

Modeling modern C&NW Covered Hoppers



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Through out the history of the C&NW, it had been best known as being one of the major Grainger railroads in the US. The transportation of grain and other bulk food products had always been one of the major sources of revenue for the C&NW, in some years accounting for 15 to 20 percent of the railroad's revenue. While much of this traffic would be handled online between many large grain elevators and C&NW served port facilities at Duluth-Superior, Chicago as well as Clinton IA, they did participate in the transportation of export grain primarily through both the Port of Baltimore as well as various locations along the Gulf Coast.

Another large source of revenue was the transportation of various aggregate commodities, such as bentonite clay from South Dakota, dry cement from both South Dakota and Iowa, as well as fine silica sand (used in the production of glass, primarily auto glass) from the Troy Grove area in Illinois. Unlike most of grain traffic, a large percentage of this traffic was destined to offline destinations, so it was never unusual to find these C&NW aggregate cars wandering far from their home rails.

Because of the large amount of traffic generated from these product lines, it is not surprising to find that the covered hoppers were the most numerous freight car type found on the C&NW. At the time of merger with the UP, the C&NW had a fleet of nearly 29000 freight cars. Of this number, nearly 12700 of these cars, or almost 1/3 of the freight cars in the fleet, were various classes of covered hoppers.

The sheer number, and variety, of C&NW covered hoppers makes these cars a natural to be of interest to the modeler. Even if you do not necessarily model the C&NW, the sight of 1 or 2 C&NW covered hoppers would never look out of place on almost anyone's layout. For those that model the C&NW, I am sure that you will find something of interest that will help give you a better understanding of the C&NW freight car fleet.

Colors of the C&NW covered hoppers

Until the early 1970's, the C&NW painted their covered hopper fleet in the traditional gray color that many of the US railroads were then utilizing. Starting in 1973, in attempt to differentiate the commodities to be loaded in the covered hoppers, the C&NW implemented a color code formula for the covered hoppers. Generally, covered hoppers that had a FDA approved interior lining (mainly found in cars that hauled malt, sugar, flour and other foodstuffs) were to be painted yellow. Those cars used for bulk grains (and whose interiors were not lined) were to be painted green, with all other covered hoppers were to be painted gray. In 1984, the C&NW developed the "Sunburst" yellow (also known as "Safety" yellow, but much more commonly referred to as "Zito" yellow) for use on all of their freight equipment, and the covered hoppers began to emerge from the Clinton repaint shops in this color, regardless of the type of interior found in the car.

Beginning in the early 1990's, as the lack of colorfastness of the "Sunburst" yellow began to become apparent, the C&NW once again began to repaint the covered hopper fleet, once again trying to differentiate the lined and unlined cars. The unlined cars were painted a slightly darker shade of green (which many on the C&NW called "Money" green) and the lined cars were painted in what was called Stagecoach, or "Traditional", yellow.

Covered hoppers that were purchased second hand, or were leased for short periods of time, tended to remain in whatever color they were last in. If you looked at a C&NW grain train in the Fall of 1984, you would find C&NW cars in C&NW green, some in various shades of gray, a few in the new "Safety" yellow and several in the RI blue (obtained from the RI upon its demise in March of 1980). By 1994, you would find a typical C&NW grain train as being a rainbow of colors. You would find cars in a couple of different shades of green, both the "Sunburst" and the "Stagecoach" yellow, as well as in RI blue, the Klemme pink and assorted other colors.

Lettering on C&NW covered hoppers.

As one would expect, the lettering style varied greatly. Generally before 1984 a railroad roman style was used for all lettering. On gray cars, the lettering was black and on the green cars, it would be either yellow or white. The heralds on gray cars were typically white on a black background while on green cars they could be yellow on black, white on black or white on a black bar and red ball. Before 1972, the herald commonly used showed "Chicago" above the bar, and either "Railway" or "System" below the bar. After 1972, the words "Employee" and "Owned" were used in place of "Chicago" and "System".

In the period from 1984 to 1990, the C&NW changed to a san serif style lettering for reporting marks and data. On the yellow cars, this would be in black. The heralds could be any one of four styles, although they all had the words "Employee" and

"Owned" in the bar and North Western in the ball. The first was a black outline ball and bar with all the lettering in black. The second style would be only the upper and lower bar lines. The third style a complete ball and bar logo with yellow lettering on a black background. The fourth style had white lettering on a red ball and black bar. In late 1990, the lettering on the heralds was again changed back to "Chicago" and "System" as the C&NW was no longer considered to be "Employee Owned". During this change, some of the covered hoppers received an outline version of the new "System" herald instead of the tri-color herald.

After 1990, both the san serif lettering style and the white lettering on a black bar and red ball remained, but the size of the herald varied as the C&NW Clinton IA shops worked to develop a stencil that allowed the ball and bar logo to look good on a ribbed car. By 1993, the shop had developed such a stencil, so most of the cars released after mid 1993 carried the slightly elongated bar tri-color logo.

Car shops on the C&NW

From the mid 1960's through the April 1995 merger with the Union Pacific, almost all of the major repair and repainting work performed on the C&NW freight equipment was done at their shop located in Clinton IA. This was a complete shop that could do both major body work as well as the repainting of the cars. This was also the location of the system wheel shop and brake shop. This shop also did perform contract repairs and rebuilding for other car owners and railroads as well. Starting in 1992, as the cars were released from the shop, they also received a decal in the shape of the state of Iowa with a star showing the location of Clinton. Minor repairs to freight equipment, as well as a 1993 airslide hopper rebuild project, was performed a second, much smaller facility, which was located in Cudahy WI.

Modeling tips for C&NW cars.

As with modeling almost any prototype, because of the wide variety of lettering and painting schemes found on the C&NW, one should use photographs whenever possible when modeling the C&NW. The best source of information for those interested in the modern freight car fleet of the C&NW is the Final C&NW Freight Car Roster by Joe Piersen and Ira Kulbersh. Copies of this book are available from the C&NWHS, PO Box 1068, North Riverside IL 60546. The price is \$30.00 including shipping.

The Chicago & North Western Historical Society has published several articles on C&NW covered hoppers in their "North Western Lines" magazines:

Spring 1994	755000 series paired airslides	\$6.00
Spring 2000	437000-437299 series covered hoppers	\$6.00
2007 No. 3	175000 series Bentonite Covered Hoppers	\$8.00

Copies of these magazines are available from the Society at PO Box 1068, North Riverside IL 60546. Please include \$2.25 postage.

CD copies of earlier "North Western Lines" magazines are available from the Society. Please check the Society website at www.cnwhs.org for prices. These articles are:

April 1977	2-bay center flow hoppers
Fall 1986	The Jumbo Covered hopper fleet
Winter 1987	Updates to above article
Fall 1993	Recent Clinton repaints Covered Hoppers

Both Microscale and Oddballs Decals make HO scale decals for many of the C&NW covered hoppers that you will see during the show. Any of the major hobby shops should have them in stock, or you may utilize the NMRA website to link to these companies websites.

Chicago & North Western 100 Ton Jumbo Covered Hoppers

Series	Builder	Year Built	Length	Width	Cubic Feet Capacity	Load Limit	Notes
7001-7030	PSC	1963	47'3/4"	9'11 7/8"	4000	195,000 lbs.	ex-CGW
7101-7105	PSC	1964	50'6 3/4"	10'8"	4427	200,000 lbs.	ex-CGW
7201-7250	GATX	1966	51'11"	10'7"	4500	200,000 lbs.	ex-CGW
7251-7260	GATX	1967	52'3"	10'7"	4700	200,000 lbs.	ex-CGW
69877-69895	GATX	1967	51'3"	10'7"	4180	192,200 lbs.	
69925-69954	GATX	1974-75	51'5"	10'7 3/8"	4180	192,000 lbs.	
69985-69999	GATX	1976	51'5"	10'7 3/8"	4180	193,900 lbs.	
76981-76989	ACF	1966	51'11 1/4"	10'7 3/4"	4650	202,000 lbs.	
95600-95649	PSC	1962	47'0 3/4"	10'6 5/8"	4000	195,500 lbs.	
95870-96969	PSC	1965	50'6 3/4"	10'8"	4427	200,000 lbs.	
96970-96469	PSC	1966	50'10 3/4"	10'8"	4427	200,000 lbs.	
170000-170496	PSC	1967	51'6 3/4"	10'8"	4427	201,800 lbs.	
170500-170926	PSC	1966	51'6 3/4"	10'8"	4427	202,400 lbs.	TLDX originally
172000-172249	ACF	1973	55'5"	10'8"	4600	199,400 lbs.	
173000-173499	PSC	1973	57'4"	10'7"	4750	203,200 lbs.	
173500-174499	PSC	1974	57'4"	10'7 5/16"	4750	202,900 lbs.	
174500-174699	PSC	1974	57'4"	10'7 5/16"	4750	202,600 lbs.	Leased-Matrix
174700-174899	PSC	1976	57'4"	10'7 5/16"	4750	202,900 lbs.	
178000-178599	PSC	1980	57'4"	10'5"	4750	199,700 lbs.	
178600-179099	FMC	1980	55'1"	10'5 3/8"	4700	200,000 lbs.	Diagram as 178000
180000-180499	ACF	1977	55'5"	10'8"	4600	199,600 lbs.	Diagram as 172000
181000-181503	PSC	1981	57'4"	10'5"	4750	200,200 lbs.	
181504-182699	PSC	1981	57'4"	10'5"	4750	202,100 lbs.	
182733-182911	Ma.In.	1980	59'0"	10'8"	4650	201,000 lbs.	Leased-Rex Leasing
182912-182998	Ma.In.	1980	57'9"	10'5"	4700	199,000 lbs.	Leased-Rex Leasing
190000-190499	BFF	1980	60'0"	10'8"	4750	200,000 lbs.	Leased-N. American
190500-190999	In.Sh.	1980	60'0"	10'8"	4750	200,000 lbs.	Leased-N. American
460070-460446	Ma.In.	1980	59'0"	10'8"	4650	202,000 lbs.	Leased-Rex Leasing
463001-463025	FMC	1980	57'9"	10'5"	4700	199,000 lbs.	Leased-Rex Leasing
470030-470159	Various	1980	60'0"	10'6"	4750	202,000 lbs.	Leased-Rex Leasing
752000-752489	PSC	1975	57'4"	10'5"	4750	200,000 lbs.	Ex-Rock Island a)
752500-752978	PSC	1975	57'4"	10'8"	4750	200,000 lbs.	Ex-Rock Island b)
753000-753429	PSC	1975	57'4"	10'8"	4750	200,000 lbs.	Ex-Rock Island c)
753500-753693	PSC	1975	57'4"	10'8"	4750	200,000 lbs.	Ex-Rock Island d)
753700-753904	Thrall	1978-79	55'4"	10'8"	4750	200,000 lbs.	Ex-Rock Island e)

Builder's Code

PSC - Pullman-Standard Company
 GATX - General American Transportation Corporation
 ACF - American Car and Foundry
 Ma.In.- Marine Industries Ltd.
 BFF - Berwick Forge and Fabricating
 In.Sh.- Ingalls Shipbuilding Division of Litton Industries

FMC - FMC Corporation
 Various-(Several Different Builders)
 Thrall- Thrall Car Manufacturing

Former Rock Island Numbers

a) CRIP Series -800500-800999
 b) CRIP Series -632250-632749
 c) CRIP Series -132750-133199
 d) CRIP Series -133200-133399
 e) CRIP Series -801000-801499

section no. 9E	YARD REPORTING PROCEDURES		CAR FAX
page 4 of 4	section REFERENCE TABLES		
date 02/01/77	subject Commodity Grades		

GONDOLA

- G
1. Suitable for loading large scrap or steel products.
 2. Good sides and ends.
 3. Cracked floors or floor boards missing.
- GS
1. Cars in same general condition as in "A" above but are contaminated (readily noticeable).
 2. Suitable only for glue stock.
- M
1. Suitable for rail, logs or pulpwood.
 2. Holes in sides or ends.
 3. Slightly bulged sides or ends.
 4. Numerous pieces of floor missing.

COVERED HOPPERS

Covered hoppers need not be inspected, but are to be graded based upon their last contents which must be shown on the empty waybill:

- A Sugar, Flour, Malt
- B Bentonite Clay
- G Grain, Grain Products
- L Limestone
- M Fertilizer
- MH Animal By-Products, Meat Scraps
- MR Cement
- S Sand, Granules

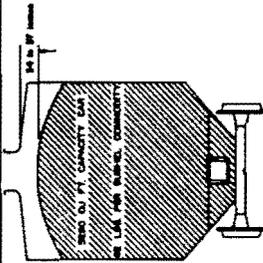
EXCEPTIONS: None.

**GENERAL GUIDELINE FOR LOADING
BULK COMMODITIES IN 100-TON COVERED HOPPER CARS**

CUBICAL CAPACITY OF CAR	COMMODITY WEIGHT (LBS. PER BUSHEL)									
	55	56	57	58	59	60	61	62	63	64
4427	0 to 2	1 to 3	2 to 5	4 to 7	6 to 8	7 to 10	9 to 12	10 to 13	12 to 15	13 to 16
4460	0 to 5	2 to 8	6 to 11	9 to 13	11 to 15	13 to 17	15 to 19	17 to 20	19 to 22	20 to 23
4500	0 to 4	3 to 5	4 to 7	6 to 9	8 to 10	9 to 12	11 to 14	12 to 15	14 to 17	18 to 18
4600	5 to 9	7 to 11	10 to 13	12 to 15	14 to 17	16 to 19	17 to 20	19 to 22	20 to 23	22 to 24
4650	6 to 11	9 to 13	11 to 15	14 to 17	16 to 19	18 to 21	19 to 23	21 to 24	23 to 26	24 to 27
4750	8 to 11	10 to 13	12 to 15	13 to 16	15 to 18	16 to 19	18 to 21	19 to 22	21 to 23	22 to 24
5250	22 to 25	24 to 27	26 to 29	27 to 30	29 to 32	31 to 34	32 to 35	34 to 37	35 to 38	37 to 39

NOTE: DISTANCE FROM TOP OF LOAD
TO BOTTOM OF HATCH FRAME
SHOWN IN INCHES

THE EXAMPLE AT RIGHT ILLUSTRATES A 5250 CUBIC FT. CAPACITY CAR LOADED WITH A COMMODITY THAT WEIGHS 62 POUNDS PER BUSHEL. IN ORDER TO AVOID OVERLOADING CAR, THE DIMENSION FROM THE TOP OF THE LOAD TO THE BOTTOM OF THE HATCH FRAME SHOULD BE 34" TO 37". THIS IS A GENERAL GUIDELINE AND AS SUCH MAY REQUIRE ADJUSTMENT FOR DIFFERENT LOADING EQUIPMENT AND PROCEDURES.



**GENERAL GUIDELINES FOR LOADING
BULK COMMODITIES IN 100-TON
COVERED HOPPER CARS**

At some country points and at other locations when scales are not functioning, it is not possible to determine within the ranges allowed under various tariffs whether overloading penalties or minimum weight charges may be assessed. Through controlled field testing, information has been developed which may assist shippers in their efforts to comply with tariff loading rules and regulations and thereby avoid penalties for overloading and assessment of minimum weight charges.

The attached chart and table are offered for your assistance in loading bulk commodities in covered hopper cars. As you know, there are many factors which may substantially affect the ultimate total loaded weight of the commodity: density of the product within the load; evenness or unevenness of the top of the load; existence of pockets or voids; accuracy of measurement of distance from load to bottom of hatch-frame, to name a few. Do not, therefore, regard the chart as an absolute standard by which you attempt to assure yourself of compliance with tariff minimum weight requirements or avoidance of tariff overloading penalties. The tariffs will be followed and enforced; we are required by law to do so.

In all instances it is imperative that the commodity be evenly distributed throughout the covered hopper car. Failure to load one end of the car or placing the load unevenly longitudinally tends to cause imbalance problems and can result in derailments. Remember it is the shipper's responsibility to properly load the car and liability to the shipper can result if the car is not properly loaded and causes damage to other lading or railroad property.

If you have any questions, do not hesitate to contact your local Damage or Control Supervisor at 515-263-4504, or in Chicago at 342-559-6786.