



## NEWSLETTER May 2018

### i) FORTHCOMING EVENTS

- **Club Meeting:** Wednesday June 6<sup>th</sup>. A Talk By Chris Blackstone - Programmable Logic Controllers
- **Workshop Morning:** Tuesday June 19<sup>th</sup> 10-12 noon.
- **Club Visit To Welburn Hall School:** June 26<sup>th</sup>. Once again PEEMS will be taking the railway to Welburn Hall School. We will be asking for volunteers to help assemble the track and facilities, help in loading students and staff into the carriages, and disassembling track and facilities at the end of the day. In order to have smooth running of all operations, assembly and disassembly will be organised in such a way that we can expedite these operations swiftly and safely for future railway excursions.

### ii) Club Meeting: Wednesday 6<sup>th</sup> May

The main purpose of this meeting was to organise the transport of models to and from the Doncaster show.

A new visitor Brian, was welcomed. Brian had come all the way from Flamborough and had an interest in 3D printing.

Prior to the meeting, our Chairman David Proctor, had some announcements.

#### • **GDPR ~ General Data Protection Regulations**

The data protection law comes into effect on the 25<sup>th</sup> May, and PEEMS needs to get members express permission to keep their data. Currently the only data kept on members is their name, telephone number, e-mail, home address and anything related to boiler testing. The club needs members permission to keep the information.

The club will keep the master files on a password protected Excel spreadsheet, which will be kept on a password protected computer. That data will only be shared between the membership secretary and the committee officers and will not be distributed out. Club members do however have the possibility to give permission for their contact details to be issued out on a distributed members list. Contact details will just be name, e-mail address, telephone number. Home addresses will not be required for the reason that some members may have security concerns.

When the club publishes the authorised members list for those members who have agreed to have details published, there will be a blank space. This will be for members to write down an address and interests, but that would be between consenting members, and would not involve PEEMS as a club.

The club considers that these rules will keep the club safe, for the first year. Consent forms were then passed out.

#### • **Railway**

The first outing will be to Welburn Hall School on the 26<sup>th</sup> June. The following outings will be to the Malton Show on the 1<sup>st</sup> July and Ryedale Show on the 31<sup>st</sup> July. Keith has agreed to tow the small trailer.

There was a post winter maintenance on the railway at the last workshop meeting, at the last workshop day on the 17<sup>th</sup> April, however it was a bit chaotic. Tony and David finished the job on the 6<sup>th</sup> May, and it was just as well they did as it was found that a fuel filter on the locomotive had perished and was leaking. A new one was fitted. This has been discussed in committee and what the club has been looking for is a "chief engineer", someone to take a technical lead on the railway, but who would not be involved in deployment. That person would only be responsible for keeping track of the maintenance, and to make sure it is in a fit state to use, pending whatever decision the club makes in the next year or so about the railway's ultimate future. The committee is pleased to announce that Peter Bramley has volunteered to take on the role of Chief Engineer of the railway. It is hoped that everyone will help Peter in this important role.

- **Speaker's Expenses**

Last month the club had a very interesting talk by Becci Ellis and her team. They had come a long way and didn't accept any petrol money. Several members felt uncomfortable about this when they left. This was discussed in committee, and it was thought that a collection taken on a club night should be sent to their team to support their activities, as they are self-funded. A substantial donation was collected at the last club meeting, and the committee would like to thank all those who contributed.

- **Welburn Hall School**

Tony and Mike went to Welburn Hall School to hand in the risk assessment prior to the railway outing. Mike was pleased that the head of education was very enthusiastic about the PEEMS visit there. They look forward to it and it means a lot to the children. When the children leave the school, they are asked to write an essay about their stay at the school. Everyone mentions the PEEMS day as one of the most enjoyable activities they experienced.

- **Outings**

There will be visit to the Parkoll Marine shipyard at Whitby on Thursday 27<sup>th</sup> September at 10am. The visit will last about two hours.

- **Safety Officer**

Alasdair McLeod has offered to take on the duties of safety officer subject to agreement on scope of the tasks.

- **Mini 'Bring and Brag' ~ John Heeley ~ Mark 5 Oscillating Engine.**

This was a follow-on from John's presentation, in February, of his Mk 1 to Mk 4 versions of the oscillating engine used to power his steam launch.



Each engine Mk 2 to 5 is different to the one preceding it. The intention was they should get better with each Mark, but this doesn't necessarily happen. John, however, has a better understanding of why this is the case. With the Mk 5 engine, the intention was to get away from the 1" stroke in a ½" bore. In the Mk 5, the stroke has been taken down to 7/8" and the bore has been increased by 1/16" to get the capacity back, to where it was before. The engine is approximately 3.1cc in automotive terms. What John hadn't realised at the time, was it wasn't the size of the valve opening, but the duration of the valve opening that resulted in less power, even though it has the same capacity as before. The engine runs smoothly, and the economy is also better. Having the stroke twice as long as the bore is a good relationship for these types of engines.

The other thing John has experimented with is the amount of clearance volume at the top of the cylinder. Normally in steam engines, there is a lot of capacity at the top of the cylinder, which doesn't appear to do anything. John wondered if he could push the piston closer to the top of the head, like in a racing two stroke. Mark 5 has a top hat section, so that the piston flat comes right up against the brim and forces everything into the top of the hat, and the port leads into the side at the top. The piston goes up to within 5 to 6 thou of the top. It appears that it is no worse, but there is no significant amount of improvement.

John has also tried to improve the rate of wear. The Mk 2 has around 2½ hours of running time, with run times around 30 minutes each. The piston is barrel shaped and it rattles. John wanted to tighten up the tolerances, so in that respect, the MK 5 is an improvement.

In order to quantify where he is with the engines, John needs to have some means of measuring the power output. There are two ways of doing this, either by driving a generator and taking measurements in Watts as a direct reading, or by using some type of friction brake, and measuring foot lbs of torque. Someone at the Barnsley club made a friction brake. This method of measurement is successful for small engines, but on big engines it can get very hot, with the risk of burning. In order to fully understand the engine, John wants to measure torque output, revs (which can be measured with an electronic rev counter), steam pressure, and thermal input from the burner. Building a torque measuring apparatus is John's next project.

### iii) The 25<sup>th</sup> National Model Engineering and Modelling Exhibition at Doncaster on 11<sup>th</sup> to 13<sup>th</sup> May.

At 10am Thursday 10<sup>th</sup> May, PEEMS arrived at the Doncaster Racecourse Exhibition Centre, to set up the stand. This went more smoothly than anticipated, especially as there were fifty models to display ranging from the very small (Lathe Fling Rest, Sine Plate) to large (1/3<sup>rd</sup> 'Blower' Bentley Engine, 3" Atkinson Steam Wagon, Hercules Carburettor). The stand also had curtains which needed ironing as well as lighting which needed connecting.



As usual PEEMS had an excellent location within the exhibition area, being next to the exit doors onto the concourse where model steam engines were plying their trade throughout the exhibition period.

The show ran from Friday through to Sunday and was well attended by the public. A lot of interest was shown in the PEEMS stand over the three days, because of variety of models on display.

The consensus was that it had been a good event which had been enjoyed by all the participants.

To illustrate the variety of models on the PEEMS stand, photographs are shown on the following pages

There is a video of some of the show at this link :

[https://www.youtube.com/watch?v=R\\_bSbMa7ee0](https://www.youtube.com/watch?v=R_bSbMa7ee0)

PEEMS has an appearance at 5:31 to 5:55

also

<https://www.youtube.com/watch?v=MTBLNNue8co>

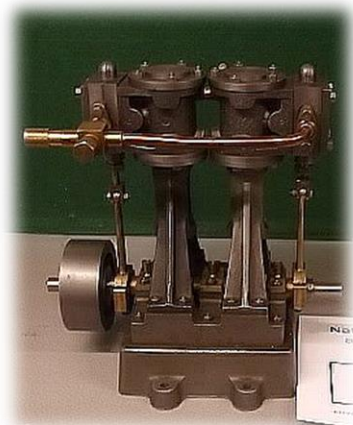
where some of Brian's engines are shown from 2:29 to 3:01



## Pickering Experimental Engineering & Model Society Section 11

PEEMS is a club catering for model and engineering enthusiasts. Whilst we operate a well equipped club workshop which offers mentoring by experienced members, most members build their models and carry out their engineering projects in their own workshops. The club workshop and the monthly club meetings also provide a social forum for lively discussions where members can discuss their projects, seek guidance and receive answers to problems. As can be seen, PEEMS has an eclectic mix of projects on display, but this represents a fraction of the work being carried out by club members. PEEMS also reaches out into the community, for example by supporting a science week at a local school and annually operating a 7.25" gauge railway at a school for special needs students. The railway also operates annually at a couple of local country shows. At some club meetings, we have visiting speakers for a wide range of engineering topics. These are shown in our calendar on the website below. We also organise excursions to museums, exhibitions, workshops and facilities, covering a wide range of engineering interests. We meet on the first Wednesday of each month at the RVS building at the traffic lights in Pickering. Address: Hungate Pickering YO18 7DG. Doors open at 7pm for a 7.20pm start. You can visit our web site at [www.peems.co.uk](http://www.peems.co.uk) where you will find a calendar of events and a newsletter which gives you an idea of our activities.

1 Steam Launch	J Heeley	2 Steam Engine & Boiler	J Heeley
3 Steam Engine	J Heeley	4 V-Twin Steam Engine	J Heeley
5 3" Atkinson Steam Waggon	C Bramley	6 Mill Engine	D Hick
7 Midland Railway Class 990 'Deeley' 4P	N Foster	8 Atkinson Cycle Engine	M Doran
9 Hercules Open Crank Engine	M Doran	10 Crane Diorama	P Bramley
11 Tailstock Tooling	P Bramley	12 McOnie Diagonal Engine	P Bramley
13 Chelmsford Steam Car	P Bramley	14 Sine Plate	P Bramley
15 Hypercycloid Engine	B Stephenson	16 Stuart Beam Engine	B Stephenson
17 Single Cylinder Scotch Yoke Engine	B Stephenson	18 Half Beam Engine	B Stephenson
19 Twin Cylinder Vee Marine Engine	B Stephenson	20 Twin Victoria Engine	B Stephenson
21 Twin Cylinder Marine Engine	B Stephenson	22 Galloway Non Dead Centre Engine	B Stephenson
23 Monitor Engine	B Stephenson	24 McOnie Diagonal Engine	B Stephenson
25 Twin Vertical Engine	B Stephenson	26 Digital Rotary Table	T FLETCHER
27 Speedy Loco Chassis	T Leeming	28 Lifting Jacks	T Leeming
29 Stuart Double Ten	T Leeming	30 Lathe Fling Rest	T Leeming
31 Martin Cleeve Swing Clear Boring Tool	C Bainbridge	32 LBSC Mechanical Lubricator	C Bainbridge
33 M701 Jet Engine (By John Heeley)	C Irvine	34 Hercules Aircraft Carburettor	C Irvine
35 Universal Dividing Table	P Gammon	36 Record Holding Flash Steam Engine	P Windross
37 Myfordboy' Steam Engine u/c	D Proctor	38 Experimental Calendar Clock Mechanism	R Gretton
39 Fusee Bracket Clock	J Powell	40 20cc Freelance 'V' Twin I/C Engine	B Rees
41 24cc Freelance OHC Flat 4 I/C Engine	B Rees	42 5"g Driving Truck	G Gibbs
43 Stuart Double Ten Engine	I BRYCE	44 8" Dia Oil Drilling Bit	K Sleightholme
45 1/3 'Blower' Bentley	M Sayers	46 1/4 Anzani 'Y' Type Aero Engine	M Sayers
47 Flat 4 Aero Engine By Bill Linfield	M Sayers	48 Ring & Sliding Gear For 3" Fowler	G Tinkler
49 Precision Drilling Machine	P Bramley	50 1 1/2" Fowler Crane Engine	P Bramley



Stuart Double Ten Engine ~ Ian Bryce



3" Atkinson Steam Wagon ~ Chris Bramley



McOnie Diagonal Engine ~ Peter Bramley



Steam Launch ~ John Heeley



Mill Engine ~ Dave Hick



LBSC Mechanical Lubricator and Martin Cleeve Swing Clear Boring Tool.  
Colin Bainbridge



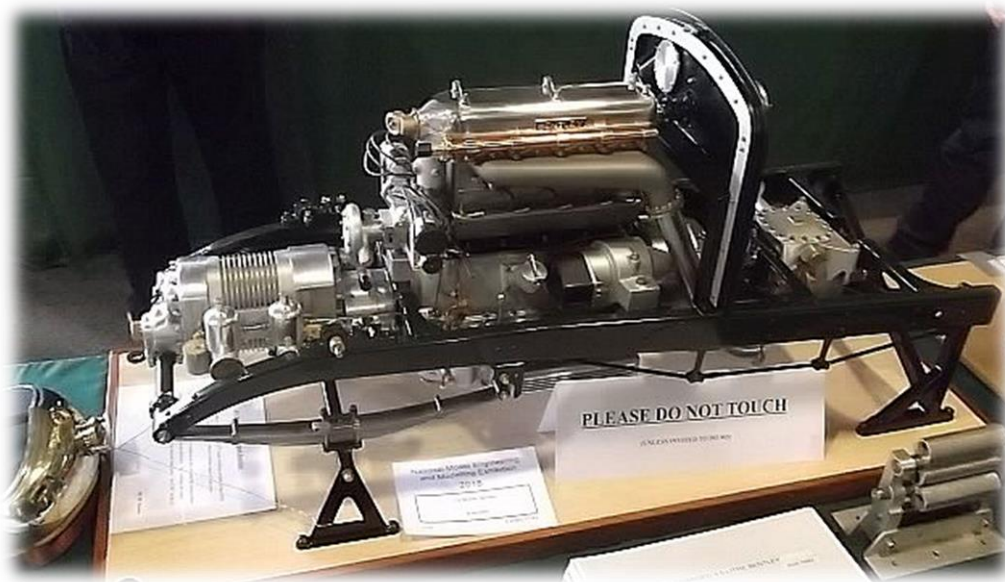
Engine  
Exhib  
2018



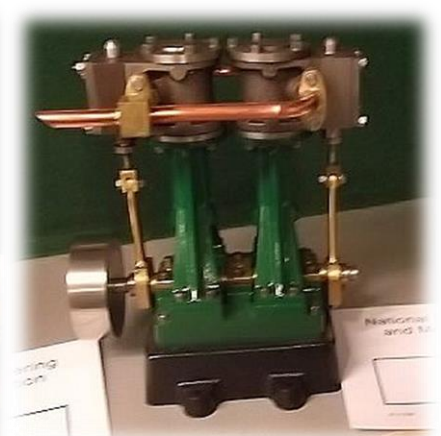
- 1) 5" gauge Driving Truck ~ George Gibb 2) Experimental Calendar Clock ~ Richard Gretton  
 2) Fusee Bracket Clock ~ John Powell 4) Ring and Sliding Gear For 3" Fowler ~ G Tinkler  
 5) Universal Dividing Table ~ Paul Gammon



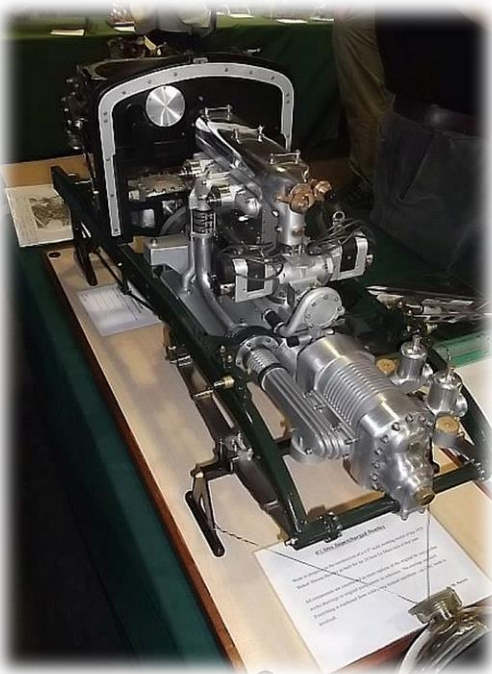
1/4 Anzani 'Y' Type Aero Engine  
 Mike Sayers



1/3 'Blower Bentley ~ Mike Sayers



Stuart Double Ten Engine  
 Tony Leeming



Record Holding Flash  
 Steam Engine  
 Paul Windross

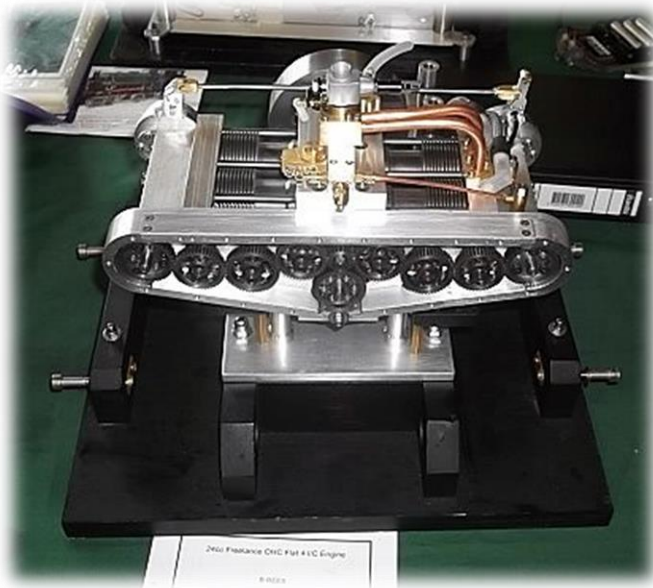




1 1/2" Fowler Crane Engine  
Peter Bramley

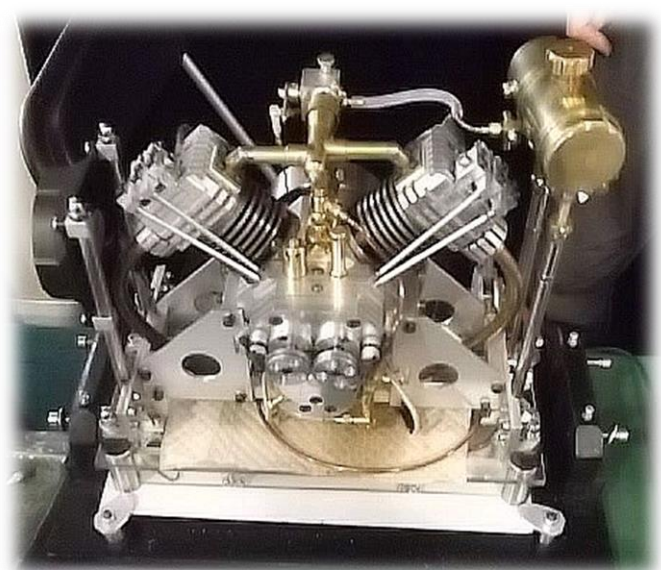


Flat 4 Aero Engine ~ Bill Linfield



24cc Freelance OHC Flat 4 I/C Engine

Brian Rees

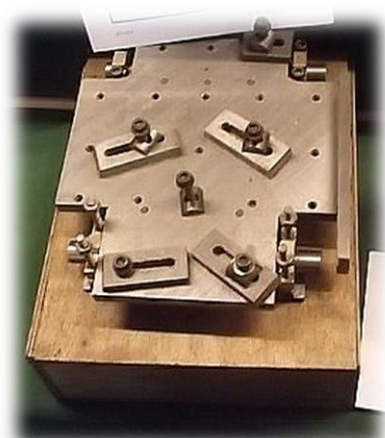


20cc Freelance 'V' Twin I/C Engine



Hercules Open Crank Engine ~ Mel Doran

M 701 Jet Engine ~ John Heeley



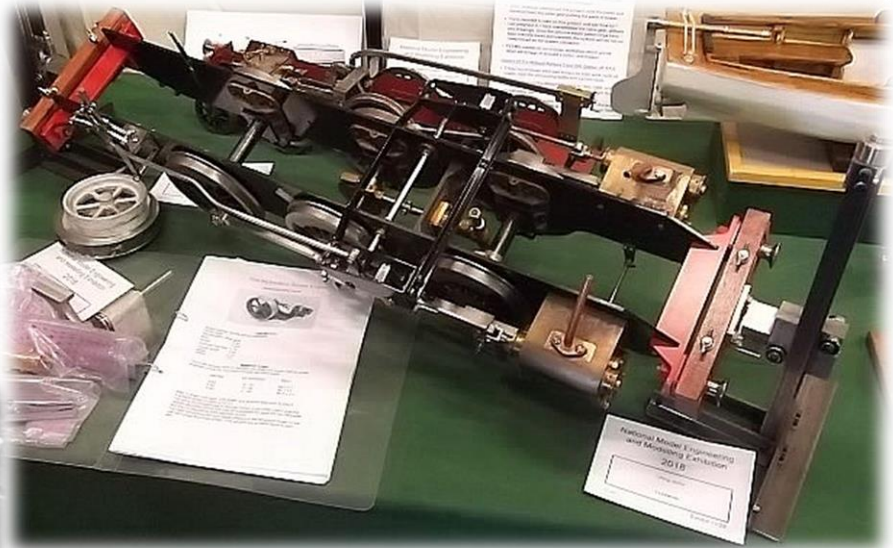
Sine Plate ~ Peter Bramley



Lathe Filing Rest ~ Tony Leeming



Digital Rotary Table ~ Ted Fletcher



Speedy Loco Chassis ~ Tony Leeming



Myfordboy Steam Engine U/C  
David Proctor



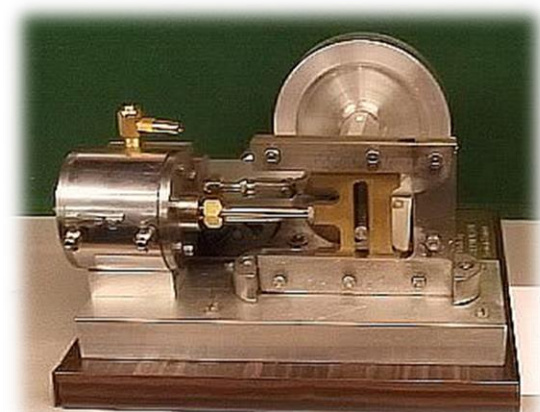
Hercules Aircraft Carburettor  
Chris Irvine



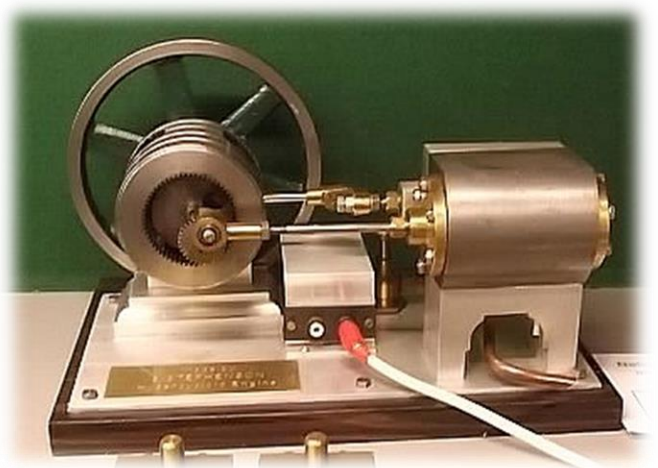
Atkinson Cycle Engine ~Mel Doran

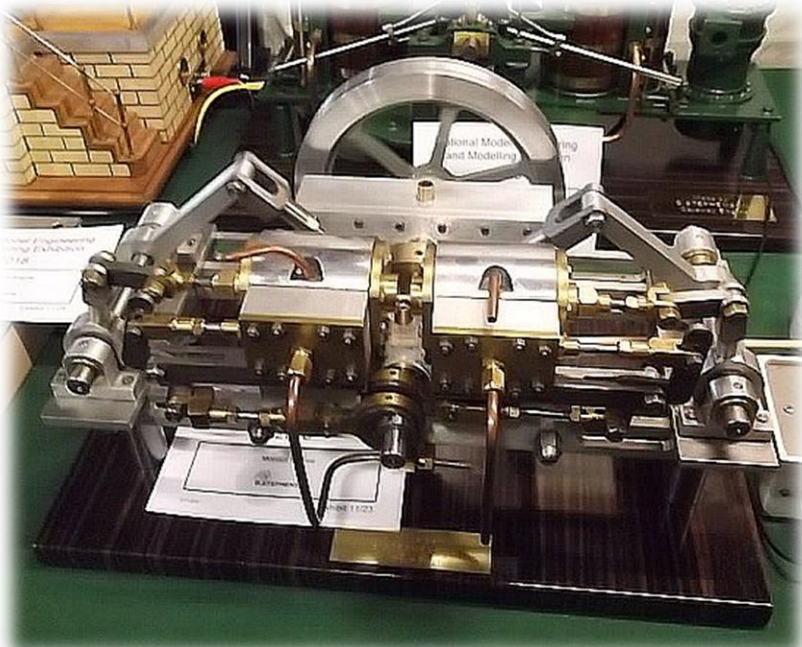


8" Dia Oil Drilling Bit  
Keith Sleightholme

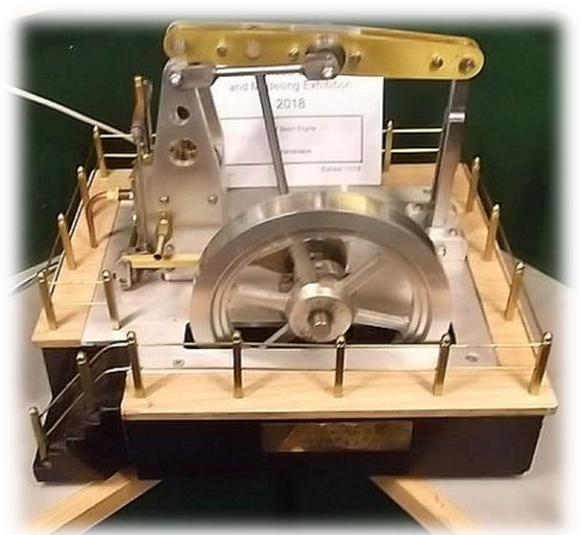


Brian Stephenson  
Single Cylinder  
Scotch Yoke  
Engine  
and  
Hypercycloid  
Engine

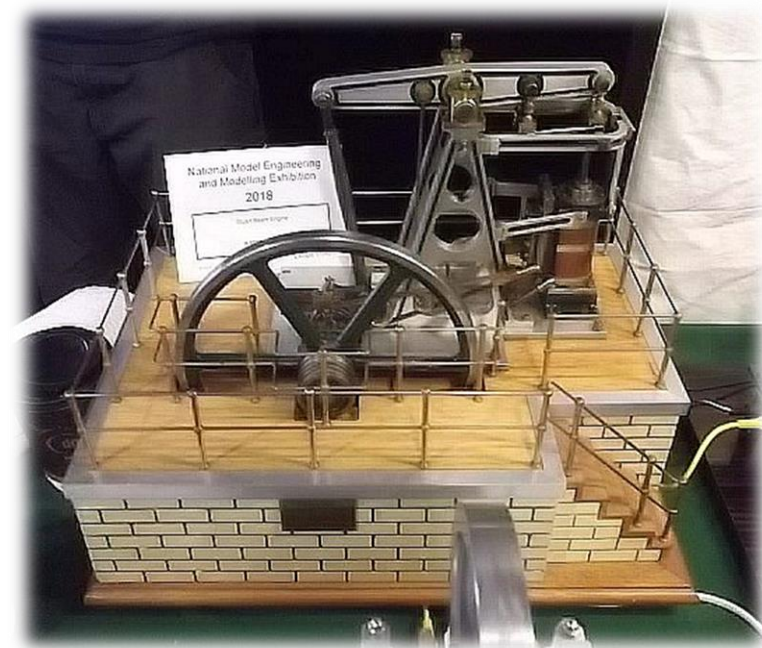




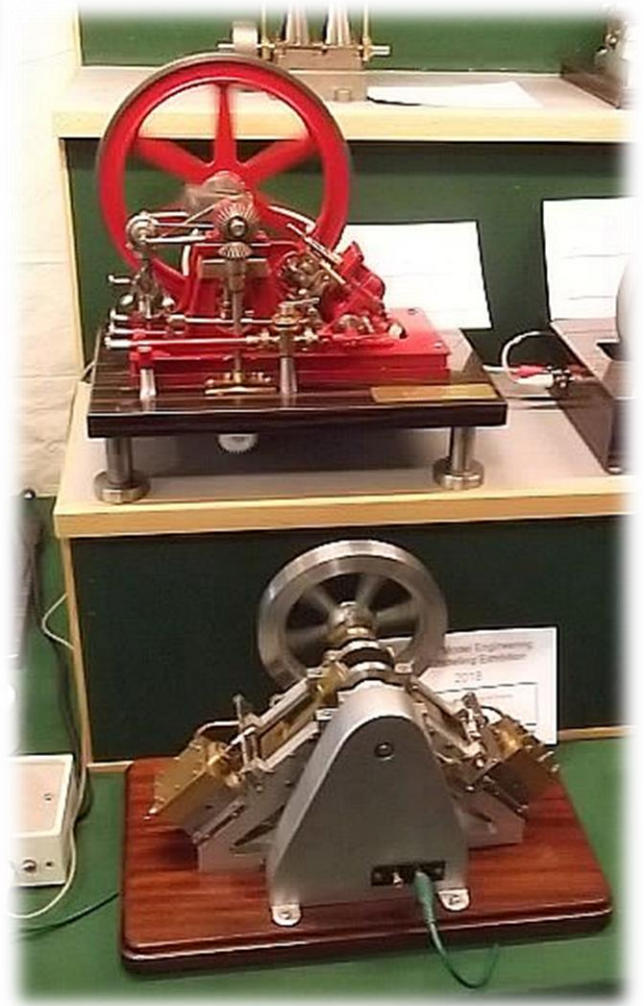
Monitor Engine



Half Beam Engine



Stuart Beam Engine



McOnie Diagonal and Twin Cylinder Vee Marine Engine



Galloway Non Dead Centre Engine

### A Note From Paul Windross :

In addition to Becci Ellis, Graham Sykes is another speed record friend and creator of some amazing speed machines. They include his steam jet bike, a world record attempt streamliner powered by a Gem turbine (to be ridden by James Toseland) plus a rebuild of a gas turbine drag racing car that crashed at 200mph while racing at Santa Pod. The steam rocket machine has just been unveiled at a NEC trade exhibition. The pictures show the rear drive for the turbine streamliner as well as the steam jet machine. There is a possibility that Graham could give a talk at a future PEEMS club meeting.

One of my own pictures is of Graham's record 3-wheeler V8. This was unstable at speed, so an extra wheel was added.

*Photographs by permission of Graham Sykes*



Contact:

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