



In this issue

February 2021

We review 2020

Build this rocket launcher **Page 2**

Full model plan inside!

We made it into DIYODE magazine!

2020

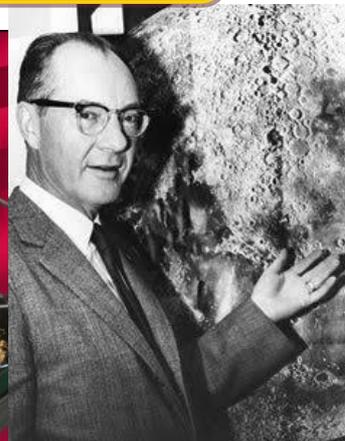
★☆☆☆☆

TOTAL CRAP. WOULD NOT RECOMMEND.

Fireside Fun
Page 16

Randy Sauder tells us about an Erector Set with NASA connections. **Page 12**

ISSUE 42 OUT NOW, available in print & digital.
diyodemag.com



GOOD IDEAS DEPARTMENT



On the road. Lower Hutt RailEx in Covid-free NZ



Page 11



This Month's Meccanoboy is Matthew Auger - Australia

Page 14



Page 10

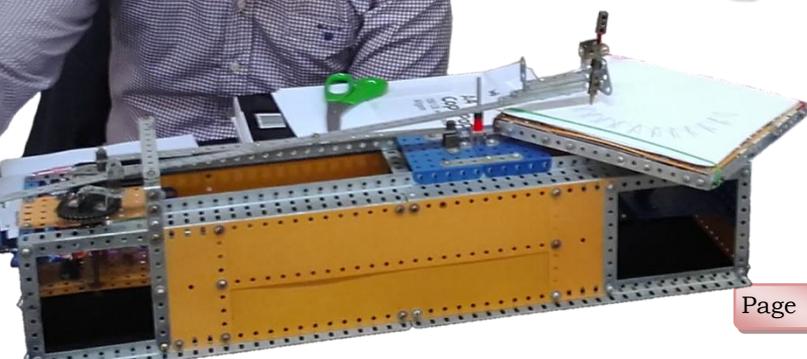
Rob Kirk's Meccano men build the Super Dragster



Page 6

Greg Rahn shows us how to make boxes

Plus so much more!



Page 1



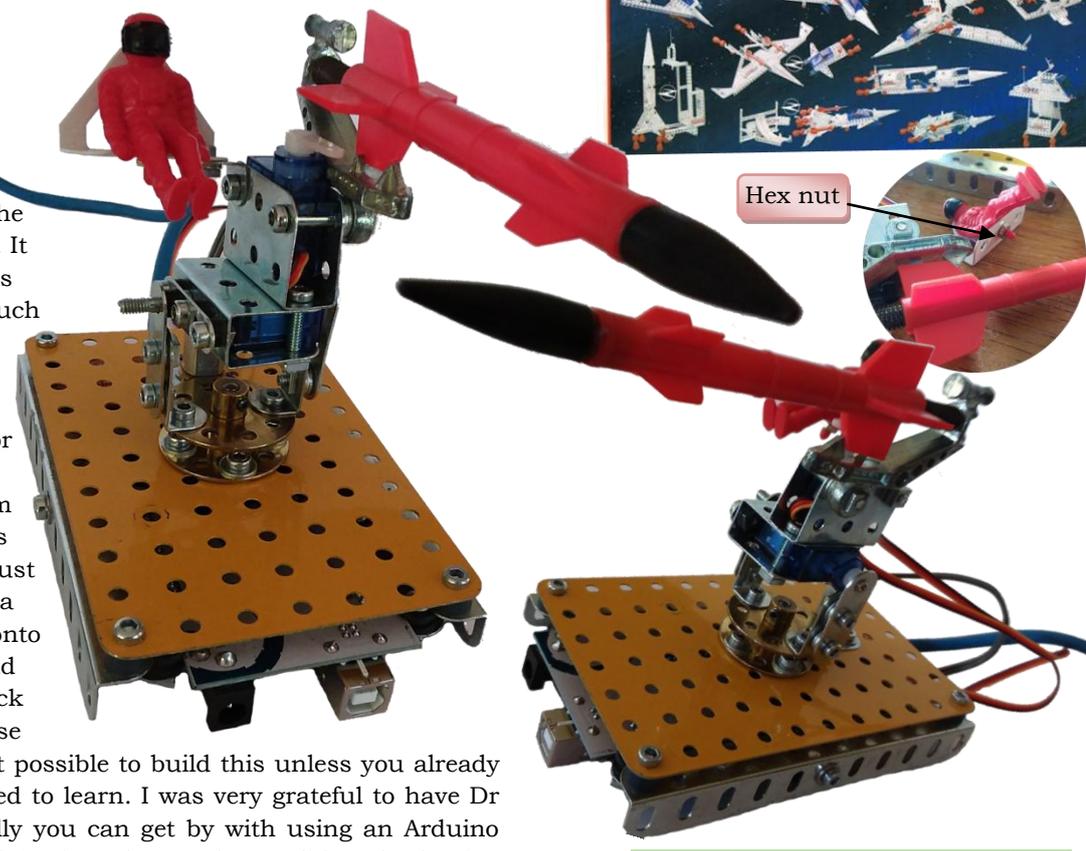
Rocket Launcher

using parts from the Space 2501 outfit



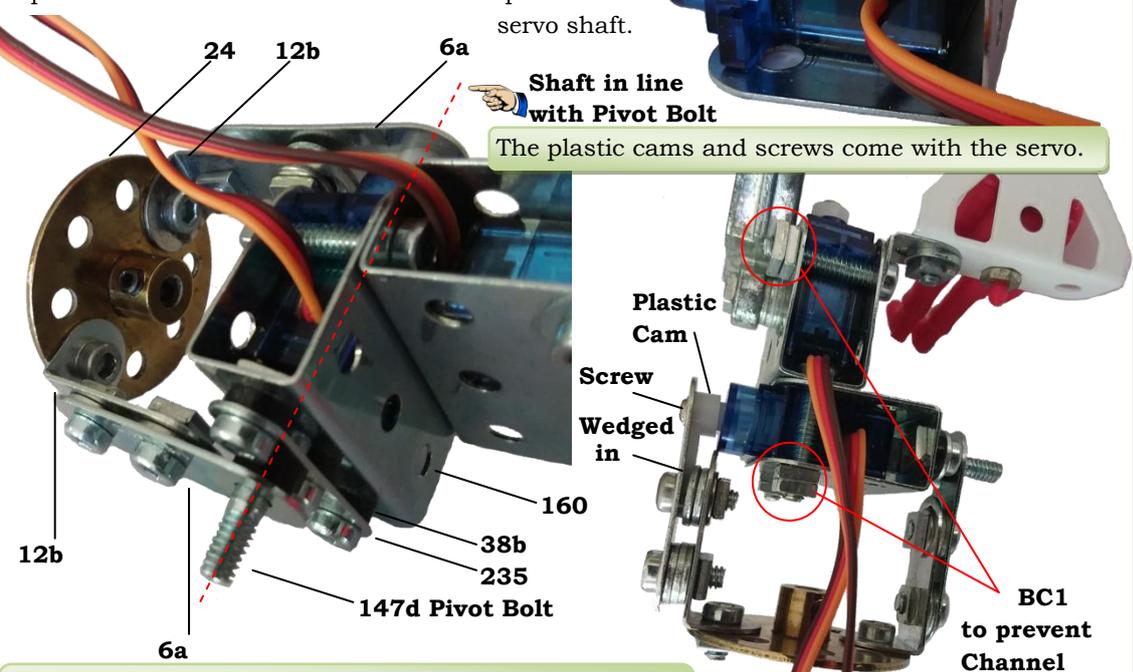
I picked up this Space 2501 outfit from the sales table at our Meccano Club meeting. It still had both rockets which is unusual as the rockets generally end up behind a couch or under a wardrobe. I remembered an article in *DIYODE Magazine* about an XY Laser Pointer Arduino project so I set about building it and then modifying it for use with the Meccano parts. Now don't stress if you haven't got the rockets as I'm sure the local \$2 shop or pound shop has something that can be substituted. You just need a rocket with fins and you can drill a 5mm hole in it. Then the rocket pushes onto a 4mm rod with a compression spring and the tail fin locks in behind anything to lock it. The trick is to twist the rocket to release the tail fin from the stopper. It's really not possible to build this unless you already know a bit about Arduino or are prepared to learn. I was very grateful to have Dr Paul Dale help me with the code. Usually you can get by with using an Arduino sketch that's already been written and in fact that's what I did with the 1st prototype which was just 2 servos and a joystick to control the XY axis. The difficulty came when I decided to use an N20 motor for the x axis, a servo for the y axis and an extra servo that was activated by a button press for the firing mechanism. I had to try and merge different bits of code from [Divode Magazine](#) and [toptechboy Arduino](#) tutorial for the motor control. While I have no trouble with the electronics, I was really struggling to understand the code. Thanks Pauli.

The 9G servos used in this project fit beautifully inside a part 160 Channel Bearing. To get bolts through you have to file just a tiny bit (less than 1mm) under the flange of the servo. There is also room under the servo for a bolt. Another bit of good luck is the drive shaft lines up exactly halfway between holes so you put a 5 hole Narrow Strip along the base of the Channel Bearing using small Spacers to allow a Pivot Bolt to fit into the 1/4" spaced hole. Now the Pivot Bolt is lined up with the servo shaft.



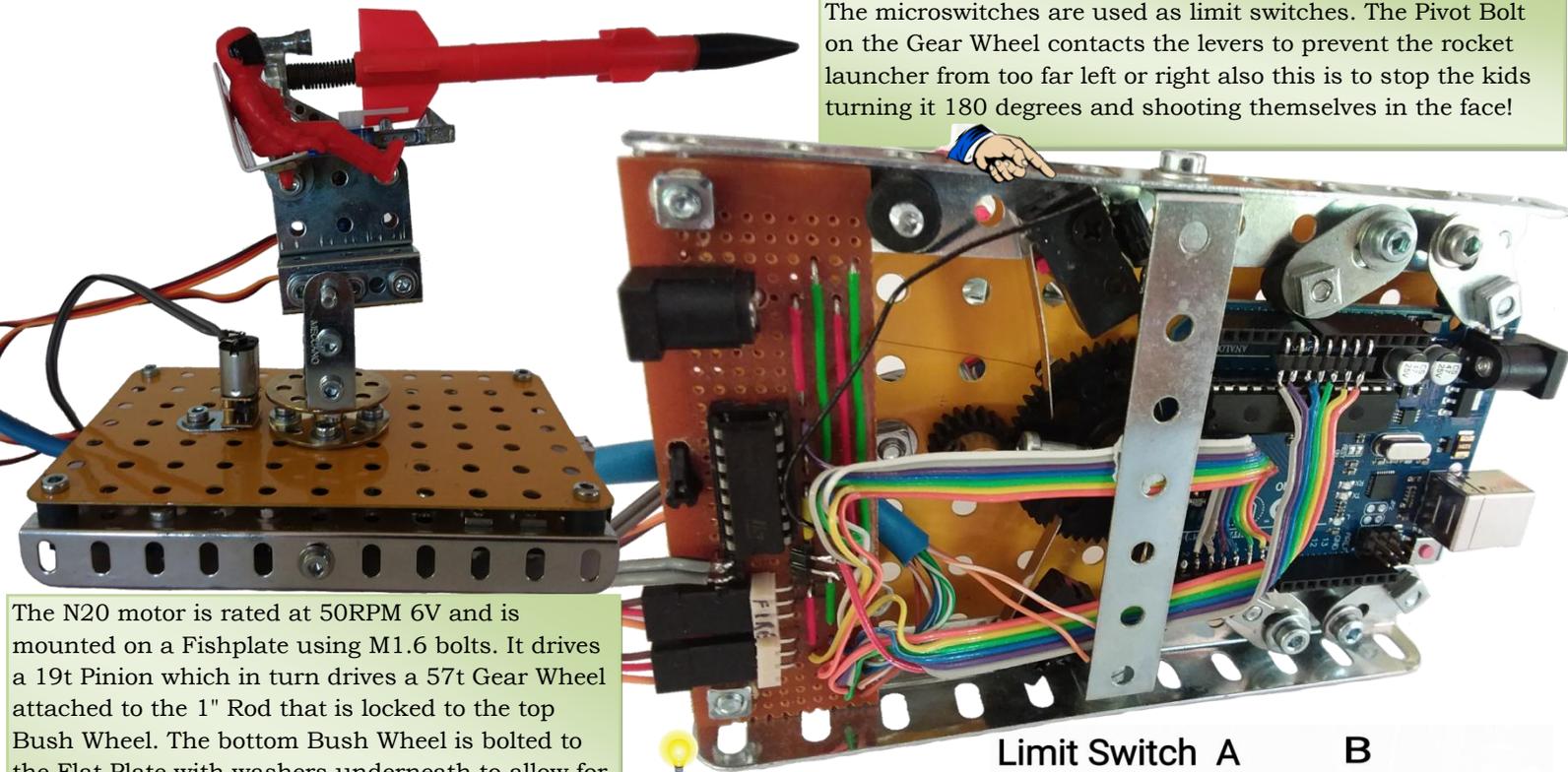
Hex nut

Part No.	Description	Qty
6a	Strip 1 1/2"	2
9	Angle Girder 5 1/2"	2
10	Fishplate	5
12	Angle Bracket	1
12b	Angle Bracket 1" x 1/2"	2
12c	Obtuse Angle Bracket	1
18b	Rod 1"	1
23c	Rubber Pulley 3/8"	5
24	Bush Wheel 8 hole	2
26	Pinion 19 teeth	1
27a	Gear Wheel 57 teeth	1
38a	Plastic Spacer large	4
38b	Plastic Spacer small	1
48b	Double Angle Strip 3 1/2"	1
52a	Flat Plate 5 1/2" x 3 1/2"	1
126	Trunnion	1
160	Channel Bearing	2
235	Narrow Strip 5 hole	1
491	Rocket	1
492	Rocket Holder	1
38b	Plastic Spacer small	4
45	Double Bent Strip	1
51f	Flanged Plate 1 1/2" x 2 1/2"	2
	Nuts, bolts, washers as req	
	Non-Meccano parts	
	Joystick with tactile switch	1
	Arduino Uno	1
	H Bridge L293D	1
	MicroSwitch	2
	Diode 1N5404 3A	2
	LED 3mm clear red	1
	LED Bezel 4mm mount	1
	Resistor 4.7k	1
	DC socket 2.1mm	1
	SG90 Servo	2
	N20 Geared Motor	1
	Push Button Switch	1
	Header Pins as required	



The Pivot Bolt is held in place by the 5 hole Narrow Strip. The 1/4" spacing allows alignment with the servo shaft.

The microswitches are used as limit switches. The Pivot Bolt on the Gear Wheel contacts the levers to prevent the rocket launcher from too far left or right also this is to stop the kids turning it 180 degrees and shooting themselves in the face!

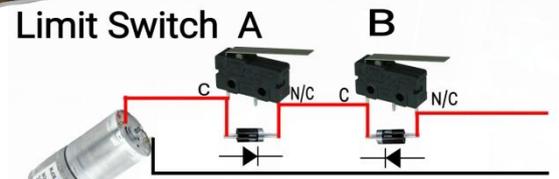


The N20 motor is rated at 50RPM 6V and is mounted on a Fishplate using M1.6 bolts. It drives a 19t Pinion which in turn drives a 57t Gear Wheel attached to the 1" Rod that is locked to the top Bush Wheel. The bottom Bush Wheel is bolted to the Flat Plate with washers underneath to allow for the peened ridge on the boss and also to raise the Bolts enough so that the Bolt ends are flush with the Nuts underneath. This allows the Gear Wheel to clear the nuts.



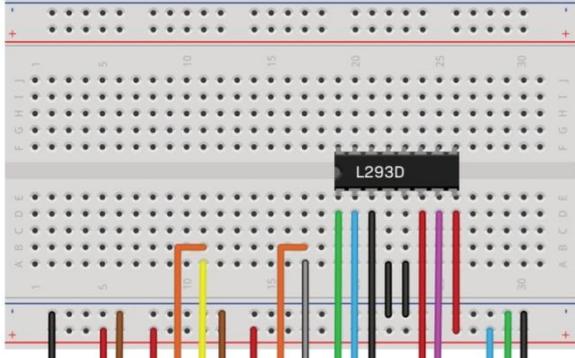
Tip. Get the limit switches working properly before you connect it to the H bridge or you'll get confused like me!

Link to Arduino sketch
<http://www.nzmeccano.com/image-155023>

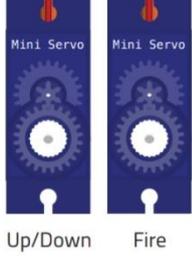
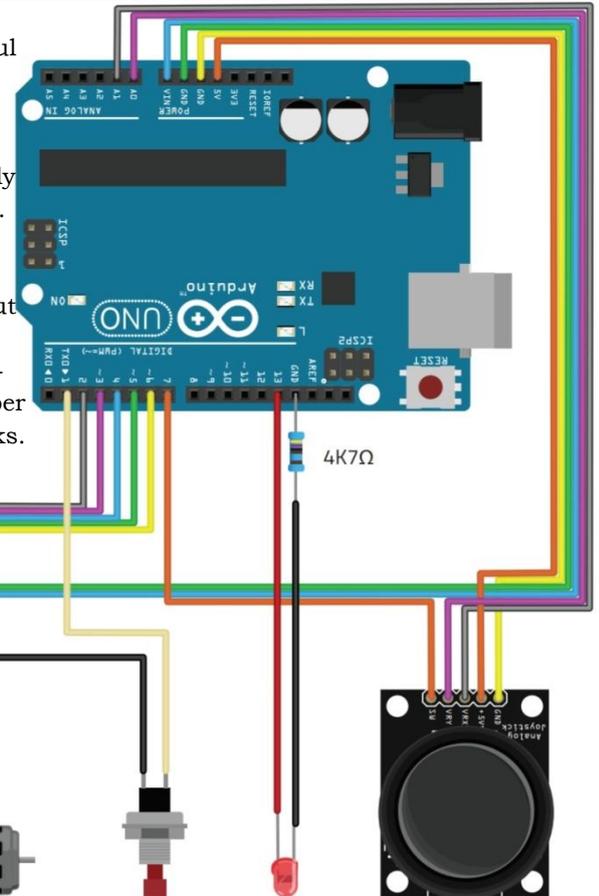


Neither switch pressed : Motor runs forward or reverse
 A pressed down : Motor runs forward only
 B pressed down : Motor runs reverse only

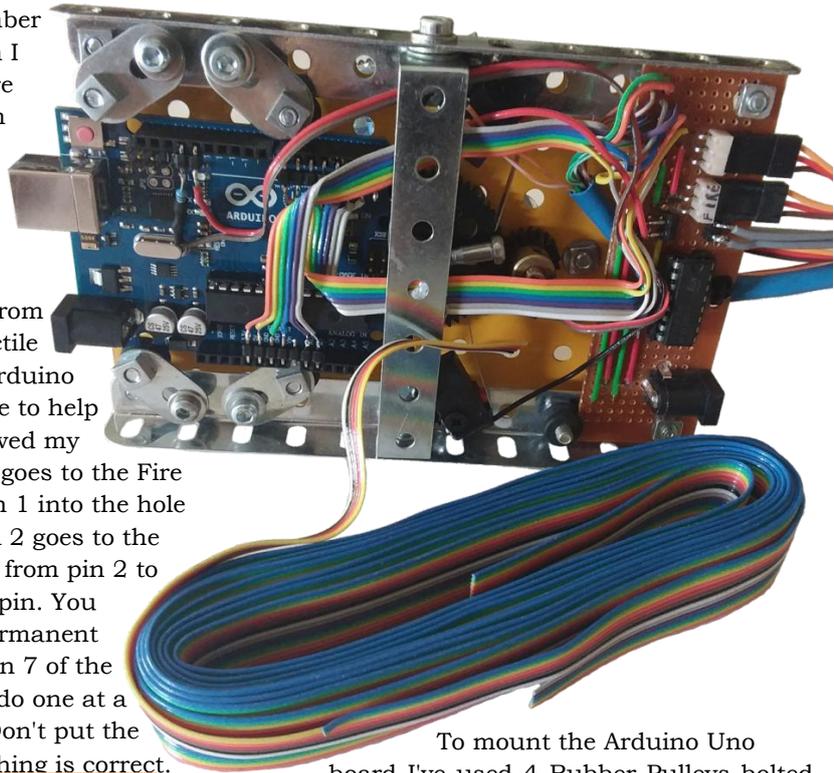
The sketch (program) can be downloaded from the above link so you don't need to worry too much about C++ coding. Just copy paste the code into your Arduino IDE then download it to the Arduino Uno. The best way to get this all working is to get a readboard and start connecting jumpers. Only pins 1 to 8 are used on the L293D. If you're just starting out with Arduino it's to best buy a starter pack. These come with a breadboard and jumper leads for prototyping. If you don't start with a breadboard and go straight to soldering you're likely to end up with a mess!



A Fritzing is the colourful circuit diagram shown here. I don't have the [Fritzing software](#) so DIYODE magazine kindly drew this one up for me. Follow the diagram and get it working first and then start thinking about building it on a circuit board. You can buy pre-drilled boards with copper pads for only a few bucks.



To design my own board I started with a chip socket for the L293D. Never solder the IC into the board directly because you won't get it out if it fails. Also, it's better to put the IC in last AFTER you've checked and double checked your wiring. I decided not to get my power from the Arduino Uno. I soldered a 2.1mm DC socket onto the board and used a 6V regulated power supply. As the servos come with 2.54mm header sockets I soldered 3 way header pins onto the board and ran my power to the IC, the servo pins and the Vin of the Arduino Uno. Next I got some right angle header pins and cut off two lots of 7 because I've used 7 digital outputs on one side of the Uno and 6 plus a gap on the other side. Connect the Arduino Uno pins to the home-made circuit board with ribbon cable soldered to right angle header pins. I remember seeing a neat trick of folding ribbon cable at right angles when I was pulling apart old printers to salvage parts. Old printers are a great source of tiny nuts and bolts! The joystick has a length of old cat6 ethernet cable I had laying around in the shed and rather than connect it directly to the Arduino I terminated it into 6 holes on the home-made circuit board. It doesn't really matter what you use so long as it has at least 6 conductors and is multistrand. Solid conductor cable like telephone cable has a nasty habit of breaking if flexed too much. The 6 wires from the Arduino to the joystick are Ground, 5V, X axis, Y axis, Tactile Switch and Fire Button. Work methodically to connect each Arduino pin to the circuit board and use the colours of the ribbon cable to help you. After plugging the header pins into the digital side I followed my prototype breadboard and progressed one pin at a time. Pin 1 goes to the Fire Button and white is pin 1 so I soldered the white wire from pin 1 into the hole adjacent to the corresponding wire from the joystick. Then pin 2 goes to the Fire Servo control and grey is pin 2 so I soldered the grey wire from pin 2 to the hole adjacent to the control wire on the Fire Servo header pin. You can see in the photo that I wrote FIRE with a black fineline permanent marker pen. Next was pin 3 which was purple, so it went to pin 7 of the L293D and so on. Of course your colours may differ but just do one at a time checking and copying from your prototype breadboard. Don't put the L293D into the chip socket until you're absolutely sure everything is correct.



To mount the Arduino Uno board I've used 4 Rubber Pulleys bolted onto Fishplates. It's important to use locknuts or the Rubber Pulleys will squash. The slots in the Fishplates allow you to adjust the position so the Arduino Uno board is held in nice and snug. I've used the Double Angle Strip to hold the ribbon cable away from the Bolt that activates the limit switches.

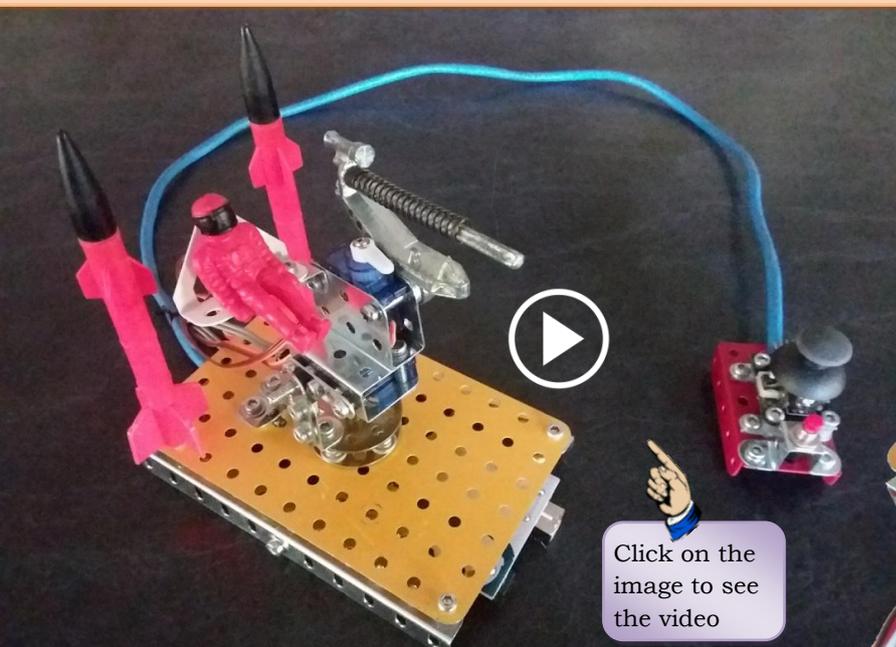
As an afterthought I added a 3mm LED to indicate when the joystick tactile switch has locked the up/down servo. I noticed the LED on the Uno lit up when it was locked and then I discovered that pin 13 also goes high. You do need a current limiting resistor though. The LED was a high brightness waterclear and it nearly blinded me! It turns out the LED on the Uno has its own resistor but pin 13 does not. I ended having to use a 4.8k resistor to keep the brightness low enough so as not to be a distraction. I discovered a long time ago that the plastic bezels for 3mm LEDs require a 4mm mounting hole which just happens to be close enough to Meccano hole size.

Going through the motions.

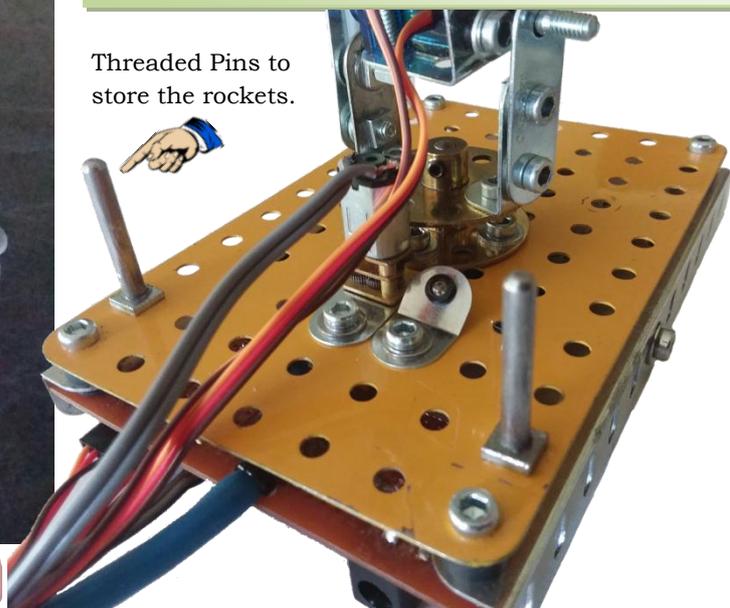
Up/Down is controlled by a servo. Push the joystick forward to go down and pull back to go up. If you release the joystick it returns to centre resulting in the servo snapping back to centre. The joystick has a tactile switch and when you push it the servo locks into its current position and the LED lights up.

Left/Right is controlled by the N20 motor. Push the joystick left to go left and right to go right. It stops when it reaches the limits set by the microswitches underneath. If you release the joystick it returns to centre but the motor stays in position until you move the joystick again.

The Fire Button connects pin 1 to Ground and causes the fire servo to rotate 90 degrees. When you release the button the servo returns to zero degrees. The white plastic cam on the fire servo pushes the rocket fin away from the diecast rocket holder thereby releasing it. With the genuine Meccano Compression Spring supplied with the rocket it travels about 5 metres. You could increase or decrease this by using different springs.

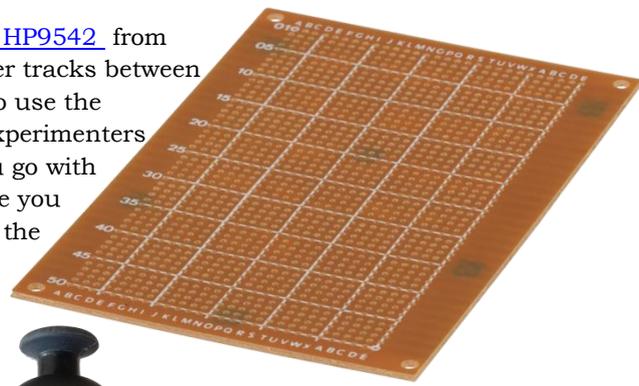


Click on the image to see the video



Threaded Pins to store the rockets.

I've used Vero Board [Cat. HP9542](#) from Jaycar as it has the copper tracks between the holes but you can also use the Universal Pre-Punched Experimenters board [Cat. HP9552](#). If you go with the Vero board, make sure you have the copper tracks in the desired direction before cutting it to size.



To cut the copper tracks I used a Stanley knife and scraped away the unwanted sections.



The joystick can be mounted any way you like but I've used a Flanged Plate and 1/4" spaced Narrow Strips to line up with the mounting holes. I chose to solder the 6 wires directly to the PCB rather than use the header pins.



Pinouts

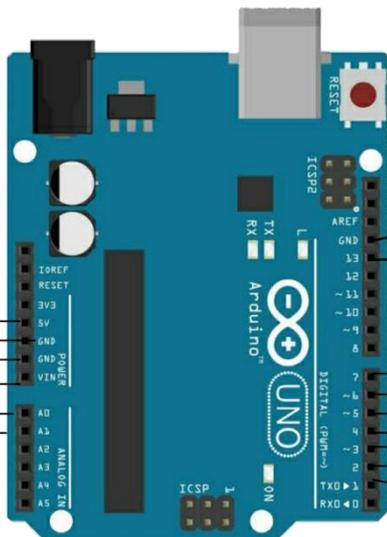
ARDUINO UNO	CONNECT TO
1	Fire Pushbutton
2	Fire Servo
3	L293D Pin 7
4	L293D Pin 2
5	L293D Pin 1
6	Up/Down Servo
7	Joystick SW
13	LED + (via resistor)
GND	LED -ve
5V	Joystick +5V
GND	Joystick GND
GND	L293D Pins 4 & 5 (GND)
VIN	DC Socket +
A0	Joystick VRY
A1	Joystick VRX

DIYODE Magazine produced the excellent Fritzing diagram showing all the connections but here is my original diagram showing the pinouts of the Arduino.



OK, I know it's a bit messy. Use the audible continuity tester on your multi meter to make sure none of those solder blobs bridge across the tracks. I also ran the Stanley knife between the tracks just to make sure.

5V to 5V on joystick
 Ground to ground on joystick
 Ground to ground on H bridge
 Vin to regulated 6V supply
 A0 to Y axis on joystick
 A1 to X axis on joystick



Ground to LED
 13 to resistor for LED

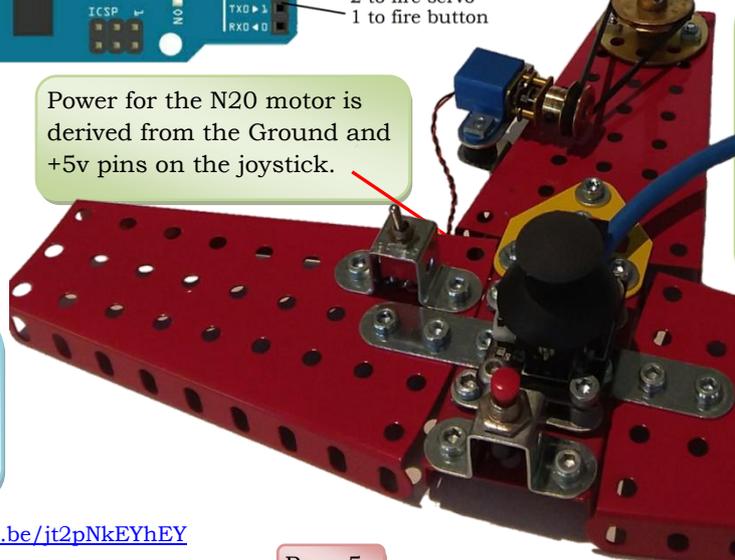
7 to SW on joystick
 6 to up/down servo
 5 to pin 1 H bridge
 4 to pin 2 H bridge
 3 to pin 7 H bridge
 2 to fire servo
 1 to fire button



Newsflash!
Launch control centre added

The joystick control was rather boring and had a habit of tipping over so with just 1 week before publication I hurriedly built this Missile Launch Control Centre complete with working radar. The Sector Plates stabilise it and the radar can be switched on and off.

Power for the N20 motor is derived from the Ground and +5v pins on the joystick.



Click the image

There's another 1 minute video on my YouTube channel.



<https://youtu.be/kIR2Qu-Ztao>

To see a short video of the Launch Control Centre operating, click on the image of the YouTube link below.

<https://youtu.be/jt2pNkEYhEY>

Build your own small parts boxes with this step-by-step guide



Original

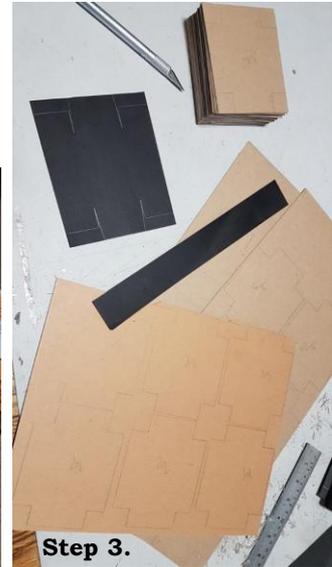
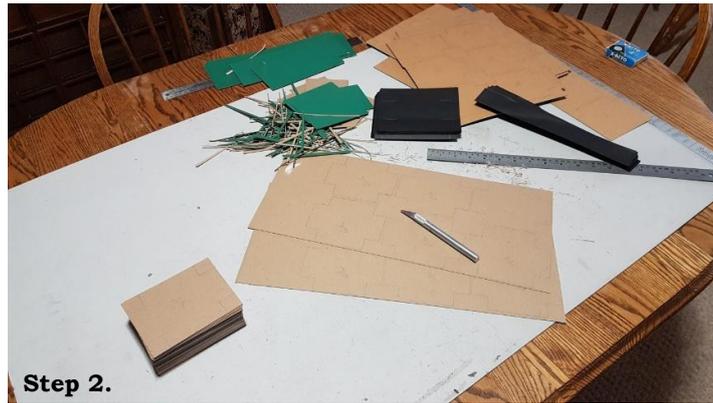
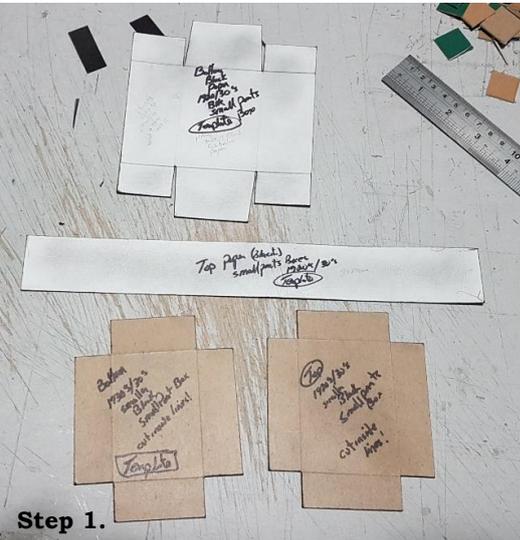
Greg Rahn - Canada

Copy

These smaller black small parts boxes were included in the larger sets from 1922 thru about 1933. They were standard small parts storage for #7, #6a, #6 and so on for the nickel, as well as the dark red/green, period. Originals today are very scarce on the ground and any self-respecting set restorer wants to see their outfit with the proper period-correct boxes.

I started making these replicas years ago (along with the 1934-41 red equivalents).

I have been known to share a few of these boxes with special Meccanoboy who have the desired items to trade.



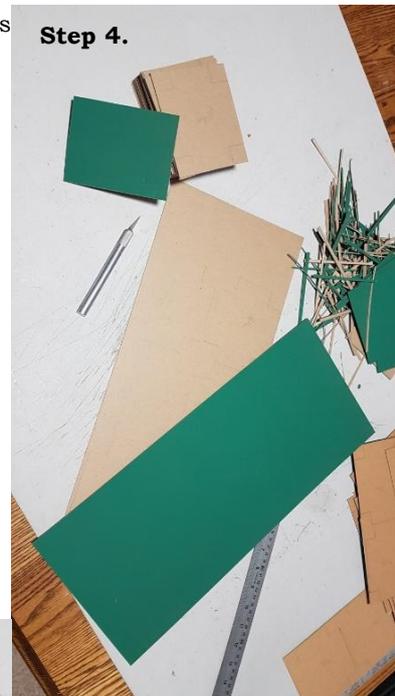
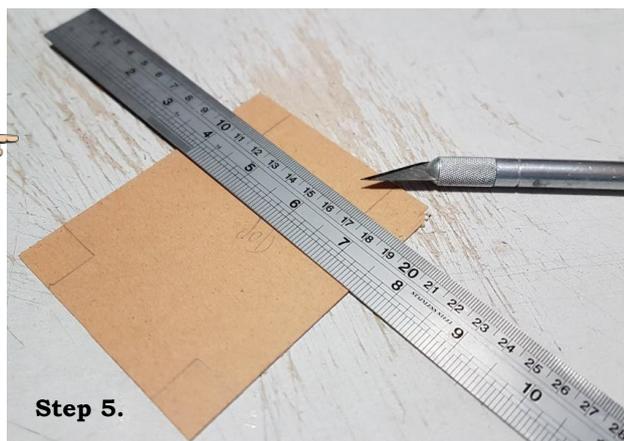
Step 1. I start with a set of templates to transfer the various parts to the cardboard and paper. The cardboard I use is a 1mm thick fibre board that I paint on one side (becomes the green inside of the boxes). I found that chalk board spray paint works the best as it is a matt finish and a nice green. Originals vary in the green insides over the era. The paper is the Wibalin book binder's paper sourced several years ago. It has a raised buckram pattern that is a good match to the paper coverings that Meccano Ltd. used in the day. It comes in various colours.

Step 2. The fibre board comes in large sheets 30" x 40" Several dozen box bottoms and tops can be made at a time. They are traced using the templates on the outside (non-painted) as will become apparent later. The black paper (also 30" x 40") is also templated for both top and bottom coverings on the non-raised side.

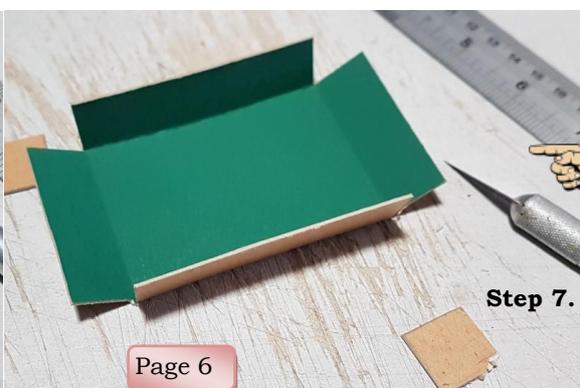
Step 3. The tracings are then reduced to their individual components with a very sharp Exacto knife, changing the blade often.

Step 4. Note the green painted side is always away from the tracing and cutting.

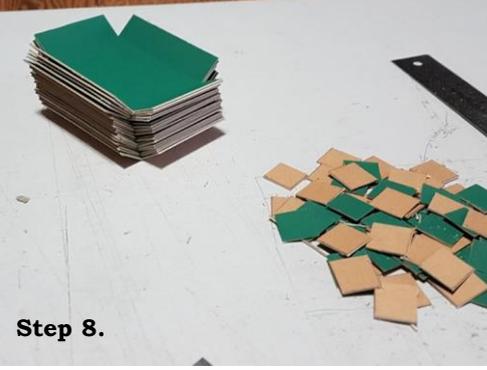
Step 5. This is where it gets tedious as there are a lot of cuts. A sharp blade and a stout ruler help.



Step 6. Each box blank, (top and bottom as they are different!) is cut out and the folding lines are scored to facilitate proper bending. This is standard box making 101.

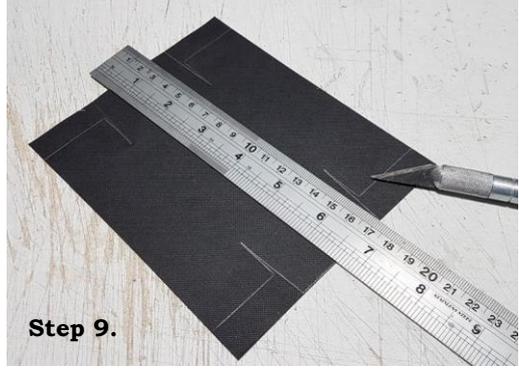


Step 7. The blank is then folded and put aside for the next step.



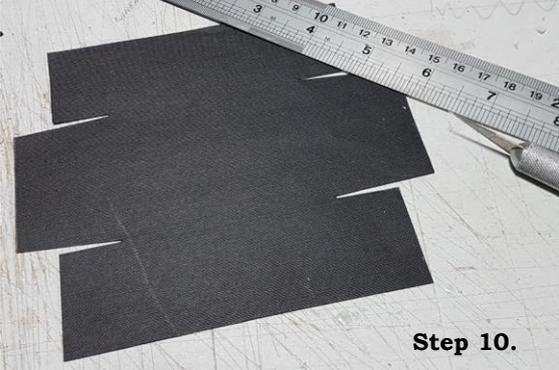
Step 8.

Step 8. So, why make just one! I make about 50 complete boxes out of 2 sheets of fibre board and 2 sheets of the Wibalin paper. After a box making event like this, you don't want to do it again for a while!



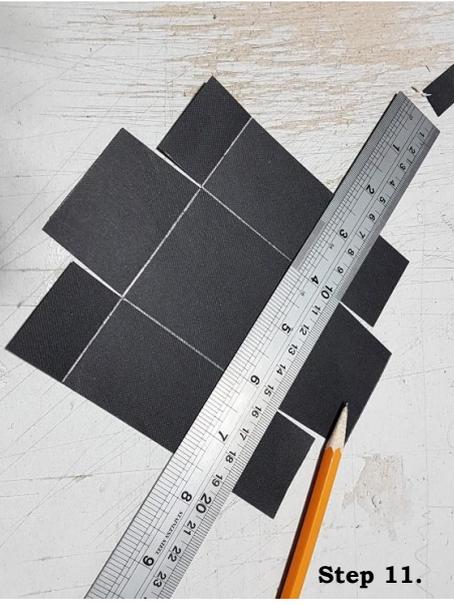
Step 9.

Step 9. The bookbinding paper has a raised buckram pattern so that needs to be on the outside of the tracing, etc. Cutting is also labour intensive and involves the same sharp Exacto knife and ruler.



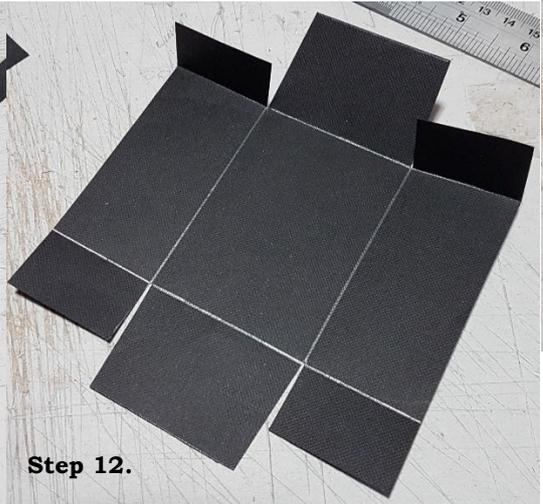
Step 10.

Step 10. Finished cutout of a paper covering for bottom section.



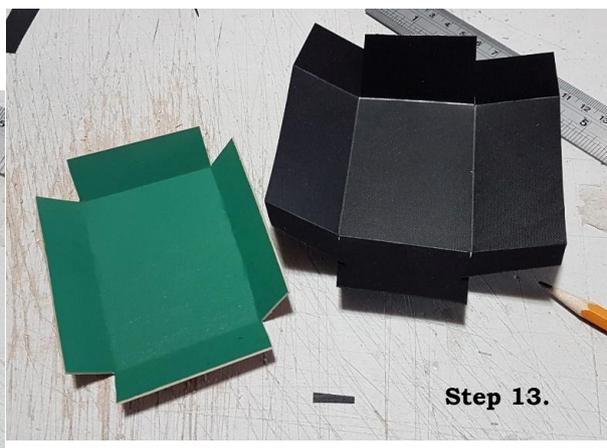
Step 11.

Step 11. This a little trick I developed that makes things easier when it comes time to glue it on. If you firmly score the lines that will be folded with a sharp pencil, it is easier to pre-fold. This is a key factor when the gluing starts!



Step 12.

Step 12. Much easier to fold all the lines around what will be a box bottom.



Step 13.

Step 13. Now we need to form the cardboard box. I use book binding tape. They used glued strips of paper in the old-time days but the tape works better



Step 14.

Step 14. I cut into the roll of tape to get proper sized pieces and then reinforce all four corners. You can now see that the pre-folded paper covering will be better to work with when the glue is applied. I use PVA glue available at any good art supply store where I also source the fibre board.



Step 15.

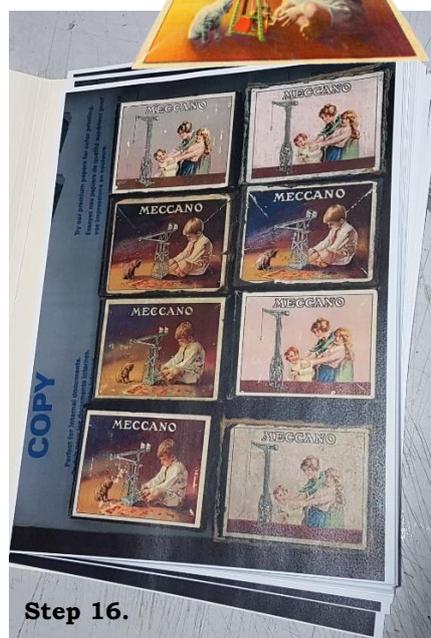
Step 15. The top just consists of a strip of paper as most of the top will be covered by the illustrated label. This whole process duplicates how the originals were made (I took an original apart!) Gluing is done in a couple of steps and all edges are folded over and worked flat with a couple of tools shown later.

Tip:

Use the work photocopier. Shhhhh.



Step 16. Labels are photocopied from good originals using a laser printer. This gives a good image as well as being shiny and durable. Inkjet printing just doesn't cut it! I have eight pretty good originals so I could vary the labels when I make the repro boxes. Nothing worse than the photo shopped cartoon look that some do to make an original label look "new".



Step 16.



Step 17.



Step 18.

Step 17. Labels are released from the paper with the trusty Exacto knife and ruler.

Step 18. These are all the materials and tools of the trade in making these boxes. Gluing is done in several logical steps and all edges are folded around and all seams are flattened by the wood stick or the bone tool that is also a book binding thing! Note the PVA glue.



Step 19.

Step 19. After all the paper is glued and flattened, I like to have the glue dry with the box together. I separate the 2 halves with a piece of plastic sheet so any glue residue doesn't stick them together forever.

Step 20. With both halves together, I also like to put a bit of tension on the whole assembly with an elastic band.



Step 20.



Step 21.

Step 21. The originals are shown on the top and a couple of my finished copies are on the bottom. Size is exact to the original. I mark all my reproductions as such to warn future generations as to their origin.



Step 22.

Step 22. Look at the insides of originals and copies. The interior colour varied with the originals and was worn by the parts they contained for decades. My copies have a pleasant green matt finish and will also gain a patina in the future with the addition of parts, etc.

See my primers in the NZM gallery

Black boxes <http://www.nzmeccano.com/image-38744>

Red boxes <http://www.nzmeccano.com/image-38796>



Original

Copy





WALTER NASH STADIUM
TAINE ST. TAIRA

Sat Nov 24 10-5
Sun Nov 25 10-4

Organised by Local Model Railway Clubs
www.raillex.org.nz

Lower Hutt NZ

Ball Racer
Stan Baker

Paul Roberts reports

RailEx, to those outside NZ, is an annual model railway display held in various venues around the Wellington area. This year the Wellington Meccano Club was invited as a guest club. As I have only got back into Meccano this year after a decade long absence, I was a bit apprehensive about being involved in a Meccano display. So the day prior to the display things got a bit crazy when a driving band snapped on my Blackpool Tower model. It was the last I had of that size so a quick raid of my teenage daughter's bedroom led me to a hair tie which saved the day. Then the auto reversing control failed badly, and being buried deep inside the model I wasn't able to fix it in time. Then my 17 year old son said "Dad, are people really going to pay money to see that?" Undeterred I set off in my car for the 30 minute drive out to Lower Hutt but I couldn't find my way in. First I turned up at a Friday night youth group, then I was directed to the next door. I found a large open hall, thinking I found right the place, only to find the hall filled with flowers, not trains and Meccano! Oh no! It's not looking good. Third time lucky. The RailEx display was in a large hall with the Meccano display right in the centre of the hall. The position could not have been better. I was able to catch up with the others from the Wellington Meccano club and a fine array of models were there. Unfortunately I was not able to stay the entire time. On Saturday morning, after the health and safety lecture, the doors opened and the crowds came rushing in. And they did come! It really was a very well attended event. As I was wandering around the display taking photos it was interesting to see the interaction between the public and the Meccano display.



Tricky Track
Max George



Blackpool Tower
Paul Roberts



Fairy Rotodyne
David Couch

It was wonderful watching Max George's tricky track, the children making Meccanograph designs using the crank handles on Reg Barlow's Meccanographs and the challenging Meccano Connect 4 model by David Couch. One difference I noticed from the Meccano displays I went to in the 1980s was the public took a huge number of photos of the models. This was evident when I ended up talking to one of the guys from my church who went to RailEx without me knowing. He ended up showing an entire set of photos of Meccano models from the display on his phone. I thought the RailEx display promoted the Meccano hobby immensely, and the Wellington Meccano Club, MWT Meccano Club and David Couch from Nelson did us proud. Thanks so much to everyone for helping out.



Plotter
David Couch



Ball Roller
Reg Barlow



Gears Demo
Chris Morton

Rob Kirk's Meccanomen build the Super Dragster

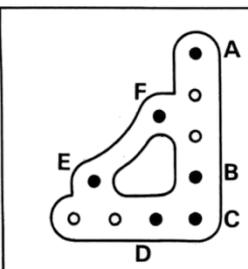
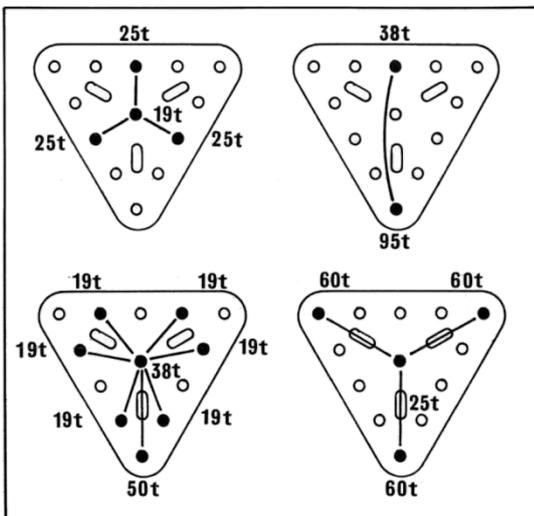
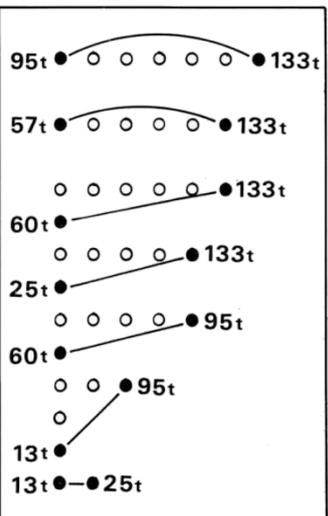
Click on any photo to see the slideshow



FROM OUR GOOD IDEAS DEPARTMENT



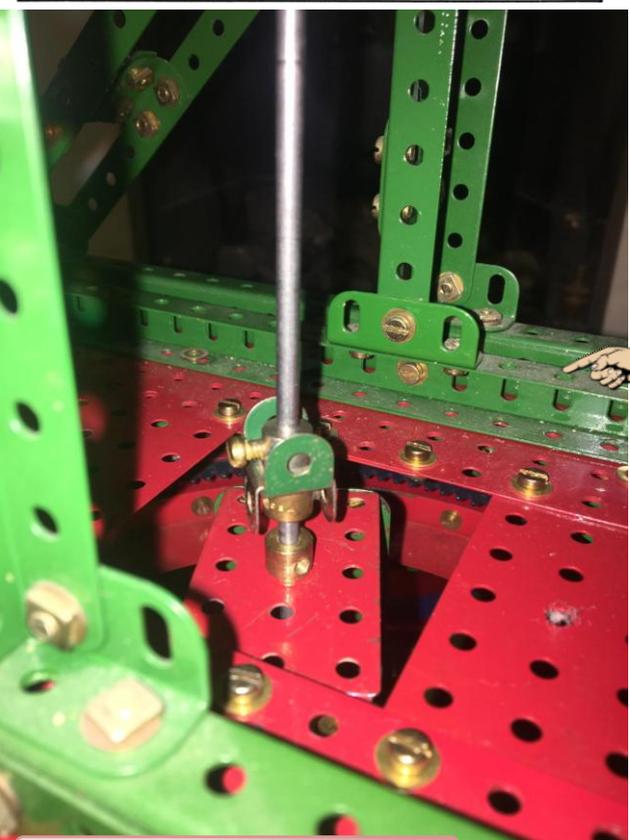
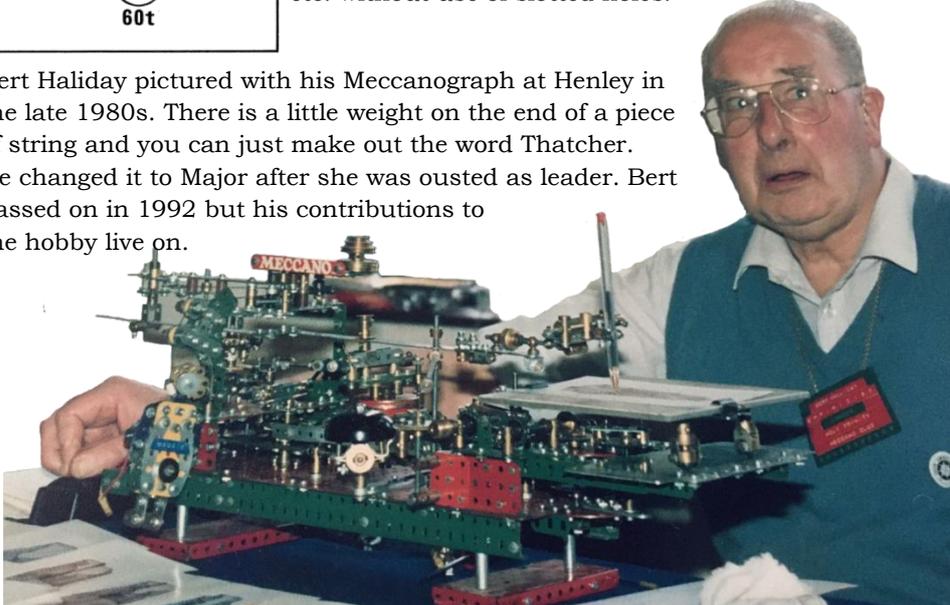
Reproduced from July 1976 MM. Examples of non-standard meshing by Bert Halliday. The black dots, of course, represent the holes in which the supporting axles would be mounted; the figures (e.g. 95t, 25t) indicate the Meccano gears, identified by their number of teeth, carried on those axles. The 13t gear indicated in the top left diagram is the final drive Pinion from a No. 1 Clockwork Motor. With reference to the Corner Gusset, bottom left, the vacant holes allow the Gusset to be bolted to any standard Plate, Girder, etc. without use of slotted holes.



AXLE-GEAR NOTATIONS

F - A	E - F
25t - 38t	38t - 50t
F - B	B - E
25t - 38t	38t - 57t
F - E	C - E
25t - 60t	38t - 60t
A - F	D - F
15t - 50t	38t - 57t
B - F	C - F
15t - 50t	38t - 60t

Bert Haliday pictured with his Meccanograph at Henley in the late 1980s. There is a little weight on the end of a piece of string and you can just make out the word Thatcher. He changed it to Major after she was ousted as leader. Bert passed on in 1992 but his contributions to the hobby live on.



From Richard Payn. I'm finishing a Giant Blocksetter Crane for a friend and working on ways to make it easy to dismantle for transport. Here is the quick release joint taking the drive down to the wheels. The superstructure can be removed simply yet it still provides a positive drive and is tolerant of small misalignment

From Edward Pritchard. The coated 'drift' supplied with the Hachette Crane outfit is good for fixing holes that are a bit small due to thick paint.

These sawn-off Allen keys are also very useful for getting to bolts in tight spaces.



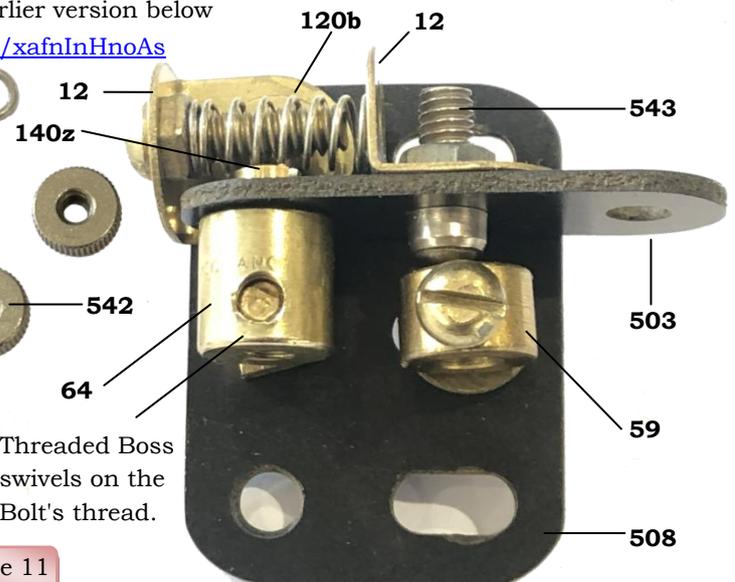
Limit Switch from Tim Gant

Link to video of earlier version below
<https://youtu.be/xafnlnHnoAs>

Click on any photo to see the video



*SR5100
 *Diode can also be 1N5004



Threaded Boss swivels on the Bolt's thread.

Randy Sauder – US reflects on his date with destiny

destiny noun

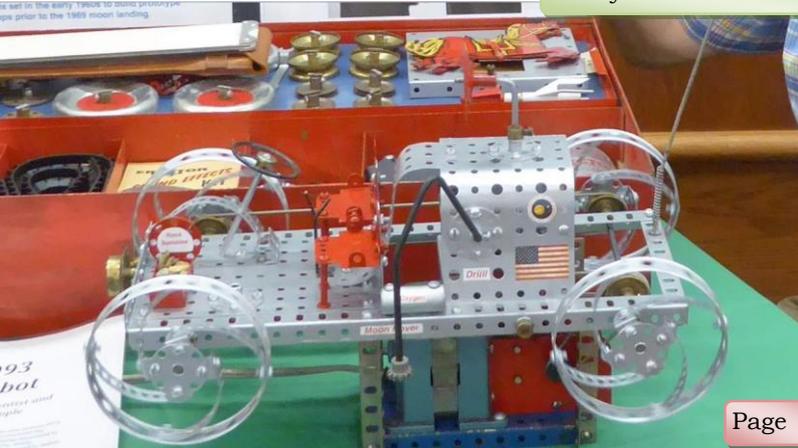
- . the events that will necessarily happen to a particular person or thing in the future. "she was unable to control her own destiny"
- . the hidden power believed to control future events; fate.



Randy at the ACGHS National Convention in Huntsville, Alabama

Since the set was in Boston, Massachusetts and I lived 1100 miles away in Atlanta, Georgia the ad didn't make my heart leap. The name Fred Whipple rang only a distant recollection. And experience taught me many seller's idea of "Large" might merely be a common small set. With that backdrop I still was intrigued to contact the seller to see what was for sale. Since there was no phone number listed I had to email for information. It turned out the seller was a sweet elderly lady in her 90's named Babette "Babbie" Whipple. Since we lived so apart she initially thought I could be a scammer and was hesitant to communicate. It was only after several emails that I gained her confidence to the point she finally shared her phone number. In an attempt to befriend and calm her fears we talked about many things unrelated to her sale. Among other things we talked about the A. C. Gilbert Heritage Society of which I am a member and its goal of preserving vintage Erector sets. Over the course of conversation I discovered she actually had two Erector sets. She described one as a large red metal box set and the other a blue metal box set, both of which were included in the sale. Upon hearing her sets were metal I immediately lost all interest. I explained that my quest was for earlier classic era wood box sets. I thanked her, wished her good luck and we said good-bye. Thinking that was the end of the story I forgot all about the encounter and nearly blew the discovery of a lifetime. Thankfully, fate intervened. Several days later and much to my surprise she unexpectedly called back. Knowing I was a collector she asked for advice on how best to sell her sets. Among other things I suggested eBay and explained that process. She thanked me, said she would, and asked if I could suggest a reasonable asking price? I told her without pictures it would be impossible to guess value. A day later she found a friend who emailed a poor quality picture. Even though fuzzy, I recognized what appeared to be a 1959 10093 red box and a 1938-1942 blue box train set. Both are desirable collector sets since the 59 was the largest Gilbert made that year and the other was a train set. Over the course of several days we talked by phone numerous times as I tried to help list her sets. During that time she told me more about her deceased husband, Fred Whipple.

Randy's Moon Rover



All Erector collectors dream of finding an ultimate barn find. For years I searched garage sales, antique stores and on the Internet hoping to find such sets. This is the story of one such discovery I nearly missed. It's a tale of two Erector sets used by NASA scientist Wernher Von Braun and astronomer Fred Whipple to build some of the earliest moon rover models. Sometime in 2009 while randomly searching online I stumbled on a benign Boston, U.S.A. advertisement, which read: "Large Antique Erector Set for sale that once belonged to my famous astronomer husband, Fred Whipple. He used this set to build a large variety of constructions. Whoever wants it must come to my home and pay cash."



Fred Whipple left, Wernher Von Braun right

She said he was world famous, that he discovered several asteroids and comets, came up with the "dirty snowball" hypothesis, and invented the "Whipple Shield," still used on modern rockets and the International Space Station to protect spacecraft from impact by vaporizing small particles. She said he worked at the Harvard Observatory for over 70 years. Also, that beginning in 1955 and 18 years thereafter he was director of the Smithsonian Astrophysical Observatory. She also mentioned that during WWII Fred invented the machine to create "chaff," dropped by Allied bombers to defeat enemy radar. Also, that his was the only organization able to make observations on Russia's Sputnik, that he was named to the International Space Hall of Fame, and received countless awards for his work. All this and much more I later confirmed by researching Fred's background online. It turned out Fred was on the level of an Albert Einstein whom he also knew. For me this was all of passing interest until Babette casually mentioned that Fred and Wernher Von Braun were good friends. Von Braun was the father of NASA and the person most responsible for the United States getting to the Moon. In the early 1970s I had the opportunity to meet Von Braun after he spoke at the University I was attending. Babette said Fred and Von Braun regularly collaborated ideas and concepts about space travel. In the 1950's they often appeared together on TV, in Collier's magazine, and elsewhere to promote the idea of going to the Moon.

Almost in after thought she added, "Oh by the way, Fred used both these Erector sets to build early model Moon rovers conceived by he and Von Braun." She added, "When Von Braun would visit our home the two were like kids brainstorming ideas on the kitchen table with the Erector sets." This was in the 1950s and early 1960s at a time when scientists were merely dreaming of going to the Moon. Besides Moon rovers, she said Fred used the older blue box set to model his Whipple Shield, chaff machine to defeat Nazi radar and other projects. Upon hearing Fred and Von Braun used these sets to build some of the earliest Moon rover concept models, long before we went to the Moon, my interest level in the sets suddenly shifted from no interest to off the chart. Because her emailed picture was vague I couldn't determine value or condition of the sets, but because of the history I knew I had to buy them. I told Babette of my interest, that I changed my mind, and asked if she would sell me the sets? It would save her the eBay listing hassle and I promptly agreed on her asking price.

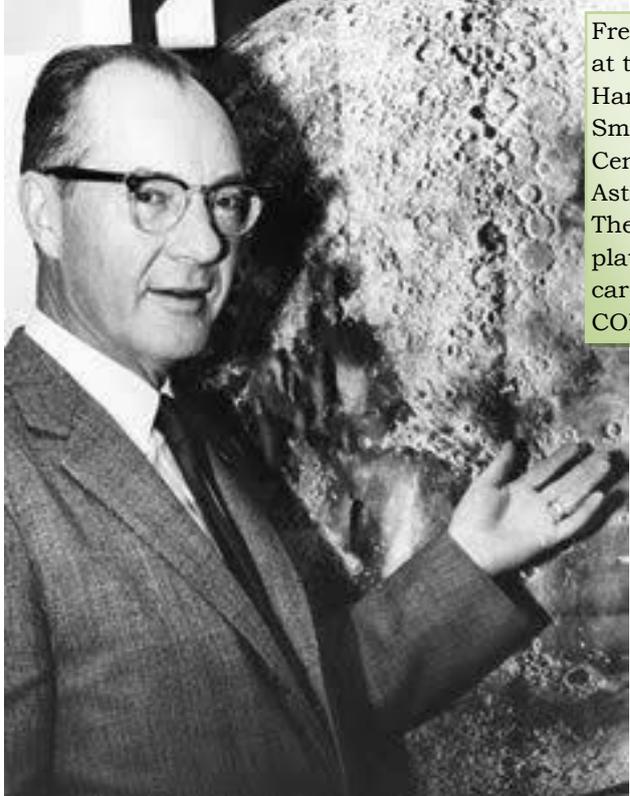


Babette Whipple 22 July 1918 – 18 Dec 2009



One of Fred's outfits used to design Moon Rover Vehicles

A week later the sets arrived at my home. Having grown up during the birth of the space age it was a thrill to handle Erector parts used to build some of the very first model mock-up rovers that might someday drive on the Moon. And knowing that those models were conceived in the minds of world famous astronomer Fred Whipple in collaboration with NASA founder Wernher Von Braun made it all the more special. After the sale, Babette and I continued to stay in contact as long distance friends. Her mind was sharp as a tack and she had many interesting stories. Because of my interest in her husband's work she later kindly gifted me one of Fred's slide rules used by him for decades along with a handwritten note. She also included a dark piece of film Fred used to directly observe the Sun. Babette and I continued to occasionally visit by phone or email until her death some months later. The sets remained in my collection until the summer of 2017 when I displayed the larger robot set at that year's ACGHS National Convention in Huntsville, Alabama. Next door to our Convention hotel was the U. S. Space & Rocket Centre Museum, so closely associated with Wernher Von Braun. During the weekend John Chapman, a retired NASA engineer visited and was our main convention speaker. John led a team that designed the Space Shuttle's external booster rockets. He was most excited upon seeing the Fred Whipple Erector set. He knew all about Whipple, the Whipple Shield, Von Braun and lots of other early NASA history. After the convention I agreed to sell the 10093 red box set and Whipple's slide rule to a fellow ACGHS member for display in his children's museum. Later, he plans to perhaps display the items at a Smithsonian type museum. Someday I'll probably do the same with the blue box set. The result is that future generations will see first-hand how an A. C. Gilbert Erector set helped shape NASA's Moon travel. And that's the story of how I nearly missed out on one of my greatest Erector finds ever. By the way, the steering wheel I used on the model was a Meccano steering wheel.



Fred Whipple at the Harvard Smithsonian Centre for Astrophysics. The licence plate on his car was COMETS



Page 13

Nice sturdy case with just a little rust

This Month's Meccanoboy

Matthew Auger - Australia

When and where were you born?

Sydney 1973.

Where did you go to school?

Goulburn Valley Grammar School in Shepparton, a mid-sized town

(pop. 50k) in country Victoria, Australia.

What was it like growing in Shep?

Fairly boring to be honest, glad to leave to go to Melbourne Uni.

Did you have Meccano as a boy?

Yes, I received a Set 7, Super Tool set and Gears Set B for Christmas 1980. Obviously old shop stock. I subsequently received a 7X and 8X and then ad hoc parts from MW Models and some French outfits when Meccano France came back to our market in the mid 1980s.

I got a free missile launcher at the French pavilion at Expo88 in Brisbane where they had a huge Meccano Eiffel tower.



Was your Dad interested in Meccano as well?

Yes, he had it as a child and then got back into it when I received my Set 7. He bought the last B/Y/Z Set 10 in Australia. When he returned to the UK I kept it, plus all the extra parts he had bought along the way.

Did you have any childhood friends who shared your passion for Meccano?

No, a few liked Lego, but no one liked Meccano. The internet and social media has been fantastic in allowing Meccano fans to connect around the world so readily.

Did you go to university?

Melbourne Uni. Finished a Science degree (mainly Physics/Maths) and half a Mech Eng degree.

Did you continue with Meccano or was there the usual cars, girls etc hiatus?

No, did little with Meccano when I left home in 1992 until the depths of the GFC. I got Dad's Meccano out of storage but work was utterly terrible so to take my mind off it all I started building models again.

What was your first job?

Going to work for ANZ bank at the time of the Tech stock boom so I started a Grad Dip in Applied Finance and Investment and became a stockbroker firstly with Wilson HTM and now Morgans Stockbrokers since 2004.

Did your interest in Meccano influence your job?

No, although when I was younger I had intended to become a Mechanical Engineer.

Wife and kids? Married to Fiona.

We have one daughter, Ivy 10.



Melbourne Expo 2018



Have you travelled much?

Driven around many parts of Australia a fair bit and to Europe a little, mainly UK, where my parents live now. This is Ivy and myself under the Forth Bridge in Scotland.

Is Ivy interested in Meccano?

Only a little, she likes Lego Friends sets more.

What was your first model?

I built a biplane using the Strip Plates from the number 7 outfit as wings. Wasn't terribly successful as there was nowhere to mount struts between the wings apart from at the very front or back so it suffered from the bane of many Meccano aircraft models, droopy wings.

What was your crowning achievement?

Completing officer training in the Australian Army Reserve in 1996.



Have you ever travelled far to Meccano Expos?

Yes, I displayed models at the following expos:

- 1988 Sydney French's Forest: 4WD chassis.
- 2009 Melbourne Expo: SML 34 Argosy Three Engine Biplane, SML1A Bentley Chassis, SML19 Steam Shovel
- 2014 Qld Museum: Set 10 Cargo Ship, Bert Love tug boat
- 2015 Qld Museum: SML34 Argosy, Set 9 Meccanograph
- 2017: Melbourne: SML4 Giant Block Setter, Meccanograph
- 2018: SkegEx: Set 9 Meccanograph (easy to take in a suitcase, excellent exhibition model if left as crank driven)
- 2018: Melb: MP87 Giant Walking Dragline – incomplete
- 2019: Melb: MP87 Giant Walking Dragline – complete.

What other interests do you have?

Cars, I have a 2002 Monaro now with an LS3 6.2L V8 that I've owned since new, was my daily driver, now a weekender. Also have a 1963 MK10 Jaguar (parts car) and a 1969 420G Jaguar I'm very slowly restoring.

How do you look back on your life? Any regrets?

Not overly, just missing out on an HJ Monaro 5.0L V8 coupe for \$2,500 in 1995. Having my 1982 VH Commodore SLE 5.0L V8 stolen in 1996. Values of those things are stratospheric these days, typical of V8 Holdens.

Do you lean towards any Meccano styles like big, small, electrical, mechanical?

When I was younger I loved building fairly high spec car chassis models. It was the 1980s so it meant AWD, 4 wheel steering, Active suspension (had a motor drive the spring mounts to achieve it), a mechanical torque converter 5 speed auto gearbox which I took along to a Melbourne Meccano Club meeting in 1991. It used the Constantinesco torque converter based on the 1922 MM model but with a freewheel mechanism from the 1930 Book of Mechanisms and the gearbox component was a 5 speed auto based on the 3 speed auto model published in the Meccano Engineer sometime in the 1970s. Over the last 10 years I've built mostly SML models and other large factory models such as the Walking Dragline and 10000 Locomotive. The Cavendish Vol 2 was very influential in this period. Probably because of work I haven't had the time to mentally relax and design in my head my own models as I did when I was young. I rarely built a leaflet model back then, the only two I built were the Set 2 high wing monoplane - a nice model and the Meccanograph.



With the exception of my Jag and Monaro, my Commodore VH SLE would be my favourite car.



The Beast. V8 Monaro



Jaguar. Work in progress

How has Meccano helped you in life?

Best thing for learning about physics and mathematics. Anyone who does triangular bracing on a Meccano model comes to grasp Pythagorean principles rather quickly.

With so many social media platforms available today, how do you connect with fellow Meccanoboy's?

Via social media, Facebook in particular. The internet and social media is wonderful for enthusiasts of what is now a semi-obscure hobby.



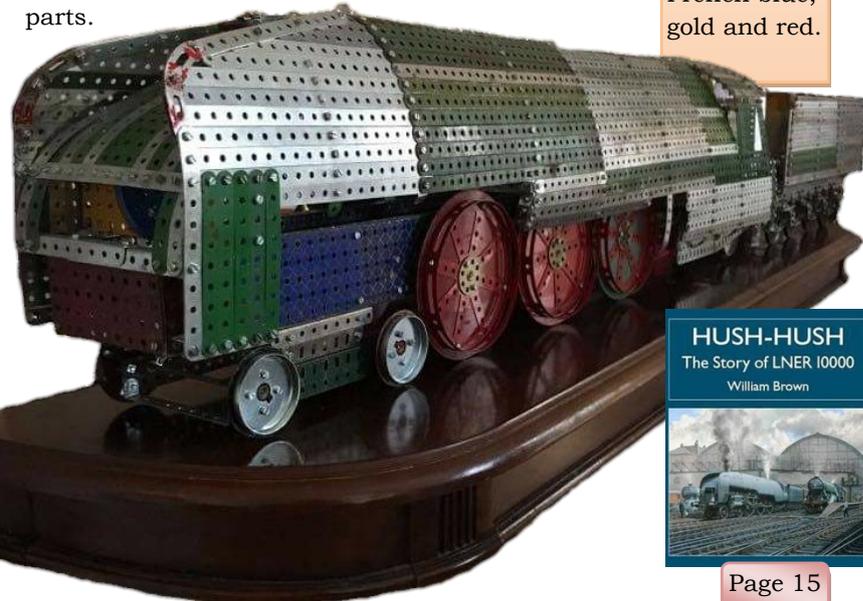
Find Matthew on Facebook <https://www.facebook.com/matthew.auger.3>



Chris Curnick, left and Matthew Auger at the Melbourne Meccano Club Expo in Oct 2017

What's your preferred Meccano colour scheme?
1978-79 Dark Blue and Dark Yellow, gradually buying up parts and sets. Best value factory set is the 1978-79 Set 5. A pity I didn't get more parts from MW Models in the 1980s when they were whittling down their stockpile. My first DBDY was in my 8X from MW Models which was a made up set, this is where I got a pair of 18.5" girders, 4 x 5.5" girders and 4.5" strips all in Dark Blue, looked a million times better than my well used zinc parts.

This is my rough build of the LNER10000. I intend to pull it apart and repaint it in 1960s French blue, gold and red.



HUSH-HUSH
The Story of LNER 10000
William Brown



Or Instagram <https://instagram.com/matthewauger77>

What are your plans for the future? Is SkegEx on the horizon?

I've got the South East Queensland Meccano Group meeting at David Wells' place at end of January. Depending on Covid, I wouldn't mind going to Sydney Meccano Club's expo in April 2021 and get down to Melbourne in Oct 2021 - I can pair that up with my 30 year school reunion. If we can get to the UK next year but probably 2022, my father has a big pile of DBDY that I bought in the UK and sent to his place so I'll be taking a big empty suitcase to fill up. I like going to UK in June so hopefully when SkegEx is on and I can do some parts shopping. I've nearly finished the 10000 loco and I've started building the Babbage Difference Engine. Other plans are redesign the MP87 Walking Dragline to be a genuine Set 10 model with an exhibition friendly gearbox. Then there's designing an Art Deco style grandfather case for the modified Clock 2 Dad left here. I've been buying up quite a few of the modern sets cheaply, partly as a way of getting some interesting traditional parts cheaply and also the modern parts look like useful additions to the range.

What's your advice for young people today?

Getting into Meccano after Binns Road went bankrupt and not having the opportunity to readily go to the shops and buy parts was a bit of a lesson to seize your opportunities. There might not be a next time.

A few of my favourite things.



We are John & Johnny. A father and son team who like Meccano. We're nothing to do with Spin Master who own the brand. Contact us at MeccanoNews@gmail.com Follow Johnny Meccano



New Zealand

<http://www.nzmeccano.com>

<http://www.nzfmm.co.nz>

<https://www.facebook.com/MWT-Meccano-Club-1476153515979522/>

Australia

<http://www.mmci.com.au>

<http://www.sydneymeccanomodellers.org.au>

<http://www.webjournalist.com.au/maylands/index.html>

South Africa

<https://www.facebook.com/Meccano-Club-of-South-Africa-464753870326296>

USA and Canada

https://www.spinmaster.com/brand.php?brand=cat_meccano

<https://www.usmeccano.com>

<http://www.meccano.com>

<http://www.cmamas.ca>

<http://www.bcmeccanomodellers.com/meccano-in-canada.html>

<http://www.meccanoquebec.org/index2ang.html>

Personal pages

<https://neilsmeccanoandstuff.jimdo.com/neil-s-meccano-models>

<https://meccanomiscellany.blogspot.com/> **NEW!**

<https://www.alansmeccano.org>

<http://www.users.zetnet.co.uk/dms/meccano>

<http://www.dalefield.com/meccano/>

<http://www.meccano.us>

<https://www.meccanoindex.co.uk>

<http://www.meccanokinematics.net>

UK

<http://www.internationalmeccanomen.org.uk>

<https://londonmeccanoclub.org.uk>

<https://tims.org.uk>

<http://hsme.org.uk>

<https://nelmc.org.uk>

<https://runnymedemeccanoguild.org.uk>

<https://www.selmec.org.uk>

<http://www.hsomerville.com/wlms>

<http://www.midlandsmeccanoguild.com>

<https://southwestmeccano.org.uk>

<http://www.northwestmeccano.co.uk>

<https://northeasternmeccano.org.uk>

<https://www.meccanoscotland.org.uk>

<http://www.corlustmeccanoclub.co.uk>

<https://nmmg.org.uk>

Other Countries

<http://club-amis-meccano.net/>

<http://www.meccaninfos.com.ar/>

<http://www.meccanogilde.nl>

<http://meccano.free-bb.fr/>

<https://www.aceam.org/es/>

Meccano suppliers

<http://www.meccanohobby.co.uk>

<http://meccanoman.co.uk/catalog>

<https://www.meccanospares.com>

<https://ralphsshop.com>

<http://www.hsomerville.com/mwmailorder>

<http://www.metalconstructiontoys.com>

<http://www.meerlu.com.au/>

<https://tinyurl.com/AshokBanerjee>

Meccgear Jeff Clark New Zealand sales@meccgear.co.nz No website yet but a pricelist with photos can be downloaded here <http://www.nzmeccano.com/image-151916>



Imagination is more important than knowledge.



Three Meccanoboy and three Legoboy are on a train going to a toy expo. The Legoboy each bought a ticket. The Meccanoboy have one between them. As the conductor starts walking through the train car, the Meccanoboy all rush off and jump into the small lavatory.

The conductor knocks on the door of the lavatory and says "Ticket, please."

At which point the Meccanoboy slide the one ticket through a ventilation slot and the conductor punches it. The Legoboy think this looks like a good trick and decide to try it on the train ride back home.

As the Legoboy board the train they have one ticket between them. Meccanoboy have no ticket!

After a while, one of the Meccanoboy says, "Here comes the conductor!" So all three Legoboy jump up and run into the lavatory with their one ticket.

One of the Meccanoboy goes to the lavatory door and says "Ticket, please."

Reaching the end of a job interview, the Human Resources Manager asked the young engineer fresh out of university, "And what starting salary were you looking for?" The engineer said, "In the neighborhood of \$100,000 a year, depending on the benefits package." The HR Manager said, "Well, what would you say to a package of \$200,000 a year, 5 weeks vacation, 14 paid holidays, full medical and dental coverage, company matching retirement fund to 50% of salary, and a company car leased every 2 years — say, a red Mercedes?"

The engineer sat up straight and said, "Wow!!! Are you joking?"

HR Manager says, "Of course, ...but you started it."

"Doctor, Doctor! You've got to help me! I feel like I'm some biscuits!"

"What? You mean those square ones?"

"Yes!"

"The ones you put butter on?"

"Yes!"

"Oh, you're obviously crackers!" Riot Machine Mk4



This virus has done what no woman has been able to do. Cancel all sports, close all bars and keep men at home.