

# LIONSHEART

Number 77

Web Site: <http://www.lionlocomotive.org.uk/>

July 2013



Photo 1. The charming view of part of the Wirral club's track. Come to Lionsmeet 2013 and find out what else is there to delight the eye. Refreshments provided. Read on for further details.

Photo by Andrew Neish

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## Dates for your Diary

Bristol Model Engineering and Hobbies Exhibition,  
Thornbury Leisure Centre, BS35 3JB,  
Friday to Sunday, 16<sup>th</sup> to 18<sup>th</sup> August 2013.  
<http://www.bristolmodelengineers.co.uk/Exhibition/exhib.htm>

Midlands Model Engineering Exhibition,  
Warwickshire Exhibition Centre, Fosse Way, Nr Leamington  
Spa, CV31 1XN,  
Thursday to Sunday, 17<sup>th</sup> to 20<sup>th</sup> October 2013.  
<http://www.meridiennexhibitions.co.uk/>

Sandown Model Engineer Exhibition,  
Sandown Park Racecourse, Esher, Surrey, KT10 9AJ,  
Friday to Sunday, 13<sup>th</sup> to 15<sup>th</sup> December 2013.  
<http://www.modelengineershow.co.uk/>

CANMOD 2014, hosted by CSMEE,  
Halswell Domain, Christchurch, New Zealand.  
Thursday to Monday, 2<sup>nd</sup> to 6<sup>th</sup> January 2014.  
[http://csmee.org.nz/resources/Canmod\\_14/Canmod\\_14\\_Brochure\\_P2.pdf](http://csmee.org.nz/resources/Canmod_14/Canmod_14_Brochure_P2.pdf)



Photo 2. The imposing entrance to Royden Park, in which is situated the Wirral club's track. Pass between the pillars and along the leafy avenue. Full instructions on how to get there are on page 2, with a map on page 3.

Photo: Andrew Neish



An opportunity to meet up and run models of 'Lion' and other early 19th century locomotives.

## **Background**

Lionsmeet is organised by OLCO, the Old Locomotive Committee, which exists to foster a continuing interest in the locomotive 'Lion'. Built in 1838, Lion originally ran on the Liverpool and Manchester Railway. It is currently in the Museum of Liverpool and, when last steamed in 1988, was the oldest working steam locomotive in the world.

See [www.lionlocomotive.org.uk](http://www.lionlocomotive.org.uk) for more details.

Lionsmeet is an informal annual gathering of those with an interest in Lion in all its manifestations and gauges.

## **This Year**

The 2013 Lionsmeet is being held on Saturday 10th August at the Wirral Model Engineering Society from 10:00. See [www.wirralmodelengineeringsociety.co.uk](http://www.wirralmodelengineeringsociety.co.uk)

In previous years, the focus of Lionsmeet has been a competition between drivers of 5" gauge models of Lion, based on work done in a set time. This year the emphasis will be on encouraging OLCO members and other interested parties to exhibit or run models of Lion and other pre-1850 locomotives. There may be some light-hearted competitive events, but these will not involve closing the track to other drivers.

Locomotives of any scale are welcome, although running facilities are limited to a raised track of 3½" and 5" gauges and a ground level track of 7¼" gauge.

An indoor display area will be available and we invite visitors to bring models (finished or under construction), drawings and railway memorabilia relating to Lion, other early locomotives and the Liverpool and Manchester Railway.

## **Who's Invited?**

OLCO members, of course, and anyone with an interest in railways of the first half of the nineteenth century. If you're thinking of building a model of Lion, please come along and take a look; maybe even have a drive (subject to the owner's permission). If you're part way through building a model, bring it along and discuss your project with someone who's been there already.

## **Location**

The Wirral Model Engineering Society. The Sidings, Royden Park, Frankby, Wirral CH48 1NP. (See map on page 3)

The entrance to Royden Park (grid ref SJ 245 862) is off Hill Bark Road, just south of its junction with the B5140 at the Farmers Arms pub. It is marked by a gatehouse, two entrance pillars signed 'Hillbark' (there's a hotel in the park) and a 'Welcome to Royden Park' sign. After about 0.3 miles of driveway, turn left at the crossroads, signed 'Royden Park'. After 30m, turn left onto a track and pass through a barrier signed 'Authorised Vehicles Only'. After 100m, turn right through another barrier into the WMES site (SJ 246 858).

## **Public transport**

Visitors arriving by train can be collected from West Kirby station by prior arrangement. Please contact me in the first instance. Contact details at the foot of this page. If you're travelling via Lime Street then please note that the platform for the Wirral line is closed for refurbishment, so go to Central Station, just a few minutes walk away (but there may be a free transfer bus).

## **Facilities**

The Wirral MES has a raised track of 3½" and 5" gauge. It is a continuous circuit of about 1250 feet in length, with one station, running through woodland with a maximum rising gradient of 1 in 68. The track is steel and is fitted with anti-tip rails 10" below rail height and 14" across outside edges. The rail is a minimum of 13" above ground level.

The 7¼" gauge ground level track is 2267 feet long, in the form of a balloon loop with one terminal station and associated steaming sidings.

There are plenty of steaming bays for 3½" and 5" gauge locos. Power for blowers at 12V and 24V DC is provided. Compressed air is available on the ground level steaming bays. Coal is anthracite beans. Bring your own lighting-up materials. Passenger trucks will be available, and may be used for driving.

There is adequate parking a short distance from the steaming bays. Washing facilities are available in the clubhouse and toilet facilities are in an adjacent building.

## **Boiler Certificate and Insurance**

Anyone wanting to steam a locomotive must bring a current boiler certificate for inspection.

OLCO does not carry insurance cover of its own so all locomotive drivers are advised to ensure that they have adequate public liability insurance cover. Members of a model engineering society may find that their society's insurance will suffice.

## **Food**

Our hosts will be offering bacon butties to visitors from 10:00 to 11:00.

A buffet lunch will be provided from about 12:30. Tea and coffee will be available throughout the day. There will be no charge for food and drink, although visitors may like to make a voluntary contribution to the host club.

As usual, if there's enough interest, an early evening meal will be arranged at a local pub, probably at about 17:30.

## **Overnight Accommodation**

There are several options on the Wirral. I will be staying at the Premier Inn, Wirral (Heswall), five miles south of the venue: Chester Road, Gayton, Heswall, Wirral, Cheshire, CH60 3SD. Tel: 0871 527 9178

## **Organiser**

I'm Andrew Neish, this year's Lionsmeet organiser. It would greatly assist both myself and the host club if anyone planning to attend would let me know in advance. Please include the number of persons attending, whether bringing a locomotive or other exhibit, and whether you are likely to partake of the mid-morning bacon roll, buffet lunch, or early evening meal.

**Contact details:** Andrew Neish. E-mail: [lionsmeet@neish.org.uk](mailto:lionsmeet@neish.org.uk). Home phone: 01428 723483. Mobile: 07779 360 393.



A map of the locality



Map supplied by Andrew Neish with minor amendments by the Editor



Photo 3. Hard hats may be advisable! The long straight appears to go on to infinity.

Photo: Andrew Neish

(Footnote: Andrew would be happy to receive members' views on the timing of Lionsmeet and he's sure that the topic will be discussed at this year's event. If we can agree a better time of year to hold the event, he'd be happy to consider moving it. Ed)



# Minutes of Old Locomotive Committee 28<sup>th</sup> Annual General Meeting

**Venue:** Liverpool Museum, Pier Head, Liverpool Waterfront, Liverpool, L3 1DG.

**Date:** Saturday, 18<sup>th</sup> May 2013

## **Members present:**

John Brandrick (Chairman)  
John Hawley ( Editor)  
Jon Swindlehurst (Treasurer)  
Andrew Neish (Lionsmeet Co-ordinator)  
Jan Ford (Secretary)  
Bob Hayter  
Peter Webb  
Alfred Lloyd  
David Neish

## **Present as Observer:**

Sharon Brown, Curator of Land Transport, Liverpool Museum.

## **Notices:**

The Notice of A.G.M. and Agenda together with the Minutes of the previous (27<sup>th</sup>) A.G.M. had been circulated to all members in 'Lionsheart' Number 76 (April 2013). For convenience of reference, the Agenda is reproduced below:-

1. Welcome by Chairman
2. Apologies for Absence
3. Minutes of 27<sup>th</sup> AGM
4. Matters Arising
5. Chairman's Report
6. Treasurer's Report
7. Election of Officers
8. Modellers' Activities
9. Any other business

## **1. Welcome by Chairman:**

The Chairman formally opened the A.G.M. at 1.30 p.m. and welcomed those attending, noting that a Quorum of Members was present.

## **2. Apologies for Absence:**

Apologies for absence were notified to the meeting as follows:-

John Mills,  
Alan Bibby,  
John Archer,  
Rich Garich,  
John Coop,  
Harrye Frowen,  
Peter Mountford

## **3. Minutes of the 27<sup>th</sup> A.G.M.:**

The Minutes of the 27<sup>th</sup> A.G.M. had been circulated to Members and the Chairman invited comments.

## **4. Matters arising:**

John Hawley reported that, although authorized by the previous A.G.M., he had decided not to proceed with the purchase of a laser colour printer.

Queries regarding action on items 11c, 11d and 11f were deferred to 'Any Other Business'.

Accordingly, the Chairman proposed adoption of the Minutes. This was seconded by John Hawley and the motion was passed unanimously.



## **5. Chairman's Report:**

The Chairman gave his report to the meeting, reviewing the year's activities. This was welcomed by those attending. Refer to separate document below for details of the address.

## **6. Treasurer's Report:**

The Treasurer presented his report and accounts. Refer to separate document below for details. Membership has increased to 84 and there is a healthy balance. The bank account was originally with Alliance and Leicester, now acquired by Santander. Acceptance of the report was proposed by Bob Hayter, seconded by David Neish and the motion was passed unanimously.

## **7. Election of Officers:**

John Brandrick was returned as Chairman unopposed.

Jon Swindlehurst was returned as Treasurer unopposed.

John Hawley was returned as Editor unopposed, although John reminded his intention of resigning office in the near future.

Jan Ford was returned as Secretary, no other candidates presenting themselves.

Andrew Neish was returned as Lionsmeet Co-ordinator unopposed.

The members present confirmed their wish that Alan Banks continue as Webmaster.

## **8. Modellers' Activities:**

These were discussed under three headings – a) 'Lionsmeet', b) Exhibitions, c) marketing of castings and drawings.

Andrew Neish reported that 'Lionsmeet' had been arranged for Saturday 10th August 2013 at the Wirral Model Engineering Society. He proposed an experimental change of format intended as a 'fun run' with multiple locomotives running simultaneously at a scale speed of 25 m.p.h. and open to all models where the prototype appeared not later than 1850. This would mean the awarding of the Mike Parrot Trophy would be held in abeyance for one year. This experimental change was proposed, seconded and carried with one abstention. The Chairman offered to write to the Model Engineering magazines with details of the Wirral Event and its experimental format.

The Chairman reported that in the current year OLCO would man a stand at the model engineering exhibitions held at Bristol, Harrogate and Alexandra Palace.

The Chairman reported that 'Lion' castings and drawings are available for sale through OLCO. Work on a modified model boiler continues.

## **9. Any Other Business**

- a) John Hawley reported that it had been decided that an economic case could not presently be made for the purchase of a laser colour printer.
- b) Lionsheart on the Web: It was agreed that it would be useful to be able to access 'back numbers' of 'Lionsheart' on the Web. Methods of achieving this were discussed and the Chairman agreed to discuss with the Webmaster what would be feasible.
- c) Members' details: Methods of making at least some Members' details available to other Members were discussed. A proposal to canvass the agreement of the entire Membership in the next issue of 'Lionsheart' was carried unanimously. (*See page 10 – Ed*)
- d) The Chairman briefly described the project involving Paul Dore which aims to build a full-size replica of a 'Samson' class locomotive (L&M No. 62) utilizing 'Planet' replica patterns, where available. John Hawley confirmed that he has delivered copies of the 'Lion' drawings to Mr. Dore.
- e) John Hawley confirmed that the David Royle 'Lion Operators Manual' is available to members but its size (36KB) means that distribution is normally made by CD. (*Though I do intend to serialise it in Lionsheart – Ed*)
- f) John Hawley is keen to set the record straight on inaccuracies that have appeared in some accounts of the rescue of 'Lion' in 1929. He is in contact with Adrian Jarvis regarding his article 'Untwisting the Lion's tale', which was published in Railway World Vol 41, No 477 (Jan 1980), Pgs 21 – 24.
- g) The Chairman raised the issue of publications regarding 'Lion'. The original 'Yellow Book' printed by T. Lyon & Co. Ltd in Liverpool in 1980 (ISBN 0 906367 04 2) is now out-of-print and reputedly contains errors. Copies are obtainable second-hand. The Chairman suggested three routes forward:- 1. Reprint the 'Yellow Book' 'as-is'; 2. OLCO write a definitive history; 3. OLCO/Museum of Liverpool jointly publish a book. There was animated

discussion which resulted in the Chairman proposing the Motion “OLCO agree in principle to support the re-issue of the ‘Yellow Book’”. The Motion was seconded by David Neish and passed unanimously.

- h) The Chairman discussed the wish to commemorate the contribution made by Charles Taylor-Nobbs to OLCO and the understanding of ‘Lion’. An annual award for the best authentic model of ‘Lion’ as determined by “an ad-hoc panel of experts appointed by the Committee” had been suggested, to take the form of a ‘Charles Taylor-Nobbs Memorial Medal’ to be retained by recipients. There was considerable enthusiasm for this initiative and the Motion that “An investigation be made regarding the provision of a Medal to be awarded on merit, as appropriate, to the ‘Lion’ model which shows a significant degree of authenticity” was passed unanimously.
- i) The Chairman proposed a Vote of Thanks to Alan Bibby for his work as Lionsmeet Co-ordinator. The motion was seconded by Andrew Neish and carried unanimously.
- j) The Chairman proposed a Vote of Thanks to Sharon Brown for her hospitality at the Museum. The motion was seconded by David Neish and passed unanimously. In replying, Sharon confirmed that the Museum of Liverpool was the most visited museum out side London and is being evaluated for a Museum of Europe prize.
- k) In concluding the business of the A.G.M., the Chairman endorsed the experimental format of ‘Lionsmeet’ for this year and stated that, subject to demand, there will be a meal following the event. He also mentioned a desire to improve the OLCO Exhibition Stand with a Chronology of ‘Lion’. The Chairman thanked those members who had attended the A.G.M. and closed the meeting at 4.00 p.m.

### Chairman’s Report

OLCO continues to increase its membership which is particularly encouraging as some societies like ours are now beginning to experience a fall in numbers. This is partly due to our excellent website and partly due to our continuing involvement in the various Model Engineering exhibitions to advertise our existence. Since our last AGM OLCO has attended shows at Bristol, Alexandra Palace, Manchester and Harrogate which is a good geographic spread and besides recruitment is a good opportunity to keep in touch with our nationally distributed membership. It also is reassuring to find that there is still considerable interest in LION including models under construction in various scales. I regard our involvement with the Model Engineering world through the exhibitions as a very important aspect of our present activity and I would like to thank all those who have supported OLCO with stewarding and loan of models. I personally find the shows very rewarding and enjoyable and the present level of involvement is about right although it is sad to report that the Manchester show will not be repeated next year.

Our other main activity is Lionsmeet. Last year we met at Newport and I would like to thank the Newport Society for hosting us and also to the Cardiff Society for their kind invitation to visit their track on the following day. I am concerned about the small numbers of visiting LIONs at Lionsmeet. We had an excellent turnout at Brighouse a few years ago but since then we do not seem to have maintained the interest and I think we need to discuss why this is and what we can do to improve matters. I am concerned that host societies may go to a lot of trouble to accommodate us only to find there is a poor turnout and feel it was not really worthwhile.

Our website is excellent and our thanks are due to Alan Banks in producing something we can be proud of. It now contains very comprehensive information including sources of castings and drawings. The only improvement I can see is that we should advertise it more energetically

than we perhaps do for example in the Model Engineering and railway journals and via OLCO stands at exhibitions.

You will be aware that John Hawley has asked to stand down as Lionsmeet editor. I am sure the Membership will be greatly saddened if he does, as he has done a magnificent job in what is surely the most time consuming and onerous OLCO office and I cannot thank him enough for his efforts and what he has achieved. Lionsheart is so important for communication with our membership and it is vital that it continues. It is perhaps the main ‘value for money’ aspect of membership and the interim newsletter which I produced in the absence of Lionsheart was a poor substitute and I hope we do not have to repeat this. It is vitally important that Lionsheart continues and we must have an Editor.

It is encouraging that there is still much interest in modelling LION. I am impressed, for example, that there is a great deal of ingenuity in modifying LION’s valve gear and the Northern Federation Boiler committee recently approved a modified boiler design based on the full size prototype. LION, in miniature at least, is not standing still.

Now that we have a well established routine with our involvement in the Model Engineering world and exhibitions, an excellent website, future objectives should include a replacement for the ‘Yellow Book’ which is now long out of print, preferably in conjunction with Merseyside Museums and extending the original text with additional material from OLCO sources and a bigger format with bigger and better illustrations and including some technical details of the sort that would be of interest to the modelling fraternity. I feel this is an area for active involvement with the Museum and we should endeavour to support their LION centered activities generally as much as possible and work with them for LION’s benefit. It is pleasing to acknowledge their success with the prestigious Engineering Heritage Award this year and we are grateful



for the invitation to OLCO members to be present at this significant occasion.

OLCO still has not progressed on a suitable memorial for our late vice president Charles Taylor-Nobbs in recognition of his role as a founder member and for his scholarly researches and publications on LION and we must address this deficiency.

Finally, my thanks are due, on behalf of the membership, to all the officers of OLCO for their work and for all those have supported OLCO activities over the

last year. OLCO is doing well with, gratifyingly, increasing publicity in the Model Engineering press for example, but there is no room for complacency and we must continue to develop. In particular we need to involve our membership generally in our activities which is why Lionsheart is so important for communication and as a forum for opinion and engagement.

It has been a pleasure and a privilege to serve OLCO in the last year. Thank you.

## **TREASURER'S REPORT**

Membership has grown slightly this year and now stands at 84, an increase of 3 on 2012. In the coming year there are 28 members due to renew, many of whom have 5 year memberships, so it will be interesting to see if the present high membership can be maintained.

Income is up this year, mainly due to good donations from exhibitions where OLCO has had display stands.

The funds in the current account are now quite high and if no large expenditure is decided on at the AGM I intend to transfer most of it into the deposit account where it will gain a little interest.

The overall balance now stands at £6170.37, an increase of £310.99.

Jon Swindlehurst - Treasurer/Membership Secretary

### **OLCO FINANCIAL STATEMENT for year ending 31/03/2013**

<u>INCOME</u>	<u>2013</u>	<u>2012</u>
Subscriptions	320.00	295.00
Deposit acc. interest	5.42	5.05
Donations	220.00	115.00
<b>TOTAL</b>	<b>545.42</b>	<b>415.05</b>
<u>EXPENDITURE</u>		
Cost of Lionsheart (70,71,72)	0.00	143.41
Cost of Lionsheart (73,74,75)	138.43	0.00
Website (2 years fees )	88.00	0.00
engraving Lionsmeet cup 2010	0.00	6.71
engraving Lionsmeet cup 2011	0.00	8.00
engraving Lionsmeet cup 2012	8.00	0.00
Treasurer's expenses	0.00	4.32
<b>TOTAL</b>	<b>234.43</b>	<b>162.44</b>
<u>NET PROFIT</u>	<u>310.99</u>	<u>252.61</u>
<u>TRANSFER (cur. to depos.)</u>	<u>0.00</u>	<u>350.00</u>
<u>ASSETS AND LIABILITIES</u>		
Cash at bank: Current Acc.	706.14	412.57
Cash at bank: Deposit Acc.	5425.06	5419.64
Cash in hand	39.17	27.17
<b>TOTAL</b>	<b>6170.37</b>	<b>5859.38</b>



## The Bristol Exhibition

John Hawley

As we have done for several years now, we will have a stand at the prestigious Bristol ME Exhibition, the 'Best in the West', at Thornbury, a few miles north of Bristol.

Getting to the exhibition is simplicity itself: just get onto the M5 and exit at junction 14. Follow the road signs for Thornbury and in no time at all, you will see the yellow AA signs for the exhibition. Parking is free and close to the exhibition hall. Thornbury itself is a small country town with good facilities and there is a supermarket a short walk from the car park, should you feel the need to purchase more in the way of refreshment than the venue itself offers. Do come to the OLCO stand and make yourself known to myself or whoever is on duty. You may be sure of a warm welcome.

**However, an appeal:** Not having a Lion of any sort myself, I am very much dependant on the loan of models for this exhibition. This year is no exception. I am much indebted to those who have offered their models in the past and would ask those of you who have models, no matter what scale, condition or completeness to be kind enough to loan your handiwork for this well regarded event. Rest assured that every care will be taken of your model and it will be returned as soon as possible afterwards. Please contact me (see back page) so that we can arrange a time and place for collection and return. I look forward to hearing from you in the near future.



## Readers' Letters

From: David Wilson

Re: Lionsheart no 76, photo. 6

Bedale, North Yorks

2 May 2013

Dear John,

Please find attached, proof that the chimney top can be formed using an old file ground to the profile of both inside and outside of the chimney cap and supported on a bar in the tool post of the lathe, checking with profile templates as you go. I found the base casting more of a challenge as with a chimney this long any mistake will show!, so have included a couple of snaps of how I managed to fly cut it.

Best regards - Dave Wilson.



Photos 4 and 5. David Wilson's flared chimney, with profiled file and other tools.

Photo David Wilson

From: -D ROYLE

Re: Spinning & Annealing

Oadby

7 May 2013

Hi John

Ref to your Spinning & Annealing the attached may be of help. One of the best books I have found to help with model Eng, is The Thames and Hudson Manual of Silversmithing by Frances Loya . The knowledge transfer is very us-full from amerzon at £5+

David Royle BA.MA.MSc

David sent scans of pages from various publications, some of which are reproduced below. So come on, all you budding modellers. Now you have little excuse for not getting out there and producing some exemplary work. Give it a go and be proud enough to offer it for exhibition.

## Where to Source Square Headed Bolts?

Before we get to the scans, however, David has appealed for help in sourcing all those square headed bolts of which Lion's designers(?) and refurbishers seemed so proud. They are the very devil to make and, due to the quantity required, are not top of the pops for passing a happy few hours on the lathe. And yet, since so many of you have Lions, there must be hundreds of these things in existence – just where do they all come from? Please get in touch (through me – contact details on back page) and I'll pass the details on. Sounds like a job for the man who's producing the kit of parts. Harry!



## 6 Largework – raising and hammering

Largework is the general term covering hollow-ware (jugs, tea-pots, trophies, etc.) and flat-ware (trays, plates and other dishes). For these the techniques of raising and hammering are basic, and learning the correct way to use a hammer, carefully and in a disciplined manner, is one of the most important requirements of silversmithing.

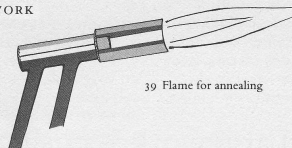
Raising is the way to produce a hollow form of some depth from a flat sheet of metal without any soldering. To begin raising a piece, it is necessary to start with a drawing of a plan and side elevation or, if the piece is complicated, a full working drawing. The piece of metal, which should be circular, is called a 'blank'. The size of the blank is calculated by adding the average diameter to the full height of the job; to this must be added 'experience' since everyone has an individual way of raising; some stretch the metal, others compress it.

The thickness of the metal is determined partly by the type of metal used and partly by the design. The most common size is G12 (0.90 mm). If Britannia silver or copper is used, either is more likely to thicken up, and G11 (0.80 mm) would be more suitable. When raising is first being practised, gilding-metal is better to use than copper as its working properties are nearer to those of silver. After the formula for the size of the metal has been worked out, take a pair of dividers and scribe the correct size of the circle on to the metal. Cut out this piece with metal shears.

### Annealing

When a piece of metal has become work-hardened through being hammered and needs to be softened so that it will not crack, it will feel hard and springy. Then annealing is required. Metal should be softened after every round of raising. The metal is heated to a temperature below its melting point and then quenched or allowed to cool slowly if certain gold alloys are being worked. The temperature at which the metal is annealed is important, as over-heating leads either to the metal

### LARGEWORK



cracking or taking on an orange-peel-like surface, showing that the grain structure has been enlarged to such an extent as to make the metal unworkable. Over-heating will also cause heavy oxidation on silver and gold if the heating is done in air, producing firestain (see p. 82). The recommended temperature at which precious metals should be annealed is approximately 650°C, producing a dull red colour. At 700°C the metal will glow a good red, at 800°C the red glow will go out of it. If the temperature is not high enough, the metal will not be fully annealed. Care should be taken with platinum. It will work-harden faster than the other precious metals, but should not be over-annealed as this leads to a 'heat-etch' pattern developing on its surface. Anti-firestain solution is not needed on platinum, as there is no danger of an oxide film forming on its surface.

There are several ways of heating the metal: different gas torches are available for use with cylinders or compressor and natural gas (see p. 78). The flame is shaped rather like two cones, one inside the other, just beyond the tip of the inner cone. Regardless of the type of appliance used, the hottest part of the flame is always at the same point.

When any metal is to be heated, always make sure that the hearth is clean so that nothing can be burnt on to the surface of the metal, from which any unknown marks should immediately be scraped or filed off.

While it is still dark red, the metal should be quenched in cold water. As a general rule quenching makes a great difference in the softening process of the metal, but there are exceptions: Johnson Matthey state in their catalogue that certain of their golds should not be quenched; others may be quenched once the metal has cooled to black heat (450°C–500°C) and others must be quenched from above 500°C. (See also p. 106.)

The piece of metal should then be dropped in the pickle (see p. 19) which cleans off any dirt and oxide. Silver and gold only need to be pickled after they have been annealed for the first time, or if they have picked up dirt on their surfaces. With gilding-metal the piece should be pickled every time it has been annealed as a thick copper oxide forming on its surface. If this is not removed it gets hammered into the surface which then becomes pitted and discoloured. After the initial pickling, a layer of fine

silver or gold is left on the surface of the metal, and remains there until it is broken either by polishing or filing. This fine silver gives a soft white sheen to the metal, and fine gold a buttery yellow sheen. Gilding-metal and copper are very dirty to work with, even after they have been pickled.

### Blocking

This is the first stage of hammering a flat sheet into a dish shape in order to provide a firm form on which to work. (It is easier to hold than a flat sheet of metal which would buckle when hammered on to a metal former.) The blocking hammer, one of the heaviest hammers, is used. It can have a face ranging from full to large and domed, and measure up to 5 cm.

If the job is to have a flat base, a circle with the diameter equal to that of the base should be marked from the centre of the blank, using pencil compasses rather than dividers as the cut made by dividers could easily open when the metal is hammered. If the piece is to have a curved bottom, the circle should be marked at the appropriate point where the metal begins to curve round on the drawing, and it should be raised in the same way as a flat-bottomed piece, the bottom being blocked out into a sandbag after the job has been raised completely. The



40 Blocking

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David then shows extracts from ME 2<sup>nd</sup> August 1974, pages 756 & 757 and 5<sup>th</sup> July 1956, pages 16 & 17, most of which you can access, I'm sure, before showing pages from an unknown publication, which I reproduce below:

### BASIC PROCESSES

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- (1) It makes the metal slightly thinner.
- (2) It spreads the metal slightly.
- (3) It hardens the metal.

**Spinning.** Metal spinning can be done in the school workshop. It is a process in which a thin revolving disc of metal is shaped over a wood or metal former (known as a chuck) with a blunt-nosed tool. The metal disc contracts in diameter by small amounts under the action of the tool until it finally assumes the shape of the chuck.

For small shallow articles the spinning chuck may be held in the three-jaw chuck of the lathe. The disc, which should be in a soft state, is held firmly against the spinning chuck by a tail block which is made to the diameter of the base of the article to be spun. This in turn is held firmly against the disc by a live centre. It is essential that the disc is running "true". The disc should be lightly smeared with grease before spinning to prevent it from being scored by the tool. The tool is supported by the toolrest and fulcrum pin (see fig. 48).

The lathe should be robust and capable of speeds from about 300 r.p.m. to about 1,000 r.p.m. Most metals can be spun, but if deep shapes are being made wrinkles tend to develop in the article being spun. These should be smoothed out as soon as they start to develop by pressing a piece of wood, known as a back-stick, at the back of the disc. The back-stick is used in conjunction with the

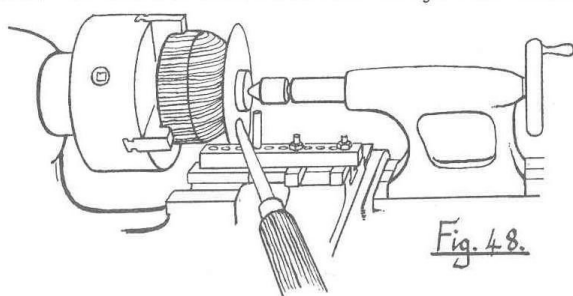


Fig. 48.

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spinning tool so that the disc is made to spin between them. Fig. 49 shows the back-stick in use. When the article is spun almost down to the chuck the edge can be trimmed with a diamond pointed tool as in fig. 50.

Fig. 51 shows a tool rest and fulcrum pin which can be made to clamp on to the top slide of the lathe. Both the tool rest and fulcrum pin can be made from mild steel.

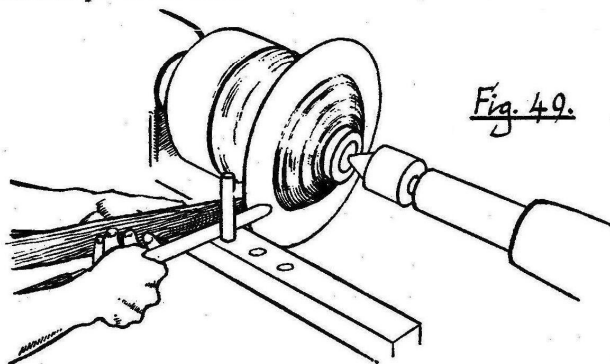


Fig. 49.

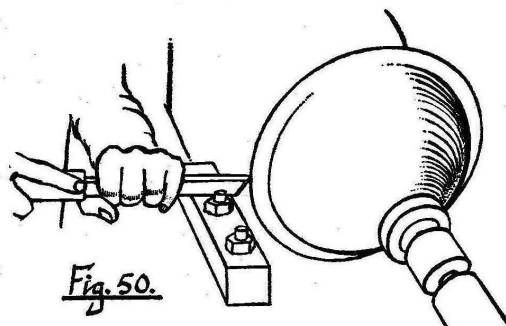


Fig. 50.

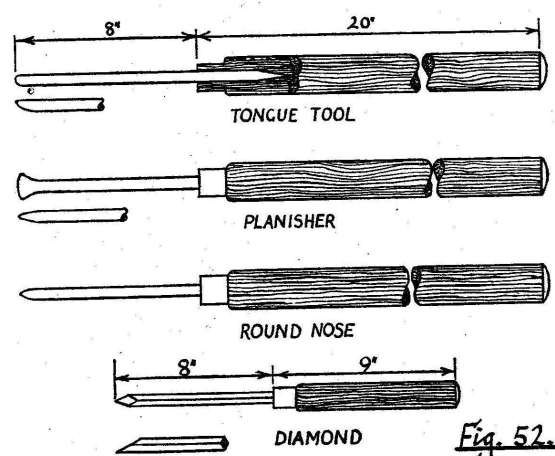
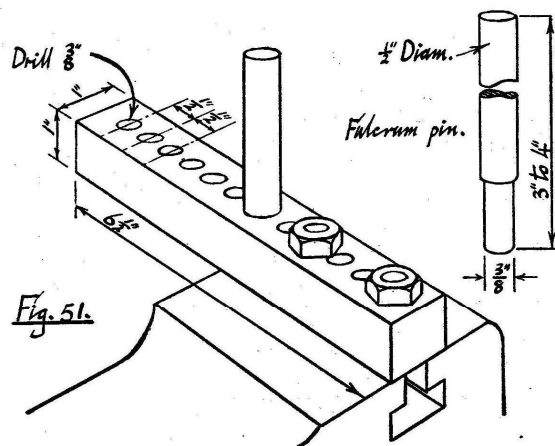


Fig. 52

Fig. 52 shows four tools which can be made in the workshop. The planisher, tongue tool and round nose tool are best made from round tool steel  $\frac{1}{2}$  inch to  $\frac{3}{4}$  inch diameter. After forging and filing to shape they should be polished with emery cloth and then hardened and tempered to light straw (see page 56) at the tip. Before use they must be polished to a mirror finish.

Fig. 53 shows a simple chuck which may be held in the lathe three-jaw chuck, a tail block, and a live centre which can be bought as part of the lathe equipment.

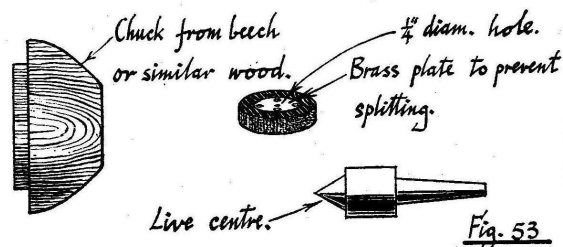


Fig. 53

**Silver soldering.** Soldering is a method of joining metal pieces together by using another metal or combination of metals which melts at a lower temperature than the metals to be joined. Borax is the most commonly used flux. This dissolves the existing oxides and prevents further oxides from forming as the metal is brought up to red heat. Lump borax is often used by jewellers and silversmiths. Some of the prepared powder fluxes are excellent and do not bubble up in heating as much as lump borax.

There are two methods commonly used:

- (1) Strip soldering, in which solder in the form of a strip is fed into the joint which has been brought up to a temperature necessary for melting the solder.
- (2) Panel soldering, in which the solder is cut into small pieces and laid along the joint with borax.

### The Editor's Bit

Well folks, I'm back! You only have yourselves to blame. I had hoped to retire in peace so that I could get on and build my Lion, telling you all about in instalments via a new broom. Sadly, by popular appeal, (no other reason, surely?), I've been voted back in. Well, keep your contributions coming and I'll do my best to produce an interesting newsletter.

This is, of necessity, a short paragraph and, in fact, a short issue. I'm away soon, but promised to get this issue out by early July. I hope you find something of interest within these pages.

### Members' Contact Details

As you may have seen in para 9c) of the AGM Minutes on page 5, 'A proposal to canvass the agreement of the entire Membership (*on sharing contact details – Ed*) in the next issue of 'Lionsheart' was carried unanimously.' Well, this is that very issue. I have long jealously guarded contact details, to such an extent that any member wishing to make contact with another has had to come to me first. I've then asked the target member to contact the first and left it at that. It's a bit cumbersome, especially given that I'm not the most rapid communicator.

And so the question is: **Do you agree to your contact details being shared among all members of OLCO?** (*By contact details I mean email address if you have one. If you have no email address, then your telephone number. I feel that postal addresses need not be divulged: that will be up to you once you've made the initial contact via email or telephone. Ed*)

**If you do not agree, then please let me know. If I do not hear from you by the end of August 2013, then I shall assume your consent. A contact list would then be issued with the subsequent issue of Lionsheart.**

**You may rest assured that your contact details will be divulged upon my receipt of your express wish to the contrary. Furthermore, no member's contact details will be divulged to non OLCO members, whether or not that member has given consent to the question above.**

### Editor's Contact Details

If you would like to contact the Editor on any issues raised in this newsletter, or for any other reason, the details are below:

I'm always glad to receive your notes, comments, articles, pictures, etc. Please consider that all or part may be published, although I reserve the right to edit them. Just run a spell checker over your computer work first though and always read through what you're sending, even if hand written, to avoid subsequent mis-understandings. I am not keen to receive contributions via floppy or CD.

As for photos, the advantage of sending them by email is overwhelming – I can put them straight into the document, scale them, crop them and all sorts, getting a 'first generation' print. When sending pictures, please include the photographer's name, or details of the publication from which it was taken, so that I can bestow the proper accreditation.

Also, please, if you change postal or email address, don't forget to let me know. Ed.