864			GSC Drawing 30965
	Walthers 920-2135 Silver 920-2134 Black	//61-N-11	
NYC Pre-War GSC (NYC K-10-XR)			See NYC Drawing N-51391
(Walthers refers to this as K-10-CR, but CR does not appear on the NYC truck drawing N-24320.)	Walthers 920-2133	K-10-XR//61-R	Available from the NYC Historical Society

Milwaukee 1954 Nystrom TruckSilve a state of the st	Walthers 920-2126 (Clasp brakes) Silver //NYSTROM:41-BMO	Typical Drawing GSC Drawing 31210
	Walthers 920-2128 (Disc Brakes) Silver //NYSTROM:41-BMDO	
Milwaukee 1946 Nystrom Truck Example 2014 Fullman Library Image P58971 4 Wheels – Drop equalizer – 7' wheelbase – Helical Bolster springs – Hydraulic Stabilizers	Railway Classics (Brass) TR06-S (Black is TR06-B) //NYSTROM:41-AMO	Typical Drawing GSC Drawing 26440







Appendix – Passenger Truck History and Coding

During the first third of the 20th Century, there really wasn't a formalized coding structure in place for either Pullman or other truck and car manufacturers. Pullman's truck nomenclature evolved from a simple numeric to a code, sometimes based on the year of introduction or physical features of the truck. Commonwealth Steel built similar trucks and its designs often preceded and influenced Pullman's.

By the 1930's Pullman was using the truck numbers listed in this document that had been introduced, as follows:

- 106S 1907 First all-steel Pullman Truck
- 1910 1910 First all steel production Pullman cars use a lighter version of the 106S truck
- 2410 1916 Clasp brake version of the 3 shoe 1910 truck
- 242 1921 First Pullman top equalized truck
- 2411 1927 Pullman first uses an 11 foot wheel base, bottom equalized truck

(It should be noted that Pullman did not innovate any of these developments, rather they adopted features created by other truck manufacturers.)

With pre-WWII lightweight trucks The Pullman Company introduced a code system based on physical characteristics of the truck, which they used for new truck designs used under lightweight cars.

- First Digit number of wheels, typically 4
- Second Digit number of independent bolsters, typically 1 or 3
- Dash
- One to Four letters
 - R Roller Bearings
 - E Elliptic Bolster Springs
 - H Helical Bolster Springs
 - X Experimental
 - U Truck specifically for the Union Pacific
- Dash (if needed)
- 11 if 6"x11" bearings (no suffix for standard 5 1/2"x10" bearings)

If the truck was at an articulation joint, an A- prefix preceded the truck code number.

However, even these code additions didn't totally answer questions for modeler in describing light weight trucks. Anderson, in *Mainline Modeler*, proposed additional codes for pre-WWII trucks including

- T Double drop equalizers
- G Designates Goose neck shaped drop equalizers
- Q Bolt on pedestals
- V Some additional variation

Following WWII, new developments in truck design necessitated the edition of code letters for things like

- D Disc brakes
- O Outside Swing Hangers
- S Roll Stabilizers
- A-C Wheel Base (7, 8 or 9 foot, no code would be standard 8'6")
- M-N Non-standard distances between pedestal liners

Ultimately, to further differentiate between trucks designed by Pullman and similar trucks designed by other car and truck builders, John Fiscella has proposed a three portion code that can more fully describe most trucks.

The three parts of the EUTC are separated by slashes. The first portion is the specific railroad created truck class, if it is required. This is followed by a specific truck model, again, if required. The final portion of the EUTC, is Universal Truck Code and is always used. If the first two portions are not required, the slashes, alone, remain. The UTC portion is structured

Designer or manufacturer, if not Pullman or GSC: (Prefix, if needed) – i j – (Suffix)

In the Prefix, only A (for Articulation) and M (for Traction Motor in the truck) are used.

The i and j are the number of wheels and number of independent bolsters, as before.

Values used in the Suffix include:

A – 6'6" to 7'5" Wheel base	P – Both Elliptical and Helical Bolster Springs (PRR
B – 7'6" to 8'5" Wheel base	Q – Bolt on Pedestals
C – 9'0" to 9'5" Wheel base	S – Roll stabilizer bars
D – Disc brake equipped	T – Twin (double) drop equalizer bars
E – Elliptical bolster springs	U – 14-1/16" journal opening (Union Pacific)
F – 9'6" and larger 4 wheel base	V – Design variant
I – Top Equalized	Y – Plain (solid) bearings
J – One Brake Shoe per wheel	Z – Independent wheel suspension
K – Unequalized truck	9 – 5"x9" Journals
L – Low Profiled truck	11 – 6"x11" Journals
M – 13-7/8" Journal opening (Milwaukee)	12 – 6-1/2"x12" Journals
N – 13-3/8" Journal opening	(CIB) – Canton I beam drop forged Equalizer bar
O – Outside Swing hanger	# - Electro-pneumatic brake control

If there is no suffix, it means that the truck has 8'-6" wheelbase, integral pedestals, plain section equalizer bars, clasp brakes, 15-1/16" liner opening, helical bolster springs, no roll stabilizer bars, 5 ½"x10" journal boxes, integral wheelsets, truck mounted brake cylinders, roller bearings, and bottom equalized. These are the default values (no code.)

I refer the reader to John Fiscella's documents stored in the Files area of the Passenger Car List IO group for expanded details and examples of the EUTC.