

NEWSLETTER June 2026

Hello Everyone,

We are now half way through the year, the Summer Solstice is on the 21st of this month.

We had a good summer Bring and Brag with projects encompassing the Past (heritage models), Present (motor bike crankcase repair) and Future (micro-controllers intelligently operating an optical measurement apparatus).

Members report a good Pickering Vintage Rally at the showground in May, with a lot of full-size, and model steam traction engines. Whilst not up to the size and range of the pre-Covid rallies, it's looking good for the future.

The PEEMS Barbeque and Social is now only a couple of weeks away (Sunday July 5th), and it's open to members, their wives, partners, friends and family, so we are looking forward to a great afternoon. The details are overleaf, HOWEVER for catering to work well, we need to know how many people each member will bring. If you're coming, please let Colin know as soon as possible. While we hope for good weather, this will be an all-weather event with plenty of shelter from the rain and/or the blazing sun.

Entry is free, as are the barbeque, sandwiches, tea, coffee and cordial, but it will also be a "Bring and Share" event where members bring food to share with others. Donations will be welcomed for a local charity, yet to be decided, but Mike and Pat have always considered their previous garden parties to be an opportunity to give to worthy causes. As well as a food "Bring and Share", if you want, please "Bring a (camping) Chair."

We will soon require your vote on which venue you would like to attend for the annual PEEMS visit. There are three locations suggested, and the links are provided in the Newsletter. This visit is usually within one and a half hours from Pickering, and we will be organising transport for those who don't want to drive there themselves.

We are also hoping to arrange a visit to The Yorkshire Air Museum at Elvington (York) to visit the Halifax III restoration. This will be a special guided tour, but will depend on numbers attending, as the museum is limited by the number of volunteers it can provide.

Before the barbeque on the 5th July, at the Club meeting on the 1st July, we can look forward to Paul Hayward's look at the historic *Rosedale Hill Climb*. Before the current cycling events, *The Rosedale Hill Climbs* were highly popular motorsport and motorcycling events, held annually from 1914 to 1930. Competitors raced cars and motorbikes up Chimney Bank at Rosedale Abbey, North Yorkshire. It is one of England's steepest roads, featuring a 33% maximum gradient. It shares the title "steepest road" in England with Hardknott Pass in Cumbria.

□ Forthcoming Events.

- **Wednesday July 1st** **The Rosedale Hill Climb. A talk by Paul Hayward.**
- **Sunday July 5th** **Summer Social and Barbeque at Croft House. Doors open 12.30pm. Food served from 1.30pm.**
- **Tuesday July 21st** **Workshop Morning.**
- **Wednesday August 5th** **Digital Fabrication In The 4th Industrial Revolution. A talk by Adrian Glasser.**
- **Tuesday August 18th** **Workshop Morning.**
- **Wednesday September 2nd** **Mike Sayers' Trophy and "Bring and Brag" Evening.**
- **Tuesday September 15th** **Workshop Morning.**

Club Evening Wednesday 3rd June ~ Summer “Bring and Brag”

Colin welcomed everyone to the meeting. Jonathan is making progress in his recovery, and the Club sends their Best Wishes to him.

• Annual Club Lunch.

Since the last Club meeting, PEEMS has had its Annual Club Lunch at the Kirkbymoorside Golf Club. Although attendees reported a good lunch and social atmosphere, it was noted that numbers were down around 20% on previous years. The reason may be the day of the week, price or the menu range. The main issue the restaurant has in terms of the menu, is the number of meal portions it needs to sell. For example, they don't want to put pie on the menu if only two people order it. They are flexible, so what the PEEMS committee will do is find out what they could potentially supply, and roughly how many orders of each portion would be acceptable for them to put it on the menu.

• Pickering Vintage Rally.

Colin asked if anyone had been to the Pickering Vintage Rally on May 23rd to 25th at the Galtres Pickering Showground. Peter Bramley said that it was quite good. There were a lot of full-size traction engines there, about forty miniature model traction engines, vintage cars and motorbikes. He was pleasantly surprised and in his opinion it was a lot better than last year, and the event was about 75% to 80% the size of the original pre-Covid rallies.

• George Gibb's 0-4-2T 5" Gauge Live Steam Locomotive.

PEEMS has been advertising George's engine in the last two newsletters. There has been interest from someone outside of PEEMS. It was originally advertised for sale at the Ryedale Society of Model Engineers at Gilling East. There was no interest there, so PEEMS, acting on behalf of George's family has been advertising it themselves. Colin suggested a deadline of the following Friday for PEEMS members to make an offer before approaching the person who had shown interest. **Postscript:** The locomotive has now been sold to an enthusiast in Scarborough.

• PEEMS Members' Summer Social on Sunday July 5th



MEMBERS' BARBEQUE and SOCIAL At Croft House.

Sunday July 5th - Doors Open 12.30.

Food Served From 1.30pm.

Members are welcome to bring:



Barbeque and Sandwiches, with Tea, Coffee and Cordial provided by PEEMS.

It will be a “Bring and Share” event, so salads, puddings and cakes will be welcome.

Please Note: For catering purposes, reply to Colin as soon as possible with the number of people you will be bringing (via e-mail or telephone ~ see Members' List).

The PEEMS Members' Summer Barbeque and Social will be on Sunday 5th July at Croft House where PEEMS has their workshop. Doors will open at 12.30 and the venue will be open for the rest of the afternoon. It is intended that food will be served at 1.30pm.

This is a social event where wives, partners, family and friends can be invited. There is no entry charge, but a donation will be welcome for a local charity.

PEEMS will provide the barbeque food, such as sausages, burgers and kebabs, and there will be a selection of sandwiches, including those for vegetarians. Tea, Coffee and Cordial will also be provided. It's all free!

However, it is also intended to be a “Bring and Share” event where members are encouraged to bring salads including potato salads, puddings and cakes as a “contribution”. If you have a personal “drink of choice” please bring that along too.

Dietary Requirements: Vegetarian sandwiches will be provided, but outside of those, PEEMS advises people to bring their own gluten or allergy free food.

Model and Vehicle Display: For further interest, a model display is encouraged. There will be a gazebo erected with a couple of tables for models. Vintage cars and motorcycles will also be welcomed and they will have priority parking.

Parking at Croft House: If people do bring vintage vehicles, this will mean parking will be very limited. It would be appreciated if Summer Social attendees make use of the local car parks (pay and display) or the free permissible roadside parking in the environs of Croft house.

• Club Visits.

At the last Club meeting, a local Club visit to an engineering attraction, and a more remote visit (within one and a half hours) were discussed. The suggested “remote” visits (with links) were presented in last month's newsletter and are reproduced overleaf.

There will soon be a vote on the preferred visit location. A PEEMS member has come forward to suggest that as he has a licence to drive a mini-bus, That could be an option rather than the usual car-share. Watch this space.

□ Suggested Local Visit.

For the “local” Club visit, *The Yorkshire Air Museum* at Elvington near York is being investigated, with a focus on a guided tour of the Halifax restoration project.

□ Suggested Visits Further Afield.

- **The Bradford Industrial Museum** <https://bradfordmuseums.org/venue/bradford-industrial-museum/>

There is a YouTube video here: <https://www.youtube.com/watch?v=vpEXHcu544U>

- **The National Coal Mining Museum For England** in Wakefield. <https://www.ncm.org.uk/>

- **The Barrow Hill Roundhouse Railway Centre near Chesterfield.** <https://www.barrowhill.org/>

The Official Deltic Preservation Society (DPS) YouTube channel is here:

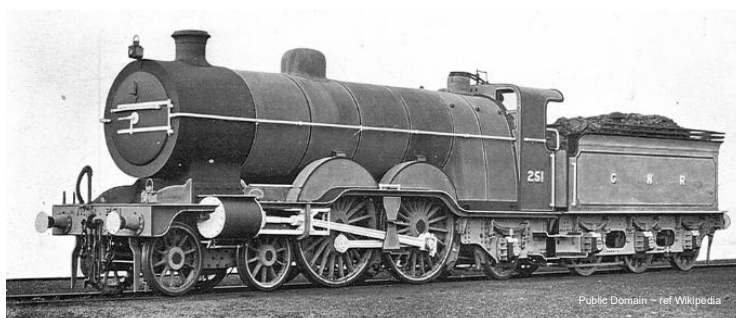
<https://www.thedps.co.uk/post/official-dps-youtube-channel>

• Summer Bring and Brag.

- **4-4-2 Great Northern *Atlantic* Class. 3½” Gauge Tender to LSBC design ‘Maisie’. Colin Bainbridge.**

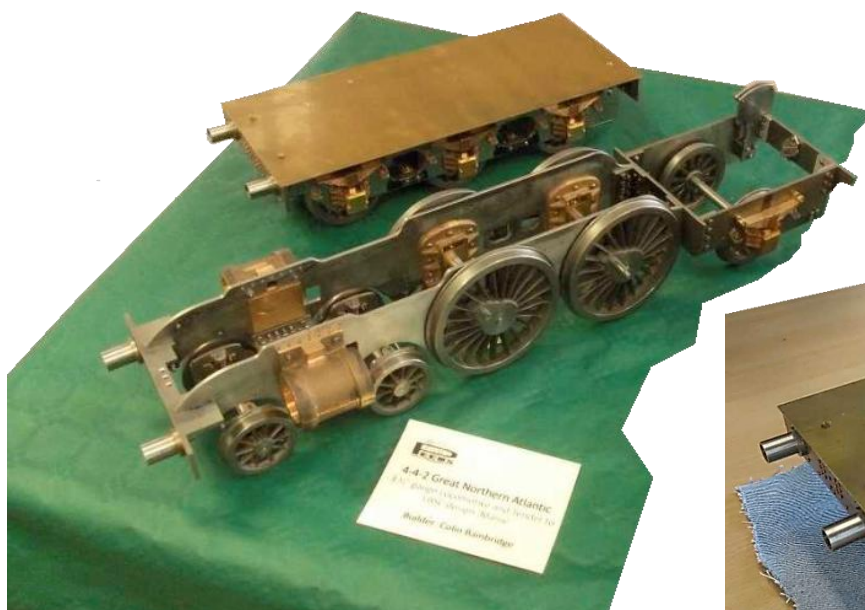
Introduction.

Colin introduced us to the 3½” gauge chassis of the tender for a Great Northern Railway (GNR) 4-4-2 Ivatt “Atlantic” steam locomotive. The colour photo of the tender was taken at the National Railway Museum in York and it has now moved to Shildon.



The model is an LSBC design. LSBC created many model designs for steam locomotives, both 3½” and 5” gauges. Colin started working on the locomotive and tender chassis about thirty years ago, and has been working on them ever since. Both the locomotive and tender chassis are in the same state of construction.

Colin displayed the locomotive and tender chassis at the exhibition when John Arrowsmith from *Model Engineer Magazine* visited PEEMS in May 17th 2022 (written up in the May and June newsletters of that year).

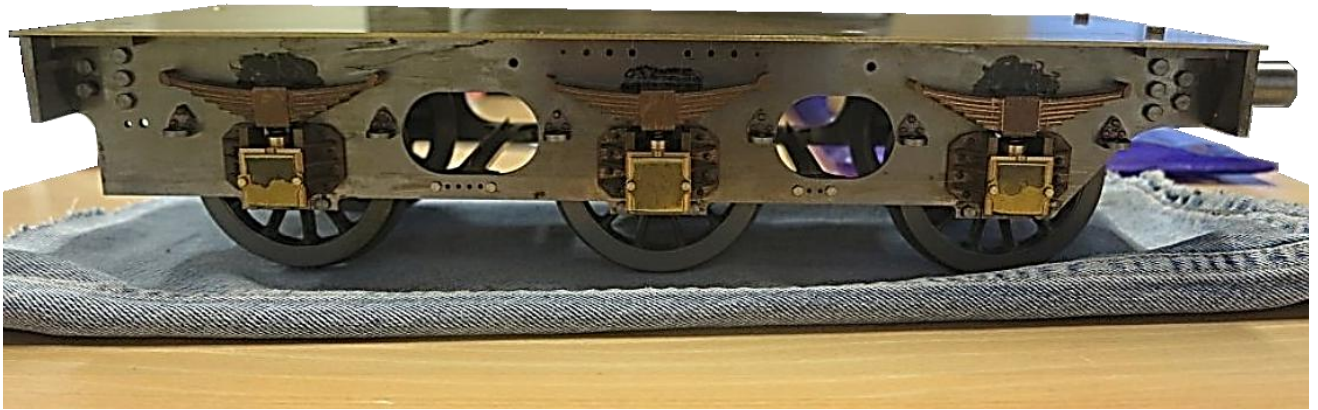


John complimented Colin on his work on the model and took photos of it for his write up of the Club.

On the Club evening, Colin wanted to give some more information on the tender, its construction, and some details of its components.



The Tender.



There are three or four castings involved in the tender chassis, such as the wheel castings, the axle boxes and the horncheeks (hornblocks). The horncheek brackets are gunmetal castings riveted to the frame to provide vertical tracking for the axle boxes.

Dummy Leaf Spring.



Coil spring between the axle box and the dummy leaf spring.

Axle box moves vertically between the horncheek brackets

Horncheek angle bracket riveted to the chassis frame on each side of the axle box.

The problem with the published designs for model locomotives, is that when you buy the castings, they may look-alike but they are not "fine-scale" identical.

Colin knew from the start that he couldn't work "fine-scale" due to his lack of skill but also because of his lack of time. Colin was aiming for a kind of modelling "middle-ground".

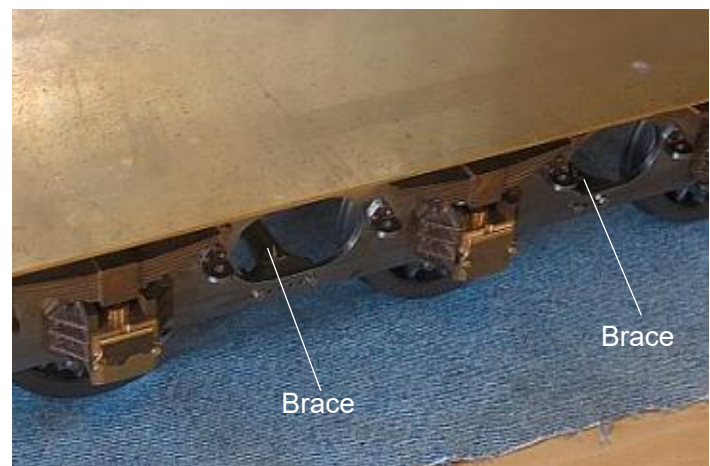
The leaf springs are "dummy" components which are just representations, with the actual damping being provided by a coil spring between the axle boxes and the dummy leaf springs.



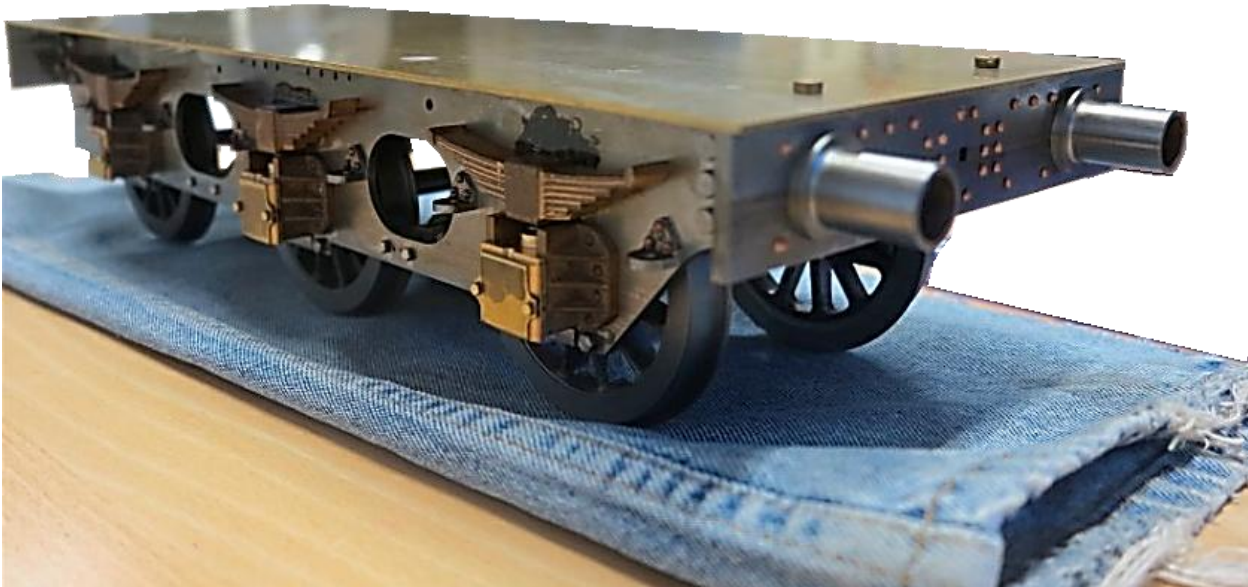
This photo on the left shows one of the dummy leaf springs being machined.

The horncheeks are angle brackets which provide the vertical tracking for the axle boxes. The original axle boxes supplied, were machined so they could move vertically between the horncheek brackets.

In the photo on the right, you can see two cross-chassis braces. These are made in three parts, two outer sections which are screwed to the frame, and a central section. These are made from brass or gunmetal and Colin wanted to solder them together rather than rivet them, but he was concerned that if they were heated too much, they would fall to pieces.



Colin opted for electrical solder, because he thought it would be interesting to see if it would work. And it did! He did a trial piece initially, with two pieces of brass, tinned with electrical solder. He brought them together, and heated them up on a hotplate, for background heat. He then put an iron on top and added more solder so it would flow through the joint. When he tested the joint strength in a vice, even to the point of bending, he was astounded just how strong it was. A very good joint strength can be achieved with electrical solder, provided it is in really good contact with the joint surfaces. As can be seen, Colin had added rivets to the outside of the frame for cosmetic appearance.



For the same reason, Colin has added rivets to the buffer beams to replicate the rivets on the full-size tender (as seen in the photo in the introduction). The rivets on the actual tender are securing the boxwork behind the buffer beams, whereas on the model, the buffer beam is a simple plate with no boxwork behind. Rivets are added for realism. Colin wondered how to do this, and came up with the idea of using copper rivets.

Some of the holes in the model buffer beam are blind but most pass straight through, so it was easy just lightly tapping the rivet shanks over on the rear side. Once painted over, no one will know!

Finally, Colin wanted to show a photograph of the tender frames being worked on, in his first milling machine which was a *Dore Westbury*. It is quite a small milling machine, and was the first "Milling Drill" of its type.



It was designed by Edgar Westbury who became a very prolific writer for *Model Engineer Magazine* between 1930 and 1960. This was an era when there was no other way to acquire these bench mounted mill drills other than building them yourself. Otherwise, you would have to spend a lot of money on industrial equipment.

It was a very popular design for its time especially amongst model engineers.

Nowadays, it is easy and relatively inexpensive to acquire precision engineering.

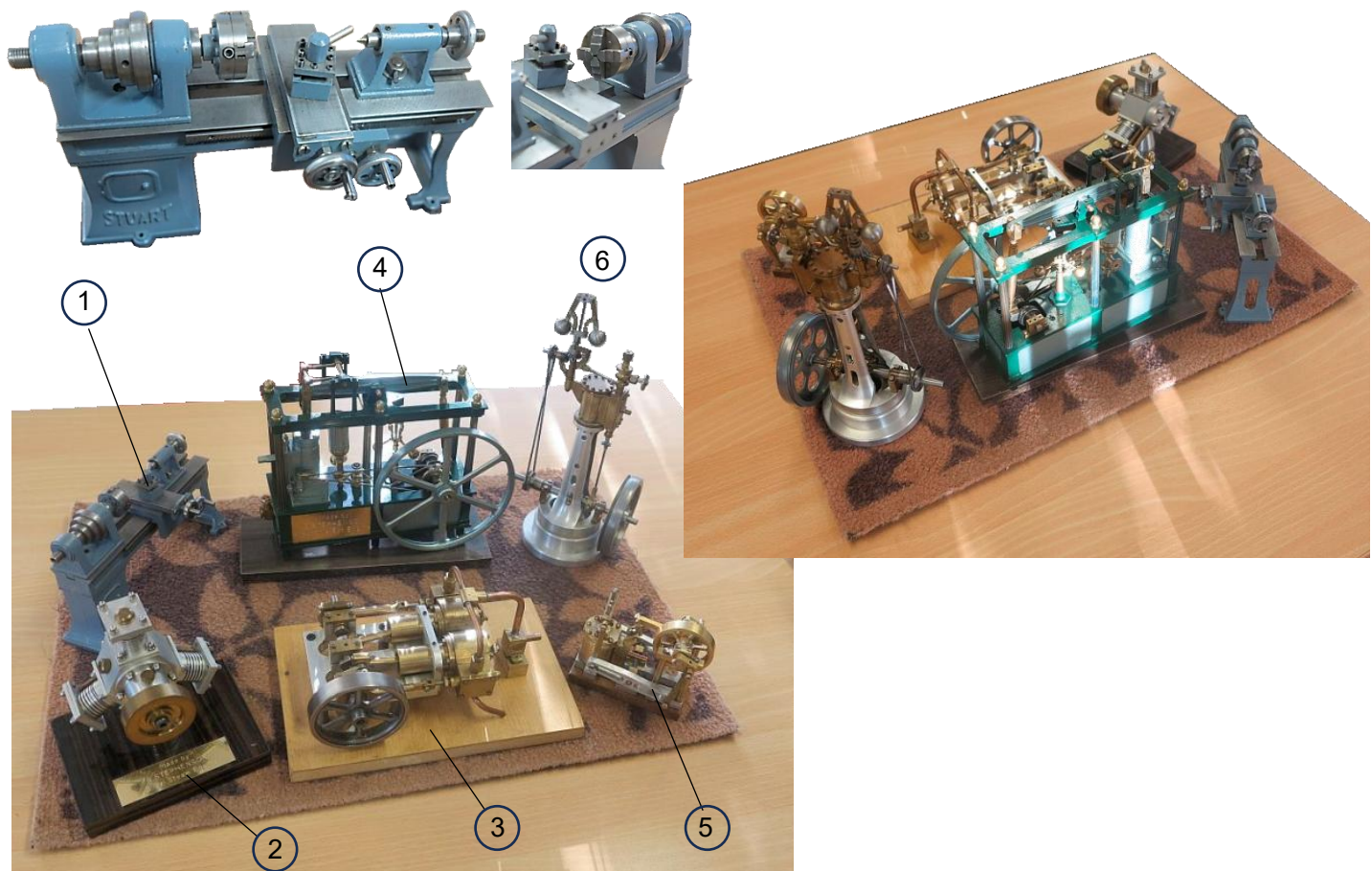
The *Dore Westbury* is of a size easily mounted on a workbench in a home workshop, and was perfectly adequate for the model engineer of that time.

Questions and Answers.

Q: Did you make the *Dore Westbury* Mill yourself?

Colin: No, I didn't have access to the bigger machines required to construct it. *Westbury* eventually became *Dore Westbury* [Westbury went into partnership with Arnold Throp who lived in Dore, which is a suburb of Sheffield]. Arnold Throp who ran *Dore Engineering*, (which provided components to professional engineers and model engineers), said he would help market the *Westbury* Mill as a kit of parts. In the process he made a few changes to it. Arnold marketed the slightly modified version under *Dore Westbury*. M.E.S (Model Engineering Services) eventually took it over, but I don't think anyone sells it anymore.

○ **Various Models From Brian Stephenson's Collection.**



Brian said that the models he had brought along had been made in his early model engineering days, at least twenty- five years ago. Since then, he has “got more educated” and has made bigger models.

At the time he built them he thought they were “brilliant”, but you move on.

1. Brian's son bought him the kit for the *Stuart* miniature lathe. Brian made the chuck from scratch, and it actually works! At the time it was a real achievement.
2. This is a three-cylinder steam engine. It looks like the sort of engine you see in *Model Engineer* Magazine for model aircraft.
3. This is a small twin cylinder engine Brian made when he went to Bill Sweeping's Monday and Wednesday workshop sessions in Scarborough twenty years ago. That is where he learnt model making. He made the fly wheel from a billet.
4. This is an Estate Pump Engine. When a well was dug, this is the kind of engine which pumped the water out.
5. This is a smaller version of the water pump.
6. This model was quite difficult to build at the time.

Questions and Answers.

Colin: Is the lathe a *Stuart* model?

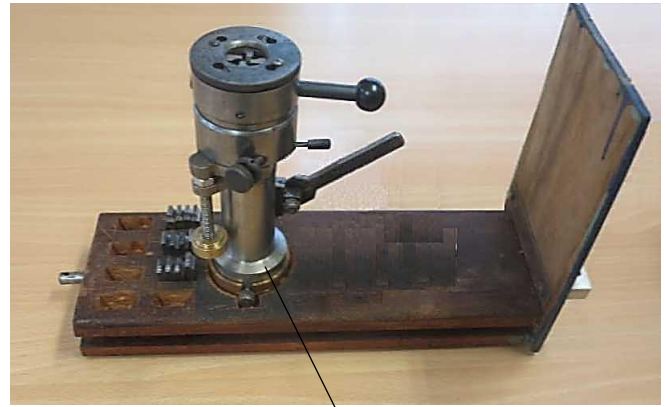
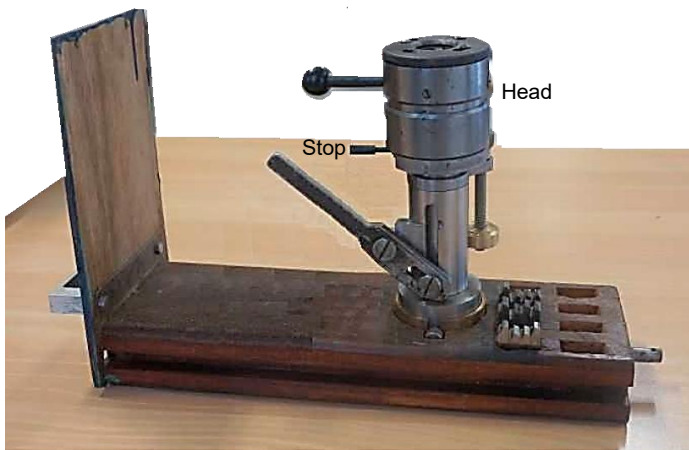
Brian: The base casting is, but a lot of the work on this model is “scratch” built, for example the chuck, the belt drive wheels and the tailstock.

Colin: The reason I'm asking is that if anyone is interested in building miniature workshop machines, then *Stuart* Models produce a miniature workshop series. *Stuart* Models are well known for the *Stuart* 10 series of model steam engines, and the *Stuart* range of castings, but they have produced the miniature workshop series too.

I haven't seen the lathe before, but I think I have seen a miniature milling machine and a pillar drill. *Stuart* castings are nice, and if anyone is looking for a small project then these miniatures are very attractive.

- **Coventry Die Box, Parting Off Tool and Artillery Wheel Machining Centre. Peter Bramley.**

- **Coventry Die Box**



Fits in Tailstock of Lathe

As anyone who knows Peter, realises that he is always making accessories for his lathe or the milling machine. Also, if something crops up in *Model Engineer Magazine* that he likes, he will make it.

This Coventry Die Box cropped up about five or six years ago. At one time there was quite a few being advertised. Someone made a head for them, and this is the attachment that fits in the lathe tail stock. Peter has modified what he did. The attachment fits onto the tailstock and is secured with a couple of screws.

The Coventry Die Box or (Coventry Die Head) is a specialized piece of metalworking equipment. These tools are widely used in lathes to efficiently cut uniform, precise, and identical threads (such as BSW, BSF, UNC, UNF ~ Peter only cuts imperial threads) into metal rods or pipes. He originally intended to get a full set of imperial dies (chasers).

How It Works.

Multiple Cutters: Unlike a standard solid threading die, a Coventry Die Head holds four individual, toothed cutting segments known as chasers.

Quick Release: To get the thread started, the die head is offered up to the rod to be threaded. The head is then fed through. When the thread reaches its desired length and the die head hits the fixed stop, the chasers instantly snap outward. This means you can thread to a dead length quite easily.

Time Savings: This "pull-off" action releases the die head from the part without needing to reverse the lathe to wind the die off the freshly cut threads.

Regrinding: The chasers can be resharpened and reground dozens of times before they need to be replaced.

- **Parting Tool.**

To be really professional, this is a parting tool which is attached to the lathe cross-slide. The lever helps to part off at a dead length.

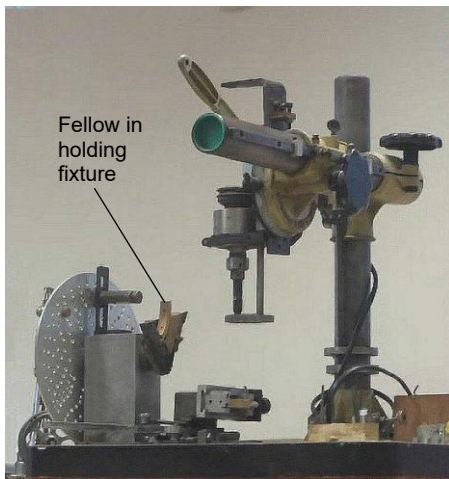
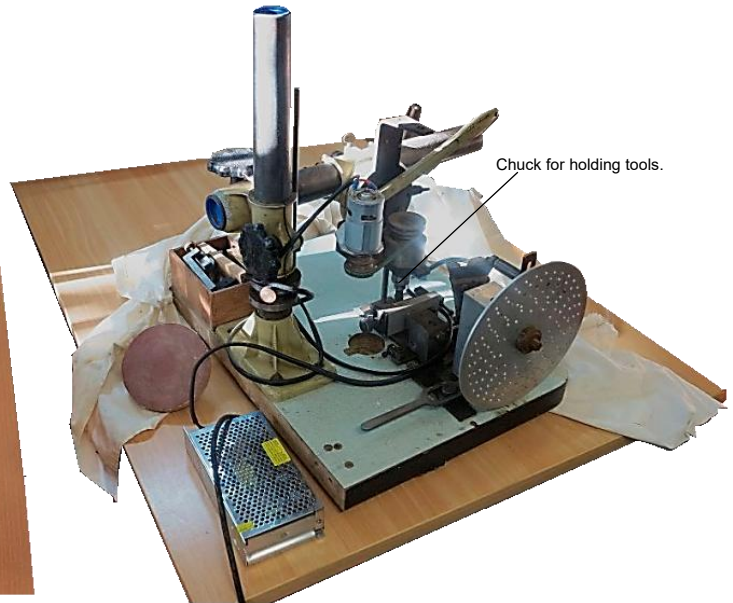
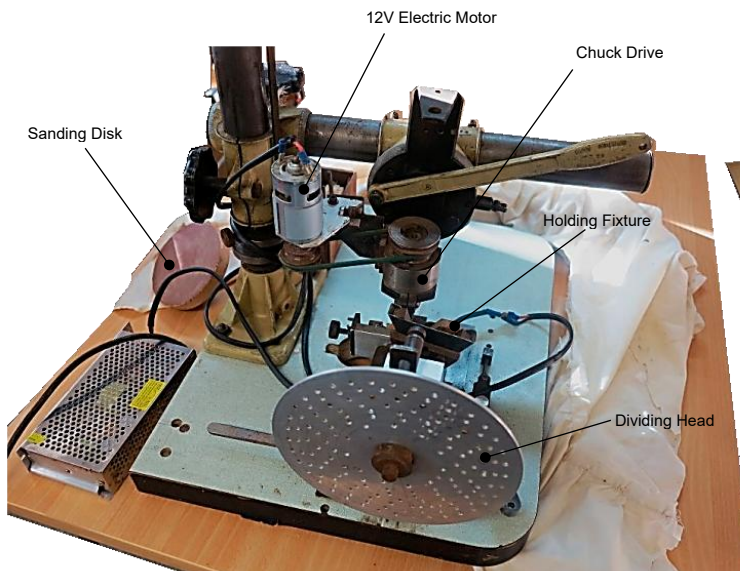


▪ Artillery Wheel Machining Centre.

Peter said that some members may have seen this wheel machining centre before, but he wanted to show it to the newer members. Seven or eight years ago, Peter and Mike were helping someone to move their workshop, and there were some items that were going to be thrown away. The horizontal tube seen in the machining centre looked too good to throw away, so Peter took it for future use.

Before that, Peter had seen the description of a steam car in a series of books. He thought it would be a reasonable model to try and make. There were a lot of diagrams that could be scaled up reasonably well.

The steam car has wooden spoked wheels (artillery wheels), and wood acts in a different way to metal when it is machined.



Spoke Tool

Artillery wheels are made of three components, the hub, the spokes and the 'fellows' (rim sections). Elm is used for the hubs, ash for the spokes and oak for the 'fellows'. The fellows are joined with glue and dowels, and there are holes in them for the spokes.



Spoke



Fellow

Making the 'fellows' is fairly easy. There is a fixture on the machining centre which holds the fellow. Using a circular saw in the chuck, the fellows can be cut off at the right length, and with the correct angles on the ends. The column is lifted to bring the saw up to the work, and the fixture can be moved horizontally to present the fellows to the saw. The plain dividing head is used to rotate the fellow to the required angle for the saw.

The vertical column can lift up, and can also twist around in order to get the tool in the chuck in the correct orientation for the workpiece.

Making The Spokes: The tool (see previous page), cuts the spoke shape which is oval in cross section. Without the machining centre, that would take a long time. Peter can make a spoke in 5 minutes with the centre, and that includes the sanding operation. A lot of time is saved, especially with 48 spokes to do.

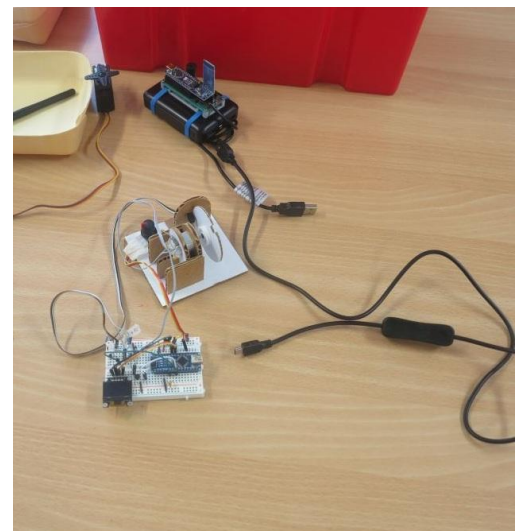
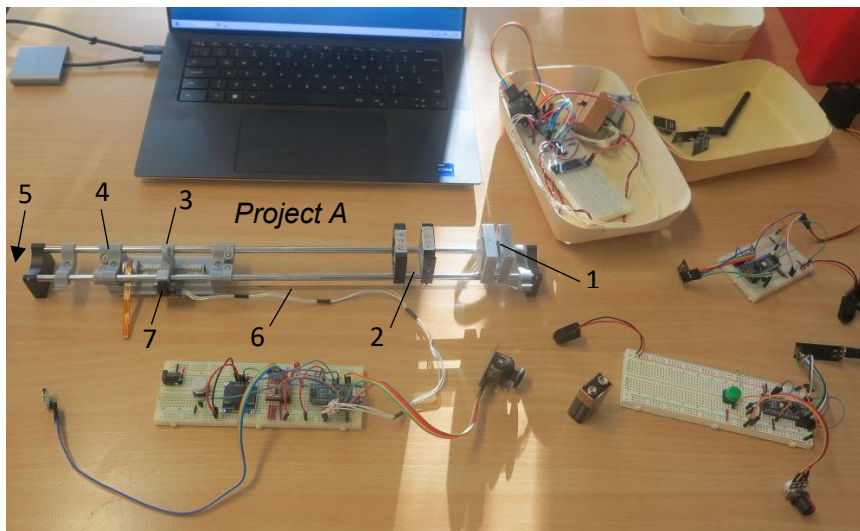
There are also stops on the machine, to ensure all the spokes and fellows are identical. The machining centre is run by a 12V electric motor.

It took Peter about two or three months to plan out how he was going to make the machining centre. The dividing head is set up for the 12 spoke wheels. Because the machine is adaptable, with movements in a number of directions and around three axes Peter can see it being useful for other projects.

○ **Microcontrollers And The Jobs They Can Do. Adrian Glasser.**

Adrian brought along two unfinished projects for us to examine and for him to demonstrate. Both of these projects use electronic digital microcontrollers. A microcontroller is a small matchbox size mini-computer. It's much less than a computer, but a little more than most electronic components.

An *Arduino* is a typical microcontroller. Adrian has used *Arduinos* before, but the projects he brought along used a different microcontroller manufacturer. The key thing is that you can write code and you can upload code to these microcontrollers. Once the code is on them, they can control other electronic devices. They can also control DC and stepper motors, they can write to digital displays and they can be used for wireless communication between devices.



Project A above is an apparatus to measure the optical power of lenses implanted in the eye. Of interest is the fact that the black parts (collimators and ends) are metal and the grey parts are 3D printed.

- 1 Bright Light Source Position.
- 2 Light Collimators to create parallel beam.
- 3 Lens on carrier.
- 4 Screen position.
- 5 Camera position behind screen to record smallest light dot (focal point).
- 6 Linear encoder ribbon.
- 7 Microcontroller on lens carrier

The lens is moved along the rails by a stepper motor, to find the best focus on the screen of the parallel beam of light which passes through it. The optical power of the lens is derived from the distance the stepper motor moves it along the rail. The distance moved is measured accurately by means of the linear encoder ribbon.

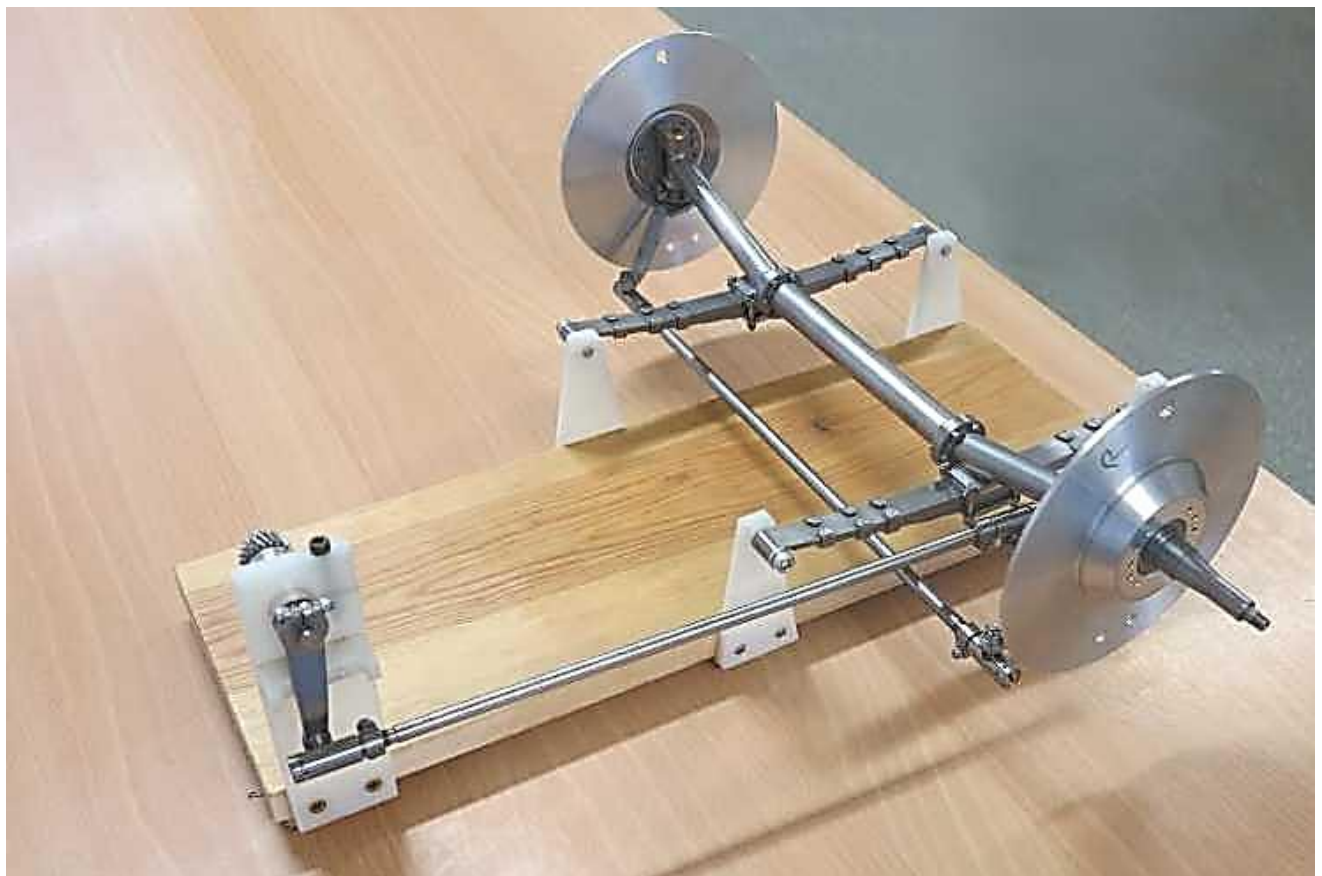
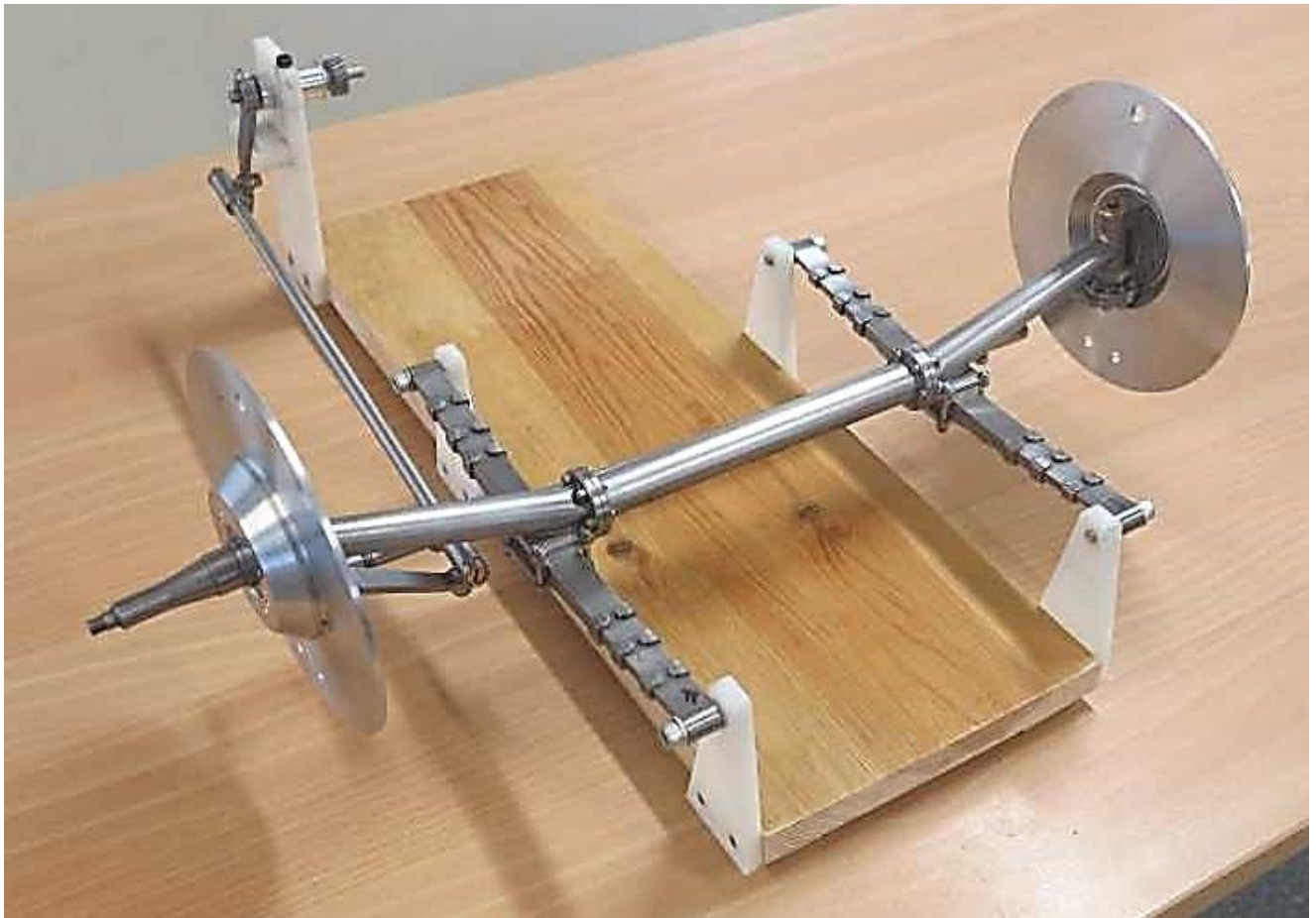
In a desk top printer, the head of the printer, which runs across to do the printing, will do it very precisely, and that is controlled by the ribbon. This ribbon has been extracted from an old printer. The ribbon has very fine vertical lines (700 lines/inch), which can only be seen under a microscope. The microcontroller on the lens carrier is counting how many lines on the linear encoder ribbon are passing by, as the lens carrier moves.

When the dot of light on the screen, as recorded by the camera, is at its smallest, the position of the lens will be known, and its optical power can then be derived.

Please Note: Adrian will be giving a talk to PEEMS on the Club Evening Wednesday August 5th, entitled "*Digital Fabrication In The 4th Industrial Revolution*".

- **The Delage Model Car, Front Axle, Hubs, Track Rods and Steering. Mike Sayers.**

As Mike has constructed his Delage model car, he has kept us informed at every stage of construction, from the supercharger in October 2019, through the development of the engine, gearbox, chassis and rear axle, wheels, brakes and differential. The last display of the model was at the Spring "Bring and Brag" in March. Since then, he has been working on the front axle, hubs, track rods and the genesis of the steering system. That is what Mike brought to the Summer "Bring and Brag".



Mike also brought along some photos of the full-size front axle arrangement, so that comparisons could be made with the model.



The full-size axles were made from forgings and hand polished to a high standard. The model axles are hollow inside, that's why they're made in three parts. The full-size axle is a work of art, and Mike has had to replicate that in the model.

It's been difficult to make because none of the components are at right angles to each other. For that reason, jigs have had to be made to make sure symmetry was maintained in the assembly, the flanges bolted together truly, and all the correct angles were maintained.

For example, the King Pins are at 7° , and the backplates and stub axle are at $1\frac{1}{2}^\circ$ to the horizontal. The King Pins need to be at 7° because when a line is projected down through their axes, it has to converge on the centre of the tyre patch, to prevent tyre "scrubbing".

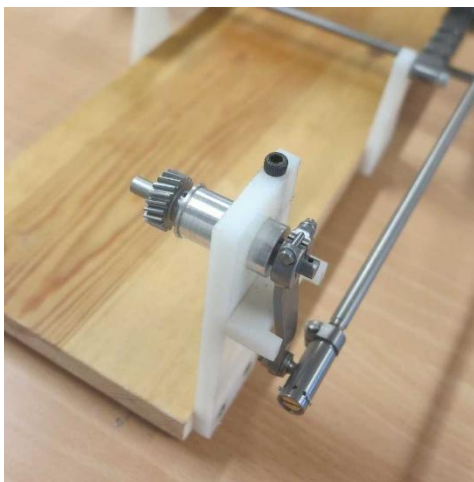
In addition, when a car takes a corner, the inside wheel must travel a tighter radius than the outside wheel. This means that the front wheels have to be angled so that their horizontal axes converge at a single common turning centre point, relative to the rear axle. (Ackermann Steering).

The axle is also tilted back at 2° .

The steering and track arms are also forgings on the full-size car, and on the model these were cut out of 5mm plate and then formed.

Mike has been in contact with a manufacturer of vintage tyres, because he wants the details of the Delage tyres so he can 3D print them. The manufacturer has his own full-size older version of the Delage compared to Mike's model version, but the mechanical parts are similar. He was very forthcoming with advice about the tyres and asked to see photographs of the model. The opinion was that the model was fine, but the gear lever knob needed to be black, and the front wheel track rod ends should be longer when compared to those seen in the full-size photos. Some other very small details were also incorrect. This is the price Mike is paying in trying to get near 100% accuracy. He's going to make the track rod ends longer.

Mike has made some progress in the steering system, but has had to guess what the reduction gearing is in the steering box.



It's a worm and sector steering system which consists of a worm gear acting with a sector of a gear wheel to give part rotation in either direction. Unfortunately, unlike all British cars, the worm is positioned at the bottom, not at the top. You may not think that makes any difference, but it does. A right-hand lock would turn the wheels left and vice versa, unless the worm and sector are handed.

So, the system needs a left-handed worm below a left-handed helical gear sector. Recently Mike has made a left-handed helical gear sector and has partly made a left-hand worm gear. This just shows how perfidious French engineers used to be.

The next parts of the project to be completed are the steering box, the steering wheel and steering column.

The front leaf springs are seen in the model photos, but the photos of the full-size model show the springs are "corded". Mike has been teaching himself how to wrap the cords around the springs. He's done several in the workshop. It's a method of wrapping and knotting so that the cords don't unravel. It has to be wound right-handed and left-handed.

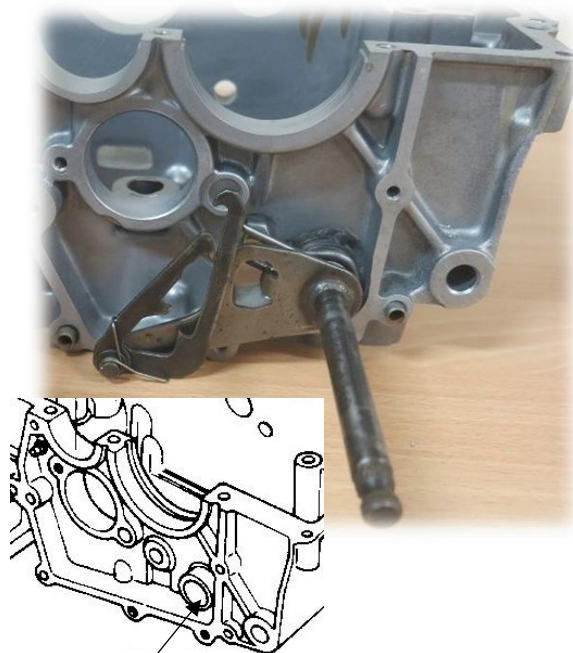


○ **A Repair To A Crankcase For A Soon To Be Upgraded Kawasaki Z1000 (1977). Andy Wilson.**

▪ **Introduction.**

Andy brought in the lower half of a pair of crankcases he had bought for another bike he's building.

He was preparing it for vapour blasting, including cleaning the threads and making sure everything was good when he noticed damage to the hole and boss where the gear lever enters the crankcase.



Area Of Damage

He could only surmise that because the crankcase didn't come from his bike, someone had actually fallen off and they'd gone down on the left hand-side and broken the gear lever. In damaging the gear lever, they had obviously damaged the hole and boss, which makes it very difficult to change gear.

▪ **The Repair.**



In order to repair the crankcase, it was placed in the milling machine in the orientation shown on the left. It was packed out underneath to give it some stability, and it was bolted to a square block, which in turn was bolted to the bed of the milling machine.

A 12mm bar was placed in the milling head and introduced to the remains of the hole in the broken boss. The table was then locked, and the 12mm bar was removed.

An 18mm cutter was then placed in the milling head and the hole was bored out. This made it possible for a bush to be introduced and welded in to replace the boss.

Once the 18mm hole for the bush was complete, the front of the casing was spot faced with a 27mm cutter, which made sure that when the bush was fitted there would be no "wobbling".

The bush was made in the lathe with an outer diameter such that it would be an interference fit in the 18mm hole.

The bush was put over the 12mm bar which was in the milling head, to introduce it to the hole in the casing, and to make sure it was in the right position. Using the quill of the milling machine, the bush was given a push into the 18mm interference fit hole.



A friend in the village then welded the bush in place, first on the inside, and then as much as he could on the outside of the casing. Andy thinks this repair will now last as long as the engine.

He reckons he could now sell the crankcases for twice what he paid for them, and it definitely has got another engine back.

The return spring works.

The top half of the crankcase was fine. Andy's got another set of cylinders to go on as he's upgrading the bike from 1000cc to 1260cc.

The cylinder studs had to come out, and normally you would put two nuts together on the thread at the top which is short and has a fine thread. To improve this, a head has been machined out of a 16mm bolt and screwed on to the full length of the top thread. The head is locked off by the Allen screw on the top. This gives plenty of purchase on the head. This means you can remove the stud and once the cylinder has been bored, put it back in again without damaging the thread.



Questions and Answers.

Comment: They tend to Loctite the bottom of the threads in.

Andy: They do. To get them out you warm the casing.

Q: When your friend welded the bush in, did he have to preheat the casing?

Andy: No, he won't have done. He welded the back (inside) first, which would have warmed the casing.

Q: Is the crankcase aluminium and did the person who did the welding know what type of aluminium it is?

Andy: He has welded a lot of aluminium cases for me in the past, particularly those that have been damaged by previous owners. He uses an aluminium filler rod. Each time he has done an excellent job. He finishes the job so it's proud. And I finish it off so it's flat.

Q: Is it nice aluminium to machine?

Andy: When I finish it, I just use a finishing pad on a drill and then carefully finish it off with "wet and dry".

Contact: If you would like to contribute to the Newsletter, the contact is:
Neville Foster Tel 01751 474137 or e-mail nevf123@outlook.com

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