C&O series 5400-5499 Deco-End Box Cars

by Al Kresse

C&O 5400-series box cars with their distinctive Deco ends flank a more traditional Dreadnaught-end car in this 1937 General American Transportation Corporation builder's view. (GATC photo; C&OHS Collection)

The years 1936 and 1937 marked a transition time between the Van Sweringen brothers' estate's relinquishing, and the Robert R. Young financial group's assuming, full or partial control of the Chesapeake & Ohio, Pere Marquette, Erie, and New York, Chicago & St. Louis (Nickel Plate) railroads.

In 1936, these railroads were experiencing increased traffic and were hoping for an end to the Depression. Additionally, J. J. Bernet, known as the "doctor of sick railroads," had been president of the NKP, C&O, PM, and Hocking Valley (HV) between 1929 and 1935.

Three of these railroads, with their intertwined financial management, were authorized funds for 2500 40-foot, 50-ton XM, general-service box cars at approximately the same time. These orders included Nickel Plate (NKP) series 15500-15999 (General American Transportation Corporation, East Chicago, Indiana, order 2779, built with Dreadnaught ends), Erie series 78000-78499 (American Car & Foundry, Berwick, Pa., built in August 1936 with Buckeye ends), and C&O series 4000-5499, with both Dreadnaught and Deco ends. Their specifications were based on the then-being-updated 1932 Association of American Railroads (AAR) standard box car design, which was being revised to increase the interior clear height to 10 feet. This was later approved as an alternative to the 1937 standard design. (C&O 5249 was shown as an example of the 1937 standard in the 1940 *Car Builder's Cyclopedia.*)

The C&O order was shared between General American Car Company, East Chicago, Indiana (4000-4499 in 1936, order 2777), Pullman-Standard Car Manufacturing Company, Richmond, Virginia (4500-4999 in 1936 and 1937), and General American Transportation Corporation, East Chicago, Indiana (5000-5499 in 1937). These cars had either the Hutchins Dry Lading (4500-4999) or Viking (4000-4499 and 5000-5499) corrugated roof panels.

The larger series of box cars is described in C&O Mechanical Department General Arrangement drawing 139-11-282. They were tracked in C&O diagram sheets 15, 16, and 17, and were featured on the back cover and also described in Plate 28 and Appendix C of Carl Shaver's book *Freight Car Equipment of the Chesapeake and Ohio Railway, August 1, 1937* (published by the C&OHS).

Approximately 200 cars of this series were transferred to the Baltimore & Ohio in 1964. Most of these cars were retired by 1978, although one of the B&O cars stayed in service until 1984.

The 5400-5499 sub-series of the GATC box cars was further subdivided. Since the AAR specifications provided for alternative roofs, doors, ends, etc., this series, as we will describe, wasn't really a deviation from the standard design.

What makes the C&O 5400-5499 series of box cars unique was their Deco Railway Devices Company stamped end panels and their CRECO (Chicago Railway Equipment Company, Chicago, Illinois) door panels. The typical end panel used by the C&O at this time was the 4-over-5-rib Dreadnaught corrugated panel assembly made by the Standard Railway Equipment Company. The Deco end panel details were described in AMC End Details drawing 136-7-681, dated September 7, 1937.

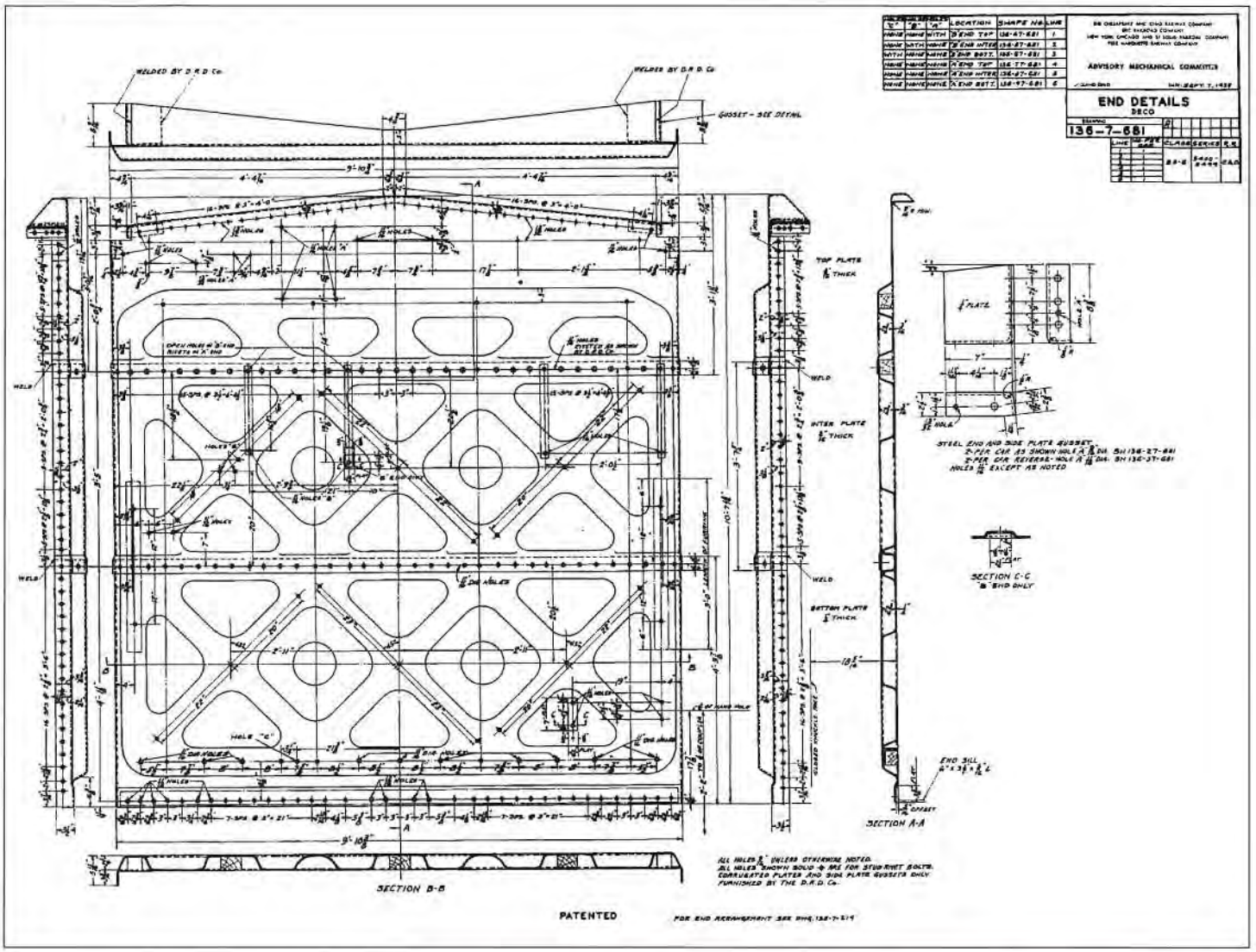
As mentioned earlier, these cars were built to the Association of American Railroads (formerly the Master Car Builder's Association) standard specifications and practices for exterior sheathed, wood-lined, 40-foot, 50-ton steel box cars. They were recognizable by their ten equal-sized, 0.10" thick side panels that were riveted together and painted the standard freight car brown of the era (possibly ready mixed metallic brown paint). They had centered, black, three-panel CRECO 6-foot-opening doors. Camel doors were used on cars 4000-5399.

Ends

The ends were built of three different Deco "dot-in-grid" end panels. The lower end panels were 1/4" thick, and the middle and top panels were 3/16" thick. To the casual observer, the inventors of these panels must have seen an egg crate and noticed how well it handled normal loading and did not fold like a ribbed panel. The lower and middle panels incorporated a diamond and dome pattern with a triangle-filled perimeter. The upper panels were made of a row of alternating, trapezoidal shapes. The stamping direction was outward, away from the corner and bottom sills and roof end panel–eaves interfaces. The Deco Railway Devices Company sub-assembled the end panels with rivets and welding and supplied these to GATC. These assemblies were supplied with riveted-in wood furring strips on which to nail the linings. Later rebuilds of these cars had to add additional furring strips.

Doors

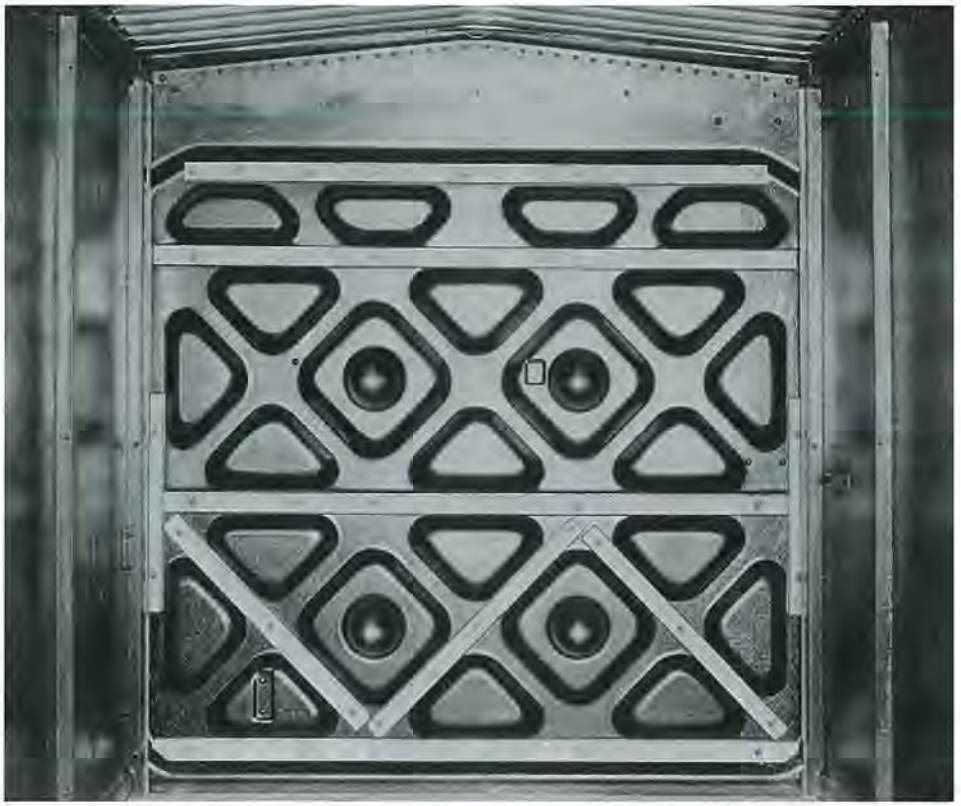
The three-panel CRECO doors were very simple. First used by the C&O on five hundred 1930s box cars, C&O 8000 and 9001-9499, they were also used, with an eight-rib design, on PM series 83650-83799 box cars built in 1940 and 1941. These door panels, as they appear on the 5400 series, seem to be made up of a single flat panel with break-formed vertical direction frames and four riveted-in horizontal hat-sections that created a three-panel effect. These CRECO door assemblies made the overall width of these cars one inch wider than those with the Camel doors. The Chicago Railway Equipment Company merged into the Superior Door Company and became their CRECO



(opposite) The darker, contrasting color of the ends and doors imply that they were painted black and the rest of the car side-structure brown. The underbody, safety fixtures, and side frames were covered with black sealing cement or spray paint. The stenciled markings comply to the A.A.R. standard for lettering and marking of box cars and used white AMC-style letters and numbers. (GATC photo; C&OHS Collection)

(above) Deco Railway Devices Company general arrangement drawing for the entire end panel assembly. (C&OHS Collection)

(right) Interior end view of the Deco-style end panel assemby. Note the detail needed on each panel to insure proper mounting surfaces for the ladders, brake steps, and tack boards on the exterior, and mounting pockets for reinforcement brackets for exterior components and multiple furring strips for nailing down the lining on the interior. Also note channels on the sides for more furring strips, plus the underside of the corrugated Viking roof panels. (GATC photo; C&OHS Collection)



Fixtures subsidary. They later became part of UNARCO, then Evans Products, and eventually part of Rail Car Specialities (RCS) of Omaha, Nebraska. This background information was kindly provided by Bill Mundinger and Rich Nogal of YSD (Youngstown Steel Door Company), Youngstown, Ohio.

From the GATC builder's photographs, it appears that the end panels had significant sprayed-on black sealing cement and were painted ready mixed freight car black at least in the stenciling areas. They also appear to have more grain, or scale, than the the other steel panels. This might imply that they were formed hot in the press.

The CRECO doors also appear to have been painted black. They exhibit more shine or smoothness than the heavier-gauged end panels. This might have been because they were cold-rolled.

Roofs and Interiors

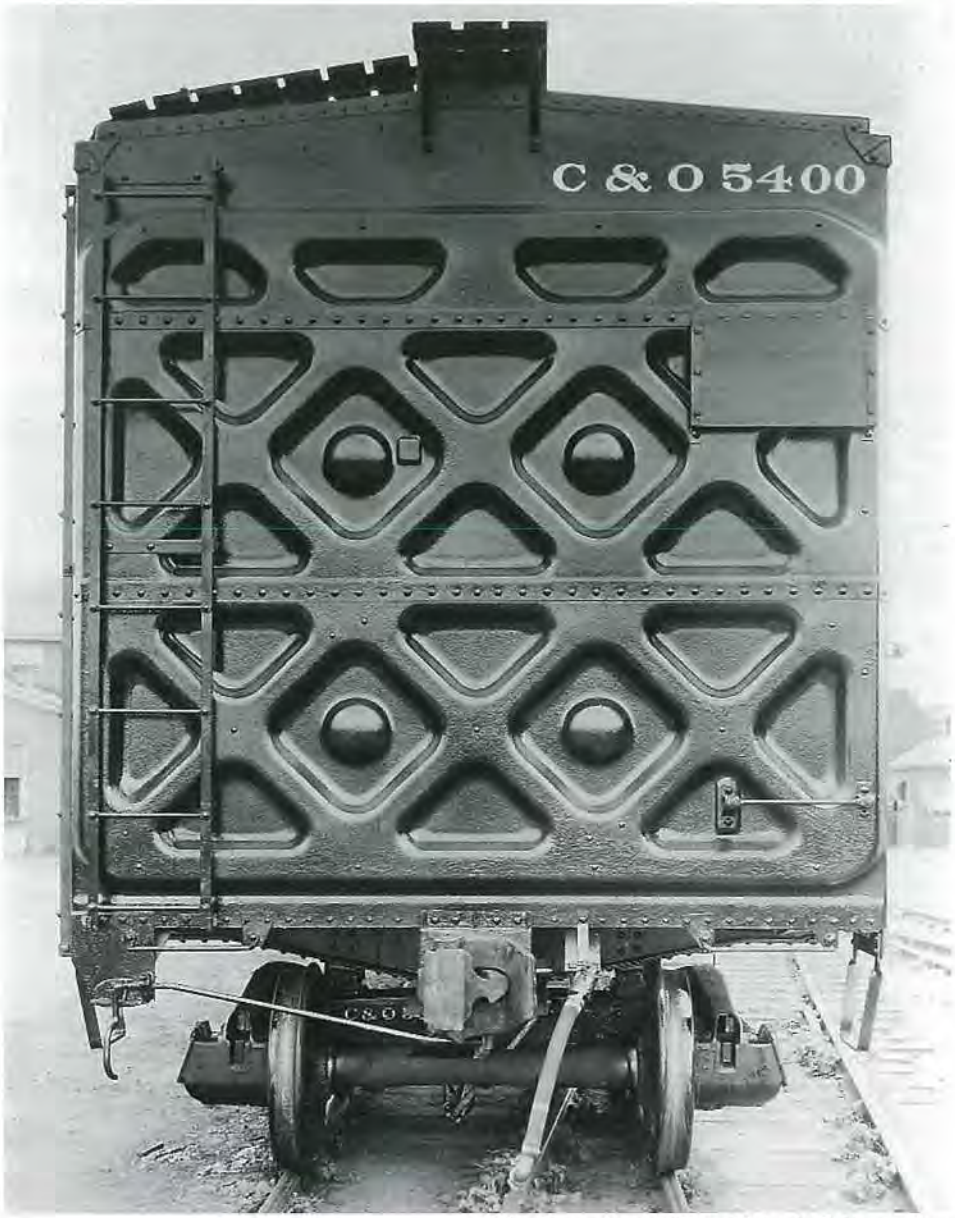
The corrugated Viking roof panels were topped off with wooden running boards. It is unknown if the roof was painted freight car brown or black.

The stenciling would have been done with linseed oil and white lead paint. The assembled trucks would also have been painted black.

Interiors were lined with with 13/16" thick by approximately 2" wide, tongue-and-groove wood strips. If done to standard practices, the sides were laid up horizontally and the ends vertically. The floors were covered with 1 3/4" x 3" wood planks.

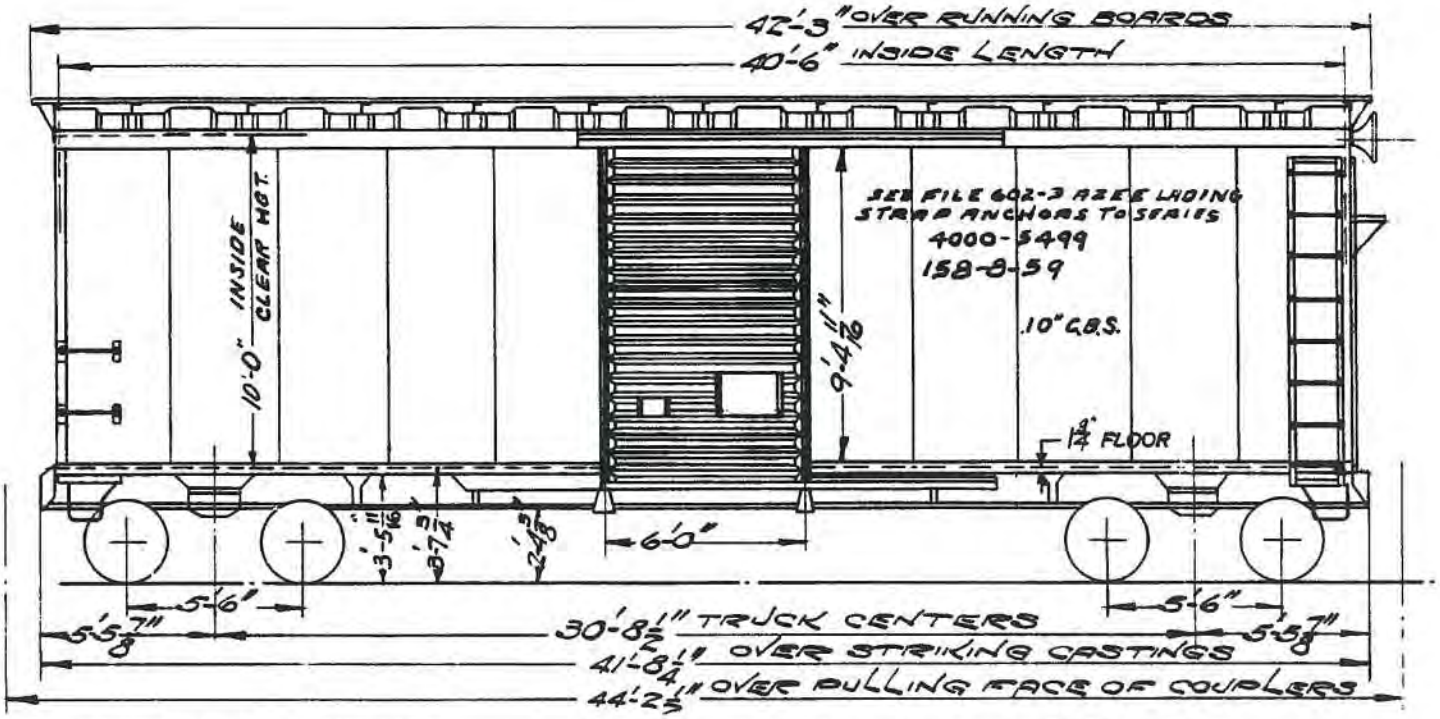
We have no reports as to how these wood-lined. stamped-steel end panels performed in normal service. We do know that the Dreadnaught horizontal-rib panels became the standard practice. This was about the same time that the AMC experimented with lightweight car construction and the Union Metal Products Company stamped steel sides for hopper cars. Annual reports for this era were very sparse on their verbal descriptions of purchased rolling stock and their expectations for them.

Readers should watch for Russ Hass' companion article on these cars and cross-reference Jeffrey M. Koeller's current three-part series in *Mainline Modeler* on early AMC Erie-PM-C&O box cars.



Acknowledgments

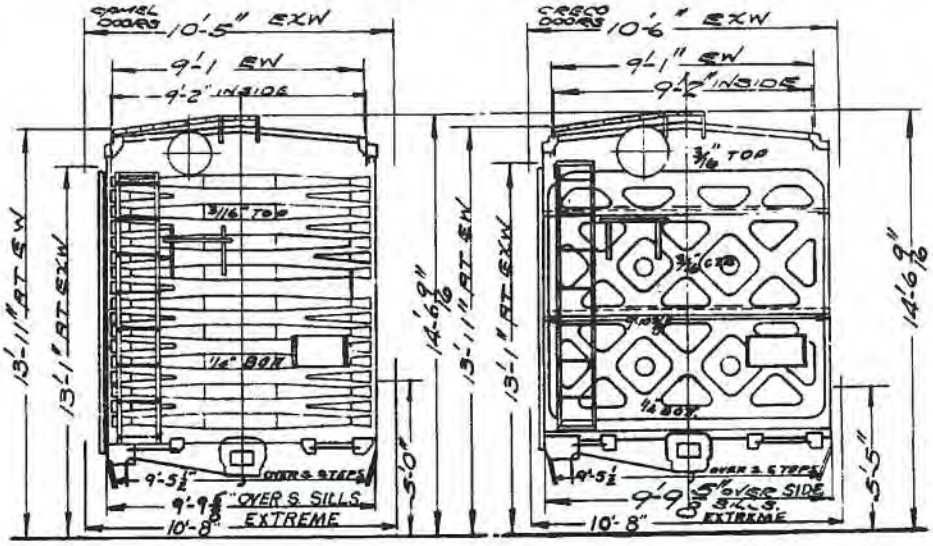
The author would like to thank the following individuals for their assistance: Larry Sexton, James "Dave" Thompson, Richard H. Henderson, Russ Hass, Tom Dixon, and Carl Shaver.



(opposite, top) Detail side view of the CRECO 6-foot door and fixtures used on the C&O 5400-series box cars. (GATC photo; C&OHS Collection)

(opposite, bottom) Builder's photograph of A-end details showing the Deco end panel assembly. (GATC photo; C&OHS Collection)

(above and right) Extracts from C&O 5000-5400 series 50-ton box car diagram sheet 17, dated August 4, 1937, and last modified on January 14, 1960. Side-view diagram shows the Camel door. These cars had an average light weight and load limit of 45,200 and 123,800 pounds, respectively. Their volumetric capacity was 3713 cubic feet. Roofs were Viking No. 16 gauge steel. These cars had cast-steel trucks. Two cars had special trucks applied in 1939: No. 5475 received heavier all-service Buckeye Steel Casting Company trucks, and No. 5494 was fitted with high-speed Symington Gould Corporation trucks and non-harmonic wheels. (C&OHS Collection)



(below) More builder's views. (GATC photos; C&OHS Collection)