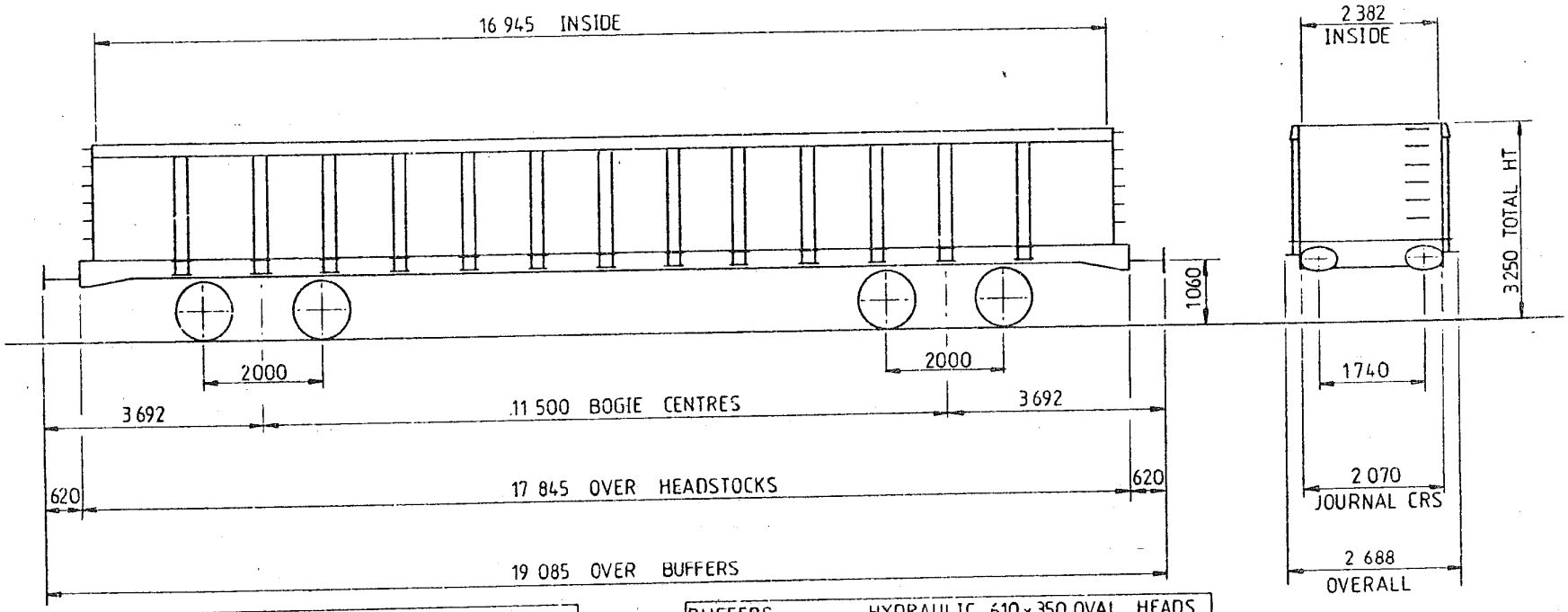
102 tonnes G.L.W. STEEL SCRAP BOGIE BOX WAGON

PX029A

EXCESS LENGTH 10	H	M	L	E
tonnes	102	66	38	29
~~VB~~				
AB	46	18	18	18
RA	10	4	1	1
MAX SPEED	60	60	60	60

TOPS CODE											
CARKND			AARKND				OPERATING PANEL No				
P	X	A	P	X	A	T	1	6	5	3	



TARE –	29000 Kg
CARRYING CAPACITY –	71000 Kg
CAPACITY –	76 m^3
MAX SPEED –	60miles/h
WHEELS –	Φ952
JOURNALS –	Φ150 ROLLER BEARINGS

BUFFERS	HYDRAULIC, 610×350 OVAL HEADS.
COUPLINGS	INTERNATIONAL SCREW
MIN. CURVE	70m
GEN ARRGT. DRG No	811335/01 (PROCOR)
BRAKE –	AIR DISC, HAND SCREW.
SUSPENSION –	PRIMARY FRICTION.

ISSUE 1

Original © BRB (Residuary) Ltd

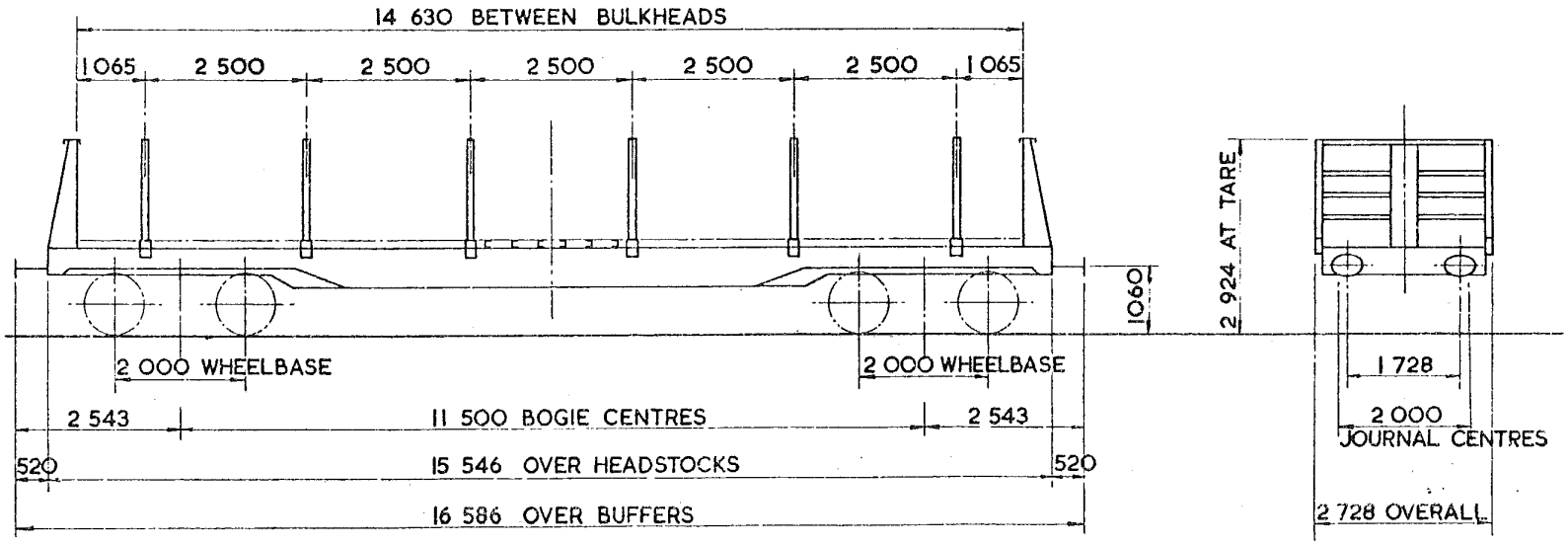
This PDF copy by J.D. Faulkner, 2009 (visit http://www.barrowmoremrg.co.uk)

102 tonnes G.L.W. STEEL CARRIER

PX 030A

EXCESS LENGTH 6	H	M	L	E
tonnes	102	69	43	24
VB				
AB	51	51	14	14
RA	10	6	3	1
MAX. SPEED	60	60	60	60

TOPS CODE		
CARKND	AARKND	OPERATING PANEL No.
PXA	PXA	P 1 1 7 4



TARE-	24 400 kg
CARRYING CAPACITY-	77 600 kg
CAPACITY-	
MAX. SPEED-	60 mile/h
WHEELS-	952 DIA.
JOURNALS-	150 DIA. ROLLER BEARINGS.

BUFFERS-	HYDRAULIC 559x356 OVAL HEADS
COUPLINGS-	INSTANTER
MIN. CURVE-	71 m.
GEN. ARRGT. DRG. No.-	741020/01
BRAKE-	AIR BLOCK & HAND SCREW
SUSPENSION-	SECONDARY COIL

BUILDER-	PROCOR (U.K.) LTD.
OWNER-	PROCOR (U.K.) LTD.
REGISTERED BY-	C.M.&E.E. (B.R.B.) DERBY
YEAR BUILT-	1973 – 74
REGISTRATION Nos.-	3004 – 3007
OWNERS Nos.-	3004 – 3007

ISSUE 1

FX PO DIAGRAM 6/455 (ALLOCATED)

Original © BRB (Residuary) Ltd

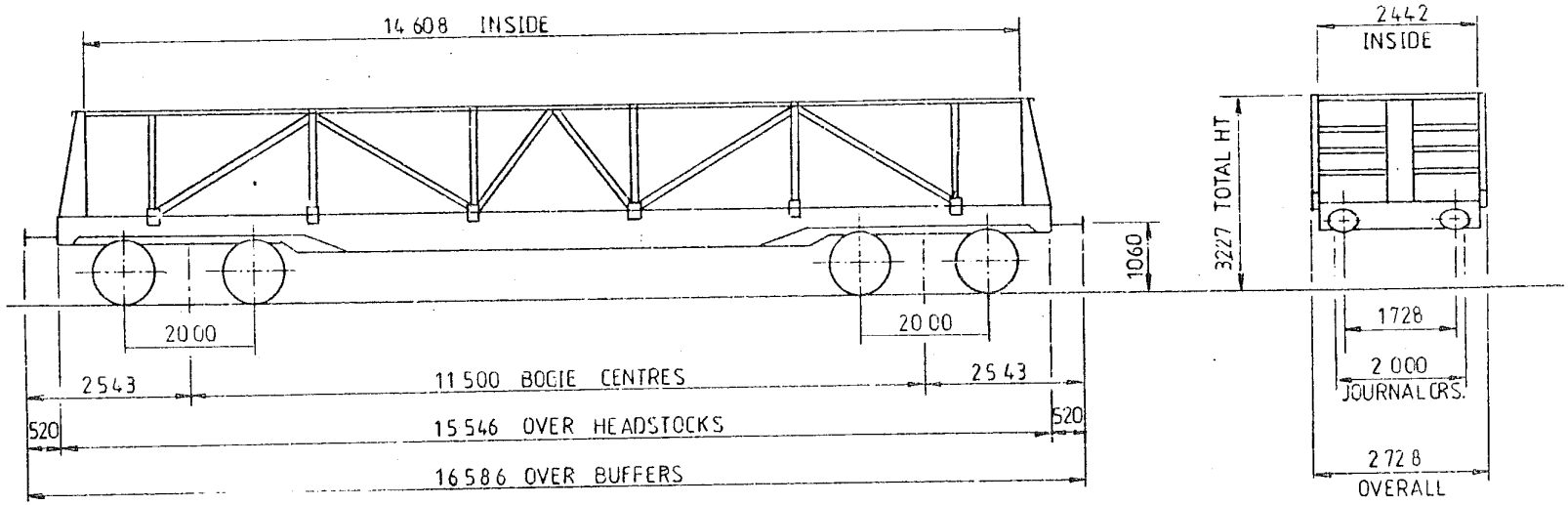
This PDF copy by J.D. Faulkner, 2009 (visit http://www.barrowmoremrg.co.uk)

102 tonnes G.L.W. BOX WAGON - SCRAP

PX030B

EXCESS LENGTH 6	H	M	L	E
tonnes	102	76	50	33
VB				
AB	51	51	14	14
RA	10	6	3	3
MAX SPEED	60	45	60	60

TOPS CODE											
CARKND			AARKND				OPERATING PANEL				
P	X	A	P	X	A	P	1	6	0	2	



TARE	33 000 kg
CARRYING CAPACITY –	69 000 kg
CAPACITY –	64·3 m³
MAX SPEED	60 mile/h
WHEELS	ϕ 952
JOURNALS	ϕ 150 ROLLER BEARINGS

BUFFERS	HYDRAULIC 559 × 356 OVAL HEADS
COUPLINGS	INSTANTER
MIN CURVE	71m
GEN ARRGT DRG No	741020/01 & 811329/01 (PROCOR)
BRAKE	AIR BLOCK, HAND SCREW
SUSPENSION	SECONDARY COIL

ISSUE 1

EX P.O. DIAGRAM 67455

Original © BRB (Residuary) Ltd

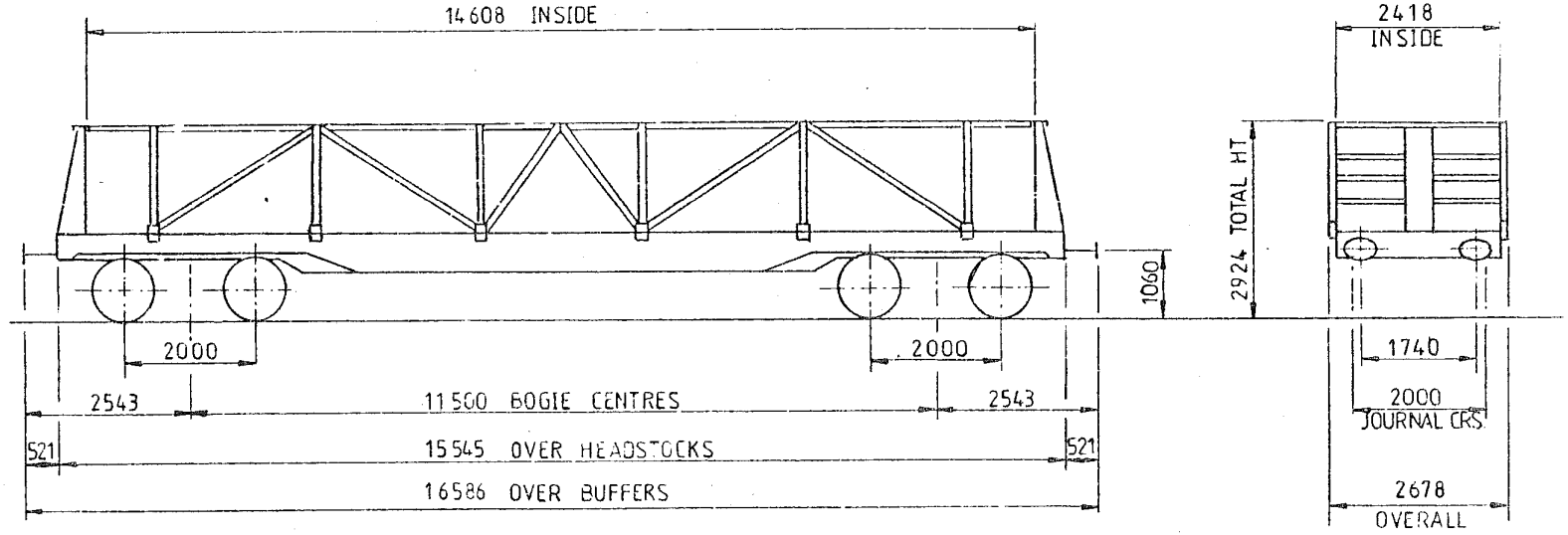
This PDF copy by J.D. Faulkner, 2009 (visit http://www.barrowmoremrg.co.uk)

102 tonnes G.L.W. BOX WAGON - SCRAP

PX030C

EXCESS LENGTH 6	H	M	L	E
tonnes	102	76	50	33
~~VB~~				
AB	51	51	14	14
RA	10	6	3	1
MAX SPEED	60	45	60	60

TOPS CODE											
CARKND			AARKND				OPERATING PANEL No.				
P	X	A	P	X	A	P	1	6	0	2	



TARE -	33 000 kg
CARRYING CAPACITY –	69 000 kg
CAPACITY –	53·4 m^3
MAX SPEED	60 mile/h
WHEELS	φ 952
JOURNALS	φ 150 ROLLER BEARINGS

BUFFERS	HYDRAULIC, 560×356 OVAL HEADS.
COUPLINGS	INSTANTER.
MIN CURVE	70 m
GEN ARRGT DRG No	741020/01 & 811316/01 (PROCOR)
BRAKE	AIR BLOCK, HAND SCREW
SUSPENSION	SECONDARY COIL

ISSUE 1

CY PO DIAGRAM 67455

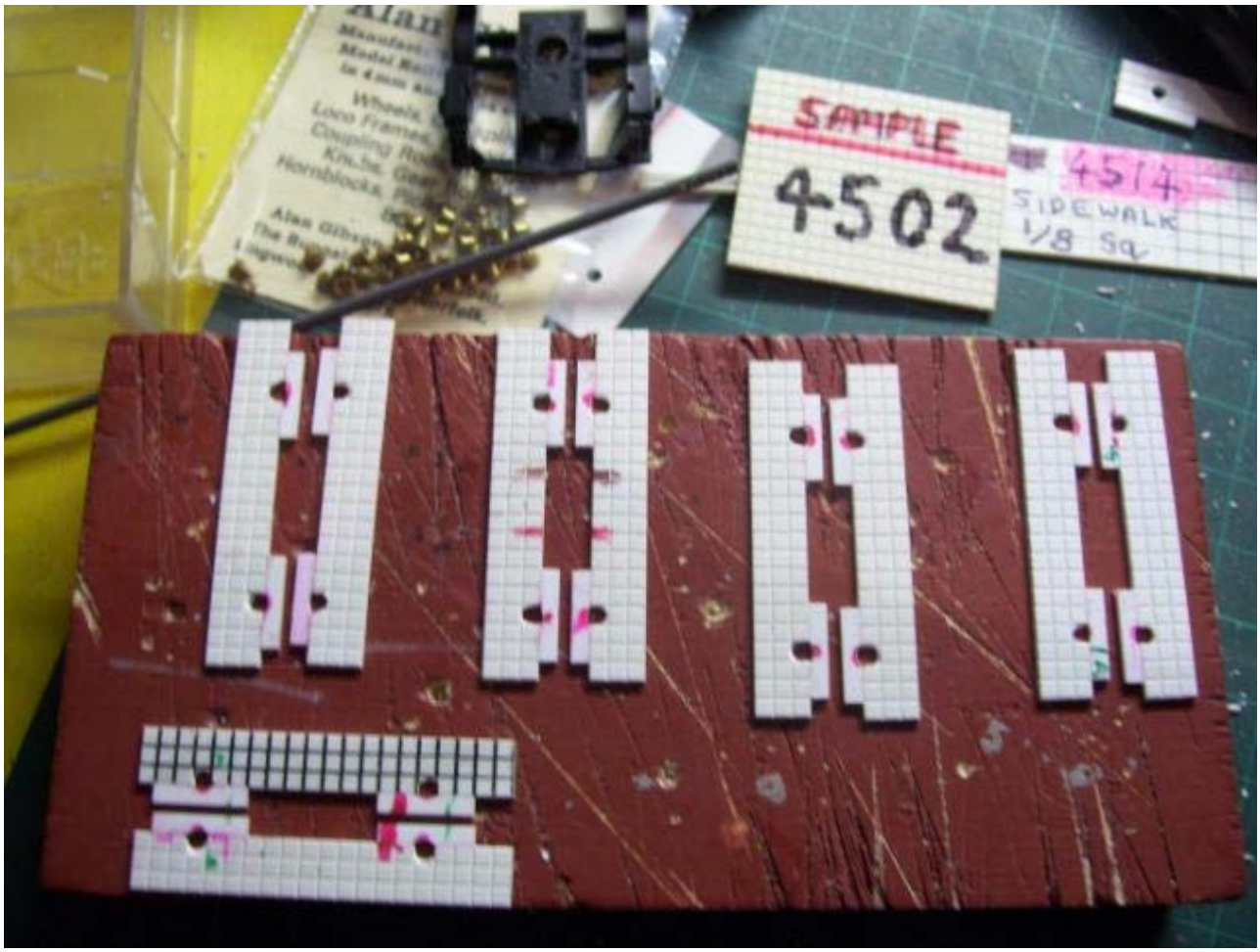
Original © BRB (Residuary) Ltd

This PDF copy by J.D. Faulkner, 2009 (visit http://www.barrowmoremrg.co.uk)

As part of the scrapyard theme for my forthcoming layout, I became interested in several types of scrapwagons. I have a dozen POA / SSA 51 ton wagons & a few MBA's from Bachmann.

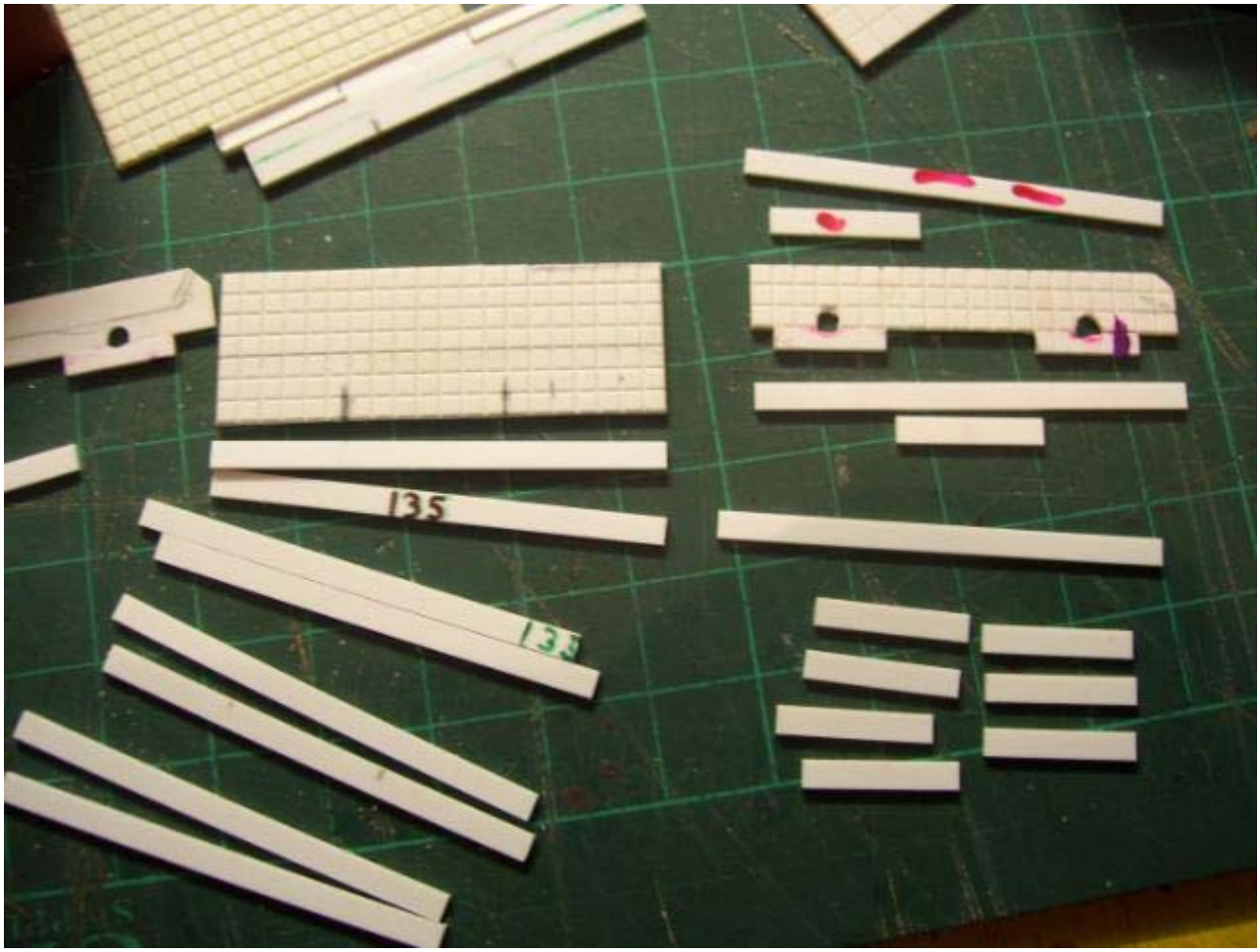
I became interested in the PXA & JXA bogie wagons used by Sheerness steel, but they're not available RTR or kit form, so, I decided scratch building the bodies would be easy enough, the bogies for the 54ft PXA I obtained from Bachmann 100 tonne fuel tankers, but obtaining the bogies for the JXA wagon presented a small problem finding a supplier, so I obtained a few dozen photos of JXA, PXA wagons, schierlen bogies from the Paul Bartlett photo website, I decided to take on scratchbuiding Schierlen bogies, & I've made sufficient achievements with this as to post my progress so far...;

I studied all my photos of both the scrapwagon with Scherlien bogies & a close up photo of a Scherlien bogie fitted to a 100 tonne fuel tanker type wagon



I decided to use Evergreen #4502 embossed sheet styrene, the recessed lines & spaced squares make it's so much easier to mark measurements, score & break to precision as required, I've used a boardmarker as to show up the recess more clearly,

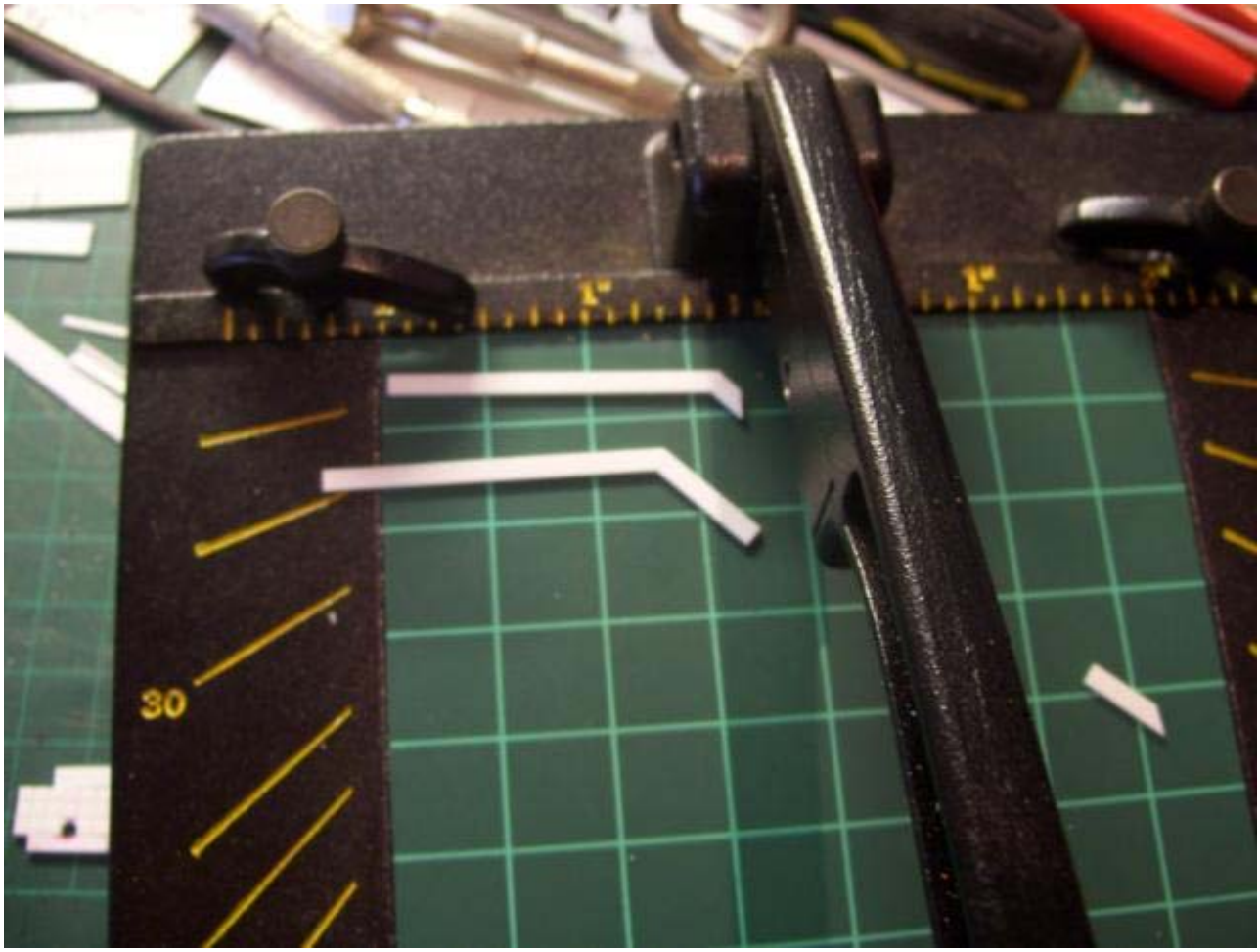
I studied my photos & other information & came to a conclusion for the size of bogie, I'm probably within 2mm give or take- so that 6 inches thereabouts of accurate scale size.



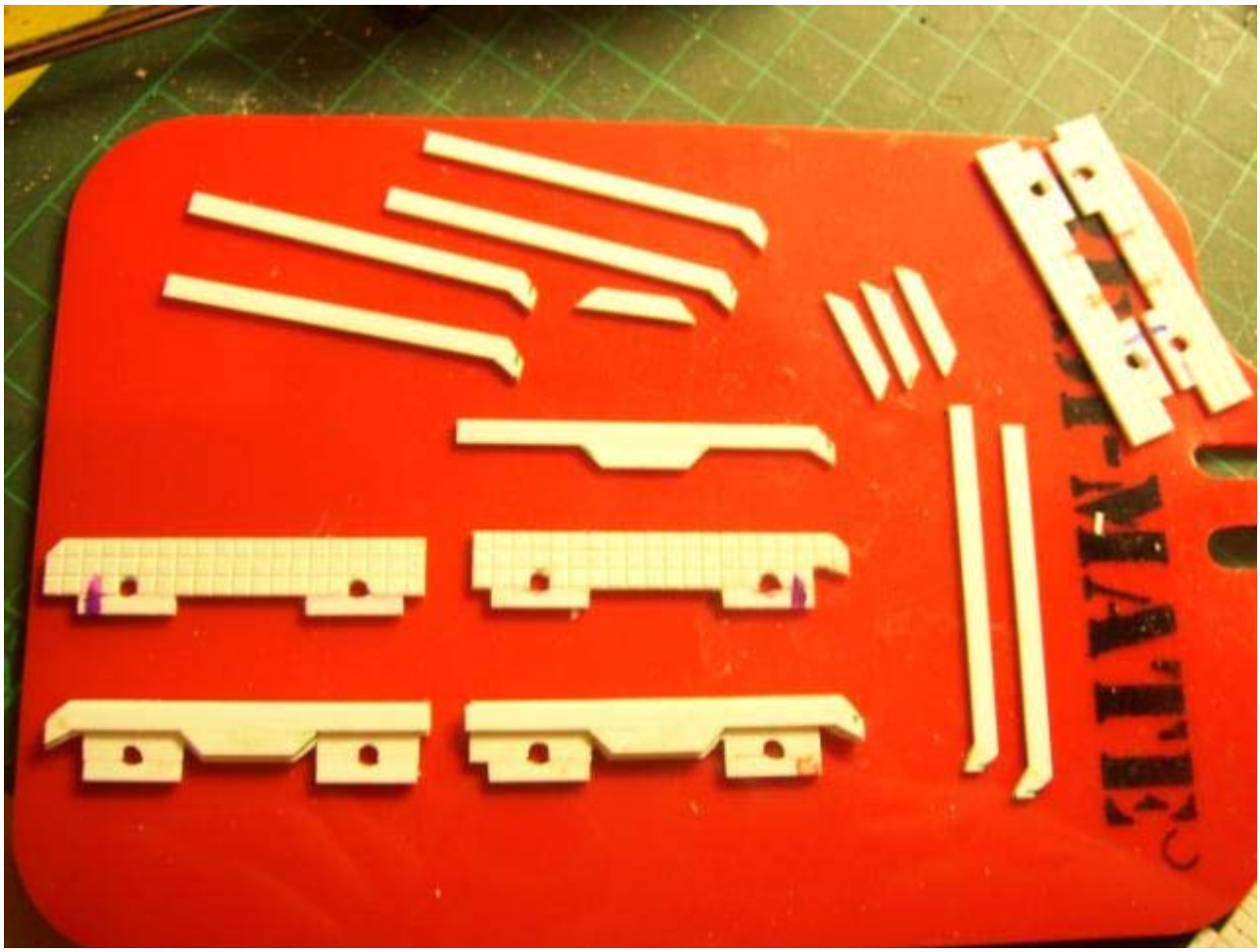
Using Evergreen strip #135, duplicates of 2 sizes were cut to exact duplicate lengths using my NWSL Chopper, angled cuts to lower portion of girder cut after straight cuts had been done,

cut components of styrene Evergreen #135 were welded together,

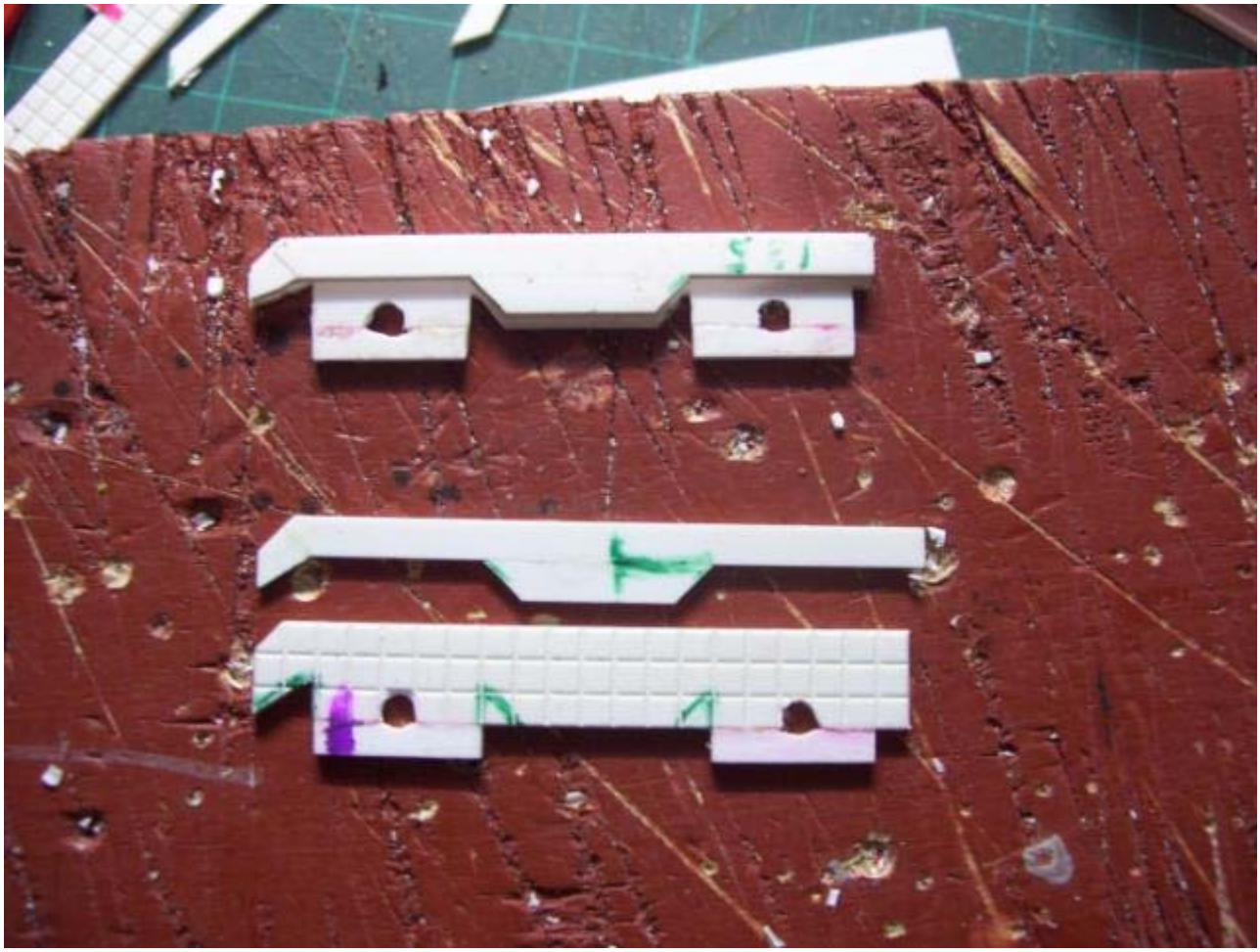
Excess trimmed off with knife,



Cut down surplus with my NWSL chopper, nice & accurately done, each one has to be exactly the same,



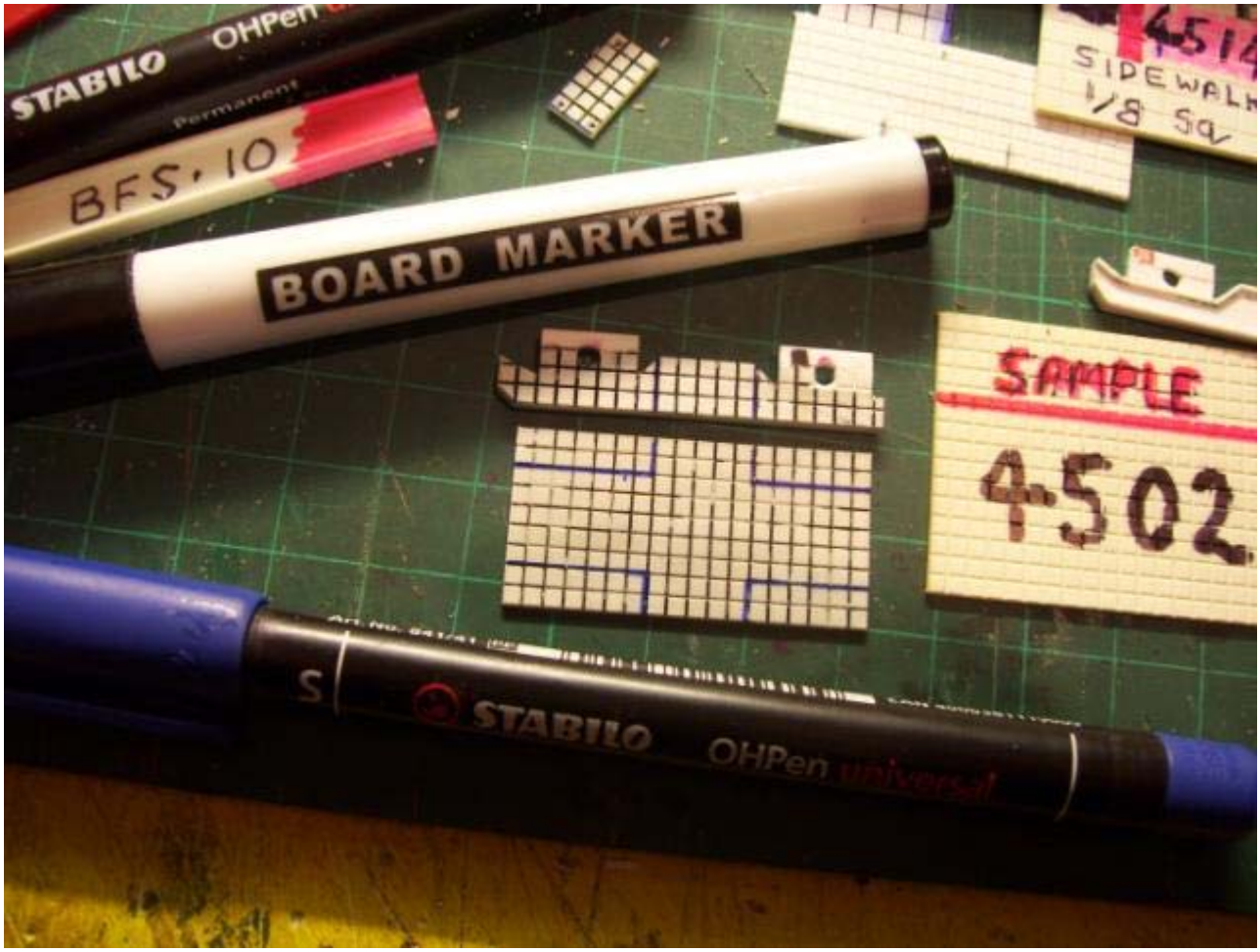
I carefully positioned lower portion of girder, welded them with plastic weld, allowed them to dry & then fitted them onto the #4502 backing plate using tiny spots of Revel Contacta....



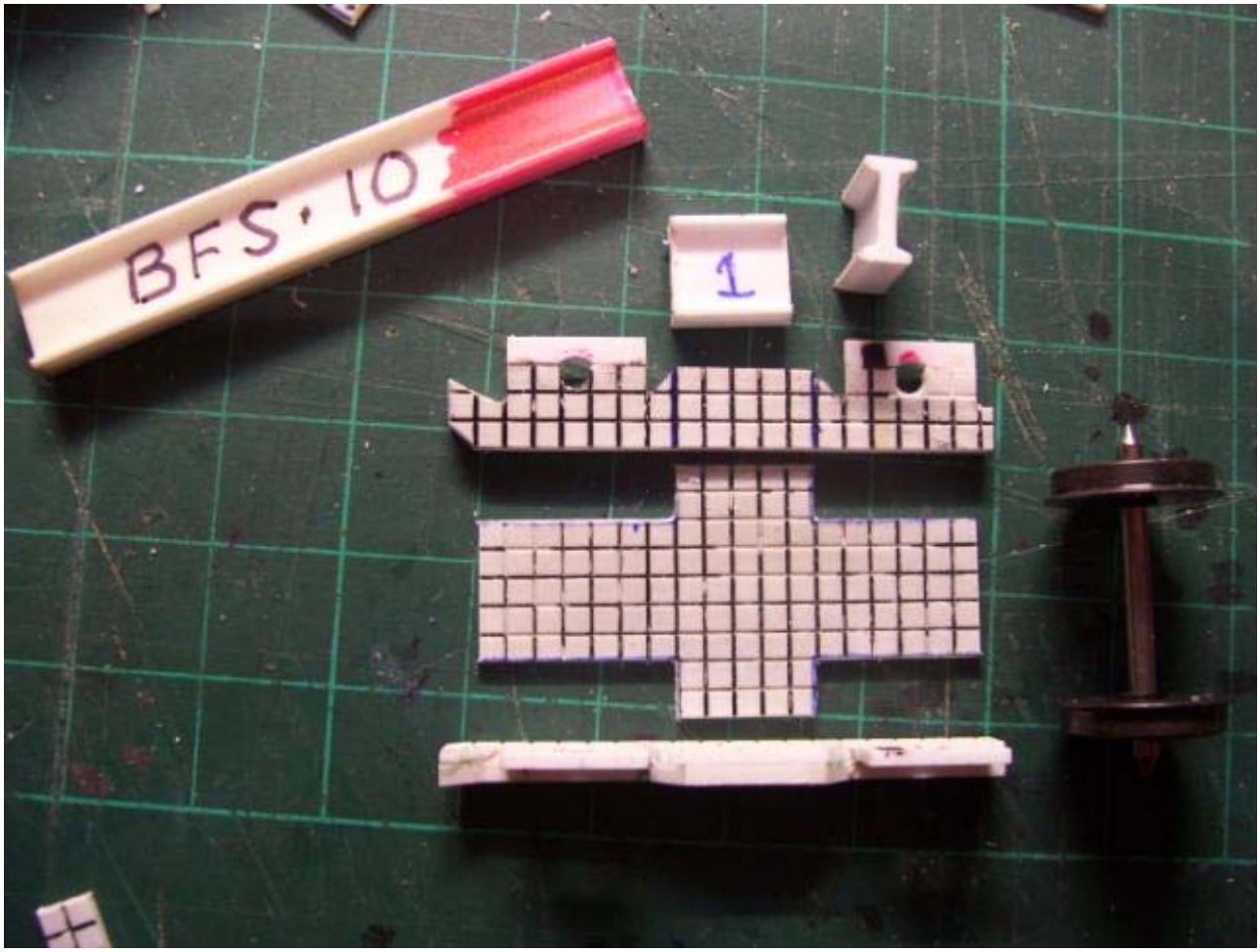
When dry, I used styrene strip Evergreen #123 (0.5mm x 1.5mm) to follow around the profile of #135 (0.75mm x 2.5mm) as to make odd shape girder design of bogies, applied & complete as seen below;

Press studs make ideal handbrake wheels, in this case, the 6mm size is especially suited to the scale size and design of handbrake wheel that are on some scrapwagons, I have photo's showing them fitted with Scherlien bogies. You may have noticed, the position of the handbrake wheel on my modelling is incorrect,

but it’s not glued into place, it’s only to give an idea of how suited the 6mm press stud resembles the handbrake wheel as seen on JXA scrapwagons fitted with schierlen bogies.

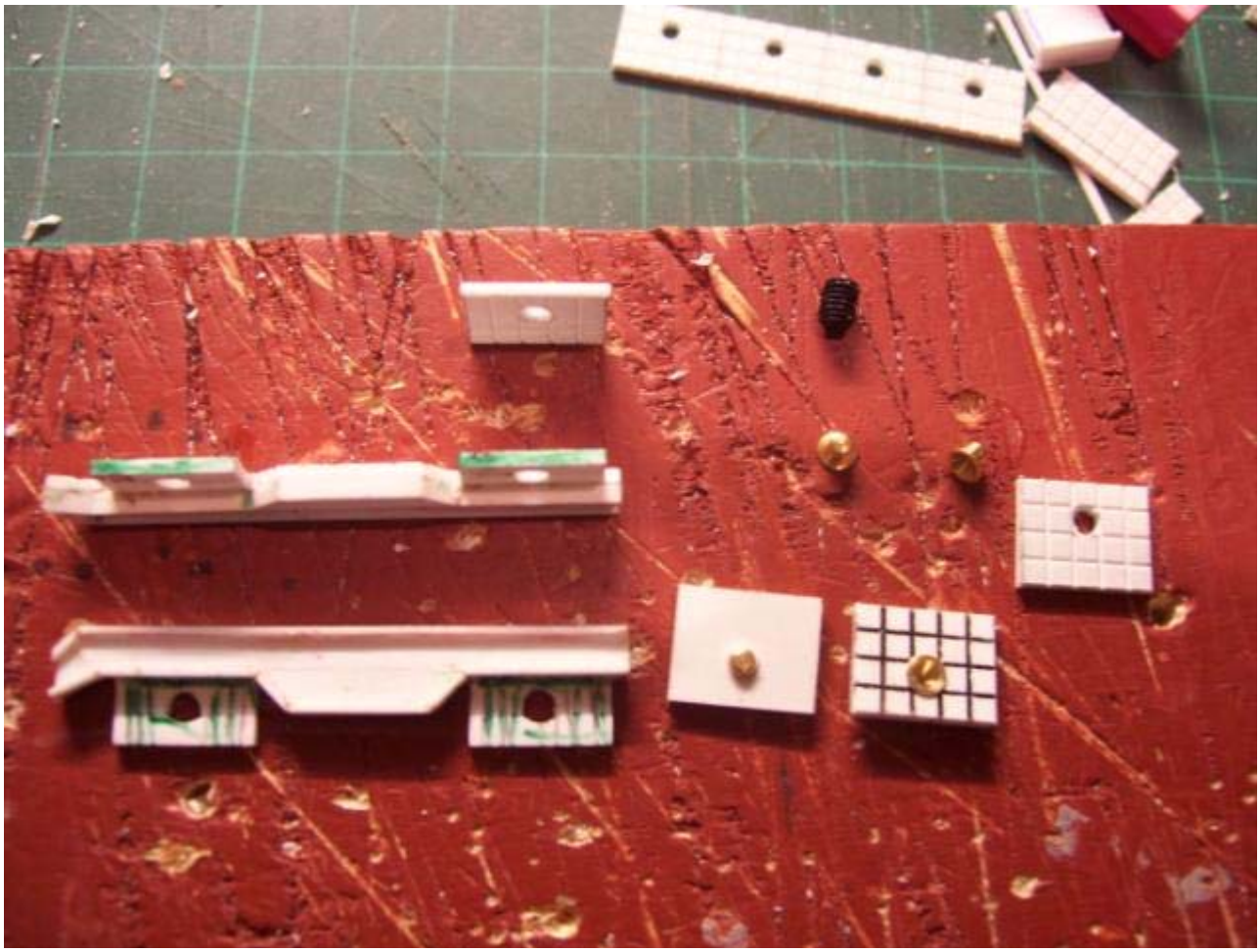


Yesterday evening, I spent time toying the idea of how to construct the top portion of bogies that hold the bogie sideframes together & fit to chassis when required, the top plate shown is one of a few different size plates, its gives a basic idea of what I have in mind, although it’s still at an experimental stage regarding which size plate to use.

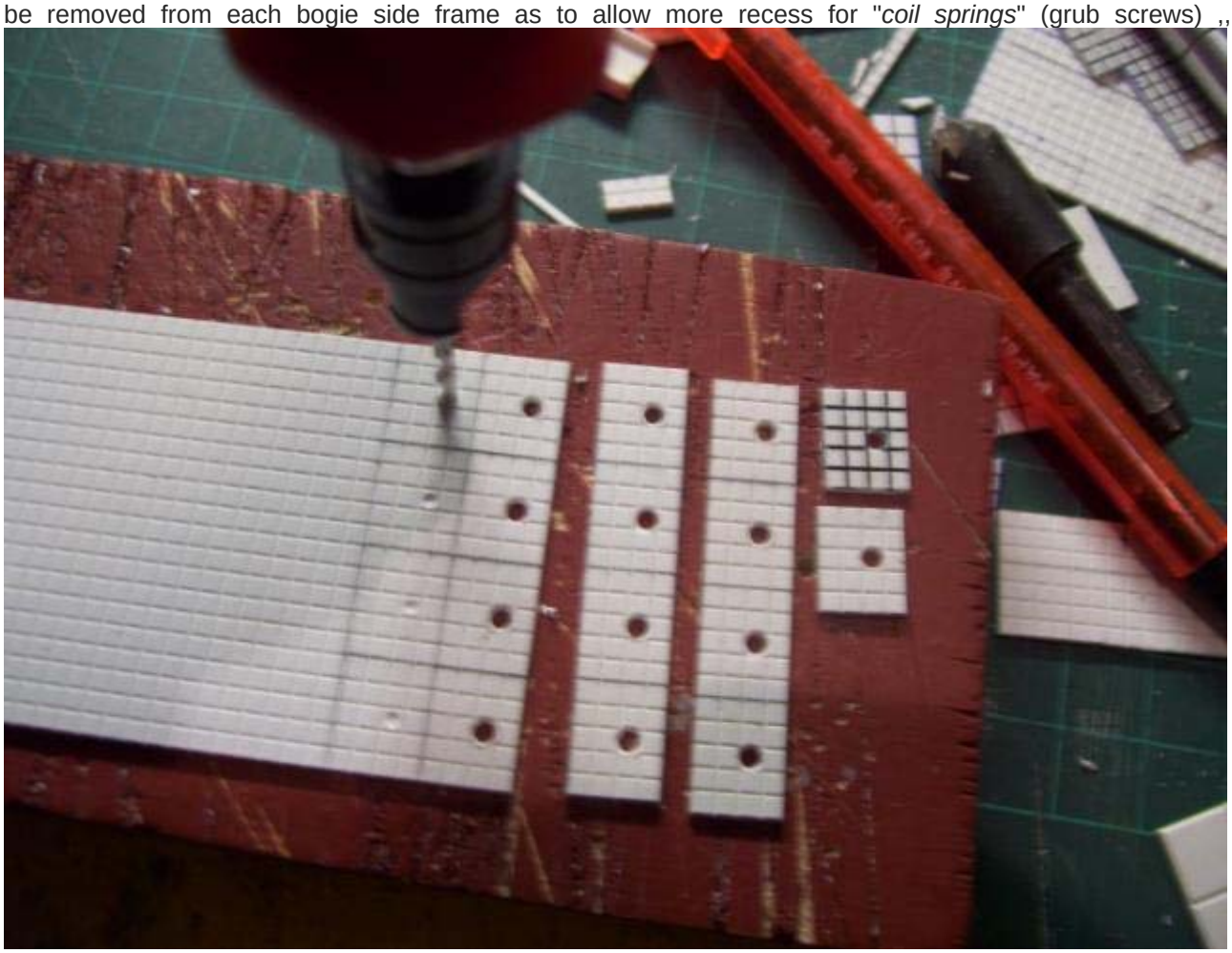


Either the Plastruct BFS10 or BFS12 girder profile will play an important part to holding together the bogie sideframes & top.

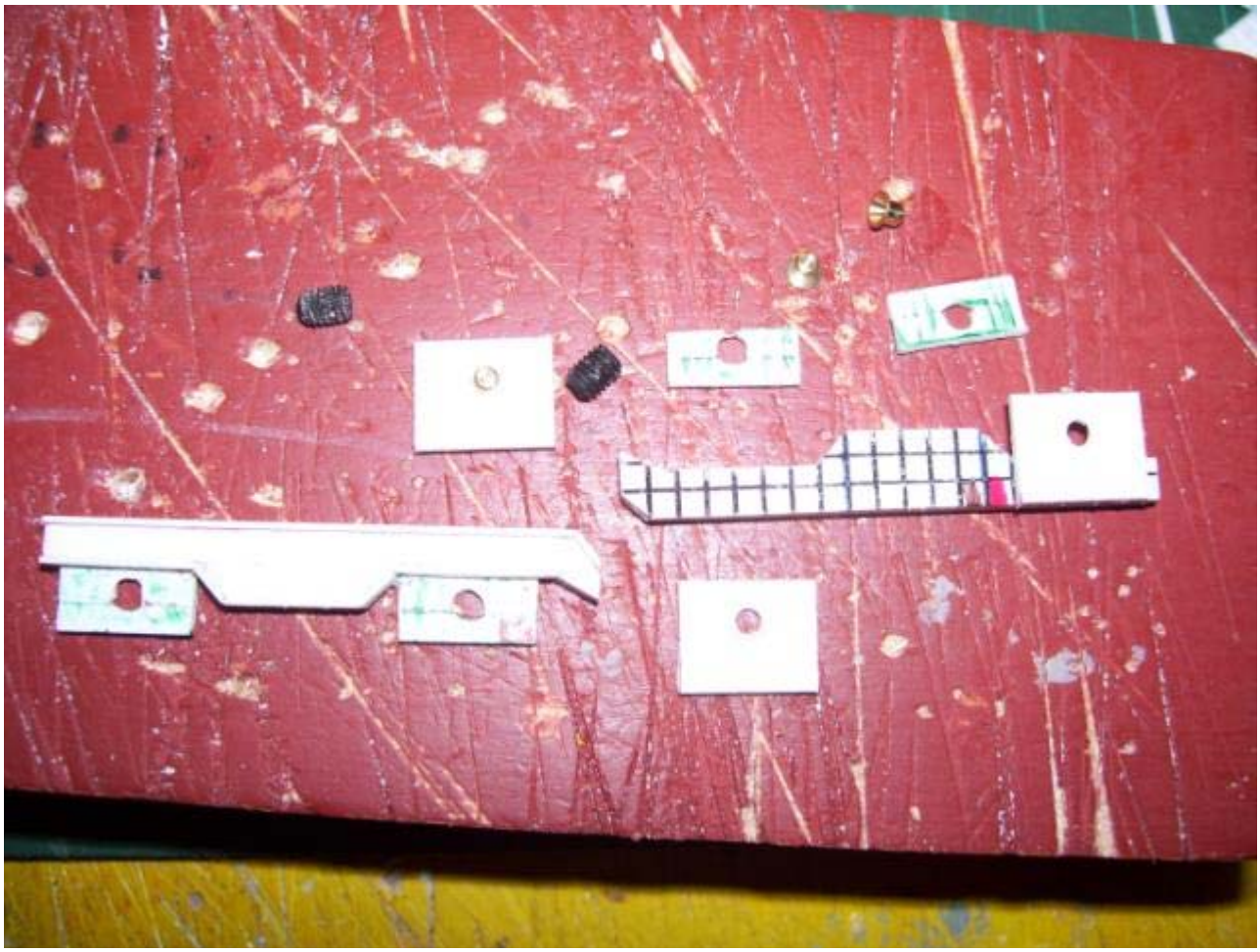
I reckon the grub screws give a fairly good representation of coil springs, but even after filing they still protrude outside of bogie girder, they need to be level with the outer girder frame flange, so...,



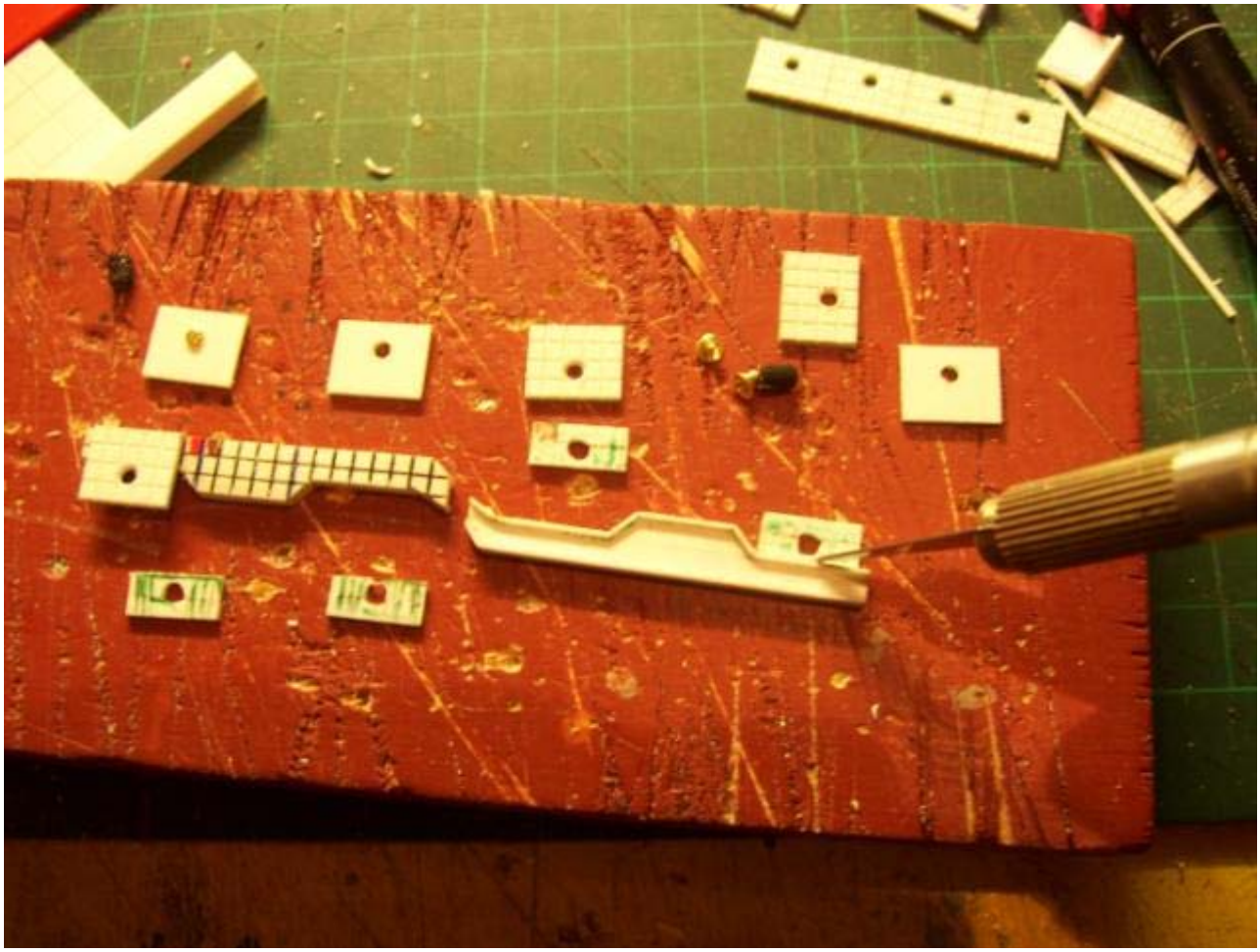
due to the grub screw protruding too far out wide from underneath bogie girder, the area's marked green will be removed from each bogie side frame as to allow more recess for "*coil springs*" (grub screws) ,,



Duplicate components from Evergreen #4502 were made & 2mm holes drilled in each of them for brass bearings, these are to replace the removed area's as explained above.

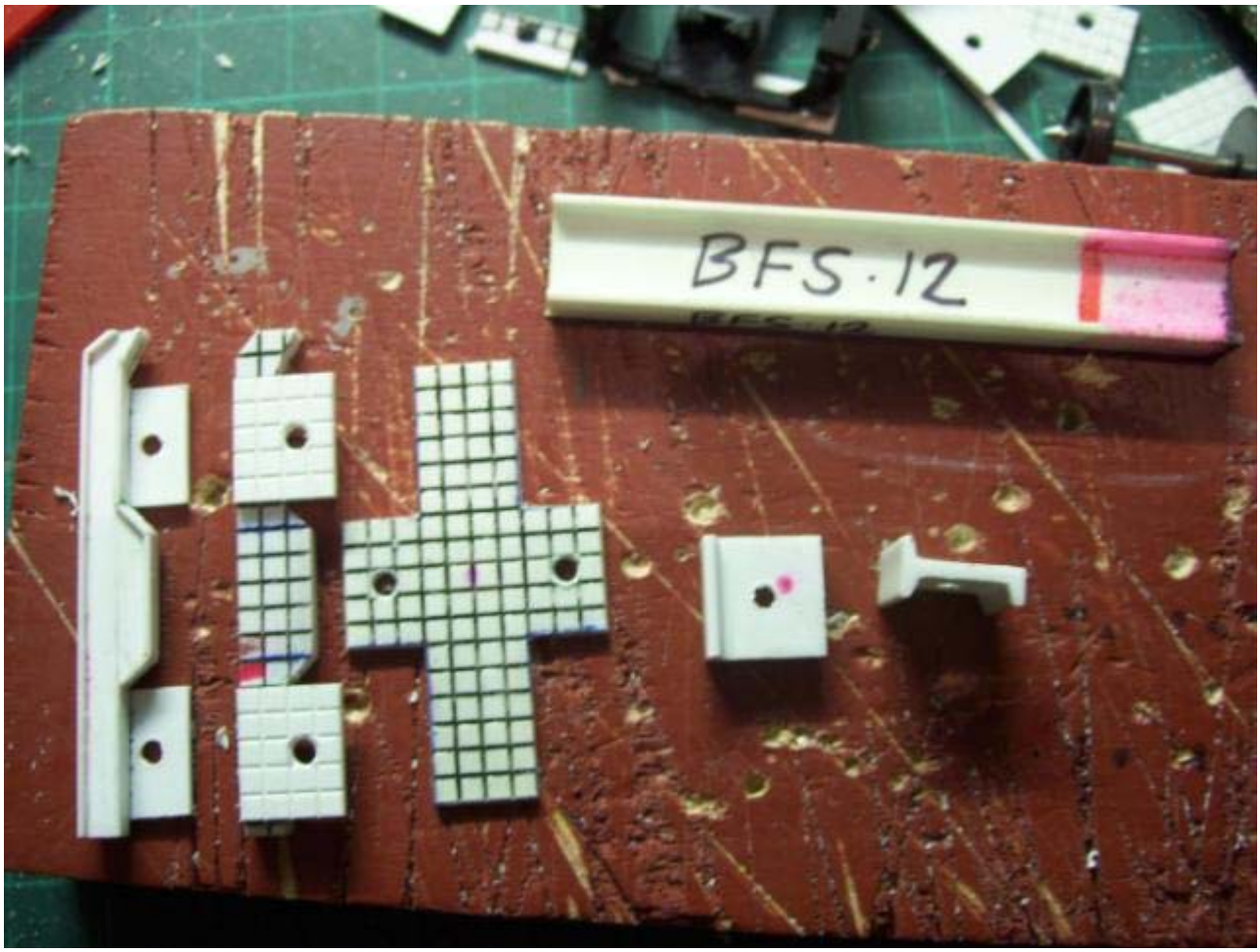


I removed the area's I've marked with green pen.

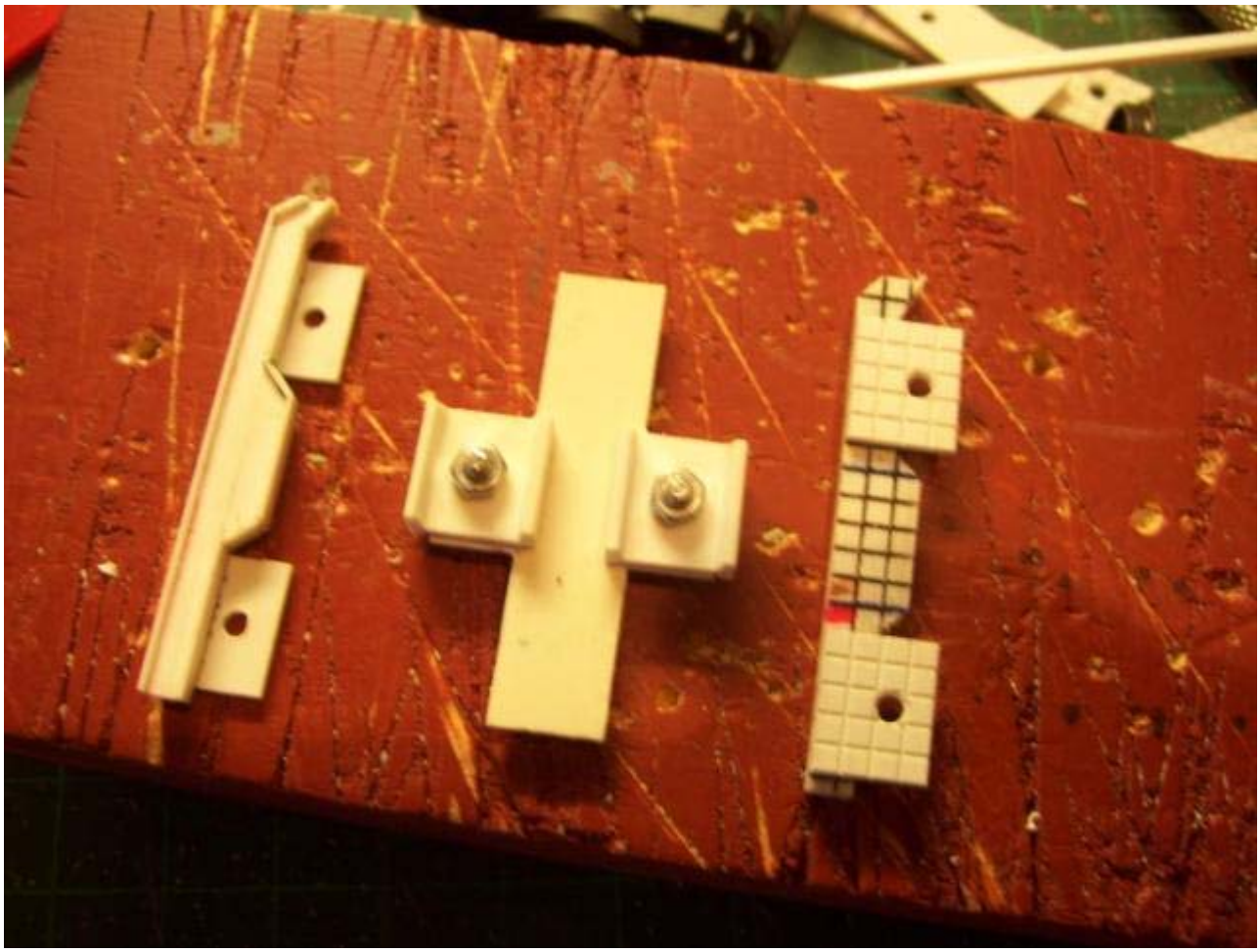


Removing the last of green shaded area, the new axle holder / backing pieces for coil springs (grub screws) were then fitted onto the rear of #4502 main side frames. Achieving accurate alignment was easy quick &

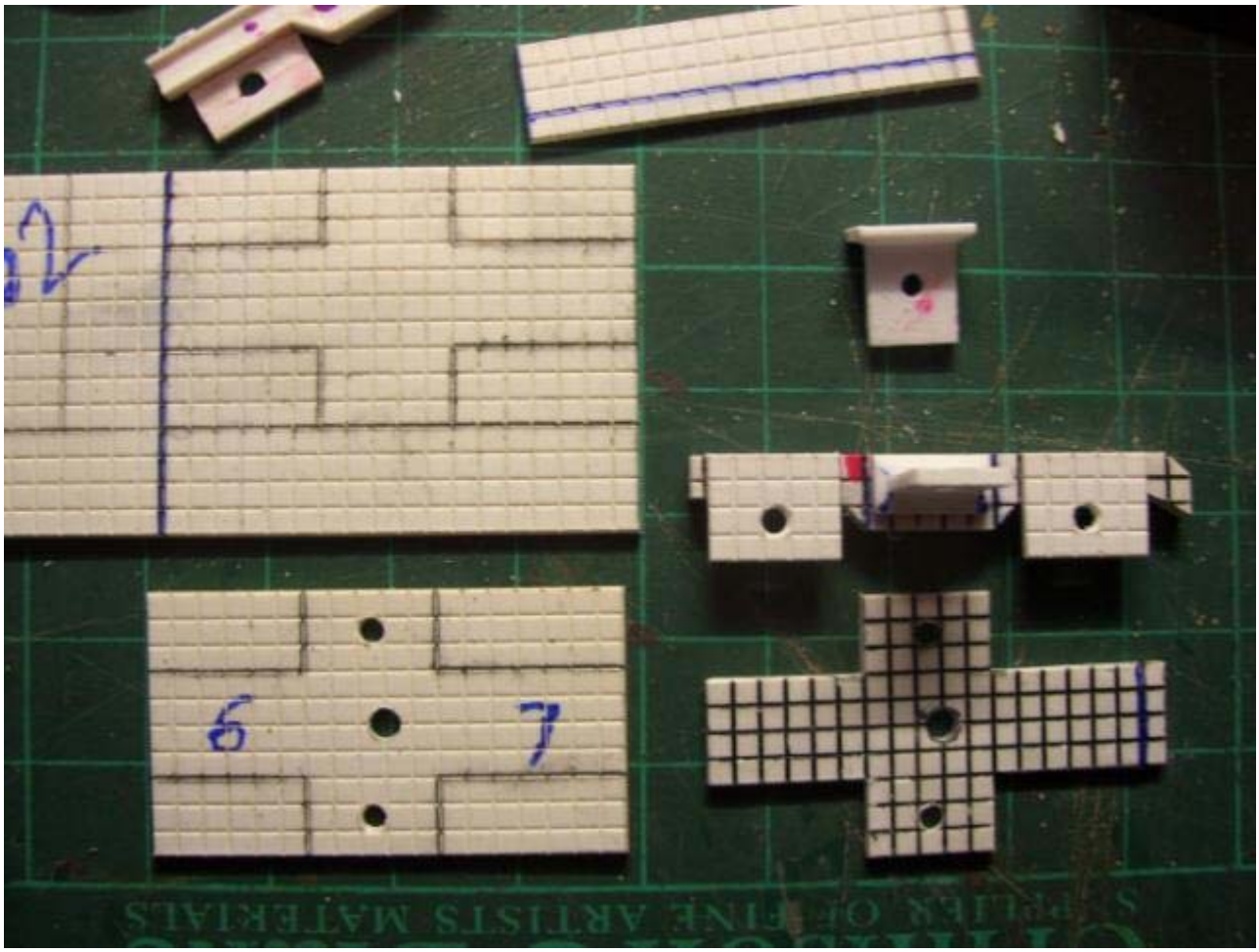
accurate, as the embossed recessed lines gives a natural guide to this, I've highlighted the recessed lines with a drywipe board marker for clarity - I strongly recommend the versatility & usage of the Evergreen embossed card range for this sort of thing- **I've used Evergreen sheet #4502** mostly for this project so far.



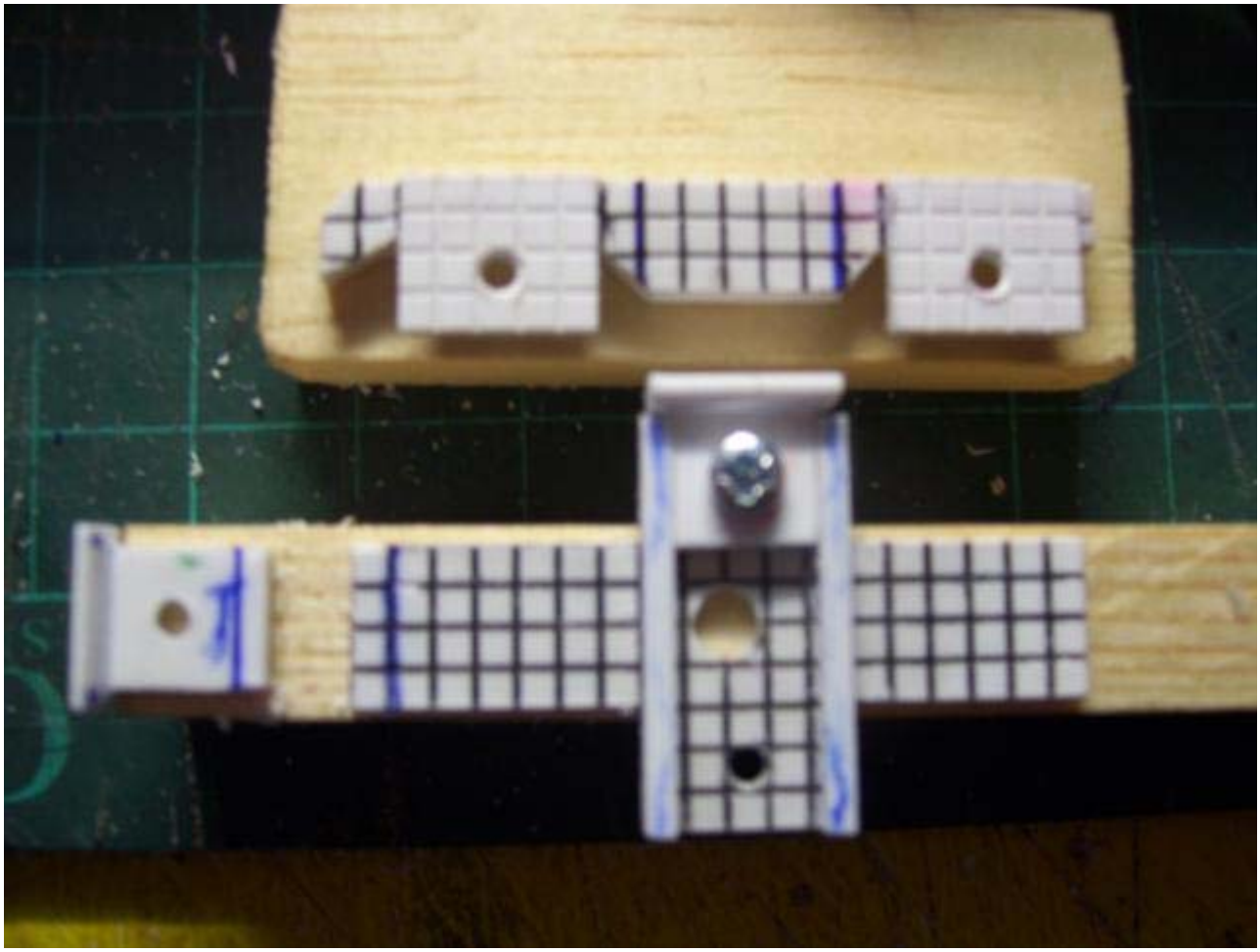
For the bracket, I decided to use cut sections of **Plastruct BFS12** rather than BFS10, modified them & drilled 2mm holes dead centre of these & the #4502 baseplate.



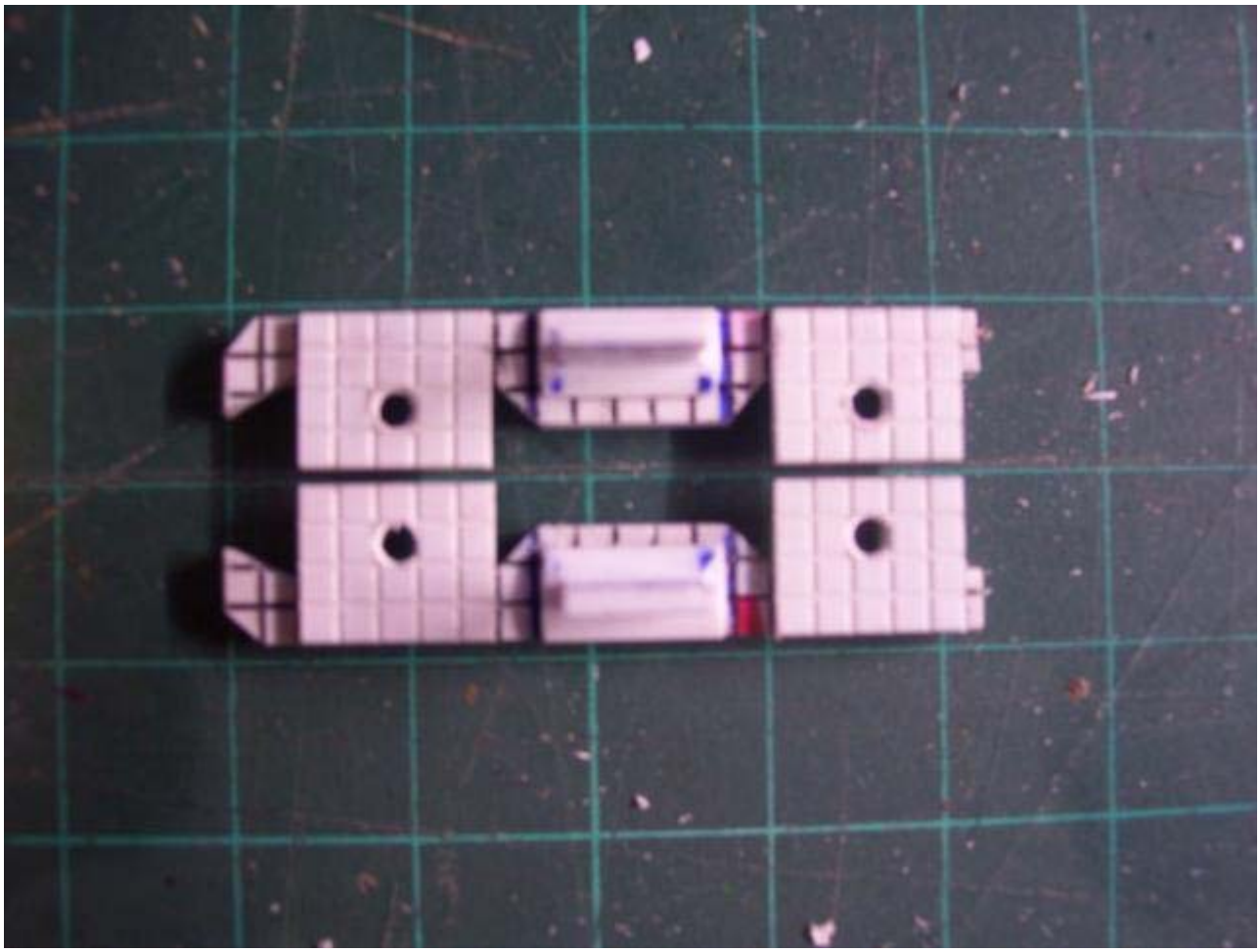
The bracket & base component bolted together with **M2 x 6mm bolts & nuts**. The #4502 baseplate itself will be strengthened with styrene strip lengthways & crossways.... I get quite obsessive about things I make & I've a habit of over-engineering things like this.



Using Evergreen #4502, several plates were marked up for cutting out, the Plastruct BFS12 pieces were modified with a file & a 3mm hole was drilled dead centre of #4502 plates.



Evergreen strip #151 (1.5mm x 1.5mm) was cut placed both sides where shown - this would strengthen and also prevent pivoted movement of bogie side frames as each bogie sideframe needs to stay rigid to #4502 baseplate & held in by M2 x 6mm bolts. It is intended that the side frames can slide out for whatever reason. Test fitting the brackets is shown in above photo, so both brackets were welded to inner sideframes, as seen in photo below.

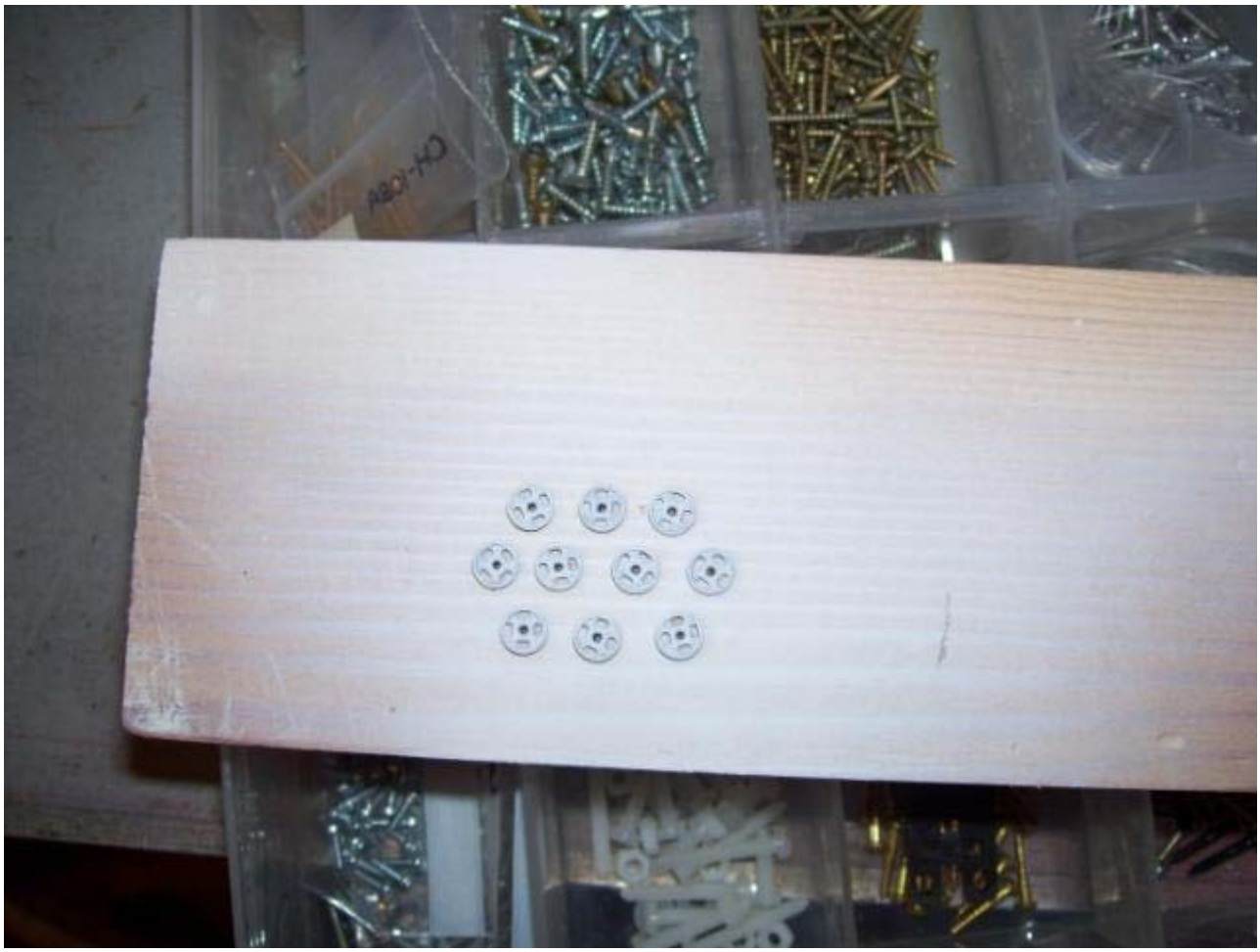


I still need to apply other detailing to the bogie sideframes, handbrake wheel (6mm press stud), coil springs (grub screws), and apply other specific feature detail to the girders.

With those modified BFS12 now welded onto inner side of side frame, I'll need to drill an 8mm clearance hole in a scrap piece of plywood as to enable me to add detail to the bogie sideframes when they're disconnected.

I made the rear frames & attached these to centre plate rather than bogie sideframes

I painted the handbrake wheels white (I've used the male part of size 6mm press studs). To enable me to spray these press studs effectively without the pressure of spray can blowing them away & so risk losing them, I drilled 1.5mm holes in a piece of spare wood & pushed the press studs into holes as to keep them in place whilst I sprayed them.



Sprayed up white, the 6mm press stud give a fairly good representation of the type of handbrake wheels seen on many photos of PR3100 type scrapwagons fitted with Scherlien bogies as seen on Paul Bartlett's photo website. Photo below; - I added more fiddly detail to the bogie side frames & glued those grubscrews in place with "*Revel Contacta Special*" solution.

1.5mm holes were drilled into each side frames , the two bogies will have a handbrake wheel on one side of bogie, on the bogie sides that doesn't have a handbrake wheel I've drilled a 1mm hole into a 1.5mm square plate & fitted them on where the option of fitting a handbrake that side would go,

Bogie side frames & front end frame girders were sprayed up using Halfords red oxide plastic primer, allowing to fully dry overnight ready for painting black / brown / rust, then assembling sides to top frames & fitting those handbrake wheels, The bogies now completed.

I know it’s a bit late now but two versions of this bogie are available from Appleby

J. Talbot
10 St. Dunstans Close
Battenhall
Worcester
WR5 2AJ

Cheques payable to J. Talbot

Got a few orders of John over past year, all being prompt. Thanks for the info chaps,

I sent a letter to John Talbot last month via; P.O.box 104 Worcester WR5 2YZ , but got no reply, so maybe wrong address as it’s a different address to above ?.

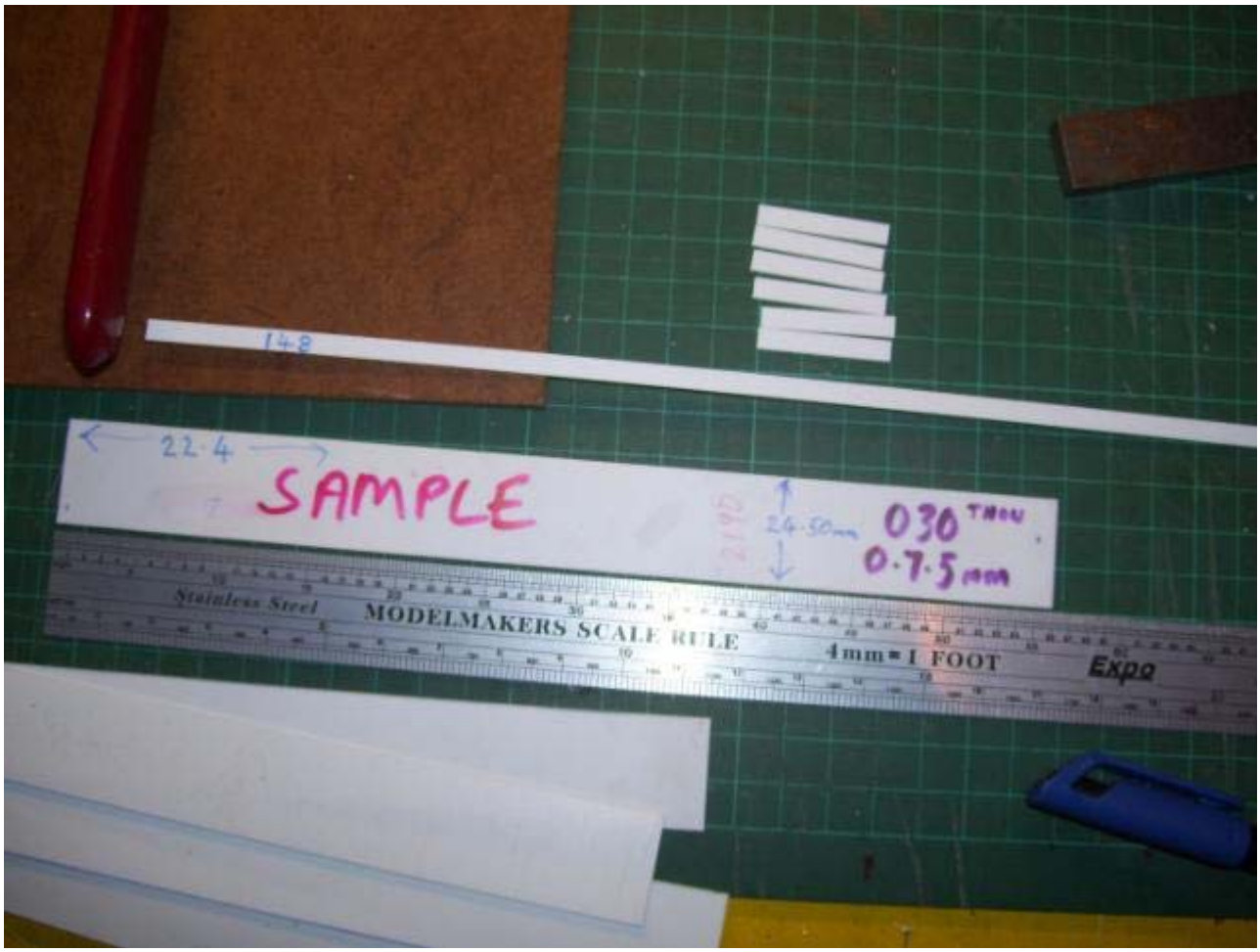
Another source of scherlien bogies (Intercity Models) said he was out of stock & needed to cast some more, but I didn’t follow that one up. I'll follow the Colin Craig lead up though, as, out of interest I'd like to compare my version with what’s available. I've decided to finish building the 2nd pair of Scherlien bogies I'd already started, then I'll start scratchbuilding the body & chassis for 2x PR3100 type JXA Sheerness scrapwagons.

The 3x4mm grub screws to represent the coil springs are also a fairly good likeness I thought, as ideally they're available in different lengths/sizes. The 6mm press stud was a stroke of luck being scale size & that particular style of 4 spoke handbrake wheel as seen on many Sheerness Steel 63ft scrapwagons.

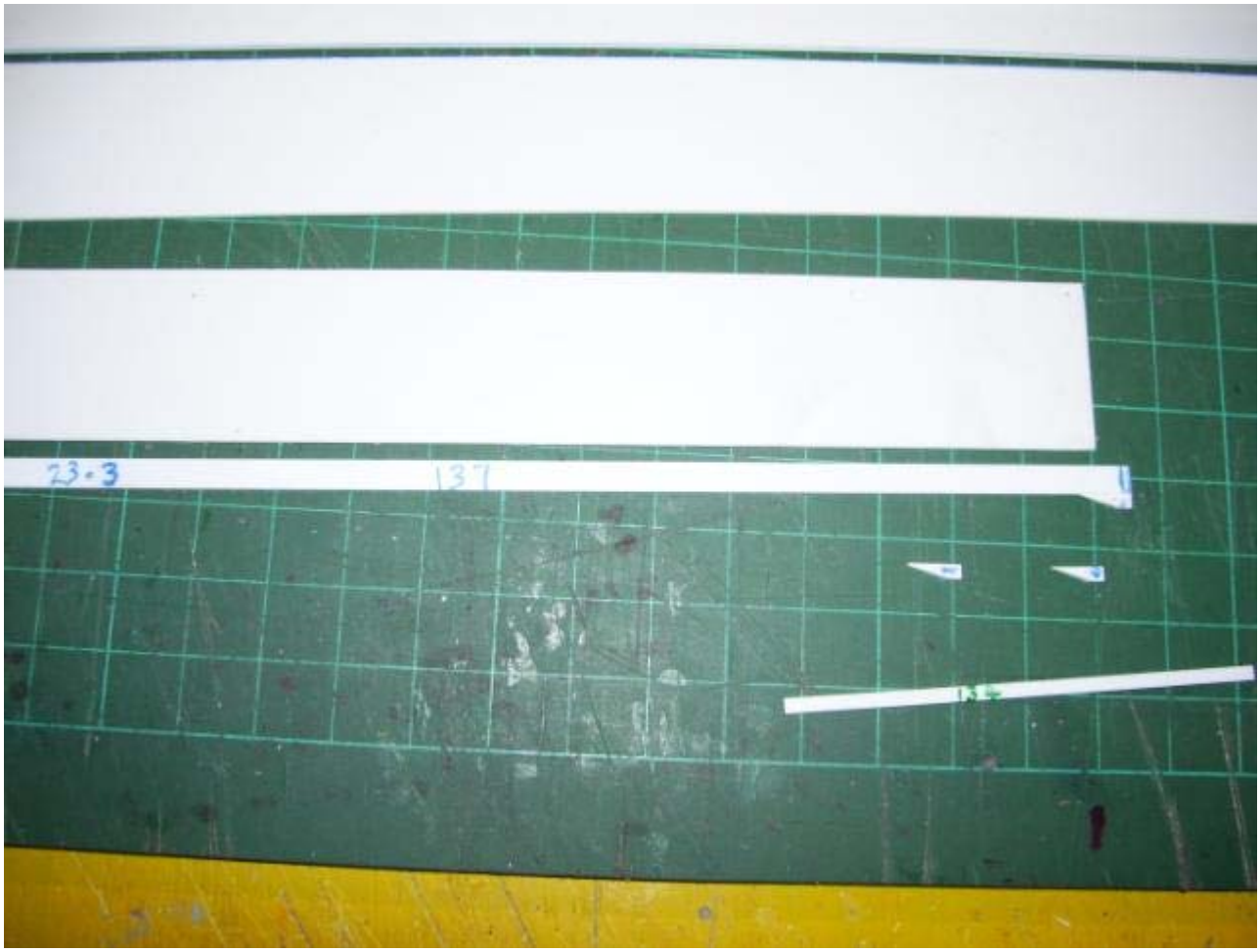
Evergreen embossed styrene sheet (various sizes of tile & sidewalk) saves so much time in marking up, almost eliminates the need to use a tri-square & pencil, minimum effort when cutting, great for making templates & spacers for assembly jigs - as shown in my next update...
... yes, I decided to complete the other pair of bogies I'd started & added more detail I'd overlooked, So now I've started to scratchbuild two 63ft sheerness scrapwagons.

The bodywork for these is still very much in the early stages of "trial & error", but it’s looking good, with a tiny problem now resolved on how best & easiest to include a tiny but essential detail feature to the external lower bracing near to solebars.

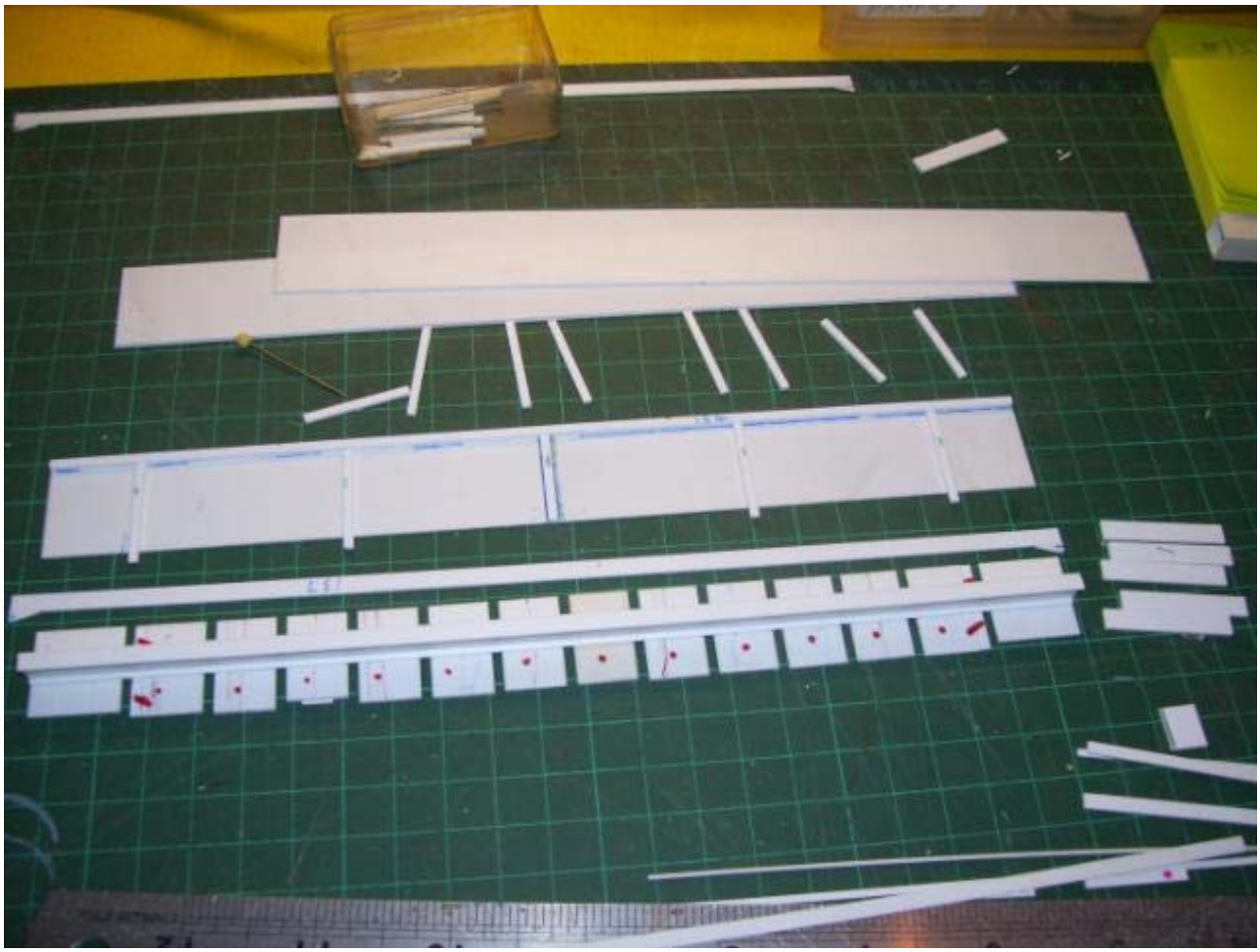
I decided to complete the other pair of bogies that I'd started , as to enable me to build 2x Sheerness Steel scrapwagons of the same general design (series PR3100 -50)



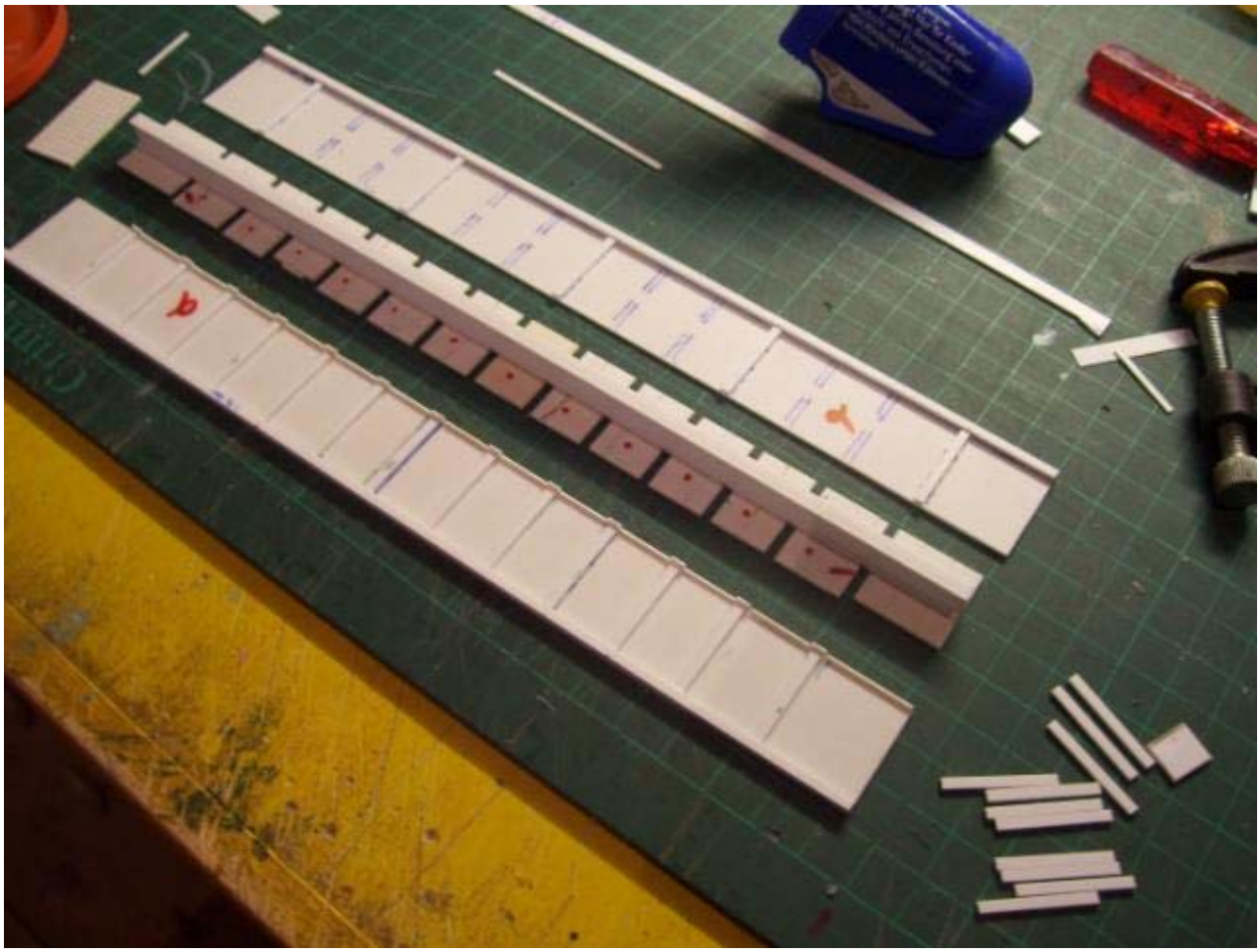
I have a Railway Modeller article about building similar scrapwagons..., the author advises using 0.40 thou thick plasticard for bodysides(1.0mm thick) , but I decided this was too *thick* (*scalewise), so I opted to use 0.30 thou (0.75mm) using 0.30 thou would be easier to create dents, tears & bulges in the "metal" to the slightly thinner styrene sheet, also, I'd estimate the thickness of steel on real examples to be approx 1/2" thick - the 3"x4" vertical brace supports giving the "main strength" externally, I've used #144 for vertical bracings, the top horizontal bracer is a #154 - as seen on the real examples (Paul Bartlett website & photo's) horizontal top bracer appears slightly proud of the vertical bracers.



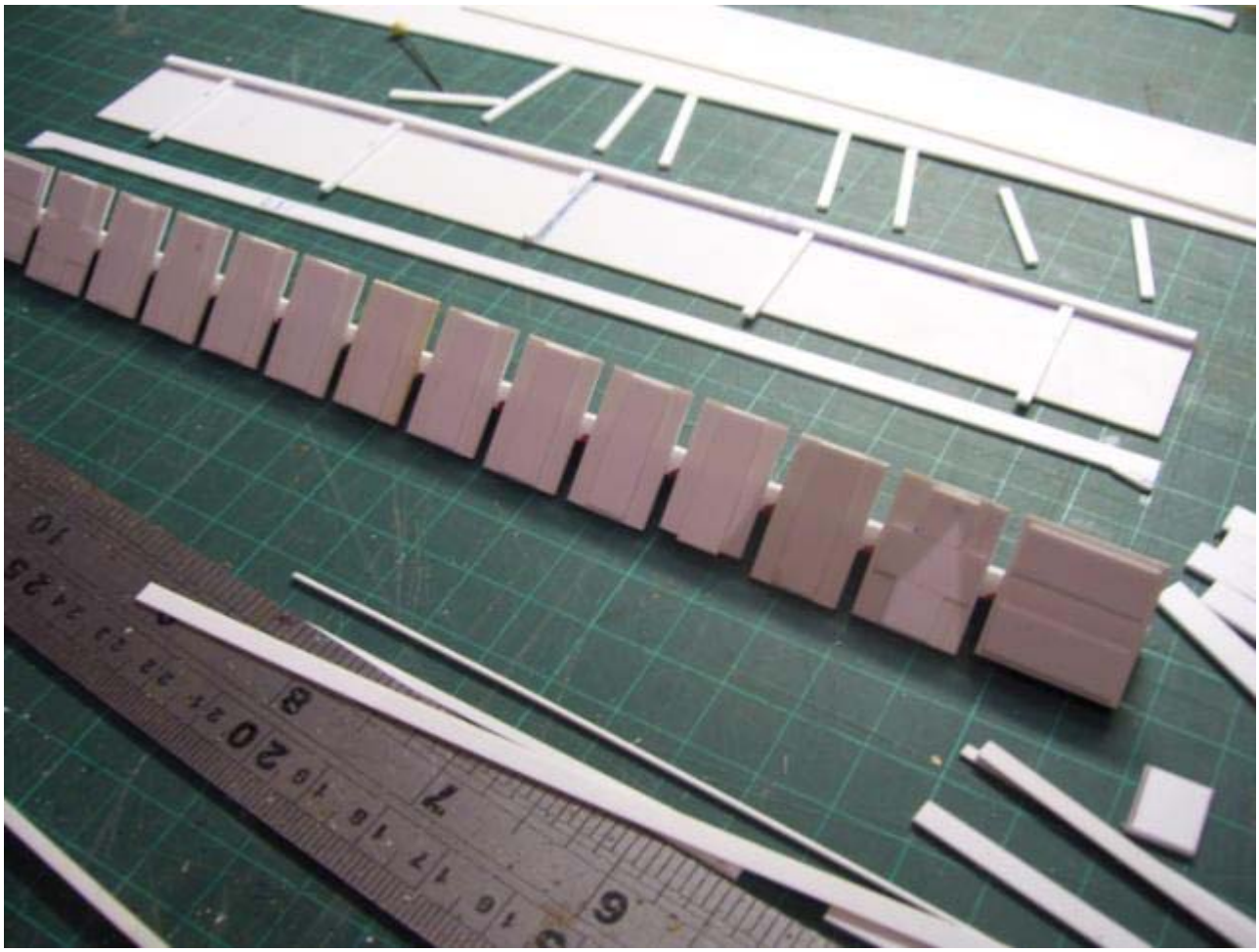
For the solebar , I used an Evergreen #137 & added some angled pieces for both lower ends,



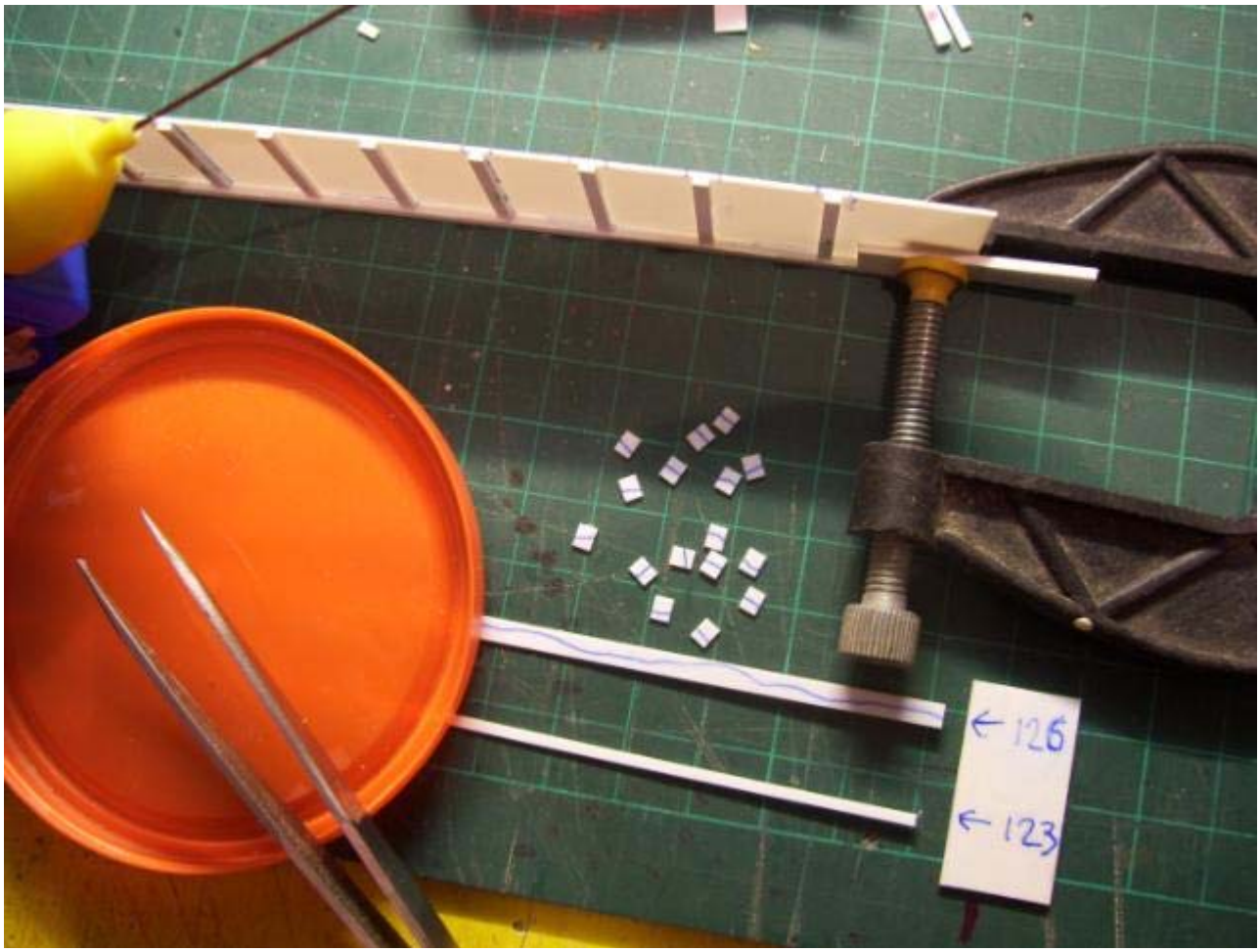
The jig I made for spacing of vertical stiffeners, as I'm building more than one scrapwagon of this type they need to be correctly positioned & it also saves time in the long run, especially if I later decided to build a few of them !



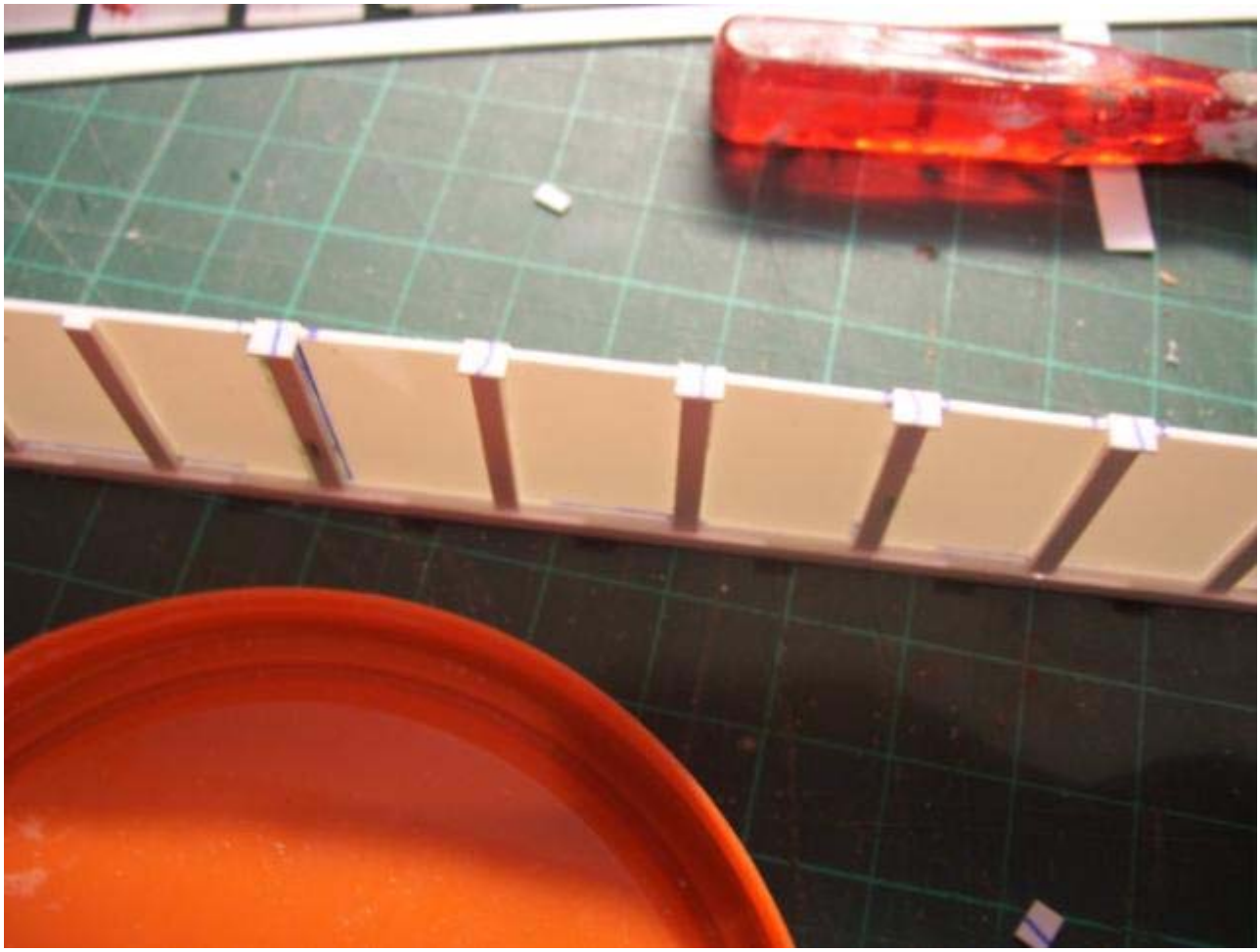
Notice that the 1st & 2nd spacing on both ends are slightly wider than those in between which are 10 equal spacing - as on my spacing jig.

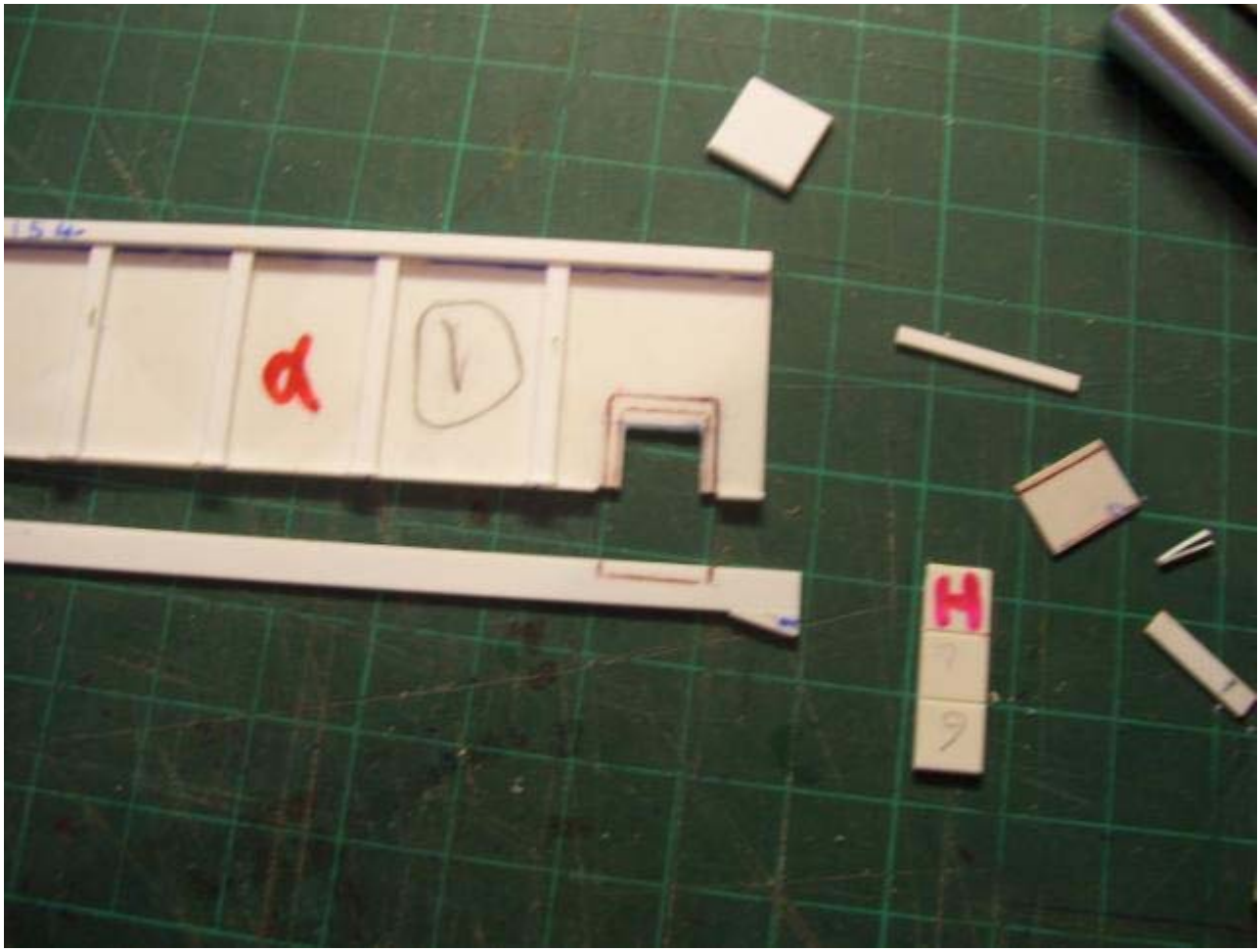


The underside view of my jig for spacing of vertical stiffeners, - notice ***how*** I've added 0.4mm thick strip to the bottom with edge clearance - this is to help prevent the jig becoming un-intentionally stuck when stiffeners are put into place with Revel Contacta (or similar solvent as to weld styrene), I used a lightweight G-clamp to hold the bodyside vertically in position as for me to add detailing, (#123 & 126).

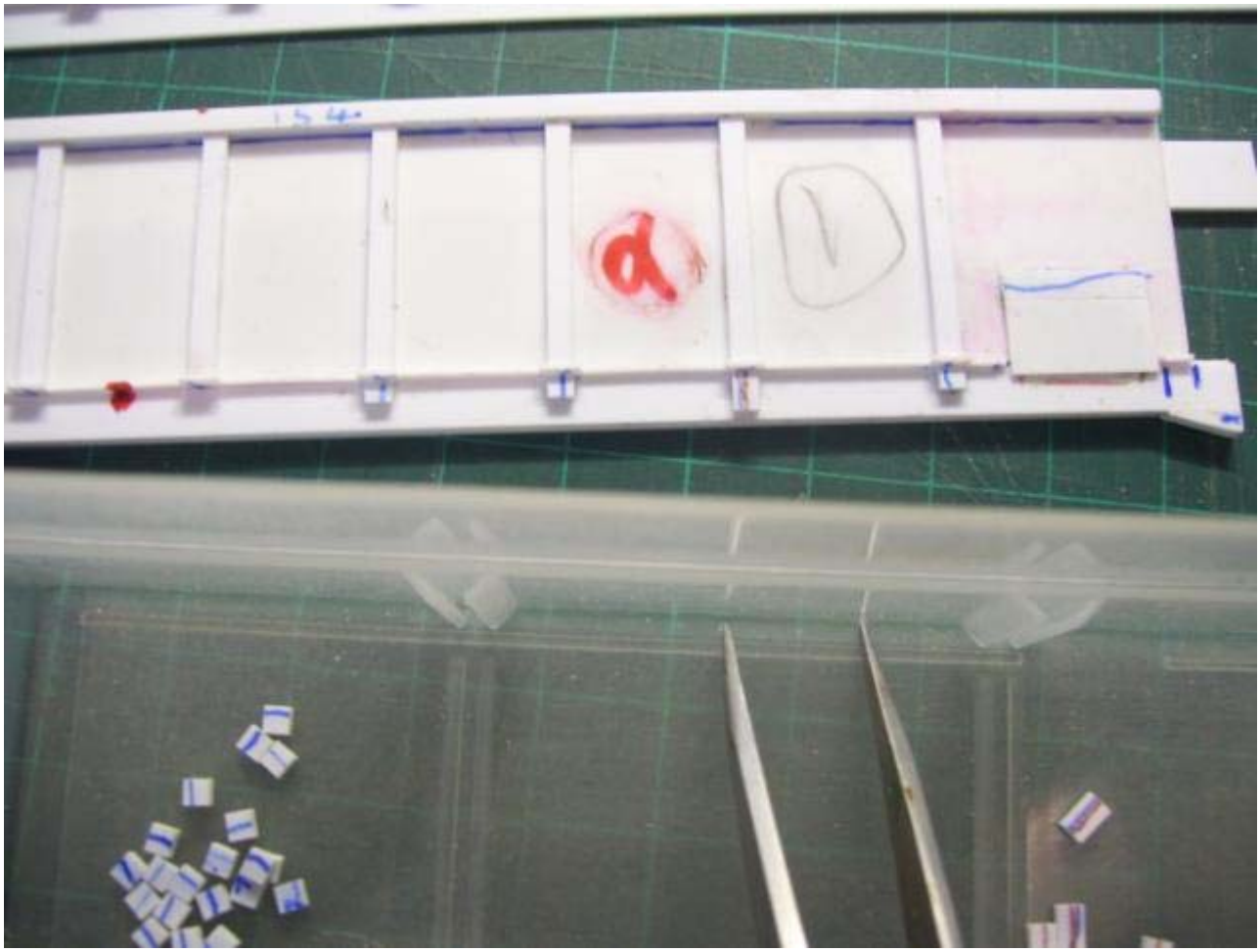


Enough Evergreen #126 were chopped to 3mm for the detailing on stiffeners, #123 were cut at 12mm as to fit in between each of these, beneath this will be the solebar component - as seen in other photo,

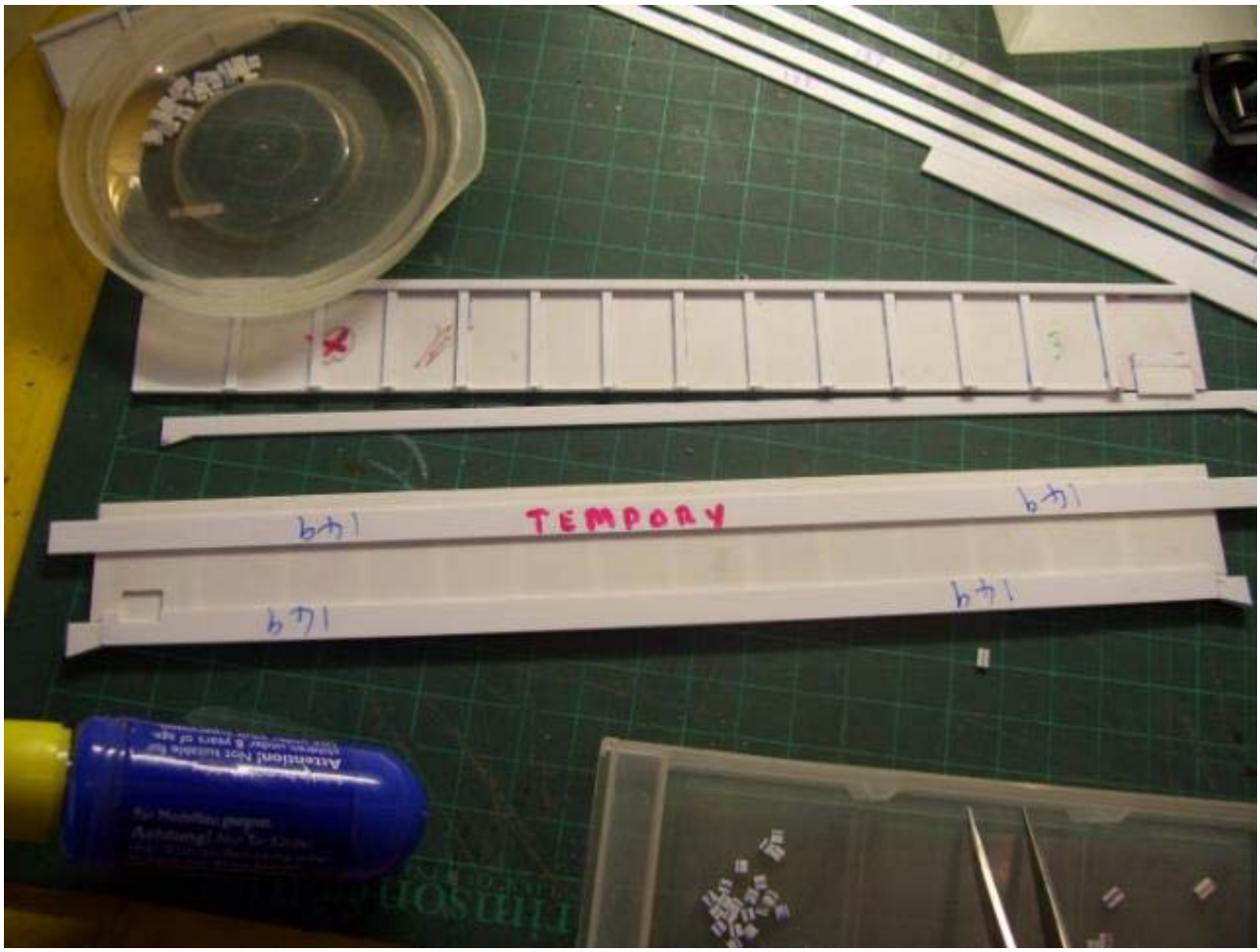




At this stage, a cut-out was made for the door/hatch on end of wagon, Next, the cut-out will have a backing framework probably using #124, then a hatch/door will be fitted.

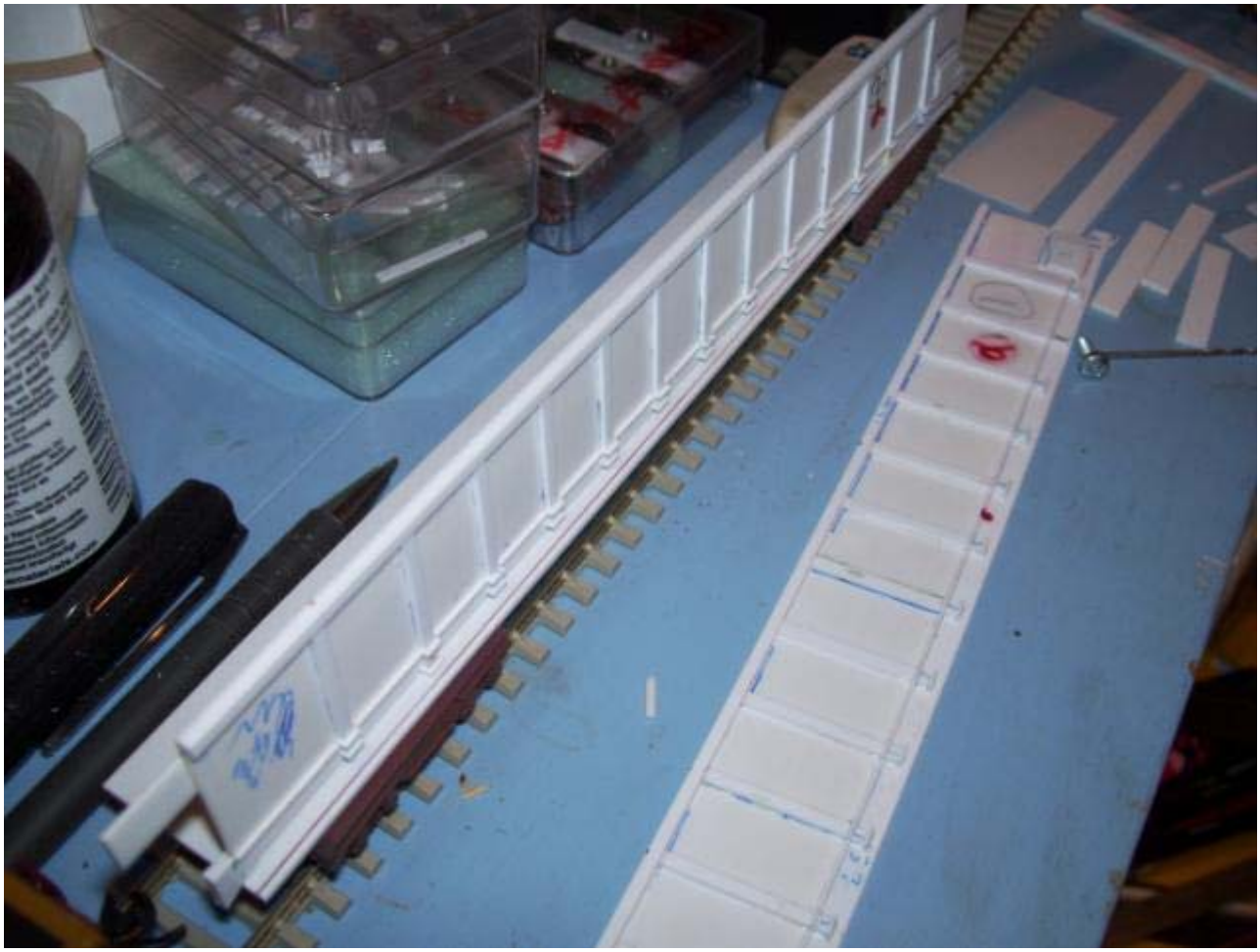


Duplicates of evergreen #144 were cut to 2mm, some were cut at 3.5mm, and these were welded onto solebar as shown, notice the 2nd bracing that’s in-line with the centre of each bogie I've used a #144 cut at 3.5mm. A hatch / door backing frame was made using #129 & 124, another #129 will be positioned over this to represent the hatch/door that will be detailed with hinges etc. at a later stage using tiny Evergreen microstrip.



On the reverse side, I lightly tacked a spare #149; this temporary #149 would be so the whole item would be kept flat whilst I worked upon the outer lower sides. Notice that I've made a small cut- out of the #149 at the hatch/door areas of each side panel, - pointless having a door / hatch the other side if cut-out isn't included ! So, as to re-iterate, solebar is #137 (0.30 thou thickness/ 0.75mm x 4.0mm), - the backing for this is a #149 (1.0mm x 6.3mm) as to enable joining reverse of solebar to reverse of bottom bodyside, also re-inforcing the angled area, the #149 cut short 6.3mm each end of length of solebar, so the 6.3 pieces needed can go vertically so it goes over the angled piece & join for maximum strength, trim the angle of #149 to suit the same as solebar profile when fully dry.

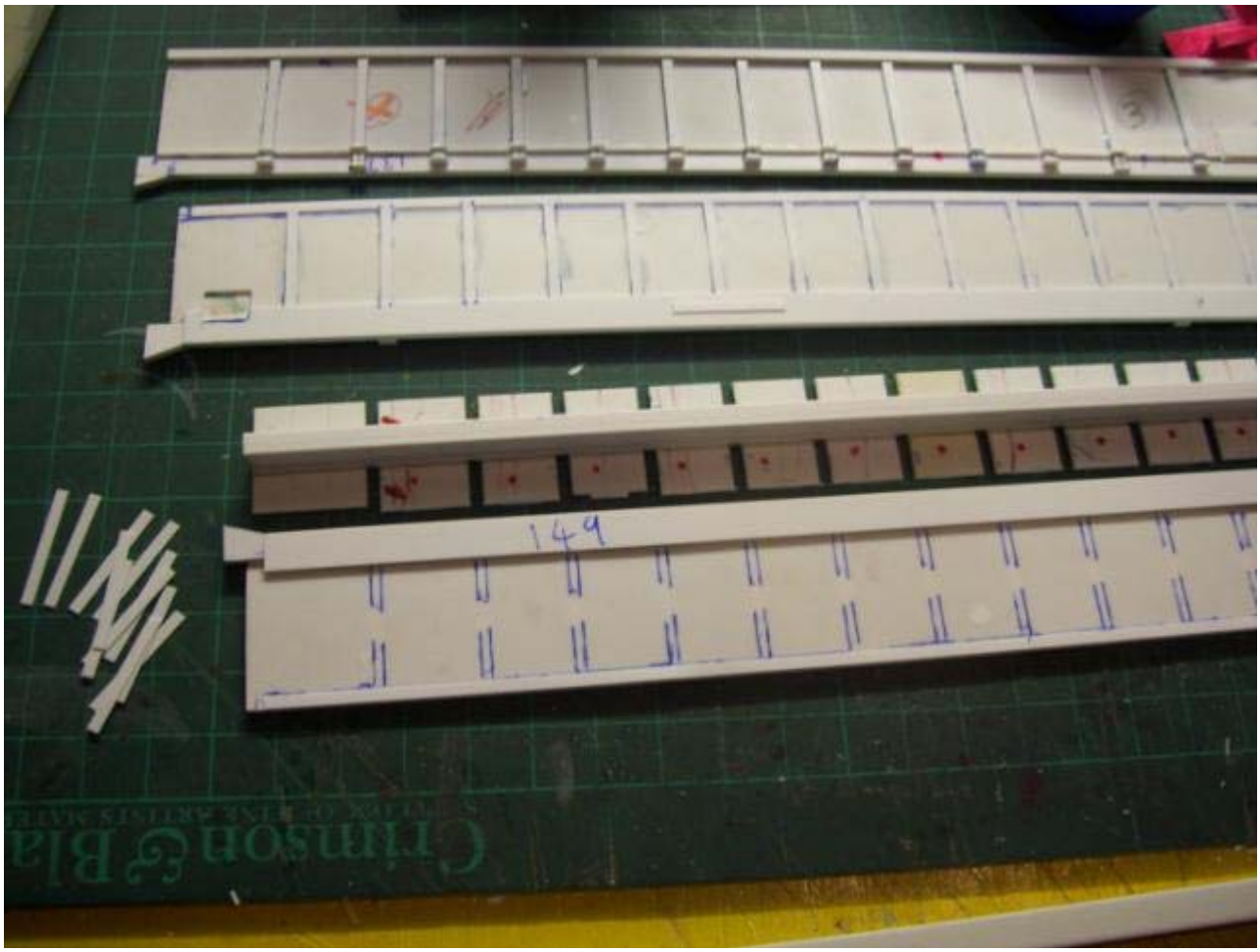
More duplicates of Evergreen #126 was cut on my Chopper, this time at 2mm for the lower most of #144 vertical bracings on the solebar.



The sides & ends of the wagons will fit on the outside of the floor/chassis; this here is position just to give me an idea of what it'll look like.

The height of the wagon sides at approx 10'6" seemed to look right positioned next to a Bachmann MBA.

I decided to start on my 3rd body, but this body having different bogies fitted , as seen on Paul Bartlett's photo website, a few of these type of scrapwagons had other bogies fitted to them, so the type of bogie seen here is to be fitted to my 3rd body is salvaged off a Bachmann TEA 100 tonne fuel tanker.

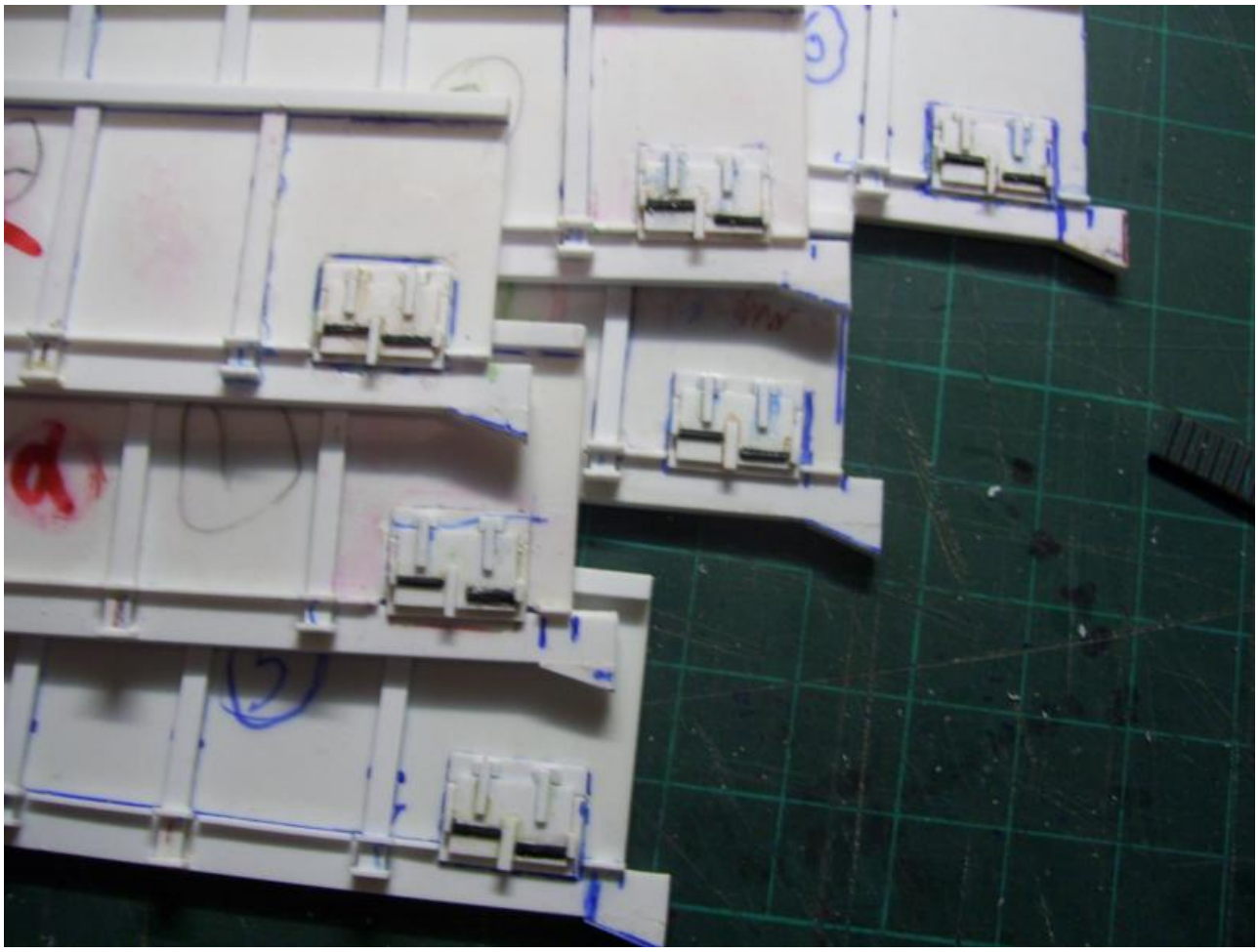


Looking at one of my Paul Bartlett photos showing the innerside of one of these "well used" wagons, So I decided to try to add some extra detailing to represent this, I have used thinnest Evergreen strip 0.25mm; Evergreen #104 (that's 0.25mm x 2.0mm, the 2mm being equal width to external bracing #144) were applied internally to areas of top & vertical bracings, easily marked for applied position using the same spacing jig as external bracings.

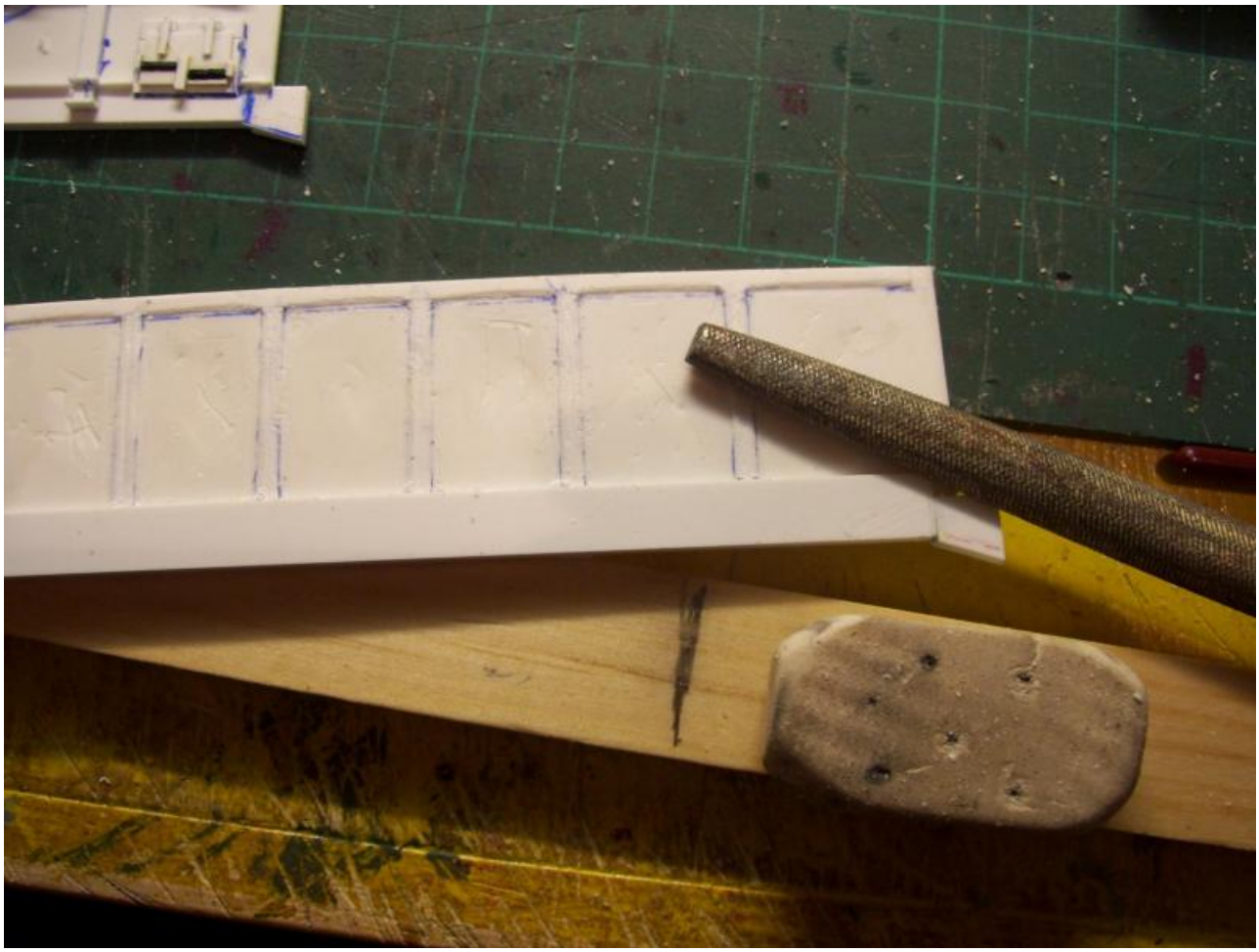
Using a variety of both blunt & semi-sharp objects & a suitably sized piece of wood to rest on all #144 external vertical stiffeners & to fit in between outside top brace & solebar area (clearance needed to avoid damage to detailing on solebar), I pressed the areas in between the innerside stiffeners Of course, on the real examples there are no internal bracings , but over a period of time & bashed usage, the panels get pushed outward to resemble this effect, I need to take the edges off the #104 internals with a Dremel sanding drum or similar as to blend them in appear as the inner sheet panelling.

Above photo; You can just see the subtle denting & outward bulging areas in between outer stiffeners,

Just to add a small tip for fellow scratchbuilders; - an ideal storage pot for storing items of strip & profile & cut down sections of them; is a desktop organizer bought from somewhere like Staples or other stationary suppliers, you may have noticed I've marked each of strips I use including offcuts for easy identification & reference, I use fine tip permanent marker pens made by Swann Stabilo, also available from Staples & other stationary retailers.



Door hatches were made with 0.5mm plasticard. Hinges & bolts were then fitted, I've had to use spare Ratio spear fencing for cross bolts as at the time I didn’t have any 0.5mm styrene rod.

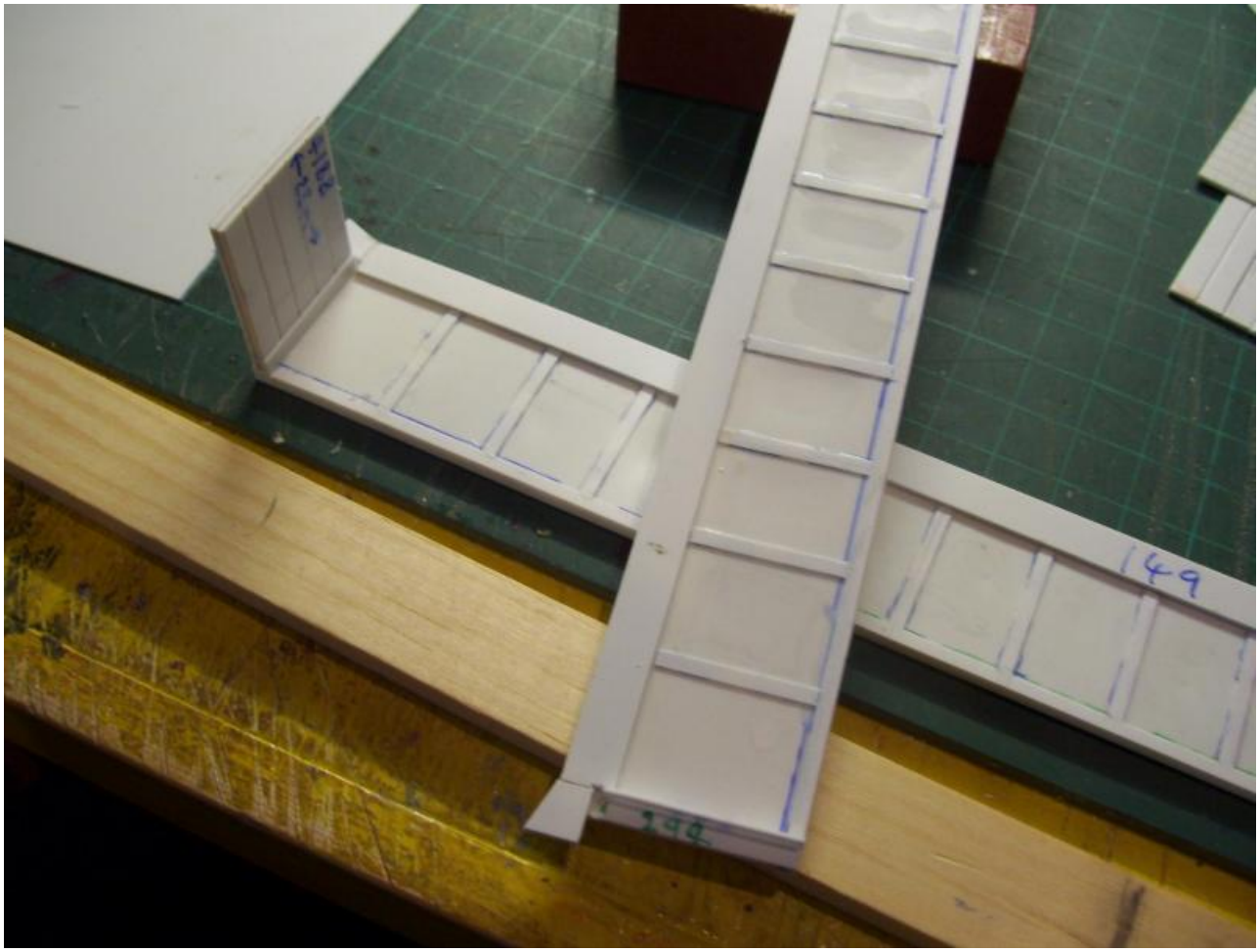


more distressing applied to inside side panels.

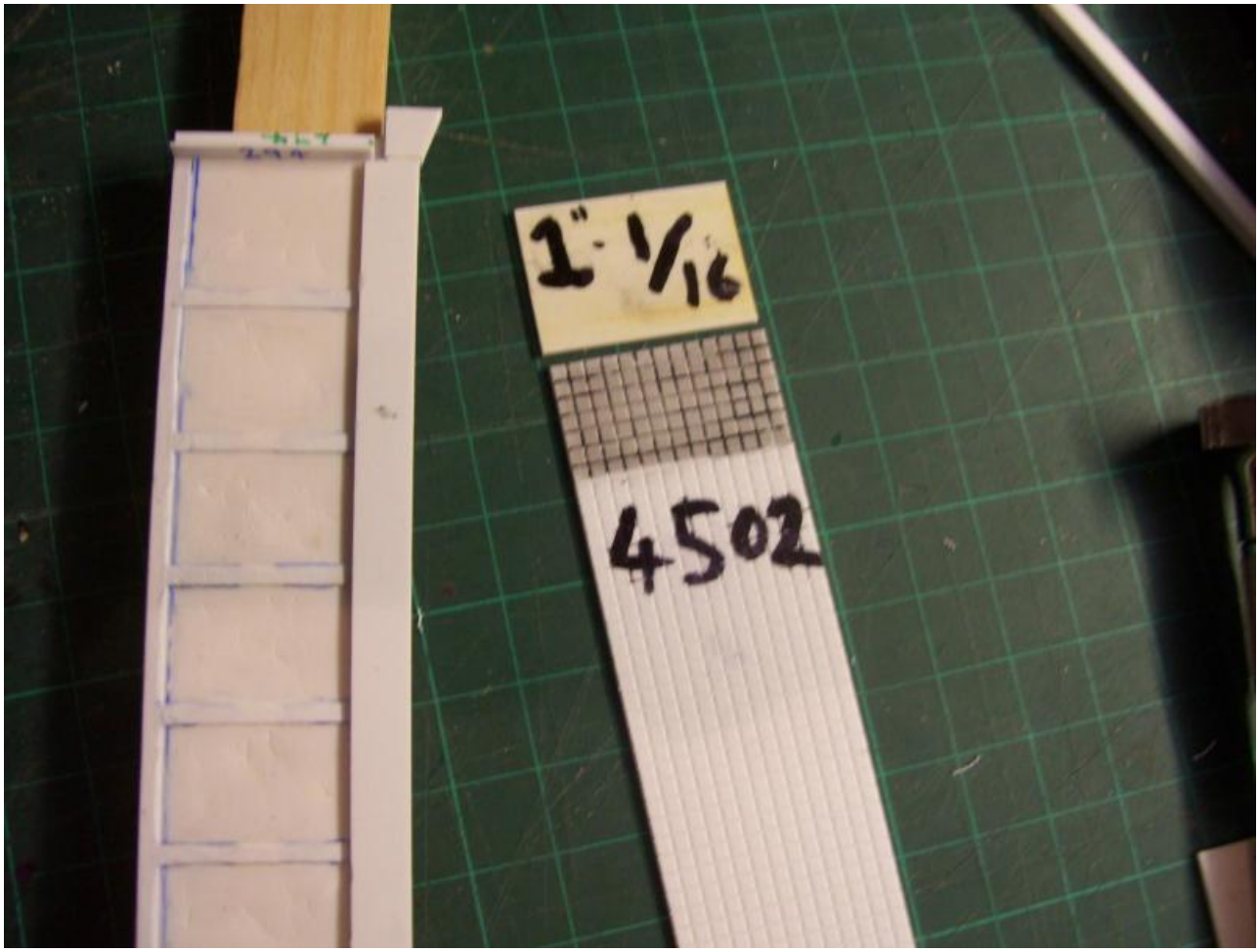
Evergreen 4188 was most suited for the rear end panels, cut at 28mm wide, just separate them every at 5th groove for most suited height of 5.

0.4mm holes were drilled for inserting ladder rungs, I've used #25 staples for rungs

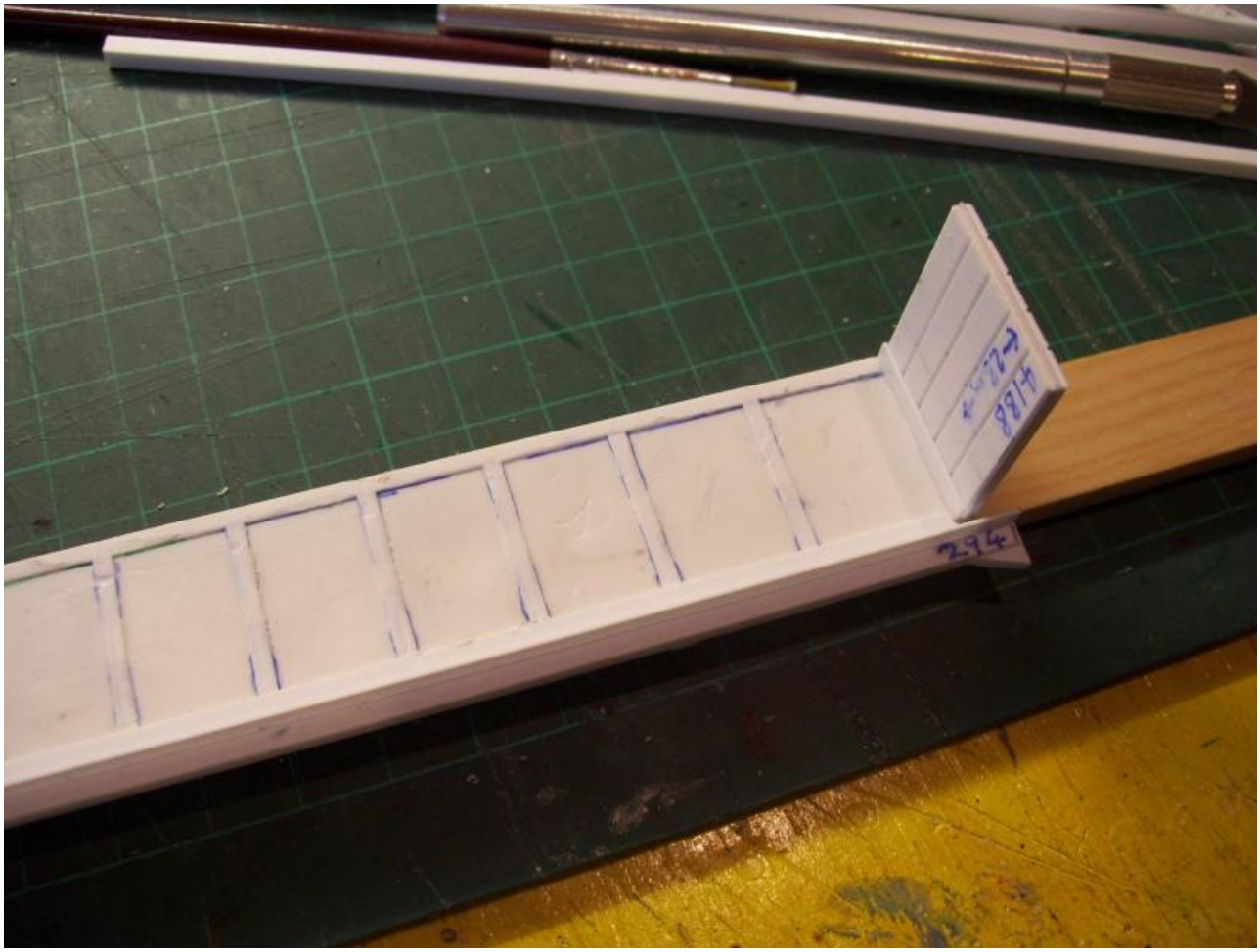
A cut to size at 28mm wide Slater’s plasticard 0.20 thou (0.5mm) was sandwiched between 2x #4188's



End components fitted into place against the #294's* (*= Evergreen 3.2mm "L" profiles)



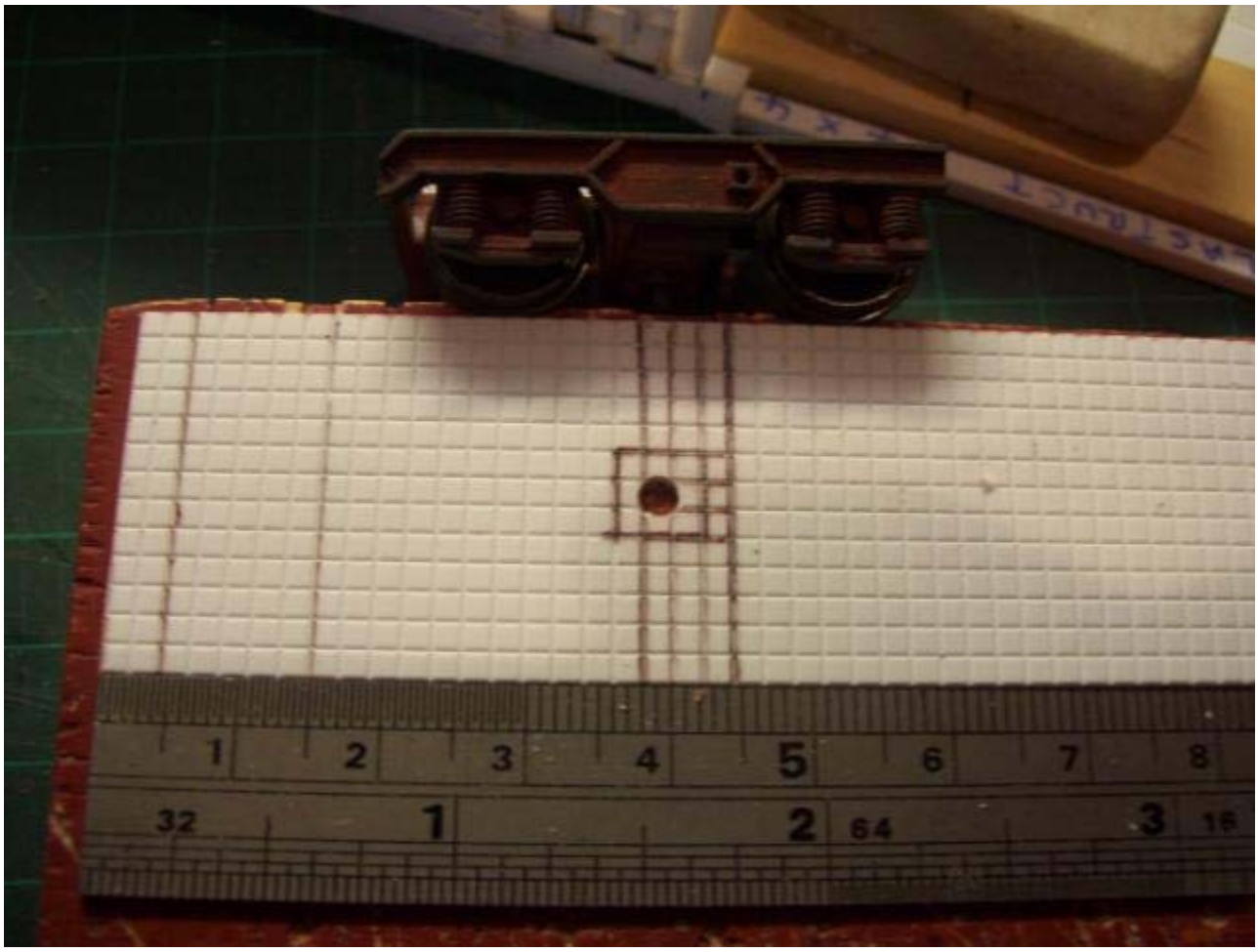
The inner floor of wagon is an Evergreen #4502 cut to 1" 1/16"



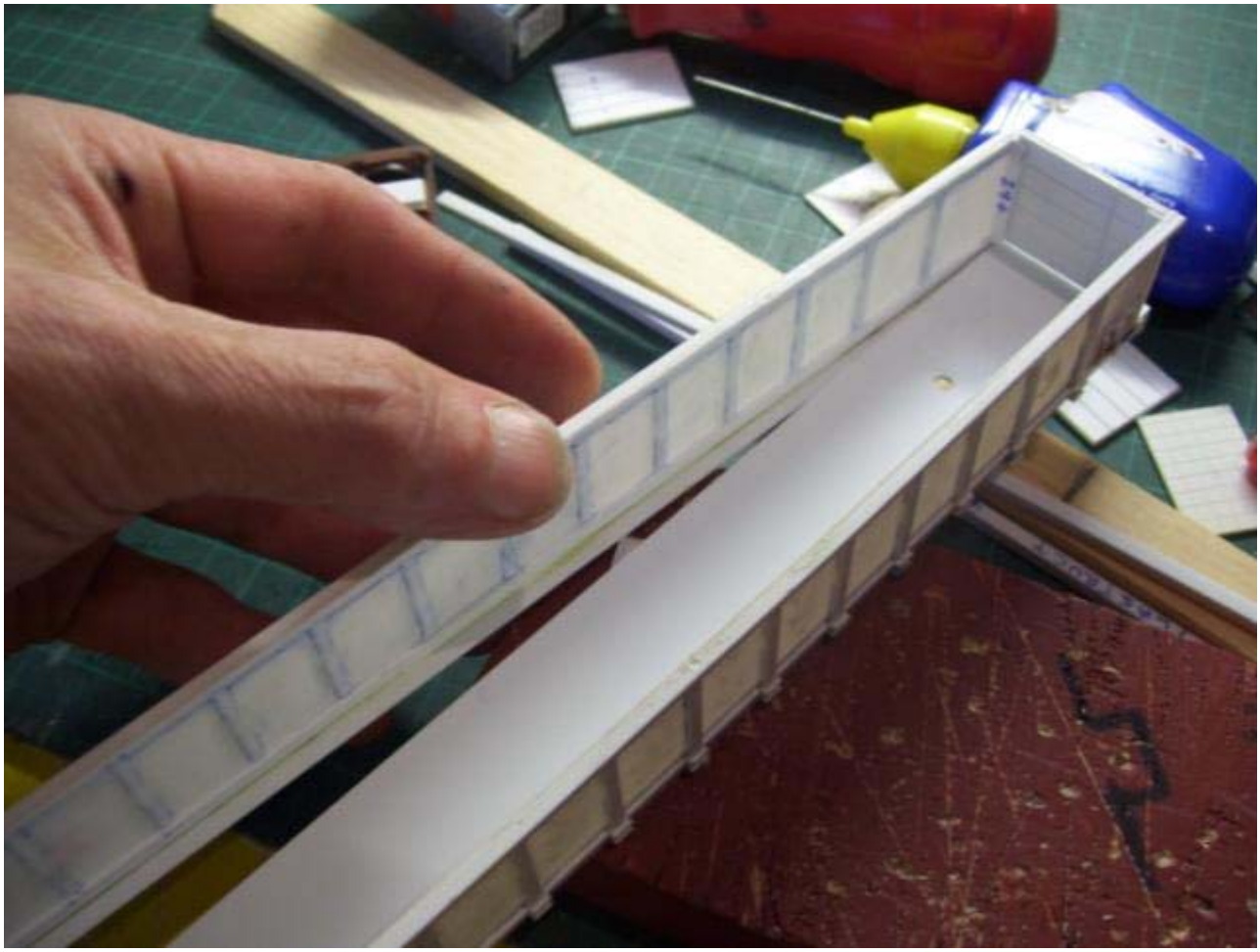
Evergreen #294 "L" were cut to size & fitted to innerside solebar as shown above. The floor to fit on topside of #294 "L" , & cross bracers to go beneath floor in line with each of the bodyside stiffeners.

I reckon Humbrol "Sea Blue" for the body but I can't nail that solebar colour. I've had some thoughts about the most suited shades of blue & came up with the following likely candidates. For the main bodyside colour of light blue; either Humbrol 65 or Revel 49 or Phoenix 58 (all matt enamel tinlets). Some of the Paul Bartlett photos show a more mid blue similar to "Barclays Bank" colour scheme as used on 51 tonne SSA / POA scrap wagons, so Humbrol 89 or Phoenix 153 will suit. As I'm building 3 of these PR31xx series wagons I may use this shade of blue for one of the 3x PR31xx models I'm scratchbuilding, & or the PR3001 series next on my scratchbuilding agenda. I tested a 50/50 mix of Humbrol 89 / Revell 49 which looked good judging from some Paul Bartlett photo's I have of PR31xx's. But I discovered mixing an equivalent colour of Phoenix enamel paint with Humbrol or Revell enamel paints were incompatible, I think this may be because Phoenix paints are acrylic based enamel as opposed to Revell & Humbrol enamel paints which I think are more oil based. As for the solebar; I reckon using either Humbrol 104 or Revel 56 to be fairly suitable.

A sneak preview on the progress made, how it’s coming together.

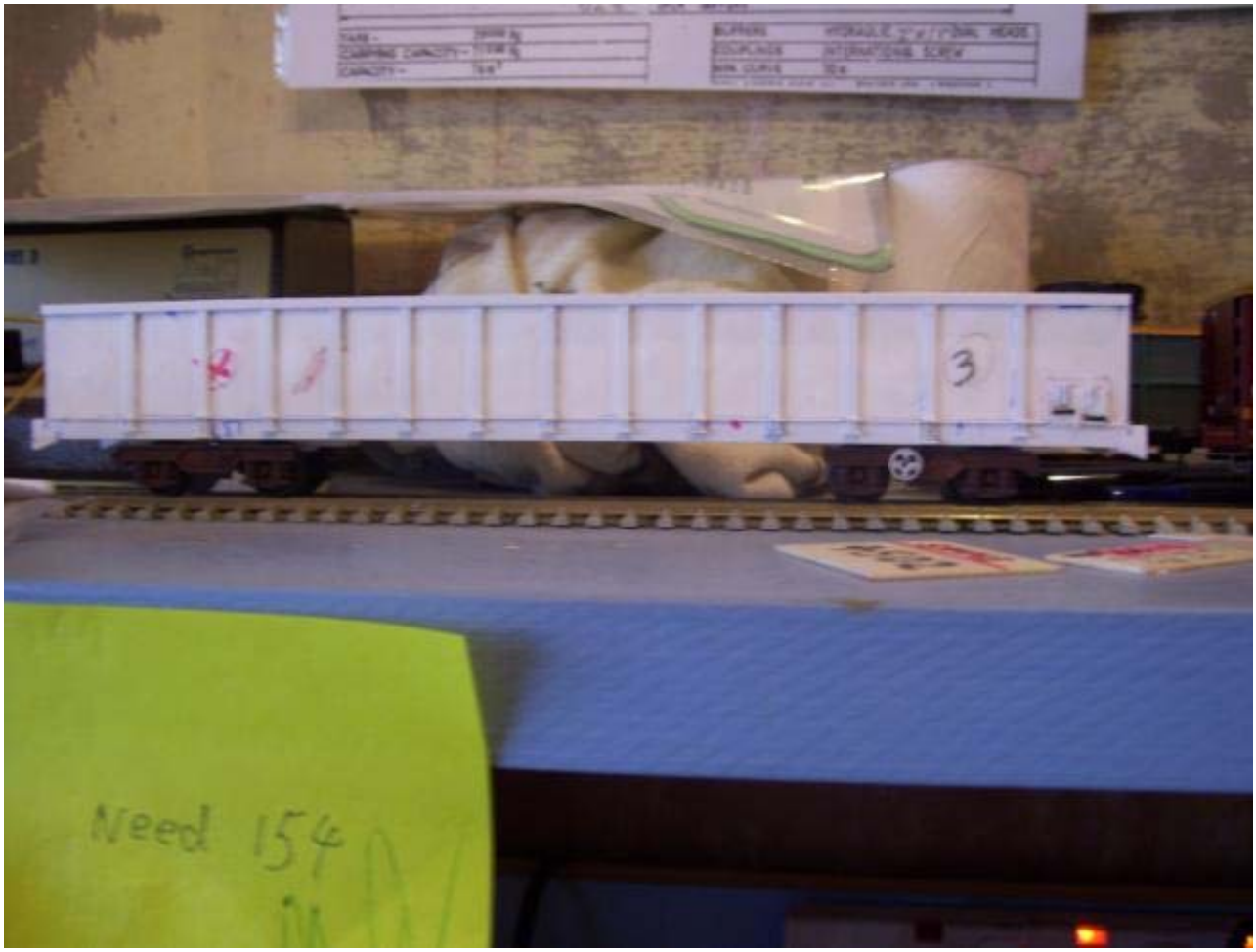


Holes drilled into floorplate for bogie positioning, this hole will be made wider equal to the diameter of a head of an M3 panhead bolt, much more robust cross member beneath this will support bogie, the pan head bolts holding bogies will be recessed below or level of floor plate, but still accessible with screwdriver.

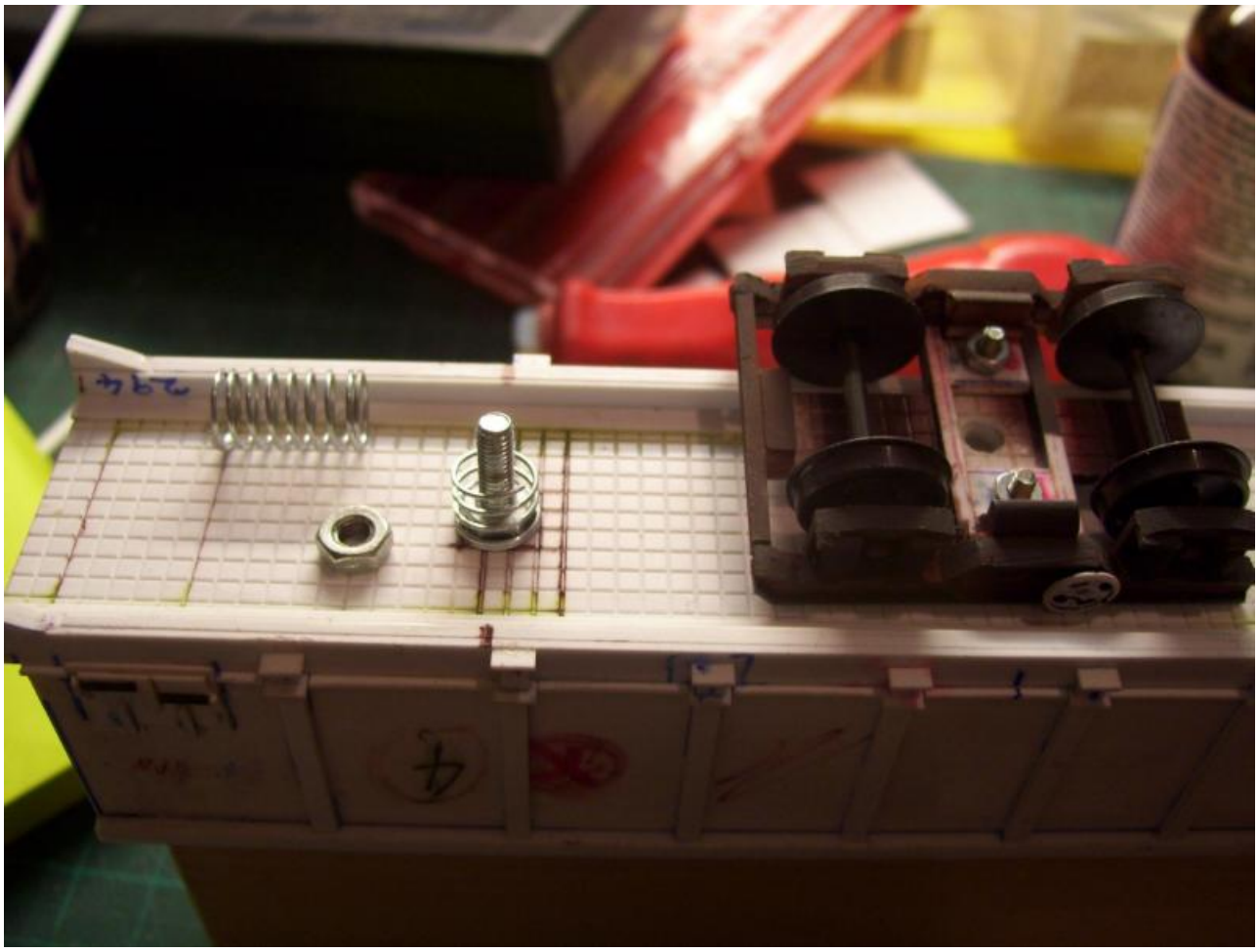


I applied tiny spots of Revell Contacta onto #294 as to attach the floor to one side of body & I allowed this to dry, then when dry I fitted the other bodyside as seen here, **the end bodysides were plastic welded to bodysides firstly**, as the topmost edge of all bodysides needs to meet up & match level, when dry the other side of floor will be sealed to the other #294 / bodyside using MEK / liquid poly applied with a fine brush.

The bogies temporarily seated in their position under chassis/floor.

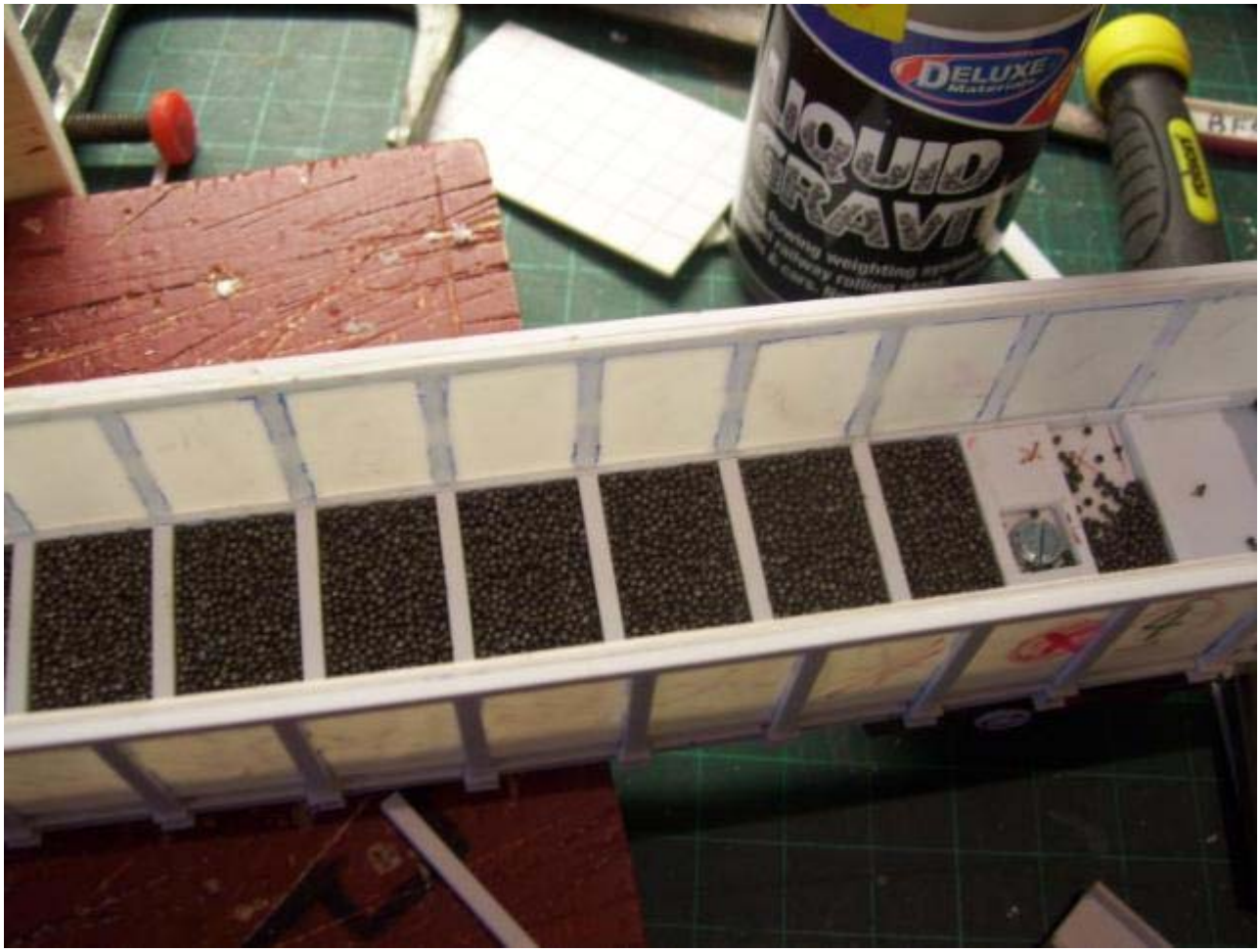


Actually, it works quite well, just so long as the nut holding bogie isn’t over tightened otherwise the resistance of spring compression will bind & restrict bogie movement, this wagon will handle 2nd radius curves when I tested. I've used a 5mm diameter spring that fits over M3 nut that secures M3 bolt to the chassis, although I had to cut the length of spring down to 2/3 of size as it was too long

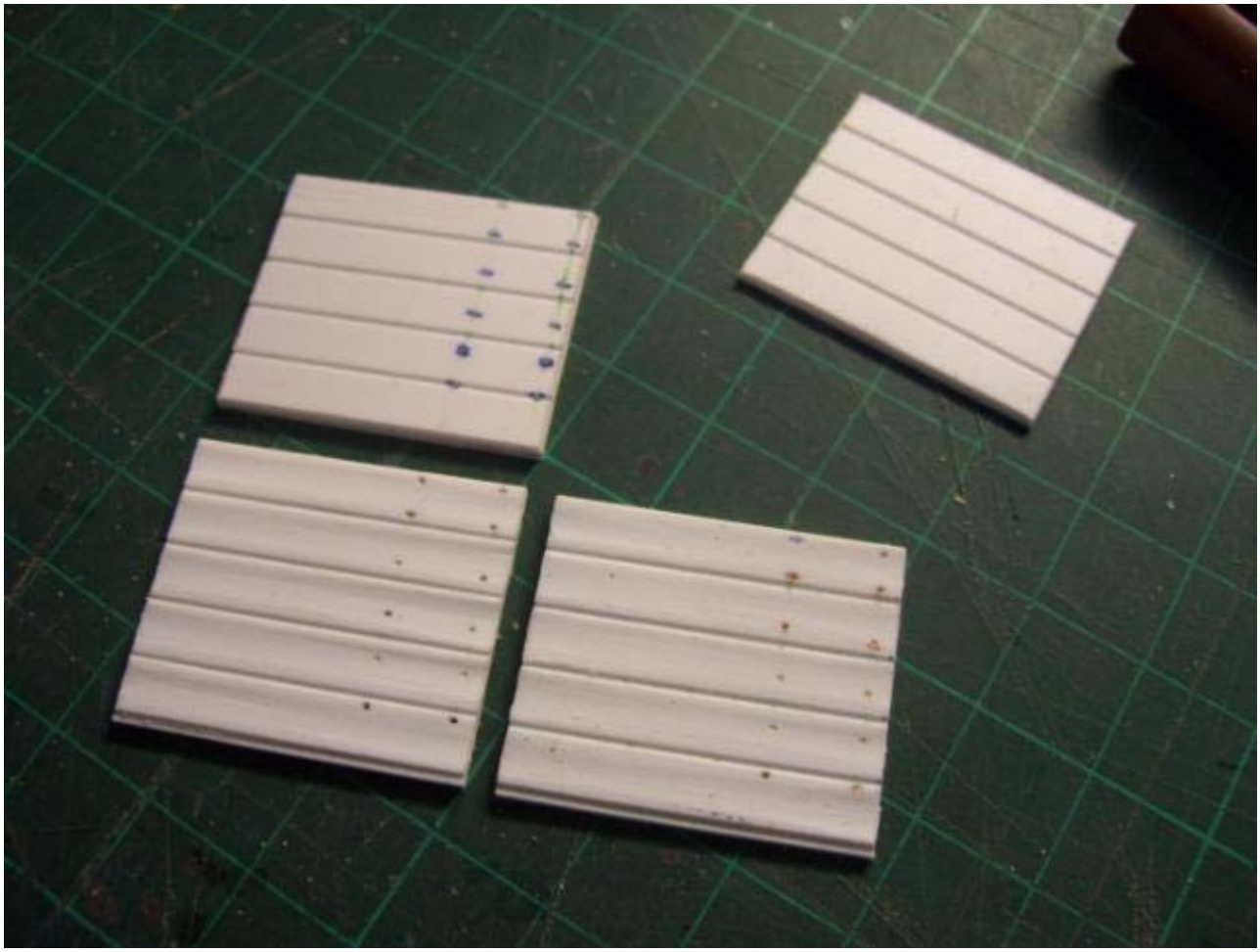


I've yet to decide whether or not to use this maybe over-engineered suspension idea, so I've left the bogie

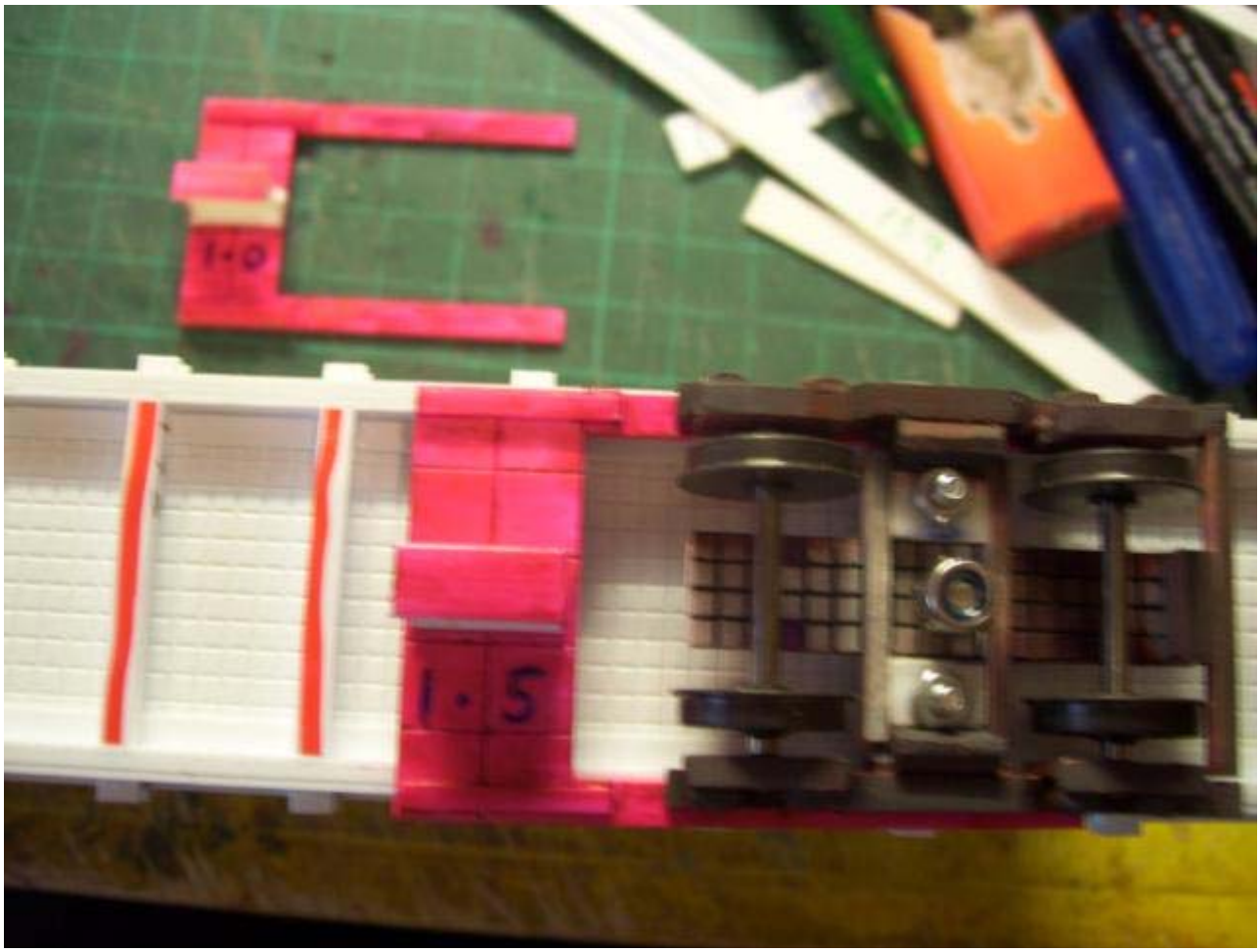
mounting areas of the floor/chassis fairly free in case I decided to revert to my original plans involving more work to that area of chassis without suspension.



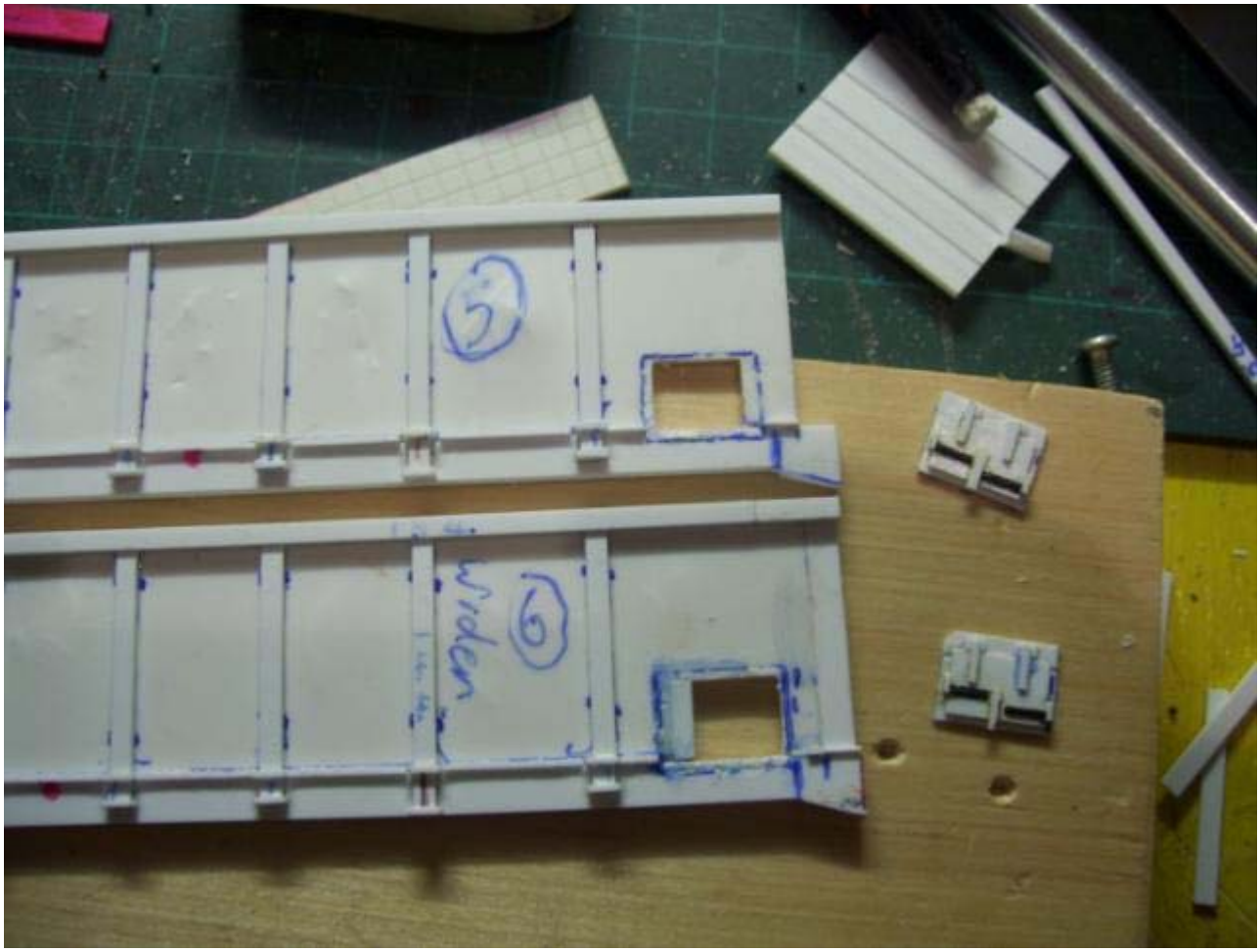
The floor / chassis of these wagons will be double skinned; this is mainly because I wish the panhead head of bolts to be recessed. In between bolt panheads, I've added cross members & filled the cavity's with a product called "*Liquid gravity*" , when the infill of this was level , I sealed a 0.5mm plasticard sheet over to fit the floor area. I done similar to other wagon, but I didn't use liquid gravity within the double skin, it doesn't make too much difference, I have some 2mm thick metal plates that I salvaged from old rolling stock, so will be using them for the other design of wagon that I'll be starting in a week or two.



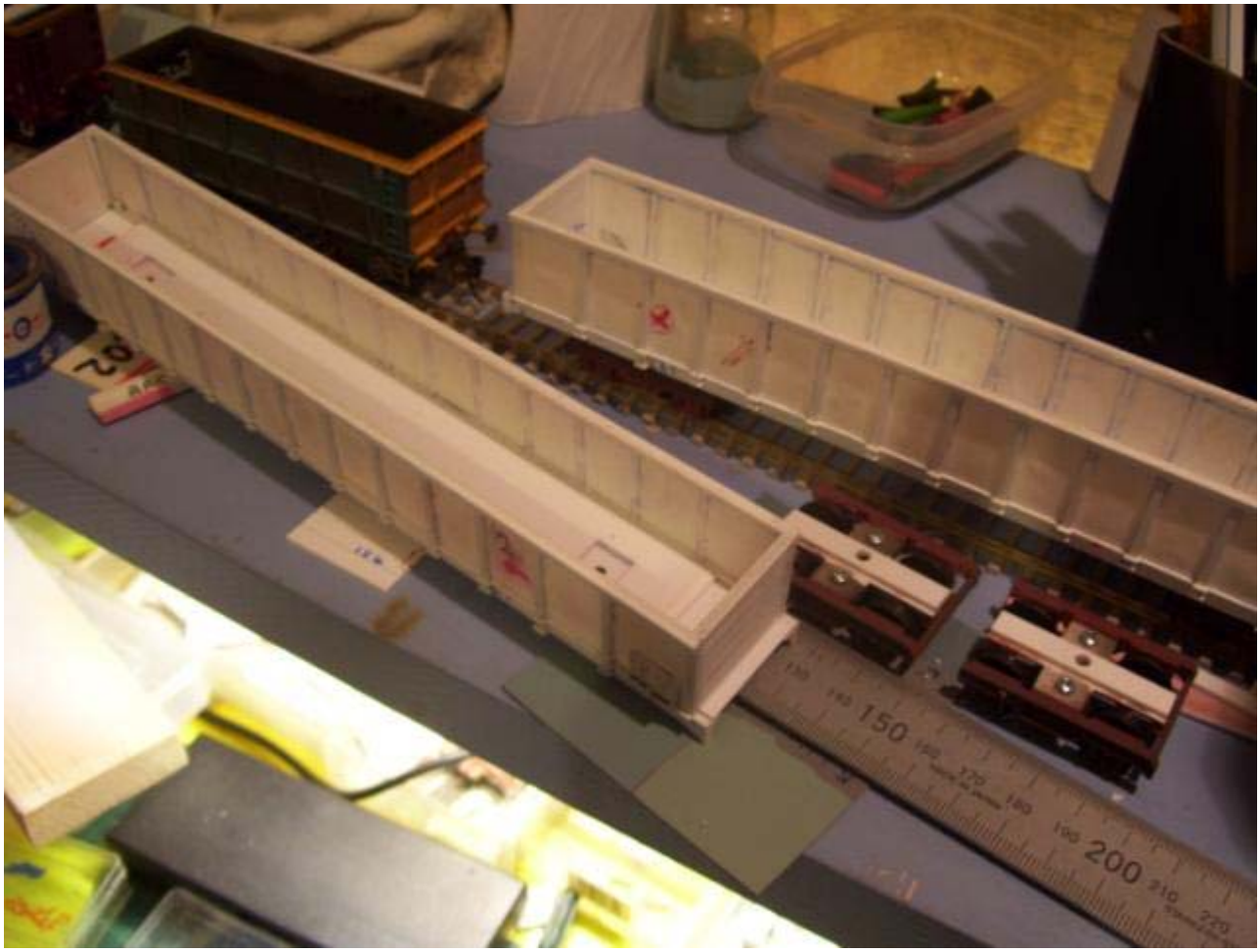
Can you see what I've done here as one of the detail features as seen on Photo's on Paul Bartlett's website?



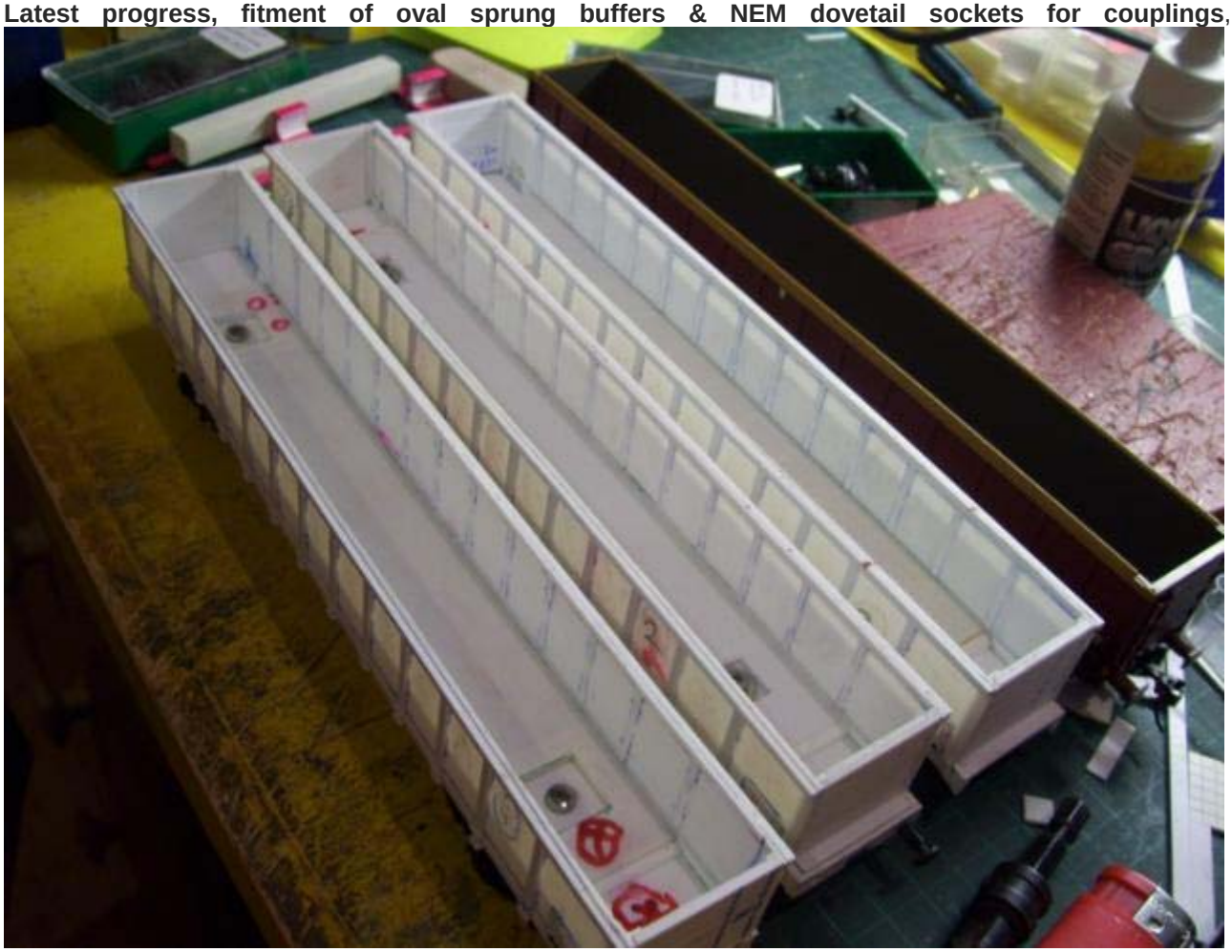
Another useful tip,; I built myself a tool from styrene as to gain the correct spacing between bogie frame topmost & the solebar/chassis., as you can see I've made 2 of them each with different spacing.



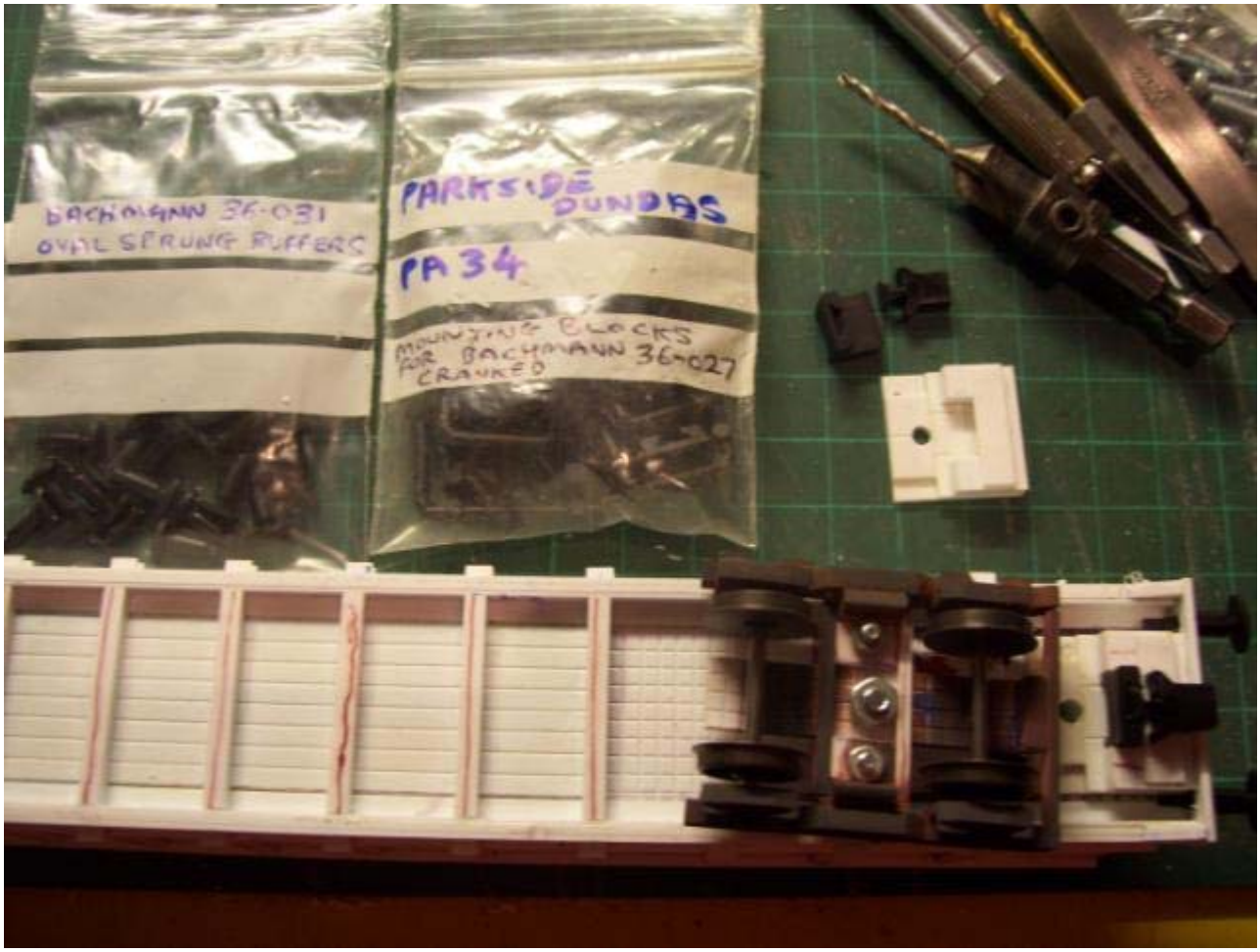
Body end modifications need to the 3rd wagon, looking more closely at my collection of Paul Bartlett photo's I noticed the other design of bogies (from TEA 100 tonne tanker) were used on the body variant onwards from # PR3150, 51, 52, 53, etc. , I needed to alter the ends by extending just the body length, (chassis length stays the same) The hatch needs to be moved over so its centralized, I was able to remove the hatch without damage but I needed to weld a couple of repair strips in the hatch hole in bodywork.



Latest progress, fitment of oval sprung buffers & NEM dovetail sockets for couplings,

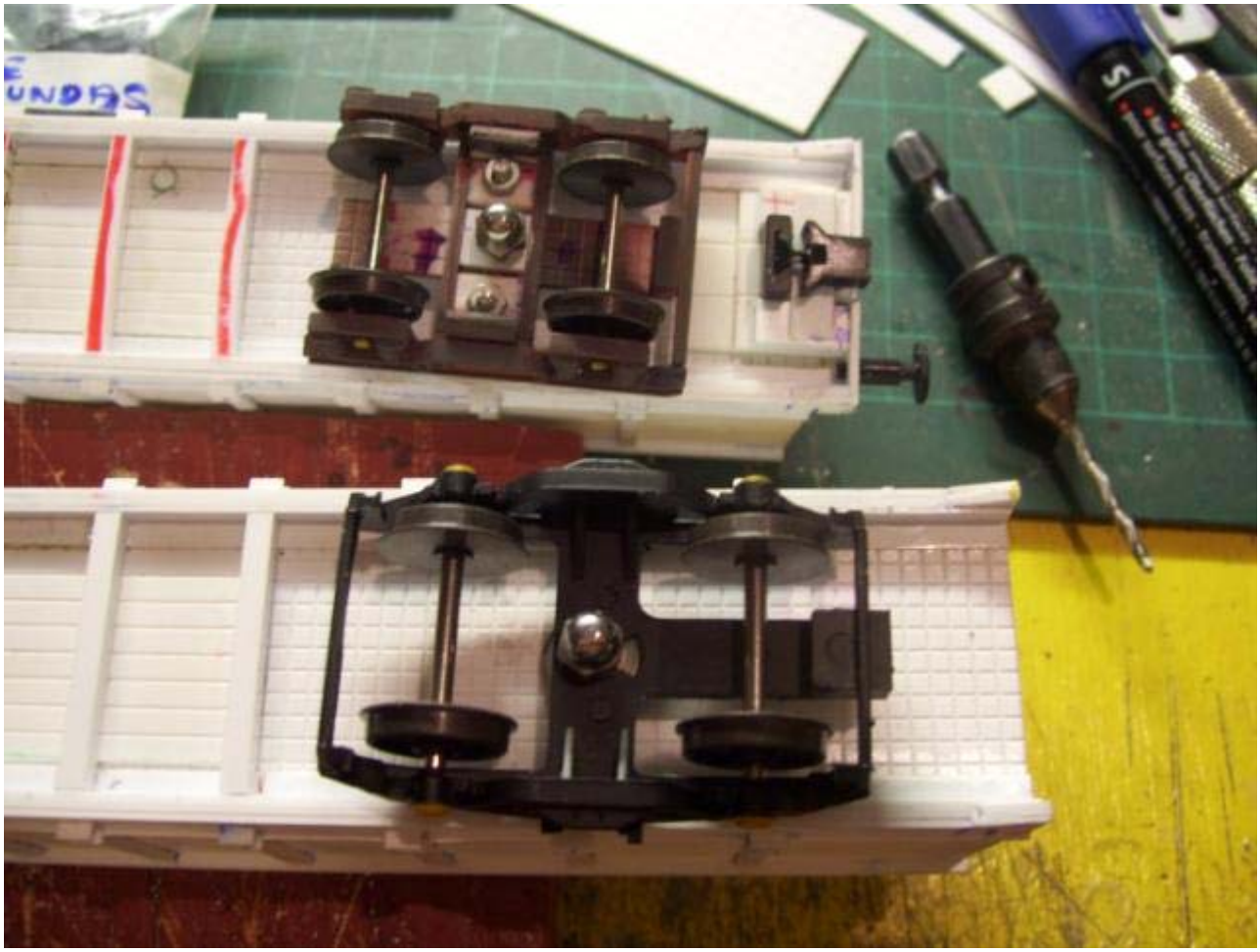


The Bachmann MBA next to my scratchbuilds.

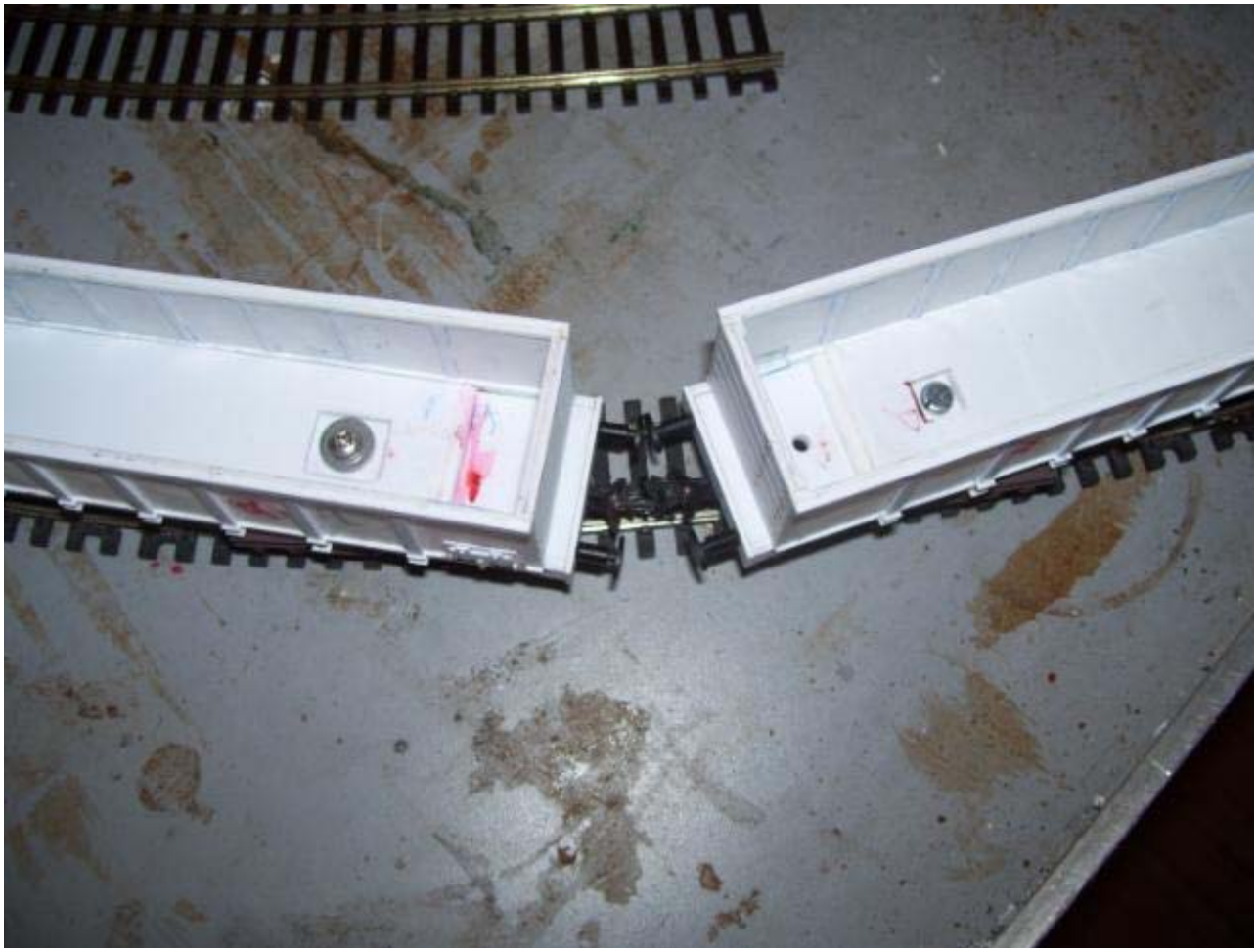


Dovetail sockets were obtained from Parkside Dundas (item PA34), & the sprung oval buffers were Bachmann 36-031 , I made a housing around the dovetail components as shown here & photo's below,

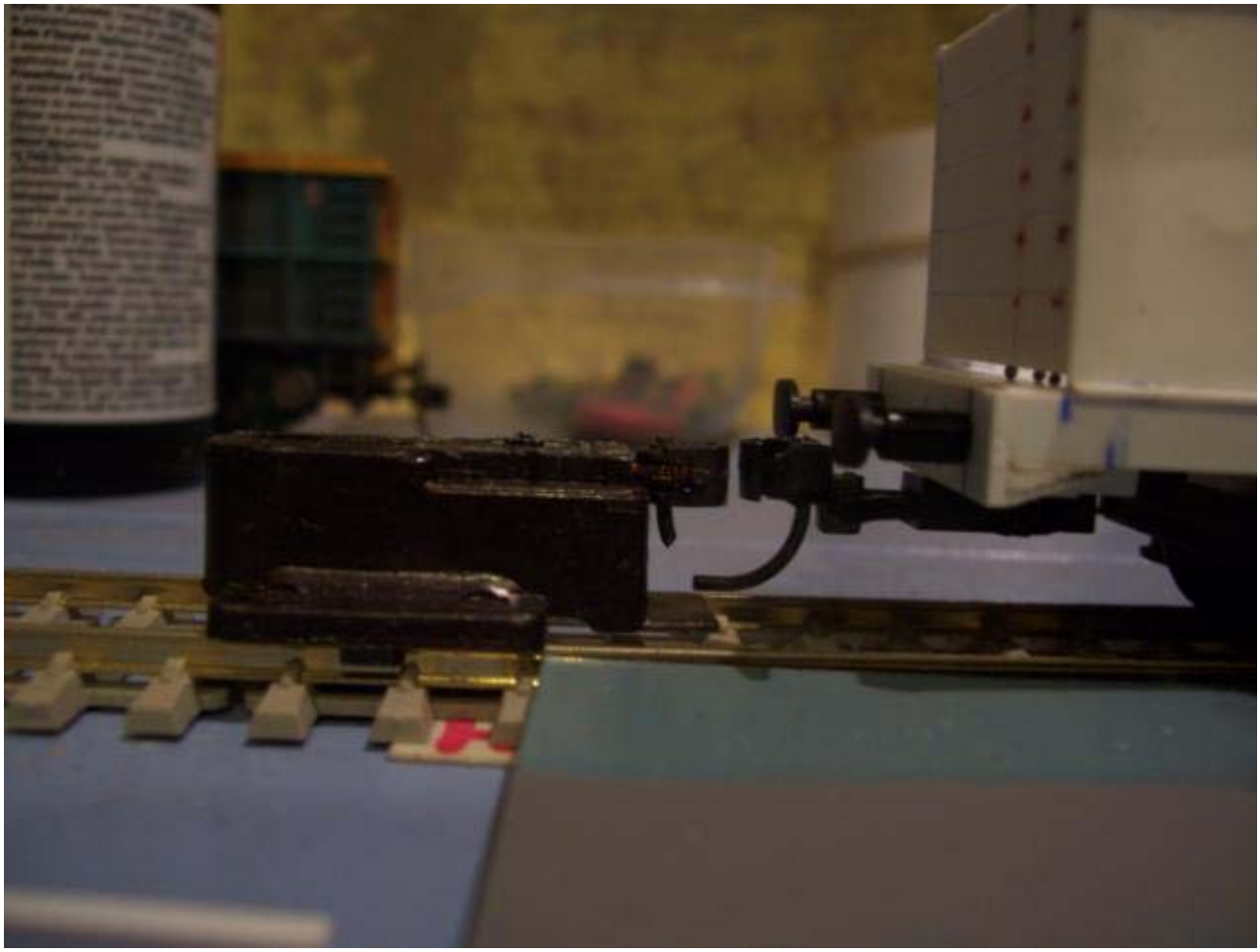
I cut to size Evergreen #149 for bufferbeams & then carefully marked for drilling 2mm holes for push fitment of Bachmann 36-031 buffers.



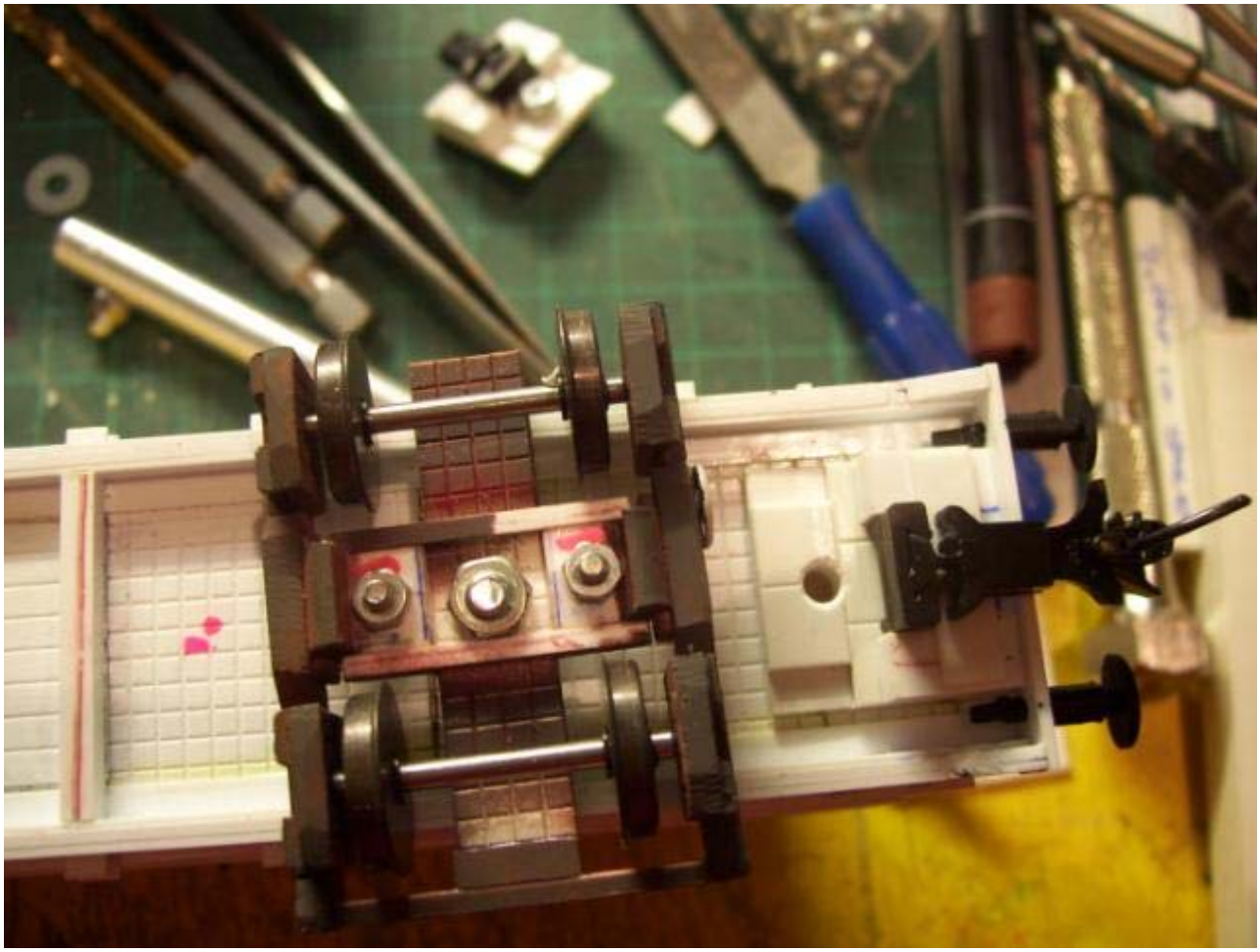
I fitted M3 domehead nuts rather than fitting nylocks or normal nuts, the domehead nuts will need painting a similar colour to bogie.



Kadee #19's are fitted here , they seem to manage pull & push around 3rd radius setrack curves okay,

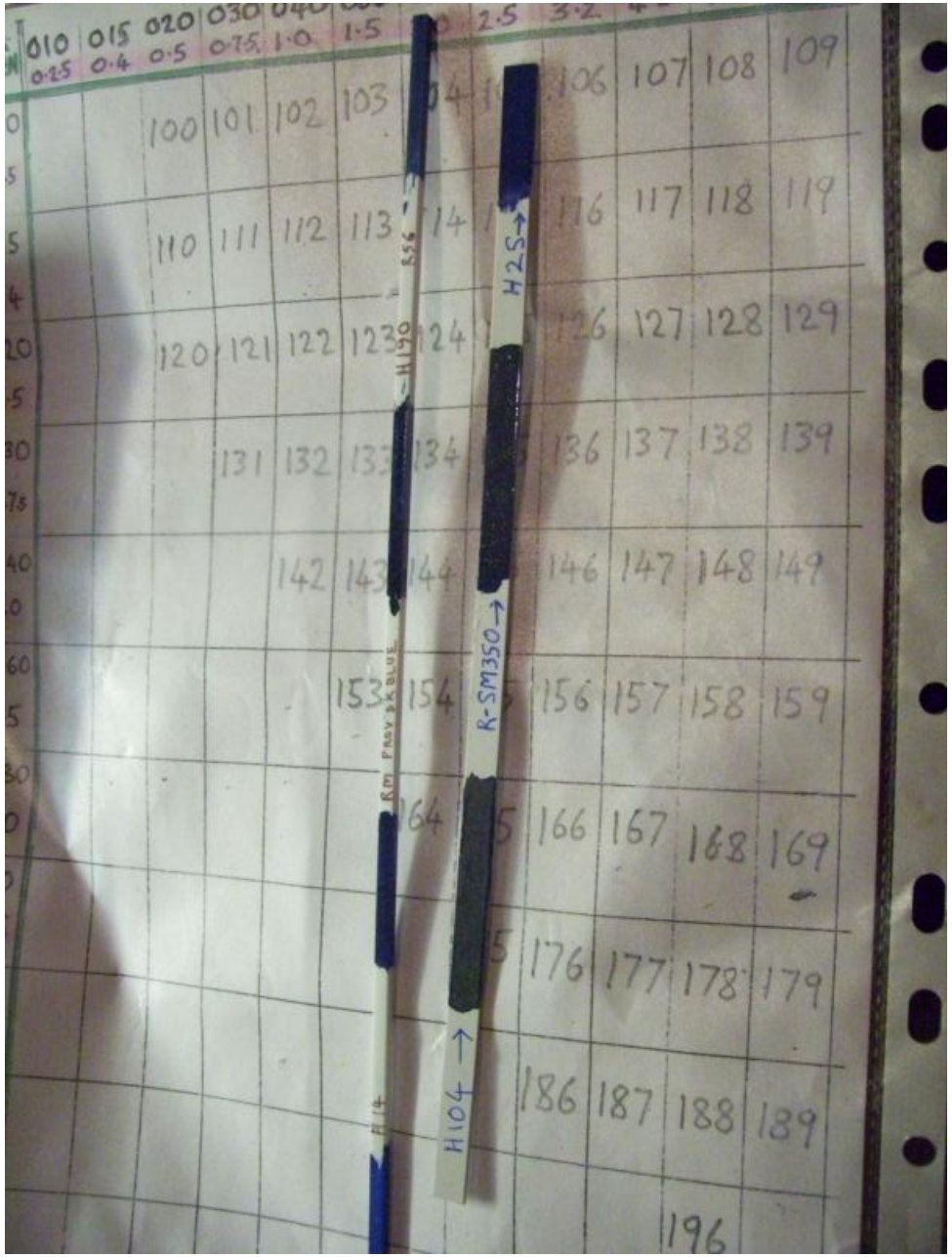


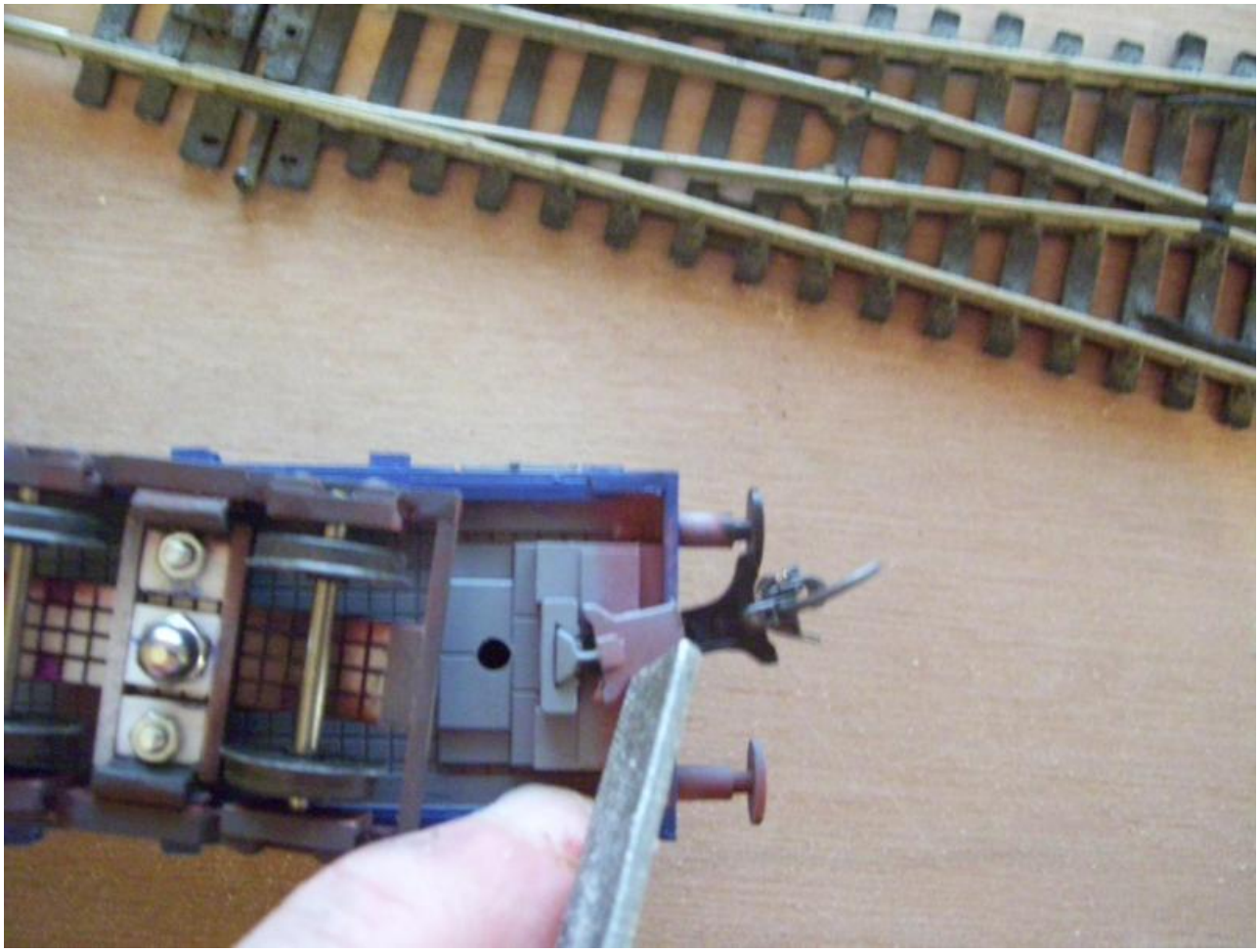
2 wagons coupled on straight track.



I lightly tacked each coupling housing into place, then carefully drilled a 3mm hole through this & chassis for nut & bolt enabling the option to remove the coupling housing for whatever reason such as removing them to avoid coupling damage during transit..., with the nut & bolt removed the dovetail & NEM pocket can be slid out or the complete housing can be removed for coupling height issues, or easier replacement of damaged buffers.

Rear ladder rungs fitment & primer paint next, over the last few days I've been thinking about the most suited colour for the bodywork - the solebar in particular; I've come to the conclusion the Humbrol 25 (H25 seen bottom RH side),


H25
R-SM350
H104



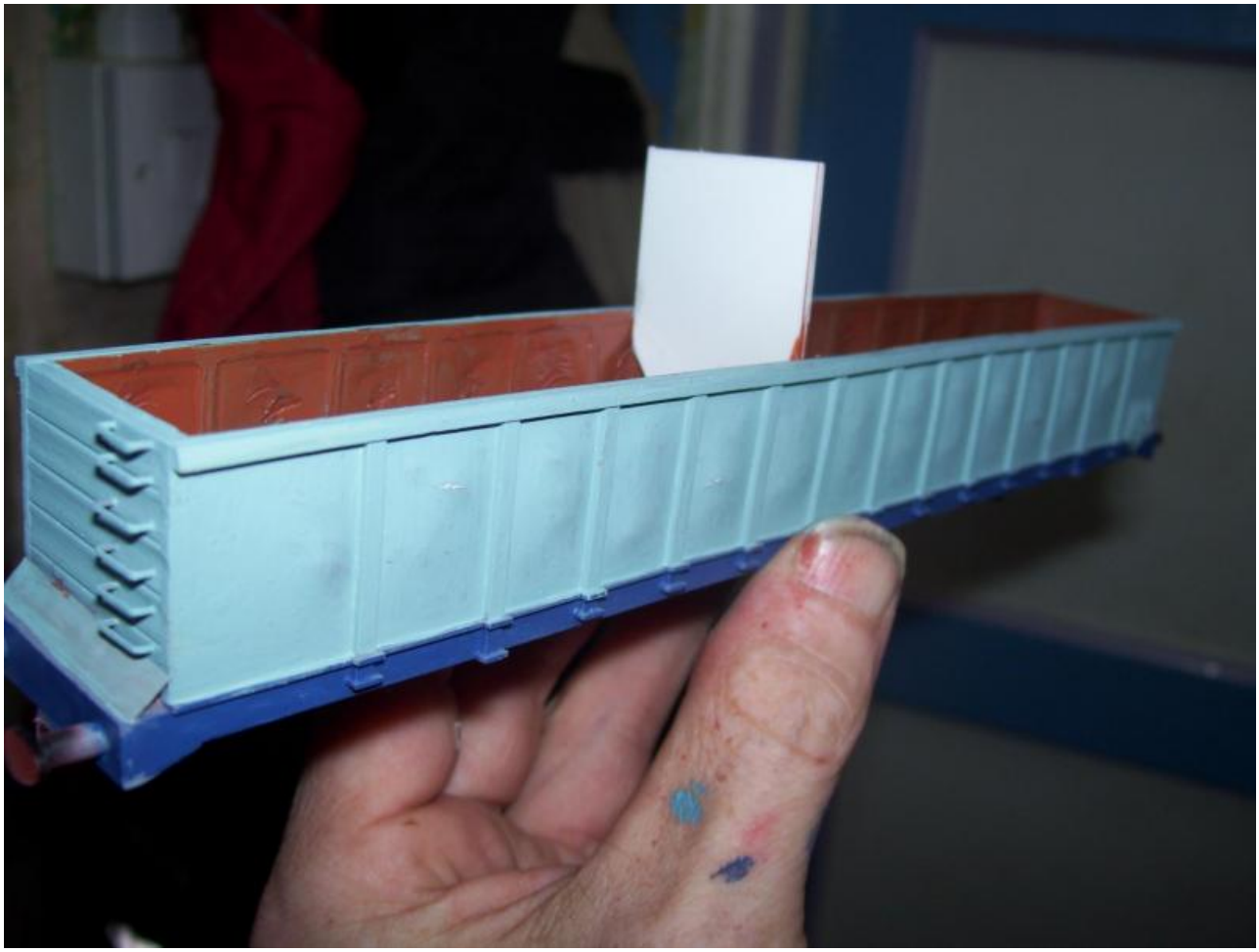
There is a fair amount of sideways movement from the dovetail, so possibly better than a fixed kadee #5 could offer

.

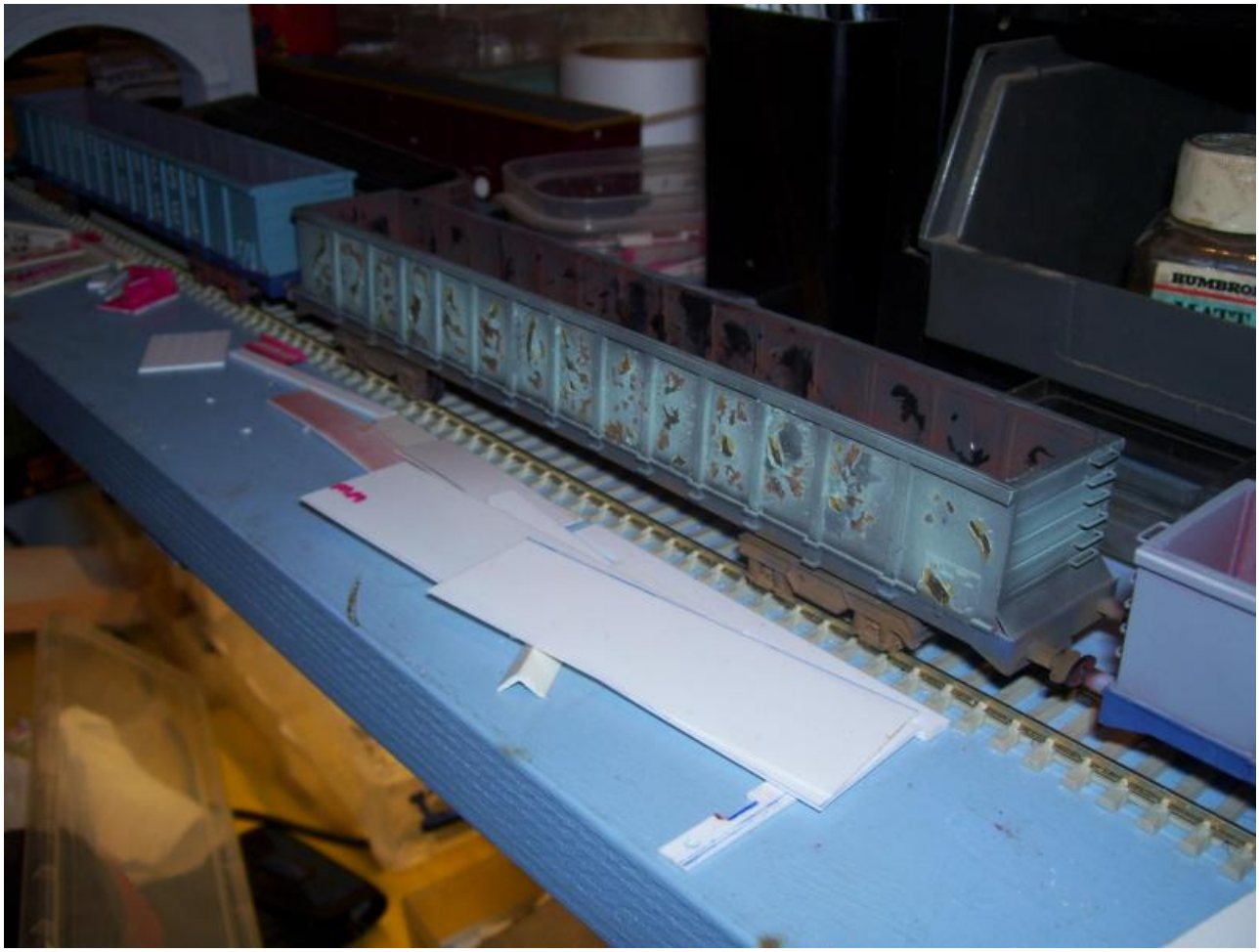
Latest progress is that I've spray primed all wagons & brush painted the solebars with Humbrol 25 , Silly me - I had to re-mask up the painted solebars as I'd forgot to add the all-important chamfer to the topmost horizontal bracings, then re-apply spray primer to them. Humbrol 89 matt has so far been applied to one of the upper bodies. Painting the bodies was started, & Letraset transfers applied to one of the wagons, here's the results so far....

A sheet of 7mm high white Letraset rubdown letters were applied, due to the bodyside stiffeners I cut out each of the required letters individually. On the sheet, there are enough "E"s to apply both bodysides "SHEERNESS STEEL", but short on letter "S" , my way around this was to carefully modify the "$" using a blade whilst still on sheet, then apply to bodyside.

The solebars were re-touched up with Humbrol 25 as to tidy the over-runs from light blue upper bodies. I'll let them dry overnight & then assess the best/compatible clear topping (Humbrol "Satin cote" or similar) as to protect the SHEERNESS STEEL lettering, then consider what shade of blue to paint the 3rd wagon.



Using a rubber & various objects such as a half round file, I added more prominent denting & bulging to the wagon I wish to portray a battered & well worn ,rusted condition, Just needed to be careful not to over-do this or the bodysides will lean inwards. I mentioned one of these wagons would be sent off to C.S. Models/Weathering - a chap who specializes in applying peeling paint & rusting. I received the model back today, here's the result...

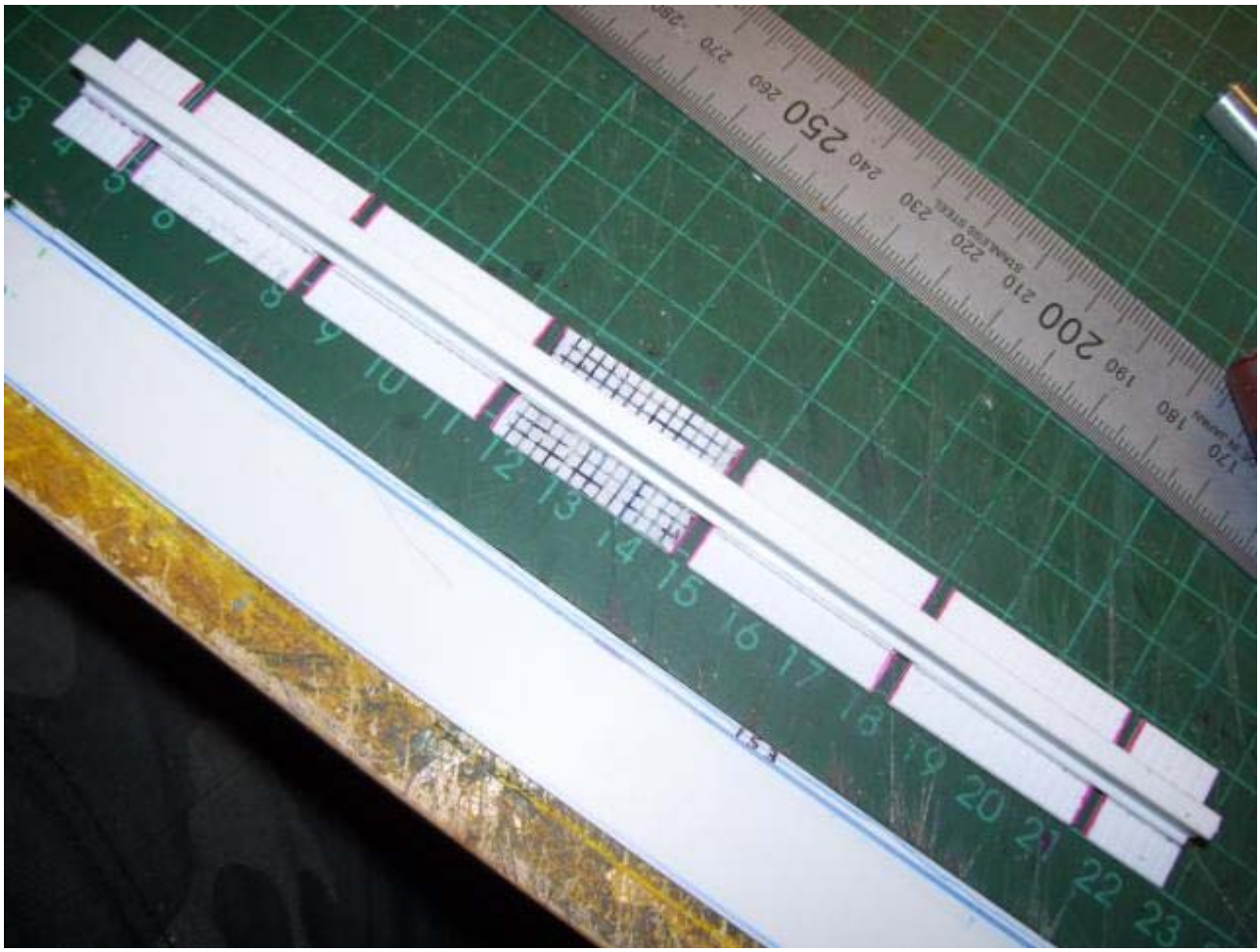


I've now started the initial stages of building the other type of scrapwagons, the type with diagonal bracing stiffeners.

As I plan to build x3 of this sort of wagon the initial stages include sample components & jig making for spacing of the uprights etc. for making in duplicate so all wagons are the same in every respect, apart from deliberate minor variations based on the photo's I have. Today, lots of trial & error that inevitably involved some wasted styrene & time, but it’s better to correct an issue before building/assembly gets too advanced. Although there are some similarities & idea's I can use, I've come to the conclusion this wagon will have much more work involved than the other scrapwagons I made in this thread.

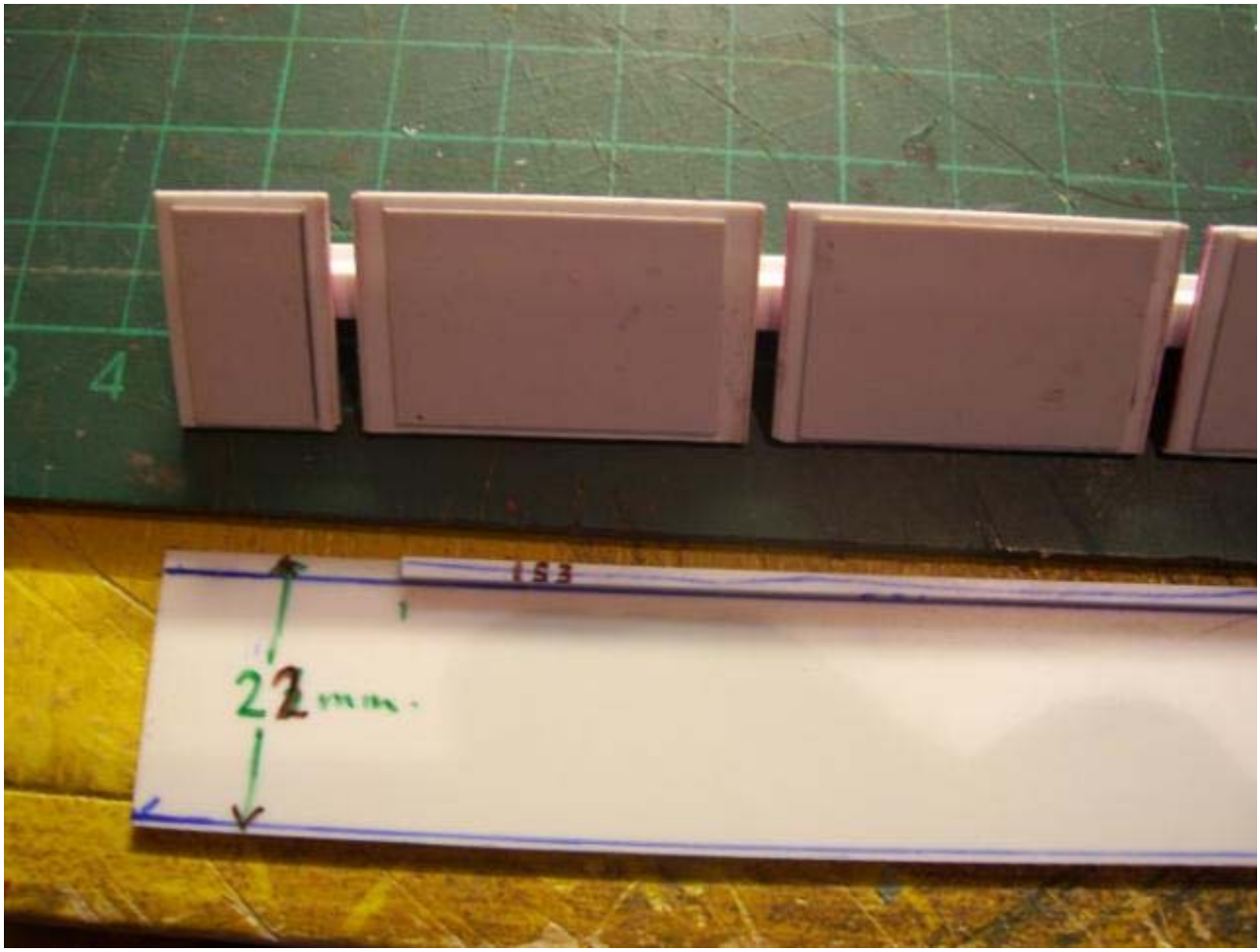
SCRATCHBUILDING 51ft PXA SCRAP WAGONS (THE TYPE WITH DIAGONAL BRACEINGS)
I've now made sufficient progress on my next scratchbuilt wagon project that I've spoken about above, Here's how things are looking so far, starting with the bodyside panels.

Like I did with the previous wagons I built, I made myself a spacing jig for the vertical bracing stiffeners, and the jig makes duplication easy.

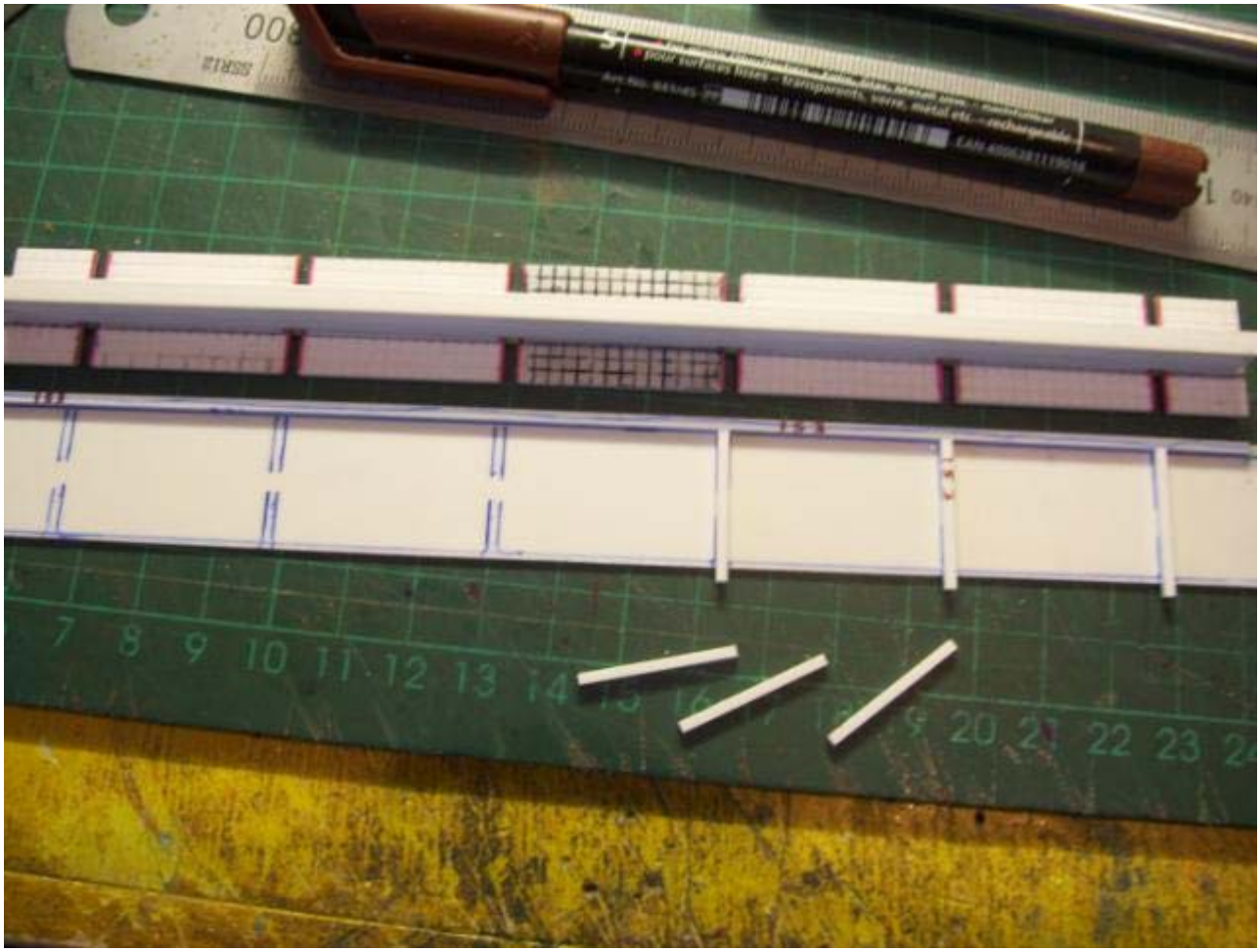


I've used 0.30 thou' (0.75mm) plasticard for the bodysides, I decided the height of this part of bodyside to be 22mm, it’s a difficult one to decide as the chassis is a little complicated with a box section area the length of wagon between body & chassis.

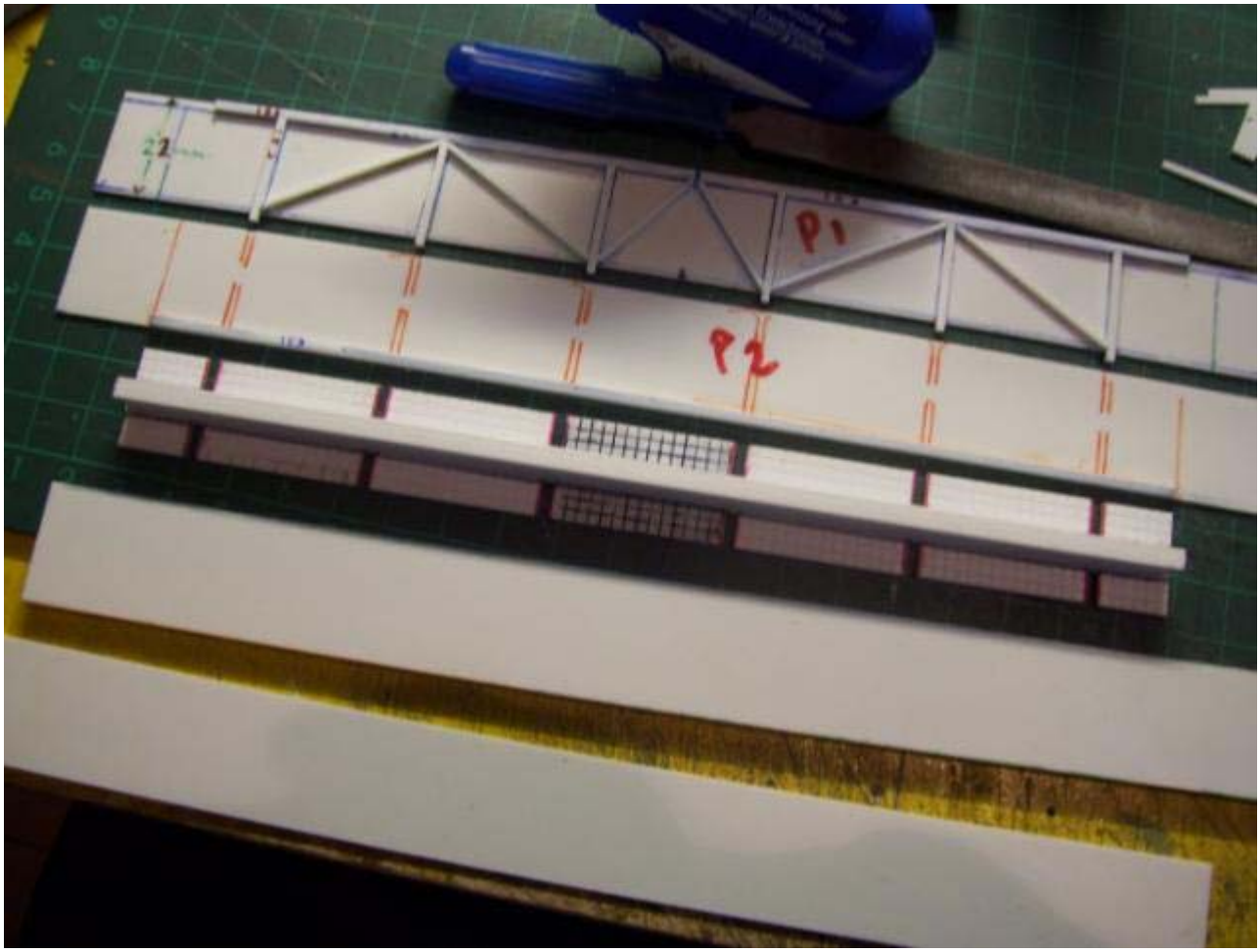
The top horizontal bracer was positioned first, allow this to set, then I used my spacing jig to mark positions of vertical bracer / stiffeners, I've used Evergreen #153 (1.5mm x 1.5mm) for these.



The reverse side of my spacing jig has 0.5mm thin plasticard sheet/strip as shown above, this is to enable my fineline pen nib to mark the required positions of vertical bracers, or if applying solvent to prevent the weld un-intentionally sticking to spacing jig (whichever method I decide to fix the bracers).



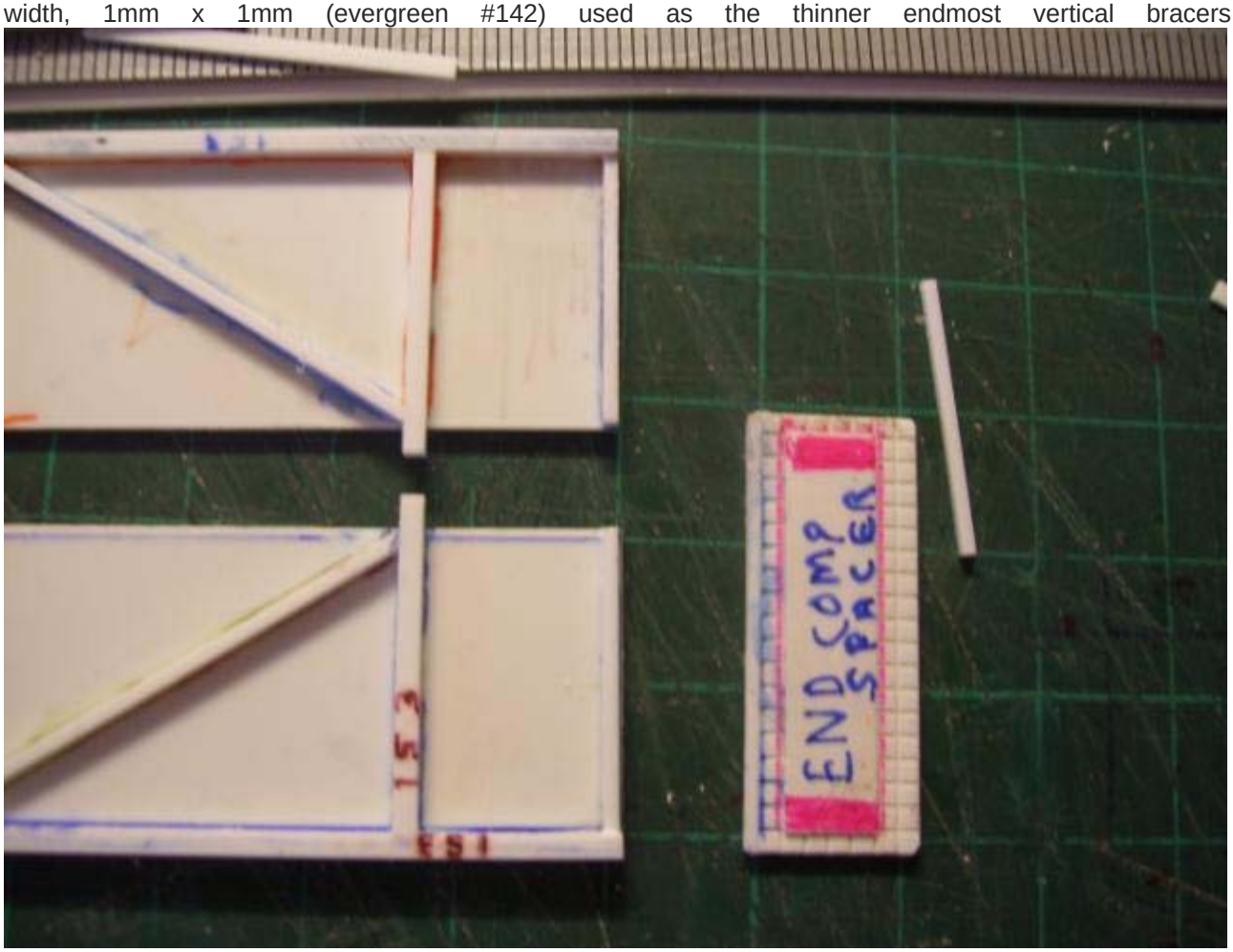
Vertical bracers put into position with the help of my spacing jig, I've used Evergreen #153 for these main external bracers.

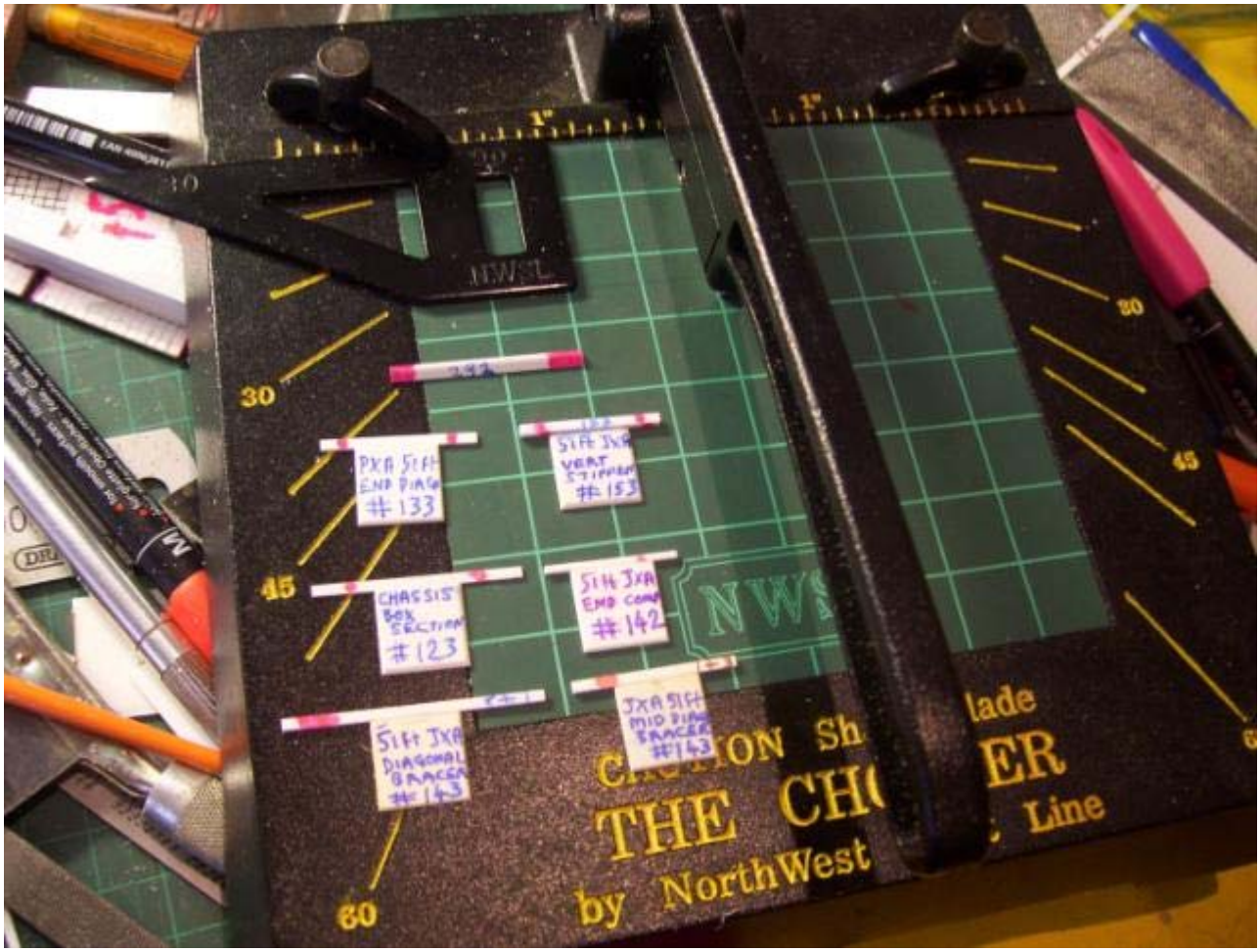


Diagonal bracings were cut to length & plastic welded into position , I've used Evergreen #143 for these.

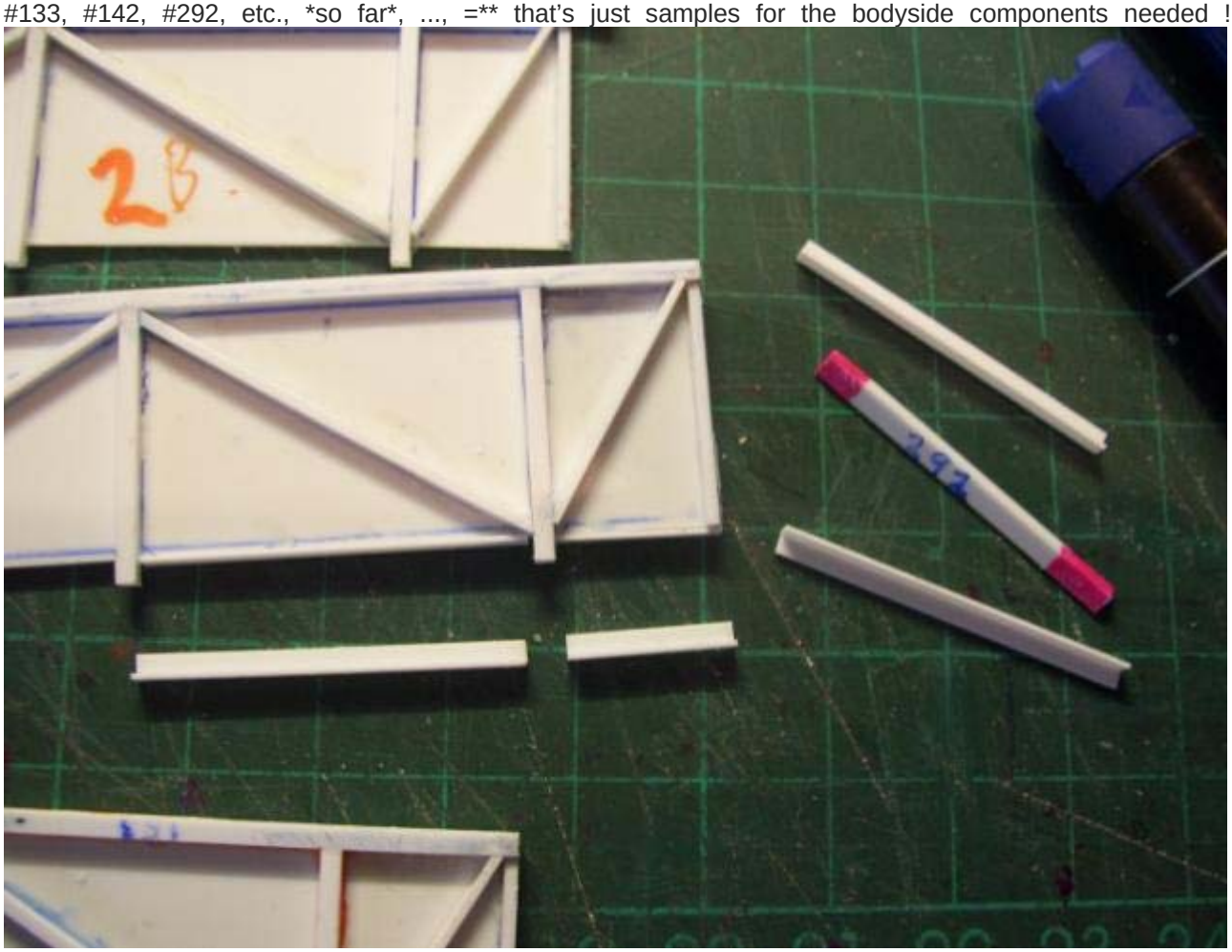
Preparation & assembly of more duplicate bodysides was started.

I made up a spacer from Evergreen #4501 & some 1mm x 1mm microstrip welded to it to gain the required width, 1mm x 1mm (evergreen #142) used as the thinner endmost vertical bracers





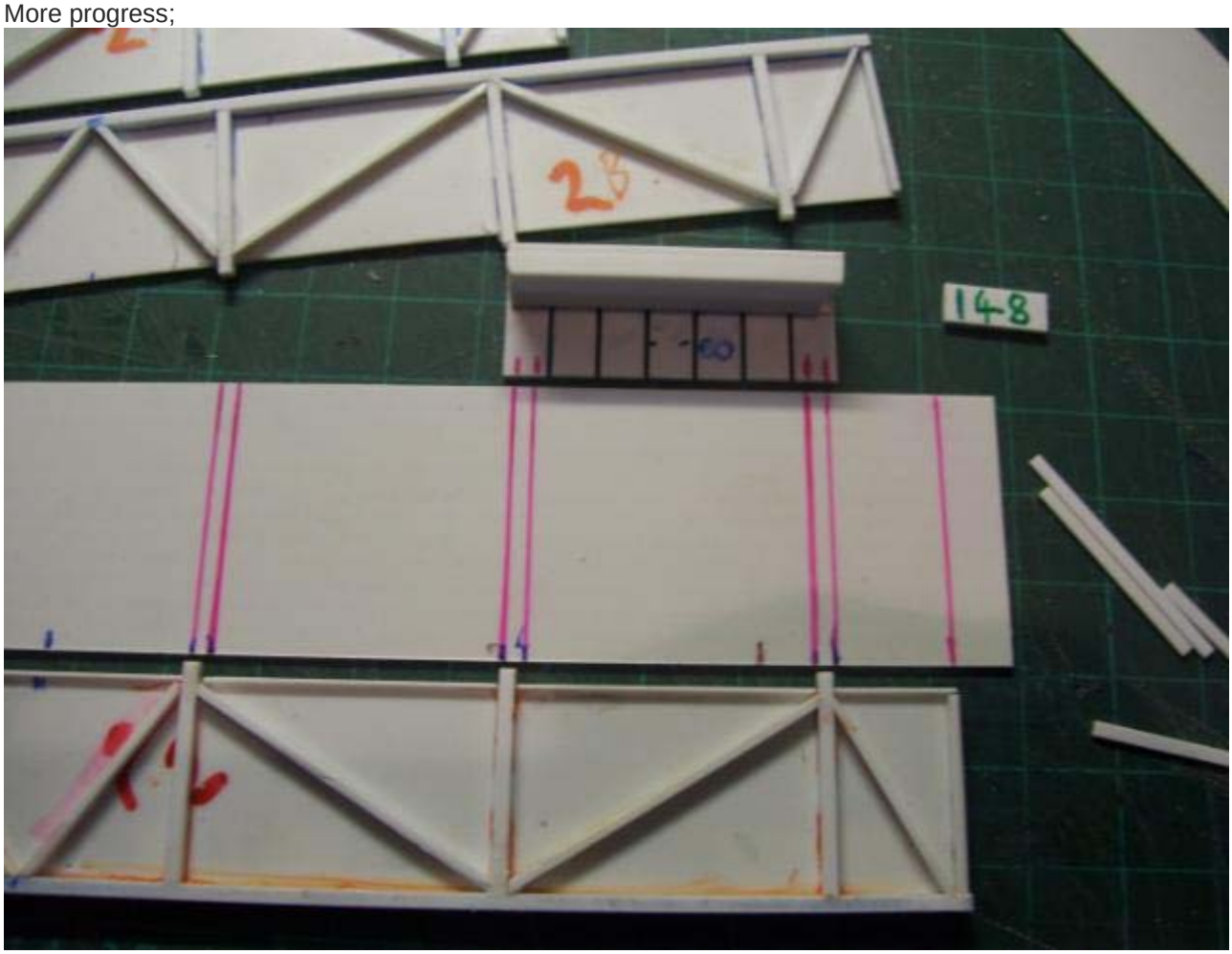
I'm building more than one of the same type of wagon for my project, so I made a "sample size" for each of the many components & for easy reference I gave them a pink marking and labelled them up #153, #143, #133, #142, #292, etc., *so far*, ..., =** that's just samples for the bodyside components needed !



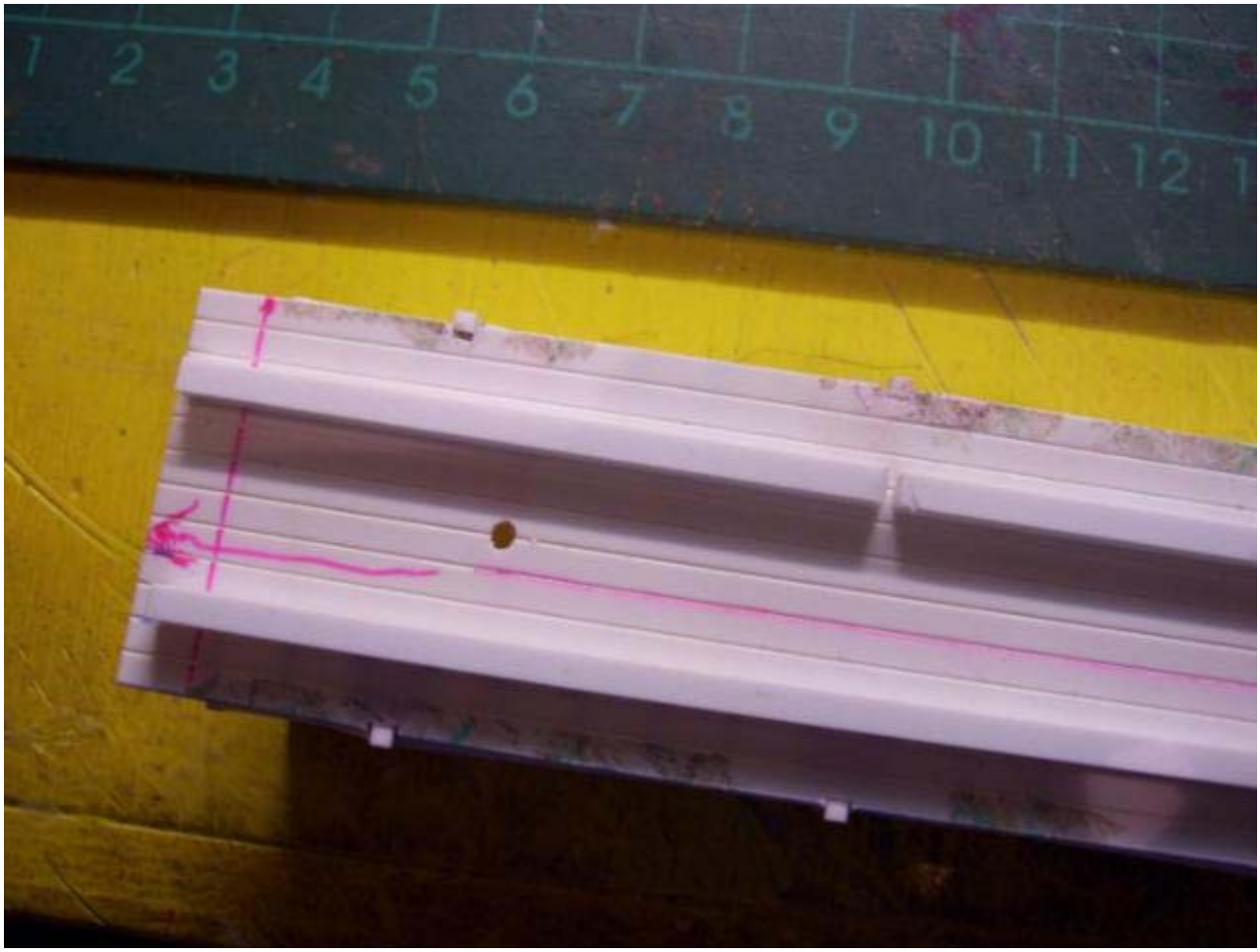
The diagonal bracers for bodyside endmost panels were welded into position, - Evergreen #133 was used. The variation of sizes used for stiffening bracers is based on photo's & diagrams I have

Next, enough Evergreen #292 were cut to size as to fit between #153 vertical bracers,

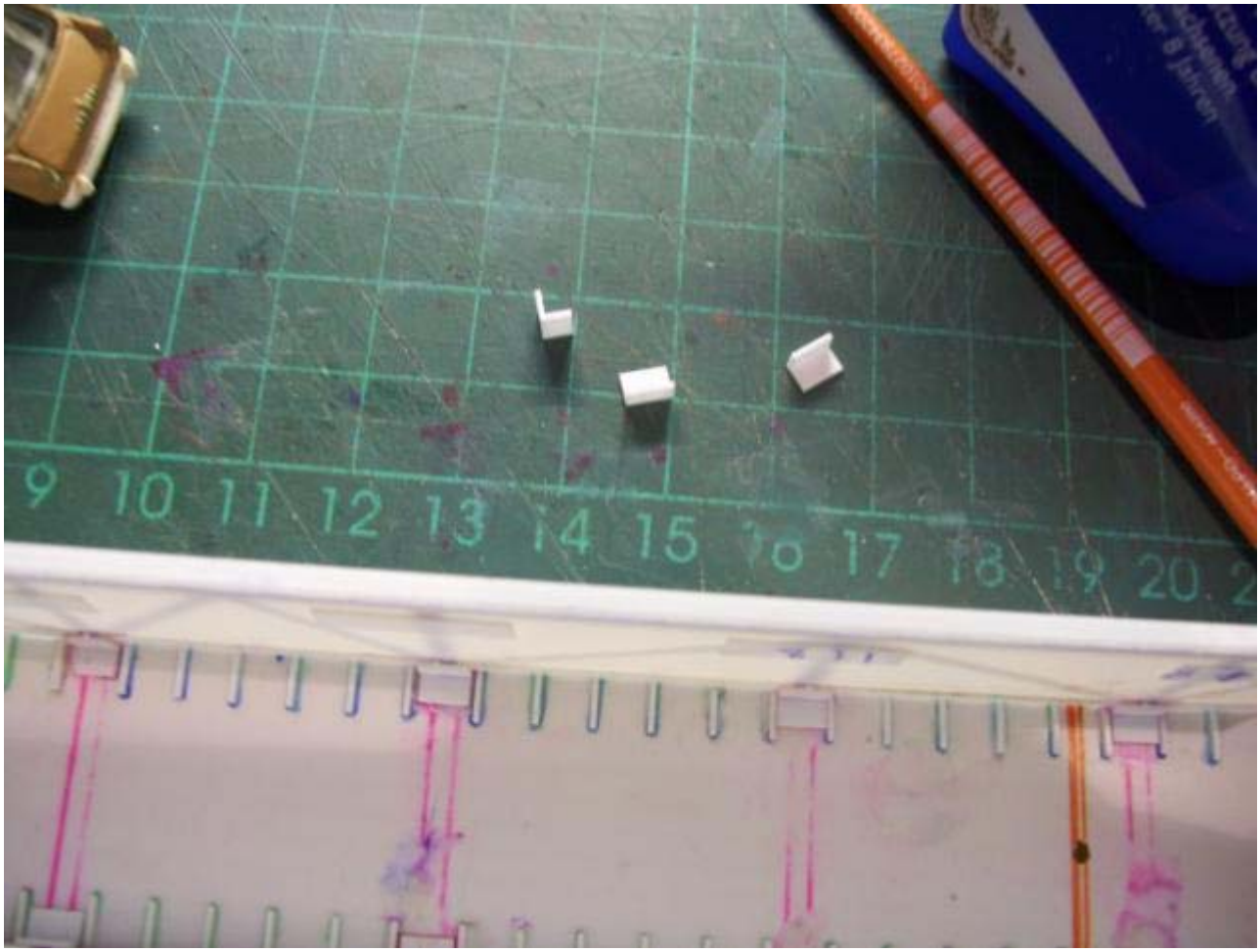
More progress;



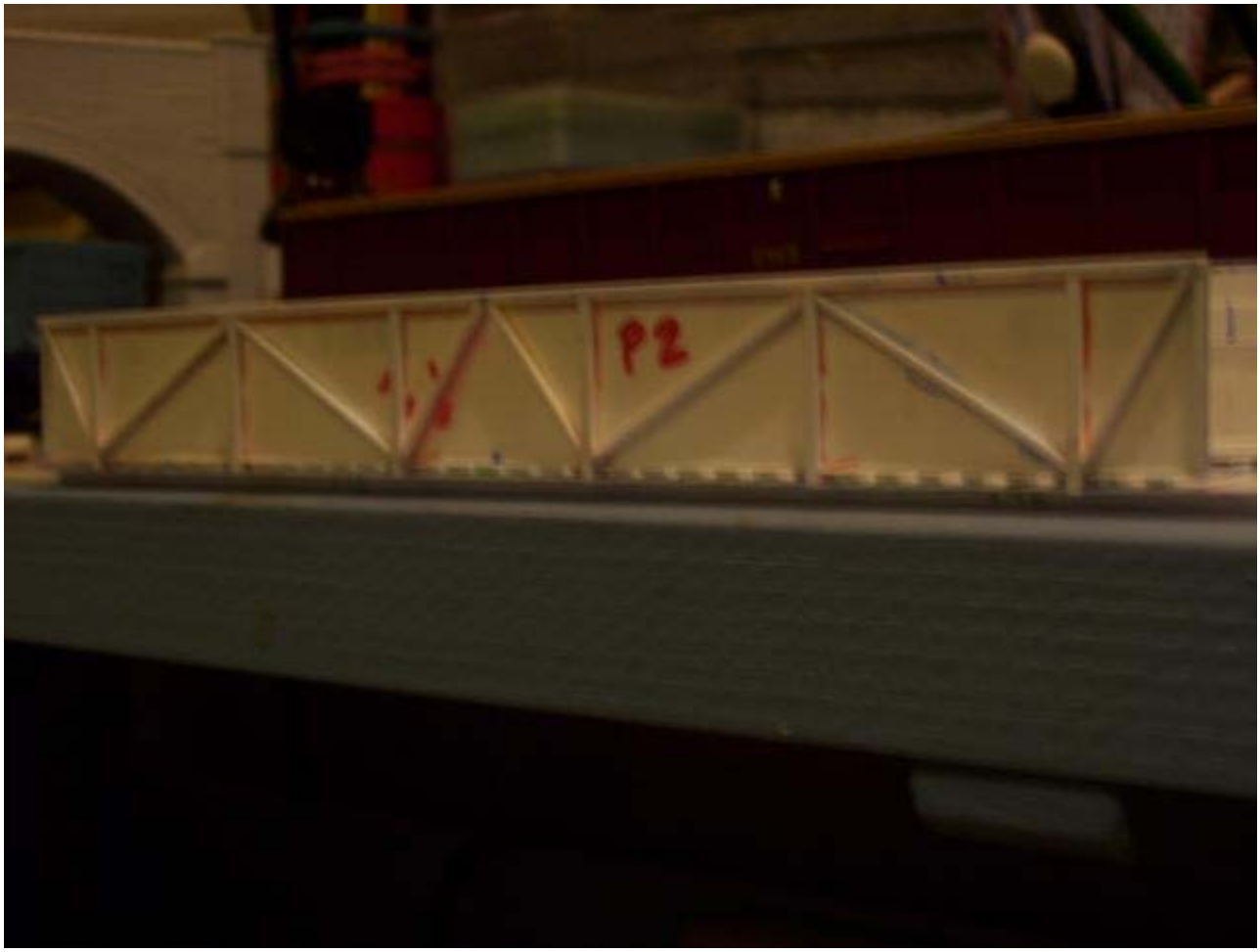
I made up another spacing jig as to get equal as possible spacing of the #122 strip for box sections above the chassis solebar.



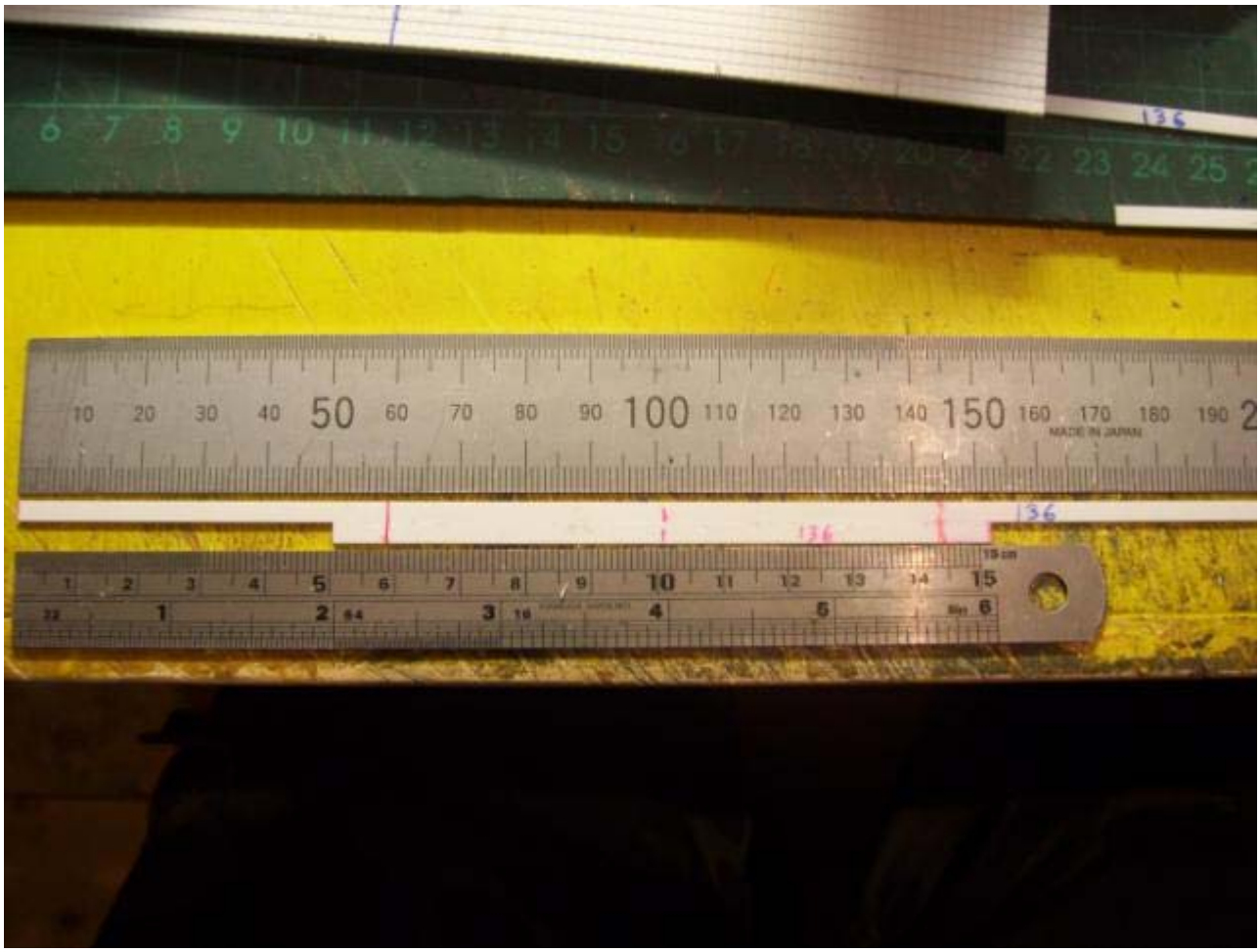
Strips of 2mm x 2mm Evergreen were lightly tacked to the underside of floor as to keep rigid whilst bodysides & floor were welded together.



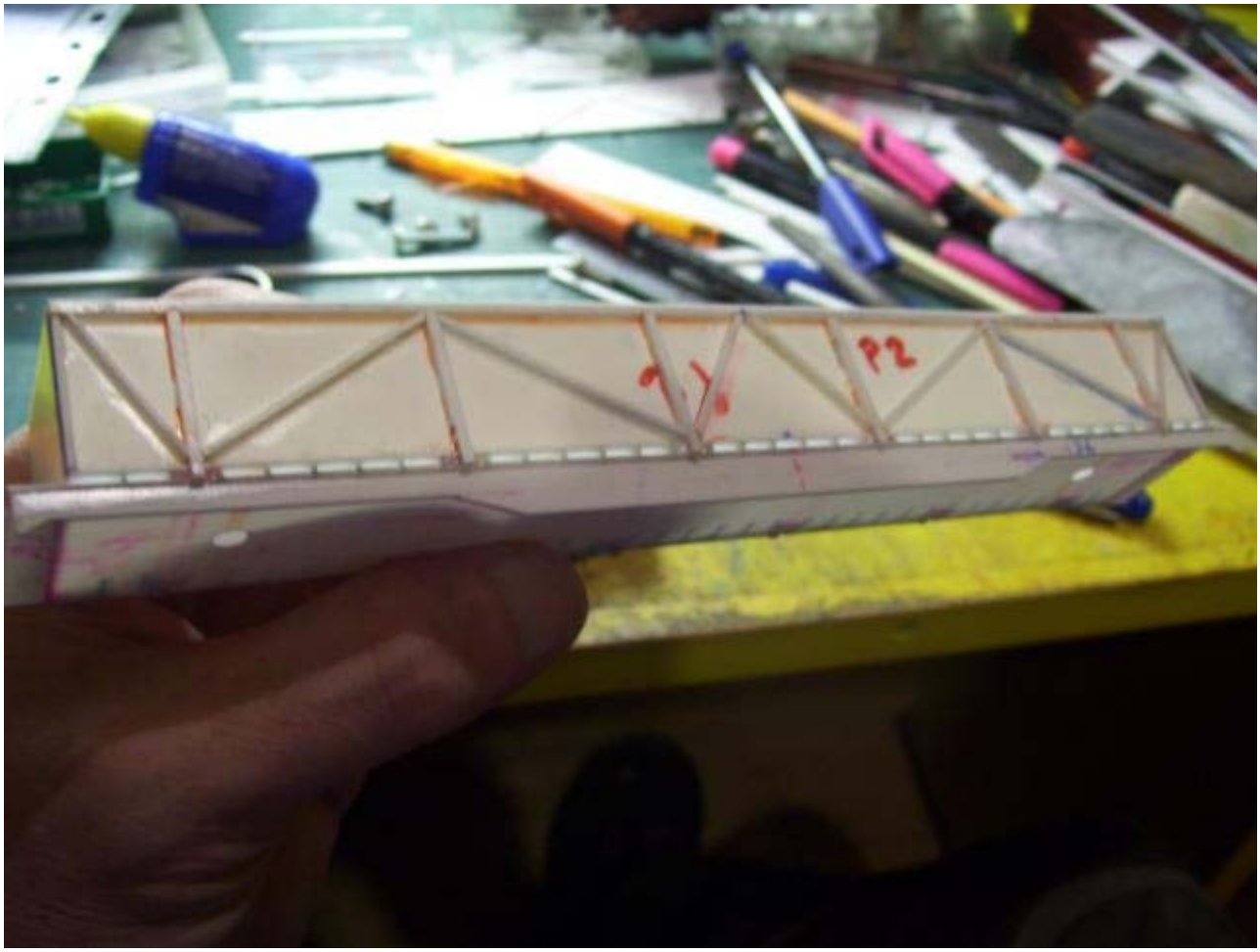
#294 L sections put into place as to keep the floor to bodysides square & rigid, additional strengthening will be done at a later stage.



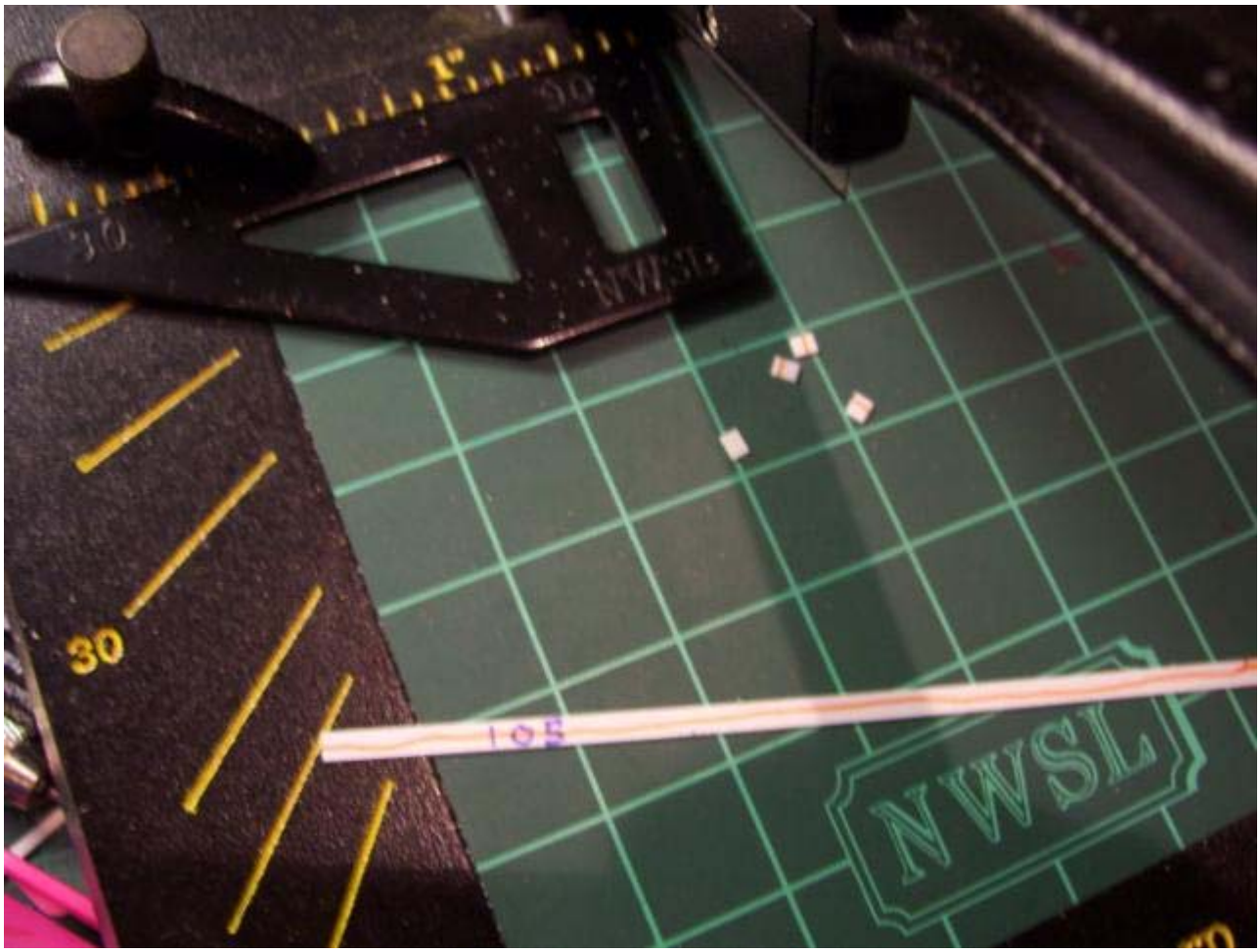
Allow to set.



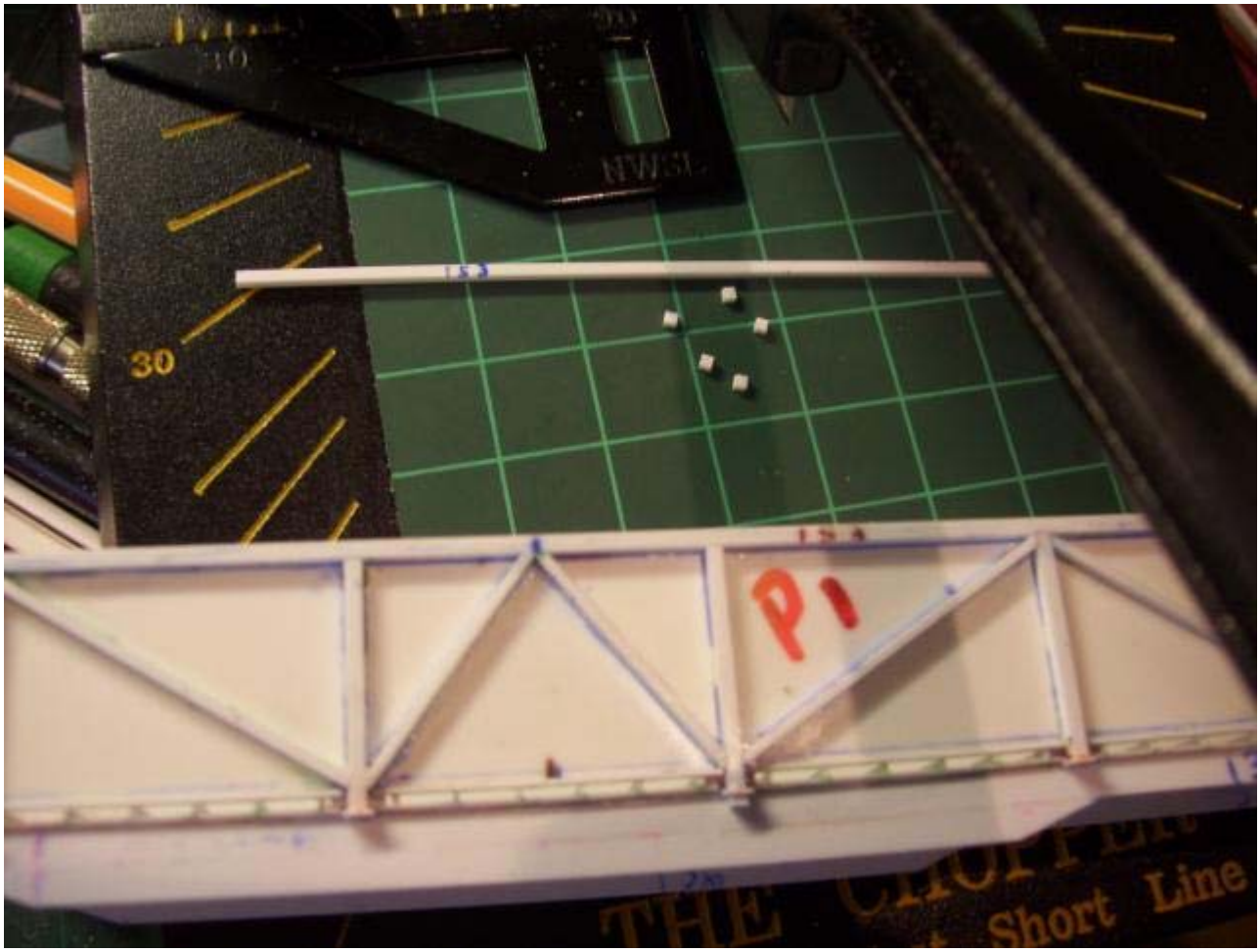
Evergreen #136 were used to make the fish belly like girder chassis.



The fishbelly like girder chassis sides welded into position.



#105 cut for the flanges of stiffeners on lower solebars.

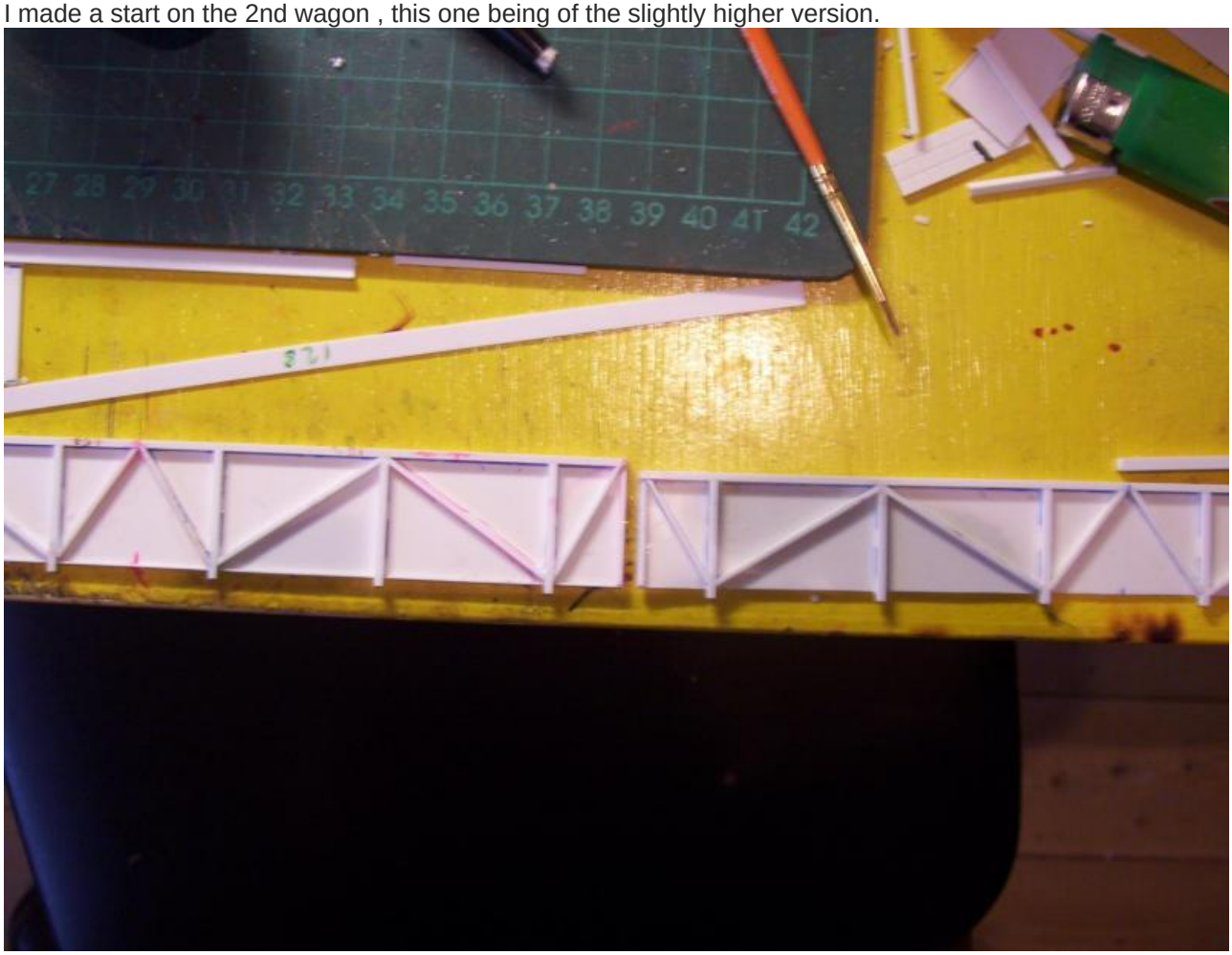


Enough #153 chopped to do the lower part of stiffeners on solebars. I found that obtaining the exact spacing of the #122 strips for box sections were easier & quicker to achieve with the little spacing tool I made, using this I marked the positions with a fineline permanent ink pen, then applied each #122 strip to cover those lines..., but yes, it did take quite some time to apply all 60+ though. On the subject of those diagonal bracings ; I earlier realized what I think to be one minor error with my model so far; , whilst double checking & reading my info & photo's I realized that there are slightly varying body heights ; , The body height (PR3000 - lower version) I've started on doesn't have diagonal bracers on the endmost side panels, so I'll need to remove just those 4 diagonal bracers, which hopefully shouldn't be a problem. With that issue fresh in mind, I'll soon make a start on the slightly higher bodied version with the extra diagonal bracer on each endmost panels & the "C" section on the top of the end section body panels,

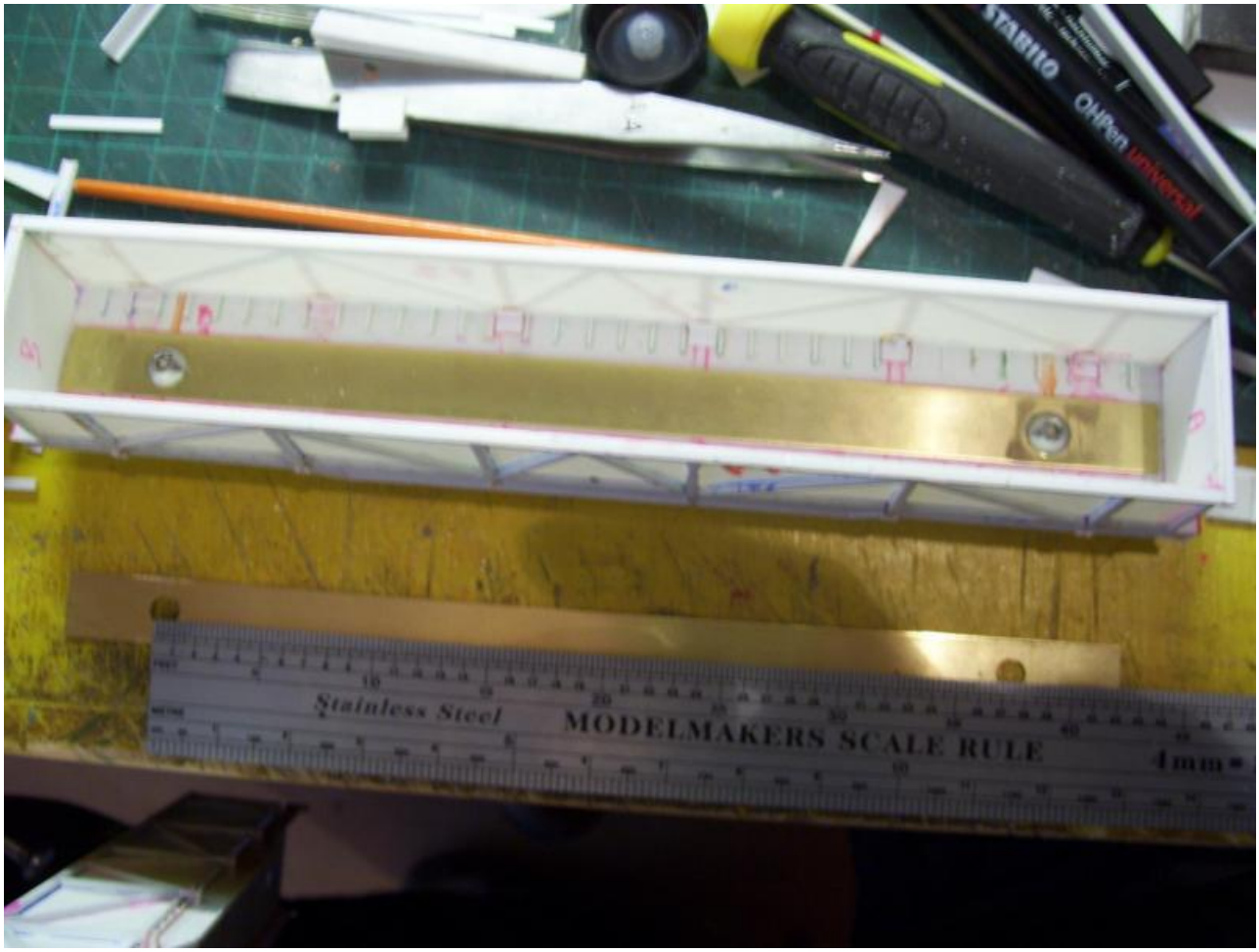
I'll also need to finish the fishbellied girder solebar (bottom flange of girder profile needed) with some Evergreen 113.

Here's the latest photo showing completed stage I'd started in previously posted photos,

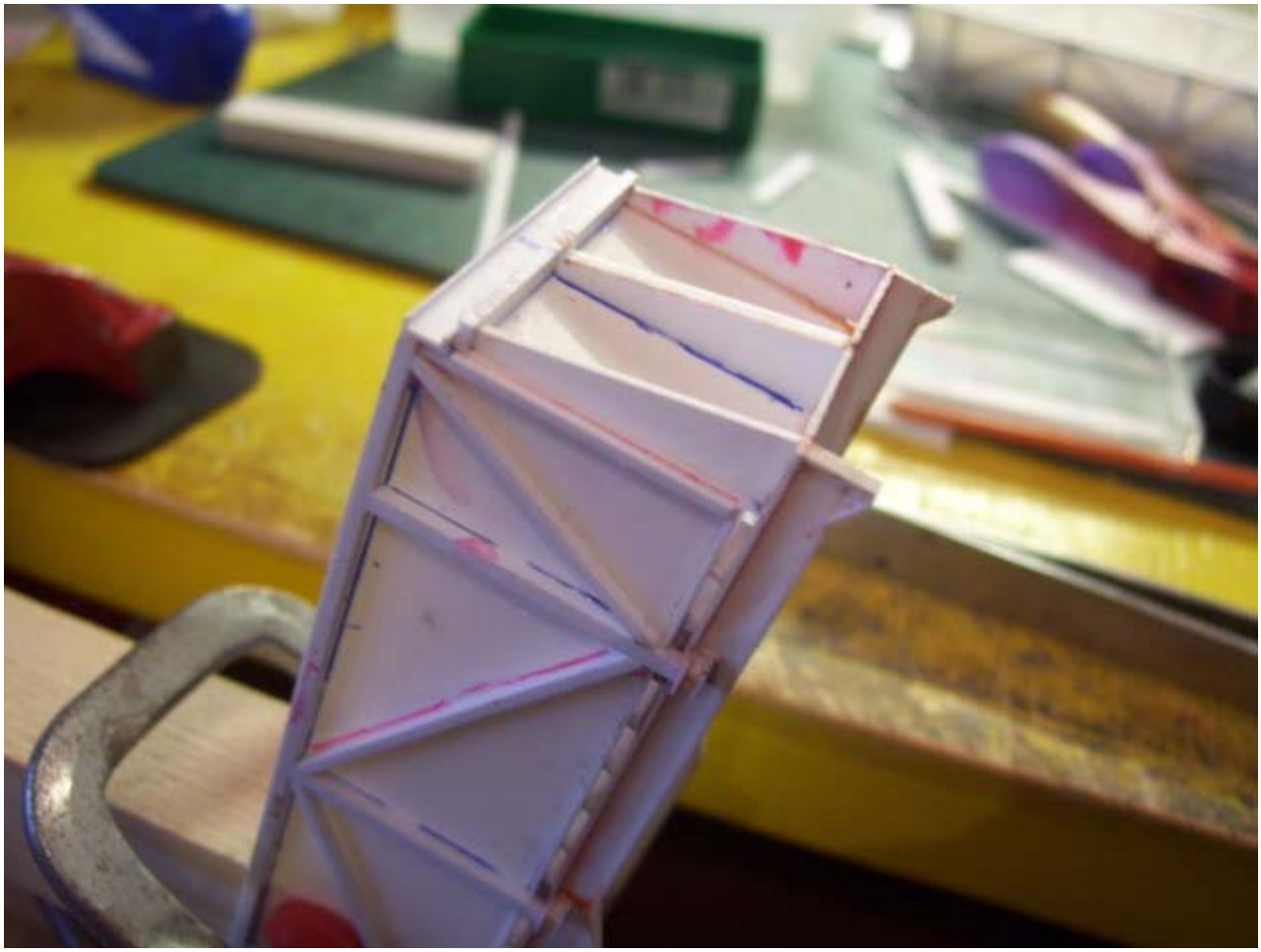
I made a start on the 2nd wagon , this one being of the slightly higher version.



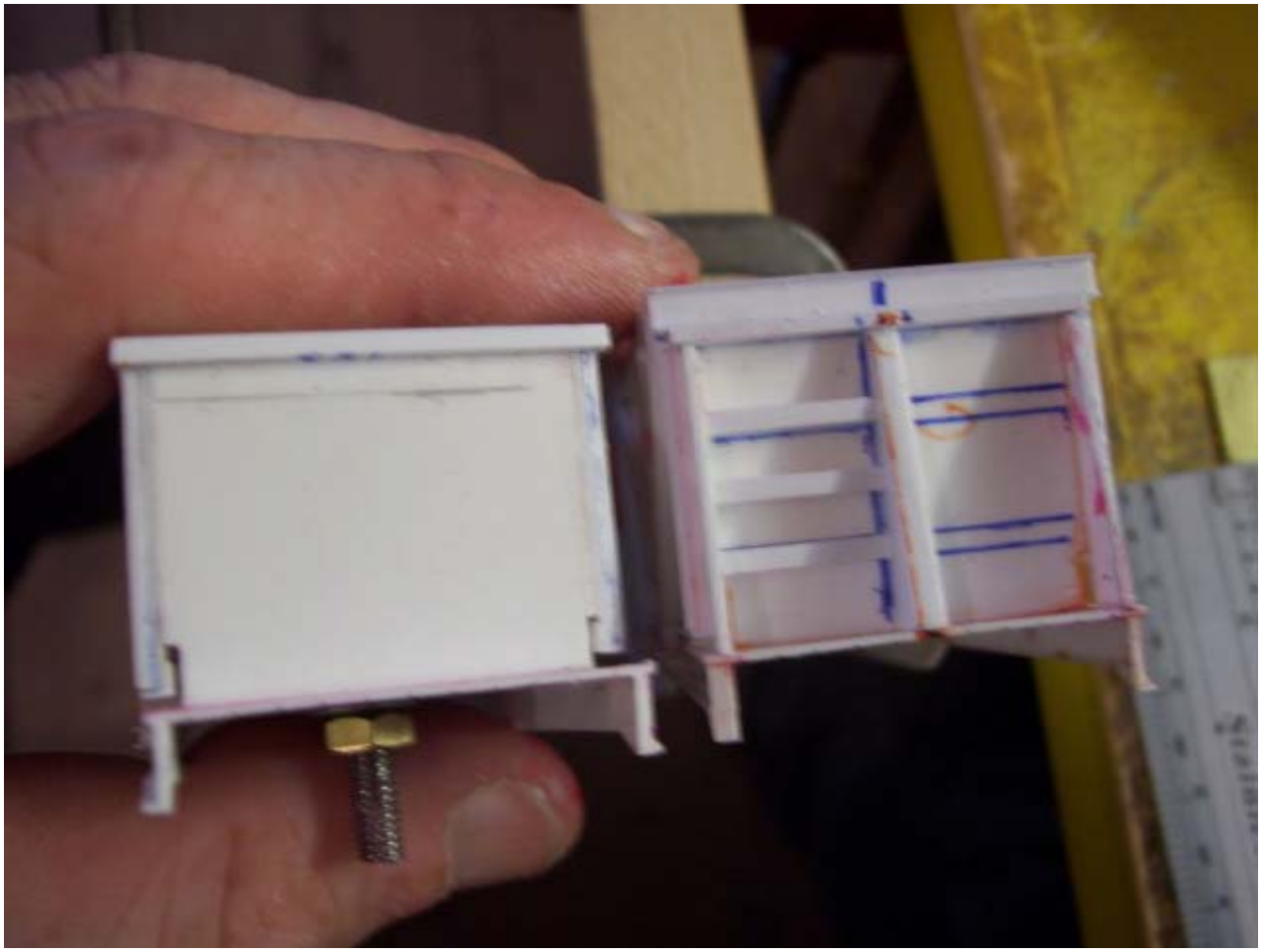
The diagonal stiffeners** on the end most of the lower version seen here were removed - (**still present in this photo)



To add some weight to these wagons I decided to use some brass strip 1mm thick x 12mm wide the length of the inside of upper body. 4mm holes were drilled for the bolts to hold bogies. As to add more weight at a later stage of building, I've pre-cut some 2mm thick x 20mm flat steel that will fit beneath the fishbellied area of the solebar / chassis. With the main sides & floor built to both wagons, it was time to start on the end panels on these wagons, starting with the slightly higher bodied version featured below, Adding the extra height for end panels for higher bodied version; I used an Evergreen #264 (but I used a #274 modified to the same as a #264 "C" profile), beneath this was a #144.

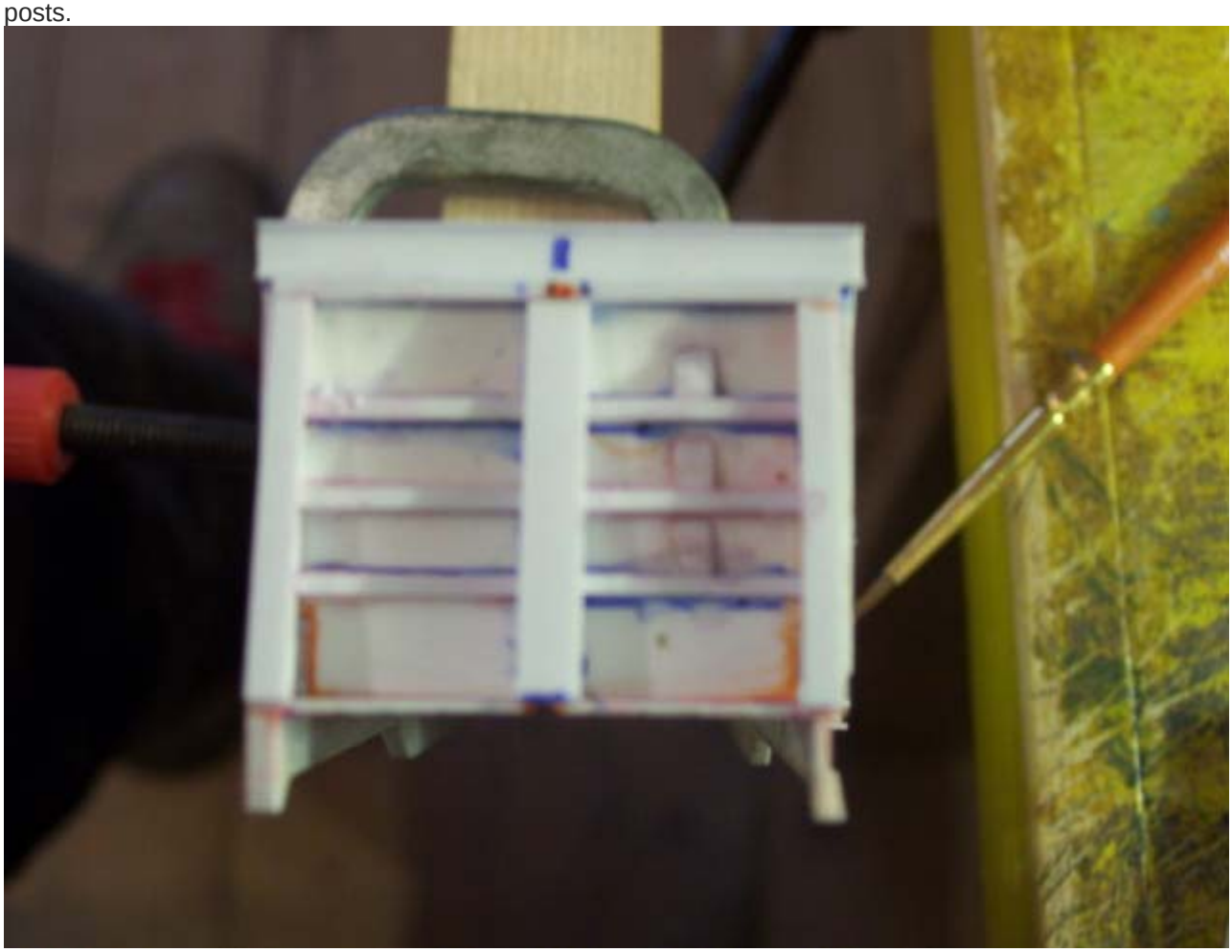


Components for the slanted end panel stiffeners were Evergreen #169 (centre upright) & #139 (side uprights) , on top of these were flange plates (#124 for side stiffeners & #126 for the centre stiffener).



The difference in height of the 2 wagons, approx 8" real, approx 3mm scale equivalent higher than my lower bodied version, that’s assuming I've modelled that to an approximate correct height

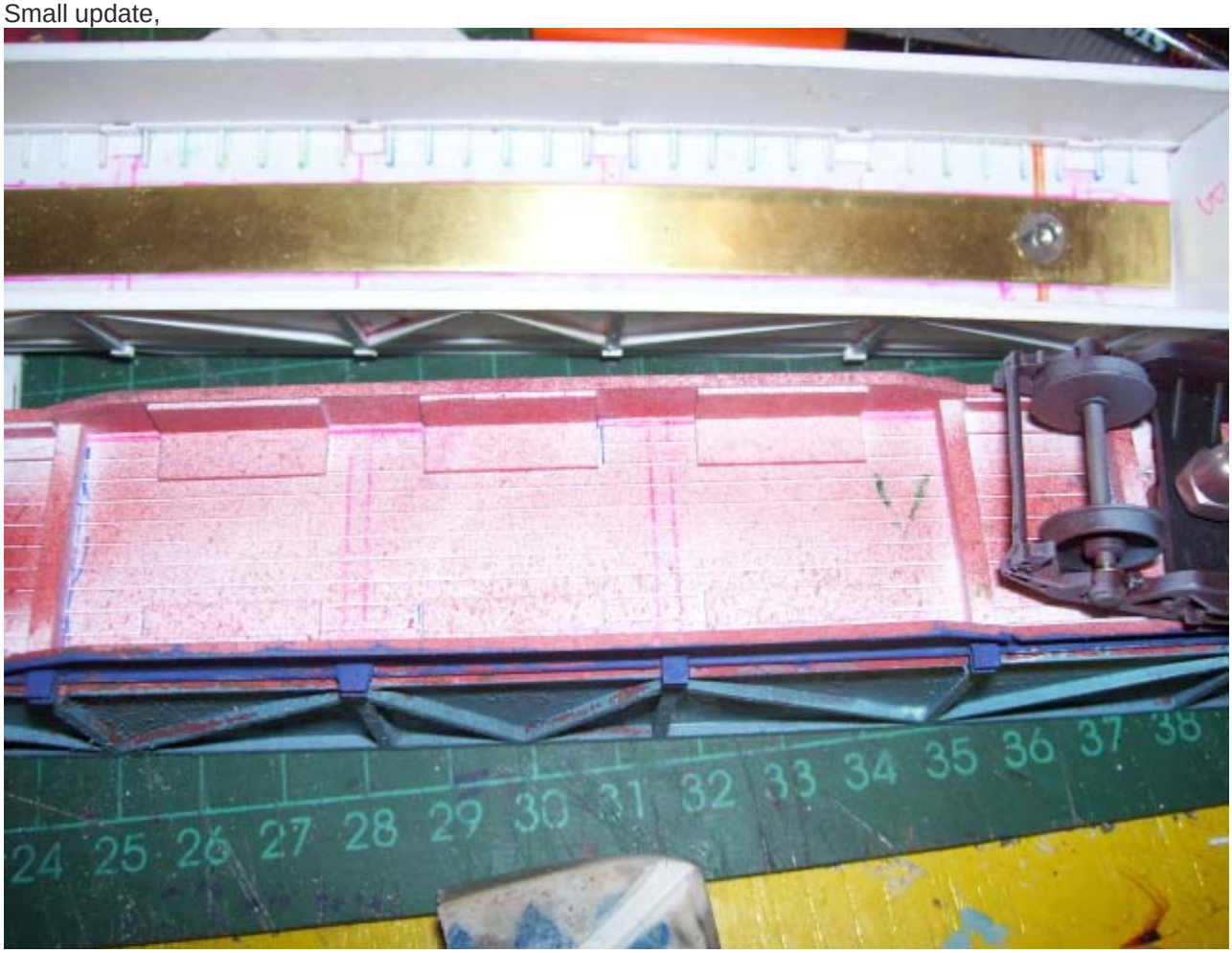
I made another spacing tool as to get the same spacing when fitting the end panel cross bracers (Evergreen #144) here & on the other end and the slightly lower version of this type of wagon I'd started in previous posts.



The end panel detail on real examples can vary slightly, so I'll model the other end panel with a slight

difference as seen on Paul Barlett's website photos of these. Those small triangular bracers on the RH side of each horizontal upright were tricky to do, I considered using modified Evergreen #249 quarter rounds, but the angle seemed unsuitable, so I just used square strip cut & filed to required angle.

Small update,



Using Evergreen #297 , I strengthened the solebar girders.

I also fitted a floor to cover the brass strip to help give some weight over the bogies, which is another thing; DONT add too much weight, as, I've fitted Romford wheels & brass cup bearings to the Gloucester RTR bogies taken from Bachmann TEA tankers. I had to modify the RTR bogies as to fit brass cup bearings, the wagons runs okay but if too much weight is added then has a slowing effect, compared to the scheirlien bogies I'd scratchbuilt on other wagons which run perfectly free & smooth.

I've made a start to paint the wagon , primer, then a test with applying scenic rust , but I decided against this "rusting" on top of primer, so most of scenic rust was scraped off leaving just a trace & dodgy looking blue paintwork on top , but I'll scape random patch areas of the blue paint & re-apply scenic rust to those areas.

Notice the difference of both ends (above buffers panel), as examples seen on Paul Bartlett's Photo website.

The Romford's look a little oversized, could that be the cause of adding drag when the model is weighted? If they are indeed slightly oversized they could be rubbing on the chassis or even something as simple as the brake moulding. I think I've discovered why the Romford wheels act the way they do in this instance, they're the 12mm size which afaik are correct scale size for these wagons, slightly smaller diameter wheels than original wheels in the bogies from Bachmann , but no, they're definitely not rubbing on any area of the chassis, but there's a fair amount of sideward movement of the axle itself just sufficient as to keep them in the brass cup bearings I've added, - this may be the cause of the slight issue, also, I used a 2mm drill as to widen the hole for fitting the brass cup bearings, - the flange of cups are still on the outside, but it maybe that either the width between inner-sides is 0.5mm too wide, & despite me using a pinvice for a 2mm drill , I had to use this drill at a 15 degree angle. - No matter though, as the two wagons I've made may well be just parked up as a rusting sideline scenic feature rather than to run them.... on the plus side, both my scratchbuilt bogies on the other scrapwagons I've built run perfectly.