Chicago & North Western Historical Society

MODELER

Volume 14, Number 4

April 2023

C&NW "Hammerhead" RSD-5

Photo Gallery – Clair Downs' SD-45s

C&NWHS MODELER Volume 14, No. 4

Bill of Lading

April, 2023

Masthead

An Invitation to join the CNW Historical Society

The CNWHS is an independent non-profit educational corporation. The Society's purpose is to foster interest, research, preservation, and the distribution of information concerning the C&NW and related roads. Its membership is spread throughout the United States and numerous foreign countries, and its scope includes all facets of the CNW. Currently the Society has close to 3000 registered members. Members regularly receive a variety of information including a quarterly publication: NWL.

North Western Lines (NWL) is dedicated to the publication of articles and news items of historical significance. Other Society publications include monographs, calendars, equipment rosters, and reprints of original CNW source material. This publication makes otherwise unobtainable data available to the membership at reasonable cost. Membership in the Society is a vote of support and makes all of the Society's work possible. It provides those interested in the CNW with a legitimate, respected voice in the railroad and historical communities. By working together, individuals interested in CNW are able to accomplish much more than by individual efforts. No matter how diverse your interests or how arcane your specialty, others share your fascination with CNW and affiliated railroads.

The Archives Committee of the C&NWHS is very active and maintains a large collection of the C&NW and related roads. For more information see the CNWHS web site.

Merchandise related to the C&NW, as well as back issues of NWL, Car kits and structure kits for modeling are offered through the CNWHS web site.

Chicago and North Western Historical Society Modeler is a publication of the CNW Historical Society (CNWHS) for the purpose of disseminating CNW modeling information.

An Illinois not-for-profit Corporation dedicated to preserving the legacy of the C&NW and its predecessor & successor roads since 1973.

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Apologies if I have inadvertently omitted anyone. Any person left out is entirely the fault of the editor.

WHAT'S DONE IS DONE

by Michael Mornard

-- Shakespeare, "Macbeth," Act 3, Scene 2

And in this case, what's done is Volume 14, Number 4 of North Western Lines modeler. With this, our April 2023 issue, we're now caught up, and just in time for the C&NWHS annual meet in Sioux City. Once again we hope to see many of you there.

We are always looking for articles for the magazine. We're also interested in knowing what sort of things you, our readers, are interested in. If we get enough suggestions we'll start posting a list of subjects folks are interested in. Maybe that project you finished that you think nobody else cares about is actually just the thing that somebody else is waiting for.

If you're going to be at our annual meet, don't forget to stop by the model display and round table. Besides the models there, I'll gladly make time to discuss what folks would like to see in North Western Lines Modeler going forward.

And don't forget, you can find us on Facebook at "Chicago & North Western Modeler".

NWL MODELER SUBMISSION GUIDELINES

You can send correspondence (including submissions) to northwesternlinesmodeler@gmail.com

Suggested format:

Body text: Arial 12 point
Titles: Arial 20 point bold, all caps, centered
Byline: Arial 12 point bold, centered
Please avoid tables, grids, or sections
Photo captions: Arial 11 point
It's easier to move photos around if you use "Wrap Text Square". To do this, insert the photo in your article; right click on the photo to get the menu. Near the bottom of that menu you will find "Wrap Text". Click that, then choose "Square" from the choices given.

Thank you all.

MODELING A C&NW HAMMERHEAD RSD-5

By Dennis Eggert
Photos by the author unless noted

Prototype History:

In the mid-1950s, the C&NW was acquiring new diesel locomotives from all of the major builders. Locomotives built by EMD, Alco, Fairbanks-Morse and Baldwin and others made up the C&NW's diesel locomotive roster. In April of 1954, seven RSD5s numbered 1684-1690 were built by Alco for the C&NW. Engines 1686-1690 were equipped with steam boilers for use in passenger service, and within this group engines 1686-1688 were also equipped with dynamic brakes. In order to

accommodate both boilers and dynamic brakes, engines 1686-1688 were built with high short hoods and were nicknamed “Hammerheads” by the railfan community. The three Hammerheads worked in freight, passenger and commuter service through the 1950s. After the end of passenger service and the changeover to electrically heated bi-level cars in commuter service, the Hammerheads spent the rest of their lives in freight service. In the 1960s, the Hammerheads were assigned to Huron, South Dakota where they worked with the other Alco road switchers with model 244 and 251 prime movers. The 1687 was destroyed in a wreck in 1968. 1686 and 1688 worked in the Huron fleet until their retirement in 1981.

Builder’s photo of C&NW 1686 in 1954. Alco Historic Photos, Chicago & North Western Historical Society Archives.

This shot of 1688 shows the 1970‘s version of the high short hood details. All of the steam boiler and dynamic brake openings have been plated over, which made modeling the 1688 much easier than modeling the 1686, which retained some of the grilled openings. Photo by Don Lison in August of 1979 at Lake Benton, Minnesota.

These three photos of 1688 were taken at Huron, South Dakota in July of 1974. Note the winterization duct behind the cooling fan, that directed warn air into the engine compartment. During the winter, an extension was added that extended over the cooling fan.

Model Construction Overview:

The HO scale model of 1688 was constructed using the drive mechanism and frame from an Atlas RSD5 (the early yellow box version made by Kato in Japan). I chose the Atlas drive because they are very quiet, smooth running and the trucks represent the prototype very well. I chose to use an undecorated Bowser/Stewart Phase III RS3 shell kit, which correctly represented the phase III features of the 1684-1690 order. I chose to use the Atlas cab, as I felt it had better detail and it came with clear plastic inserts for the windows.

This is the Bowser/Stewart shell kit used for the model. The cab and plastic handrails were not used.

Mounting the Stewart shell to the Atlas frame:

I have successfully built several RS3 and RSD4 models by mounting a Stewart shell on an Atlas chassis, and the 1688 was built similarly. The following is a general description of the process. First, the Stewart shell had to be mounted to the Atlas frame so the walkways were level and at the proper height. The Stewart undecorated shell came as an unassembled kit with flat castings.

Before any assembly was started on the shell, I fit the walkway casting to the frame. To get the walkway to sit on the frame properly, a Dremel tool with a cut-off wheel was used to machine a flat surface on the bottom of the walkway casting. Once the fit was right, the Stewart shell was assembled.

On my models, I prefer a shell mounting method that is strong, but also one that's quick and easy to disassemble when service is needed. To accomplish this, metal blocks with 2-56 tapped holes were glued into the ends of the shell with CA adhesive. Slots were cut in the ends of the frame that line up with the holes in the metal blocks. The shell was then screwed to the frame with two 2-56 screws that go through the frame slots and thread into the metal blocks. There is ample room on each end between the coupler and truck to access the screws. There are no stubborn shell locking tabs and frustration to remove the shell.

The Atlas cab is fastened to the walkway using the same method, using metal blocks with tapped holes. Metal blocks are glued to the sidewalls of the cab, and screws are used to fasten the cab to the walkway. When assembled, the Stewart long and short hoods are one assembly. The front and back walls of the cab slide into slots in the hood assembly, which locks the hood assembly into place when the cab is screwed to the walkway.

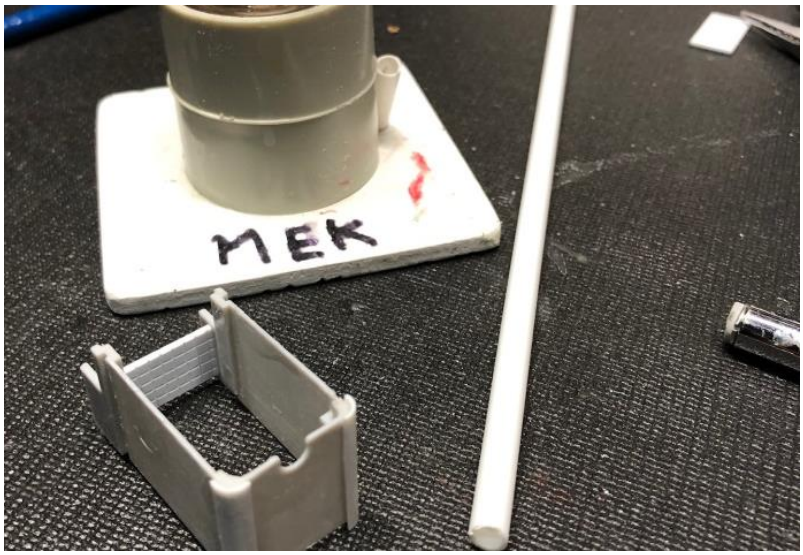
This shows the Atlas frame mounted to the Stewart shell.

Building the high short hood:

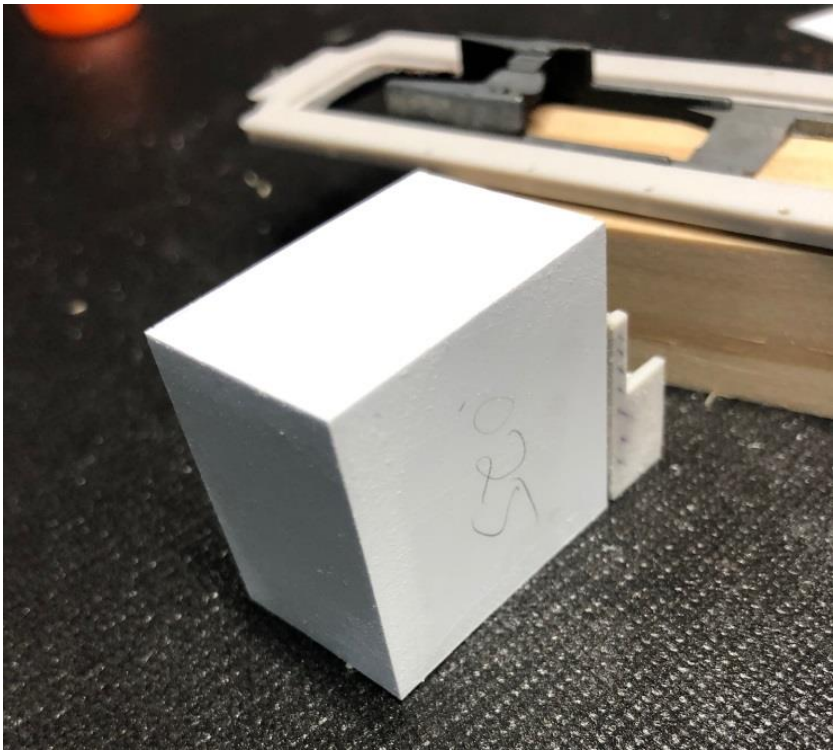
The high short hood was built using the existing Stewart short hood. The Stewart shell comes with the sides of the long and short hoods cast in one continuous piece. I separated the short hood sides from the two hood side castings using a razor saw. Using an end mill in his drill press, my friend Luke Lemmens milled .020" from the exterior surfaces of the sides and end pieces. The sides and end were then glued together and .020" thick styrene sheet with the extended height was laminated to the milled surfaces. The top of the hood was made up of multiple layers of styrene to make it extra thick, so it could be later sanded with the rounded shape.

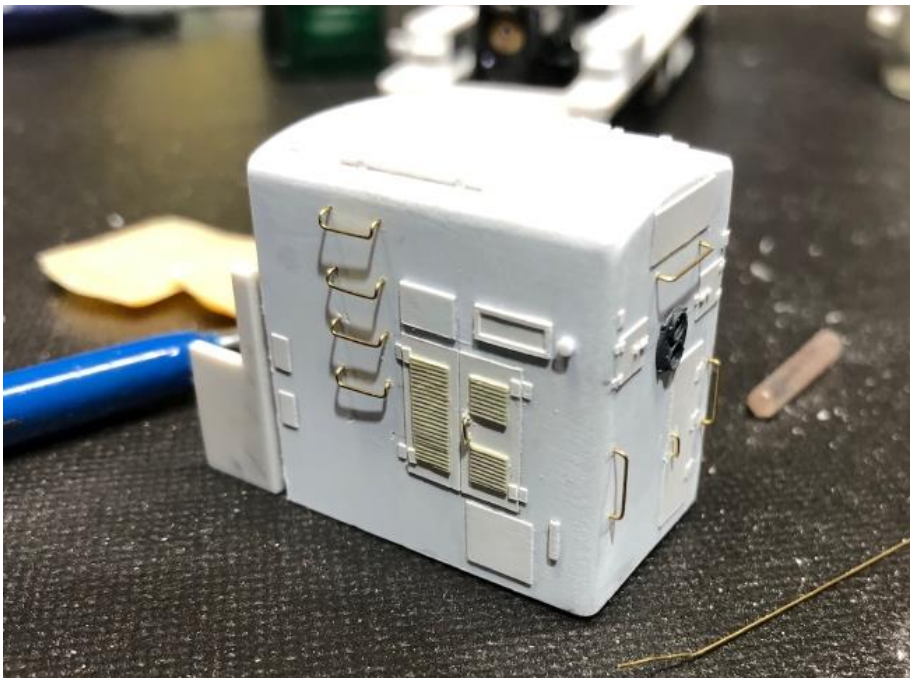
This shows the milling being done on the short hood sides and end. Luke Lemmens photo.

The C&NW high short hoods were unique by having a smaller radius on the corners. To model the smaller radius, pieces of styrene tube were cemented to the corners to build up material for the smaller radius. The corners were sanded square, before the higher sides were laminated on.



The short hood is shown here before shaping the top and corners.

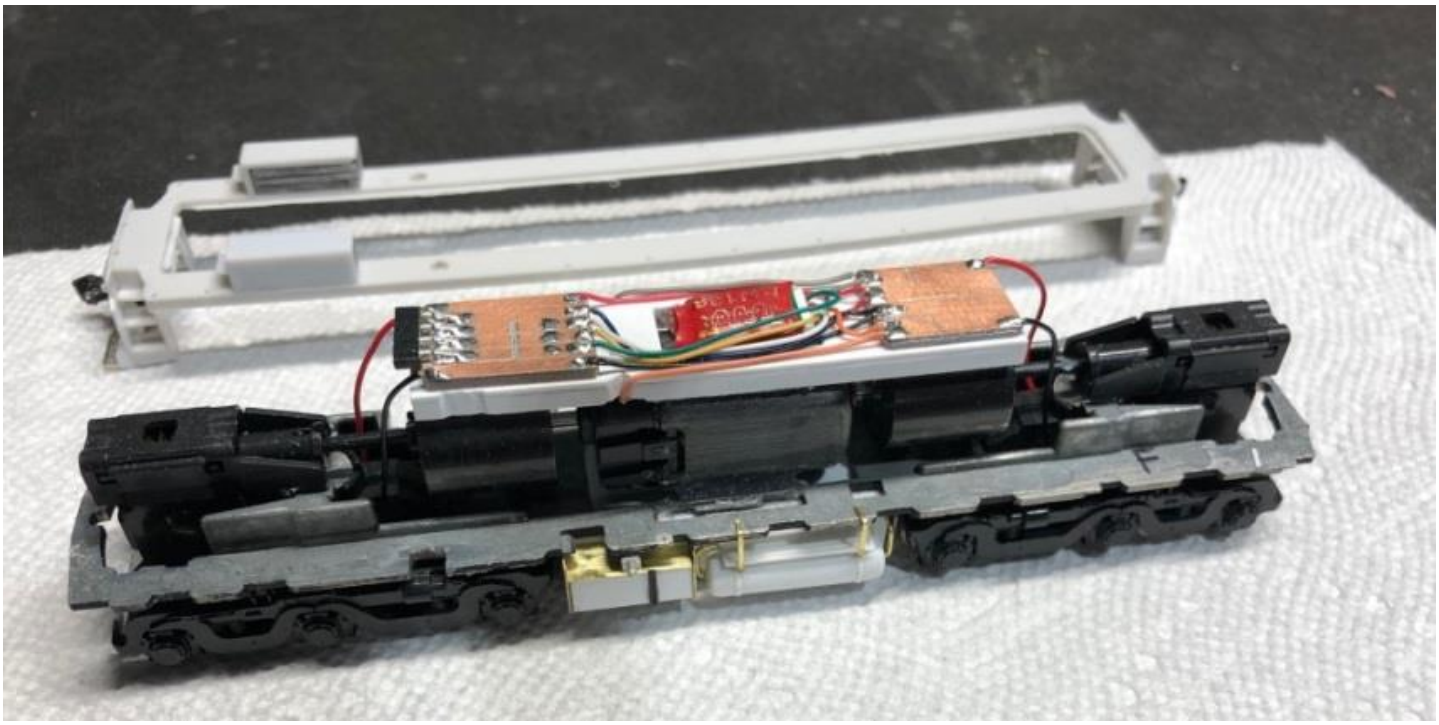




The short hood is shown here after all of the details were added and before it was reattached to the long hood.

Modeling the fuel tank and air reservoirs:

The fuel tank on the Atlas chassis was very different from the prototype, so a new tank was scratch built from styrene. The plastic fuel tank casting was removed from the chassis and the large block of steel on the bottom of the chassis was removed using a hacksaw and file. The modifications to the chassis required a new motor mount to be made using GE Silicone II sealant. The sealant provides a slightly flexible but strong bond between the motor and frame which minimizes vibrations from the motor. The sealant can be easily cut away with a knife should the motor ever need replacing. To add ballast, the new fuel tank's core is a solid block of lead. New air reservoirs were made using styrene tube.



This shows the new fuel tank, air reservoirs and the chassis final assembly. Blank PC board material was used to make circuit boards to organize the DCC decoder wiring. Circuit traces were made by scribing breaks in the copper laminate. When the photo was taken, the current limiting resistors for the lighting functions had not yet been added to the circuit board on the left. A 4-pin connector, on the far left end of the left PC board, provides a removable connection for the lamp wire harness from the shell. With the space limitation of the low Alco hood, a Digitrax N-scale 3-function decoder was used.

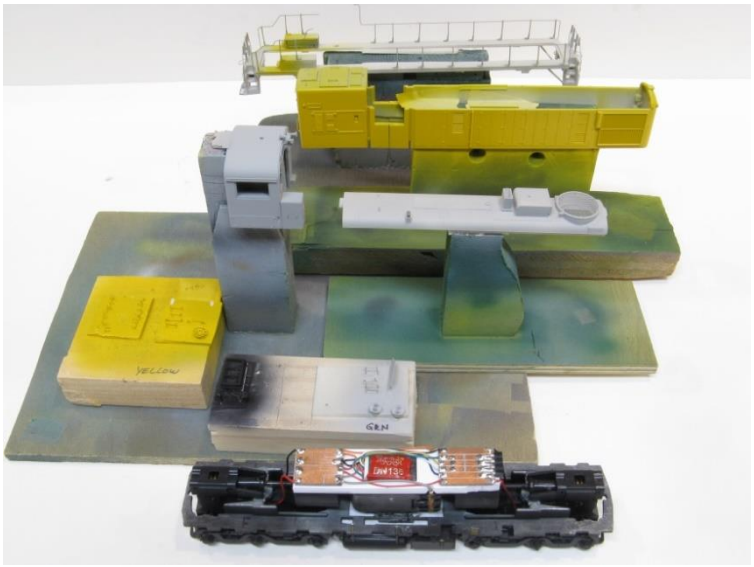
The rest is just details:

With the shell assembled and mounted to the chassis, all that was left were the details. All of the cast-on hood door handles were removed and new handles were made using .008” brass wire. The paint was removed from the Atlas cab with Chameleon paint stripper. On the pilots, the steps were one solid piece and didn’t look very prototypical so I removed them and built new steps from styrene. The handrails were made using brass wire and Smokey Valley stanchions. The end handrail stanchions were made from brass bar and the grab irons were made using .012” brass wire. The top of the cooling fan was removed and a Detail Associates etched brass fan grille was applied. A crank case breather was made from styrene and added to the long hood. The rear pilot footboards were removed and new footboards were made using .010” x .030” brass bar and scraps from a Plano Apex roof walk. The plow on the front pilot, the winterization duct behind the fan and the standby heater cabinet were all fabricated from styrene.

These two photos show the model after all of the details were added. The winterization duct was modeled without the extension that extends over the fan.

Painting:

My biggest challenge when airbrushing a model with two or more colors is masking. To eliminate as much masking as possible, I disassembled the model before painting. Since the green and yellow separation line at the top of the hoods was exactly where the Stewart castings joined together, I left the long hood top casting as a loose piece until after the painting was completed. I also temporarily removed the grab irons and hood door handles to allow the tape used for masking to lay flat. I'm currently using Model Master acrylic paint for my C&NW colors, which is no longer produced. I have a good inventory of the colors I use, but at some point I'll need to find a replacement. I use Chrome Yellow for the C&NW yellow. The green is a mixture of six parts Green Gloss, one part Gloss Black and a few drops of French Blue. The decals were from Microscale set No. AH-290 and a few pieces from my decal scrap box.



Left: The model was disassembled and the pieces were mounted on painting fixtures made from wood blocks before airbrushing. Double stick tape was used to secure the small parts to the wood blocks.

Below: The painted reassembled model before weathering. The hood door handles and window glass will be installed after the weathering is completed.

Weathering:

In the 1970's the C&NW's Alcos were seldom washed, and some of them turned nearly black by 1980. My modeling era is 1976, so I used photos of 1688 in approximately that time period for weathering references.

To start off the weathering, the model was disassembled and the carbody filters and radiator shutters on the long hood were masked off and sprayed with Railroad Tie Brown. Next, thinned down black paint was hand brush painted around all of the hood doors to accent the details. A 50:50 mixture of Grimy Black and Railroad tie brown was lightly airbrushed over the entire model and black was airbrushed on the top surfaces of the long hood and cab to simulate exhaust soot. Following the prototype photos, the black-brown mix was also airbrushed heavier in a few areas.

On the sides of the hoods, a pencil eraser was used to rub off some of the spray, to simulate human contact that rubs off dirt on the prototype. Color photos for reference are a must when weathering. The Kadee #58 scale couplers were airbrushed with a 50:50 mix of Rust and Railroad tie brown before they were installed on the model. A small file was used to polish the coupler wear points. After installing the cab glazing and hood door handles, the model was complete.

List of parts used:

Atlas RSD4/5 (made by Kato)

Stewart RS3 Phase III shell kit (no longer available)

Smokey Valley #108 Handrail Stanchions (no longer available)
Detail Associates GR2703 Cooling Fan Grill
Details West AH-186 Nathan M-3 Air Horn
Details West RB-126 Western Cullen D-312 Rotary Beacon
Cal-Scale #190-280 Marker Lights
Hi-Tech Details #6034 Diesel MU Signal & Air Hoses
Scratch built: short hood, fuel tank, air reservoirs, winterization duct, front pilot plow and standby heater cabinet

(Editor's note" KVmodels.com has etched brass Alco handrail stanchions. No connection, we're just trying to provide info to our readers.)

PHOTO GALLERY

Once again, it's my privilege to show some of Clair Downs' excellent work. Clair also wishes me to note he does custom work for others.

In any case, we like his models!

Clair says, "I chose 901 because of the SD50/60 style exhaust hatch. Seems like I read somewhere that CNW experimented with this but I may be wrong. They could have just used what was lying around. Both units have a lot of extra details added from C&C, Details West, Detail Associates, Mike Rose Hobbies to name a few.

All are DCC ready, no decoders added. Proto 2000."

The oil all over the fuel tank makes me wonder if there's something leaking in the engine compartment.

Personally, Ye Editor really likes the subtle weathering.

Next we have an all black SD-45. Black can be difficult to weather, but I think Clair did a great job.

He says: ”Another P2k unit. Ex PC unit. I built this one mostly using one photo from the 2019-1 issue of NWL. It was a somewhat overhead view that gave me the basics. I'm also midway through building another CNW SD45 w/o dynamic brakes, 962. P2k as well.”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