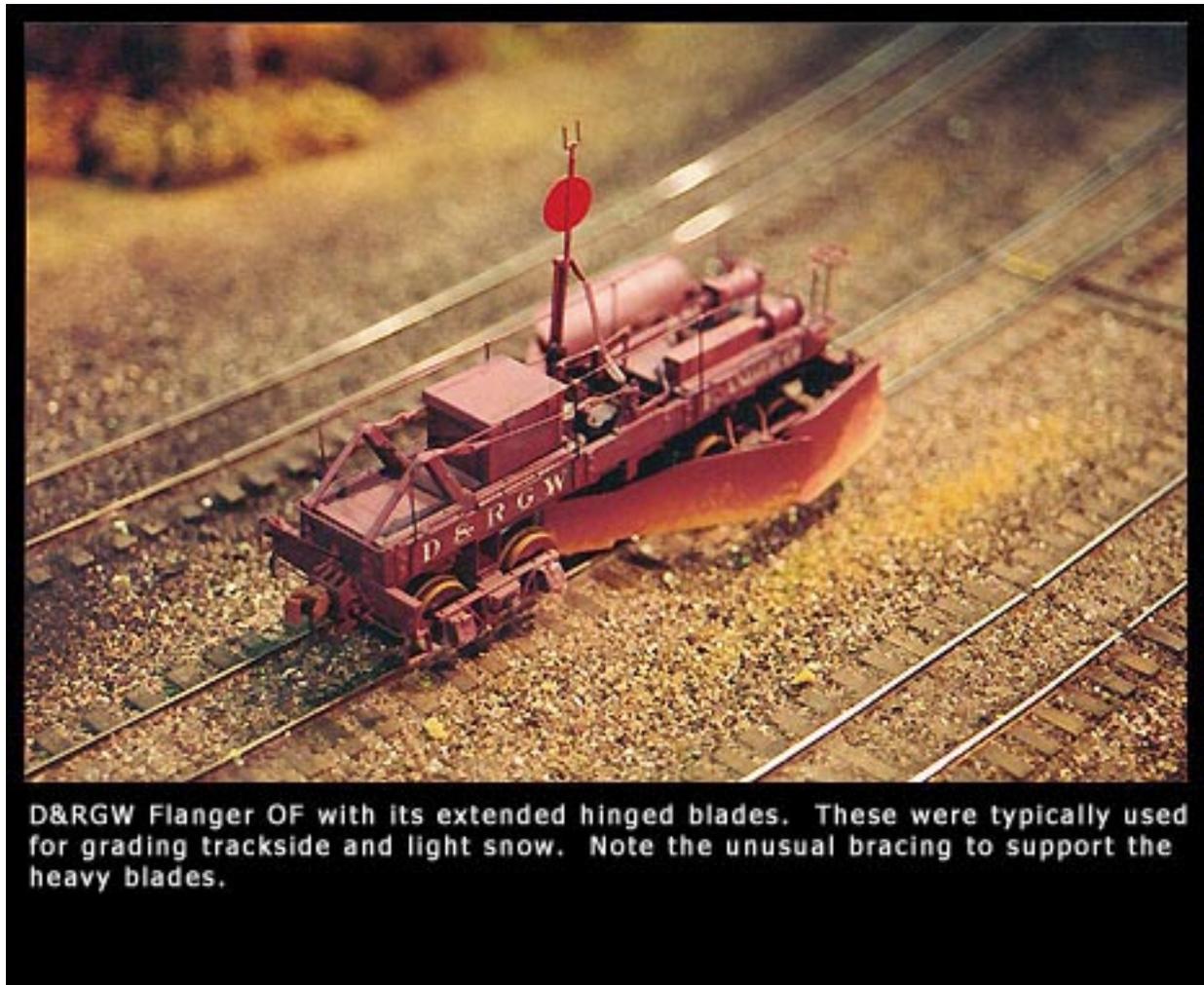


The narrow gauge work equipment of the Denver & Rio Grand Western has always interested me. I like the way each of these cars differ from all the others, and how each reveals the ingenuity of the shop workers who rebuilt and repaired it.



D&RGW Flanger OF with its extended hinged blades. These were typically used for grading trackside and light snow. Note the unusual bracing to support the heavy blades.

In the July/August 1990 Gazette, I described my On3 version of the D&RGW as it was in October, 1937. When I needed more rolling stock, I decided to build a model of each piece of work equipment in use on the railroad in 1937. I knew that models of Rotary OM, ditcher OX and flanger OD had been imported to the U.S. in brass; and that kits for the derrick OP and Marion steam shovel OQ were once available from Durango Press. But I knew of no models or kits for the flangers, OC to OL and OT. Thus, I was delighted when I saw San Juan Car Company's ad in the March/April 1991 Gazette - it announced a kit for flanger OD. I could easily add shrouding around the blade-raising mechanisms and make other changes as needed. Thus I knew I could easily convert the San Juan kits for OD into flangers OC to OL and OT. Combining these kits with what was already available, I could have the entire flanger fleet on my railroad. It is good to know that San Juan also sells the parts of OD separately.



D&RGW Flanger OI with a standard blade. This is a modified San Juan Car Co. kit of Flanger OD. Note the target that indicates whether the blade is up or down.

There were wood-framed flangers in service in October, 1937, but I was interested in building the steel framed flangers first. (In a later article, I will describe how I rebuilt a Durango Press Rio Grande Southern flanger into a D&RGW wood-framed flanger.) I decided to start my steel-framed flanger fleet with OC, OF, OH and OI. They had been rebuilt with steel frames in 1937, and were still in service then.

I looked for the best flanger photos I could find, and settled on the photos in *Narrow Gauge Pictorial*, Vol. VII (1989, available from R. Robb Ltd.). These photos showed me that while OC, OF, OH and OI are similar, they did have subtle differences. I followed the San Juan instructions with changes to suit the flanger I was building. For example, Fig 1 shows the changes I made to convert the San Juan kit to represent OI. The changes noted there and in the text below are keyed to the numbered steps of the original San Juan Car Company instructions.



Here are three flangers, OF, OI and OB in storage in Chama. All have steel frames.

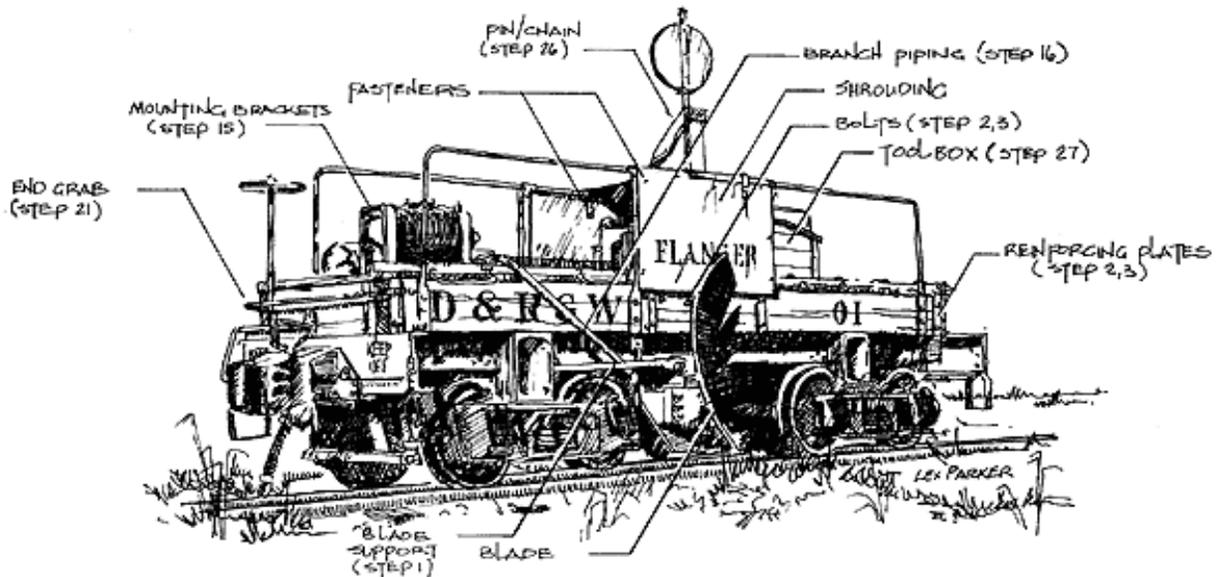
Miscellaneous Details

The toolboxes have different shapes and locations on each flanger. Some toolbox lids were covered with sheet metal, and some had corners reinforced with steel. You can use thin styrene or thin glossy magazine paper to represent the sheet metal. Be sure to add the hasp/lock from Grandt Line. Leave the toolbox lid open if you want to reveal details of tools stored inside. On some flangers, the brakeroad cover was absent. Some flangers had reservoir mounting brackets (step 15) that had splayed legs - OI didn't, so the OD brackets worked just fine. Also, OI had sloped branch piping (step 16) but some other flangers had vertical piping.

Weighting

Before gluing on the top deck, I added weight to make my flanger track better. I used the NMRA standards for HO as a guide to weighting my equipment, i.e., a base weight of 1.5 ounces plus 0.5 ounce per inch of length of the car. My finished flangers weigh 3.75 ounces. To calculate how much weight to add, place all the components, including trucks, couplers, and

brass parts on your scale and weigh them together. You can fill the tool box and weight box on each flanger with additional weight if you wish to.



Shrouding

OI was one of the flangers that had sheet metal shrouding to protect the moving parts of the blade-raising mechanism from snow and ice. If you wish to add shrouding, install the handrails first, then add the shrouding based on photos of the flanger you are building. I made my shrouding from thin styrene sheet. Before assembling the shrouding, I added small dents and creases to simulate minor damage. These dents were a good place to apply some rusty weathering.

Notice that the top sheet of the shrouding on OI folds over the side sheets. After deciding where to place the rivets and fasteners, you can simulate them by pressing dimples into the styrene from the backside. (The dimpling suggests rivets, but nut/bolts/washers could be used if you prefer.) Small metal brackets hold the shrouding to the handrails. These too were made from styrene strips, carefully folded, dimpled and aligned and glued with MEK.

Blades

I left the most difficult change, the blade, to last. The photo of OI in *Narrow Gauge Pictorial Vol. VII* shows a high sculptured blade. I could have used styrene or cardstock to make my new blade, but, I decided to use sheet brass. The "V" shaped plastic casting from the kit is important as it supports the blade, and provides an accurate angle.

As I did not have any dimensions to work from, I decided to use the plastic blade supplied in the kit as a starting template. I traced one half of the kit blade onto a piece of paper. Then, using the photos, I modified the outline on the paper to resemble the prototype blade of OI. When I was satisfied, I traced this pattern onto two pieces of brass sheet. These were then cut roughly to

shape, "sweat-soldered" back to back, and filed to their final shape. These pieces were heated, separated and dressed with a file and emery paper. Each half was annealed and carefully rolled around a piece of 1" diameter pipe to form the curve of the blade. I tried to keep the bottom leading edge of the blade parallel to the centreline of the pipe.

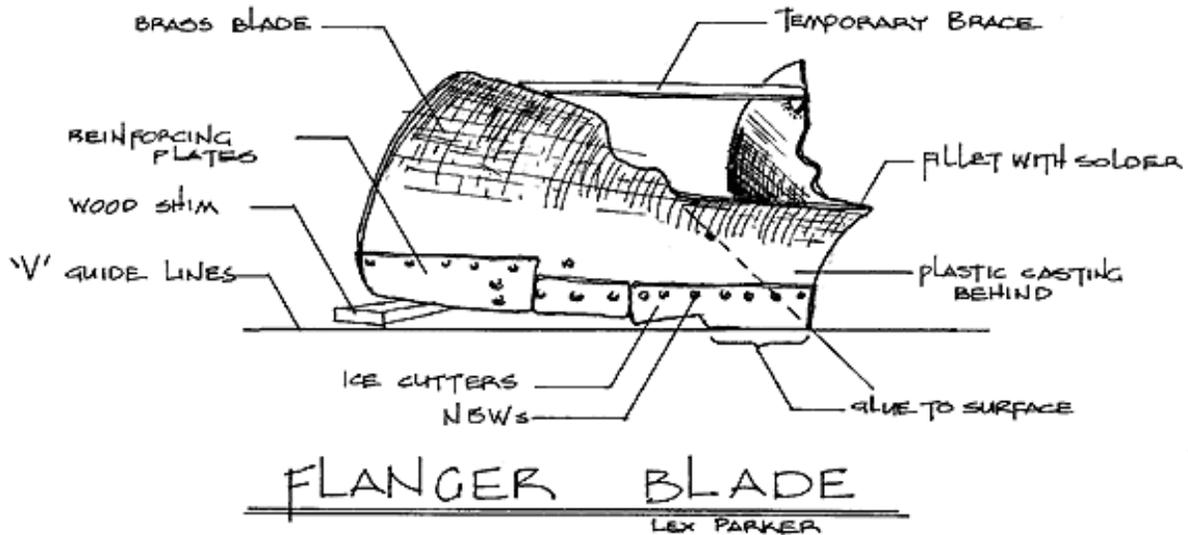
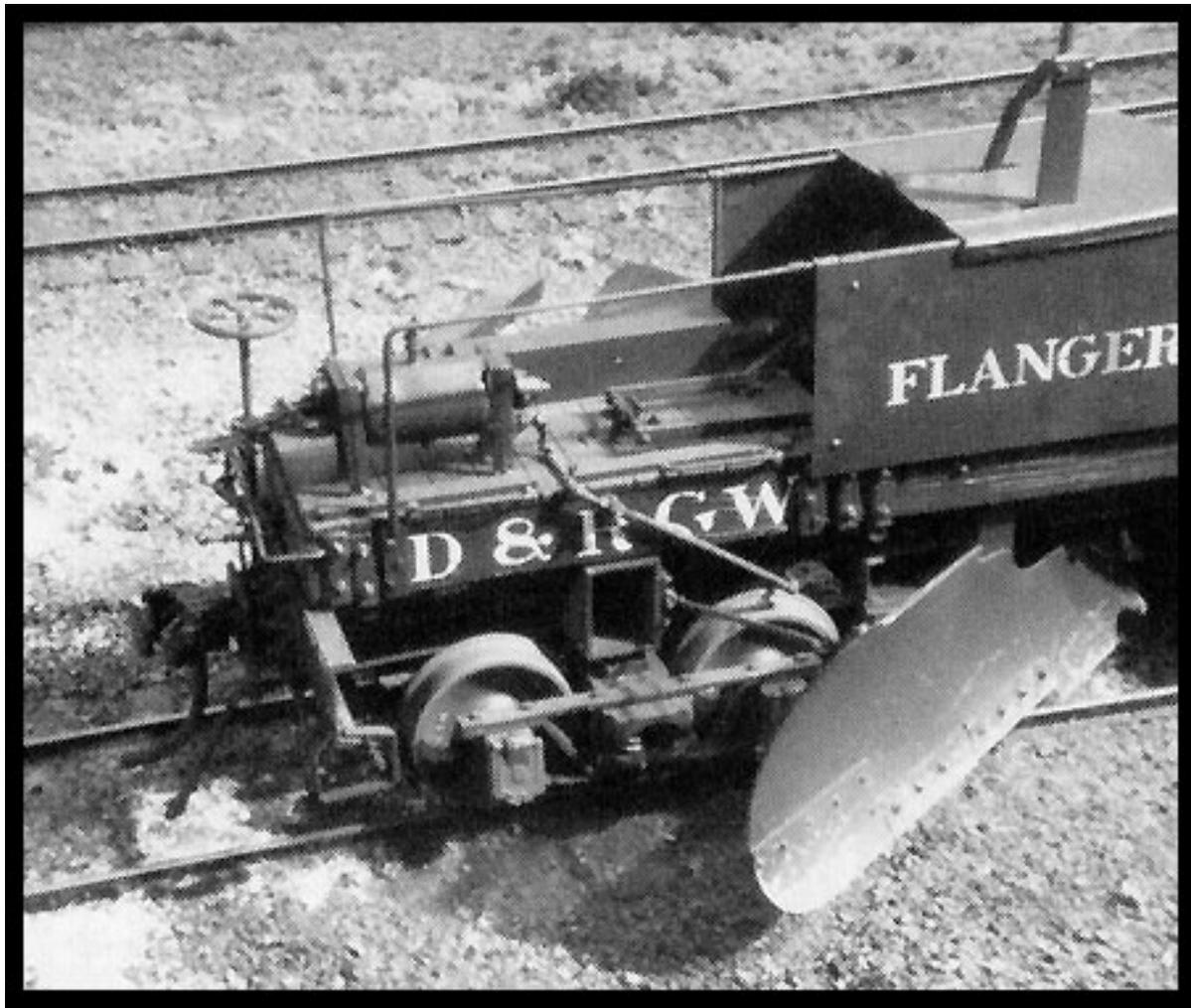


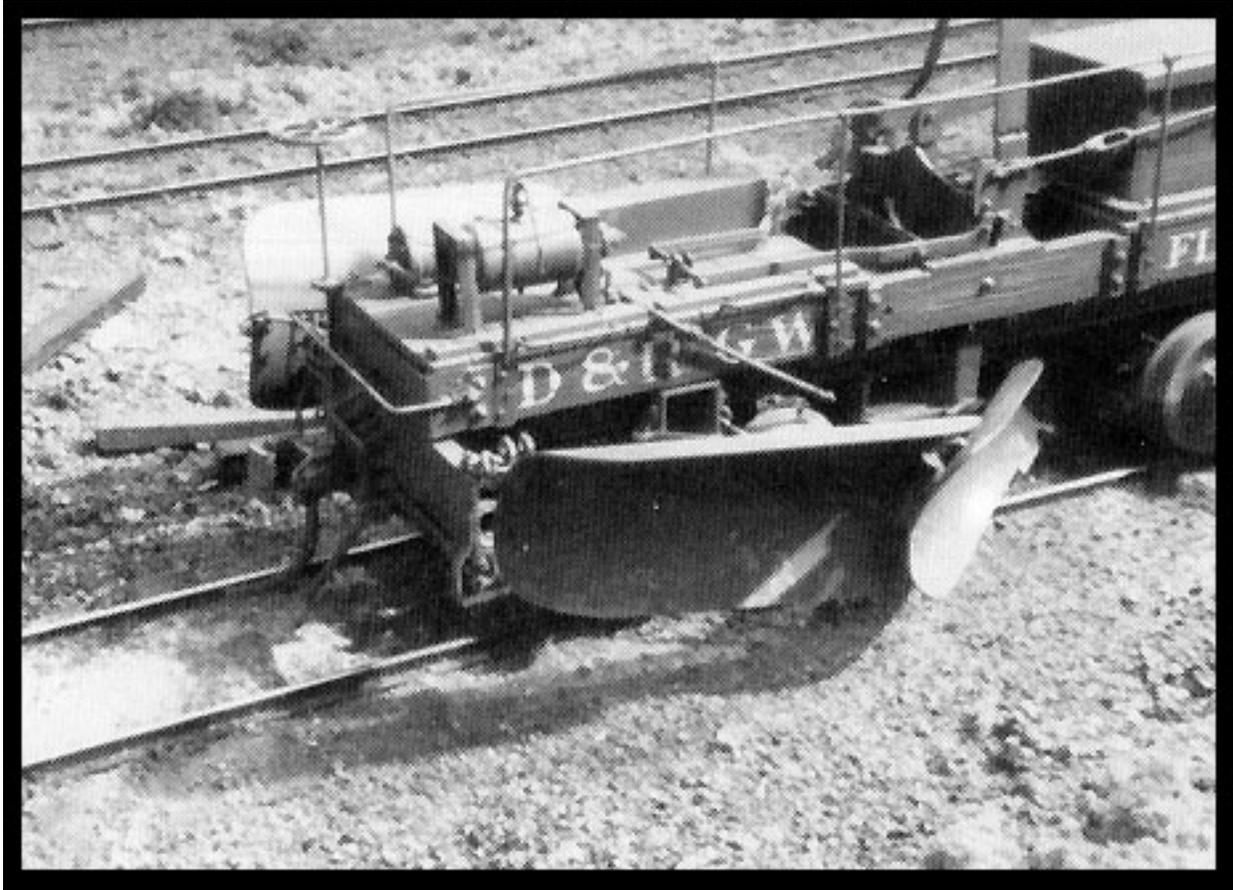
Fig. 2 shows how I put the halves of the blade together. The leading edge of the "V" joint where the two halves of the flanger blade join was a bit tricky to shape. This can be partly done before rough cutting the blade. Use a template made from the original plastic blade casting in the San Juan kit, and then shape the blades by mating the edges while holding the pieces together. Only one blade needs to fit into the curve of the other at this point as the final shaping can be done after soldering the two halves together.

I formed the angle between the two halves of my blades by using the plastic "V"-shaped mounting block and template supplied with the kit as guides. Fig. 2 (here) shows the blades with their leading edges glued to a plate glass work surface with ACC. The bottoms of the trailing edges of the halves of the blade were supported with wood shims. I removed the plastic mounting block temporarily placed behind the blade, and soldered a temporary brace across the top of the blades. This strap held the halves together, and maintained the correct angle while I put a fillet of solder where the two halves of the blade join. Then I removed the still braced blade from the glass work surface and dressed the joint using a dremel tool disc and emery paper. Once I was satisfied with the joint, I removed the temporary brace.



Next I added the final details to the blades - ice cutters and repairs to the steel plates and reinforcing plates. I used both brass shim stock and styrene with nut/bolt/washer castings. Some blades had holes in them that were left over from being attached to other flangers. I drilled the holes appropriate for OI and attached the plastic "V" brace casting provided in the kit to the back of the blades using ACC. Then I added the brace mounts. Finally, I glued the blade to the verticle guides on the main body of the flanger at the desired height, being sure to keep the blade unit level.

Other flangers required different blade construction. You can see outlines from Eric Bracher (of Rio Grande Models) for all the D&RGW flanger blades in Charlie Getz's "Narrow Gauge Scene" in the last issue of the Gazette. Flangers OF and OL had hinged extension blades. When I built OF, I found that small brass dollhouse hinges were strong enough to hold the blade extensions. OF has an interesting brace structure to support the added load of the extended blade. This brace was simple to construct using styrene, brass wire and turnbuckles. Both OI and OF carry steel pole braces for the outer blade that are stored on the deck



Painting

Before World War II, the work equipment of the D&RGW was painted red. I like to paint each piece of equipment a slightly different shade suggesting that the paint came from different batches and was applied at different times. Exposure to the sun and weather lightened and bleached the red-painted equipment as it aged. I use Floquil Boxcar Red for a freshly painted car, and Rock Island Maroon for a weathered car. Different mixtures of these two colours can yield many interesting shades.

The lettering on the sides of the flangers varied depending on whether it had a blade extension or shrouding. Compare photos of OF, OH and OI and you will see "FLANGER" stenciled on the frames of OF and OH and on the shrouding of OI.

I hope this article will encourage some of you to get some kits out of their boxes and modify them so you can have more than one flanger operating on your layout

