Markovich, Frank – *Creative Solutions to Common Modeling*

Clinic time will be about 1 hour for presentation – 15 minutes for Q and A.

Topics including

- Will cover some methods that are less then obvious for scratch-building structures and rolling stock, etc. Process to map out a project and complete it in a reasonable time. From simple layering for weathering to simulating things such as knots and paneling. Most of all the method I use to plan out a project and in essence design my own kit.
- Will show you some examples.

Age old question – why scratch-build?

Well here are a number of reasons:

1. No model of the prototype.
2. Models that do exist are less than ideal – lacking detail or oversized etc.
3. Challenge.
4. Ability to control each part and the final finish.
5. Inexpensive – usually costs less then a RTR or kit.
6. Lots of fun and very rewarding!!!!
7. Need it for an achievement award – the trestle later falls into that category for me.

Methodology

- I have used this for more than just models.
- Used it on the layout to get it ready for the ‘O’ scale national. Others told me I would never be ready. Six months to finish:
  - No backdrop – Dave Biondi painted it.
  - ½ no scenery
  - Didn’t run at all
  - Middle of converting to DCC
  - ¼ of the trees needed
  - Rolling stock needed repair
  - Lots of miscellaneous items needed
- I made it – one week to spare.
- Mapped the entire project out!
- Set realistic goals and times.

Planning

- Key area that most people leave out or do not do enough.
- Saves time and money.
- While you can't plan for everything – the more you plan the easier the project as a whole will be.
- Can do it on paper or with your computer.
- It is at this point where you identify problems – start working solutions – look at alternatives.

To Plan

- List out:
  - All the steps – you will miss some but get what you know!
  - All the materials – even map out how long to get the materials.
  - Any tools you may need that you don’t have.
  - Anything you might have to special order or get from a supplier that is out of the ordinary.
  - Alternatives to the complex parts or processes – this has saved me time!

I do the previous step on paper

- You could use the computer – word or excel or similar programs.
- Following is an example for a Trestle that I built towards the Achievement award for Structures.
- While I used MS Word for the notes and first list – paper would also work fine.

The list of tasks – I used word

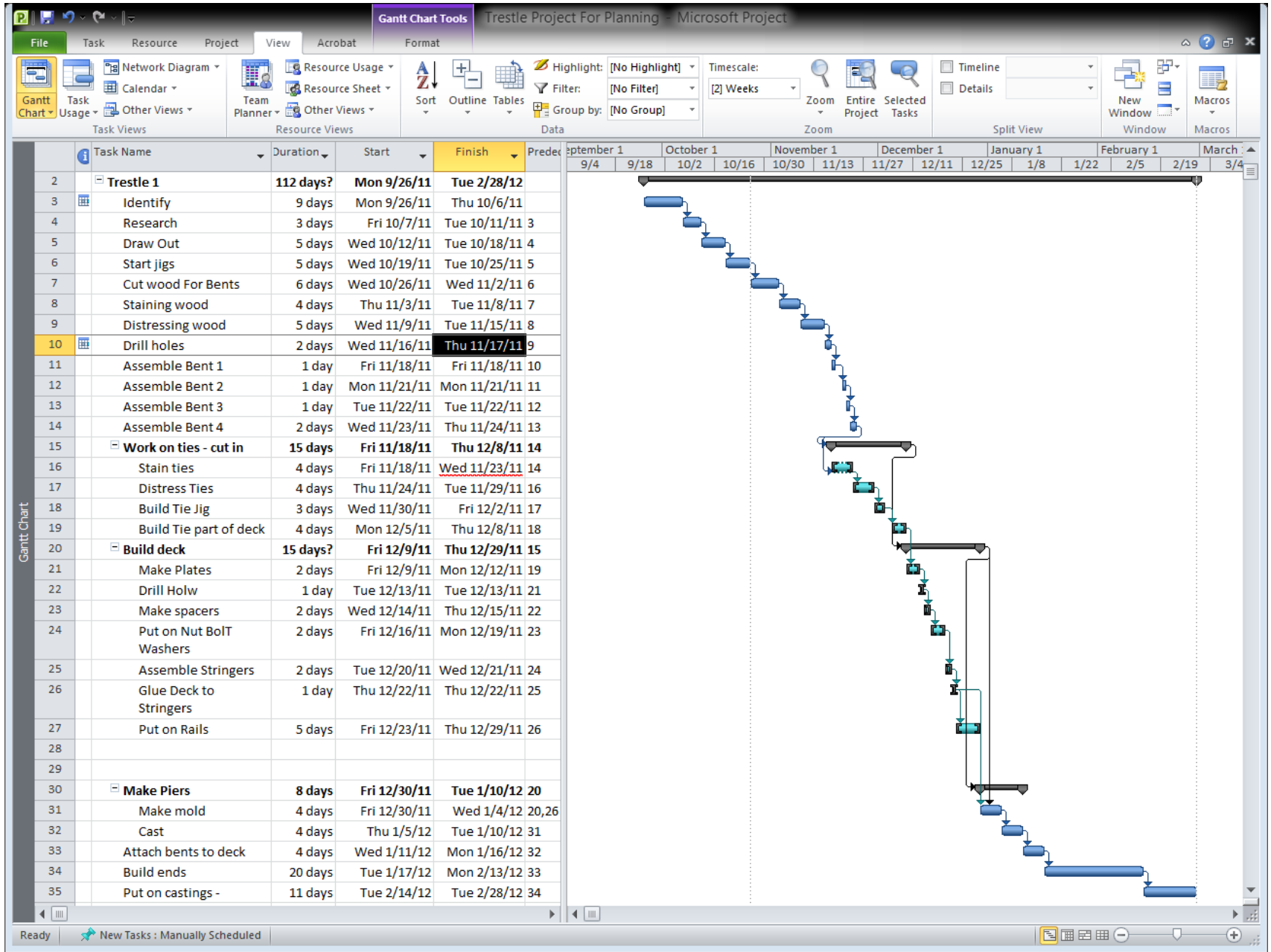
Identify
Research
Draw Out
Start jigs
Cut wood For Bents
Staining wood
Distressing wood
Drill holes
Assemble Bent 1
Assemble Bent 2
Assemble Bent 3
Assemble Bent 4
Work on ties - cut in
Stain ties
Distress Ties
Build Tie Jig
Build Tie part of deck

Build deck
Make Plates
Drill Holw
Make spacers
Put on Nut BolT Washers
Assemble Stringers
Glue Deck to Stringers
Put on Rails
Make Piers
Make mold
Cast
Attach bents to deck
Build ends
Put on castings -

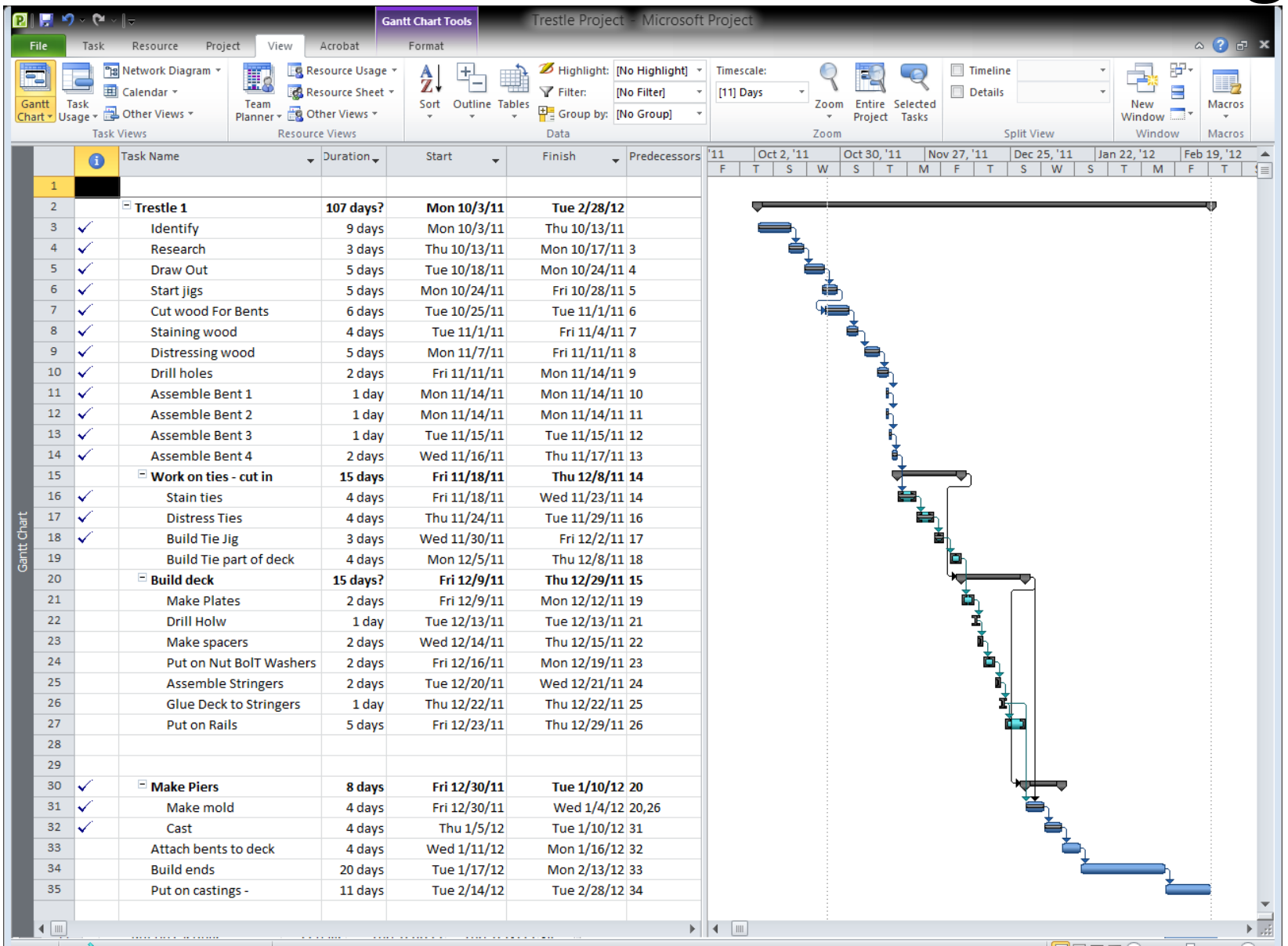
Set an order

- It pays to set an order.
- As an example – some parts may require masters and molds to make. They take time. You might want to at least start these early.
- Or ordering parts, materials, tools, etc. While I start models before I have everything, I don't start them until I have at least ordered everything that I think I need.
- I then use MS Project but excel on any spreadsheet or project management program would work.

I then put in MS Project



Then tracked it as I went along



	Task Name	Duration	Start	Finish	Predecessors
1					
2	**Trestle 1**	**107 days?**	**Mon 10/3/11**	**Tue 2/28/12**	
3	Identify	9 days	Mon 10/3/11	Thu 10/13/11	
4	Research	3 days	Thu 10/13/11	Mon 10/17/11	3
5	Draw Out	5 days	Tue 10/18/11	Mon 10/24/11	4
6	Start jigs	5 days	Mon 10/24/11	Fri 10/28/11	5
7	Cut wood For Bents	6 days	Tue 10/25/11	Tue 11/1/11	6
8	Staining wood	4 days	Tue 11/1/11	Fri 11/4/11	7
9	Distressing wood	5 days	Mon 11/7/11	Fri 11/11/11	8
10	Drill holes	2 days	Fri 11/11/11	Mon 11/14/11	9
11	Assemble Bent 1	1 day	Mon 11/14/11	Mon 11/14/11	10
12	Assemble Bent 2	1 day	Mon 11/14/11	Mon 11/14/11	11
13	Assemble Bent 3	1 day	Tue 11/15/11	Tue 11/15/11	12
14	Assemble Bent 4	2 days	Wed 11/16/11	Thu 11/17/11	13
15	**Work on ties - cut in**	**15 days**	**Fri 11/18/11**	**Thu 12/8/11**	**14**
16	Stain ties	4 days	Fri 11/18/11	Wed 11/23/11	14
17	Distress Ties	4 days	Thu 11/24/11	Tue 11/29/11	16
18	Build Tie Jig	3 days	Wed 11/30/11	Fri 12/2/11	17
19	Build Tie part of deck	4 days	Mon 12/5/11	Thu 12/8/11	18
20	**Build deck**	**15 days?**	**Fri 12/9/11**	**Thu 12/29/11**	**15**
21	Make Plates	2 days	Fri 12/9/11	Mon 12/12/11	19
22	Drill Holw	1 day	Tue 12/13/11	Tue 12/13/11	21
23	Make spacers	2 days	Wed 12/14/11	Thu 12/15/11	22
24	Put on Nut BolT Washers	2 days	Fri 12/16/11	Mon 12/19/11	23
25	Assemble Stringers	2 days	Tue 12/20/11	Wed 12/21/11	24
26	Glue Deck to Stringers	1 day	Thu 12/22/11	Thu 12/22/11	25
27	Put on Rails	5 days	Fri 12/23/11	Thu 12/29/11	26
28					
29					
30	**Make Piers**	**8 days**	**Fri 12/30/11**	**Tue 1/10/12**	**20**
31	Make mold	4 days	Fri 12/30/11	Wed 1/4/12	20,26
32	Cast	4 days	Thu 1/5/12	Tue 1/10/12	31
33	Attach bents to deck	4 days	Wed 1/11/12	Mon 1/16/12	32
34	Build ends	20 days	Tue 1/17/12	Mon 2/13/12	33
35	Put on castings -	11 days	Tue 2/14/12	Tue 2/28/12	34

You can do this on paper also

- Or even with excel or similar program.
- I have used other project programs.
- Many are free on the web.

What this does is keeps me on track.

- I can track my progress weekly.
- Further keeps me motivated!!!

- Don’t kill yourself if you must do a reset. This has happened to me due to a work situation.
- Do it as soon as you know.

Look at the bridge to see the steps

- Will now cover some of the items.
- I do lots of castings. You don't need to make every part from scratch – repetitive parts can be made with a master then casting.
- It is also advantageous to use jigs.
  - Did jigs for the tie spacing.
  - For the bents
  - For drilling – this really helped.

Castings

- The piers are cast from plaster.
- I started with balsa wood. Made 4 piers – used a knife to carve.
  - Balsa is a good material for making a mold that will represent concrete – the texture works great.
  - Used it for the end of the bridge – retaining walls also.
- From there I made molds using RTV.
- Since the piers have 4 sides you actually have 16 variations (not counting color and weathering) to work with. No one can tell that any two are alike!
- I used dental plaster to cast – I had some left over. I did try resin casting but it didn't look right even when finished. Plaster gave the piers a more natural look.
- One important point here is that sometimes you need to experiment with more than 1 material or method.

Plates and spacers

- The masters were made from styrene.
- Added in NBW for the plates.
- Again made 4.
- Spacers made similarly.
- Made molds and then cast these with resin.
- Tap plastics or Bragdon are good sources for the RTV and the resin.
- In this way I could make many of them before needing them for the assembly.
- I also finished these parts well before assembly!!

Save stuff for molds

- I look at all plastic items that come through our house.
- Many are useful for holding the mold.
- I never buy a holder.
- Can use any flat surface and modeling clay (Which can be used over and over). I am using the same clay for last 4 years.

For Jigs

- I use scraps for most of them.
- Save small pieces of wood and styrene.
- For items made of wood use styrene or other plastics for the jigs and for items of plastic use wood! Then the glues don't stick to the jigs – unless you use ACC or similar.
- For structures I always make a jig of the framework. It not only ensures that it is correct but in the long term speeds up construction.

For cutting angles

- I draw the angle out then use a power miter with scratch built stops. It may even be a stop bolted to the table. Keep it simple.
- Small strip-wood can be cut with a chopper.
  - While I use the angles that come with it when possible, many times you must make something more accurate.
  - As an example, if you need 20 degrees. You will have to make something for that.
  - Make a 20 degree jig!

Routing

- If you look at the trestle you will see that the top is routed for the top stringers.
- This is per prototype.
- The way I did this is to again build a jig that allowed the ties to be routed in exactly the same place on each side.
- Used a piece of scrap wood and attached another piece to the top as a stop.
- Then taped the ties together and ran them across the Dremel with the jig.
- When I first tried this, instead of routing, I tried cutting it out. Took too long and did not yield consistent results.
- Notice that I didn't use a routing table. You don't need to buy a tool for only 1 job. Think and there is another way to do it!

Next is a new project

- Spent quite a bit of time researching Westside Caboose #4.
- Built one a number of years ago in HOn3.
- Realized a number of short comings in other model – including the following.
  - Prototype used wood siding – not individual boards.
  - Steps of paper were far too fragile. Looked good but didn't hold up.
  - Roof was individual boards on the prototype.
  - Interior Stove.

First problem was the siding

- Without going into all of the detail, I figured out that the siding was about 7.25 inches between boards.
- Well I tried sanding 1” by 8”s in O – not a good solution.
- Next cut my own. While this sort of worked I could get 1 of 4 or 5 from .005 veneer.
- Even with doing these things the walls would be way to thick.

Solution

- Used .005 veneer and glued scale 1” by 12” HO strip wood to simulate the siding.
- Still a bit too thick but very close. The eye would not be able to see it.
- Used a spacer (styrene) to get the right spacing.

Another Solution

- Laser cut 1/64 material into strips.
- Again a bit too thick but not by much.
- Have a sample to show the group.

Next problem the Steps

- Spent considerable time on this.
- First tried styrene.
- Then cardstock (similar to Simpson kits). Worked in HOn3 but not strong enough for On3.
- It looked ok but was difficult to get just right. The corners were the issue.
- Settled on .005 sheet brass.
- Made a paper pattern that I temp glued to the brass. Used rubber cement as this is easily removed
- See next slide.

Copy Machines are my friends

- Drew out 1 stair.
- Marked where the bends would be.
- Used a copy machine to make many.
- Glued the final template (of 12 or so step sides) on the brass using rubber cement.
- When dry
  - Drilled the holes for the NBW's.
  - Cut out the steps with scissors – yes scissors – worked great – even for the corner cutouts.
  - Touched it up with files – holding the side with a vice.
- Bent the step sides using a vise – yes a brake would have worked better but I don't have one.
- Used a chemical blackener on the steps before painting.
- For the treads used wood as on the prototype. Again a paper drawing used as a guide to cut and drill.
- These not only look better than the paper steps but are much stronger!

Roof

- Not done with the model.
- Have the board sizes for the roof. How you might ask:
  - Looked at Dr. Muff's photos,
  - Simpson photos,
  - Photos I took in the 70's,
  - Wrote the current owner of the caboose who was kind enough to tell me in an email.

Problem

- I would like the roof remove-able.
- With individual boards this will be difficult.
- So may just make the cupola remove-able.
- You may have a suggestion for me on this.

Many other small issues

- Just hammered away at each one.
- The cross beams for the body are in real life 5” by 12”. I didn’t have any so sanded down a 6” by 12”. Not a big deal.
- Idea is when you find a problem think of a solution – many do not require spending more money.
- I could have had Kappler or Mt. Albert cut me the right size – but there is a minimum order and I only need less than 6 real inches of that size.

Interior

- Most of the caboose interior is easy to build – cabinets etc.
- One exception is the stove. It is not like any stove I have ever seen.
- See following slides and you will see I do a mini-plan for even those.

Here is a picture of the stove

First problem is the size

- Using photos and some crude drawings the size can be figured.
- Know the end of the caboose. How far from the side to the door. Then use that to measure. Will get close.
- Once this is determined – plan out how to build it.

Proposed solution

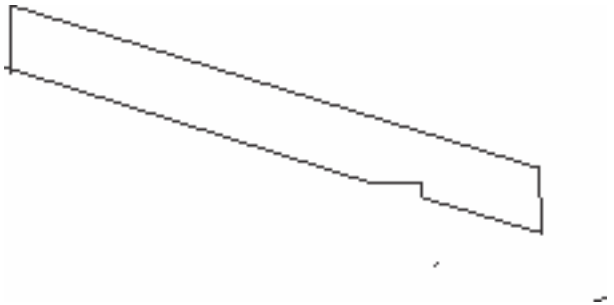
- Since the same style stove is in more than one Westside Caboose – I need to make a master and then cast it.
- Main part can be made of clay! Then cast.
- Start with the base (minus the legs). Use styrene for this. Two layers. Then form the main part of the stove from clay between 2 cut out ends of the stove (styrene).
- There is a grate on the top in some photos. Use a knife to carve that out.
- Top will also be styrene – two layers also.
- Mold will have to be a 2 part mold as there is some undercut.
- Stove pipe is just styrene pipe.

Finish of stove

- This was a cast iron stove so it needs to be finished in a black with some patina look.
- The casting of clay will help. But spraying with paint almost dry when hitting will give the look. In most cases this is exactly what you don’t want to do!

Some Structure problems and solutions

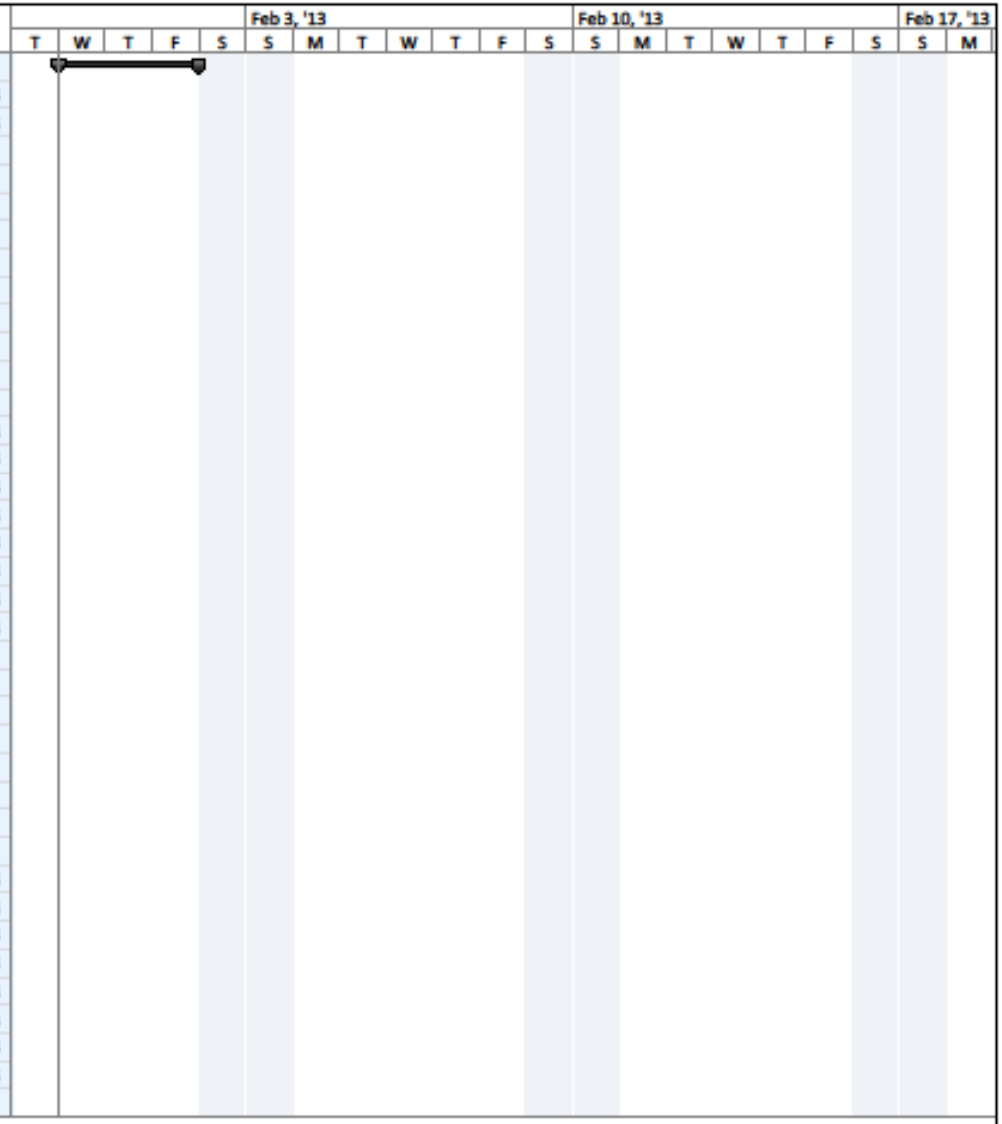
- Porch roof trusses – on most prototypes there is a small cut.
- How to make the cut for many.
- One solution is start with boards 1” longer on each side. Then put them together by either gluing the ends or fastening. Then mark and do the cut. Lastly trim them as a group to the correct length. See drawing below. Extend wood beyond the needed size.



Next Project

- Snowplow – Westside – On3.
- Wanted to totally scratch build.
- Next slide has the project outline on it.
- Did this is a short period of time.
- I did do a number of items before I started laying it out – acquired all the material, and some fabrication work including testing some ideas.

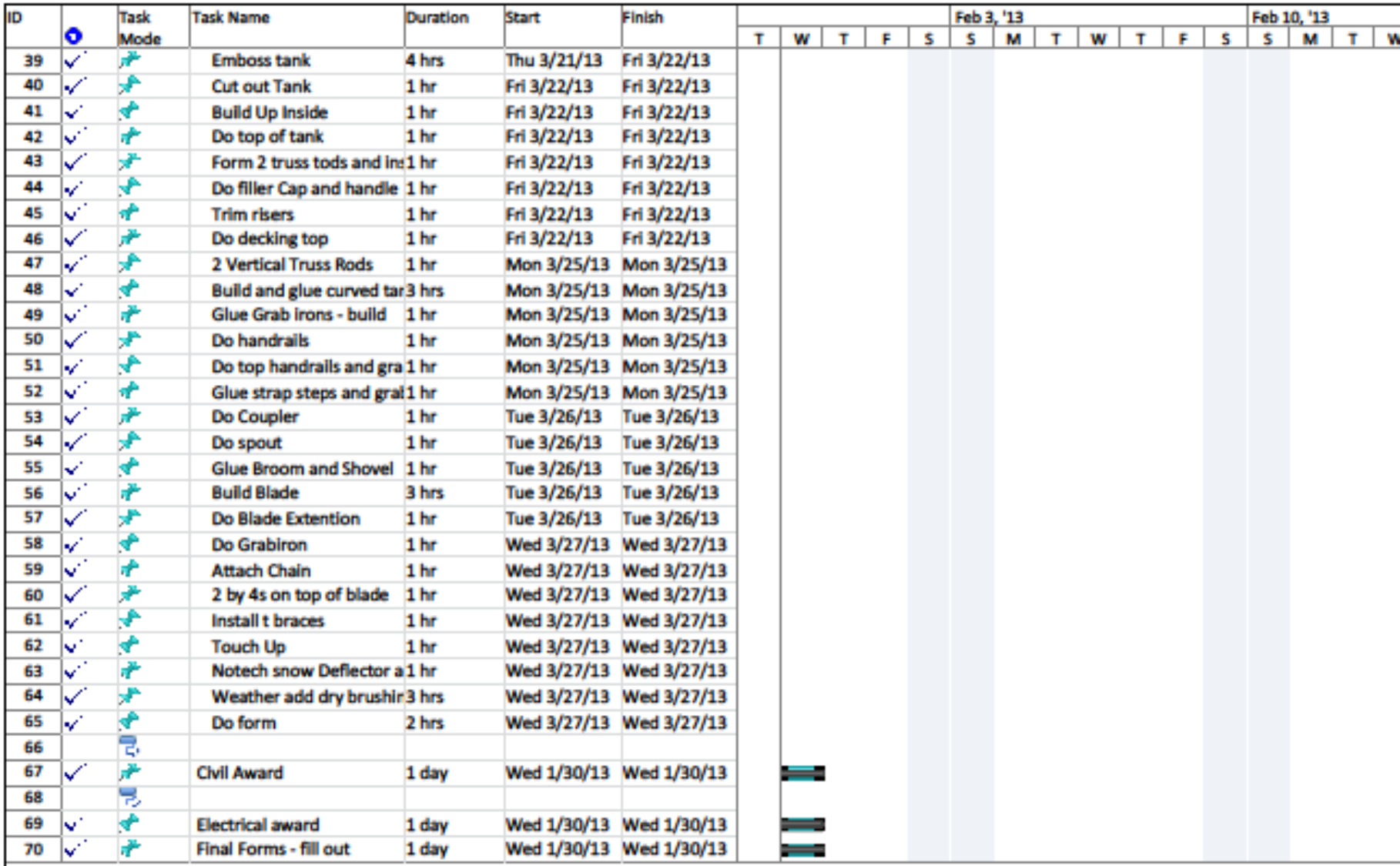
ID	Task Mode	Task Name	Duration	Start	Finish
1		**Snowplow**	**3 days**	**Wed 1/30/13**	**Fri 2/1/13**
2		Distress Wood For Fram	3 days	Mon 3/11/13	Wed 3/13/13
3		Assemble frame	3 days	Thu 3/14/13	Mon 3/18/13
4		Distress decking wood	3 days	Tue 3/19/13	Thu 3/21/13
5		Put on Decking Wood	3 days	Fri 3/22/13	Tue 3/26/13
6		Body Bolster Intall	1 hr	Fri 3/15/13	Fri 3/15/13
7		Body Bolster Details - scr	1 hr	Fri 3/15/13	Fri 3/15/13
8		Couple Pockets	1 hr	Fri 3/15/13	Fri 3/15/13
9		Coupler Pocket holders	1 hr	Fri 3/15/13	Fri 3/15/13
10		Drill Body for NBW	1 hr	Fri 3/15/13	Fri 3/15/13
11		Install Body Bolters	1 hr	Fri 3/15/13	Fri 3/15/13
12		Trim Andles and Drill Tru	1 hr	Fri 3/15/13	Fri 3/15/13
13		Drill Journals	1 hr	Fri 3/15/13	Fri 3/15/13
14		Do sideframes	1 hr	Mon 3/18/13	Mon 3/18/13
15		Glue Bearing Plates to tr	1 hr	Mon 3/18/13	Mon 3/18/13
16		Fab Bearing Plates	1 hr	Mon 3/18/13	Mon 3/18/13
17		Drill Pilot Holes in Body (	1 hr	Mon 3/18/13	Mon 3/18/13
18		File top of boltes and glu	1 hr	Mon 3/25/13	Mon 3/25/13
19		Glue 7 Frame together	1 hr	Mon 3/18/13	Mon 3/18/13
20		Build Channel I beam	1 hr	Mon 3/18/13	Mon 3/18/13
21		Install Body Bolters	1 hr	Mon 3/18/13	Mon 3/18/13
22		Trim Plow Frame	1 hr	Tue 3/19/13	Tue 3/19/13
23		Cut out bade	1 hr	Tue 3/19/13	Tue 3/19/13
24		Build 1st riser	1 hr	Tue 3/19/13	Tue 3/19/13
25		Build 2nd Riser	1 hr	Tue 3/19/13	Tue 3/19/13
26		Build 3rd Riser by sandin	1 hr	Tue 3/19/13	Tue 3/19/13
27		Install metal parts of Rise	1 hr	Tue 3/19/13	Tue 3/19/13
28		Drill Risers for NBW	1 hr	Tue 3/19/13	Tue 3/19/13
29		Install Risers	1 hr	Tue 3/19/13	Tue 3/19/13
30		Install NBW on risers	1 hr	Wed 3/20/13	Wed 3/20/13
31		Build Plow face	1 hr	Wed 3/20/13	Wed 3/20/13
32		Build and install cross be	1 hr	Wed 3/20/13	Wed 3/20/13
33		Glue Plow to frame	1 hr	Wed 3/20/13	Wed 3/20/13
34		Drill Holes in Frame for T	1 hr	Wed 3/20/13	Wed 3/20/13
35		Coundersink	1 hr	Wed 3/20/13	Wed 3/20/13
36		Build box for Tank	1 hr	Wed 3/20/13	Wed 3/20/13
37		Trim and glue seven wire	1 hr	Wed 3/20/13	Wed 3/20/13
38		Add NBW	5 hrs	Thu 3/21/13	Thu 3/21/13



Project: Project2
Date: Tue 3/26/13

Task	External Tasks	Manual Task	Finish-only
Split	External Milestone	Duration-only	Deadline
Milestone	Inactive Task	Manual Summary Rollup	Progress
Summary	Inactive Milestone	Manual Summary	
Project Summary	Inactive Summary	Start-only	

ID	Task Mode	Task Name	Duration	Start	Finish
39		Emboss tank	4 hrs	Thu 3/21/13	Fri 3/22/13
40		Cut out Tank	1 hr	Fri 3/22/13	Fri 3/22/13
41		Build Up Inside	1 hr	Fri 3/22/13	Fri 3/22/13
42		Do top of tank	1 hr	Fri 3/22/13	Fri 3/22/13
43		Form 2 truss tods and ins	1 hr	Fri 3/22/13	Fri 3/22/13
44		Do filler Cap and handle	1 hr	Fri 3/22/13	Fri 3/22/13
45		Trim risers	1 hr	Fri 3/22/13	Fri 3/22/13
46		Do decking top	1 hr	Fri 3/22/13	Fri 3/22/13
47		2 Vertical Truss Rods	1 hr	Mon 3/25/13	Mon 3/25/13
48		Build and glue curved tar	3 hrs	Mon 3/25/13	Mon 3/25/13
49		Glue Grab irons - build	1 hr	Mon 3/25/13	Mon 3/25/13
50		Do handrails	1 hr	Mon 3/25/13	Mon 3/25/13
51		Do top handrails and gra	1 hr	Mon 3/25/13	Mon 3/25/13
52		Glue strap steps and grat	1 hr	Mon 3/25/13	Mon 3/25/13
53		Do Coupler	1 hr	Tue 3/26/13	Tue 3/26/13
54		Do spout	1 hr	Tue 3/26/13	Tue 3/26/13
55		Glue Broom and Shovel	1 hr	Tue 3/26/13	Tue 3/26/13
56		Build Blade	3 hrs	Tue 3/26/13	Tue 3/26/13
57		Do Blade Extention	1 hr	Tue 3/26/13	Tue 3/26/13
58		Do Grabiron	1 hr	Wed 3/27/13	Wed 3/27/13
59		Attach Chain	1 hr	Wed 3/27/13	Wed 3/27/13
60		2 by 4s on top of blade	1 hr	Wed 3/27/13	Wed 3/27/13
61		Install t braces	1 hr	Wed 3/27/13	Wed 3/27/13
62		Touch Up	1 hr	Wed 3/27/13	Wed 3/27/13
63		Notech snow Deflector a	1 hr	Wed 3/27/13	Wed 3/27/13
64		Weather add dry brushir	3 hrs	Wed 3/27/13	Wed 3/27/13
65		Do form	2 hrs	Wed 3/27/13	Wed 3/27/13
66					
67		Civil Award	1 day	Wed 1/30/13	Wed 1/30/13
68					
69		Electrical award	1 day	Wed 1/30/13	Wed 1/30/13
70		Final Forms - fill out	1 day	Wed 1/30/13	Wed 1/30/13



Some Highlights

- The bolster parts were made with sheet styrene and with tube styrene – ¼ inch tube. Cut with a razor saw using a miter – the power miter would be too fast for the material.
- Made a pattern for the metal channel on the uprights and cast 4 of them. Made it from styrene.
- Made from card – used a file folder for the cardstock. Rather than transferring the drawing to the cardstock, I made a copy of the drawing and taped the drawing to the cardstock. I then cut the two together. For the line on the side used a straight edge to fold the cardstock very straight. Put the end curved pieces on the plow top and used a straight edge clamped to the plow to get the straight and correct spacing – marked on the straight edge where they went. Treated the cardstock with just a little moisture to soften it up and rolled the back end around a dowel that was a little smaller than the curve of the top part of the blade.

Some Highlights - continued

- I made the ‘T’ pieces from 2 pieces of strip styrene.
- The tank came next. It was made in the following manner – Drew out the rivet detail on a piece of paper. Taped the drawing to a 0 .010 piece of styrene sheet. Put a #65 drill bit in a Dremel drill press the not drill part (head) sticking out so opposite how one would drill. I then embossed the plastic one rivet head at a time. Used a piece of wood on the back of the plastic – before doing this I experimented with a piece of scrap to get exactly the right drill bit and the right backing. Considered buying a riveter but this worked fine and saved considerable money.
- From there I made a top and bottom of the tank from some scrap 0.125 styrene

Some Highlights - continued

- For the curved (8) holders on the sides I made them from .008 sheet brass in the following manner. Measured where the holes for the NBW's should be drilled and drilled them. Cut them out from the brass sheet and bent to shape around an X-Acto blade handle. Glued the NBW on and attached by drilling holes in the places where attached. I did dip the brass in Blacken it first.

False starts

- The curved sections on the back were first done with styrene – but they were just not strong enough.
- Had to switch to metal sheet. Very thin that I cut out with shears – then drilled. Took much longer than the styrene.
- I rubber cemented the drawings on the metal – drilled the holes and then cut them out.

Distressing wood in a hurry

- While there are many ways to do this such as a wire brush or a scratching tool the method I find the best is a wood whacker. Next two pages describe how to build one.
- I have a couple of examples up front.

Wood Wrecker

- Have built one years ago. All use #11 blades.
- First experiment was to chuck 5 blades in a vice grip. This worked well as long as the grip was tightened up significantly.
- Then did something similar with 5 blades – bolted them together – epoxy over the none blade end. Modified a handle – wood handle drilled out to the size just over the end of the blades. Epoxy on the blades to handle.
- Used this for years – did every tie on my home layout with this.
- Handle was great as it allowed me to work very fast.
- Note – use safety glasses when doing this technique.
- I finally broke a blade – after doing the entire layout when working on an individual module.
- I have also modified an hobby knife tool to do the same. My son did this in school for a class invention project.
- Whatever you do dip the handle in something to provide a grip.
- The Maple Leaf Mafia Narrow Gauge modeling group in the Toronto area came up with a neat tool for scribing and distressing wood for structures and for railway ties. A description with my modifications is on the next slide.

Wood Wrecker pt. 2

BUILD YOUR OWN WOOD WRECKER –

Start with a 6 to 8 inch length of rectangular brass tubing by K&S or Special Shapes Co. It needs to measure 5/32" x 5/16" outside dimensions. Use #11 X-Acto knife blades. Some recommend using old blades – I have found that new blades really work best. You can buy blades in large quantities.

The shafts of exactly 6 blades will be an extremely tight fit inside the opening of the rectangular tubing. Use a block of wood or Masonite to force the blades inside the tubing, until they are firmly seated. I tape the ends together (point side). Be extremely careful - those blades are still sharp!! They can go flying so wear safety glasses when doing this!!!!

If you are nervous about the blades coming out, use a couple drops of ACC or epoxy to freeze them in the shaft. Now wrap the tubing with something to prevent the edges from hurting your hands. I dipped the handle in the rubber goop they sell at Home Depot for tool handles.
To use the tool, simply scribe in the direction of the grain. Because of the six blades, one pass will 'grain' an On3 tie, and the lines are perfectly parallel. Swerve the tool, or make a curved pass to get some variety. Around knot holes make sure that you swerve it appropriately.

When to add grain detail

- I have tried a number of different ways.
- In most cases it is best after the wood has at least a base of driftwood stain or similar.
- But sometimes it works great to do after the final paint color and then add in alcohol and India ink.

Tar Paper Needed

- I make my own tar paper – use newspaper or the paper from old phone books, and tissue – paint to suit. I like the dark greens and blacks but have used a dark red. I use Floquil as it binds the two together. Be sure to put something underneath the newspaper. I use cardboard.
- This adds texture. Then dry brush with an off white.

For Tar Paper Rolls

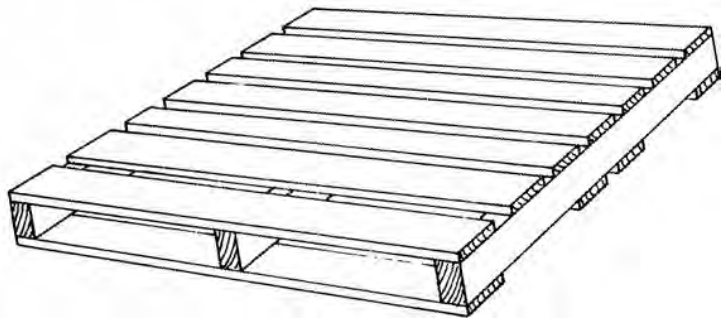
- Sort of the same idea but instead of the newsprint and tissue – I roll up either blue tape or masking tape really tight on very small straws – this gives a nice center.
- Straws that work well are the ones for stirring coffee.
- Cut the rolled up tape to a scale 36”. I use a single edge razor blade.
- Then paint black or similar – inside for the roll can be a dark brown. But it almost can’t be seen.
- Take tissue and make the outside holders.
- I have tried many solutions to this and above works best for me.
- When done dry brush also to bring out the detail.

Pallets

- You could buy pallets but it is easy to make them.
- I make a jig or two and can turn out 20 or so in an hour.
- After the jig is made I Pre-cut all of the wood.
- Then while watching TV or listening to music I build them up. Goes really fast.
- Old time pallets wood size varies – I used 2” by 4”s for frame and 1” by 12”s for stringers.
- Using real wood looks much better than the plastic ones or the laser cut ones (IMHO).

Pallets are many sizes

- 48 × 40 is standard for US or 48 x 48 inches.
- Below is a drawing of a typical wood pallet.



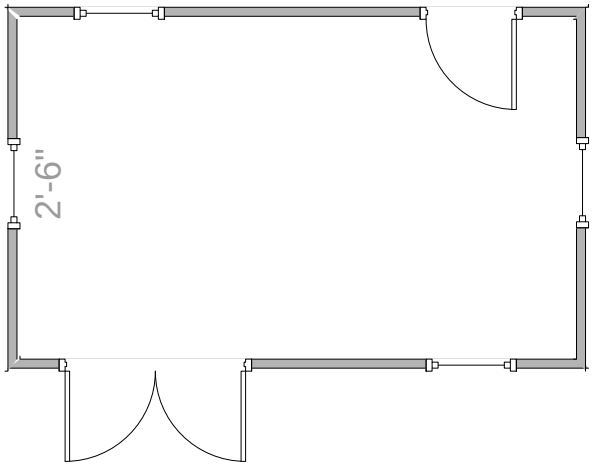
Cinder Blocks

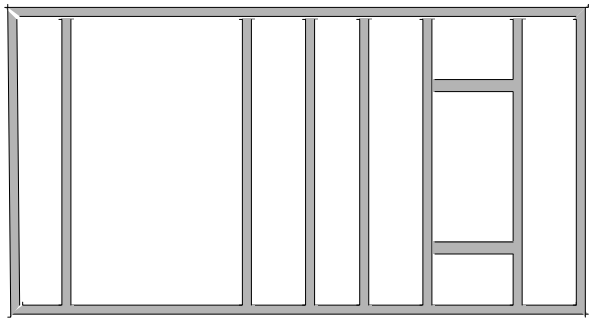
- I made 1 and then a mold. Again made it out of clay.
- Then I cast a number of them.
- Next, to speed things up, I made a mold with many of the cinder blocks already cast. In that way I could do 7 or so at a time.
- These are finished with a light gray – I used acrylics as they dry fast.
- Then brushing on some pastel powders to give more of a texture.

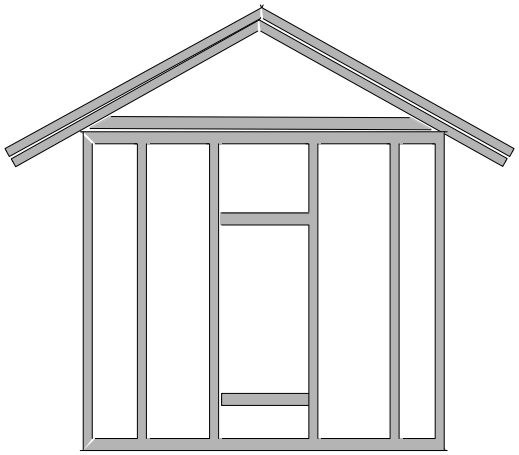
Build framework on drawings

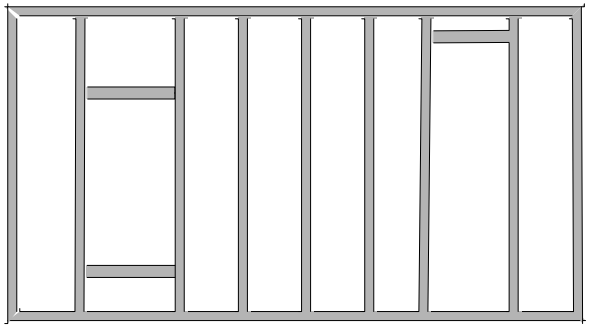
- For basic framework – be it structure or rolling stock – I copy the plans onto clear presentation overhead material. Can do this on almost any copier. I use graph paper to start – for O scale this works great as each square is 1
- scale foot.
- Then I fasten this to by healing mat by tacking it down.
- Can glue scraps to it for making a 1 time jig.
- Then build the framework right on it.
- This saves time.
- I further make more than 1 and cut it out to set the NWSL chopper to the correct size.
- I always cut about 20% more as things happen.
- Don't forget to pre-stain the wood if you intend on staining it.
- This works much better than doing it on paper like I did as a child building model airplanes.
- See drawing on next page for an example.

Plans – reduced for presentation.









Slide material

- Slide material can be used for many other things.
- Printing over it an interior and placing just behind a window can add interior without doing a full interior.
- Find an appropriate interior photo – internet – old magazines etc. Scan it into the computer – scale it and print it. Use a vivid color setting.
- Slide masters can also be used for windows. You could even print the muntin (sometimes called a grid or window pane divider).

Fixing broken items

- A few things.
  - Figure- epoxy and for holding up a Brandon chalk case – use rubber bands. Glue dries and fill in any small spots with Squadron putty then paint.

Other Fixes

- Cover the problem – too much glue and you can't get it off – hide it. Structure can put a plant or vines up the side – or for interior a cabinet or workbench.
- Cut too much out of a wood piece – happens sometimes –
  - Get the same wood – stain it the same and then cut it out and fit it in. I have done this and you can't tell it done carefully – particularly when you mess up a piece of wood in a kit.

Contact Information

- Frank Markovich –
  - Email: frank@frankmarkovich.com or markovich@smccd.edu
  - Cell 408-505-2727
  - Address: 1904 Chula Vista Dr., Belmont Ca 94002

Doing deck posts

- For many this is a difficult process.
- With a deck jig described on the following slide this is not so difficult.

Making Posts Even

- While many models have short posts under structures – my shack does. It is very often hard to difficult to get all of the support posts even and upright.
- Here is a method that worked for me.
- First draw out the post pattern – or copy the pattern from the kit you are building.
- Glue this pattern to a piece of plastic that is slightly larger than the pattern. Attach a 2nd piece of the same size plastic to the one with the pattern on it. Drill the appropriate hole through both pieces of plastic so that the posts fit – loosely.
- Now glue plastic square stock on the bottom piece. Do it so that the posts line up with the square stock.
- Then glue the top piece to the square stock – make sure both top and bottom line up.
- You now have a tool that can be used for putting posts on a deck.
- When you cut the posts – make sure the ends are perfectly square – I use a true sander to help with that.
- Then use the jig to glue the posts to the bottom of the deck stringers.

Working the wood

- I believe that nothing looks better than wood to represent wood.
- For the scale I am in it does require more detail on the wood.
- One thing that really does bring out detail is layering.
- Even on plastic or metal this is important.

Study the prototype!

- Go to the location.
  - Take pictures
  - Make notes
    - Colors
    - Weathering
    - Take measurements etc.
- If not possible then use references:
  - Books
  - Photographs
  - Videos – use them more and more now.
  - Internet – User groups really have helped me. Most of the prototype photos are from this source.
  - Museums
- Even eye witnesses if you can find them.
- This part can be a hobby itself or a hobby within a hobby.

Make notes

- I suggest you write down everything.
- Now onto adding this detail in your modeling.

Real wood

- While I have seen some very beautiful models made of other materials, for a wood structure, real wood to me still looks the best.
- Some effects cannot be accomplished easily with other materials. Such as exposed wood, broken wood, lifted boards etc.
- To me more fun to work with real wood.
- Lots of choices now: Strip wood, scribed siding, coffee stirrers, sheet woods. Some choices in wood also from basswood, redwood to even balsa in some structures (good to simulate foundations or piers).
- Real wood takes stains well. I know others are able to simulate with various plastics but it just isn't the same look.
- For castings such as windows and doors I always paint them first with a raw wood color. Then continue from there. Floquil CN Grey is a good choice for the base coat.

Why detail wood?

- I like to see some depth in a wood building or rolling stock.
- If it looks too smooth it loses the real look and the feel.
- Even on freshly painted structures and rolling stock, variations can be seen. Nothing stays fresh looking in nature very long!
- It is fun and adds much to a model as long as it isn't overdone! That to me can be a huge mistake. And believe me I have made it more than once.
- Scale will determine the amount of wood detail. Less detail in N scale, more in O scale.

Open window and doors – peeling paint – These windows and doors work and are built of individual pieces.

Old Yorke kit. Similar approach.


SUSIE'S PLACE

Example of Planning

Tool shed goals

1. Must fit in a space no bigger than 4” by 6” – front long side. Includes any part of footprint. This includes deck etc.
2. Age – old 20 years or more. Very weather worn. Paint is beginning to wear out. Wood underneath split and showing lots of grain detail etc.
3. Board by board – with a full frame interior and floor. Floor will be scribbed. Much easier and will look fine. Also unpainted but fully weathered – more weathered by the door.
4. Inside – no paint – will stain with walnut. Wipe stain.
5. Roof will be shingles – individual shingles. No gutters!
6. Windows and doors will be scratch-built. Large enough to see in.
7. Double wide doors – open – swing open not slide. Make them work.
8. Windows are double hung. Not working.
9. Outside color will be similar to Westside yellow with white trim. All peeling paint. More towards bottom of walls.
10. Peak on side.
11. Nails will show. 24 inch centers for studs.
12. Prototype built out of pine of fir. So knots are present.
13. Make roof removeable.
14. Interior with work benches etc. To be added after building is complete.
15. Framing 2 by 4’s.
16. Siding 1 by 12’s. Siding is horizontal.
17. Plans drawn in Visio.

Comments: inside wood and exterior different. Wipe them to get the effect.

Following slides are my directions for the project.

- I write these out.
- Not afraid to modify them as needed.
- Many times I get ideas as I go along.
- But this gives me a direction.
- Without a direction, how will I know how to get there and what I intend.

Cutting - staining – painting – assembling etc.

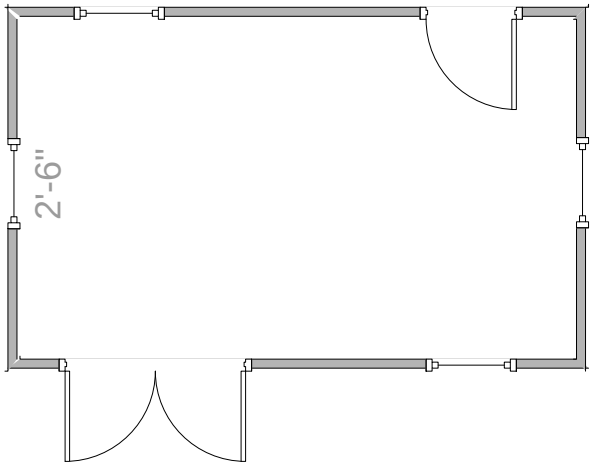
Start with plan on building. If scratch-building do as if you wrote kit instructions.

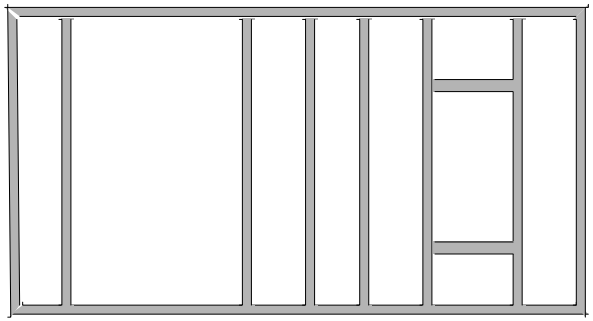
Order

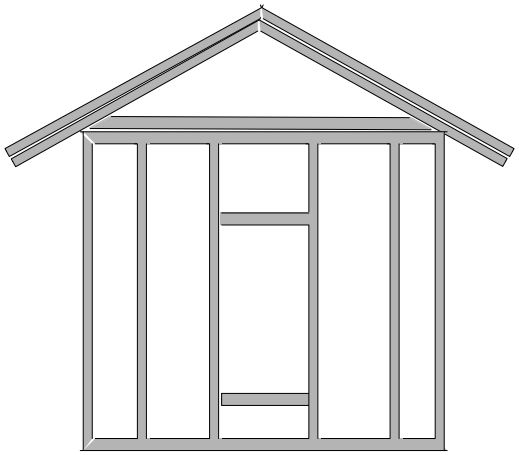
1. Build jig for framework – do over framing plan. Build from plastic so wood glue won't stick to the frame.
2. Stain the framing. Wipe on Walnut – thinned down a bit. 2 days. This to include the roof rafters and the roof stringers – Model furring strips for the roof.
3. Stain the floor – let it dry 2 days.
4. Stain rest of wood. Start with the Walnut. Wipe on with rag. Let dry 2 days.
5. For exterior of wood – start with silver grey stain – driftwood or India Ink formula. Let dry 1 week!!!
6. Do the framing with the pre-stained wood. Use carpenters Glue with small glue applicator.
7. Put knots in with wood burner.
8. Use #11 knife to add in detail around knot holes.. Distress the floor – rest of the floor.. Use distress tool.
9. Do a wash of grimy black on the floor. Make area by door a heavier wash.
10. Make cuts in scribed wood to indicate different board lengths.
11. Dry brush with Earth, Mud, and some Roof Brown Poly S the boards to very the color. Do to board ends? Do not overdo. Use very little paint.
12. Add in Nail holes to the floor with a drafting pencil. Run down a few boards sides to show cracks in flooring.
13. Rub in various chalks to indicate wear and dirt on floor. Use earth colors.
14. Assemble the siding on the framing for each wall.
15. On to exterior walls put knots in with wood burner.
16. Use #11 knife to add in detail around knot holes.. Distress the sides – rest of the sides.. Use distress tool.
17. Do a wash of grimy black on the sides. Make area by bottom a heavier wash.

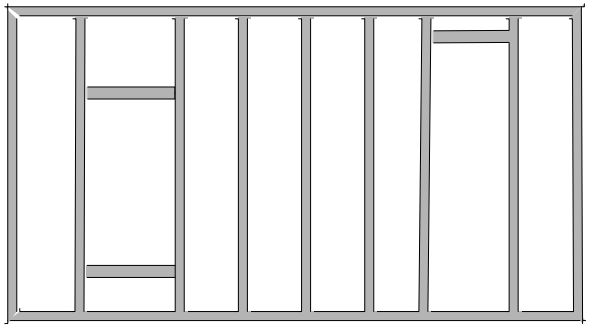
18. Make cuts in siding to indicate different board lengths. Do where there is framing.
19. Add in Nail holes to the sides with a drafting pencil. Opposite where the framing is located.
20. Dry brush with Earth, Mud, and some Roof Brown Poly S the boards to very the color. Do not overdo. Use very little paint.
21. Distress and add wood grain, knots etc. on the exterior walls. This is a first pass. Will do more later on.
22. Treat outside walls with thin wash of grimy black to get the distressing to show. Don't worry is some gets on inside as cracks etc. in the structure will show through.
23. Cover the framing – leave the openings for the doors and windows.
24. For each wall – Pat rubber cement on the walls. Do more towards the bottom of the walls and less to none towards the top of the walls.

Plans – reduced for presentation.









Tools

- Most important tool for me is the X-Acto knife with a #11 blade. I get them by the box.
- File cleaner – for doing grain on large amounts of wood at one time.
- Wire brush for the same.
- A tool – will show you that puts a number of X-Acto blades (5 to 7) in at once. Easy to make. I have a number of these.
- Pounce tool (used in sewing) – also called tracing wheel.
- I use a drafting pencil for nail holes.
- Can make nail hole tools – will show.
- Various good paint brushes – and some inexpensive ones for dry brushing and other techniques that seem to eat brushes.
  - Good inexpensive collections can be had from Michael's Craft stores or Aaron Brothers. Get on both companies Email lists for sales and specials.
  - Even inexpensive foam brushes can be used.
- Hobby Ruler.
- Old T-Shirts – one way to apply paint quickly.
- Scales, squares, weights.
- Ruling pen – for applying super glue – drafting supply stores have this.
- T-pins for holding parts down.
- Glue applicators – work well.

Other materials & tools continued.

- Rubber cement
- Rubber cement pickup
- Chalks
- ACC – I use this very little but others use it quite a bit.
- For wood I prefer using carpenters glue or even white glue.
- Epoxy, goo, etc. can be used for special needs.
- Palettes for many items. I use tops of cottage cheese and other items. It is a type of recycling.
- Masking tape – can be used in place of rubber cement pickup.
- Blue tape for masking – don't use much but it does help
- Cutting mat – large one makes it easier. Good surface helps.

Paints etc.

- 99% Isopropyl alcohol with ~2 ounces of India Ink. Could also use 70% Isopropyl alcohol – I prefer 99% as less chance of warping the wood. Can vary this and I do.
- For interior wood use the same Isopropyl alcohol with brown India Ink (I found this recently – it works really well). The alcohol – India Ink mixture is really inexpensive - $7 a pint. Goes a long way.
- If you can find it Floquil Driftwood stain – I have 2 pints left. Like gold to me.
- There are formulas for making it. Some better than others. My favorite is CN Gray with 2.5 parts thinner.
- Rubbing alcohol and leather dye. I have also used this – prefer India Ink.
- Various stains – I like maple, oak, etc. Can buy larger amounts of MinWax stains. Much less expensive than hobby stains – what Floquil used and rebottled.
- Floquil weathered black, cheery, maple, concrete, mud, etc.
- Grimy black – Floquil – thinned out considerably.

Acrylics

- The usual suspects are needed – some listed below:
  - Burnt Sienna
  - Raw Sienna
  - Burnt Umber
  - Raw Umber
  - Various yellows, greens etc.
  - White

  # You can buy sets of these from Michael's crafts – watch for sales and get on their email list.
- Floquil Poly S:
  - Earth
  - Dirt
  - Mud
  - Others as needed.

Safety

- Wear safety glasses whenever working with tools, or with adhesives and paints.
- Work in a well ventilated area! A vented booth when spray painting. A mask at the very least!
- Wear gloves with any paints, solvents, glues etc.
- Keep cutters sharp! Dull blades are more dangerous than sharp ones. Discard worn blades properly.
- Cut away from you – not towards you.
- Work in a clean organized space. Use a healing mat to work on.
- Above all use common sense. If something doesn't feel or look right it probably isn't!

Experiment

- I am not the final expert.
- Try the various techniques, stains, paints etc. and find what works for you!
- Watch clinics on this topic. Lots of good DVD's out there on this. They will give you other ideas also. Darryl Huffington's are good as a start but also Paul Scoles etc.

Distressing tools

- I could go on for pages but here is a brief list:
  - Hobby knife with #11 Blades – other blades can be used for special effects.
  - Wood Distressor – how to build on next slides.
  - Dental Tools – dental picks can really work well.
  - Wood burning set with different points – great for knots.
  - File Cleaner – for files to take out the small filed items in the grooves.
  - Wire brush – don't go to cheap here.
  - BBQ brush – clean unused one.
  - Fine Toothed modelers saw blade – in handle.
  - Course sandpaper or emery board.
  - Other knifes etc. I look for all sorts of unusual items.
  - Wood carving tools – I use these to gouge out for knot holes.

Wood Wrecker

- Have built one years ago. All use #11 blades.
- First experiment was to chuck 5 blades in a vice grip. This worked well as long as the grip was tightened up significantly.
- Then did something similar with 5 blades – bolted them together – epoxy over the none blade end. Modified a handle – wood handle drilled out to the size just over the end of the blades. Epoxy on the blades to handle.
- Used this for years – did every tie on my home layout with this.
- Handle was great as it allowed me to work very fast.
- Note – use safety glasses when doing this technique.
- I finally broke a blade – after doing the entire layout when working on an individual module.
- I have also modified an hobby knife tool to do the same. My son did this in school for a class invention project.
- Whatever you do dip the handle in something to provide a grip.
- The Maple Leaf Mafia Narrow Gauge modeling group in the Toronto area came up with a neat tool for scribing and distressing wood for structures and for railway ties. A description with my modifications is on the next slide.

Wood Wrecker pt. 2

BUILD YOUR OWN WOOD WRECKER –

Start with a 6 to 8 inch length of rectangular brass tubing by K&S or Special Shapes Co. It needs to measure 5/32" x 5/16" outside dimensions. Use #11 X-Acto knife blades. Some recommend using old blades – I have found that new blades really work best. You can buy blades in large quantities.

The shafts of exactly 6 blades will be an extremely tight fit inside the opening of the rectangular tubing. Use a block of wood or Masonite to force the blades inside the tubing, until they are firmly seated. I tape the ends together (point side). Be extremely careful - those blades are still sharp!! They can go flying so wear safety glasses when doing this!!!!

If you are nervous about the blades coming out, use a couple drops of ACC or epoxy to freeze them in the shaft. Now wrap the tubing with something to prevent the edges from hurting your hands. I dipped the handle in the rubber goop they sell at Home Depot for tool handles.
To use the tool, simply scribe in the direction of the grain. Because of the six blades, one pass will 'grain' an On3 tie, and the lines are perfectly parallel. Swerve the tool, or make a curved pass to get some variety. Around knot holes make sure that you swerve it appropriately.

Cutting Tools

- NWSL Choppers – I have and use all 3.
- Hobby knife #11 blade.
- NWSL True Sander.
- Dremel or similar 3 to 5 inch power disk sander.
- Cut off saw – Ron Kolo uses this effectively – I use it with the coffee stirrers.
- NWSL Dupli-cutter – good for scribed siding.
- Signal edge razor blades – give great cuts and very inexpensive!!

Modify windows and doors

- If using castings – you can add lots of interest by modifying windows and doors.
- Have them open or cut out mullions.
- Even better scratch build doors and windows. I did this on the shack in the earlier picture. The windows and doors actually open and close. Subject of a NGSL article I did a few years ago

Bottom of walls

- Use the alcohol shoe dye starting at the bottom. Brown black mixture.
- Wet stiff brush – start at the bottom and work your way up the structure – be very random!
- Dry brush – well almost.
- Can then use chalks – again starting at the bottom.
- Start with a gray chalk (Bragdon enterprises).
- Then a rust or similar and lastly a black or brown
- I use a fan brush for this.
- Above anywhere that a engine would be running brush with mainly black going up.

Dry Brushing

- Use this quite a bit – really a lot on trees – will show 1 tree trunk.
- Get just a little paint on the brush. Rub most of it off on any porous surface – I use scrap paper and or a scrap rag.
- With most of the paint off go over the wood lightly getting just the highlights.
- Use mainly a white and then earth colors for this. White brings out detail on edges.

Other sources

- Magazines – NGSL Gazette my favorite but Model Railroader, Railroad Model Craftsman, and other outside MR such as Finescale Modeler.
- Books – Kalmbach and others.
- DVD's lots here, from Greenfrog, Darryl Huffman, Paul Scoles etc.
- Magazines on railroading and structures – I even like to go through National Geographic.
- Use time while waiting in doctors and dentist offices etc. to go through magazines.
- Clinics
- Other modelers – my best source.

Before we start

- Be safe
- Wear safety glasses whenever working with tools.
- Work in a well ventilated area.
- Spray booth if spray painting.
- Wear respirator when using paints – especially lacquer or mineral based paints!
- Wear gloves when rubbing paints on wood or whenever paint could come in contact with your hands etc.

For interior wood

- Use a thin wash of walnut, cheery or other stain. Also can use a very thin wash of grimy black.
- The brown India Ink in Alcohol works really well. There is an example of that on the handout.
- Will also sometimes do light dry brushing of earth, mud and sometime roof brown. Very light. Make darker by the bottom.
- Anywhere above where loco's go use some grimy black.

Exterior wood

- Start with one of 3 silver effects:
  - Floquil driftwood – I still have 2 pints left – bought it when they announced they were discontinuing it.
    - There are online formulas for getting close to this.
    - Some using commercial paints some using existing model paints.
  - Or the India ink and rubbing alcohol. Vary the mixes.
  - Or the leather dye (black and brown) and rubbing alcohol
  - These last two – I have used but still prefer driftwood.
  - Following 2 pages show other formulas to get driftwood.

Driftwood formulas

- Thinned grime works well – experiment with thinner to grime – about 4 parts to 1.
- 2.5 parts Diosol, 1 part CN Gray with a little weathered black or grime. For closeness to Driftwood this really does work well. I also use this on castings for an undercoat – thinned just a bit not 2.5 to 1.

From another internet source – Maybe get together with others for this.

- Its supposed to be a dead ringer for Floquil driftwood!!!

  Can you imagine 2.5 quarts (yes, I said quarts, not ounces) of Driftwood stain for under 20 bucks??

  Start with 1 quart of Sherwin Williams "Pickled White" Interior Wood Oil Stain Wood Classic." Have the following tint added:

  W1-20
  B1-16
  Y3-11
  Y1-2

  The only requirement is that the Sherwin Williams outlet you get this from must have the computerized mixing setup.

  [This information originally appeared on the On30Conspiracy on August 7, 2000.]

  In use, the stain needs to be thinned with approximately 1 1/2 quarts of Diosol.

Wipe driftwood stain or other stain method such as India Ink or leather dye on the wood

- Use a rag (Cut up T-Shirt), wear gloves.
- As an alternative use inexpensive paint brushes.
- Will demonstrate.
- Wipe 1 direction.
- Do not try to fully cover.
- Vary quite a bit!
- This must dry a few days!!!!
- I usually let it dry at least one week.

Next distress the wood

- Use distressing tool.
- E-Xato knife with #11 blade
- Wood burning tool for knot’s. I do this first.
- Dental tools – picks etc.
- Or even the file cleaner, or wire brush.

Wire brush technique

- Run a wire brush down the wood in one direction.
- Vary the angle etc. get variety.
- Could also use a file cleaner or BBQ brush.
- I like the file cleaner – but wear gloves. I have cut my fingers or hands more than once doing this.
- Good for lots of wood.

Distress tool

- I prefer this method.
- Again go down in 1 direction and move it around – will demonstrate.
- Can also do ends on flatcars to get grain detail.
- Works great to go around knots.

Add more detail

- I will not do all of the wood with the previous methods but will do some boards totally individually with an #11 blade. Put it knot holes etc.
- For knot holes can use the knife, other blades, dental picks, or wood burning technique – just started doing this and it looks great.

Wash of thinned grimy black

- To bring out grain detail. Very thin.
- May even use my paint thinner for cleaning brushes (this is what I and others use more often than not).
- Brush it on and wipe it off with a rag!!!
- Only want it in the grain.
- An alternative is to use the India Ink or Leather dye thinned with rubbing alcohol.

Then add some color

- Using dry brush techniques.
- Poly S paints of Mud and Earth. Also some Roof Brown for variety.
- Don’t overdo – just a little must be dry brushing.
- Again let this dry for some time.

Add in wood that is rotted

- Bottom of structure will be where this wood is located.
- Really distress quite a bit. Washes of Grimy black. I do in about 3 passes of distress and Grimy Black.

Old colors

- I actually start with rubber cement tapped on the wood. Let it dry.
- If the structure had another color or more of paint underneath wipe it on very thin. Or spray paint it. Don't fully cover!
- Then use rubber cement pickup, masking tape, your finger – or an eraser to lift the paint and rubber cement.
- I will distress again.
- Let this dry a few days.
- Then a wash of grimy black

Final color

- Do the same last steps.
- Rubber cement – more towards bottom of building or lower part of rolling stock.
- Spray or wipe on paint – do thin and don’t fully cover.
- Pull off paint where rubber cement was using rubber cement pickup.
- Lastly use the back side of a #11 blade to wipe off some of the paint. Be careful during this step.

Final steps

- Again India ink or grimy black wash over the whole structure.
- Then you can use powders for add color.
- I used to dry brush with white. I still do but do much less and try to get it so that the viewer doesn’t even see the white. It is for highlighting.
- I lastly like putting moss or other plant type material on structures or mud on the underside of rolling stock

Peeling Paint

- Think about how much and where.
  - More towards bottom of what you are building and less towards the top.
  - Doors get lots of action and use – more there.
  - Windows get a bit. Think about where people handle the windows for a start – where windows rub – going up and down or sliding.
  - More on the sun side usually and less on the shade side (moss and growth more there – or rotting if in a damp place).
- From a high level on how to do.
  - Put something on the wood before the final coat of paint.
  - Paint
  - Remove that something
  - Many ways to accomplish this.

Methods for Peeling Paint

- Put rubber cement on where you want the final paint to be missing. Use paint between fingers or use small tool to apply the cement.
- Paint
- When dry !! Use rubber cement pick-up. A rubber type item. Can also use your finger rubbing across or masking tape.
- I have used all 3 and all work well. Finger is not the best but for small areas works fine.
- For other techniques it is similar. You can use salt, dirt, etc. First lightly wet it to put it on the surface. For this use the finger or masking tape. I use this for metal items quite a bit but works equally well for wood. Can be finer than the rubber cement – both an advantage and disadvantage.

Peeling Paint Cont.

- Also use the hobby knife with a #11 blade to scrape off some paint – again by the bottom of the model.
- Do not overdo the peeling paint!
- I have actually left some rubber cement under paint to represent bubbling of the paint in some areas – a nice effect.

Final Touches

- More washes of both diluted black and diluted browns.
- Rubbing in real dirt towards bottom. Also underneath rolling stock but away from working parts.
- Weathering chalks – Bragdon and ones you get from powered chalks.
- Put signs on the building. Rub them in and use a knife, dental tools etc. to work into the wood surface. Also, do washes over it like the siding. Want to make it all tie together.
- Plant material near the bottom of structures. Can even use to hide problems.
- Water tanks etc. Use bleach – spray it on – use high power light to get effect – or the sun.

For modeling Dented or Broken Wood

- I will break pieces – even scribed siding. See earlier photos. Make sure the edges are rough!.
- For siding you can cut the boards and pull it out. For both roughen up the ends!! Using X-Acto knife, dental tools, etc.
- Dents use dental tools works best for me. Must use a bit of pressure for this.

Burnt buildings

- Use real fire. Be very careful. Scorch the edge of the wood.
- I have only done this one time.
- Then you can bleach it afterword for a great effect.

Tools

- Go over the various tools used. Show each tool.
  - Where to get tools.
- Go over paints used.
  - Where to get them.
  - Pricing
- Stains
  - How to make them.
  - Where to get materials.

Demo's

- Show Tools
  - Lay them out and talk about each tool and it's use.
- 3 types of old wood techniques (gray – silver look)
  - Driftwood – rub on with rag. Dry 2 days.
  - India Ink and Isopropyl Alcohol. Dry 1 day.
  - Shoe dye and Isopropyl Alcohol. Dry 1 day.
- Distressing – show each method
  - Knife
  - Distressing tool
  - Carving set
  - Wood burner – knot holes
  - Wire brush
  - File Cleaner
  - Side of saw blade
- Show methods of knot holes– step 1.
  - Wood Burning
  - X-Exto knife
  - Wood carving
- Bringing out grain – all must dry at least 2 days!!!
  - Dirty paint
  - Grimy black cut by 10
  - India Ink wash
  - Wash of Leather dye
- Peeling Paint
  - Rubber Cement
  - Rubber Cement Pickup
  - Masking Tape as an alternative

Demo's 2

- Nail holes
  - Pounce tool --
  - Drafting Pencil
  - Homemade tool - Maybe
- Dry Brushing
  - Various Colors
  - Rag – wipe off.
  - On a tree trunk
- Chalks
  - Bragdon – rubbing in
  - Using dirt as a chalk
  - Other chalks – use fixative to fasten
- Interior
  - Paint -
  - Leather Stain
- Peeling Paint
  - Rubber Cement
  - Rubber Cement Pickup
  - Masking Tape as an alternative
  - Salt
- Trees
  - Carving
  - Painting
  - Drilling
  - Adding in Caspia

Knot Holes

- Show methods – step 1.
  - Wood Burning
  - X-Exto knife
  - Wood carving
  - Using a toothpick or other piece of wood.
    - Drill a hole in the wood the size of the toothpick.
    - Stain the toothpick – use a dark stain such as walnut.
    - Put the end of the toothpick in the hole. Cut off the back of it. Must be flush with the front.
    - Glue it on the back of the wood.
    - This works best in large scales – O scale or larger – HO or smaller would be difficult.

Latest Technique

- Using pastels
- Use high quality
- Powder and apply with soft brush.
- Fix with odor-less mineral spirits.
- Can build up.

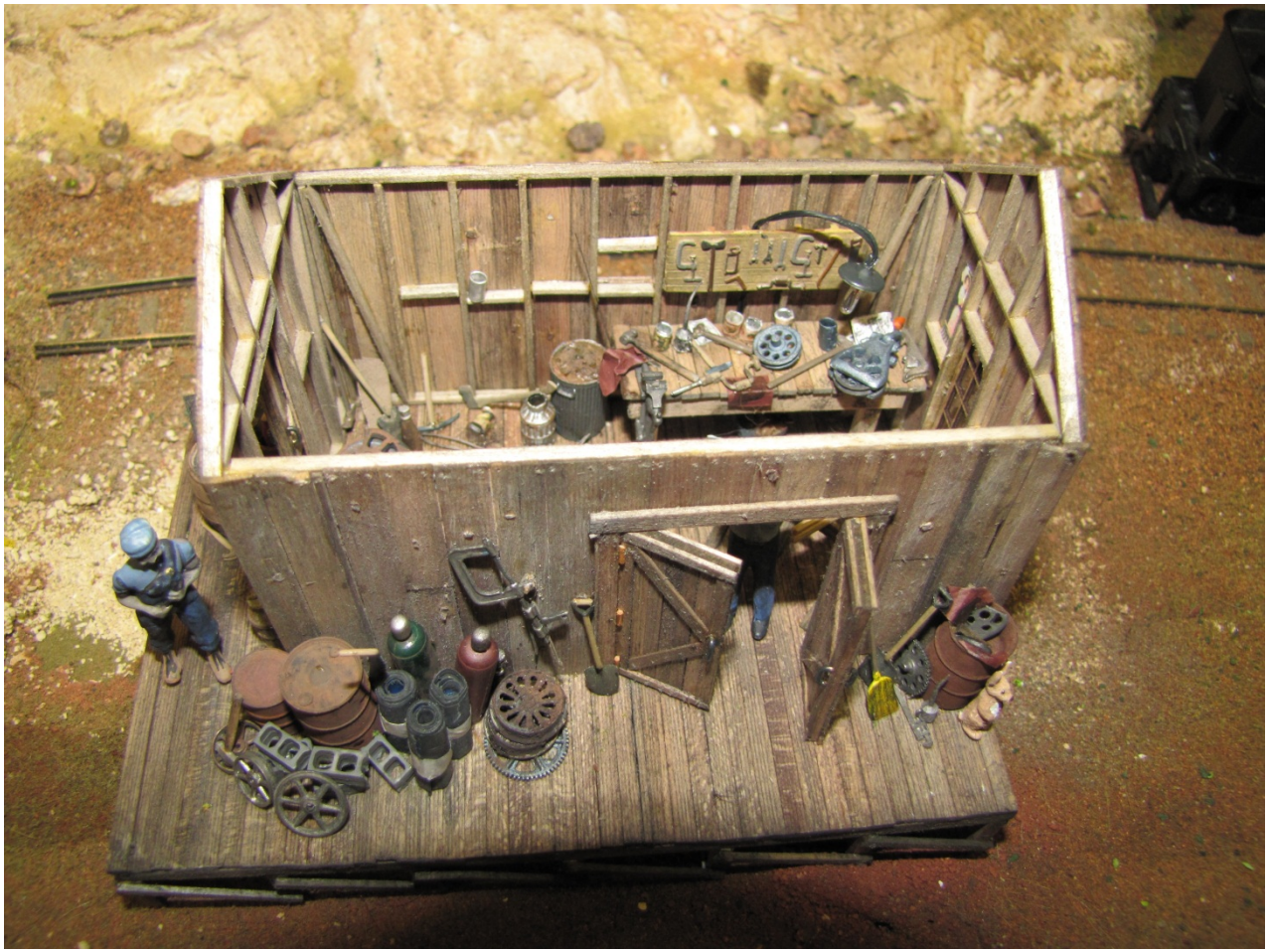
Start with coloring base

- Rubbing alcohol with India Ink or Shoe Dye. Wear gloves!
- Let dry.
- Distress the wood.
- Add in nail holes like before.
- Then add powder to wood and use the mineral spirits to work it in.

Notice floor Variation

Knot Holes Etc.

Shading etc.



Link

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