PEEMS NEWSLETTER: 23rd April 2017

Comment

The month of April brings us around to more progress in the refurbishment of the PEEMS workshop. Since the last newsletter, Tony Leeming has now completed the rewiring and the club is now only awaiting a qualified electrician to make the final connections and fit the fuse box. With the help of the volunteers, the installations to bring the workshop up to acceptable standards have only taken a month! The machines and benches are now ready to be installed in the outer workshop.

The preparations for the Doncaster show continue and there are now thirteen members exhibiting forty six items.

Last month's newsletter was the first to be posted on the PEEMS web site (just Google "PEEMS" and it should be the first site that appears). The consensus is that it is worthwhile illustrating the club's activities with photographs and drawings where appropriate. As is commonly said, "a picture paints a thousand words", and this is especially true where engineering is concerned. However, embedded colour photographs do increase the byte-size of the newsletter. Rather than littering up people's e-mail inboxes with large files, the website allows the presentation of the newsletter each month, with the added bonus that photos and drawings can be zoomed into for closer inspection, with the simple rotation of the mouse wheel. In addition, internet links in the newsletter work with the simple click of a mouse. If required, hard copies of the newsletter can be printed off the web site.

It is also hoped that with the newsletter on the web site will become a vehicle for member's engineering articles. Hopefully, each month's newsletter will be posted alongside those previously posted, so that cross references can be easily made. Obviously, bandwidth issues will have to be investigated to make sure the website doesn't get too large, thus incurring costs to the club.

From now on, the newsletter will not be e-mailed to members, but of course those club members who do not have internet access will still receive their posted copies of the newsletter and any included articles. It was good to see Paul Windross at the Club meeting on April 5th looking his normal cheerful self.

Workshop Matters

Despite last month's momentum waning somewhat, progress is still being made by a dedicated few, as described in the comments above.

The professional electrician has completed the final wiring, installed a check meter and carried out compliance testing.

George Gibbs has continued to sort out all the tooling and he has restored the lever operated tailstock for the Myford. Thanks to the attention of Ted Fletcher, the milling machine wiring has been repaired and the machine is now fully functional.

The floor-standing Fobco drilling machine, contributed by George, has been collected and installed in the small workshop. This, as far as we know, will be the last machine installation for the foreseeable future; thus completing a very comprehensive equipment list.

Two more benches are to be built and installed in the outer workshop and this task may be left until John Powell returns from his hospital ordeal as he has asked to be involved in their final fitting. It is good to hear that, despite his medical procedures, John is still checking on progress. His treatment, we understand, is going well.

As the workshop is close to being a workable entity for members, a list of 'Rules of Occupancy' will be drawn up by the Committee and published quite soon. Nothing too onerous it is hoped but basic housekeeping and disposal of rubbish will have to be strictly adhered to.

Time to start thinking about projects.



Milling Machine In Place In Workshop

Work Bench In Workshop

Outer Workshop Showing Installed Electrics And Painted Walls

Club Meeting Wednesday 5th April

Martin Sanderson. Walnut Woodwind and Brass Instrument Repairs.

It is a coincidence that a year ago, and within a day (6th April 2016), Roger Taylor gave PEEMS a talk on the "History Of The Cornet", and Martin Sanderson continued the musical theme with a very informative talk on brass and woodwind repairs.

As Martin explained, instrument repairers are in general like himself, "one man bands". There are only about six instrument repair companies in the U.K with more than five workers.

Instrument repairers are represented by NAMIR (National Association Of Instrument Repairers) which has about 170 professional members.

NAMIR has a very good members-only web site. It is invaluable for advice and there is a very good response for spare parts.

Martin repairs, but doesn't make instruments and was introduced to the profession by his girlfriend (now his wife), a musical instrument teacher.

In order to train for the profession, Martin undertook a three year course with two years at college in Newark-On-Trent. This course takes on ten students a year, and initial emphasis is placed on hand/eye coordination with regard to instrument repairs. In the first year at Newark, there was training on tool work and use of the pillar drill, and in the second year, Martin made a clarinet. The third year was spent at a Leeds college where the specialism was brass instrument repairs. In the last six weeks of the course, the students were encouraged to manufacture their own tools. One tool a week was manufactured, copying original tools from America.

Martin's workshop is in Thornton Le Dale. He has a 10ft x 16ft shed containing a Kerry lathe. The lathe has 18 inches between centres, and he explained that lighting is very important, especially for woodwind repairs. Martin's first repair project was an oboe with silver key work.

Some of the complications that happen in the repair process were described. Currently, there is a lot of cheaper equipment from the Far East, and for brass and woodwind instruments there is a real problem sourcing spare parts. Sometimes the customer has to be told that their instrument has no chance of repair. Further complications are that woodwind instruments require very small screws for adjustment, and some manufacturers even use their own thread sizes.

Most of the instrument repairs that Martin performs are for schools and bands. Most repairs for schools are for woodwind instruments (eg. flute, clarinet, saxophone, oboe and bassoon), of which flutes and clarinets are the most common. There was an education here for those of us who thought saxophones were brass instruments. Saxophones are classified as woodwind because they have reed mouthpieces, whereas brass instruments have brass mouthpieces.

Band instrument repairs are generally for brass instruments, such as cornets and trumpets. We heard that brass instruments can be made from plastic, with brass valves.

Repairs generally consist of replacing pads made from card, felt and skin (fish lung), and replacing tenon joints.

The advice was that repairs can be effected efficiently, provided that the repair stages are carried out in sequential order. Repair stages include pad replacement, key work cleaning, tenon joint replacement, key regulation, and adjustment of string tension.

The sizes of the instruments repaired have a wide variance. For example, a bassoon is eight feet and six inches long from the bell-end to the mouth piece.

Martin explained typical woodwind repairs, using the flute as an example. The flute has sixteen pads (tone holes). The flute is one of the most demanding instruments to play, and much time is spent adjusting the pads. The pad settings are critical, and air gaps are not allowed. Where airgaps occur, the pad has to be unscrewed, and the height is built up with paper. The oboe is similar and will not play unless the pads are seated properly.

Tenon joints on clarinets are another common repair for school woodwind, especially due to the tendency of some pupils to sit on them at home! Tenon joint repairs are carried out on the lathe. An example was given where a mouthpiece was used to repair a joint which was then bonded in place with Araldite. Sharp tools and slow rotation on the lathe were the key to a successful repair.

Baritone saxophones are another common repair. Being a member of the 'Thornton Dale Christmas Lights Committee' gave Martin access to an innovative saxophone checking tool. He demonstrated this by passing a string of lights down through a sax showing where all the air gaps were! This tool saved a lot of time compared with the alternative method of using Rizla papers.

An important aspect of the repair process is Quality Control, with each instrument checked and repaired before release to the customer.

Typical brass work repairs are: the freeing of valves, freeing tuning slides (which can seize up), freeing mouth pieces, removing dents, cleaning and soldering. General maintenance is also carried out with hot soapy water and brushes and then oiling. French horns have rotary valves, which are often not cleaned and these can then jam up.

Illustrating how important the maintenance of brass instruments is, Martin gave an example of a cornet he had worked on. This cornet had been stored in an attic for sixty years. It had been kept in a leather case. It had copper valves (most valves are nickel plated), and had been maintained by oiling etc. There was some lime scaling in the port holes, but it still worked.

One of the most essential tools for brass repairs is a "dent ball" set. Dents in brass instruments can be removed using dent balls. The balls are introduced at the bell-end, and using for example, a tuning slide as an internal hammer, the dent can be removed by increasing the ball sizes. The dent balls are magnetised stainless steel, and therefore their position inside the instrument can always be determined with a magnet.

Sometimes even the finest quality instruments are unrepairable. Martin gave an example of a French horn which had been run over by a car whilst still in its case. Martin ended up having to contact the finest craftsman in the land, or at least in East Yorkshire, and he couldn't fix it either.

Finally, during questions and answers, we learnt that a French Horn tube is about nine feet long, and that the better clarinets are manufactured from African blackwood. The cheaper clarinet mouthpieces are manufactured using ABS (Acrylonitrile butadiene styrene), a common plastic polymer.



A Visit To Newark Air Museum On The 7th April



Six members of the club visited Newark Air Museum, on the first Club outing of the year. Newark Air Museum, is located on the perimeter of what was once Winthorpe airfield, a Second World War Heavy (Bomber) Conversion Unit (HTU). The disused runway is still there, although it is now part of Newark Show Ground. The idea of the museum was first formulated in 1964, and in 1967, was registered as a charity. Newark's collection of aircraft, aero engines and aviation relics, gathered together over the years, now represents one of the largest non-profit making volunteer managed aviation museums in the country. Work on the various exhibits is undertaken by a small group of museum members who do the work in their spare time.

For a volunteer run and organised museum, the layout and exhibits were very impressive. There are thirty six aircraft in total with thirty two airframes undercover in Hangar 1 and a further twenty airframes in Hangar 2. In addition, there are over forty five engines, power units and rocket motors dating from the 1920s through to modern jet engines, including the Olympus which powered the Vulcan and Concorde.

There were quite a few curiosities in the museum, such as a Supermarine Swift WK277, (only six left), an aircraft type which had broken the world absolute airspeed record in 1953, at 738 mph. WK277 was going to be converted into a world speed record jet car, and was then stored in a garage before delivery to the museum. Also on show was the Lee Richards Annular (Circular Biplane replica). This was built as a non flying replica for the 1965 film "Magnificent Men In Their Flying Machines", where it was "flown" by Tony Hancock!



The swing wing Russian MIG-23M Flogger, (originally from Poland) and the MIG-27 Flogger (based around the MIG 23 airframe), are the only ones on display in any British aviation museum.



A tour of inspection of the inside of the AVRO Shackleton Mk 3 Phase 3 WR977, was one of the highlights of the visit. Not only is this aircraft the only Mk 3 phase 3 Shackleton preserved in a volunteer air museum in the UK, but it allowed an idea of the cramped flying conditions in a Lancaster. The Shackleton was developed by Avro from the Avro Lincoln bomber, itself being a development of the Avro Lancaster bomber.

WR977 was fitted out for maritime reconnaissance and anti-submarine warfare, carrying three homing torpedoes, nine depth charges, twelve sonobuoys, and armed with a cannon in the nose. The flight stations and cockpit are shown opposite, and it looked as if the crew of ten had left for the last time, which indeed they did in 1971.

The most impressive aircraft at Newark was the AVRO Vulcan. It is amazing that the airframe with its futuristic shape first flew on the 30th August 1952 only eleven and a half years after the AVRO Lancaster's first flight on the 9th January 1941. In fact, at Newark you can stand between the AVRO Vulcan and AVRO Shackleton, and consider their first flights were only three and half years apart, with the latter's first flight in March 1949.



There was a timely reminder, however, of the true purpose of the Vulcan, with a "Yellow Sun" bomb on a trolley in front. The name belied the fact that this was Britain's first hydrogen bomb which had a yield of 500 kilotonnes. This was never used and was withdrawn in 1970. The words "Inert" and "Practice", painted on the bomb, allowed close inspection. It is worth noting that while the Vulcan was in service for twenty eight years, (1956 to 1984), the only bombs dropped "in anger" were the twenty one "conventional" bombs dropped onto the runway at Port Stanley during the Falklands war, with one cratering the runway.

A salutary reminder of the extreme danger of aerial warfare was the photograph of Albert Ball VC DSO MC, taken hundred years previous (9th April 1917) to our visit. This may have been the last photograph taken of him as he was killed one month later (7th May 1917), aged just 20.

There are a number of types of aircraft at Newark, ranging from the Vulcan to home builds, gliders, helicopters and autogyros. While there is no room in this newsletter to discuss all the aircraft, a list of the aircraft at Newark is at: <u>http://www.newarkairmuseum.org/aircraft-list</u>

After visiting all the exhibits, the PEEMS members retired to the excellent café for sandwiches and coffee. The exhibits were so good that a revisit is recommended in the future.



Forthcoming Events

Club Meeting, Wednesday 3rd May:

Arrangements will be made for The Doncaster Model Engineering Exhibition including stewarding.

Bob Polley's Open Day, Sunday 7th May

Bob Polley, is holding his annual open day. Last year, several members were able to get along and had the Bob Polley 'experience'. The principal event was running locomotives on the track but Bob also has a very interesting display of other items in one of his large sheds. It is expected that this year, the 'experience' will be the same. Members and their guests are welcome.

24th National Model Engineering and Modelling Show Doncaster, Friday 12th, Saturday 13th and Sunday 14th May.

Preliminary arrangements:

Wednesday 10th May ~ Load vehicles for Doncaster Show.

Thursday 11th May ~ Doncaster set-up day. (arrive at 10.00 am).

Workshop Morning ~ Tuesday May 16th 10.00am to 12 noon

PEEMS Garden Party Sunday 4th June 11am to 5pm.

Mike and Pat Sayers will be holding their final PEEMS garden party, which will be in aid of 'Rydedale Special Families' and the 'Next Steps Mental Health Resource Centre'. All are welcome.

Scarborough North Bay Railway

A visit to the historic Scarborough North Bay Railway has been proposed for the evening of Wednesday the 19th July. The visit will be suitable for families, and it would be good if the train is full. There will be a meal after the ride, and for that reason, numbers will need to be known before July 19th, for catering.

PEEMS Model Exhibition At Pickering Station 24th to 28th August. (Thurs-Mon)

PEEMS will be mounting an exhibition of models at Pickering Station over the above dates. This is now a fixed date in the calendar, but arrangements still need to be made. The exhibition will be in same location as before, in the room on Platform 2

The Railway

Some updates :

The railway has an extensive season this year with six outings, and volunteers are required for setting up, running the railway and dismantling.

- 20th to 21st May (Sat/Sun) ~ Levisham Station during their "Behind The Scenes Family Weekend". This event is already featured on the NYMR web site. Help is requested for this event.
- 13th June (Tues) ~ Welburn Hall School
- 24th/25th June (Sat/Sun) ~ Wolds Vintage Rally ~ Fangfoss. This will be the first time at this rally.
- 2nd July (Sun) ~ Malton Show. The railway will be setup on the Saturday afternoon and evening.
- 25th July (Tues) ~ Ryedale Show
- 12th/13th August (Sat/Sun) ~ Driffield Steam Rally. This event is now confirmed for the railway.

We are hoping to make at least £200 from each event, except obviously Welburn Hall School.

"Clock Focus Group"

John Powell is setting up a "Clock Focus Group" for those interested in all aspects of clock construction, repair, tool making and joint projects in the workshop. The dates of Focus Group meetings will be determined later.

Anyone interested should contact John Powell or Richard Gretton at grcgretton@btinternet.com

Contact

If you would like to make a contribution in the Newsletter, the contact is: Nevile Foster Tel 01751 474137 or e-mail <u>nevf123@outlook.com</u>