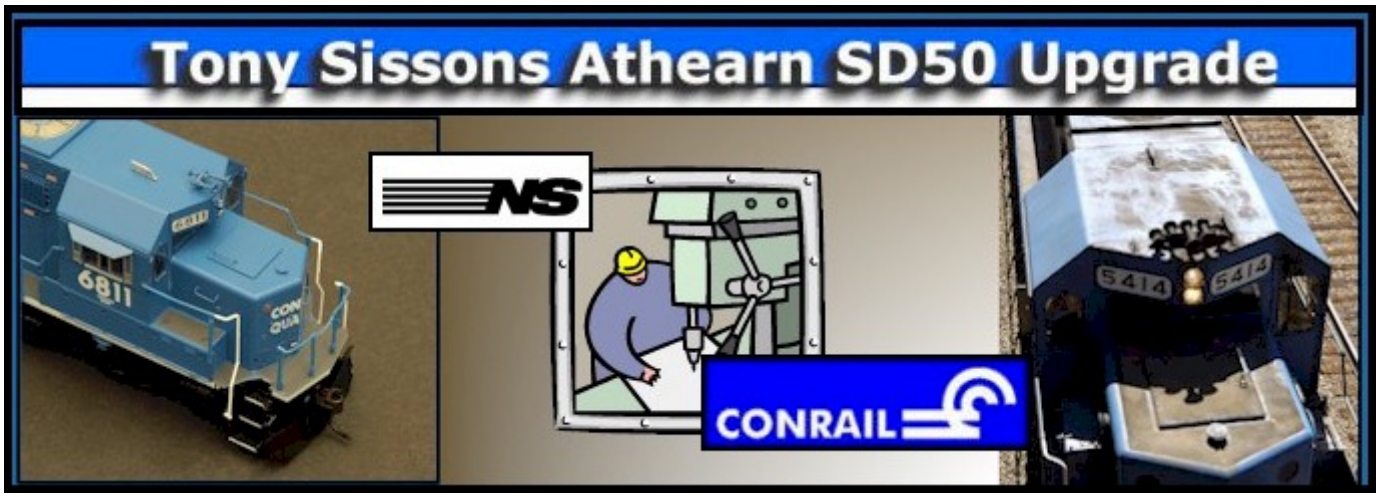

Here are edited "NSModeler" Yahoo group posts that were made by Tony Sissons as he conducted an overhaul project for the HO scale Athearn SD50. Several of his detail techniques are highlighted as Tony shows us his unique modeling style and fine craftsmanship. – *Steve Smith*

Page 1

Hi Guys,

Bobby Pitts was right; this e-group has gone to sleep. After Bobby's comments about the Athearn SD50's, which he posted the other day, I decided to get mine out of the box and give it a once over and compare it with recent photos I have of NS patched SD50's. Depends on how far you'd like to go with this model but I counted a total of 40 items that I would certainly give some attention too. Some are minor and there's a couple that are a little bigger, especially around the fuel tank area and the truck sideframes. So, after jotting down my notes, I thought it might be an idea to crank up Bob Harpe's NSmodeler list and do a kind of mini clinic on here as I plod through he changes I'll be making to my Athearn SD50. My goal is to do the minimum amount of damage to a decent off the shelf model, minimum amount of expenditure in detail parts and get it so that its half way presentable, meets muster and can sit alongside several of my other models at Savannah 2007.

To be specific about this, this is not a clinic in the manner our resident master clinician, Bob Harpe presents, this will be more like a rambling string of e-mails carrying my stupid ideas, mistakes, errors, mishaps and senior moments, nevertheless revealed to all in full color as I move along with this project, you may even get to see the blood and guts, given you don't hit the delete key, which is always an option. To make a proper start then the pic attached shows how ham-fisted I can be. I have already broken a portion of the handrail, both front and rear, whilst photo'ing all the areas of this model that need attention, now another item has been added to my list that I'm going to have to repair or replace. Not decided yet, but I will.

My selected prototype is NS 5424. I have a number of photos of 411/5418/5427. If anyone has a hankering to do 5414, this is fitted with a 5 trumpet horn btw. Those others I have mentioned all have

original CR 3 trumpet jobbies. The list of stuff, either to add, replace, or butcher with the knife as per my comparison of the model against photos is as follows: BTW try to avoid item 41 if at all possible.

- 01 Hand grab on top of low nose to be changed to drivers side
- 02 Hand grab on side of low nose to be removed - drivers side
- 03 Add hand grab on front of step - drivers side
- 04 Add vent on drivers side of low nose
- 05 Fit 2 antennas to roof of cab
- 06 Re-number to chosen prototype
- 07 Patch cab side
- 08 Remove rear mirror - both cab sides
- 09 Add NS cab door lock
- 10 Add sand pipes
- 11 Add fuel tank end overlays
- 12 Add details to ends of fuel tank
- 13 Add windshield wipers
- 14 Add MU hoses
- 15 Modify plow
- 16 Add ditch lights
- 17 Drill out class lights and blank off
- 18 Paint top of nose black ..
- 19 Remove center damper on all truck sideframes
- 20 Remove center lump on truck sideframes
- 21 Plug center hole in truck sideframes
- 22 Replace couplings with Kadees
- 23 Add CR toolbox
- 24 Fit etch steps A Line
- 25 Pipe air reservoirs
- 26 Fit cut levers
- 27 Add step lights
- 28 Add additional box behind cab - conductors side NS 5424
- 29 Add brake tensioner & chain
- 30 Fit lifting eye bolts to locations on roof
- 31 Modify fuel sight gauge
- 32 Add spare knuckle coupling holders
- 33 Modify rear pilot with larger plate
- 34 Modify lifting lugs both sides
- 35 Add lifting lugs rear/top of long hood
- 36 Add lifting lugs around dynamic fan

- 37 Add AEI tags
- 38 Lower horn height
- 39 Modify/replace grille behind cab - both sides
- 40 Remove cab sunshades
- 41 Repair/replace broken handrail both ends
- 41a Make good all errors and paint over them - then weather to hide even more errors that paint couldn't. :) As in 'handrails'

I'll be posting pix as I go along.

Page 2

This evening we can take a closer look at the issues in the list of jobs I set out on page one. My intention is to go through each item both as per the prototype and the model. This way we will get a better appreciation of the work in front of us, (for those who are going to take this up as a project that is). It will also give time to think how you are going to approach each individual item/problem. Some are no brainers, of course, but others will take a little more work. No doubt there are some highly skilled modelers reading this, not trying to get you guys to suck eggs but I also know that there are some less skilled modelers on here who want to learn. I'm not a master modeler by any means but I hope that some of my skills that I have learned rubs off on those who haven't made as many mistakes as I have in their modeling. Please, don't be shy with any questions either. The more asked the greater the discussion the more we all learn.

Yahoo has some file size restrictions and although it would be nice and convenient to post all of the pics of one subject item in one hit, that will not always be possible. I could reduce the size of the photos but, nah, they suck that way. So I'll be keeping to the page numbering so that everything will be on order, again, senior moments permitting. Such is life.

Tonight I'm starting with the roof and sending down three pix in all. 5414 with a five horn cluster and 5416 with a 3 horn cluster. The 5 horn cluster (K5 I believe) is available from Details West, AH-252. Note on these pics you can see clearly the additional roof antenna, which the model does not have, only a single Sinclair. Plus the position of the low nose hand grab which has to be swapped mirror fashion to the opposite side of the nose on the model. You may also note that on the drivers side of the nose there is a vent, this is not included on the model either. Both upper surfaces of the low nose have been painted black too.

I have matched the list numbers of the stuff that needs to be looked at in the model photo. Suffice to say, I didn't mention the addition of the CR tool box, that is in the no brainer dept, not so much anything other than obtaining a toolbox and sticking it on. Page three (3) will have the 5414 roof image & Page four (4) will have the 5416 roof image.

Page 3

Page three with 5414 roof pic.

Page 4

Page four (4) with 5416 roof pic

Page 5

I continued my walk along the roof and made a stop at the dynamic fan after noticing the difference between the lifting lugs that are molded to the model and the p/type jobbies. Photos say it all, don't they...?. These are easy to make and the originals are easy to slice off with the blade.

Page 6

I'm still walking along the roof and stumbled on these four 'X' panels. The 2 pix attached indicate a problem area. Not decided at this juncture how I'll go about this, but I will. Those 'X' panels can't stay. Something to think about how this is going to be achieved to look good when done - but resistance is futile. The model photo doesn't show these rectangular 'X' panels up all that well, but they are there on the model I have.

Page 7

Well, I've jumped down off the roof and tonight we'll start our walk from the front to the rear of the loco.

From this point all prototype photos will be of the NS 5424. I do have some detail shots, but not as many of 5411/5418/5427/5416 so if any of you guys want to do one of these engines, say the word.

The front of the Athearn model does leave a lot to be desired. The comparison between the p/type and the model is pretty much self evident. Depends what the plow looks like under studied detail we can decide if its worth going with a new Details West one. However, with some skilled rectangular aperture cutting and making those 2 doors the original plastic one supplied may look OK. MU hoses, airline and such are pretty much a regular standard replacement job. D/West will probably be fitted as they will be chosen for the MU receptacles and d/lights. Had a few e-mails in concerning the embedded or attached. 2 for attached 2 for embedded. So...? I think we'll try embedded for the nest couple of e-mails and see how that goes. Jon Schuknecht feels that embedded makes the text with photos easier to follow and I must say I'm inclined to agree. However, this is a test to see if yahoo will carry both embedded and attached pics. If so, then it's a good deal all round, both camps are satisfied. So, maybe yahoo will have a will of its own, as we all know it can form time to time. Let's see how it goes.

Roger informs that he escaped the other nights foul weather. Glad to hear it, he was holed up in a closet in his garage the weather was so bad. I received a very informative email from Josh Blevins in Charlotte, NC. He talked to me about the truck sideframes and some of the differences with them and made some

great points. I'll be getting to these during the weekend I should think and I'll be cutting and pasting Josh's pertinent paragraph from his email to me about these for all of us to read and inwardly digest. Wishing everyone here a darn decent Saturday, meanwhile

Page 8

Intentionally Left Blank

Page 9

I noticed something that will have to be put right. Look at the dynamic brake air intake grille. Check the photo of the model I sent down with page 8 and compare it with the prototype photos of both 5414 and 5424. Stevie Wonder would be able to see the difference. Anyway, a replacement using a Cannon part I believe will be in order here, no way can I leave it as per Athearn's rendering of this component.

Page 10

November 19th. Side frame day and the start of looking deep into detail changes I see that are required. I mentioned that Josh Blevins sent me some very interesting info about these. I don't have a full and comprehensive working knowledge of the variations used over the years and what Josh says makes sense. Here is the paragraph he wrote in an e-mail to me.

"The SD50 is looking pretty good so far. I didn't notice but are you going to change out the trucks? The Conrail units actually ride on trucks from trade-in SD35s I believe with the extra brake cylinders removed and new journal bearings. I think I've read some where that you can swap out the trucks with the Dash-9 trucks and use the SD9 or SD45 side frames. What's really neat is if you use the DW-244 journal bearings glued to the axles so that they spin with the wheels. I did this with a L&C SW900 that I've been working on".

Josh makes good points. I'm a model maker rather than a railroad modeler and all I do is make what I model look like the photos I take of it. I had no idea that CR SD50's ran on trade in SD35 trucks, thanks Josh for that info. That's always good to know. It has changed my approach slightly now. I feel more comfortable at least to start with in getting my butchers knife out and carving up these side frames knowing that if I screw up I can always get hold of a pair or more, of Athearn truck side frames. Maybe some of you who are going to work along with me will go straight for the replacement side frames..? But the original theme of this quasi clinic was to use what Athearn delivers and turn it into a respectable RPM table display as economically as possible. So that is the way I'll go and try to use the side frames that have been fitted to this model as I have it.

If you can print out the attached image, do so, I know I'll be referring to it a lot during the modifications that are required. Page 11 will be along next with a photo of the model tagged with some comments, as I do.

Page 11

I'll be following on from the prototype truck photo - page ten (10). Here is what Athearn have fitted to the SD50 I have. It's quite different for sure. Now why would they have done that...? All e-mails will be read and inwardly digested.

Page 12

Not got any response to the truck side frame question as yet. No doubt many of you are on travel or getting ready for Thanksgiving. Maybe next week.... Taking a look at the fuel tank and doing the usual - making the comparison of what the model offers and what the prototype has. I see there's a fair bit of work on the fuel tank. All the omitted bits and pipes are reasonably simple and I don't see any difficulties here to make a nice job of the fuel tank and surrounding areas.

Page thirteen will carry some additional fuel tank pictures for comparison purposes. My wishes to everyone for a relaxing day tomorrow, enjoy your turkey. And to those on this list who maybe overseas in the service of the United States military, wherever you are, you too have a safe and enjoyable day tomorrow also. Thank you for what you are doing, great job.....

Page 13

Additional fuel tank photos.

Page 14

Hope everyone enjoyed a pleasant day yesterday. Some additional fuel tank photos for your info file. The more angles the better, I say.

Page 15

Well....about coming to the end of the locomotive walk around, there's several odd items that I haven't focused on at this time but I'll get to them as work on the model dictates. Attached is a general overall roof shot showing some of the lifting lugs along the side and end edges of the roof/body that may well need some work on the model.

Michel, thanks for your fuel tank information you sent across the sea the other day, always good to have it. For the record the fuel tank I measured was a 4000 gal job at a tad under 20 feet long.

I'm on travel now until Dec 15th, so I'll be taking this time to concentrate on other things. When I get back to base here I'll make a start on the model, photos, warts and all. One question, I don't know how

many guys are following along with me and likewise have no idea how detailed, if at all, you would like me to get with this project. I know we have skilled modelers looking in by the same token no doubt less skilled modelers paying attention. Some of you will look at what I present, nod, smile and carry on their own merry way knowing exactly what to do, some of you may not have a single clue where to start or even how to get there. So let me know, guys, so that I can set my parameters to suit. I don't want to bore the pants of you but on the other hand, I don't want to jump over things that are obvious to me but out at left field for others. Let me know what you want and don't be coy about saying so, either.

Page 16 – Plow / Part 1

I wrote in page 15 that I'd be starting on the actual model when I got back from travel. I decided that I'd work on the plow first. Because I will model this plow as close as I can to the image I sent down with page 7. Then the changes I want to make are:

- Open the MU doors.
- Reshape the two lower corners
- Thin down edge profile
- Thin down coupler cut out edge
- Add 2 MU hose doors
- Add hand grabs
- Try to replicate damage to top edge of plow per the p/type photo....?

I think that takes care of the items to do. I tackled the MU apertures first. I have attached two images, one in the initial stages of work. Holes must be drilled into the door areas first then opened up with files until you arrive at the dimensions I have set out in the image. These dimensions are the finished dimensions. The image shows the one aperture initially filed but not to the final dimensions indicated.

Note that the 0.022" dimension is on a curve and the angle of the photo shows the curve and the amount of material that actually remains. However when measuring from the upper and lower lips of this area my calipers indicated 0.022" Be careful when filing this area and make it as fine and as close looking to the photo as possible. If it’s slightly thicker by .005 thou and it won’t make all that much difference, I don't think. The second image is of the completed MU aperture filing job. When it come to removing the plow, cut off the melted plastic tabs from the inside of the pilot and it falls off.

Page 17 - Plow / Part 2

As a follow-up from the images of the front view of the plow on page 16 and once the MU hose apertures are filed to size, the thickness of the original plow can be filed down from the back such that when viewed from the front it appears that the plow is close to a scale 3/8ths (.375") thick. Try to create that fine scale look to it. The thicker it is left the coarser and less believable it will look. But do not make the edges look like a knife blade either as this leaves the merest hint of material to show some thickness.

Page 18 - Plow / Part 3

I see that I sent out page 17 twice in error the other evening. My apologies and I hope that I didn't push some of you 'over quota'. The next job on the plow is to reshape the two lower corners to match the prototype as per the photo I sent down with page 7.

I first file each corner at an angle then glue two scrap pieces of 0.040" thick styrene to both corners. Leave them both for 24 hours so as to ensure that the adhesive is rock hard before attempting to reshape the styrene add-ons. Then it's a matter of going careful with files until you achieve an integrated contour between the new add-ons and the original shape of the plow.

Page 19 - Plow / Part 4

The next stage on the plow is to re-shape the corners. Again refer to the photo sent down with page 7 and don't forget that these techniques can be used similarly on any plow re-shaping job. Using a 'Sharpie' pen, blacken the white styrene. Then mark out the trapezium shape as shown in the attached pic followed by filing the first cut at the angle shown.

Page 20 - Plow Part 5

The next stage is to file to the horizontal and vertical lines. I suggest commencing your file cut somewhere away from any of the guide lines. This will help you to avoid running your file edge past the horizontal and vertical limit lines.

Page 21 - Plow / Part 6

Angle cuts 3 and 4. This takes care of the corner re-shaping job. If like mine, your plow has lots of file marks, this can be taken care of with a little squadron green later. There is still some more modifications to do on the plow yet.

Page 22 - Plow / Part 7

I made this image prior to modifying the corners of the plow. The thickness needs to be reduced by about 10 to 12 scale inches. I filed the back of the plow surface with my file slightly tipped at an angle and ended up with an edge at 0.006" thou. This should give a closer appearance of 3/8th thick steel which the prototype plow looks like. See image...

Page 23 - Plow / Part 8

Well guys, still can't leave the thinning department yet. Now its the turn of the edges of the coupler aperture to get a taste of the file. Nothing big here, just bring the side edges down to as close as you dare to 0.010" thick, or better still 0.006" thick.

Page 24 - Plow / Part 9

The four (4) mounting brackets welded to the back of the plow are quite fancy, incorporating a compound curve. I find this unusual as square and straight cut materials are usually less expensive than cutting curves, even though these are flame cut. But the image I have attached shows how the prototype plow is shaped, at least to as fitted to these ex CR SD50's. So my model plow will be modified to get as close as I can to this shape.

The image of my work at this stage on the plow shows the thinning down in width of the bracket closest to the camera plus the curvature. Space to move a file back and forth is a tad limited in this area, especially to form the curvature. I did contemplate cutting the brackets off altogether and making four (4) new ones. However, the plastic used for this plow isn't the best stuff around and gluing on a complete set of support brackets I felt would compromise the strength of the plow, leaving it easier to be broken off due to my ineptitude in handling some time or other in the future. So I decided on the more a reliable fixture and went with modifying the existing brackets rather than cut them off altogether.

For the outer support brackets I glued a piece of 0.040" scrap to the outer plow bracket, knowing that these brackets will be more easily viewed when the model is sitting on display at an RPM meet. It is a bit easier to shape these brackets than those on the inside and make a superior job of them.

Page 24 - Plow / Part 9A

Note this is part 9a and an addendum to part 9. An image that I decided not to include with the prior two images. I believe that we're at the point that no additional material is needed to be removed from the original plow. The cruel close up image attached, showing up a myriad of file marks etc, illustrates how I filed the large blob of 0.040" styrene scrap down to something resembling the curvature of the upper edge of the outside plow support brackets. Its not possible to discern the rough looking surfaces when the plow is in your hand, at all. So don't be disappointed if your own efforts turn out similarly.

F.Y.I. All this shape modification work only took me around 45 minutes all told, leaving glue drying time to do its work over night. Next stage of the plow is fitting some bits back onto it.

Page 25 - Plow / Part 10

Following on from page 24, thinning down the inside supports. The image attached shows the reworked outside support after I filed off most of the added styrene lump. I gave this some 6 days for the adhesive to totally cure before I attempted filing it. Nothing annoys me more than getting half way through the re-shaping and the original added piece of scrap styrene comes off. Leaving the joint to settle and gets a good bite ensures that it does not. I think that I am now finished with cutting and hacking and am ready to proceed to start to put some things back in order to this butchered piece of plastic. Next up, MU hose doors.

Page 26 - Plow / Part 11

I have used the filler Bob recommended the other day and like it a lot, way easier than squadron green and all the other rubbish I have used over the years. Half used squadron green tube now dumped in the bin. Thanks for that piece of info, Bob, well worth it.

The images show the plow door as it is fitted to an ex CR SD50. In this case it is NS 5411 and the individual parts I have made for one door, minus the main door hinge. I think these bits get me somewhere close to what the prototype looks like. They can of course be fashioned form styrene scrap too. Myself, I happen prefer the alloys like brass, nickel silver and copper to work with. Now to make them all one piece.

Page 27 - Plow / Part 12

Here's another view of the plow to help in the fabrication of them. For the main hinge I used a length of 0.015" diameter brass wire, which I did not show on the previous image of the plow door parts.

Page 28 - Plow / Part 13

We're getting close to wrapping up this plow. These images show a side on view and a full frontal with the hand grabs now fitted in place. The prototype hand grabs are 3/4 inch diameter which calculates to 0.008" diameter at 1:87 scale. So I used 8 thou diameter brass wire, they will thicken a tad when painted but preferable than using anything thicker. The length of the hand grabs is 19 inches from bend center to bend center. I have left the wire protruding thru the plow to replicate the nuts securing the grabs to the plow. These need just a little more trimming to look as close to the prototype image as possible, I think. Once the plow is fitted to the model the imperfections that these close up pictures in the series have highlighted will be invisible. Now its time to give it some paint, after which I reckon it will look something like the plow in my prototype images.

I fancy tackling the truck side frames next. Taking a quick look there seems to be a fair amount to do on these.

Page 29 - Front & Rear Pilot / Part 1

Looking at the front & rear pilots, there's a fair amount of work to do. This is the start of it, removing areas that are unwanted.

Page 30 - Front & Rear Pilot / Part 2

I have attached an image showing the angled slot in the pilot. This is good for all corners both ends.
This represents stage one (1) in the development of the slots on the model.

Page 31 - Front & Rear Pilot / Part 3

The following is an ongoing dialog of the angled pilot slots. Once drilled you can then remove the plastic that remains between the two holes, file and make good per the prototype. For the record, these slots in 12 inches to the foot scale are 4 1/2"W x 9 1/2"L..

So that you are all aware, I have used my modeler's license and compromised on the slot angle. I have increased the angle a very small amount, (a leaning outwards angle toward the steps) I did this on purpose because if I had maintained the angle per the prototype then the #56 holes would have come pretty much bang into the steps. For those modelers who wish to keep the original steps. The dimensions I have given and used will permit making this representative angled slot so as to just miss the original step when the drill punches thru the pilot. For those modelers who wish to use etched steps later on, then the additional clearance will be useful. I also cut out all the top steps at this stage to make it easy to see what I was doing with the drill.

If you wish to bring the angle more in line with the vertical (12 o'clock), move the upper hole .005 - .007 outward and the lower hole the same distance inwards. This will rotate the slot angle closer to the horizontal. Even as I have dimensioned it, I had to hack away the front face of the step so that when looking through the slot from the front you couldn't see it. Its not a problem, but it is officially not dead nuts on, as I would have preferred. This and no doubt other items are caused by the vagaries of using a 'ready to roll' Athearn versus using an Athearn Genesis model, where the compromises during the usual modifications would be far less.

Page 32 - Front & Rear Pilot / Part 4

Thanks to the poor weather, was able to do some work on NS5424. Here's a shot of the finished angled slots. The other end looks much the same.

Page 33 - Truck side frames - Part 1

My truck side frames finally arrived. I studied them and found that there is a lot to do on them. The image shows the original and some of the models that are required on the truck side frames to bring it closer to the appearance of a Phase II Flexi coil C as fitted to NS 5424.

Note: Remove 'A' both ends - Thin down 'B' all three - Modify 'C'. 'D' represents the edges of the main casting. These need to be rounded off to appear more like the prototype castings, i.e. all exposed edges.

Page 34 - Truck side frames - Part 2

We're continuing with the truck models. The prototype image shows the cavities at the end of the trucks, there are 6 of these cavities per side frame. There are none on the Athearn truck side frame. So break out your butcher's knife again. This added feature is generic, as it can be added (or in this case plastic removed) to the majority of truck side frames.

You will also see that I have added a #76 (0.020") hole above the cavity on the model. This may be opened out later, as at this time it seems a few thou small to my eyes, but it's better to leave it potentially smaller than the other way round. I forgot to arrow this hole when processing my image. My apologies…

Page 35 - Truck side frames - Part 3

In part 1 of the truck side frames, e-mail page 33. I mentioned the following....

"'D' represents the edges of the main casting. These need to be rounded off to appear more like the prototype castings, i.e. all exposed edges."

I forgot to add that there are six sharpish corners on the top of the truck side frame that also need to be rounded off in similar manner. The image attached shows the six areas to work on. Lower is the original, upper has been worked on.

Page 36 - Truck side frames - Part 4

I decided to change out the axle box bearing caps to more accurately represent those fitted to NS 5424. I used Details West part # BC244. Three packs are required. The O.D. of the D/W brg caps needed a small amount of filing to remove the mold lines and get them more concentric before lightly pressing them into their respective holes.

Page 37 - Truck side frames - Part 5

The attached prototype images show the sand hose bracket and another 'thing' poking out from behind the truck above the sand hose bracket with the two cables affixed to it. Its on one truck only, at least on NS 5424 it is, conductors (left) side 3rd axle. Could anybody tell me what that 'thing' is? Any ideas...detection device or something...?

Anyway, these features are distinctive enough to be modeled. It means making some scratch parts but they are very easy to do

Page 38 - Truck side frames - Part 6

Drill the 0.018" diameter holes into the underside of the side frame keep plates as the first step in adding the truck details. See image - 6666_nut_bolt holes - Then insert the Tichy Bolt/Nuts into each hole from the top via the cavity using a dab of CCA. When cured cut the end of the bolt that protrudes from the underside of the keep plate and file level and smooth.

Page 39 - Truck side frames - Part 7

Make eight (8) of these 'L' brackets using 0.010" brass sheet. I guess you could use styrene but they would no doubt break off later in the models life. Brass is stronger for the place these brackets will be located.

Once made, bend up accordingly using the prototype images I sent down. Make sure that you have four (4) of each hand, both left and right. The small hole is a #80 and I drilled this so that the sand hose can be easily attached later.

Page 40 - Truck side frames - Part 8

Two views of the completed sand pipe/hose brackets. Using 0.010" thick material is a little heavier than I would wish but these need to be robust. However the thickness will not show at all once the truck is painted and weathered.

The side view shows the small lugs with the hole as large also, but this will be hidden by the sand pipe and if at the end of the day it is too large, I'll get the file out and trip a few thou off the bottom of it.

Page 41 - Dynamic Fan

I'm back from company duty. Somewhat lost continuity with the clinic during my time away but I'll sort myself out. Getting back to it I reviewed the model again and noticed what I think is a small manufacturers defect. The dynamic brake fan hatch was not attached flat to the roof of the shell. It appeared that one edge was poorly fitted and it overlapped the inertial filter hatch a tad. I lifted this off and filed the edge of the dynamic fan hatch a little so that it lay nicely flat.

Page 42 - Dynamic Fan

There are a couple of choices to improve the Athearn dynamic brake grid lifting lugs, make new ones yourself or purchase the Cannon part DB-1801 which comes not only with a nice dynamic brake grid but lifting lugs also. The premise of this mini clinic was to make something out of an Athearn R-T-R loco spending as little money as possible. Since my dynamic fan was off the body and on my workbench, I decided to do something to the three lifting lugs. Athearn's effort is no question somewhat lacking in the look of the prototype. I have detailed a method I used to show this self made alternative.

Page 43 - Dynamic Fan

Here are the lifting lug hole specs and the lifting lug dimensions for those going the do it yourself route.

Page 44 - Dynamic Fan

This is how the new lifting lugs might look on your model if you decide to make these lifting lugs yourself. Your other alternative is the Cannon route.

Page 45 - Truck side frames - Part 9 (Additional Bracket)

This series of mails will cover how I made the single bracket positioned on the left hand forward truck. Image 0408 shows the end of a 0.005" thick brass strip filed to a width of 0.025" and bent up at 90 degrees x 0.0125" long. I also filed the opposite end of my brass strip, which is approx 3 inches long, also to 0.025 in width. I then bend the brass strip into a circle and solder the end to the other, leaving a small overlap of 0.0125".

Page 46 - Truck side frames - Part 10 (Additional Bracket)

I then cut the loop close to the join. See image 0417. I clean up the cut and bend the soldered piece, (the smallest length) over a steel rule, which happens to be nicely at 0.020" thick.

Page 47 - Truck side frames - Part 11 (Additional Bracket)

Image 47 is a closer view at the soldered joint highlighting the 0.0125" overlap or protrusion of one end of the bracket before its cut. Image 47A shows a side on view of the soldered small piece.

Page 48 - Truck side frames - Part 11 (Additional Bracket) *continued*

I have included image 48 and 48A simply to show the soldered bracket from another viewpoint to make things hopefully a little clearer. Note the #80 drilled thru on center. I now clip the soldered bracket from the strip leaving a tab approx 1/4" long so that it can be glued to the inside face of the truck side frame.

Page 49 - Truck side frames - Part 12 (Additional Bracket)

Looking at the air cylinders, they looked a bit under nourished. So I broke down and decided to use a set of Details Associates air cylinders which are far better looking. Part # TK2801. It seemed to me with all this work it was a shame not to give it the best it deserves (See Image 49). Image 49A shows the final truck completed, the other three are almost identical but they do not carry this additional bracket. If you opt to add this detail make sure you select the correct truck configuration. There are differences.

Page 50 - Dynamic Brake Grid Lifting Lugs

Just prior to the Savannah RPM meet I was asked how I make the lifting lugs for the Dynamic Brake Grid. So here goes....

I take a length of brass strip 0.010" thick X .125 wide and clip the corners off one end. I do this simply to make it less tedious to file the remaining brass away. Then I file the angled portion until I'm left with a small pin or spigot at the end of my brass strip. Images show these first two steps.

Page 51 - Dynamic Brake Grid Lifting Lugs

The dimensions I make my lifting lugs too is shown in image 0329. Once you have completed filing the small pin to support the lug, drill a #78 hole on center thru the lug. Then cut it off the brass strip.

Page 52 - Dynamic Brake Grid Lifting Lugs

Here's the last step on the lifting lugs. Holding small pieces like this to file square and down to the final specified dimension is always a difficult prospect. So what I use is a piece of flat stock steel. It must be solid and can come in various shapes as long as two of its edges are flat and square in all directions to each other. I use a rectangular block made from mild steel, it does not have to be hardened either. I position the item to be worked on, in this case one of the lifting lugs so that two edges just overlap the edges of my steel block. Use a dab of CA to glue the lug to the block and leave it a decent while to dry good and hard, say 30 minutes minimum.

Now it is a simply a matter to carefully file the long edge down to the correct dimension ensuring all the time that your file remains square with the small edges. Once done, carefully take a blade and slip under the glued lug and pries it off the block. Go careful so as not to bend it to a different shape. :))

You can do this not only with these lifting lugs but many small items can be held in this manner to enable a more precise shaping of small parts without the frustration of trying to hold them firm enough to work on them.

Page 53 – Fuel Tank Modifications

I've made a start on the fuel tank. Cut it, shortened it and glued it back together again. Made an error and initially removed more than I should and had to put some back, which annoyed the dickens out of me, as the image shows. Nothing of the error will be seen once painted though. The overall length when the fuel tank is completed should be a scale 20 feet (2.756 inches). Because I decided to add new welded ends to the tank at a later stage, the length of the tank after re-joining should be 10 inches less than the final scale 20 feet length at this stage (2.656 inches long).

Because the tank is shorter some material must be removed from both the tank and the chassis so its final fit is on center. I removed the majority of both ends of the chassis casting first with hacksaw and finished off on a mill. But without a mill a file will work just as well. The amount of chassis material will depend on the amount you cut back the shortened tank. See image. Either way, ensure that the tank will fit the modified chassis on center.

Page 54 - Fuel Tank Modifications

After the major mods to the chassis and fuel tank, details can be added. I added tank end plates as I didn't think much of the original Athearn detail, so filed what was supposed to represent these welded ends and made a pair from a scrap piece of 0.005" thick brass sheet. Glued them onto the ends of the tank and filed the profile keeping the edge 0.005" larger than the area of the original tank end. The addition of these two 'welded' end plates brings the final length of the tank to 2.756 inches, a scale 20 feet length.

Note I mark the surface of the brass with a black 'Sharpie' to give my scribe marks more contrast and easier to see when shaping with a file.

Page 55 - Fuel Tank Modifications (detail part 1)

The next detail I added is the fuel tank inspection plug door. The prototype image and my attempt at replicating it are attached. Comparing the two pix now I think I should have come closer to the right hand edge of the tank with the welded plate.

Page 55 - Fuel Tank Modifications (detail part 1 - addendum)

Since posting my original e-mail <<nsmodeler] Athearns SD50 Page Fifty Five (55) Fuel Tank - detail part 1>>, Chris Toth contacted me with additional detail concerning my incorrect nomenclature using the terminology 'inspection plug door'. It is NOT an inspection plug door. Chris has kindly corrected me and I offer his description cut and pasted from his e-mail to me describing this component for us all.

Chris writes:

"[I] saw your latest post on the list regarding the SD50 fuel tank. That isn't a fuel tank inspection plug. That is actually the waste retention tank that is welded within the fuel tank. Oil, water or anything else that leaks down onto the engine compartment floor of the locomotive drains into a sump, which is piped into the waste tank (the larger of the three pipes routed into the top of it), as well as any oil from the engine airbox drains (the other two pipes coming in at the top). The pipe at the bottom is the drain."

Chris, thank you for calling me on this, it's much appreciated. Guys, without guys like Chris, I for one would still be stumbling. It's great that we have him as a member on this list.

Page 56 - Fuel Tank Modifications (detail part 2)

This e-mail shows the dimensions of the welded plate. For clarity I have detailed different dimensions of the same part. All pertain.

Page 57 - Fuel Tank Modifications (detail part 3)

For modelers who do not have the benefit of a lathe the domed waste retention tank door can be fashioned from a British model component called a buffer. These are available from http://www.dartcastings.co.uk/mjt.htm . I have included an image which shows where the buffers are located on a British locomotive plus a compilation image of the model buffer, slightly modified for NS 5424, that is available from Dart Castings.

Page 58 - Fuel Tank Modifications (detail part 4)

This past Memorial Day weekend allowed me to make some progress on the fuel tank end and I decided to make and fit the straight bar with 3 x plugs positioned there. I think because of the plugs that maybe this has something to do with draining the last dregs out of the tank.