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DATES FOR YOUR DIARY

Annual Exhibition, Scone ..................................... 8th/9th September
Catheart Model Railway Exhibition (?) .................. 27th / 28th October
NEMS Exhibition Darlington .............................. 10th November
Greenock Model Railway Exhibition ..................... 10th/11th November
Arrangements are now well advanced for our Annual Exhibition which will be held in conjunction with the Scottish Vintage Tractor and Engine Club ‘Farming Yesteryear’ extravaganza at Scone Palace on Saturday and Sunday, 8 and 9 September.

Our exhibition will be held in a large marquee in the same prime location as last year.

The display of Meccano attracted a huge interest last year and we are hoping to lay on an even larger display this year with a wide range of large models on show and lots of small models (which in many ways is what Meccano was about) being displayed on shelves.

The weather forecast for September is excellent and it is anticipated that there is going to be another record entry so we can look forward to a most interesting weekend.

Circulars have been sent out to all the members so if you have not received your copy or if you have not returned your reply slip, please contact me as soon as possible to ensure that you are included.

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Once again the Meccano Society of Scotland had been invited to put on a Meccano display at the Scottish Traction Engine Society’s annual weekend bash at Balado and your correspondent volunteered to report on our presence for the Newsletter.

The morning of Saturday 12th May dawned grey and damp; in a word driech! As I left Glasgow at 08:00 hrs and headed north-east towards Kinross-shire the rain came down in pelters and I began to wonder quite what sort of a weekend we were in for. However by the time I got to the site the weather had returned to just driech and would remain so for the rest of the day. The Balado site is on an old RAF base and the former runway provides a firm surface for the heavy traction engines to trundle up and down on without sinking into a quagmire. The ground rises up from the runway and beneath the old control tower I found the marquee that was to house our display. As in previous years, we shared the marquee with Sandy Soutar and his garden railway layout.

After setting up my models, I helped Alan Blair to erect the Meccano sign board outside the marquee so that the paying public would know what was inside.
Inside the marquee our members had laid out their displays as follows:

Douglas Carson: Stationary Steam Engine SM11a in Black/Yellow/Silver, Forge Crane, small stationary steam engine, steam car and electric car.

Alan Blair: Marine Engine and South Seeking Chariot. Alan’s marine engine had been modified since its last outing by the addition of railings made from bent knitting needles, the creation of which, using a Meccano bending machine, is to be the subject of a future article in the Newsletter.

Ian Soutar: Meccano parts for assembly by visitors, display of recovery vehicles in various colour schemes and a rather nice Marklin set.

Jim Gregory & Angela Goodlet: small models including an open topped double-decker bus and tram, a swing boat and a large rotating display of Mission Aviation Fellowship (MAF) aircraft.

Ian Soutar: various Army Multikit models

Margaret Tattersfield: modern Meccano lorries and fork-lift trucks.

Bert Hutchings: Historical display of Meccano colour schemes, crane for the use of children, railway locomotive, tipping lorry and blue/gold railway steam crane.

The site was open to the public from 10:00 and thereafter a small but growing trickle of visitors began to come through the marquee. Initially there was a delay in establishing mains power to the marquee and as all my models are battery operated I was the only one with a working moving display.

As ever on these occasions, the usual questions were asked; do they still make Meccano? How much is the set in my loft worth? Did you make that yourself? And how long did it take you to make that? All of which were answered with our usual friendly warmth as though we had never been asked this before.
Enthusiastic young Meccano modellers at work. Alan Blair’s marine engine is in the right foreground.

The flow of visitors increased yet further in the afternoon, particularly when a shower of rain passed overhead. Several small boys were taken by Ian Soutar’s parts and assembled a variety of models themselves with occasional guidance from members of the Society.

One of the nice things about ‘piggy-backing’ on someone else’s show is the opportunity to see what else is on display. There were steam traction engines, road rollers and lorries in various sizes lined up beside the old runway. From time to time one of these would belch smoke against the leaden skies and move onto the runway to go through its paces.

In addition to the steam engines, there were displays of veteran cars and military vehicles, an outdoor steam railway track as well as several owls from a falconry centre. Another feature of these shows is the traders selling everything from beef burgers to automobile junk.

After about 16:00 the flow of visitors to the marquee began to slow and it became clear that the day was winding down.

View of steam engines on the old runway

My rechargeable batteries were still going strong some six hours after starting their day’s work which I thought a good performance in the damp and somewhat cool conditions. The day officially closed at 17:00 by which time there were very few visitors left. I could only attend the Saturday of this weekend display, (my place in the marquee being taken by another on Sunday), so I packed my models and returned to Glasgow.

Although numbers may have been down compared to last year due to a combination of the weather and another related event taking place in Edinburgh, I felt it had been a successful day for our Society. A large number of visitors had seen our models and had their questions answered and several youngsters had enjoyed themselves making models. We would find it almost impossible to stage an event ourselves that would attract similar numbers so this sort of show is an invaluable opportunity for us to spread the Meccano word.

* * * *
THE MENSTRIE CHALLENGE 2007

The Challenge was fought out at the annual Constructor’s Day and attracted eleven entries in all. Of these two were exactly the same design (although realised with slightly different parts) and came from David Lawrence in the USA. Another two entries were from the same person (Chris Shute) but were radically different from each other.

Aim:
To produce a vehicle which will automatically reverse as many times as possible between a pair of obstacles 4 feet apart.

Rules:
1. The motive power shall be a post Second World War Magic clockwork motor.
2. All parts of the model must be standard numbered Meccano or Meccano replica parts and appear in the ISM Inclusive Parts list.
3. The Magic clockwork motor shall be an integral part of the moving model.
4. The maximum size of the vehicle to be width 9 inches and length 12 inches.
5. The model must start without assistance.
6. Once an attempt is under way, the competitor may not touch it except to straighten its course if necessary.
7. Each entrant shall be allowed three attempts, the most number of reversals accomplished in any one attempt being the one taken in consideration when deciding the winner.
8. The winner will be defined as the entrant whose model covers the greatest number of reversals on a level floor in one winding.
9. Proxy contestants are welcome.

The aim and rules are repeated here because they turned out to have a particularly unexpected influence on the result.
The track was a four foot long varnished wooden board set up with weighted Meccano boxes at each end. First off was Chris Shute Mk1. This model went very fast and struck the end boxes with such enthusiasm that it kept knocking its track off line and had to be frequently corrected as allowed under Rule 6. In spite of this it managed thirty three and a bit traverses of the track on its first run. General opinion among the spectators inclined to the view that the winner had appeared already.

Subsequent models achieved up to 9 traverses – with one notable exception. This was Tim Edwards entry which, on its first run did no less than fifty three (53). The success of this entry appeared to be down to three main features:

- very careful engineering and construction
- no reliance on gear driven reversing mechanism (crash gear changes caused some models to fail prematurely – i.e. when there was still spring power available)
- no flexible drive band – the Magic Motor was coupled directly to the drive mechanism by a wheel pressing against the motor’s drive pulley around which an elastic band had been wound to give a friction transmission

Although the model travelled quite slowly (compared to the Shute rocket) it was quite heavy and so momentum ensured a clean direction change at each end of the course. Overall a total distance travelled of over 70 yards was a considerable achievement.
Detail of the drive. Note no elastic band belt transmission. Power is transmitted by winding an elastic band round the motor pulley and pressing it against the Bush Wheel (top left)

Complete results were as follows:-

<table>
<thead>
<tr>
<th>Name</th>
<th>First run</th>
<th>Second run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cris Shute Mk1</td>
<td>33+</td>
<td>33+</td>
</tr>
<tr>
<td>Doug Carson</td>
<td>4</td>
<td>5+</td>
</tr>
<tr>
<td>Alan Blair</td>
<td>Withdrew</td>
<td></td>
</tr>
<tr>
<td>Tim Edwards</td>
<td>53</td>
<td>44+</td>
</tr>
<tr>
<td>Margaret Tattersfield</td>
<td>Withdrew</td>
<td></td>
</tr>
<tr>
<td>David Lawrence (no.3)</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Bill Jack</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Chris Shute Mk2</td>
<td>8+</td>
<td>8+</td>
</tr>
<tr>
<td>Robert Jones</td>
<td>Not counted (see below)</td>
<td></td>
</tr>
</tbody>
</table>

Two models gave rise to some concern regarding Rule 2. One of these, (that of Bill Jack) contained a 5½" strip of non-Meccano manufacture. The ends of the strip were not totally radiused. As the neither the strip itself, nor the unusual shape of its ends, was fundamental to the operation of the model this minor breach of the rules was allowed to pass. Concern was also raised regarding the unusual 1" spoked wheels on the David Lawrence model. These wheels which were Meccano having been included in one of the Crazy Inventor sets and being only suitable for tri-flat axles were clearly within the rules.

Robert Jones’ model on the other hand was disqualified. It was over 13" long and therefore clearly in breach of Rule 4. This was a considerable relief to the organisers as this unusual model did not cover the entire distance between the two end stops but instead oscillated back and forward with a period of about 1". The number of oscillations was never counted but probably amounted to over 100. When the Aim is examined it simply says “automatically reverse as many times as possible between a pair of obstacles 4 feet apart”. It does not say
that the vehicle has to cover the entire distance between the end stops or touch them – nor is there anything in the Rules to this effect. Had this vehicle not been in breach of Rule 4 it would have had to be declared the winner.

The losers in all of this were those responsible for making up the rules, who had better be prepared to take counsel’s opinion if they are to be employed for the purpose next year!

* * * * *

SERENDIPITOUS SUBSTITUTION

by

David Lawrence

Living in the U.S., as I have for the last 20 odd years, one of the things I miss from back home are the British TV adverts. From time-to-time one of these will appear on the TV here, to play on my nostalgia. One such ad by the Royal Bank of Scotland recently made the grade and stayed in the memory, which is what an ‘ad’ is supposed to do, isn’t it? This showed a man choking over something he ate at a dinner party. His companions did nothing to help. Then a chap from another table stepped across and applied the Heimlich manoeuvre without saying a word, but with a caption of ‘Just do it’. We seldom get ads as good as that over here. I’m not sure if this was shown in the UK.

I don’t get to see the FA Cup Final here. We have something called the Superbowl. It is the season ending championship for American Football – a confusing game in which players dressed as moon-walking spacemen grapple with each other. There are Superbowl parties, often family events with lots of food and drink involved. Somewhat curiously many people watching their TV sets are not following the course of the game. They are waiting for the adverts! This is because over the last couple of decades interest in the enormously expensive screen adverts - shown while the game is being televised - have become ‘super-ads’ and have surpassed interest in the football game. There is probably a word for this but I can’t think of it right now. We should probably make one up. How about – Serendipitous substitution? That sounds suitably meaningless.

The reason I mention this is because I foresee a similar trend coming to the Menstrie Challenge - a rare event in my Meccano calendar and one which I try to send a competing model to, if I can figure out a suitable design. This event is to be congratulated by its heroic attempt to get contestants to stick to the rules. So the question becomes, will future contestants continue in attempts to stump the judge(s) and will THIS challenge supersede - in interest value - the performance of the model? Get it?

In anticipation of this coming about, I appeal for any lawyer or paralegal member of the club to stand ready to act on a contestant’s behalf. Like the TV adverts at the Superbowl could the legal standing of ‘the rules’ become the primary interest of the Menstrie Challenge.

No one would be brash enough to suggest that deciding whether a Meccano part is in fact an authentic Meccano part is easy and I doubt I will be the only contestant, searching for the correct legal interpretation of the term ‘standard numbered Meccano’, especially when the newer Meccano parts do not have numbers. I also look forward to hearing the case for using
parts in the ‘Inclusive Parts List’ since this includes Meccano-compatible special parts from independent manufacturers, just the bits we are (I assume) trying to exclude.

Having said all that, I think we should ask, what is the worst thing that could happen? I imagine it would be disqualifying a model that is found later on appeal to be OK. Yes, that would be a pity. Can I suggest a way around this. How about running the contest first and afterwards scrutinize the winners for any rule infringements. If any are claimed give the owners a couple of weeks to appeal, before announcing the winner.

It would cause a slight delay but it could save a nasty situation. But I plead with you guys, please don’t shy away from the whole thing. The Menstrie Challenge is too good a thing to lose just because it’s difficult.

* * * * *

REVERSING BLUES

by

Bill Jack

The recent competition at Menstrie produced some ingenious models which are shown and described elsewhere in this magazine. I was pleasantly surprised and indeed deeply humbled by efficacy of the entries and admired all of them. Many “thought” hours and physical hours must have gone into each one.

Mine started from scratch, as I had never built anything since my first Meccano was neglected when I was fourteen. It was lost, so I had to dig up bits of odd sets here and there to get going again. My final model was Mark 11 (eleven) having been built up and dismantled and reconfigured and rebuilt ten times. The motor was mounted here there and everywhere, inside and outside, and upside down, to try to get the best effect. Yet I still did not come up with the layout of many of the others, nor anything like the quality and only achieving three bumps. The main problem I found was with the gearbox which would reverse but required quite a dunt on the end to end control rod, to shift them and hold them in gear. I was at it on and off for many weeks and even enlisted the help of my colleague’s mechanical knowledge and hoard of Meccano bits and pieces.

So, if ever the competition comes up again, hopefully I will have learned something from Menstrie. Meantime, roll on the next annual competition which presumably will be announced soon. Congratulations all round to the organisers and competitors.

* * * * *
THE ROBOT GARGANTUA

by

Chris Shute

The following are the notes for a lecture given by Chris on a subject of which he is the acknowledged world expert.

More Than A Milestone In Meccano History

Good afternoon, I’m Chris Shute. I moved to Shropshire from Scotland last year and I recently became a member of the Telford and Ironbridge Meccano Society. I’m very pleased to be able to share with you a remarkable Meccano machine, The Robot Gargantua, the creation of Griffith P. Taylor – Bill to his friends.

My intention today is to persuade you that the Robot Gargantua represents not only a milestone in Meccano history, but also in robotic engineering. Here, of all places, this machine shows perfectly how somebody with a new set of ideas, and a new way of looking at things, can invent something groundbreaking, ahead of its time. Being a genius helps, of course, but so does a large box of Meccano.

Some background. It is March 1938. Clever and useful inventions just keep on appearing: the photocopier, freeze-dried coffee, and a new kind of pen, the work of a Hungarian gentleman, Mr. Laszlo Biro. Clever Meccanomen are pushing the limits of the system. Meccano clocks and looms exist. The best-known large model is the Giant Blocksetting Crane. A Frenchman has produced a large clock that shows lunar cycles and predicts Easter, among other things. But there are no robots.
In the so-called real world, an American, Seward Babbitt made an automatic crane to grab ingots from a furnace in 1892, (according to lots of on-line histories of robotics) but nobody seems to know much about it. It couldn’t have been that successful. The Jacquard Loom (first made in 1801) is still the only programmable industrial machine in 1938 if you ignore the music box and the Pianola. In 1938, the word robot had been around for only a few years, mostly in science fiction. And science fiction could be pretty frightening: later that year North American radio audiences were famously fooled into thinking that Martians had landed thanks to a vivid dramatisation of The War Of The Worlds.

Meanwhile, in Toronto, a young student, Bill Griffith P. Taylor spends hours in a basement garage with a large amount of Meccano. He comes from a remarkable family. I must tell you about them first. Bill’s Grandfather, James, poor son of an Oldham loom-repairer got scholarship to Owens College, (now Manchester University). This man becomes a chemist then a metallurgist in Sheffield – his assistant for a while is Henry Brearley, inventor of stainless steel. In Germany he works with Bunsen, yes the gas-burner man. He goes on to become a mining engineer in various countries including Chile – in a place called Antofagasta (does that ring any bells with Meccanomen?). The family emigrate to Australia with their son…

Their son will become the father of our Meccano-loving student. He is Thomas Griffith Taylor, a brilliant geographer and geologist who served on Scott’s ill-fated Antarctic expedition of 1911. To prove that he’s up to the task, he and his mate, physicist Charles Wright walk the fifty miles from Cambridge to London in one day, in order to meet Scott. Thomas survives the Antarctic making plenty of scientific discoveries and surveying vast areas. Afterwards he marries Doris Priestley, sister of Raymond, another scientist on the Scott expedition, quite possibly a descendent of Joseph Priestley, the man who discovered oxygen.

Thomas and Doris begin their married life in Australia after the First World War. They are blessed with a son, Bill. At the age of ten, Bill gets given a Meccano set from a neighbour, whose son didn’t want it. Isn’t it sad when that happens? Still, it went to a good home. But they have to leave Australia: Bill’s dad Thomas, now a much-respected Geographer, has upset the establishment. He pointed out that the unexplored interior of Australia would be a barren desert without the potential of the USA.

So in 1928, the Taylors move to Chicago. They travel via Britain and buy another Meccano set to keep Bill amused on the voyage. Thomas establishes faculties of Geography in Chicago and then Toronto universities. The North Americans take geography and geology very seriously, in their new quest for oil and minerals. Thomas Griffith Taylor is soon reckoned to be the highest-paid academic in North America. He can afford to buy one or two more Meccano sets for young Bill!

Bill’s father is a tough act to follow: Antarctic scientist and world-renowned Geographer. If he were alive today you can bet he’d be in the forefront of the debate about global warming. So, when it’s time for Bill Taylor to go to university what does he study? Botany! It was the wish of his father, who actually knew Charles Darwin’s son George at Cambridge. But like many students, Bill’s not sure. He gets his degree anyway and then spends a year touring Europe. Afterwards he enrolls in Toronto University to study Civil Engineering. This is to be his life.
So, March 1938. Meccano Magazine, the world’s leading boys’ interest publication, carries a single page article describing a remarkable crane-like machine built by a Mr Griffith P. Taylor of Toronto. Details of this machine are few, but we read that:

- Levers at its base control it.
- The grab can open, close and *rotate*.
- The machine can build complex towers *unaided*.
- Everything is driven from *one motor*.

A single small photo in the article gives little away:

- How does the motor at the base get to drive the grab?
- How do levers at the base control motions through the rotating jib?
- How do blocks get placed with inch-perfect precision?

Can this really be done in Meccano, or any material? Is it a hoax like Piltdown Man? The month before, the British Broadcasting Corporation’s new “Television” service had just broadcast a play called *Rossum’s Universal Robots*, written by Karel Capek, who coined the word *robot* from his native Czech language. (It means *servant*). This, incidentally was the first ever TV science fiction programme, 25 years before Dr Who. Anyway, the Meccano Magazine article does not tell us that the modeller is a 21-year-old student. Neither does it describe the unique mechanisms he devised in order to create The Robot Gargantua. Was this machine so alien to the mainstream Meccano world of modest outfits, with boys in short trousers and woolly jumpers building tabletop cranes? For whatever reason, this beautiful machine – which was well photographed and well described (it could have been serialised) – did not excite the editor. Gargantua, in the Meccano Magazine, is little more than a curiosity squeezed in between the Hornby trains, the stamp collecting, and a few well-researched articles about real-life engineering feats, bridges, dams, and locomotives. Either way, Meccano Magazine never publishes anything from Griffith P. Taylor again. The machine fades into the mythology of Meccano.

We jump ahead. Forty-three years later…

It is about 1981. Margaret Thatcher is Prime Minister. There are riots in Brixton and Toxteth. The Swedish pop group Abba break up. There is a video game called Pac-Man. These are dark times indeed! But worse still, In Liverpool, the ruins of the Binns Road Meccano factory are being demolished. Men in hard hats walk through piles of Meccano parts a foot deep. One man gets permission to salvage some parts for himself. From the dust and debris he picks up a typed booklet of notes and photographs. He doesn’t know it but he’s just stumbled across the Meccano equivalent of the Dead Sea Scrolls: It’s Bill Taylor’s original submission for the Gargantua article of March 1938.

Robin Johnson, editor of Constructor Quarterly eventually acquires the Gargantua notes and pictures. Meccano gurus Bert Love, Alan Partridge and John Woollatt examine the 26 high-quality photographs, each labelled with a letter of the alphabet. They were taken on glass plates, so they can be enlarged and show lots of detail. In time, a glossy hard-backed book is produced. You can still get it from Robin – I can recommend it.

Meanwhile in Canada, Meccanoman Colin Hoare tries to find out what happened to Griffith P. Taylor. At the address typed on the Gargantua notes, there is now only a swimming pool. But Colin persevered.
It is 1996. In Sydney, Australia, retired professor of civil engineering Bill Griffith P. Taylor receives a copy of the book several months before he dies, aged 80 years. He’d still enjoyed building with his Meccano collection, but he never joined a Meccano society and he hadn’t bothered subscribing to the Meccano Magazine for years. (Understandably!)

The year after, I decided to build a copy of just the Robot, (i.e. Gargantua’s punched-tape programmer) to show at Skegness. I love all automated devices – the more mechanical the better. By complete chance I met Bill Taylor’s widow Dorothy and son Norman who were visiting the exhibition, while touring Europe. Somehow they persuaded me to build the complete Gargantua in time for the next Skegex. Until then I’d never built anything bigger than the No.10 set Eiffel Tower. There’s a flat in Cardiff which probably still has holes in the ceiling where the aerial mast poked through.

But my family were very excited by the idea of Gargantua, and I was soon collecting some of the extra parts I needed. With the help of John Evans, who had access to some new-fangled thing called the Internet, I contacted South African Charlie Roth (a big model expert, if ever there was one), who’d just built the crane part only, and sent a picture to Constructor Quarterly. But he told me he hadn’t managed the tower linkages, and so had been forced to put motors into the grab. Sadly, not long after that, he died.

Still, I kept at it for the next 10 months, spending about 400 hours on the project. It took me another month to cut the 576 holes in the paper tape, just in time for the Skegness Exhibition. So half a century later, in front of Meccanomen from around the world, Bill Taylor’s creation finally got some recognition. And ten years on, the machine is still running. I hope to share more information about it.

I learnt more about the remarkable life of Bill Griffith Taylor from his family and the article he wrote in Constructor Quarterly 1996:

- He submitted other articles to the Meccano Magazine – which were all ignored!
- During the war he designed aircraft jigs and fixtures.
- He drove right around Australia.
- He designed and built most of his homes.
- He was critical of box-girder bridge designs. You may remember those that collapsed in Melbourne and Pembroke.
- As a party trick he could tell you the day of the week for any date in history.
- And, oh yes, he knew all Meccano parts by their numbers.
- He had his own views about genius – not (as Edison is supposed to have claimed) 1% inspiration and 99% perspiration – Bill Taylor preferred to think over design problems calmly, avoiding stress, until the solution came to him completely, without committing much to paper too early.

At last, let’s take a closer look at Gargantua:

- The jib resembles that of a block setter, upside-down.
- The tapered tower is like those of suspension bridge portals like those at Clifton & Menai.
- The outer girders of the tower are reinforced C-section – three Angle Girders overlaid by two Flat Girders. Strong, but easy to get nuts inside for all the cross-bracing girders.
- The structure is stronger than necessary – is this classical Victorian engineering, or a scale model of a proposed invention?

How do we program Gargantua?
- A plan of the block structure is drawn on graph paper.
- Co-ordinates (in 3 dimensions) are plotted for each block’s start and end position.
- A table is calculated, showing the necessary changes in co-ordinates for each block move, the horizontal and vertical distances they need to travel, or the rotational changes in the jib or the grab.
- These changes are converted into the numbers of motor rotations required for each of the Gargantua’s motions (hoist, traverse, grab etc) to bring about each block-move. E.g. from here to there will require 488 motor revs to be directed to the trolley drive.
- The ‘program’ is written out as a schedule of events coinciding with the overall number of motor rotations, a bit like the Multimap directions you can download – travel for 2.7 miles then turn right; another 1.4 miles turn left etc.
- Each ‘event’ is an engagement or disengagement of giant dog clutches in the Gargantua’s gearboxes. Small holes in the paper tape trigger all this. But how do you keep up this accuracy? Aren’t there cumulative errors? No, by using Gargantua’s various end-stops now and then in the program, you make sure that, for example, the jib always starts rotating from a fixed start point. When the grab is lowered, you arrange for the program to give a few more revs of the motor than are really needed – Gargantua will detect when the block reaches the ground or lands upon another block and then disengage the drive locally in the jib gearbox so there’s no danger of the cords going slack.
- Several shorter motions can happen simultaneously during a longer one. Example, while the trolley is travelling out towards the end of the jib, the jib can be swinging towards the drop zone and the block can be spun to the correct angle. If you want to show off, you can arrange things so that everything happens at the very last minute, just before the block touches down. This all saves time – only a skilled operator can do it manually.
- Yes it would be easier with a laptop, but where’s the fun in that? But I would like to use a PC to help generate new programmes and try them out before committing them to the paper tape.

Let’s look at some of the Gargantua mechanisms. They’re fairly unique in Meccano.

A **five-digit counter** helps prepare the punched tape. It’s a simple design, much like the old-fashioned electricity and gas meters: a row of dials showing thousands, hundreds, tens & units. Five dials 2½” apart fit exactly across a frame of 12½” Girders. Each dial has a 10:1 reduction driving the next one.

A **locking lever frame** controls all motions. Without the programmer attached to them, the levers can be worked manually – forward, neutral, & reverse. All the levers must lock automatically in each of the three positions. This is achieved by a spring-loaded strip forcing a bolt into one of the three central holes on each curved strip that guides the lever. The operator has to squeeze each lever before it can be moved – a great safety feature.

There are **mechanical limiters** on all motions. Many Meccano cranes now have slipping clutches or micro switches to prevent unwanted mishaps like the string coming off. (Believe
me, you don’t want the string to come of a Gargantua!). Gargantua only has one motor, so that mustn’t be stopped by any switch, except in an emergency. Slipping clutches could also be a problem because the programmer, the crane and the motor all have to be locked together as part of the drive chain in order to put the blocks in the correct place. Bill Taylor’s solution to this was to fit mechanical sensors to each of Gargantua’s five motions, which come into action if either extreme of travel is reached. A simple one to see is fitted to the traversing trolley on the jib: at either end, spring-loaded levers can operate a linkage acting directly on a lay-shaft in the transfer gearbox between the central drive shaft and the trolley. So even if the operator – human or robot – leaves the control lever engaged, no harm is done. In fact it all helps get the motions back to a start position. What is really clever is that when you reverse the drive, Gargantua happily lets you come back the other way from the end-stop without any kind of re-setting. If you do this with micro switches, you need diodes or lots more wire and switches. Very un-Meccano!

In the programmer, **controlling the paper tape** is quite a challenge. When the drive is engaged to start the paper moving, a number of other things must also happen together: a light brake has to be applied to the feed spool of paper; a brake on the take-up spool has to be released; and the hole-detecting electric wipers have to be lowered onto the paper. All this happens by throwing a single lever, which is attached to a single axle rod. On this rod are a number of eccentrics, each of which will activate a particular operation. Another eccentric is spring loaded in order to give an over-centre action – engage or disengage – nothing in-between. This is a great way of making good use of the eccentrics in your No.10 set.

No other crane, before or since, has had **lifting tackle** like that of Gargantua. Without it the ground-based levers and automation cannot work. The tackle has to be able to grab and rotate the wooden blocks. Each of these two operations can be done through a blue 2” pulley at either side of the tackle. This means that the tackle is suspended by two loops of cord, which are in fact endless loops (a bit like those you’d use to open Venetian blinds) passed back to wooden drums in the jib gearbox. Notice that they’re mounted vertically, the same as most of the shafts and controlling linkages from below, which keeps things simpler. The problem is: What happens when you want to move the traversing trolley in or out? And what happens when you want the grab to go up or down? Look at a normal trolley on a normal crane: when either of these things happens, the pulleys on the tackle block start to rotate. That’s no good for Gargantua because the grab could open or spin, and we don’t want it to yet! The solution lies in the two extra trolleys running above the normal (i.e. lowest) trolley of the jib. The central trolley compensates for any movement of this traversing trolley, i.e. the one carrying the grab. The upper trolley interrupts the two endless loops on their way back to the winding drums, so that they can be extended or shortened in unison to bring the whole grab tackle up or down. A heavy-duty block and tackle (using 3 ½” Pulleys) is used to move this top trolley.

**Single Motor Operation.** As we’ve seen, one motor drives everything, including the programmer. If you have a separate motor for each motion, (which would have been quite costly when Gargantua was built) you need lots of wires and switches. If you then want to automate a multi-motor robot, you really need to arrange some feedback device to let the programmer know when each job has been done. It’s risky just to rely on timing devices – five seconds of travel here, 8 seconds of hoisting there – this can be a bit hit-and-miss. If you use just one motor for everything – including the programmer – you can get away with very little in the way of feedback devices.
**Power-assisted gear-engagement.** Our single motor has to run constantly, if only to keep the paper tape moving. How do we engage each of the five crane motions? One possible solution might be to have solenoids to move the control levers forwards or backwards. The problem with that is you’ll need ten solenoids and – assuming you can get them – they’ll need to be pretty powerful to work through all the linkages up to the jib gearbox. You could try putting the solenoids up there, (you can see it’s a bit crowded already!) but then you’d have to build some multiple slip-rings to get the power cables to the top, unless you want the rotating jib to tie them in knots.

Bill Taylor made his own solenoids, which are simply electromagnetic coils that can pull a rod about half an inch when they get energised. His coils were similar to the pre-war Meccano Electron coils. I used the modern Elektrikit coils which are just the right size.

But Bill’s solenoids don’t engage gears or clutches – they’re too weak to do that in a big machine like Gargantua. Instead, they’re part of an elegant – if extravagant – mechanical lever-pulling device: Take a common or garden differential, like the one you’d have in the back axle of a rear-wheel-drive car. Imagine the car jacked-up so the wheels can spin freely, but there’s no drive shaft connected to the differential. Apply a gentle brake to one wheel and start turning the other one. What happens? The differential cage starts to spin. This is the Gargantua programmer waiting for instructions. Now poke a screwdriver through a hole in the differential housing. Instantly the spinning cage is arrested. But the motion has to go somewhere, so it overcomes the light brake on the other wheel. This wheel turns for a quarter turn pulling or pushing a lever – with great force – to engage a clutch in the machine of your choice. After the quarter turn of the wheel, that jamming screwdriver is magically flicked out of the differential cage and the wheel can turn no more because power is directed back to spinning the differential. That roughly describes what is happening in the Gargantua programmer. Every time a hole is detected in the paper tape, a solenoid is switched on briefly, and it causes the spinning differential to jam, the same as in the screwdriver analogy. The lightly braked wheel at the other end is one of these red Face Plate wheels, which pull or push the control levers. The whole mechanism is repeated for each of the five motions. That’s twenty Bevel gears used up!

I’ve added a set of remote push buttons to trigger the solenoids without the paper tape running, so I can still operate Gargantua manually. When the solenoids fire and the lever-pulling happens, you can hear the pitch of the motor drop slightly, which tells us that some serious work is being done somewhere in the system!

Some of the peculiar challenges in constructing Gargantua:

- Getting hold of enough parts. Forty Bevel Gears alone! I have a very supportive family.
- Finding a motor big enough. My old Ford Sierra was going for auction, so nobody noticed the auxiliary cooling fan motor had gone missing. It draws up to 6 amps. This is a lot less hazardous than using a tenth of a horsepower mains motor like the original.
- Working out the inner parts of Gargantua, which were never photographed.
- Reproducing homemade electrical parts in modern Meccano. I used 13 Elektrikit parts in the programmer, which was quite easy.
- Drilling big holes in big blocks of wood.
- Making knot-free joins in endless loops of cord.
- Calculating where to cut holes in the paper.
Gargantua is an early example of Meccano being used to prototype a complex new machine, though not the first. In 1934, at Manchester University, a sophisticated Meccano differential analyser (a sort of analogue computer) was produced by Hartree & Porter. Coincidentally, details of it were published just before Bill Taylor began his tour of Europe. Perhaps he visited it? After all, his grandfather James was a former student at Manchester.

Gargantua is a masterpiece of Meccano design. It must have been thought out fully before construction – my own creations often tend to ‘grow’ as I have to fix unforeseen problems. Bill Taylor seems to have had that rare ability to foresee possible problems and design them out before they ever get built. Any rebuild is so time-consuming and annoying. Gargantua was the result of three years work. And don’t forget, Bill Taylor was studying for his degree at the time.

Gargantua deserves a place in the history of robotics and computing, not just Meccano! It really ought to appear in the online histories of significant dates in the development of robotics. Who was Seward Babbitt anyway – you won’t find anything more than a couple of sentences about his automatic furnace crane on the Internet, and not a single picture! (Was that a hoax?!). Later in 1938 Willard Pollard & Harold Roselund produced a programmable paint sprayer for the De Vilbiss Company. But it took another quarter of a century for General motors to install the first industrial robot on a production line.

* * * * *
SKEGEX 07

by

Angus Plumb

A report on the 26th annual exhibition of the North Midlands Meccano Guild held in the Embassy Theatre, Skegness, on 29 & 30th June and 1st July 2007.

The elements did not smile on Skegex 07. The ideal weather would be warm and fine enough to entice the day trippers out to Skegness, these resorts can no longer depend on people staying for a fortnight, but not settled enough to have them spending all day on the beach. Both days I was there the day did not start promising and the public were noticeable by their absence in the town. Nevertheless there was a steady trickle of visitors in the Embassy, and there was plenty for them to see.

This year there was no blockbuster to compare with John Thorpe’s Tornado, but the tables were well filled with a variety of Meccano building, from the simplest to the most complex, certainly something for everyone.

In the foyer was a model of a Bailey Bridge Erecting Vehicle, modelled in large scale and in yellow plates by Peter Pyefinch and getting appreciative comments from the punters coming in to see what the board outside advertizing a Meccano Model Exhibition had to offer.

Once in the hall, past the ladies taking tickets and selling raffle tickets and the ‘Stewards Enclosure’, Dave Bradley presented a Heavy Haulage Tractor Unit in the Yellow that was much in evidence this year. He claimed to have assembled this impressive 1:10 scale remote controlled model in three weeks. Geoff Bennett was next, demonstrating a pair of escalators, (in red and green) one going up and one going down. In between tweaking the complex mechanism to cure the occasional jam he was pleased to point out the difficulty of keeping the handrail in step with the stairs. He took the precaution of using belt drives so that his motors did not burn out if the mechanism stuck.

Chris Harris displayed a large yellow Dalek that threatened to exterminate visitors as they passed. Fortunately the threats proved idle. This model shows how conical discs can be used to good effect in decorating the bodywork. Dennis Remnant presided over his model of a Franco-Crosti boilered Class 9F freight locomotive in re-sprayed black to match the prototype. This model is based on MP76 by Paul Joachim and Philip Webb. Some non standard work was involved in the piping and the smoke emerging from the unusually positioned chimney on these engines where the heat from the fire is used twice. This was a fine model, but unfortunately it had developed a fault too soon before the exhibition and was not operating.

Barry Wilcox, possibly known to those of us who dabble in eBay, had a pair of radio controlled Earth Moving Machines in highly appropriate Yellow a Terex TS-40 Coal Scraper at 1:10 scale and a Volvo A35C Dump Truck at 1:11. This was a fine pair of models from a newcomer to the show scene.
Roger Thorpe presented the icon of ‘50s Meccano, the Block Setter from the Pinyon Instructions Book cover, in authentic red/green and with all functions driven from a single motor. Alan Scargill, one of the local boys, displayed a selection of models including a Vertical Steam Engine in yellow plates and green strips, a Vertical Pumping Engine in more conventional red and green, also a Lorry Mounted Breakdown Crane and a Beam Engine. He also had a selection of used parts for sale at good prices, including some less common items.

Stuart Borrill, ably assisted by his wife, had his usual selection of well made brassware, including replica parts and compatibles. His prices are still very keen. He also displayed a particularly attractive (non-Meccano) chess set machined in coloured metals to distinguish the two sides.

Henry Harbin presented a large model of the first ever motor car (1885 Benz), using Meccano and wood strips for the seat and footboard and spoked wheels made up using wire.

Gregg Clarke displayed a Liebherr LR1280 Lattice Beam Crane at 1:24 scale in blue and yellow. This was a fine representation of the type of crane often seen on low rise building sites.

An impressive stand formed the centre piece of the back wall showing off examples of the current range of sets and the models made from them. Nikko appear to be making strenuous efforts to position Meccano in the modern toy market. Much criticism could be heard in the hall on the lack of progression and compatibility of colours between sets. It has to be said that these comments came from the upper end of the age range of those present. A model of King Ghidora, a three headed dragon of oriental mythology, had been assembled and placed in a prominent position on the stand of Nikko products. It is understood, however, that the company do not propose to release this model to the western market as they suppose there is insufficient understanding of the story involved. Nevertheless the set contains some interesting parts as the model is powered and articulated.

Wendy Miller had set up her usual two tables of parts, one of plastic and one of metal and was inviting kids to try there hands at modelling in Meccano. The tables were not empty on any of the several times I passed in the course of Friday and Saturday.

Bob Miller displayed a Ball Game, 3 Uni-cyclists and a remote controlled Racing Car assembled from several, mainly recent, colour schemes.

Robin Johnson had laid out his regular display of Constructor Quarterly back numbers and related publications and was as usual deep in conversation with various sages of the hobby. Peter Pyefinch also had a display of paper rather than metal, in his case a collection of post cards illustrating Meccano.

Michael Whiting presented two Orreries, based on MP173. These constructions representing the relative motion of the planets and other heavenly bodies fascinate Meccano modellers with the need to produce various gear ratios. Needless to say, the planets themselves tend not to be standard Meccano!

One of the highlights of this years show was Michael Whiting’s model of the Lady Isabella Waterwheel, the Laxey Wheel, in the Isle of Man. Michael modelled the aqueduct that
supplies the wheel, making an impressively long model. Michael also displayed a Steam Roller in red and green and a representation in Meccano of the London Underground Map. Some repainting had been unavoidable to represent all the lines. He had set a small quiz to entertain the spectators viewing his somewhat static display.

Tim Roylance was showing a model of the Steam Locomotive ‘Lion’ in zinc and red parts. This was an early 0-4-2 engine of the Liverpool and Manchester Railway that was still able to steam in 1930 for the centenary of the opening of the line.

John MacDonald had a display of the military models for which he is well known. This year he showed a Tank Transporter Tractor and a Rocket Carrier, both well detailed models in army green parts.

John Thorpe was in the corner below the stage in place of Tom MacCallum this year with his range of used and replica parts and some bargains in Meccano Magazines as he is keen to dispose of his collection. John stays in North Derbyshire not far from the reservoir that was threatening to self destruct and knows it well from its attraction to watersports enthusiasts.

Peter Goddard somewhat dominated much of the space in front of the stage with a very large model of a 100ton Floating Crane. He must be well down on his suspension when he carries it around.

Pat Briggs was undaunted by his large neighbour and displayed his fascinating Astronomical Clock. The 14 dials show:

1. Armillary sphere
2. Angle of the horizon of sunrise and sunset (the azimuth)
3. Hours of daylight, times of sunrise and sunset, equation of time
4. Simple calendar
5. Sundial time (true solar time)
6. Greenwich mean time (mean time for longitude 1°W
7. Lunar/solar eclipse prediction
8. Seconds
10. Hours to next high or low tide
11. Aspect of the circumpolar stars. Sidereal time.
12. Earth Globe
13. Moon phase ball
14. Celestial Globe
The MC (Mike Cotterill) presided over the NMMG stall with back numbers of the Meccano Newsmag for sale. Mike also displayed a model of an LT&SR 4-4-2 and a freelance 0-4-0 in yellow parts. Marion Cotterill, apart from holding fort at the door, displayed a number of small(ish) models including the Empire State Building, Eiffel Tower, Tower Bridge and Big Ben from the recent ‘Landmarks of the World’ sets.

John Reid of the Midlands MG presented a display of aircraft including a DH2, a Fokker D1 Triplane and an SE 5a.

A Ruston Bucyrus 100RB, a piece of earth moving plant to those not versed in Civil Engineering speak, was shown by S Pashly, modelled in yellow and green parts.

Brian Ashton is another regular at Skeggie with his Arcade Games including a Racing Car game, the point of which I failed to gather, although it appeared to involve steering a static car on a moving track. He also had his Allwin game that was far from on its first outing, a Fontascope which appeared to be a sort of ‘What the Butler Saw’ animation of a roadman with a jack hammer, and a Loom that he claimed to be prepared to demonstrate but was always too busy elsewhere.

David Northcott had one of the novelty models that are always fascinating, a Great Barracuda constructed in bare metal plates. Unfortunately the shiny metal, lighting and dark table cloth made this a particularly difficult model to capture on photograph.

Willy Dewulf, visiting from Marseille, demonstrated his Liebherr SE25 self erecting crane, a model of a piece of construction plant that almost literally pulls itself up by its own bootstraps. He also had a Hi-ab type truck loading sections onto a representation of a steel framed building in course of erection. He had a remote controlled Cargo Boat docking and leaving a quay and modelled, appropriately, in French Blue parts. He also had a 1913 Meccano/Marklin set for sale.

Tony James of the NMMG showed a development of the Optare Solo bus from MP167 in a longer version than we saw last year. This is in keeping with prototype practice, the vehicle is available as mini, midi and standard bus. As Tony pointed out, the ‘Solo’ refers to the floor being so low wheelchairs can access the vehicle with ease. Just to prove the point Tony had modelled a wheelchair in Meccano and had it placed in the saloon.

Rob Mitchell had his rather gruesome gallows in which teddy bears act as executioner and victim. It seemed to please a lot of young boys. I can sympathize. I seem to remember thinking it was fun to hoist my sister’s dolls with my Meccano cranes. I never could understand why she didn’t share the fun.

Mike Hooper showed his version of the magician, a Tommy Cooper lookalike producing a rabbit from a hat, an entertaining piece of animated modelling developed from an original from the blue/gold period that was displayed last year.

Ivor Ellard displayed the Meccano Canary. The story behind this model of a yellow bird in a cage is an early example of Health and Safety at Work, the cage was placed in the paint shop at Binns Road, which of course needed a controlled environment, and when the bird fell off the perch it was time to open the windows.
Terry Allen showed the front end of a Citroen Chassis with all links and mechanisms carefully modelled.

Eddie Oatley presented a Hunslet Austerity 0-6-0 Saddle Tank locomotive in yellow.

John Turnbull displayed a Vertical Turning and Boring Mill. Although not so fully operational as we saw it last year this model, presenting a variety of cleverly constructed components and based on an article in the April 1954 MM, was certainly not boring.

Nick Rodgers had a very evocative freelance lorry based on a Foden S18 flat-bed with chains. This was modelled in dark red/green repainted parts and was reminiscent of the sort of Dinky Toy my pocket money never seemed to run to.

Another Ivor Ellard model was a Meccanograph using four colours simultaneously.

Next we saw a crane modelled in red parts loading rice into a yellow hopper and 0 Gauge wagons modelled in Meccano running on Hornby track.

Howard Somerville appeared to have abandoned his zinc/yellow Hydraulic Lift or I might have been able to tell you more about it.

John Sleaford had a table of aircraft models including Spitfires, Concorde and Hawks from recent sets.

Peter Sleaford showed a Meccanograph from an article in CQ35, originally produced by the Nightingale family.

An interesting selection of small models was on the next table, assembled from recent sets by a member of the SE London MC and including a Dragster from a ’78 set, an Elephant from Motion Systems 8540, a Racing Motor Cycle from Design Set 1, a small Digger from one of the sets sold through M&S and a small Helicopter from a French Set. Good encouragement to the beginner to look around at what is on the market.

An Arnfield Clock was displayed by Co Stevens, built to a design by Michael Adler. Always a fascinating model this.

Kelvin Freeman had some real nostalgia on display with his Blue/gold Roundabout with Aeroplanes and a Car on a matching Blue/Gold Turntable. He also had some Aeroplane Constructor Set Models. Belgian Harry Marien presented a diorama of a crippled Spitfire landing at Tangmere with other planes under camouflage netting. Next came a substantial Gasometer with each cylinder displaying a different colour scheme.

More models by Alan Scargill were on display next. A Coles Crane in dark red/green and also a Roundabout with Aeroplanes. Tony Parmee, a keen exponent of the advantages of limiting model building to the constraints of Outfit 10, this year showed Flying Boats.

Guy Kind’s Caterpillar 789C Mining Truck in realistic Blue/Yellow/Red is featured in CQ77. Guy continues the European connection, he is from Luxembourg and is a regular visitor to Skegex with his excellent machines.
John Ozyer-Key is another regular visitor. This year he presented a model of the Fell type Diesel Locomotive that was tried out by the LNER as one of the early attempts to apply diesel technology to the railway. The prototype was not a success but John’s model provides a fascinating display of the complex assembly of differential gearboxes that were at the heart of the design. This model makes the point that it took mechanical engineers a few attempts to get the hang of the different response of the internal combustion engine to the steam units they were familiar with.

P James displayed a pair of muck shifting machines in realistic Yellow, a Caterpillar 245 Excavator and 769C Dump Truck both at 1:10 scale and provided with engine sounds by an ingenious device the principle of which is similar to the Musical Box.

Ron Gee presented a Schools Class 4-4-0, modified from the familiar Outfit 10 model and built in Yellow. One wonders which company had purchased it from the Southern! A Cliff Railway was on show next, modelled in this year’s ubiquitous yellow, by Dennis Latham.

The Nightingale family presided over a display including a Fairlie type Steam Loco, such as might be seen on the Ffestiniog Railway, from MP164 and complex Meccanographs, or ‘Spiral Guilloche’, based on Konkoly’s originals, but much modified to produce the most intriguing patterns.

Chris Bourne was happy to explain the theory of his Scull Saw, better known to us as a jig saw, with which he was producing ‘Designer’ puzzles based on covers of Meccano magazines.

Tom McCallum displayed an Automatic Gantry Crane. Roger Marriott presided over a Car Chassis, the Model of the Month for January 1957, and set up as a Dealer’s Display Model.

Roy Whitehouse showed an Oil Field Pump, a form of Beam Engine, in red and green.

Mark Robson had a Logging Tractor and Trailer.

The Empire State Building, complete with King Kong, aeroplane and starlet were modelled by David Hobson. He also showed a Doxford Opposed Piston 2-stoke Diesel Marine Engine in a 3 Cylinder configuration dating from 1935.

Frank W Weber, visiting from Germany, showed a fine model of a D-Rad M23 motor cycle dating from 1923. He also presented a River Steam Boat.

A couple of versions of Emmett’s St Torpids were on display, one in blue/gold and another in yellow and green. I was unable to discover who had built them. This is the sort of thing Dave Taylor used to mount before he absorbed all his efforts into dealing.

Paul James demonstrated one of the novelty models, a Clock with a Unicyclist riding around it. Tony and Maurice Rednall, regular visitors, had set up a Back Hoe Excavator loading gravel and plastic pipes by remote control and including engine sounds. Modifications are under way to remove the need for manual intervention between digging and hoisting modes.

Ian Mordue, one of our colleagues in the NEMS, presided proudly over his model of the 1922 Stothert & Pitt Titan Block Setter built for Port Elizabeth. To provide a compact model Ian
had used zinc and red narrow parts, with a single (non-Meccano) motor driving all functions through complex and very smooth running gearing. Ian had some motors for sale. He backed up his sales pitch by explaining how he had sold his previous South Shields Block Setter for more than enough to buy the parts for the current model.

Ian was surrounded by the Rednalls who had a further display of a complex Novelty Ball Roller and a representation of a Detent Escapement for a Chronometer. No doubt someone will be in a position to explain how such a device works. Perhaps if I understood what ‘detent’ means I could grasp the principle more readily.

Tony Homden put on a display of Military Equipment. I have to admit that by this stage in the day I was beginning to suffer from exhibition fatigue and the subtleties of the pre and post war army green, referred to by Michael Denny in his CQ article, escaped me.

I was, however, impressed by the model of the King’s Lynn Custom House in Zinc and Yellow modelled by Bernard Shaw, another NMMG member. Models of buildings are a rather unusual subject for Meccano but this was a well thought through construction with some fine detailing.

Roelf Valkemma was visiting from Holland, where he estimates there are 600 active Meccano Society members. He was displaying a Transporter Bridge, not strictly according to any prototype, but demonstrating all the essential features of this type of structure. The model was built in nickel parts with a period vehicle waiting on the roadway. Roelf was considering an automatic reversing device so that he did not have to be present the whole time while it was operating, but had not yet come up with a satisfactory solution that would not be obtrusive in an otherwise realistic model. He was also showing a Mantel Clock in blue/gold styled very much to the period from which the colour scheme dates.

Peter Pyefinch, who’s Bailey Bridge erector greeted visitors in the foyer, had more large vehicles in the hall, a Unipower Heavy Haulage Tractor and Goldhofer Bogie Trailer Unit, in yellow, as used by Alsthom to move large electrical equipment.

The Way family, members of TIMS, had a display of large and small models including a Coles Crane and an 8-wheel Lorry in zinc/yellow, a Tractor in red/green and models assembled from 2930 & 2940 Sets.

Michael Molden showed a large and finely detailed Scania Tractor Unit in white plates.

NEMS were as usual present in strength. Apart from Ian Mordue, Roger Burton had a Congreve Ball Rolling Clock, not an accurate time-piece, but a fascinating display model. John Herdman showed an Olymbus, a hybrid diesel/electric vehicle in the yellow colours of his local Tyneside operator. This vehicle was originally built by ‘Designline’ a New Zealand company for the 2000 Olympics in Sydney. Barry Richardson presented a Small Beam Engine. Brian Chaffer had a Triple Expansion Steam Engine and a double-ended ‘Fairlie’ type steam locomotive. Dave Harvey was there with his Saxon Centre Engine, a type of steam engine used in the centre of fairground displays to drive the ride, power the lights and play the organ. He also showed an Impulse Inching Clock. Joe Etheridge presented a Beyer Garrett 2-6-2 2-6-2 and a Shay Engine as used by American loggers where the track was not level enough for conventional engines to keep their footing. Several NEMS members are lined up for an appearance at Scone in September.
Our own Ken McDonald presided over his Centrifugal Intermittent Motion and a red/green Blackpool Tower. I presume my opposite number preparing his report for CQ must have found the exhibition fatigue coming on at this point as Ken’s display is dismissed as ‘one of those Konkoly-derived swinging pendulum jobs’. Alan Blair had managed to coax his Land Rover from Perthshire to Skeggy, bringing with him the Gallopers he is steadily developing, the engine mechanism in the centre is now functioning, although I did not press him on whether he is basing it on Dave Harvey’s model or not. The lights are in place, but not very effective as the canopy is yet to be fitted. Alan was off to see Stuart Borrill about more brassware when I spoke to him. George Roy of NEMS completed the line up on the floor of the hall with his Tunnelling Machine in dark blue/yellow.

On the stage Mike Rhoades was performing like an old hand with his excellent stock of the standard parts range in both new condition at good prices at the front under the giant Girder Frame that dominates his stall, and well used in the bargain basement at the rear. As usual he had a display of sets and the less common parts. I managed to add two 1920’s MMs and a grey Digger Bucket to my collection. Mike’s wife Carole was unable to accompany him this year as she was in hospital for tests on the condition that has been her handicap for some time now. Mike was not, however, short of sympathetic helpers.

Ken Senar and John Bridger were regulars whose health also prevented their attendance this year and for whom a speedy recovery is to wished.

On the other side of the stage Dave Taylor performed with his usual ton or more of largely replica and recent parts. I acquired a copy of the recently published ‘Factory of Dreams’ story of the Liverpool factory and was encouraged by the interest in his stock of new sets. In centre stage, Peter Blunden was holding forth over a stock aimed at more specialist buyers, including a range of Aeroplane and Car Constructor parts. Peter was returning to Skegex after an absence of 6 years due to other commitments which had kept him out of the country.

As I made my way to the exit on Saturday afternoon I did not fail to notice that George Illingworth had turned up with his usual collection of Fire Engines.

As usual, modellers were asked to vote for the most outstanding items in the show. The results were:
1st prize, The Sir Alec Issigonis Shield – Ian Mordue for his Port Elizabeth Block Setting Crane
2nd – Barry Wilcox for his Terex Coal Scraper
3rd – Guy Kind for his Caterpillar Dump Truck
4th – Peter Goddard for his Floating Crane
5th – Geoff Bennett for his Escalators

* * * * *

Issigonis Shield winner Ian Mordue with his block setter
FACTORY OF DREAMS

A History of Meccano Ltd. by Kenneth D. Brown

Reviewed by

Tim Edwards

This is a book on Meccano history with a difference. Most books on Meccano Ltd deal with their products and their history. This new book concentrates on Meccano Ltd as a company and traces how it developed and grew from its beginnings as Mechanics Made Easy in 1901 until the Meccano factory closed in 1979.

The book covers the following topics:
1. The development of commercial toy manufacturing in Britain
2. "Mechanics Made Easy" and the early history of Meccano Ltd, 1901-1918
3. Building an empire: Frank Hornby and Meccano, 1918-1936
4. Losing an empire: Roland Hornby and Meccano, 1936-1964
5. In new hands: Meccano under Lines Brothers, 1964-1971
6. The end of the line: Meccano under Airfix, 1971-1979
7. Post mortem

It is a fascinating book, which sheds a lot of new light on Meccano Ltd, and places it in the context of the general toy trade. The book is a must for everyone interested in the products of Meccano Ltd. - Meccano - Hornby - Hornby Dublo - Dinky Toys - etc.

The book is profusely illustrated in both black & white and colour and has 230 Pages

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* * * *
EVERY MECCANO BOY’S DREAM
(Part 1)

by

Douglas Carson

It is often said that every Meccano boy’s dream is to own a No 10 set.

Well, this Meccano boy is no exception and over the last few years I have watched, with incredulity, the prices offered for No 10 sets on eBay, the well known internet auction site. I have observed prices ranging £1,040 to £2,901 depending on completeness, age and quality. The average price, excluding the highest and lowest, was about £1,600. I had never been tempted to bid at this level. However a recent set attracted my interest.

Firstly, it was in my favourite colour scheme; silver, yellow & black. As readers may know, this colour scheme was in production for a relatively short period of time from 1964 to 1969. It replaced the light red and green colour scheme of 1958 although the contents of sets were virtually unchanged. In turn, silver yellow & black was replaced by the blue, yellow & zinc scheme, however zinc plating had already replaced aluminium painting for strips and girders in about 1966. The eBay listing stated zinc parts, although to me they looked like silver in the photograph. Another factor in dating the set was that the small parts tins were in light green and not the clear plastic cases that were usually supplied with this set. This suggested that this was an early set of its period.

Secondly, it was evident from the photograph that most of the stringing cards were present and many parts were still attached to their cards with Meccano cord. This suggested that the set had had little use.

On the down side, some parts were probably missing. The listing stated “It may well be complete except for the manual.” This is eBay language for “there’s a heck of lot of stuff here that I can’t be bothered to check, so don’t blame me if you find parts are missing.” However, after very careful examination of the photograph and comparing it with the photographs of a No 10 set of similar vintage (that I found on the New Zealand Federation of Meccano Modellers web site - http://www.dalefield.com/nzfmm/index.html), I worked out that all the major circular parts were present and that the brassware appeared to be complete. There was also a sprinkling of light red and green parts in amongst the silver, yellow & black. My conclusion was that (other than manuals) this was probably an almost complete set.

Another factor to consider was that the seller stipulated that the buyer must collect and his location was Gloucester. Travelling to Gloucester would be a major expedition but, on the other hand, this might deter other bidders and hence depress the bidding. As it happened, I would be on holiday just after the end of the auction so I would have time to do it. At this point I mentioned my interest to a friend who very kindly volunteered to accompany me to Gloucester and share the driving. The RAC website suggested that it would take six hours to get to Gloucester so it would be feasible to get there and back in a day.
Lastly, as with any other eBay purchase, I checked the seller’s ‘reputation’. This is the aggregate of feedback provided by previous buyers and sellers to this user and is displayed as a percentage rating: where 100% indicates 100% positive feedback. This seller’s rating was 99.4% with no negative feedback in the last 12 months. This indicated a probably trustworthy seller.

As you have no doubt guessed by now, I had convinced myself that I definitely wanted this set so it was time to decide my bidding strategy. As in any auction, it is important to decide the maximum one is prepared to pay. After much thought, I decided my maximum would be £1,600 – the average eBay price for a No 10 set.

The next thing to decide was how often to bid and at what level. One of the most annoying things when using eBay is being outbid in the last few seconds of the auction, particularly when you were prepared to bid a bit higher. I decided that my plan would be to monitor the bidding over the seven days of the auction and then place my bid about five minutes before the end of the auction. My bid would be well above the current one but would still allow me time for a subsequent last minute bid should there be a flurry of bidding at this stage. Of course, this assumed that the bidding had not exceeded my limit and also depended on my internet connection working at the critical time. By the time I came to bid there been nine bids and the price was still well below my limit. The last bid had been two days previously. Encouraged by this I placed my bid at roughly half way between the current price and my limit and anxiously awaited the result. I was now the highest bidder! But would anyone else bid in the closing minutes of the auction? Those last five minutes passed ever so slowly however, much to my surprise, nobody did. All I had to do now was contact the seller and arrange the details for payment and collection.

In the event, this all proved very straightforward. The seller agreed to meet me at a service station on the M5 to the south west of Birmingham, which reduced our journey time to an
estimated five hours. He was willing to accept a bankers draft at the rendezvous and my co-
driver was still happy to accompany me.

We left Glasgow at 07:45 hrs and, with one stop to change drivers, we were at Frankley Services just after 13:00 hrs. The seller was already there and after a quick inspection of the goods (and the cheque) the handover was completed. We set off North and after another stop to change drivers we were back in Glasgow at 18:45 hours. Nearly 600 motorway miles covered in 11 hours including stops at an average speed of 55 mph.

It was as well that we went when we did for less than twenty four hours later the M5 was closed due to flooding and by the following day large parts of Gloucestershire were under water.

To be continued…

* * * * *

AMONG THE MODEL BUILDERS . . . .

BUILDING A COMPACT EPICYCLIC GEAR

by

Alan Blair

I have always been intrigued by epicyclic gears and I have decided that my next model must include one of these fascinating mechanisms.

An epicyclic gear consists of three components – an annulus gear, a planet gear and a sun gear - arranged as shown in Fig 1. In the classic configuration the planet gear is attached to a carrier which is free to rotate about the same central axis as the sun and annulus gears, the annulus gear is prevented from rotating, the sun gear is driven, and the output is taken off the planet gear carrier or vica-versa.

Fig.1 General arrangement of epicyclic gear

Whilst the Meccano 3½" diam. gear ring (Part No 180) would appear to be an ideal part for the annulus gear in a classic epicyclic gear, the resultant gear system is far too large for most models. Many Meccano traders, however, offer a 2½" diam. gear ring which is readily suited for incorporation into epicyclic gear boxes and the resultant assembly is of acceptable size. This gear ring has 57 teeth on its inner diameter which conveniently enables 19 teeth pinions to be used for the planet and sun gears. An epicyclic gear box of this type can be built as follows.
The annulus gear is shown in Fig 2. The 2½" diam. gear ring is carried off a 2½" flange wheel by four ¾" long bolts each of which carries a compression spring with a washer at each end arranged such that the gear ring is gently pressed against the head of the bolt. The reason for the compression springs will be explained shortly. A socket coupling complete with a 1" pulley and rubber ring is also attached to the boss of the face plate.

The assembled epicyclic gear is shown in Fig 4 below. The planet gear has been attached to the output axle rod (which also carries a 2" pulley for ease of identification in this article) such that the rod protrudes by approximately ½". The output axle rod is journalled in two 4 hole strips attached to a flanged plate as shown. The input axle rod (which carries a 1" gear, again for ease of identification) is attached to the ½" wide, ½" pinion such that the axle rod only extends ¼" into its bore. The right hand end of the input axle rod is journalled in a 4 hole strip as shown while its left hand end is supported by the protruding end of the output axle rod, described above, journalled in the bore of the ½" wide, 19 teeth pinion. The annulus gear assembly is free to rotate on the input axle rod and is held in position axially by a collar. Washers need to be placed on the output axle rod between the planet gear bush wheel and the sun gear pinion so that the gear ring of the annulus gear meshes mid way along the flanks of the teeth of the planet gear pinions.

The planet gear is shown in Fig 3 and it consists of two de-bossed 19 teeth pinions and spacing washers as appropriate which are journalled in pivot bolts attached to two diametrically opposite holes in an eight hole bush wheel. (I removed the bosses from the pinions in order to provide a more compact axial arrangement.).

The sun gear simply consists of a ½" wide 19 teeth pinion.
As the two planet gear pinions make two pairs of points of contact between the annulus gear and the sun gear and it is important that care is taken in the assembly of the gear to ensure that everything is concentric and that the axle rods are truly straight. Any inaccuracy in the manufacture of the parts will also be highlighted (Meccano parts were never a byword for accuracy of manufacture!) and the compression springs allow the annulus gear to ‘float’ slightly and a very free running gear system can be achieved.

Whilst on the subject of the planet gears, there is a rule that must be followed when building epicyclic gears which is:

\[
\frac{\text{Sum of No. of teeth on annulus and sun}}{\text{No. of teeth on sun}} = \text{Planet gear factor}
\]

In the gear described in this article, we have: \((57+19)/19 = 4\). This means that any number of planet gears can be used provided that the number selected is a factor of 4 (ie. 1, 2 or 4). A single planet pinion would cause rotational imbalance, whereas 4 planet pinions require a high standard of manufacturing accuracy, hence a 2 planet pinion gear configuration has been selected for the epicyclic gear described in this article. If, say, three pinions had been contemplated for the planet gear the above rule could not have been satisfied and it would not have been possible to get the three planet pinion gears to mesh simultaneously with the annulus gear and the sun gear.

Having built the epicyclic gear and given everything a drop of oil it will be seen that by holding the rubber ringed pulley and turning the input shaft the output shaft turns co-axially and in the same direction with an input/output speed ratio of 4:1. It will also be found that if the rubber ringed pulley is not held, the planet gear simply rotates within the annulus gear and no drive is transmitted. In effect an epicyclic gear has an in-built clutch mechanism and in the next issue of the Newsletter I hope to describe how to utilise this feature to provide a smooth operating intermittent drive mechanism.

As I mentioned at the beginning of this article epicyclic gears are fascinating mechanisms…. an invention of the Gods … what pleasure … what fun!
A NEW SPECIAL MECCANO PART

by

Alan Blair

A short while ago Stuart Borrill called me and during our conversation he mentioned that he was introducing a new part – a universal coupling - to his range and would I mind reviewing it for him which, of course, I did.

Stuart is well known in Meccano circles for the superb quality of his work and his ability to interpret the requirements of our fraternity.

As many of us have discovered the Meccano universal coupling (Part No 140) has a number of limitations. Principal among these are the excessive backlash and its very considerable axial length. I was reminded of these shortcomings when I experienced difficulty in obtaining a smooth up-and-down motion of the horses on my model of a set of four abreast gallopers.

This was traced to the backlash in the Meccano universal couplings which formed part of the drive train for each flight of horses and I eventually eliminated it by pre-loading the cranks axially with compression springs.

Stuart's design of universal coupling has no backlash and is two thirds of the length of the Meccano equivalent. The coupling can also accommodate a 65 degree angular deflection and is an excellent addition to his range of parts.

Stuart’s contact details are:

Stuart Borrill, 70 Lincoln Road, Skegness, Lincs. PE25 2EE
Tel No. 01754 765849

* * * * *

Universal Coupling by Stuart Borrill
MECCANO ON THE INTERNET

In the last issue reference was made to the Online Museum of Meccano parts. We print below one page from the rapidly growing archive which is hosted by the Christchurch Meccano Club of New Zealand. Certain layout details of the page have had to be changed although the information is exactly as found on internet. References in the bottom half can of course, only be accessed on line. The museum can be found at http://www.nzmeccano.com

Part 51: Flanged plates

DATA SHEET

<table>
<thead>
<tr>
<th>PART DESCRIPTION</th>
<th>Introduced</th>
<th>Obsolete</th>
<th>In 1929 No.7</th>
<th>In 1935 Outfit L</th>
<th>In 1955 Outfit 10</th>
<th>Smallest Outfit</th>
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<tr>
<td>51 Flanged plate, 2½&quot; x 1½&quot;</td>
<td>1934</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td>N°4</td>
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</tr>
<tr>
<td>51a Flanged plate, 1½&quot; x 1&quot;</td>
<td>1993</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51b Flanged plate, 1½&quot; x 1½&quot;</td>
<td>1993</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52 Flanged plate, 5½&quot; x 2½&quot;</td>
<td>1911</td>
<td>-</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>N°00</td>
</tr>
<tr>
<td>53 Flanged plate, 3½&quot; x 2½&quot;</td>
<td>1911</td>
<td>-</td>
<td>10</td>
<td>7</td>
<td>6</td>
<td>N°6</td>
</tr>
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The parts

Flanged plates were the first Meccano part introduced that let models be build in a more solid form, rather than being constructed entirely from strips and angle girders. Early outfits had a large number of these plates, but once strip plates and flexible plates were added, the numbers of flanged plates needed was reduced.

It was immediately realised that the 5½" x 2½" flanged plate (part 52) was ideal for use as a base for small models, and one was provided in all the smallest outfits from then on (even the tiny outfit 000 of the early 30's). Only the Pocket Meccano missed out, using part 51 as its base instead for cost reasons.
When first introduced, parts 52 and 53 were called "Large rectangular plate" and "Small rectangular plate". They were renamed to "Flanged plate" in 1913.

**Chronological variations**

Four styles of part 52: 1911, 1927, 1927, and 1934

The most changed part of this group was part 52, the 5½" x 2½" flanged plate. Initially it was provided with two flanges on its long sides (left-hand example in the above picture). In 1927, along with the colour change to dark red, the part had a slot and saw-cut added. The sole purpose of this was to allow the building of a saw bench using the new part 159, circular saw.

At the very end of 1927, the flanged plate gained extra flanges at the short ends, making it considerably more useful. The second and third example in the photograph above both come from a December 1927 outfit, indicating that the changeover was almost exactly at this point. In 1934 the part changed colour, and simultaneously lost the sawcut and slot (right-hand example). It is thought that all dark red examples have the sawcut and slot, and vice versa. The "New Meccano" parts in early red (also known as pea-red) from 1926 have no sawcut or slot, and two flanges.

EMP lists part 51 as being available in dark red, although I don't believe that these exist. Has anyone got one?

The only significant change to part 51 was that it initially had square corners on the flanges (unlike the other two sizes). Early dark blue examples are like this. The square corners were rounded off in 1937.

**Variations and oddities**

Here's a funny one: a part 51 in a blue anodised finish, but it is stamped "Meccano Made in England", so we have to assume that perhaps it's an experimental finish that never made it into production.

*Part 51 in blue anodised finish*
Dealer spare parts boxes

Boxes for parts 52 and 53

The top row shows two examples of boxes for part 53 (a single part in each box), medium red to the left and light red to the right (with the green label). Note that the box is the same size as that used for part 52, shown below.

Individual part numbers

Part numbers for the parts on this page are as follows: Unique part numbers

For identification, each variation has been given a suffix to the main Meccano part number. These suffixes consist of a two-character code for the colour, and if there are many variations, a further number and sometimes letter code to identify each variation. See the bottom of the 'Parts' page for further details.

You don't need to worry what the codes are, just click on any one for a photograph.

The button above turns on and off the display of DMS numbers (where they are known). The DMS (Development of the Meccano System, Hauton and Hindemarsh) published in 1972 and added to in 75 and 82, suggested part numbers for every variation of every Meccano part. These numbers aren't perfect, but they are recognised and also referenced in the EMP (Encyclopedia of Meccano Parts, Don Blakeborough).
### Description

<table>
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<tr>
<th>Description</th>
<th>from</th>
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<tr>
<td>Nickel plated, two flanges</td>
<td>11</td>
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<tr>
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<td>11</td>
<td>.bs</td>
<td>.bs</td>
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<td>Tinmed steel, two flanges †</td>
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<td>.st</td>
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<td></td>
</tr>
<tr>
<td>Early red (pea-red), two flanges</td>
<td>26</td>
<td>.re</td>
<td>.re</td>
<td></td>
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<tr>
<td>Dark red, two flanges, slot and sawcut for part 159</td>
<td>27</td>
<td>.dr</td>
<td></td>
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<tr>
<td>Dark red, four flanges, slot and sawcut for part 159</td>
<td>27</td>
<td>.dr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dark red, two flanges, part 51 with sharp corners</td>
<td>27</td>
<td>.dr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue with gold lines, part 51 with sharp corners</td>
<td>34</td>
<td>.bg</td>
<td>.bg</td>
<td>.bg</td>
</tr>
<tr>
<td>Blue with gold lines, rounded corners to flanges</td>
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<td>.bg</td>
<td>.bg</td>
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<tr>
<td>Medium red</td>
<td>37</td>
<td>.mr</td>
<td>.mr</td>
<td>.mr</td>
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<tr>
<td>Olive green, fewer holes in plates †</td>
<td>39-41</td>
<td>.ma</td>
<td>.ma</td>
<td></td>
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<tr>
<td>Medium red, post-war stamping</td>
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<td>.mr</td>
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<tr>
<td>Light red</td>
<td>58</td>
<td>.lr</td>
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<tr>
<td>Black</td>
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<tr>
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<tr>
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<tr>
<td>White (Space)</td>
<td>79</td>
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</tr>
<tr>
<td>Dark yellow</td>
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<tr>
<td>ALL</td>
<td></td>
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</table>

Please send us pictures of missing parts!
A greyed-out box shows that no part exists for that colour combination.

- Part number codes with a green background have an attached picture of the part, just click once on the code to show a photograph of that part in a separate window.
- Parts marked "†" were temporary or economy parts, or existed only within specific themed outfits. The previous part continued throughout or afterwards.

### Further information

**George Illingworth**  
(at 8:25pm, Tue 7th Aug, 07)

Charles

You are missing the early red with four flanges and saw slots. Your text is misleading because it says that the saw slot came with the dark red. I think they must have had two or three reds almost at the same time.

0

I will try and photograph if you do not have one.

George

Reply: That's interesting, I'd like to see one. I was under the impression that most sources have four flanges coming in in 1928 -- my Dec 1927 one is as early as I've seen. Are you sure you don't have a later 'pre-war medium red' one, which there definitely were for export 1933-on?

* * * * *
Club Meeting, 19 May 2007

The meeting was held in the Scout Hall in Menstrie at 2.30 pm. Members present were Bill Jack, Chris Shute, Jim Gregory, Angela Goodlet, Ian Souter, Bert Hutchings (Secretary), Alan McDonald (Treasurer), Alistair Nicoll (Newsletter Editor), Bob Middlemass, Tim Edwards (Webmaster), Doug Carson, and Robert Jones. There were apologies from Jim Craig, Desmond Smith (who was at the Holyrood Royal Garden Party), Jackie Inglis, Chris Freeman, Jim Berrie, Rod Bessent, Alan Blair, Ken McDonald, and Margaret Tattersfield.

Exhibitions: the Scottish Traction Engine Society weekend at Balado on 12 and 13 May had been well attended, and visited by several members in addition to the exhibitors. Our old Meccano had attracted quite a number of children to play with it on the Saturday. We hope to be at this show next year as well. The NEMS are exhibiting at the Shildon Railway Museum on 27-28 May, the Skegness exhibition is on 29-30 June and 1 July, and Jim Gregory hopes to arrange a charity fund-raising exhibition in Auchterarder on 28 July. Members at the meeting were told of an opportunity to exhibit at the Castle Fraser Steam Fair on 23-24 June, for which to call Alan Blair. In Alan’s absence, it was hoped that arrangements for our exhibition at Scone on 8-9 September were progressing well.

Treasurer: further to our lapsed insurance arrangements, the Secretary reported that the NEMS were insured for their whole year’s activities through the Southern Federation of Model Engineering Societies, for approximately £250 per annum.

Newsletter: the current issue of the newsletter was much admired, and the Editor expressed his appreciation of club members’ contributions to it.

Website: the Webmaster requested members to visit the site and identify the builders of several unattributed models.

Other business: Chris Shute has joined the Telford and Ironbridge Meccano Society, and has exhibited with them. He won their recent tug-of-war competition, and related interesting details of it. Bill Jack proposed a vote of thanks to everybody who had entered a model in this year’s competition for a reversing vehicle powered by a Magic Motor, and this was enthusiastically carried. Finally there was a sincere vote of thanks to Alan Macdonald for organising the use of the hall for the day, and to our two excellent caterers (Chris Shute’s wife, and Ian Souter’s partner).

Bert Hutchings, Secretary

* * * * *
Club Meeting, 19 August 2007

The meeting was held as usual in the Smith Art Gallery and Museum, Stirling, at 2 pm. Members present were Angela Goodlet, Desmond Smith, Margaret Tattersfield, Jackie Inglis, Angus Plumb, Gordon Macmillan, Douglas Carson, Dick Martin, Jim Wood, Jim Berrie, Jim Gregory, Tim Edwards (Webmaster), Bert Hutchings (Secretary), Alan Blair, Alan McDonald (Treasurer), Ken McDonald, Bob Middlemass, Bill Jack, and Alistair Nicoll (Newsletter Editor). There were apologies from Ian Souter.

Exhibitions: Alan Blair reported that most of the arrangements were well in hand for Scone on 8-9 September, namely the marquee, tables, and power supply. The Treasurer would attend to the club shield (from Ed Rebecca), other trophies, and club flyers, and the Secretary will bring our table covers. Angus Plumb had obtained a very large (almost A0) laminated reproduction of a Meccano poster, to attract visitors’ attention along with Alan Blair’s large MECCANO sign. The Scone event is open to SVTEC members on the Saturday from 9 am, and to the public on Sunday from 9.30 am. Severe traffic congestion is normal on the Sunday morning.

Alan Blair regretfully reported that after a verbal assurance from SVTEC that we would be covered by the their insurance, a further enquiry with the brokers had revealed otherwise. The meeting authorised Alan and the Treasurer to obtain the most economical possible cover for up to £2 million of public liability insurance for the weekend. The general sense of the meeting was that annual cover should be obtained eventually, even at a cost of £200-odd as paid by other U.K. Meccano Societies.

Our invitation to the West of Scotland Model Railway Exhibition at Cathcart on 28-29 October has not yet been confirmed. The NEMS exhibition is in Darlington on 10 November, and the Greenock Model Railway Society have invited us to exhibit with them on 10-11 November. Tim Edwards and Douglas Carson planned to attend at Greenock on both days, and other exhibitors would be welcome if they contact Tim Edwards very soon.

Web site: the site now has pictures from this year’s Open Day at Menstrie, and there will soon be pictures from Balado. Members are asked to begin thinking now about a competition for Menstrie 2008, instead of leaving it to the last moment. The Webmaster and the Secretary had each received a complimentary copy of Kenneth Brown’s new book about the Meccano company “Factory of Dreams”, reviewed on the web site and elsewhere in this newsletter, and copies of the book were available for members to see at the meeting.

Treasurer: the Treasurer presented the club accounts for 2006-7 and a budget for 2007-8, as enclosed with this newsletter, and his recommendation of an unchanged annual subscription of £12.50 was accepted by the meeting. The meeting warmly thanked the Treasurer for his continued work in handling these matters, whose difficulty was disguised by their simple presentation. The Treasurer also circulated a list of e-mail addresses for members to confirm.

Newsletter: the Editor expressed his great appreciation for all the contributions to this and future newsletters which he had received from members in response to a request for more of them.

Other business: Alan Blair showed his 4:1 in-line epicyclic gearbox, later to be converted to an intermittent drive, shown and described elsewhere in this newsletter. Ken McDonald had
recently seen an old play on TV in which a hamster cage made of Meccano was featured. Desmond Smith displayed three small models, one of a crown (to commemorate his visit to the Holyrood Garden Party in May and conversation with Prince Andrew), a small Dinky Builder truck, and a neat lorry in dark red and green. Jackie Inglis announced a change of address due to her mother’s poor health. Doug Carson passed around some specimen parts from his recently-acquired No.10 set in the short-lived black, yellow and silver colour scheme of 1964-66, also described elsewhere in this newsletter. He also displayed a simple motorised tumbler for rotating a screwtop jar of small parts in any cleansing solution. Jim Wood demonstrated a mock-up of part of the mechanism of a proposed rolling lift bridge, built around a 133-tooth gear and long rack strip. Other members mentioned that on a larger scale, a non-Meccano rack strip was available to mesh with the large toothed quadrant introduced in 1970. Jim Berrie passed on sad news of our former member Bobby Brown’s continuing health problems. Jim Gregory showed us a motorised lawn mower built from modern parts, and two other small models on the “farming yesteryear” theme. He and Angela had recently visited the Hamilton Toy Museum in Callander, which had now expanded to include some inspiring Meccano items. Tim Edwards brought out three models from very recent sets – two small cars, and a larger radio-controlled one. He said they had been fairly easy to put together, and pointed out the peculiarly-shaped flexible body panels which helped to give the models realism and simplicity. Bob Middlemass passed round a recent news item from the Daily Telegraph which illustrated a large Meccano model of the famous Iron Bridge at Telford, and some Australian club newsletters for general interest and for the possible use of extracts in future newsletters. The meeting finished with a general discussion of the problems found when repainting parts. Several members had experienced bubbling of the paint finish, particularly after stripping with a caustic solution and only rinsing it off. It was found that firm scrubbing, or the use of fine steel wool or emery paper, was needed to remove the last traces of solution.

**Future meetings:** at Stirling on 18 November 2007, then in 2008 on 13 January (not 20 January, due to a prior booking) and 23 March; Open Day at Menstrie on 17 May; then at Stirling on 24 August and 23 November.

Bert Hutchings, Secretary
**ELECTRONIC CONTACT ADDRESSSES**

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<td>Officials of the Meccano Society of Scotland can be contacted by e-mail at the following addresses.</td>
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<tr>
<td>Secretary:</td>
<td><a href="mailto:secretary@meccanoscotland.org.uk">secretary@meccanoscotland.org.uk</a></td>
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