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February 2021



INSIDE

- Airforce Recovery crane
- 3D print your own parts
- MotorVator 4 reviewed



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From the Editor

Kia ora Meccanomen

Another modelling year is upon us. Undoubtably the highlight for many will be the forthcoming National Convention at Waikanae in March. This is our biennial chance to catch up with old friends and display those creations spawned during lockdown. (*Spoiler alert! Some of these are previewed inside.*)

This issue has some familiar names in New Zealand Meccano gracing its pages. **Bruce Geange** is back with another delightful mini-model. **Paul Roberts** explores a new facet for our hobby - 3D printing of those hard-to-get parts — while **Ross Quinn** laments the difficulties of being a Meccanoman in 2021. The usual Club reports highlight National activity up and down @HellHoleNZ.

Of particular note is the **Christchurch Meccano Club** who held a very successful exhibition in the Arts Centre on 28th October 2020, and some images from that are posted. It seems that **David Couch** has found several new and ingenious ways to marry the digital world to Meccano. Other systems were well represented, as well as various train brands. As always, the **Lang boys** put on a strong showing.

Finally a plea to support our Wellington friends in their endeavours come March. A show not to be missed, **Reg Barlow** assures me.

See you all there
 Best wishes
 Richard

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My Experience with 3D Printing Meccano Parts –

By Paul Roberts WMC

It's something I tried for the first time last year with mixed results. For anyone wanting to 3D print some Meccano parts, I hope this article might be of some help.

Basically I had some parts that worked really well, some that worked well with some rework, and some that just did not. Firstly there's a range of materials around, I can't remember the default one that was used, but it was about as strong as nylon. Secondly you are not going to get the same strength as you would from mild steel or brass. Printing out a Meccano part is not quite the same as hitting the print button on a computer, there's a bit more behind it.

On the plus side I was able to recreate some long obsolete Meccano parts at rock bottom prices, but on the downside I did have failures.

My background

I have a lot of experience creating 3D shapes through my old career as a CAD Operator. I also have my own, but very dated copy of AutoCAD which has been ideal for creating some complex shapes. Prior to 3D printing Meccano parts I used 3D printing to fix some home maintenance problems around the house. I was pleasantly surprised to find my old copy of AutoCAD could output one of the suitable file formats.

What worked well

I have a strong interest in the Elektrikit set, and I gave it a crack at creating some solenoids. This did work out really well. I was able to create the shape accurately enough. I made a Meccano winding device for winding the wires. I was able to find some information on the no. of turns from the NZ Meccano website. I was to source the correct copper wire from England and found eyelets almost the same size from the "Pete's Emporium" shop nearby. Also I was able to find matching red tape from Bunnings. I managed to get it all together, and the solenoids (both rectangular & cylindrical) worked. To prove it you can see my electric motor on the Wellington Meccano Club Youtube channel, the top four solenoids are all 3D printed. Unfortunately on the last cylindrical solenoid the top broke off when joining the eyelets together. So I'm redoing this one.

Another part that worked out well was the insulating spacer, though I had to tap the hole manually.

What worked well with a bit of rework

I also made a large number of Elektrikit lamp holders. Unfortunately the slots for the brass strips were modelled correctly, but slots were a problem for the 3D printer. After redoing the lamp holders with a modification discussed later in this article I was able to recreate these well. To recreate the brass strips I made a Meccano jig. Instead of using thin brass sheet I used the lids from Watties canned peaches, and cut these open initially with tin snips, then scissors. I placed the thin strips in my Meccano bending jig, then I would the turn the threaded rod back one turn. After this I added the 2½" strips one by one, bending the thin metal around the strips. The result was a bit uneven, but once I screwed the bulb in, everything was smoothed out. After this I found I could create the lamp holder without using the bending jig.

I also made some insulated spacers and washers from the 1920's electrical set, but I've had to rework these as the diameters were too big. Even though they were the correct size on the CAD drawing in reality outside diameters seem to end up bigger and internal diameters smaller. I redid this CAD file, and the parts worked out really well. I used these parts to mount the 3D printed Elektrikit lamp holders on my recent Blackpool tower model.

What sort of worked well

I also made a few insulated flat plates. These did come out reasonably well, except there was a bit of a slight curve to the parts, this was more noticeable on the 2½" flat girder. Also the lines of the 3D printing were more visible though I could have sanded these down a bit. I did accidentally make these slightly thinner than the originals, but they are still quite usable.

I also had a go at creating the Meccano Electronic set Photo cell. I was able to get an original Meccano drawing from <https://www.meccanoindex.co.uk> this was a great help. I modelled the shape correctly, though it was a bit tricky. I tried to get a photocell from Jaycar Electronics just before lockdown, but unfortunately they only had a large photocell, the small one sold out. This didn't fit inside the 3D printed part, but outside. It did not look good until I put the hood on which fitted the outside diameter of the photo cell perfectly and lined up the orientation correctly as well. As I don't have the right tools to make the brass sockets, I have had to leave this, though the photocell is fully functional.

What did not work out

I had a crack at creating some 1" gears. I modelled this very carefully making sure the gears meshed correctly on the computer. When I tried this on a model again this looked good, they meshed so well.

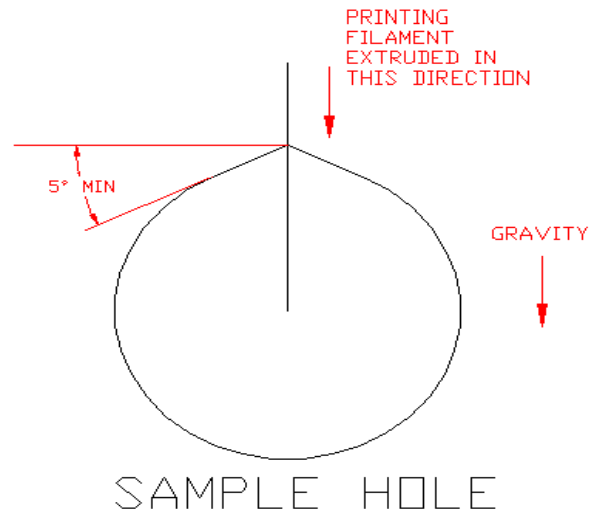
What didn't work however was I stripped the thread with a grub screw. My plan on creating more gears was dashed. Also I don't think large plastic plates would work out well due to the material being so brittle, unless the thickness was increased somewhat.

The 3D printing

I don't currently own a 3D printer, so printing these out was a bit of a mission. Basically there's two types of places you can get your prints done, a non commercial location or a business. I used to get my 3D prints done at the National Library, but they stopped offering this service. A nearby business offered to print my parts out for \$110, but I found a nearby library that did this for \$18, but took a whopping 50 hours to print. The service they offered was 6 cents per gram. Unfortunately they only offered printing in white, so some of the parts ended up being painted.

Something I learned

There was a bit of technique involved in designing for holes or slots, unless they were facedown. When the liquid material is extruded out of the tube, it can't just be supported in mid air. The 3D printing software allows for a supporting material that is designed to rip off when descaling a 3D print. Unfortunately this gets quite difficult with small holes and slots unless they are face down. By adding a slope at the top of this I was able to overcome this problem. Though I used a 5° slope, I think I could have reduced this down to 2° depending on the printing. In reality you would not notice this.



Colours

Normally only primary colours are offered though more expensive 3D printers can perform colour mixing but it is more expensive.

Future Plans?

I really would like to continue with more 3D printing, one plan I have is to recreate some vintage Mecano motors using Stan's tiny motors, one example is the junior PowerDrive motor. Another plan I have is to recreate the 1920's electrical set (with the exception of the notoriously dangerous acid filled accumulators) as much as I can. I have printed out some of the 1920's solenoids, but I haven't wired these up yet.



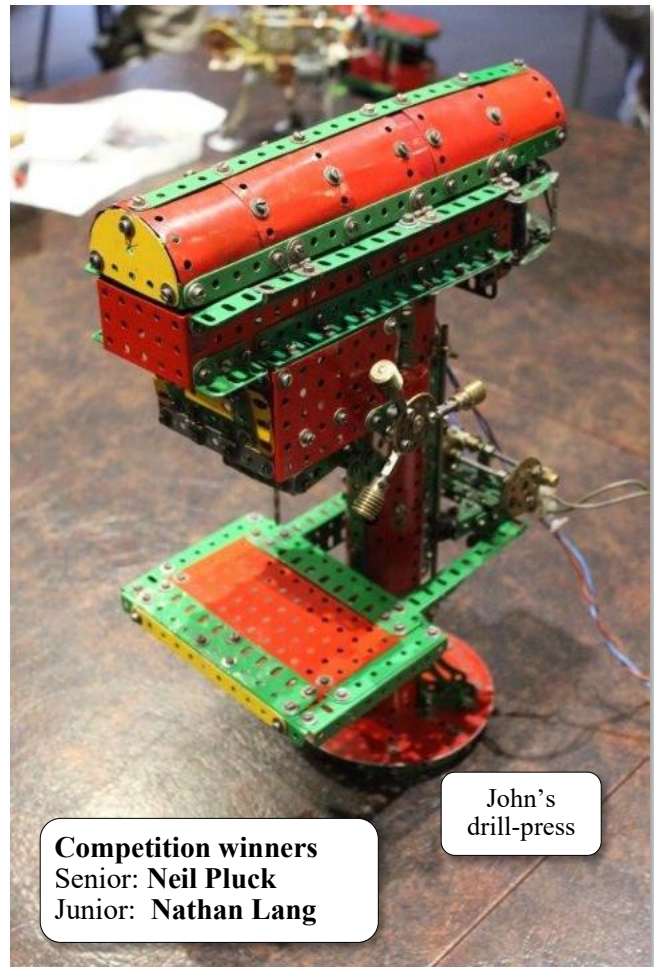
Above: A selection of Paul's immaculate 3D printed parts, including Elektrikit solenoids and bulb holders. Standard flat girders and a 38 tooth gear wheel are also in his inventory.

Feb. 2021 magazine report.
Christchurch Meccano Club
by Roland Jaspers

The main news from the Club is that we had a successful display at the Great Hall of the Arts Centre. The weather was against us on days one and two; it was very hot. This drove attendance down over those days, but overall numbers were reasonable. The arts centre was very pleased with the income generated over the weekend. Some photos of the event are included on page 23, 26 and back page. The Torro-construction table was busy most of the time, which made for a fair amount of de-constructing at the end of each day. **Robert McFarlane** had some of his large K'nex models which were placed opposite the entrance. This provided a splash of colour to draw the eye into the hall.

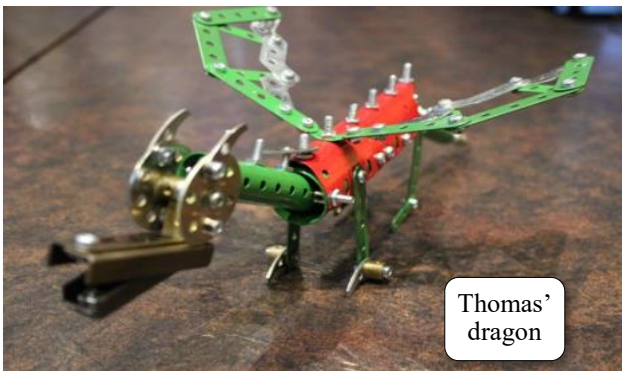
All models generated good interest. They were all well looked/marvelled at, played with and (for some) given a decent workout. The **Lang boys** were great at keeping my hands-on models going, as I invariably bring too many of these to a show. By including the construction tables the hall and stage were well filled, with no obvious gaps.

The last meetings of the year were all about the preparation for, and wash-up of the Meccano display. The theme for October was Dragon. A couple of great examples are enclosed with this report. December had no theme so a variety of models was presented. Again, some examples are enclosed. There will be a small contingent of Club members at the convention, so we look forward to seeing you all there.



John's drill-press

Competition winners
 Senior: **Neil Pluck**
 Junior: **Nathan Lang**



Thomas' dragon



Stephen's St George & dragon



Nathan's flyboat

A Modeler's Lament

Or

The Rocky Road to Convention 2021

By Ross Quinn

I am registered for the convention but I feel a bit inadequate about it, for several reasons. One is that I have no firm plan about what I will bring to display; and another is that I feel I am yet to build anything that is really up to convention standard. I enjoy playing with my Meccano, but “play” is the operative word. I do not have (or more positively ‘have not yet demonstrated’) the skill or the stickability to make awesome models. The third is that I have a handicap: no Meccano Room. A son, his wife and baby daughter are staying with us until about the time of the convention, and our all-purpose room that I have used until now is full of

baby stuff! Even my Meccano cupboard has been largely taken over. Most of my small parts are stored in a cranny under my computer desk (*fig 1*), which now has to double as a worktable as well (*fig 2*). The cranny is partially obscured behind the dehumidifier!

My best displayable thing at the moment is a small, motorised Meccanograph which works moderately well (*fig 3*).

My best hope is my copy of **Paul Dale's** fancy gearbox, partially complete. This is an awesome model that I fell in love with at first sight, but even a copy is proving most challenging to build. When you have 50+ gears and one small motor you cannot cope with much friction! *Fig 4* shows my effort so far. The differential is ready to install, back right as we look at it, and it at least runs very nicely. See you all at the convention. Whether I am well dressed or not remains to be seen.

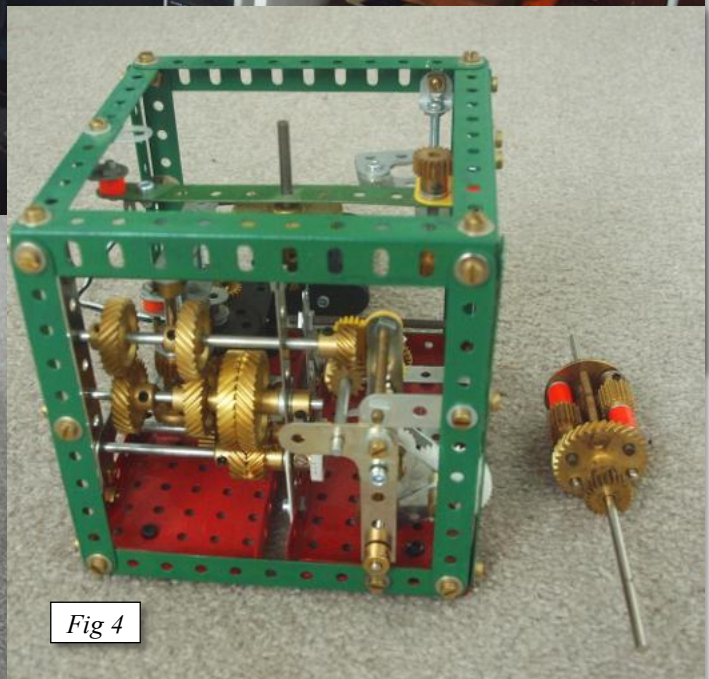
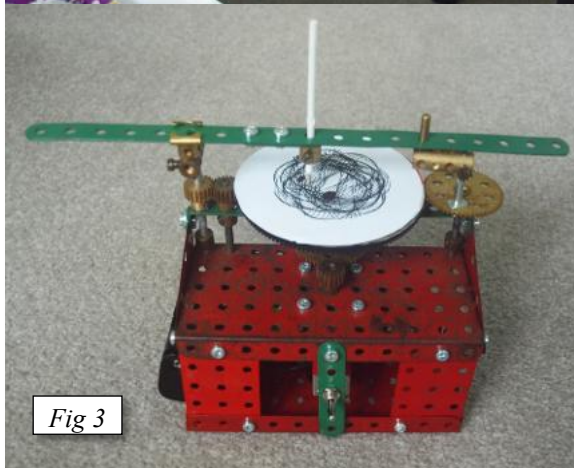
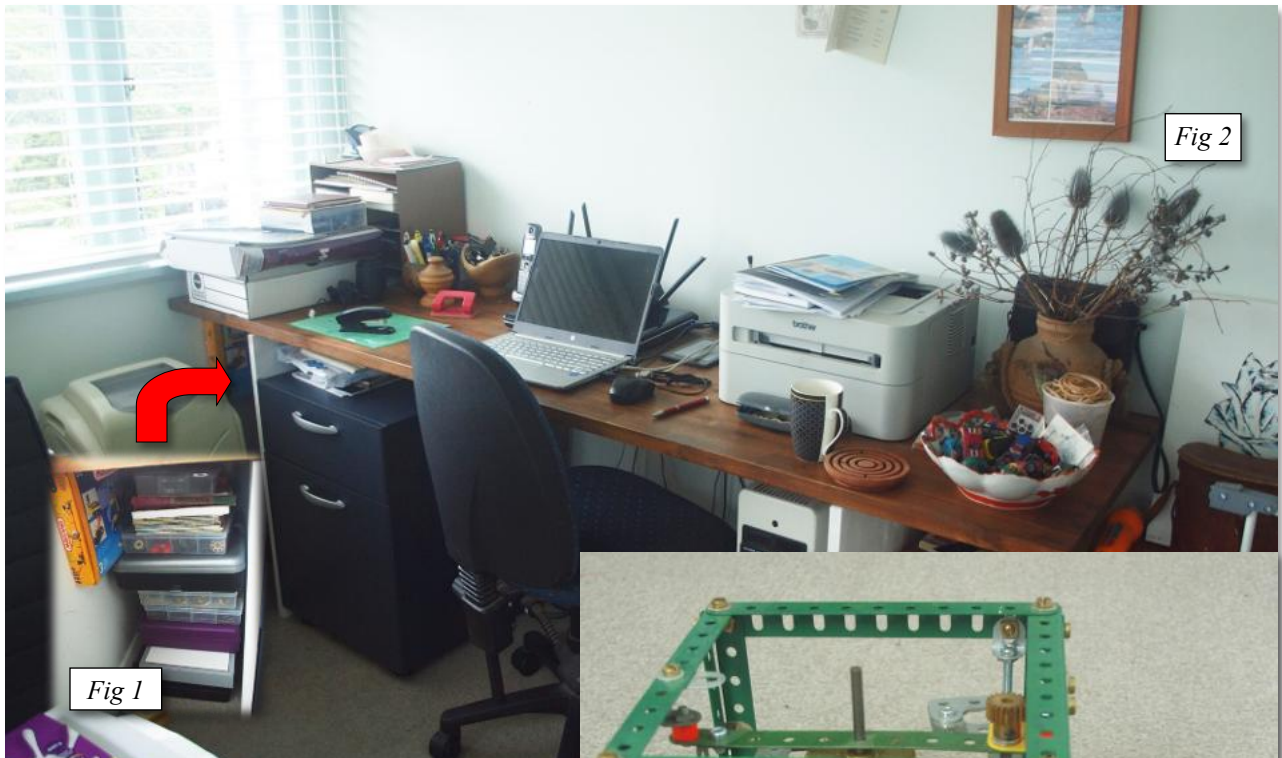


Fig 2

Fig 1

Fig 3

Fig 4



The Wellington Meccano Club

Meeting

Reporter – Max George

Meeting Date: Friday 6th November 2020 at 7:30pm at Max George's place, Tawa.

Model Building:

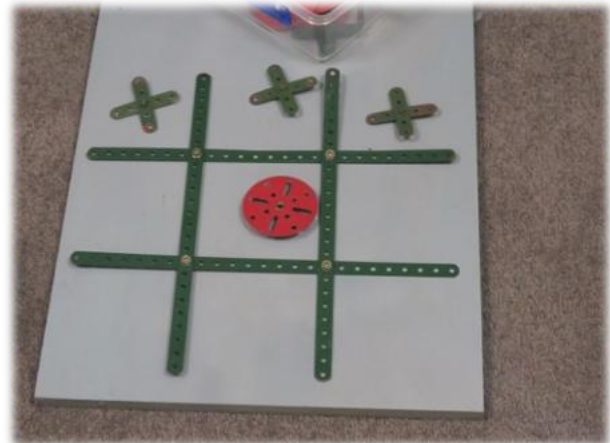
The theme for the meeting was something for either the Taita RailEx Display or our Convention next March.

Paulette Morton: Brought with her the Spider which she had made to scare her kitten. I don't think it works very well at that task. She will be displaying it at RailEx.



Reg Barlow: Has been busy making models for RailEx especially for children to have hands on.

Come and support our
Wellington Meccano Club
 Colleagues at the National
 Convention on March 19th to
 21st at Waikanae



Noughts and Crosses.



Skittles.

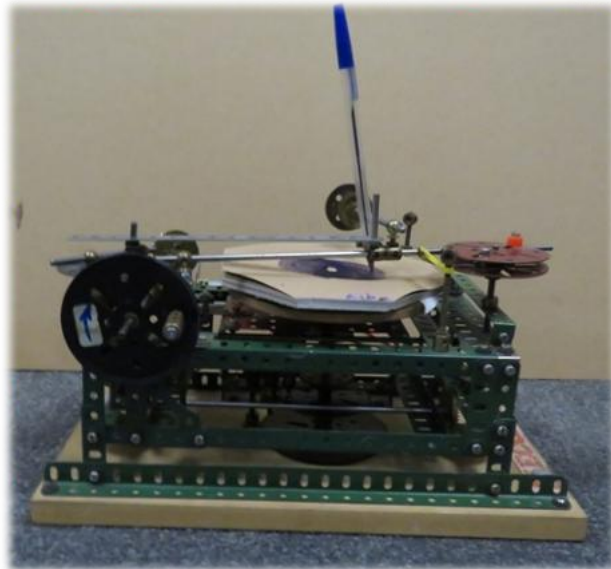
Reg will also have at RailEx a couple of Meccano-graphs and his Ball Roller.



Ball bearing puzzle.



(Above) Ball roller sections



Stan Baker: Didn't bring any models but he indicated he would bring his Ball rolling challenge, his cyclist on a wheel and possibly a clock to RailEx.

Sections 1 and 4 of his Ball Roller he had at Te Papa and is adjusting the system for the RailEx display.

Keith McCallum: Didn't bring along a model but could possibly have a crane for RailEx

David Couch: Would have many models at RailEx. His Rubik Cube solver, a Connect 4 game for playing the computer against a viewer, and a plotter that sketches.

He had been asked to build a model that could be controlled from his Cell Phone by Bluetooth connectivity and designed a robotic vehicle using Arduino servers and two motors. This would not be at RailEx. David had it roaming around the lounge at the meeting.



(Above) Robotic Vehicle by **David Couch**

Chris Morton: Will have on display at RailEx the factory made Revolving Chassis and Stationary

Steam engine. He will also have the display of gears mechanisms.



He also brought along a model made using only one Meccano part.

Chris managed to purchase some models from The Warehouse and brought along a built up model from set 18302 of a John Deere 8R Series Tractor and the box for a John Deere 9RT Series Tractor.



(Top,) John Deere 8R Series Tractor.

(Middle) Bulldozer.



He also had built the bulldozer from the Engineering and Robotics set 18206

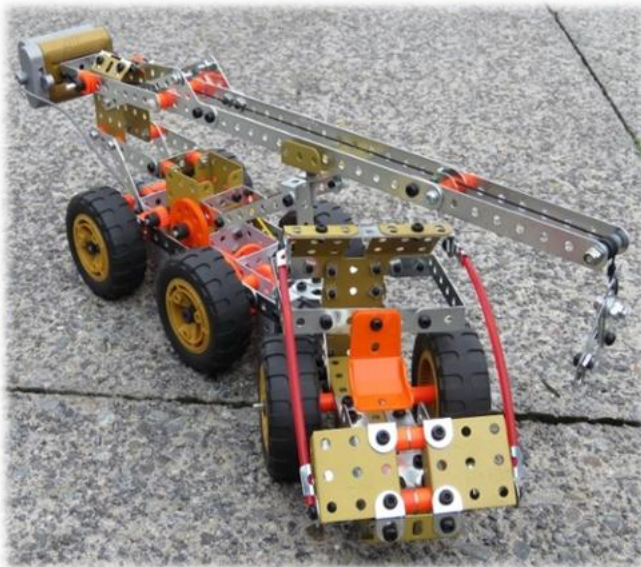
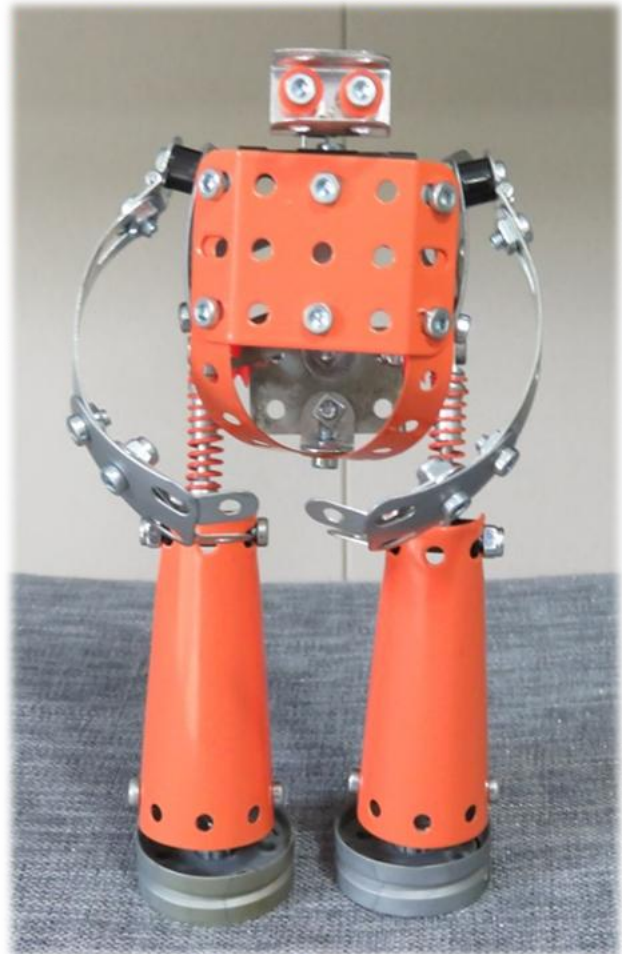
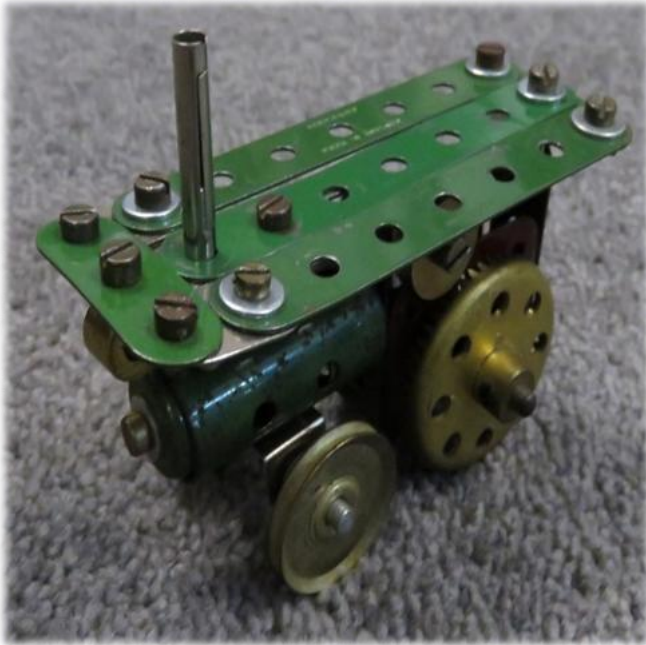
(Above) John Deere 9RT Series Tractor



(Above) Dump Truck by Trevor Green.

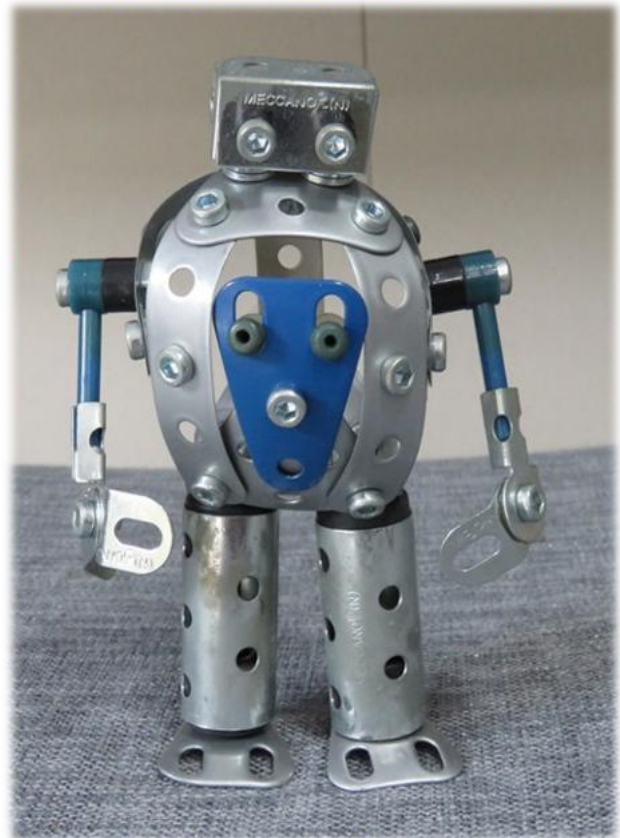
Trevor Green: Brought along a Dump Truck and showed a photo of Bryan Jones's Spider Bike in a magazine.

(Below) Traction Engine.



Lou Nichols: Had made a traction engine that was first published in the October 1929 Meccano magazine. It has subsequently been published in Jan 1968 Meccano Magazine. It was quite fiddly to make. He also had a magazine showing a motor car built around a Meccano steam engine which Bob Prescott had made a few years ago.

Max George: Again he had models built by his U3A Meccano builders group.



(Above) Crane built from set 9550 Motion Systems 50 Model Set.



(Opposite, above) Set 2400A Large Orange Metal Robot

(Opposite) Set 1400B Small Blue Metal Robot



Robert Vale: Is keen on trains and built an Elevated Jib Crane together with some 'O' gauge railway. Robert will be at RailEx displaying his 'N' gauge train. This was originally 'OOO' gauge.

Paul Roberts: Is building a large Blackpool Tower from numerous photos he has of it. This will be on display at RailEx.

(Below, left) Blackpool Tower

Stephen Westmoreland: Made a woodpecker for RailEx. (Below, right)

Next Meetings:

The **December** meeting will be the Christmas luncheon combined with MWT at Murrayfield Museum and Cafe on 6th December.

The **January** meeting will be late January with another barbecue at **Trevor Green's** beach house in Waikanae, the same as last year.





Combined Manawatu -Wanganui -Taranaki
&
Wellington Meccano Club Christmas lunch.



COME TO THE CONVENTION IN 2021

.... and see what these below have become....



Auckland Meccano Guild Meeting August 8th 2020

By Gary Higgins

This is our first meeting after the previous lockdown which caused us to miss our May meeting, we are hopeful of our next meeting taking place at **David Wall's** residence in November but again this is dependent on the state of the Covid-19 in the country.

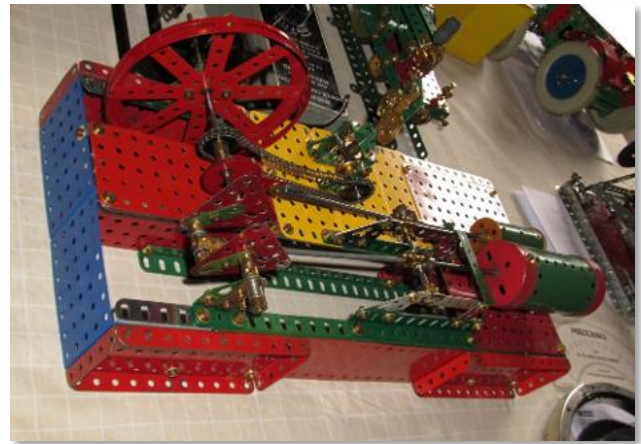
The meeting was held at the home of **Neil Carey** in Hillsborough. Neil still had his magnificent loco made up but we are told this will probably be the last viewing. Neil has repeated history by de-streamlining his NZR "J" 1212 steam loco that was exhibited at the Inglewood convention last year, to how the prototype appeared from 1958 to when the loco was withdrawn from service in 1969 with the dieselization of the South Island rail system nearing completion.

Gary Higgins had brought along his air sea rescue helicopter (*Fig 1*) from a recent set however this was not well designed with the battery packs in the floats which entailed removing them to change batteries. Gary sawed the closed ends off the floats enabling the batteries to be changed without stripping the model. It worked well with a small universal joint in plastic and two plastic bevel gears to work the rear rotor. Gary had brought along his model of Wall E from the film of the same name. He had adapted the model from a model by **Frank Weber** who had published it in CQ magazine. Gary had adapted the model by using motors from one of the new Spinmaster robotics packs and was able to control it by Bluetooth from his smartphone. He also brought along a cheap \$20.00 *Concorde* brought from a bookshop which is Meccano compatible and a reasonable model for the price.

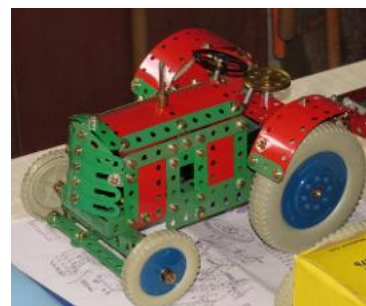


Frans Ennen joined us from Puhoi and is keen to get back into modelling however all his Meccano is currently in Holland so he can only look and plan ahead at the moment.

Rick Vine had brought along his usual assortment of well thought out models including another cheap local kit for under \$20.00 of the *Flying Scotsman*. It looked ok but according to Rick it was difficult to put together in places and the cheap plastic wheels did not do it justice. Rick had made up a model of two hub disks which appeared to be supported only by string under tension, a fascinating model which could be pulled in two showing that string was the only support mechanism. Rick had completed a model of the Horizontal Steam Engine SMI 1a which ran very well during the meeting. He had also built a 7.4 locomotive in dark green from a model plan and a catapult game which cleverly managed to toss a coin and catch it in the air, it probably would be better renamed the robber especially if it was your coin it caught!



William Irwin had been busy building a very nicely designed model tractor from a No 9 set leaflet. He has used LRG pristine parts and two of the large plastic road wheels' part no 187b, which are not often seen. (*Fig 1*) William also had a boxed example of these parts. He had also brought along his recently built strip bender which had six inch rollers enabling a person to roll a 5.5" strip long ways. There was much discussion on the roller and some interesting theories emerged on what it could and could not do. William had also a number of GRB options including an original couple of plates that had suffered some rusting, he was open to suggestions on how to remedy this. He also had an assortment of bearing options



such as the Meccano Quadrant and various pinions. William is our guru on many of these parts and a lot of information was exchanged during the meeting.

Mike Stuart had brought along his rendering of a giant block setting crane in nickel finish. Absolutely magnificent and many kudos to Mike for managing



Above: **Rick Vine, William Irwin and Mike Stuart** discuss the whys and wherefores of Mike's suburb all nickel version of the classic block setting crane — just like the one on the cover.



(Middle) **Neil Carey's** magnificent NZR 'J' class model steam locomotive, re-modelled to remove the streamlining baffles.



(Left) **Brian Cotton's** Bing trains

to get it all into his car and to have it working well at the meeting. This is one of the iconic Meccano models of all time.

Brian Cotton represents our locomotive side and he had brought along a nice selection of items A passenger train (locomotive and carriages) all made in Germany by Bing, for subsequent retail in the UK by Bassett Lowke circa late 1920's. Similar with the freight train which was a mix of Bing and Carette items, also made for Bassett Lowke. Georges Carette was a Frenchman making toys in Germany before the first world war. Bassett Lowke was a huge toy and model retailer but they didn't actually manufacture most of their items. They even sold "Bassett Lowke" train track made by their rivals at Meccano limited (but without Meccano branding) The track used was Lawrence lines made in Wellington, NZ just after WW2 when it was difficult to import anything, so a lot of toy industries popped up to fill the gap.

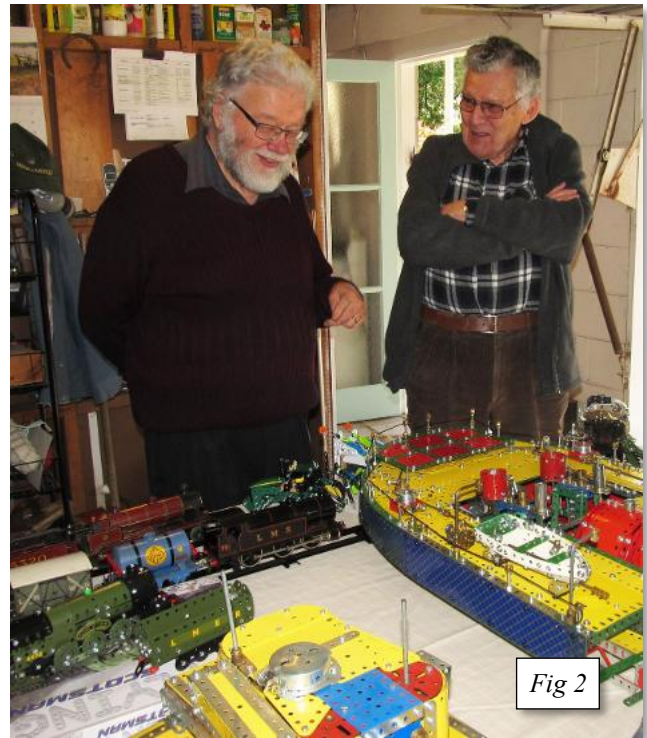
Les Megget had brought along a small part of his latest project a model of the Wellington steam powered floating crane Hikitia. (*Fig 2*) Les tells me he has many parts in various stages of completion. He is working from original plans of the vessel and so the final result will certainly be amazing. A section of the base that Les brought along had the steam engines in place and even parts that may not be seen when the model is completed have been rendered accurately.

Anthony Caldwell had built up a model from the No 8 Meccano booklet of a military tank in yellow and blue. (*Fig 1*) This is quite a large model even though it does not have rotating tracks but it could be motorized.

Keegan Wrightson had been building the supermodel of the mechanical digger. He had replaced the vertical steam engine in the original plans with a more modern horizontal engine and as our venue had access to outdoors he had fired up the engine. There were issues between the steam drive and the mechanics of the digger however. Don't you notice that whenever you build a model it works perfectly but when you display it out come the gremlins. Keegan also had a DBDY stem engine in Meccano. Keegan had also made up an all terrain vehicle from the master connections set using a workaround on the original model plan .

Holly Wrightson had built a small model of a traction engine with mobile crane in red green Meccano.

David Wall has gone to the dark side, bless him, and had built one of the small insectoid creatures using one of the modern Spinmaster robotic sets. He had used the realistic eyes on springs from the Meccanoid set of 1979 to make the model more lifelike and it sprang across the floor its eyeballs twitching and with menacing mandibles. David also had built the John



Deere tractor set with the tracks, this is a very nice set and true to scale resplendent in original John Deere colours.

The meeting concluded with a discussion about the up and coming convention, agreement on the next meeting being at David's on the second Saturday of November, Covid permitting. The group had an excellent afternoon tea courtesy of the ladies.



Top) **Les Megget** and **David wall** discuss David's recent purported defection to the Dark Side.

(Below) **Neil Carey** and **Rick Vine** take in Rick's meticulous and functional Horizontal Steam Engine.



Auckland Meccano Guild Meeting 14th November 2020

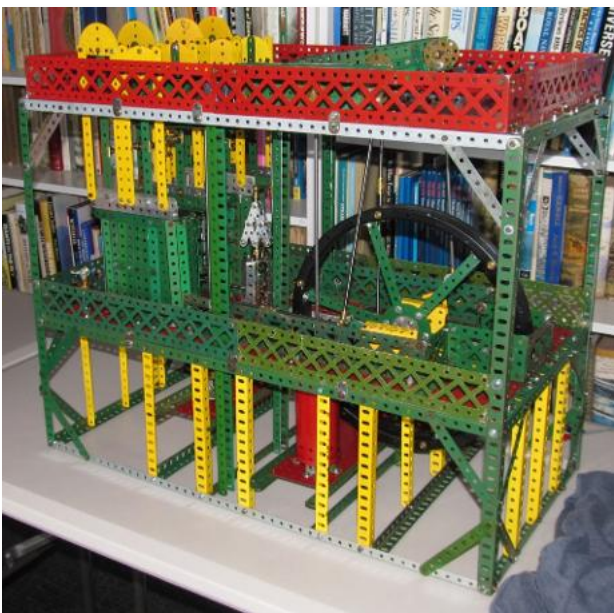
By Gary Higgins

Apologies were received from **Les Megget**, who is recovering from an illness and from **Graeme Mills**.

Gary Higgins brought along a large TRONICO CLAAS combine harvester and a John Deere tractor made by Meccano. He had added two extra tires to the front and rear of the tractor, making it suitable for use on heavy soils. The TRONICO Combine set is not powered but externally looks the part. These sets are made in Germany.



Gerald Hart had been to MOTAT (*Museum of Transport and Technology*) recently and had taken a liking to the large beam engine used to power the water pump. He was enthusiastic enough to buy a book on the subject and made a beam engine to his own design based on the original.

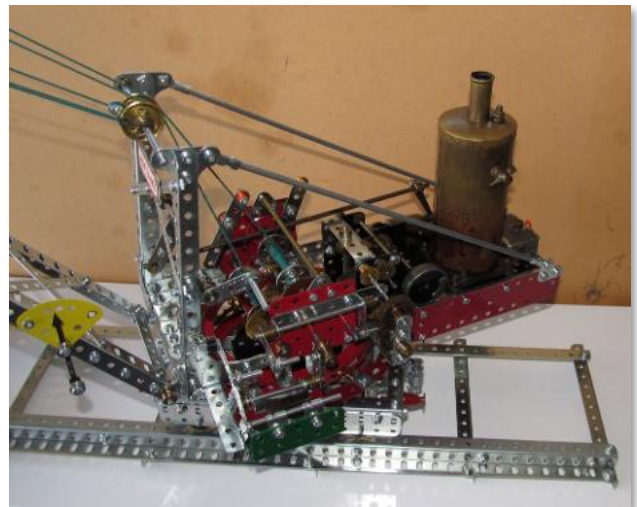


Rick Vine had made up a model of a group of very hungry cannibals on a desert island who had caught a rabbit and were cooking it in a pot. The model was cleverly animated with the various figures moving

and stirring the pot with the hapless rabbit within. The model design was from Bernard Perrier in his book ZKWYX MECCANAUT. Rick had also brought his own Meccano version of the Coronavirus, a rubber band gun (it fires rubber bands) and a boxed Vulcan bomber model put out by the Imperial War Museum in London. They make quite a few of these models now which are a mixture of Meccano and Eitech.



David Wall had built a rail mounted Dock yard steam crane using an original early Meccano steam engine. I noticed he kept his eye on it, these things are getting quite valuable.



We welcomed **Alan Coop** back to the club after a considerable absence, he was one of the original club members.

Mike Walmsley is building a gigantic Ferris wheel and brought only the A frame to display. I hope you have a large hall to display the finished model Mike!

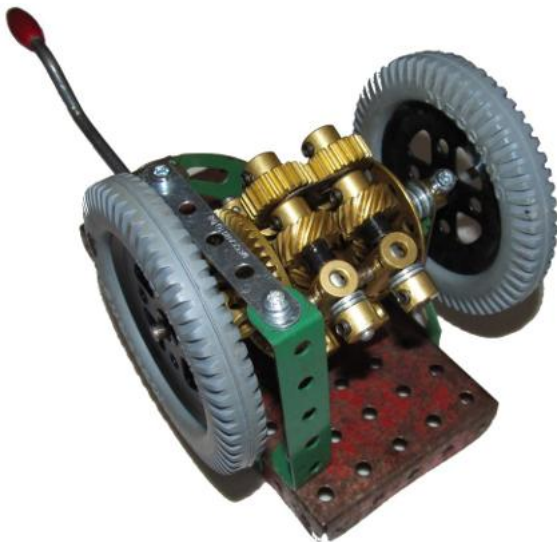
Keegan Wrightson Had made a Navy or Digger but had used a modern horizontal steam engine for the power. An interesting concept for an older super-model. Keegan also brought along a boxed No 10 set from the late 1950s in red and green. It is in a number of lift out drawers and appears to be in very good condition.



William Irwin had brought some of the overseas club magazines and an interesting historical display of Propellers, windmill sails and other parts showing variation through the years.



Frans Ennen had made up a Torsion Differential which was very compact and a useful design where space is a premium.



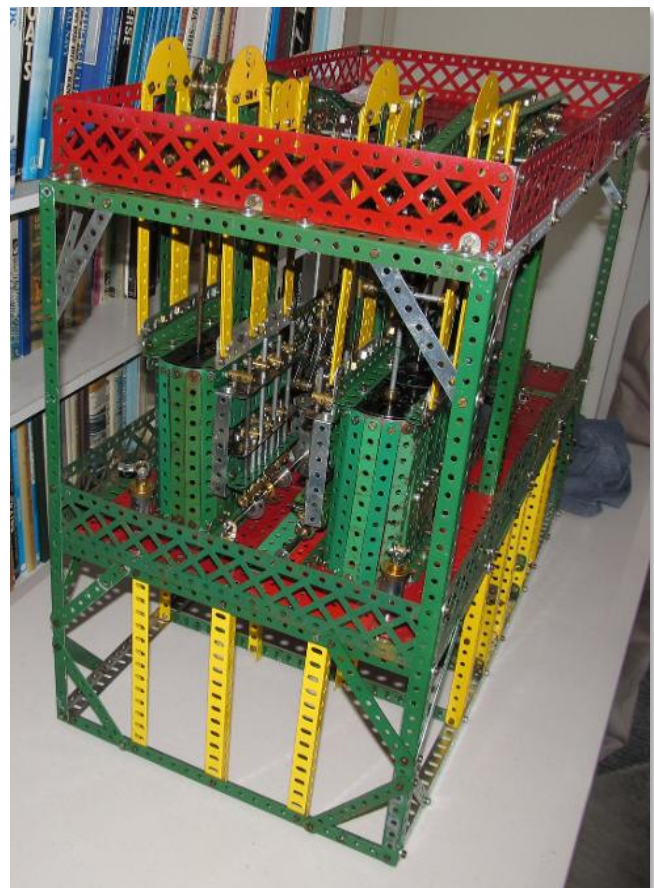
Also in attendance Was **Neil Carey**.

It was agreed that the next meeting should be at **Les Megget's** providing Covid and Les are ok with it at the time.

The meeting closed with an excellent afternoon tea hosted by the ladies.

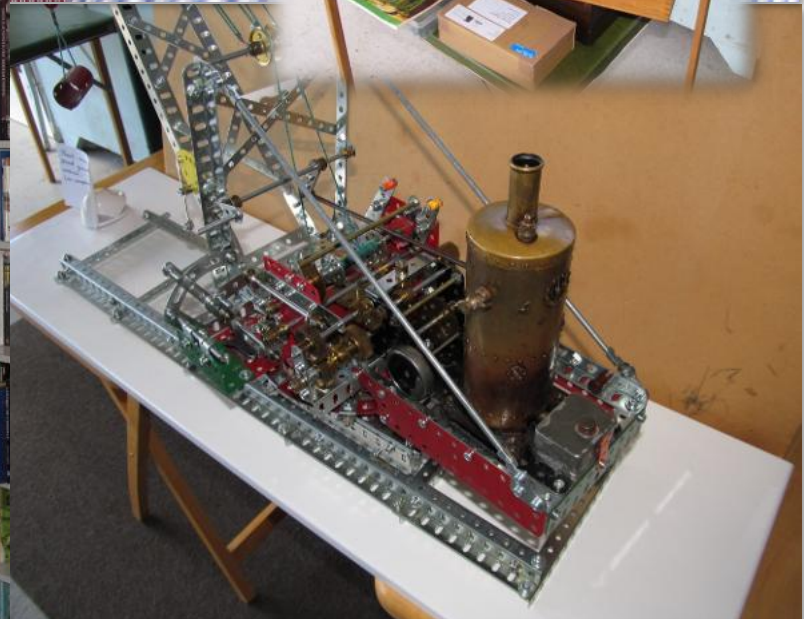
Below: Gerald Hart's custom built beam engine, based on the example he found at MOTAT .

Anthony Caldwell had brought along a garbage trip truck from one of the 70s sets.





*Above: Mike Walmsley's magnum opus, a larger-than-life Ferris wheel.
(Note: Human for scale.)*



A selection of Auckland Meccano Guild members at their November 2020 Meeting.

(Top) Rick Vine, David Wall and Neil Carey commiserate with Keegan Wrightson on his recent No 10 set acquisition — inset.

(Above) Gerald Hart makes a point.

(Middle right) David Wall's steam driven Dock crane.

(Bottom) Various members admire Gerald's complex beam engine model. Mechanism detail inset.



Meccano Air Force Recovery Mobil Crane

By Bruce Geange MWT

These cranes were produced during the 1940s and were mounted on a Leyland Retriever or a Thorny Croft Amazon 6 x 4 vehicles. A truck mounted DC generator supplied power to the Coles crane (*fig 1*).



Fig 1

The front of the chassis (*figs 2 & 3, below*) has $3\frac{1}{2}$ " Narrow Strips bolted either side of a $1" \times \frac{1}{2}"$ Double Angle Strip spaced with a Washer. The right side also has an Angle Bracket bolted by the round hole spaced with two Washers. Holes three have Angle Brackets bolted by the round hole facing down. To the angle brackets fix a 2" Strip and at each end a Stub Axle Mount is secured with 15mm Pivot Bolts and Nylock Nuts. For the tie rod use a seven hole Narrow Strip again secured with Pivot Bolts and Lock Nuted to the strip. The wheels are the same as the rear and spaced with Mini Plastic Spacers. Two Fishplates are fitted as shown with a $1\frac{1}{8}"$ Bolt and Collar.

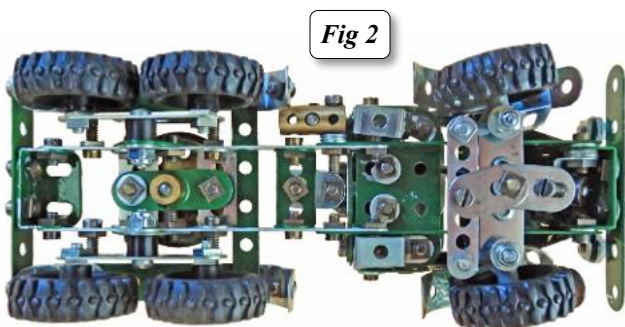


Fig 2

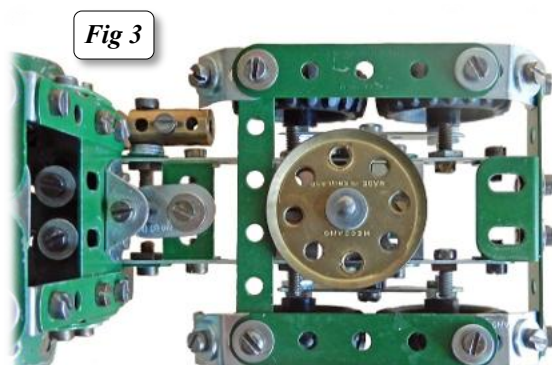


Fig 3

The chassis extends with seventeen hole Narrow Strips lapped two holes on the inside with the right side having a Coupling as the fuel tank spaced with three Washers. In holes five bolt a $1" \times \frac{1}{2}"$ Double Angle Strip with three more in holes nine, thirteen and the end. The DAS in hole nine is fixed with $\frac{3}{8}"$ Bolts facing out with $\frac{3}{8}"$ Bolts again in holes fifteen. Between the DAS in holes nine and thirteen bolt a Double Arm Crank, boss down spaced with Plastic Spacers. Secure a $1\frac{1}{2}"$ Axle Rod to the centre hole with a $1\frac{1}{2}"$ Pulley next. Bolt 1" Triangular plates at holes eleven and thirteen facing down on each side. 2" five hole Strips are used for the rear wheel pivot beam and fix to the triangular plates with a 15mm Pivot Bolt, Washer and Nylock Nut spaced with a Plastic Spacer. 1" Loose Plastic Pulleys with Tractor Tyres (A381) fitted are lock-nutted to the ends of the 2" strips with 19mm Pivot Bolts and a Plastic Spacer. To the rear DAS bolt a 1" Angle Girder by the round holes with a 3" Strip. Each mudguard has a $2\frac{1}{2}"$ Strip with four Obtuse Angle Brackets and a 3" Narrow Strip across the front locked in the pulley groove.

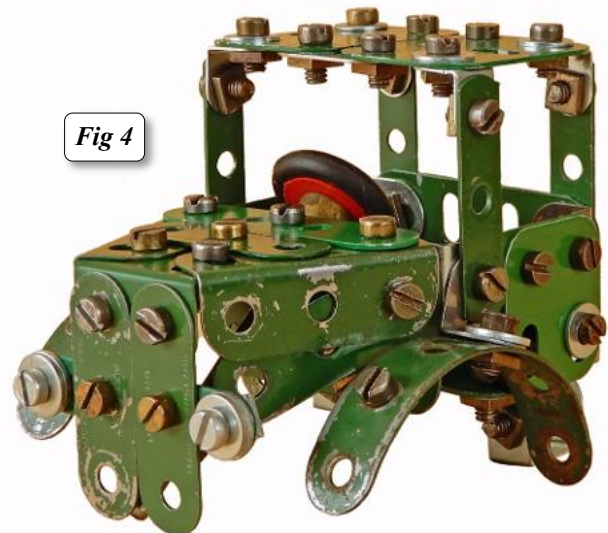
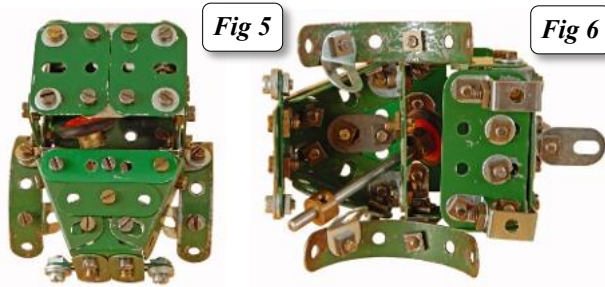


Fig 4

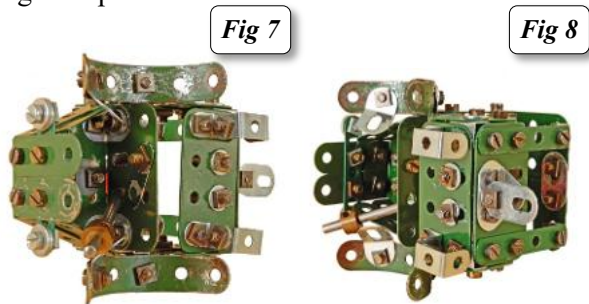
For the bonnet and cab bolt two 2" Angle Girders to either side of a 1" Angle Girder all by the slotted holes (*figs 4, above, 5, 6, 7 & 8 overleaf*). To the front of the 1" AG Bolt $1\frac{1}{2}"$ Strips in each hole with a seven hole Narrow Strip in the centre holes with a Bolt, two Washers and a Nut for the headlights. At the other end of the 2" AGs Bolt a 2" five hole Strip with Angle Brackets below by the round holes. Add a Fishplate to the centre hole facing forward with a $1\frac{1}{2}"$ Strip fixed to the slotted hole. To complete each side add a $1\frac{1}{2}"$ Strip to the rear of the 2" AG fixed at an angle. To the slotted holes on the angle brackets Bolt a 2" Flat Girder by the slotted holes with a second Angle Bracket by the round hole facing the rear. Add a 1" Narrow Strip to the FG as shown to hold the steering axle in place. To this angle bracket Bolt a $1\frac{1}{2}"$ Narrow Strip facing up, Angle Bracket by the slotted hole facing down at an angle and a $1\frac{1}{2}"$ Strip on the inside of the AB facing the rear. Roll 3" Strips

to a curve for the mudguards and Bolt through holes four to the angle brackets with an Obtuse Angle Bracket in holes two by the round hole.

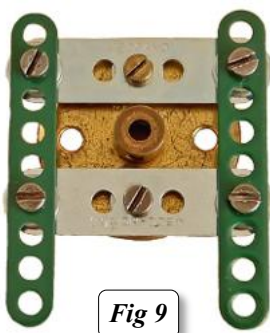
The door panel is a 1" Flat Girder fixed to the 1 1/2" strip by the round holes with an Angle Bracket at the end hole secured by the round hole facing the rear. The end slotted hole also has an Angle Bracket fixed by the round hole facing down. A 2" Flat Girder makes the rear of the cab with two 2" Narrow Strips facing up and a Small Trunnion (C860) with a Fishplate fixed by the round hole spaced with a two Mini



Plastic Spacers secured with a 1/2" Bolt and a Nut. The cab floor being another 2" Flat Girder fixed by the slotted holes with fishplates being used for the seats and held by 3/4" Bolts and spaced with two Plastic Spacers. The steps consist of a Narrow Angle Bracket and a 1/2" x 1/2" Narrow Double Bracket. For the cab roof bolt four Narrow Angle Brackets to the narrow strips and fix two 1 1/2" Flat Girders by the slotted holes then join with Fishplates. This complete assembly bolts by the front of the radiator with a 3" Strip and a Washer to the front of the chassis. The fishplate at the rear bolts to another double angle strip.



The beginnings of the crane have two 2" five hole Strips bolted to a 1 1/2" Pulley and spaced with Washers (fig 9, below). To these bolt two nine hole Narrow Strips using holes two and six spaced with two Washers and a 2" Angle Girder by the round holes at the front with another at the rear by the slotted holes (figs 10,11 & 12).



Fix a 1" Flat Girder by the slotted holes to the slotted holes on the rear 2" AG. Bolt 1" Angle Girders by the slotted holes to the rear AG with a



Fig 10 Fig 11 Fig 12

2" Flat Girder facing up by the slotted holes. The top outside holes have Corner Angle Brackets fitted with an Angle Bracket on the right side for a winch axle. To the front of the 1" FG bolt two Angle Brackets by the round holes spaced with Mini Plastic Spacers. At the front bolt a 1 1/2" Flat Girder to the left side with a Angle Bracket and a 1 1/2" Strip beside. A 1" Double Angle Strip fixes to the centre holes on the front AG. Four 2 1/2" Narrow Strips bolt to the angle brackets and the double angle strip then meet at the top to support the jib. The right side front strip has a Fishplate bolted to the second hole by the slotted hole and spaced with two Washers (second winch drum). A 1" Angle Girder fits in between the two front strips bolted to the flat girder by the round holes. Bolt a 2" Flat girder to the left side of the crane by the slotted holes with a Threaded Boss on the top front corner. The right side has a 1" Flat Girder with a 1 1/2" Strip having an Angle Bracket and a Reversed Angle Bracket for the seat all fixed to the angle girder at the rear. The winch drums (fig 13, below) consist of 1 1/2" Axle Rods that

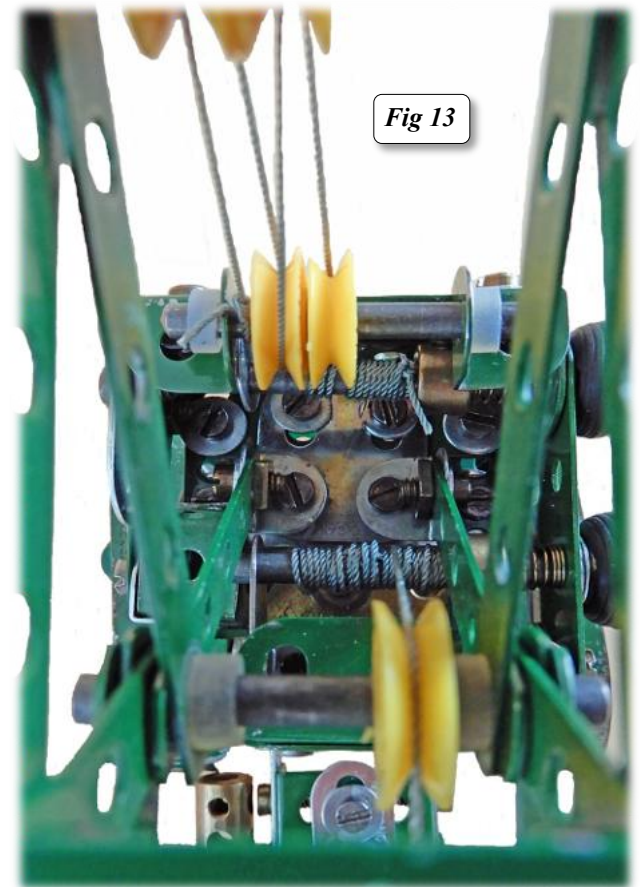


Fig 13

have a Collar with a Aero Tyre on one end on the outside, through the flat girder with a 14mm Compression Spring with a second Collar finishing in the fishplate or angle bracket. Secure cords to these axles. A third $1\frac{1}{2}$ " Axle Rod fits to the rear of the crane and has two $\frac{1}{2}$ " Loose Plastic Pulleys. A 2" Slotted Strip with a 2" Narrow Strip fixed to the slotted hole bolts to the threaded boss.

The crane jib (*fig 14,15, below*) was built using narrow strips each side and spaced with a 1" Double Angle Strip and two Angle Brackets joined by the slotted holes. Six $5\frac{1}{2}$ " Narrow Strips are used with two on each side at the top lapped two holes and one below extended with a $4\frac{1}{2}$ " 17 hole Narrow Strip. All Pulleys are $\frac{1}{2}$ ". Take note where the pivot axle fits through the narrow strips.



Fig 14



Fig 15



CONVENTION UPDATE

Greetings all,
Next instalment in the Convention reminder ☺

The first page is a list of alternative accommodation and touristy type things in the area, I hope you may find this useful. Print it out and tuck it away .
You all would have received the latest NZFMM magazine, with the Convention Registration form included.

I hope this has prompted the grey matter into thinking of what model you will be creating and displaying. Or maybe you have already started to build?

Yes March seems such a long way away, but we all know how quickly that time will roll around, and the last minute panic to get it finished. We all suffer from that same disease.

As an aside. The WMC recently were part of a Model Rail expo here in Wellington, it was a good exercise for us , like a dress rehearsal for the real thing in March.

We will be having a couple of guest exhibitors ourselves. As you will be aware we have the 0 Gauge Hornby layout, the Hornby is the catch phrase here, and one of our own members has some small layouts in a suitcase ! so although he will be wearing his Meccano hat, we are letting him display his little layouts as well.

As a heads up as well, **please ensure all your power cords have been certified and tagged.** We had to go through this exercise for the display. As the Hall is maintained by the KCDC (Kapiti Coast District Council) I have been told they will be checking. If you have any questions, please get back to me.

Reg Barlow
Convenor

021 955 488
reg_barlow123@hotmail.com



CMC Display 28/10/20
(Left) Latest John Stark Clock .
(Top) Mike House Historical display
(Right) David Littlefair models



Blast from the Past - MotorVator 4

By Richard Feltham MWT

One of the things that puzzles me is the seeming reluctance of Meccano modellers to include digital control in their motorised creations. Cheap and powerful microprocessors, such as the Arduino or BBC:Micro, are readily available and the numerous YouTube instruction tutorials make using them a breeze. Having precise fractional rotational and velocity control in response to any number of sensors takes things to a whole new level.

This approach is not new. In 2003 an Auckland based company, Ampworks, released an innovative, dedicated digital control system specifically for Meccano modellers. Billed as '*Powerful and Painless Electronics for Meccano Modellers*' the MotorVator 4 provided pulse width modulated (PWM) control of four DC motors coupled with six analogue voltage sensing inputs. Two additional servo control and three controlled action outputs, basically relay controls, could be linked to eight digital inputs. A separate controller, called 'The Director', with two mini joysticks and control buttons completed the kit.



It was designed to be operated in one of two modes. Mode A simply connected the Director to the MotorVator so that the joysticks and buttons controlled the outputs directly, much as a video gaming controller does today. A range of relationships were pre-

programmed to permit more realistic operation. Mode B allowed automated routines to be written in its own 'MeccCode' language, running on the 24kb of memory. It was envisaged that by using sensor data from the analogue inputs to direct program flow to control motors, robots could be made that would use avoidance routines or perform quite complex tasks.

But in spite of its advanced nature it did not catch on. I don't recall seeing anybody use it in their Convention models. Priced at around \$500 it was an expensive outlay. The company went out of business in 2011 and there is no reference to it in the Meccano literature – although I'm happy to be corrected on that point.

My MotorVator is still functional, but I suspect was never used in anger. The first challenge was finding a computer that was old enough to have both a CD-ROM drive and a serial port. A USB to serial adapter on my laptop finally got things happening – sort of. I soon discovered that the manual coding instructions, apart from being almost incomprehensible, actually had been superseded a couple of years down the road by a software update and had it not been for a chance discovery of a sample program would never have got it running. Although the motor PWM ports work as advertised the servo sockets remain firmly dormant, in spite of what appear to be correct oscilloscope readings. I hope to get enough of it working to justify a display at the Convention, but am not holding my breath.

In summary, Ampworks were on the right track, but ahead of their time, and at ~\$500 in 20003 it was never going to fly. Interesting to note that nowadays you can achieve the same functionality with an Arduino costing \$9.50.



Extensive refurbished Meccano Collection for Sale



Extensive Meccano Collection for sale

The Public Trust is acting on behalf of the estate of the late Mr **Selwyn Hales**, who asked that his Meccano collection be put up for sale. This is similar to at least a No #10 set, with numerous parts having been refurbished by re-enameling or powder coating. It includes several electric and clockwork motors. An 18 page pdf file detailing the parts present can be obtained from the Senior Trustee, **Carolyn Marriner** at:

Public Trust

92 Bank Street, **Whangarei**.

P O Box 642 Whangarei 0140

Tel: 099835273 • Toll Free: 0800 371 471 Email: Carolyn.Marriner@publictrust.co.nz

Puzzle Page

David Couch writes: "Here is my solution to puzzle no. 5 in the November 2020 issue of the NZFMM Magazine. The required weights are 1, 3, 9 and 27 grams.

Bella's weighing machine is a simple balance with two pans and arms of equal length. She can place weights in either or both pans. Let's say the object to be weighed is in the right pan. To weigh one gram she places a one gram weight in the left pan. To weigh two grams she places three grams in the left pan and one gram in the right pan. For three grams, it is three grams in the left pan, and for four, three plus one. For five grams she places a nine gram weight in the left pan and three and one in the right pan.

I think you can see how it goes from here on. It turns out that the weights needed are powers of 3, that is 1, 3, 9 and 27, which add up to 40. There is exactly one combination of weights for each amount from 1 to 40 grams. If Bella wanted to weigh heavier objects, the next weight needed would be 81 grams."

PUZZLE No 6

Dazza was resplendent in his new birthday T-shirt. Emblazoned across the front was the number thirty three million, five hundred and fifty four thousand, four hundred and thirty one. When the President of the Waikikamookau Meccano Club queried the significance of this he sniffed loudly, saying, "Every true Meccanoman knows what this is."

Can you enlighten the mystified President?



(Top left) **John Couch** displays his microprocessor driven *Connect 4* robot.

(Top right) **Robert McFarlane** (obscured) eye-catching K'nex Ferris wheel

(Middle left) General view of the Arts Hall during the **CMC Exhibition**.

(Middle right) Computer-Wizard-in-Chief, **John Couch** explains his ingenious paperchain folder

(Bottom) Peter **Sathersthwaite** adjusts his delightful railway crane and transport



New Zealand Club Diary 2021

Auckland Meccano Guild

President: David Wall, Tel. (09) 426 1965
Secretary: Gary Higgins, Tel. (09) 832 4292
Meetings: Next meeting not yet confirmed

MWT Meccano Club

Chairman: Chris Morton, Tel. (06) 323 8001
Secretary: Robin Rye, Tel. (06) 764 8670
Meetings: Second Saturday of every second month, at 2pm. Next meeting: 13th February, at St. Luke's Church Hall, Corner Cornfoot and Manuka Streets, Castlecliff, Wanganui.

Wellington Meccano Club

President: Reg Barlow, Mob. 021 955 488
Secretary: Max George, Tel. (04) 232 4200
Contact: Stan Baker, Tel. (04) 566 7150
Meetings: Begin 7:30pm on first Friday every second month.

Christchurch Meccano Club

President: Neil Pluck, Tel. (03) 382 0411
Secretary: Roland Jaspers, Tel. (03) 351 4389
Meetings: Start at 7:30pm on first Friday every month (except January) at Papanui RSA Club, 55 Bellevue Ave or No. 1 Harewood Road, Christchurch.

Greater Waikato Meccano Club

Contact: Graeme Wrightson, (Mob) 027 671 6004
Meetings: These are held on the first Saturday of every second month, except January. Most meetings are held in the Central Waikato area starting at 2 pm. Contact Graeme Wrightson on 027 671 6004, Matamata.

Other Meccano Contacts

Hamilton: Don McClelland, Tel. (07) 843 4198
Tauranga: Barry McKey, Tel. (07) 576-1623
Hawera: Daryl Anderson, Tel. (06) 278 7666
Napier: Trevor Adam, Tel. (06) 843 4837
Palmerston North: Bruce Geange, Tel. (06) 357 0566
Nelson: John Stark, Tel. (03) 545 1025

Articles, etc. for the February 2021 issue of NZFMM Magazine should be sent to Richard Feltham before the 20th January 2021. at: richard.feltham174@gmail.com

Back Numbers: NZFMM Magazines from April 2001 are available. Please contact Bruce Geange.

WANTED

LOOKING FOR Average to Good condition Super Highway and Crane multi-kits for building. Prefer posted or pickup from Waikato or Auckland Area.

Contact:
 Kegan Wrightson
 0220481447
 s4ndv1p3r@icloud.com

Buy, Sell, Auction & Exchange

FOR SALE:

No.9 Set - plus many additional parts - fair condition, stored in drawers in a home-made cabinet. Also a large box of post-war Meccano Magazines.

Price: \$100.00 Buyer to collect.

Contact: Mr Gordon Binnie
 Mildale
AUCKLAND
(H) 09 426 6196
(M) 027 361 8110

FOR SALE:

- 15305 Race car
- 16301 Excavator
- 17207 Chev Silverado
- 6023640 Evolution excavator
- Have checked and all parts are complete, did not count nuts and bolts

Please contact Don Flowers at
bflowers@gmail.com

Small Meccano Models Collection

Bruce Geange's delightful miniature tractor models have featured prominently in the NZFMM magazine over the years. A bound collection of these articles can be obtained from the author for \$20+p&p. Please contact Bruce directly at a.b.geange@slingshot.co.nz or write to 4 Winchester Street, Palmerston North, 4412.

2021 Convention
Waikanae Memorial Hall
19th, 20th, 21st March



**Christchurch Meccano Club
Display at the Christchurch Arts Centre
28/10/20**

