

# LIONSHHEART

SPRING 1990

## LION TO MOVE AGAIN

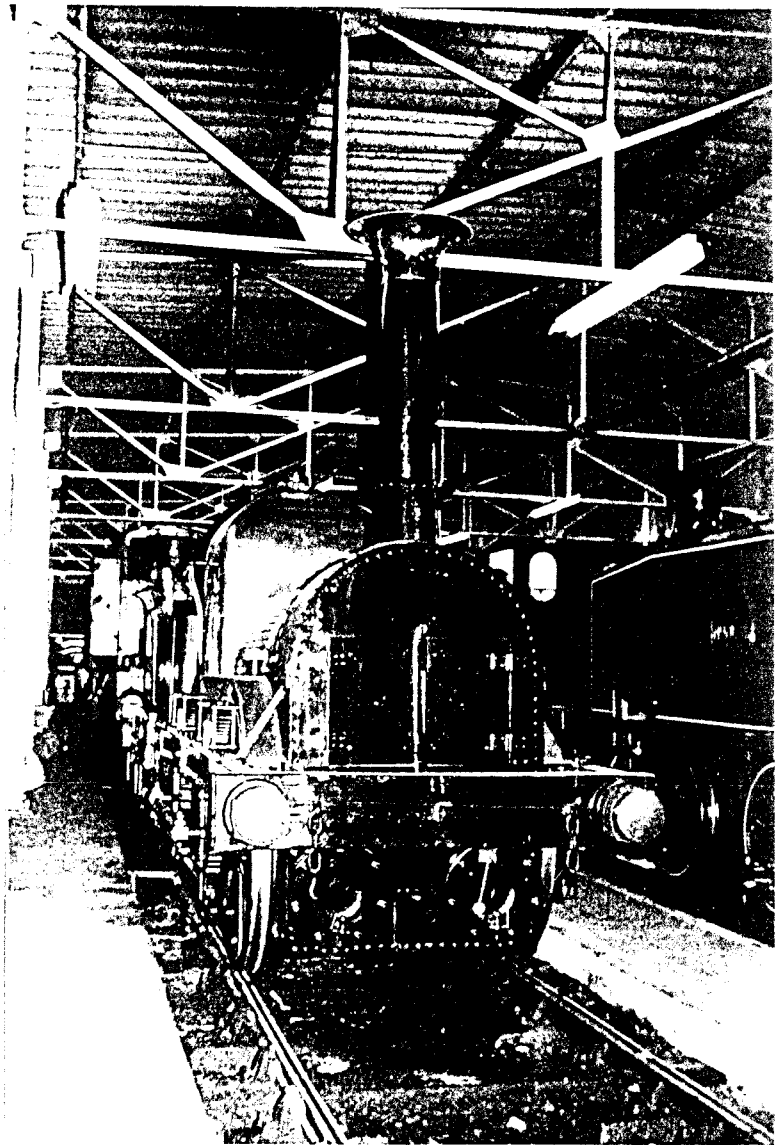
It has now been confirmed that Dinting Railway Centre will cease to be an operational Steam Centre after Easter 1990. This is because arrangements are being made to transfer to a new home.

Dinting Railway Centre will announce details when negotiations are completed. Press speculation regarding the new location is currently unauthorised.

OLCO members have many happy memories of Dinting and are sorry that the present centre is closing. But we hope that the former Dinting membership will go on to even greater success in their new home.

National Museums and Galleries on Merseyside state that they are in favour of limited steaming of LION but feel that at the moment their work programme will not permit the steaming of LION for a few years. Accordingly, they currently plan to remove LION from Dinting on the 21st or 22nd April and return her to static display in the Transport Gallery at Liverpool Museum.

So, if you'd like to see LION on static display in a railway environment, pay a visit to Dinting soon. Dinting is open every day, with one or more locomotives in steam on 1st, 8th, 13th, 14th, 15th and 16th April.



Lion in the 3-road shed at Dinting  
Photo: Eddie Ball

## A.G.M. & LIONSMEET 1990

The Annual General Meeting of the Old Locomotive Committee will be held at 3.00 p.m. on Saturday, 5th May at the Kirkfield Hotel, Newton-le-Willows, Merseyside. In addition, on the evening of the 5th, the OLCO Annual Dinner will be held.

LIONSMEET this year will be held on Sunday 6th May at the Warrington Model Engineering Society track at Daresbury. As usual, current boiler certificates will be required for those engines which are to be steamed.

The track will be available for any locomotives to run in the morning.

In the afternoon, the competition for the Chairman's Award will be held. Hauling a Dynamometer Car, each engine will perform for ten minutes and the winner will be the LION which does the most work.

The track is within easy reach of the M6 so we hope that members will be able to attend in force. The following day is a Bank Holiday and modellers could choose to move on to the famous Urmston Rally on the Monday.

(continued on page 5)

# Kirkfield Hotel

2/4 CHURCH STREET,  
NEWTON-LE-WILLOWS



Telephone: Newton-le-Willows (0925) 228196 or 220489

The Kirkfield Hotel is an 18th-century converted coaching house, with original oak beams in the bar and restaurant. It is conveniently situated on the A49, directly opposite St. Peter's Church, within easy access of M6 and M62 motorways. It is graded AA 2-star and Tourist Board 3-crowns.

If you require accommodation, you should contact the Hotel directly, mentioning OLCO. If you would like information on other possible accommodation in the area, please contact:

Mike Parrott  
49 Pontneathvaughan Road  
Glyneath  
Neath  
West Glamorgan  
Telephone: 0639 722360

Mike is also the contact for any queries on the LIONSMEET. Remember, any model being steamed will require a current boiler certificate.

## OLCO DINNER 1990

This will be held at the Kirkfield Hotel at 7.30 p.m. on Saturday, 5th May (the A.G.M. is at the Kirkfield the same afternoon).

The charge for the 3-course meal will be £10.00 per person (drinks extra). The meal is being booked by OLCO, so it is essential that you let the Secretary know your requirements beforehand. Meals once booked cannot be cancelled. If possible, send a cheque to the Secretary beforehand, otherwise pay on the day. The address for the Secretary is:-

Miss Jan Ford  
Old Locomotive Committee  
Brewood Hall  
Brewood  
Stafford ST19 9DB  
Telephone: 0902 850095 (evenings)

## ANNUAL GENERAL MEETING 1990

This year's A.G.M. is particularly important. Your Executive Officers are proposing changes to the 1985 Constitution. We want the membership to fully debate these changes before voting. In addition, any amendment to the Constitution requires half of the paid-up membership to attend the meeting and vote. So please, make an effort to come along to the A.G.M. and air your views on the future of OLCO and the best way to promote our objectives.

If you are unable to attend, but have strong views, write to the Secretary beforehand (address below left) and your letter will be laid before the A.G.M. But note that proxy voting is not allowed.

The complete existing Constitution is reproduced later in this issue of LIONSHEART for reference.

The Executive are proposing amendments to the Constitution to encourage younger members of OLCO and rationalise the membership year to reduce confusion. The following Resolutions will be laid before this year's A.G.M.:-

### RESOLUTION NUMBER 1:

That a new class of membership be created, known as JUNIOR MEMBERSHIP, for persons over the age of 12 and not having attained their 18th birthday with rights similar to Individual Members but not being entitled to vote and paying a reduced subscription.

### RESOLUTION NUMBER 2:

That subscriptions should fall due on the 1st of January each year, for the year 1st January to 31st December and that new members joining before October in any year shall pay the full subscription for the time being in force which shall be valid until the 31st December in the year of entry and that new members joining on or after the 1st October in any year shall pay the full subscription which shall be valid until the 31st December in the year following the year of entry.

### RATES OF SUBSCRIPTION:

The Executive are proposing that the subscriptions due on the 1st April 1990 shall be valid until the 31st December 1990 and that the new subscriptions due on 1st January 1991 shall be as follows:-

Individual:	£10
Family:	£15
Institution:	£20
Junior:	£5

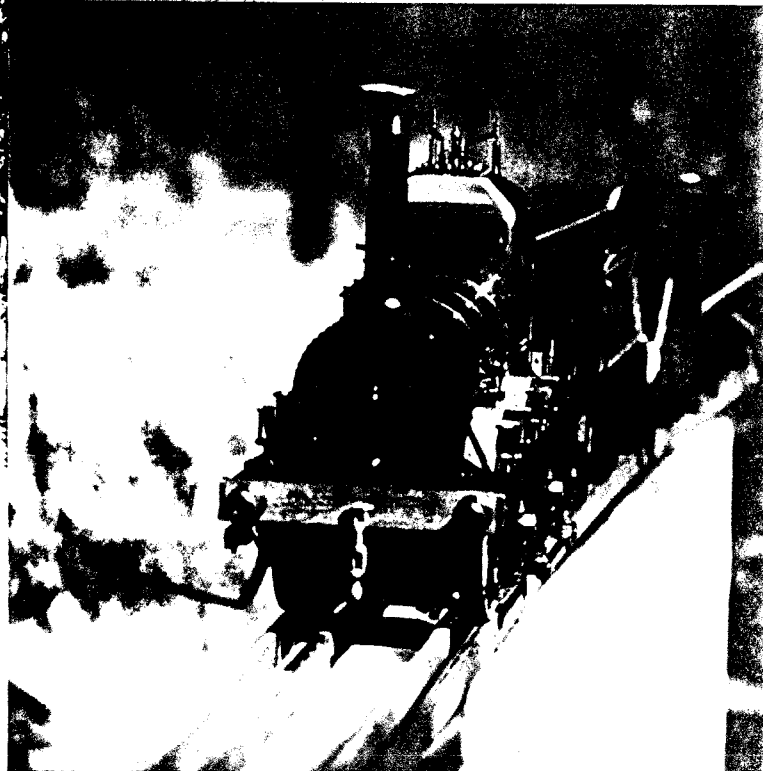
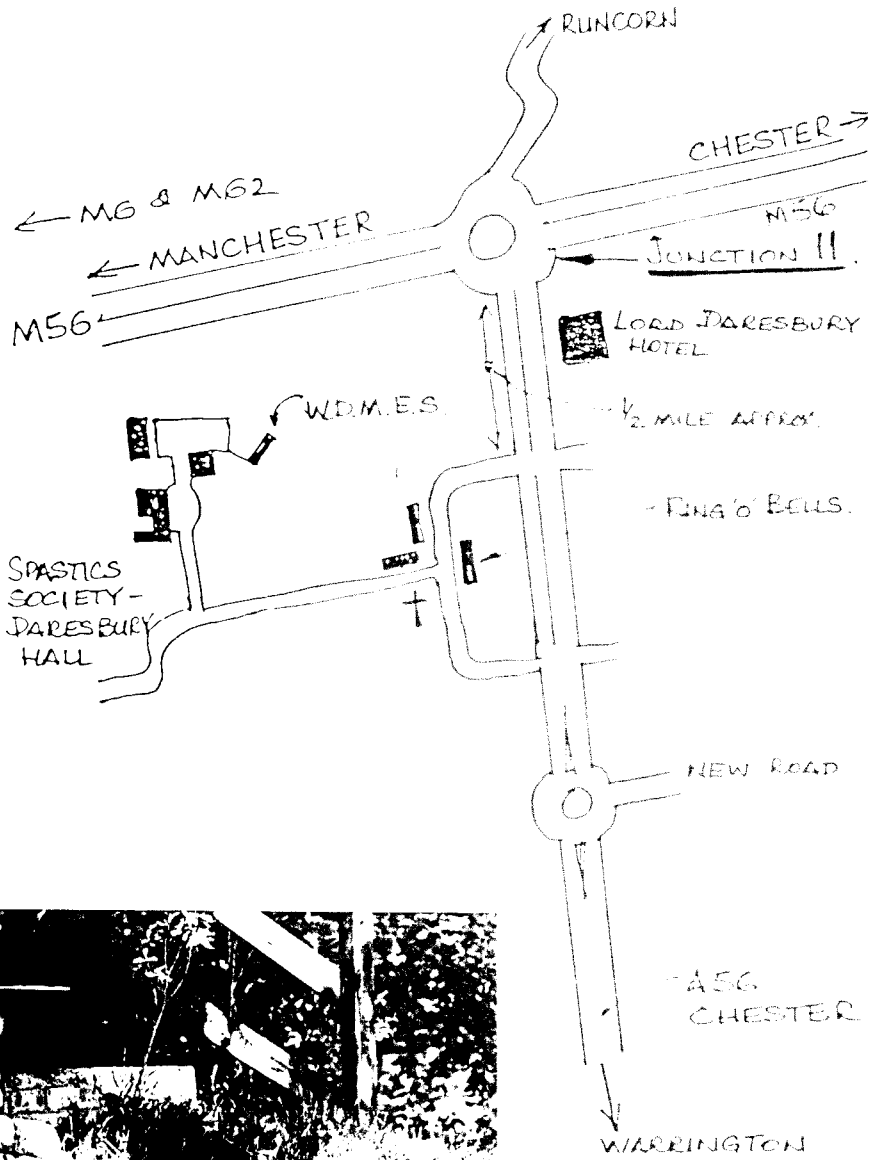
# VENUE FOR LIONSMEET

LIONSMEET will be held on Sunday 6th May at the Warrington and District Model Engineering Society track at the Spastics Society, Daresbury Hall.

From Warrington town centre, take the A56 Chester road. Follow the signs for Chester and North Wales. After 3 or 4 miles take a left turn into Daresbury village. At the Ring O' Bells public house, turn left. After about 1/2 a mile, turn right into the Spastics Society entrance. Go as far as you can to a large car park. The Clubhouse is on the right hand side. Parking is free but donations in aid of spastic children would be appreciated.

If you are approaching from the M56, exit at Junction 11 and turn towards Daresbury. After about 1/2 a mile, turn right into the village, then right again at the Ring O' Bells. Then follow the directions above.

If you have any queries, please contact Mike Parrott (details on page 2) and bring a current boiler certificate if you intend to steam a model.



Last year's LIONSMEET at Cheltenham had some splendid engineering working hard.  
Photos: Peter Servis



## LIONPOWER

by Mike Parrott

Having attended all four LIONSMEETS at which the competition for the Chairman's Trophy has been held, and won the event this year at Cheltenham, I thought it would be an interesting exercise to calculate how much work a model LION should be capable of doing in ten minutes and see how this compared with the figures obtained at the four events.

For the purposes of the calculations, I have taken the dimensions for a 'standard' 5-inch gauge LBSC-version, although the weights are from my own model and are therefore quite likely to be different from anyone else's, particularly in the load distribution.

The theoretical tractive effort is calculated from

$$T.E. = \frac{0.85 \times B^2 \times S \times P}{W}$$

where

T.E. = Tractive effort  
 B = Cylinder Bore in inches = 1.25  
 S = Cylinder Stroke in inches = 1.625  
 P = Boiler pressure in p.s.i. = 80  
 W = Driving Wheel diameter in inches  
     = 5.375

This gives a theoretical tractive effort, or drawbar pull, of 32 lbs. My own locomotive has a boiler passed for service at 90 p.s.i., which increases this figure to 36 lb.

However, one is unlikely to obtain this due to a) internal friction in the engine and tender and b) the wheels would slip long before this pull could actually be developed. With regard to the internal friction losses, I find that pulling the locomotive along a level track with a spring balance requires a force of approximately 3.5 lb. Some years ago I used the Rugby M.E.S. Dynamometer Car (incidentally the first 5-inch gauge dynamometer car ever built) to see what the maximum drawbar pull obtainable was. On a very rusty, dry rail, on a 1 in 100 rising gradient and the brakes on to let the engine just creep forward, I found it would pull the spring out to 28 lb.

On a 1 in 100 gradient, a force of 1/100th of the engine weight is required to lift it up the gradient and this force is, of course, absorbed before the spring and so must be added to the reading. According to the bathroom scales, the engine weighs 56lb and the tender 20lb in working order, giving a total of 76lb. Therefore the actual pull developed was 28.76lb. Adding the 3.5lb internal friction gives 32.26lb which agrees quite well with the 36lb theoretical, as the 3.5lb friction losses does not include losses in the motion under load. So far, so good.

Our photograph shows the Author with his LION at the Re-Enactment at Llandudno last year. Later on, he won the Chairman's Award at the Cheltenham LIONSMEET.

Photo: Eddie Bell

Let us now consider the problem of how much pull can normally be developed, as rusty rails do not stay rusty for many laps! Although the engine weighs 56lb, being an 0-4-2 engine not all the weight is available for adhesion. The question is, how much weight is the rear axle carrying? Out came the scales again, and by lowering the engine rear wheels onto the scales until the axleboxes reached their normal working height, measured by feeler blocks from the keeps, I found the answer was 16lb. This leaves  $56 - 16 = 40$ lb for adhesive weight.

The next problem was to find the coefficient of friction for cast iron to steel and aluminium, to see what proportion of this could be converted to drawbar pull. The textbooks I have were agreed on two things- i) coefficients of friction vary enormously depending on exact circumstances and cleanliness (very helpful!) and ii) it takes more force to start something sliding than it does to keep it sliding, that is there is something called 'stiction'. This last point explains why, when an engine starts to slip, it usually does so violently. If you watch the dynamometer car spring reeading when this happens, you will see the reading drop back, often quite considerably. One of the books did quote a figure for coefficient of friction for 'metal-to-metal 0.15 to 0.3'. I seem to recollect from elsewhere that cast iron-to-steel is about 0.2 and steel-to-steel 0.22 (fitting steel tyres should improve figures by about 10%, at least on steel rails).

From this, on steel rails the 40lb adhesive weight should be able to develop  $40 \times 0.2 = 8$ lb and taking the 0.15 coefficient given above as a guide for aluminium, which is generally accepted as being more slippery than steel,  $40 \times 0.15 = 6$ lb. The average drawbar pull recorded during my run at Cheltenham was 6.25lb on aluminium rail and David Neish's figure at Guildford was 8.8lb on steel rail, so once again theory and practice are reasonably in line.

What then should the train weight be in order to load the engine to its maximum sustainable drawbar pull? For the 1829 Rainhill competition, locomotives had to pull a load of 3 times their weight. Two years later it is recorded that 'Samson' pulled a load of about 11 times its own weight, but this was exceptional. Normal loads were and still are, I believe, of the order of 6 - 7 times the locomotive weight. In model form, then, a scale load would be  $76 \times 6 = 456$ lb.

The Guildford Dynamometer Car weighs 82lb, an ordinary passenger car, say, 30lb, leaving 346lb or just over 24 stones for passengers. This represents just 2 adults. The force required to pull this load up a 1 in 100 gradient (typically the steepest encountered) is  $456/100 = 4.56$ lb, plus the friction of the ball-bearing mounted trucks (coefficient of friction 0.001) = 0.45lb, giving a total drawbar pull requirement of 5lb. This excludes wind resistance and flange friction, etc but is not far below the 5.25lb pull available on aluminium rail, after allowing the 0.75lb required to lift



6  
the locomotive up the gradient. On steel rail, an extra adult passenger would take the load close to the 7.25lb limit.

This brings us to the other factor in the work done equation, the distance. Since there is a 10-minute time limit, this implies speed. I have recorded a speed of 15 mph with my LION at Rugby with the Birmingham Dynamometer Car on a 1 in 100 downgrade, approaching a fairly tight curve. At Cheltenham, the maximum speed I noticed on my run was 12 mph. I have done some simple calculations to try and ascertain at what speed the engine would overturn on a 35-foot radius curve without superelevation, but I am not prepared to publish them in case anyone tries to achieve it and finds an error in my calculations! I suspect that, in any case, either the tender or driving/passenger trollies would overturn first! However, for the purposes of these calculations, let us assume that an average speed of 10mph is practical. In 10 minutes this gives a distance of 8,500 feet.

For aluminium rail, then, a target figure of 52,500 ft lb would seem to be the limit and for steel rail the target would be 70,400 ft lb.

The four winners so far are David Neish (Guildford, steel rail, 72,810 ft lb), Dennis Gadsby (Warrington, aluminium rail, 44,150 ft lb), Jim Mercer (Dinting, steel rail, 42,900 ft lb) and myself (Cheltenham, aluminium, 45,970 ft lb).

From this it would appear that David's winning run at Guildford was pretty well unbeatable, but that there is still room for improvement on aluminium rail.

Miniature LION, GEORGE V and CORONATION at last year's Re-Enactment.

Photo: Eddie Ball



## FEEDBACK

From: Dr. S. J. Kennett, Liverpool

Pleased to receive the News Sheet; very interesting. There seems little attention given re LION to the fact that she was rescued by the Liverpool Engineering Society, in whose ownership she remained until presented to the Liverpool Museum. I was President that year - stood on the footplate and was asked to move the regulator; as I did so a very realistic tape was started portraying the appropriate noises!

In the archives of the Liverpool Engineering Society, now in the City Central Library, there is a very full documentation of the acquisition and custody of LION.

With best wishes to the Committee.

Can members supply more information concerning the history of LION? Articles, letters or notes will be welcome. If you are prepared to loan photographs, articles or documents, these will be copied and returned.

If you have specific queries concerning LION or modelling LION, please write in and we will do our best to locate the information you require.

Apologies, Len Belk's article is held over to the next issue, when Barry's LOCOMOTION saga will be continued.

The Editor, Lionsheart  
Old Locomotive Committee  
Brewood Hall  
Brewood  
Stafford ST 19 9DB

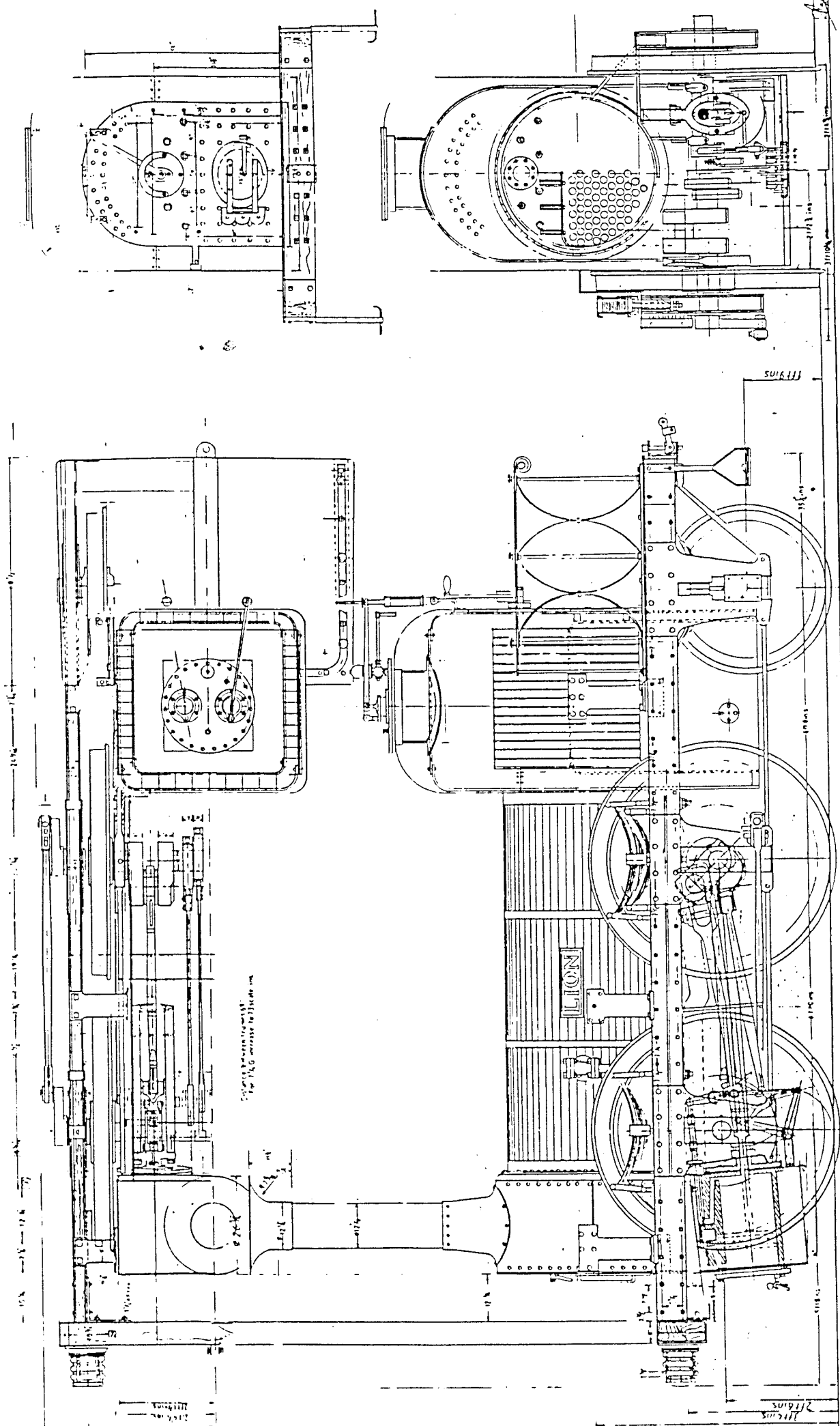
## LION DRAWINGS

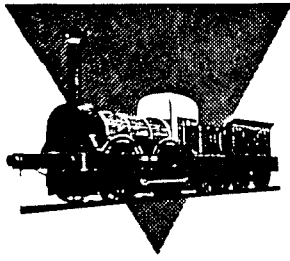
A number of members have asked about drawings of LION. On the opposite page we reproduce a very small-scale reproduction of one of the available drawings. The complete set shows the locomotive, tender, wheels and many of the details of LION. The complete set of drawings costs £47.50 from:

Mr. E F Clark  
'Ballards'  
Knotting Green  
Bedford MK44 1AA  
Telephone: 0234 781224

For further details, please contact Mr. Clark, who can also supply selected drawings from the complete set.

In addition, he can supply a set of castings for the 7.25-inch gauge LION at £250 per set (plus delivery charges). The set, which weighs around 38 kg, comprises all the wheels plus the cylinders.





## COMMITTEE PROFILE

Last year's A.G.M. brought some new faces to the Executive Committee. Under the Constitution of OLCO, executive officers are allowed to take a well-deserved rest after serving for four years. This means that members were unable to re-elect stalwarts E. F. Clark, Charles Taylor-Nobbs and modeller David Neish.

Alan McKirdy took over as Chairman. When not building or repairing pipe organs (his profession) he is himself a modeller. He developed the successful pear wood miniature boiler cladding used on a number of model LIONS. But he has also been to the fore in engineering work and support on the prototype LION. He is a keen motor-cycle rider and lives in Suffolk.

Eddie Ball looks after OLCOSALES and is usually on hand to man the sales stand at OLCO events. He has produced a superb collection of photographs depicting modern-image British Rail and the preservation scene. He lives fairly near to the Whiston Incline where LION was used as a bank engine and is a member of the police force.

Jan Ford had avoided the temptations of railway preservation for a number of years, but the appeal of LION proved too strong. She complains that, through LION, she has become involved in the operating departments at a number of preserved railway sites, in various capacities. When rosters permit, she works as an electronics engineer in Wolverhampton.

Mike Parrott has been a modeller for a number of years and his own LION has always performed well, winning the 1989 Chairman's Award. Wife Suzy formerly headed the OLCO Costume Group. Both of their children are being properly brought up to have a healthy regard for steam in general and LION in particular. Mike works for British Coal and Mike and his family now live in South Wales.

Peter Servis was brought out of retirement to edit Lionsheart. In addition to his interest in early machines like Lion, he studies the Romans in Britain. He is active at a number of preservation sites and is particularly committed to arranging visits to industrial museums and preserved railways for young people and the handicapped.

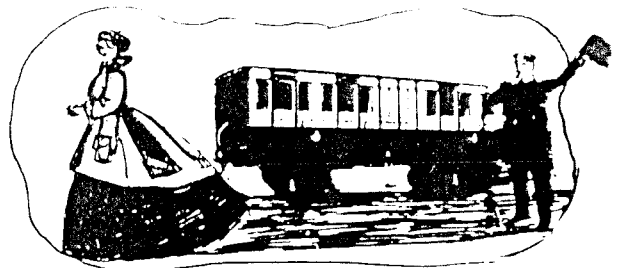
Barry Smith is a driver for British Rail and can often be seen on the electrified Manchester to Euston route. He is an expert on locomotive valve gear and an enthusiast for the Lancashire and Yorkshire Railway. He has worked on the replicas of 'Locomotion' and 'Sans Pareil', in addition to being LION's regular driver. He lives in a station building on the Macclesfield line.

Charles Taylor was re-elected treasurer for a further term. He is an expert in braking systems and also acts as an adviser to the West Somerset Railway. He now lives in Bristol.

ALIGHT AT INGROW  
and visit

**TRAVELLERS' TALES**  
**THE VINTAGE RAILWAY**  
**CARRIAGE MUSEUM**

(owned by the Vintage Carriages Trust)



INGROW STATION YARD

**NOW OPEN**

**12 noon to 4.00pm**

ADMISSION CHARGE:

**Special rate to K&WVR Members**  
**Substantial reductions to holders of**  
**FULL LINE and DAY tickets**

See our unique collection of  
historic railway coaches—  
now safely under cover



CONSTITUTION - ADOPTED 15TH JUNE 1985

1. The OLD LOCOMOTIVE COMMITTEE (OLCO) is so named to establish its continuity with a group of members of the former Liverpool Engineering Society who adopted the same title circa 1928 when they arranged the rescue and restoration of the locomotive built in 1838 by Messrs. Todd Kitson and Laird of Leeds and identified as LION.

2. The objects for which OLCO was re-founded in 1984 are:-

A To support and promote activities associated with the locomotive LION by the following means:-

(i) To organise supporting activities for the locomotive when it is away from its usual place of preservation.

(ii) To organise supporting activities for the locomotive at its usual place of preservation.

B To promote knowledge of the locomotive LION by the following means:-

(i) To foster and promote appropriate study and research directly.

(ii) To act as a channel of communication between those engaged in such study or research and also those engaged in building models of the locomotive LION.

(iii) To collect and preserve or cause to be collected and preserved, documents and other historical matter relating to the locomotive LION, or references to such items.

(iv) To publish or cause to be published whatever material (including a newsletter for members) appears to the members of OLCO and its Executive Officers to relate to LION, the activities of OLCO and associated matters.

C To promote or carry out whatever other activities studies or the like or to purchase or acquire whatever items as shall seem appropriate from time to time to the members of OLCO and its Executive Officers in furtherance of these Objects.

The Executive Officers shall define from time to time as required what matters and activities are deemed to be associated with the locomotive LION and what falls outside the remit of OLCO.

3. The expenses of OLCO shall be met from subscriptions and such other funds as OLCO shall by donation or otherwise acquire. Such funds shall be applied solely towards the objects of OLCO as defined in Rule 2.

4. All paid-up members of OLCO at the time this constitution is adopted shall be confirmed as members but thereafter all admissions to membership shall be made by a properly-constituted meeting of the Executive Officers who may in their absolute discretion refuse to accept or renew an application.

Individual Executive Officers shall have the power to suspend temporarily the membership of any member, provided such notice is clearly given in the presence of at least two witnesses who shall be paid-up members of OLCO. Such suspension shall have immediate effect and shall continue for 14 days. Unless a properly constituted meeting of Executive Officers is held within 14 days and confirms the continued suspension of the member concerned, the temporary suspension shall lapse and the member concerned shall resume the full privileges and duties of membership. While suspended the member may not participate in any OLCO activities under Rule 2A.

5. All paid-up members at the time this constitution is adopted by their act of adopting this constitution, and all members hereafter to be elected by accepting membership of OLCO, explicitly undertake that when participating in any of the activities described in Rule 2A above they will conscientiously obey the instructions of the Executive Officers or persons

specifically delegated by them as regards all matters concerned with or arising out of such activities.

These undertakings shall also be deemed to have been accepted individually by all members of any society, association or other body which accepts corporate membership of OLCO.

6. There shall be the following categories of membership of OLCO

Individual Members  
Family Membership  
Affiliated Institutions  
Honorary Members

All membership is subject to Rule 4. The qualifications for the above categories are as follows:-

INDIVIDUAL MEMBERS shall be over the age of 18 years and each individual member shall pay a full subscription as per Rule 8.

FAMILY MEMBERSHIP shall be available to not more than 6 persons at the same postal address. Individually such members over the age of 18 shall have all the privileges of and shall make the undertakings (as per Rule 5) of individual membership. Family members under the age of 18 may participate in OLCO activities as per Rule 2A only to the specific extent and under such conditions as laid down in each case by the Executive Officers.

AFFILIATED INSTITUTIONS may become members on the condition that individual members of such bodies must be aged 18 or over to be permitted to participate in activities as per Rule 2A and if participating in such activities must abide by Rule 5. There shall be no such restrictions on participation in OLCO activities other than under Rule 2A.

HONORARY MEMBERS may be elected by the Executive Officers in their absolute discretion on such terms as they shall decide in each case.

7. Apart from participation in the activities of OLCO, members for the duration of their membership shall be entitled to the following.

INDIVIDUAL MEMBERS shall receive one copy of all the regular publications of OLCO and shall be entitled to attend and vote at all General Meetings.

FAMILY MEMBERSHIP shall receive one copy of all the regular publications of OLCO but only one person from each such membership shall be entitled to attend and vote at all General Meetings. His or her name shall be notified in writing to the Secretary of OLCO prior to any General Meeting.

EACH AFFILIATED INSTITUTION shall receive two copies of all the regular publications of OLCO and may appoint one delegate to attend and vote at all General Meetings. The name of the delegate shall be notified in writing to the Secretary of OLCO prior to any General Meeting.

HONORARY MEMBERS - see Rule 6.

8. The subscription rate for the forthcoming year shall be determined by the Members at the Annual General Meeting on the recommendation of the Executive Officers.
9. Moneys and all other property acquired for the purposes of OLCO shall be vested in the Executive Officers as Trustees for the members.
10. The accounts of OLCO shall be prepared on an annual basis and shall be presented for approval to the Annual General Meeting. They shall be subject to audit, the auditor having been approved by the members.
11. The Executive Officers of OLCO shall manage its affairs. There shall be not less than 4 and not more than 12 Executive Officers who shall be elected at the Annual General Meeting for the period until the next AGM but shall be eligible for re-election up to 4 times, after which they shall not be eligible for election for 1 year. Only members entitled to a vote at a General Meeting shall be eligible to serve as Executive Officers.

Nominations for election of Executive Officers may be self-nominations but all nominations

must be seconded at the Annual General Meeting by a fully paid-up member entitled to vote at the meeting, prior to the election. Such nominations may be made at any time prior to the election.

The Executive Officers may co-opt any paid-up member who would be entitled to a vote at a General Meeting as an Executive Officer to fill a casual vacancy, but such co-opted Officers shall serve in this capacity only until the next Annual General Meeting when they shall be eligible for re-election in the usual way. Such a co-opted Officer may only serve as an ordinarily elected Officer for 4 years before ceasing to be eligible for re-election.

At a meeting of Executive Officers, three shall be a quorum and in the event of a tied vote, the Chairman shall have an extra casting vote. No proxy or postal voting shall be permitted.

When the members elect the Executive Officers at the Annual General Meeting, two of these Officers shall be elected specifically as Chairman and Secretary. Apart from the Officers elected to these two posts by the members, the Executive Officers shall have power to appoint any of their number to other specific posts; to create sub-committees; to appoint individual members for specific tasks; and to conduct their affairs and meetings other than as set out in this Rule, in any way as appears to them will best serve the interests of OLCO.

12. Annual General Meetings of OLCO shall be held once in each calendar year at a time and place to be advised to the entire membership not less than 14 days in advance. At this meeting the Executive Officers shall present a report and audited accounts as per Rule 10 for adoption by the membership. Elections shall be held for Executive Officers as per Rule 11.

Extraordinary General Meetings of OLCO shall be held at the discretion of the Executive Officers or at the written request of not less than 20% of those members who are entitled to vote at an Annual General Meeting. The time, place and proposed business of such meeting shall be advised to

the entire membership not less than 14 days in advance.

Decisions and elections at Annual General Meetings and Extraordinary General Meetings shall be by a simple majority vote of those members present and entitled to vote. No proxy voting shall be allowed. In the event of a tied vote, the Chairman of the Meeting shall have an extra Casting Vote.

Except as provided in Rule 13, a quorum for an Annual General Meeting or Extraordinary General Meeting shall be one quarter of all the members entitled to vote at an Annual General Meeting.

The Chairman of OLCO for the time being as elected by the members shall normally preside over Annual General and Extraordinary General Meetings. If a new Chairman is elected during the course of the meeting he shall take the chair immediately after his election. If the elected Chairman of OLCO cannot be present to take the chair at an Annual General or Extraordinary General Meeting after it has convened with due notice having been given, the members present shall elect a Chairman (for that meeting only) from amongst the Executive Officers present. If no Executive Officer is present, they shall elect one of their number.

13. Any Amendments to this Constitution shall only be made by an Annual General Meeting or Extraordinary General Meeting at which not less than one half of the members entitled to vote at an Annual General Meeting, are present.

Any such proposed amendment shall be submitted in writing by its proposer and seconder to the Secretary not less than 21 days before the date of the proposed meeting. The Secretary shall circulate the text of the proposed amendment along with the notice convening the meeting to all members as per Rule 12.

14. Any proposal to wind up OLCO shall be subject to the same arrangements as set out in Rule 13 for amendments to this constitution. In the event that OLCO is wound up the Executive Officers shall after discharging all debts and liabilities dispose of any remaining funds, assets or other

2

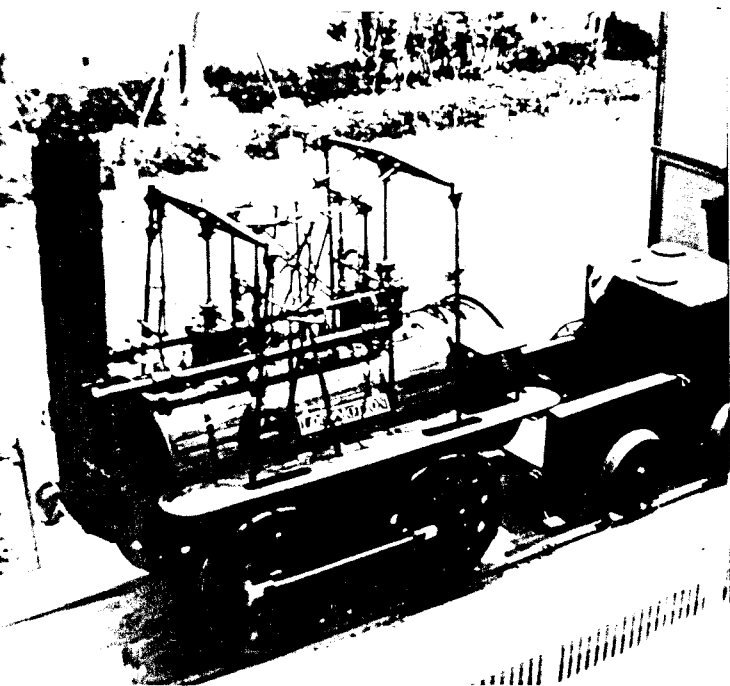
items in any way they think best, but always bearing in mind the purposes for which OLCO was re-founded in 1984.

15. All matters not covered by these Rules as now set out or as amended hereafter shall be determined as necessary by the Executive Officers.

---

## LOCOMOTION - BEAMISH TO NAGOYA

by Barry Smith



It was a grey, dull Sunday afternoon. I was watching a video recording of the previous summer's activity with LION. No more steamings were planned for the immediate future as it was felt that after 2 years of steaming she was due for a well-earned rest, as indeed I was. I hadn't had a holiday for 2 years and was planning to go on a tour of the European railway museums in 1989, with a group of colleagues from British Rail.

My holiday plans were about to be curtailed as I answered the telephone. "Hello, Mike here. How would you like to go to Japan next year, with LOCOMOTION?" I recognised the voice of Mike Satow, but was dumbstruck by what he was saying. The conversation continued, but what it consisted of I have no idea. I put the phone down, thought for a while, then phoned Mike back to make sure I hadn't been dreaming. "That's right, the Japanese want to borrow LOCOMOTION for an exhibition they're planning next year. I'll tell you more when I know more myself."

I heard nothing more about the trip until I saw Mike at the Model Engineering Exhibition at Alexandra Palace in January, 1989. He confirmed that the trip was on, but knew little of what it was actually about. I said that as it was 2 years since I had driven the loco, at the Science Museum Open Day at Wroughton in 1986, I would like a 'refresher', in order to familiarise myself with her again. Mike said he would arrange this.

A few days after my return home, I received a letter from John Gall at Beamish inviting me up there. It was arranged that I would go there on the Easter Bank Holiday weekend.

The Bank Holiday duly arrived. I had originally planned to travel to Durham by train, but the weather was so good, I decided to go all the way by motorcycle. Three hours after leaving my home near Manchester, I arrived at Beamish and was met by John Gall, who took me to where LOCOMOTION was, at the far end of the museum complex. There I was introduced to Jim Rees, who was to be my companion on the trip. Mike was also on hand to re-teach me the intricacies of LOCOMOTION's parallel motion, more of this later. She was already in steam, having been prepared by the regular footplate staff at Beamish. I changed into my overalls and climbed onto the tender. For a few runs along the track, Mike drove the loco and I watched, then Mike said "Right, you now!"

I climbed up on to the narrow 1-foot wide running board on the left hand side of the loco and turned right to be faced by a seeming mass of complicated levers and rods. How there would be room on the footplate for the driver, the Japanese pupil driver and the interpreter, defied comprehension, as, on our arrival in Japan, we would be required to teach the Japanese crew how to drive her. LOCOMOTION would be in Japan for 5 months at the exhibition, but Jim and myself would be there for only 4 weeks. It was hoped this would be long enough to teach the Japanese all her peculiarities, plus a working knowledge of her in order for them to be able to carry out any running repairs. It was hoped, however, that this knowledge would not have to be put into effect.

After the day's refresher on LOCOMOTION, I felt confident in my own mind as to my capabilities. The next time I would see the loco would be in Nagoya!

On the last weekend in June, I travelled up to stay with Jim, prior to flying to Japan on the 3rd of July.

Monday saw Jim and myself at Heathrow, boarding the JAL 'Jumbo' that would be our home for the next 12 hours. After an uneventful flight, we arrived at Tokyo airport, where we had to change aircraft for the final leg of the journey to Nagoya, arriving there at 9.30 p.m. on Tuesday, the 4th of July.

We were met at the airport by a group representing the organisers of the Exposition, taken to our hotel and briefed on what was required of us. As it had been Sunday night since I had last been to bed, this briefing more or less washed over me. I must admit that I can't remember much about what was said.

The next morning we were driven to the site, accompanied by our interpreter. There we were to supervise the unloading of LOCOMOTION from a low loader and onto the track. This was scheduled for 10 o'clock. At the approved hour, the low loader was carefully manoeuvred into position. The dock workers then proceeded to fasten the slings under the boiler and, within a quarter of an hour, LOCOMOTION was safely back on the track that had been specially laid.

By 11.30 the tender had been coupled and the chimney bolted on. As things had gone so smoothly, we decided to steam her before the official steaming the next day.

This proved to be time well spent, as it turned out - LOCOMOTION just would not make steam with the coal provided. Within half an hour, the fire became blue and clinkered. Modern Japanese steam locomotives have a very large, wide firebox in order to cope with the poor quality coal. It was obvious that some other technique would have to be found in order to make steam. Normally, the boiler is fired with about half to three-quarters of a glass of water. This proved to be beyond the capabilities of the imported Australian coal.

The next day, I decided to drain off all the water in the boiler, leaving just about half an inch in the bottom of the glass. The fire was lit, using copious amounts of wood, and a very large, roaring fire was maintained by constantly firing the wood into the firebox. Then, when the little water in the boiler started to boil, the hosepipe was slowly turned on, allowing just a trickle to enter the boiler, whilst all the time maintaining the rapid wood firing. Slowly, the water level rose in the glass, until the required three quarters of a glass was reached. By adopting this method of raising steam, steam could be raised in

about one and a half to two hours, instead of the previous 8 hours by using coal alone. The only thing wrong with this was my physical well being, as I must have sweated gallons of body fluids during these two hour steam-raising sessions.

On the second day of steaming, the boiler was inspected by the Japanese boiler inspector and suitably passed O.K., although, for some reason, the safety valves were reset to blow at 40 p.s.i., instead of the normal 50 p.s.i. We were introduced to the three drivers who we would be required to teach how to drive LOCOMOTION. It was a little off-putting when one asked for the instruction book and operating manual. We had to confess that there wasn't one. Three days later, after burning the midnight oil, there was a manual, suitably translated in Japanese, complete with diagrams showing the position of the valves for the required direction of travel.

Those who have seen LOCOMOTION working must have been fascinated by the complex system of rods and levers that are her motion. Imagine, for a moment, trying to describe that to an English-speaking person. Now imagine trying to describe the same to a Japanese who speaks no English, you can picture the task! It was decided, therefore, to show by example, with the Japanese drivers on the footplate, before the manuals were completed.

We set off and, after a few trips up and down, the Japanese were given a try. Total disaster - they were going in any direction except the correct one. It was obvious that they had not yet grasped how the manually-operated valves work. Trying to describe the action of the valves and rods without a manual was just a waste of time. Until the instruction book was ready, we would just have to try as best we could.

An interesting sidelight to our first week in Nagoya came on the Friday. A large contingent of very smartly-dressed men in cream uniform appeared on the scene. This group turned out to be the Nagoya City Fire Brigade, who then duly started to inspect LOCOMOTION and her track and the shed. They seemed satisfied with the arrangements and presented us with a fire certificate, enabling us to operate. However, they insisted on a No Smoking rule being imposed! No Smoking, when LOCOMOTION belches forth smoke and ashes from everywhere. As the signs were written in Japanese, I pretended not to know what they said. If I was to retain any semblance of sanity, I would definitely need to smoke.

During our first week of operation, we operated without the air brake commissioned as, in transit, one of the connections on the pipe system had become damaged. As usual, this was the only spare we didn't have, so a telex message was sent to Beamish for the required spare. Meanwhile, the Japanese drivers thought the English are indeed crazy, to drive a locomotive without brakes. They would not believe that the handbrake was adequate and that the airbrake is for emergency use only and not to be used as a service brake. In order to allay their fears, a hasty lash-up on the braking system was effected, by re-routing some pipes and blanking-off the connection to the tender. The blanking piece was (whisper it quietly) a one Yen piece, which proved to be just the right diameter. English ingenuity, Japanese technology, just the right combination.

The following Monday, it was obvious that the drivers had been studying the instruction book, as there was a vast improvement in their ability to start and, more importantly, to stop LOCOMOTION using the handbrake. I then realised why they had viewed the handbrake with such trepidation. They were frightened that they would not have the strength to operate it as, whenever I put it on, they could not get it off! The Japanese are, physically, a small race and the handbrake handle was level with their heads! A further hazard presented itself at this time. Their very small feet were in constant danger of getting trapped in the running board, where the connecting rod goes through, so it was arranged for metal guards to be fitted, in order to reduce the width of this space and prevent any crushed feet.

The following day, Mike and Peggy Satow arrived, accompanied by Mike Preston from the Science Museum. Mike and Peggy were to officially hand over LOCOMOTION at a ceremony the following day, after exchanging pleasantries. They were whisked away for the 'Cooks Tour', leaving us to carry on with our practice sessions.

Later that afternoon, disaster struck. The fusible plug in the firebox started to blow, not, I hasten to add, from a shortage of water in the boiler but from around the thread, where it is inserted into the firebox.

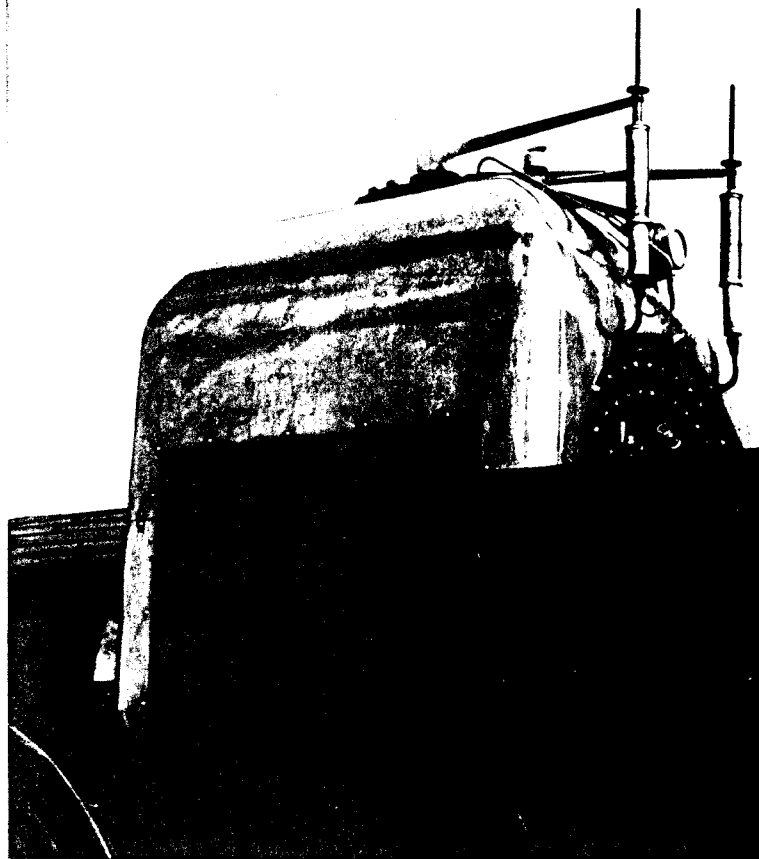
I suppose this could be put down to my forgetting to see if it was still tight after the hydraulic test of LOCOMOTION in Japan, but, as no one had told me she had had a hydraulic, I wasn't to know. It was only later I found this out.

I decided that the water loss from around the plug was negligible and to carry on the operation. This only confirmed the worst fears of the Japanese that the English are, indeed, crazy and that it would be impossible to drain the boiler, refit a new plug and light the fire to be in steam by 10 o'clock the next morning.

Jim and I arrived on site next day at a quarter to seven. At a quarter past, the water was being drained off. Jim removed the faulty plug and fitted a new one. Mike then arrived on the scene. By twenty past seven, we were refilling the boiler and lighting the fire as described earlier. By the time the Japanese drivers arrived at eight o'clock, LOCOMOTION was well on the way to making steam. They wouldn't believe us when we said we had arrived at seven. They thought we had been there all night. Mike then went away to change out of his overalls into his suit, in order to be ready for the first opening ceremony at 10.30. Jim and I changed into our George and Robert Stephenson costumes in order to steam out of the shed at the appointed hour, or so we thought. At 10.15 a representative of the television came to see us to discuss the morning's operation, which was to be screened live on Japanese television. Quite simple, really. At 10.30, steam out of the shed and make a run down the yard. No such luck. "At 10.30 and 27 seconds, the band will strike up a fanfare, LOCOMOTION will then move forward 57 metres, taking 24.5 seconds and stop exactly in line with a ribbon stretched across the track". Bear in mind, the time is now 10.20, no chance of a rehearsal. "You can drive, Jim. I'll fire". I wasn't going to make a fool of myself on national television. "Thanks, Barry. You're a pal", said Jim.

We backed inside the shed, the band struck up. Luckily, Jim knew the tune, I didn't. He knew the tempo and when they would finish. We rolled forward and came to a stop in 25 seconds, just as the band stopped and exactly in line with the ribbon. I don't quite know what would have happened to the assembled guests standing in front of the ribbon if we hadn't stopped.

Mike then made a short speech, Peggy re-christened LOCOMOTION with a bottle of champagne and the ribbon was cut ceremoniously by a least half a dozen of the guests. Jim and I were then formally welcomed to the City of Nagoya, given large bouquets of flowers and invited to attend the buffet lunch. Not a bad ending to our first week in Japan.



HAPPY BIRTHDAY, LION!

#### E. F. CLARK'S ADDRESS TO THE 1989 AGM

This report takes us up to the end of LION's 150th Birthday year, which more or less coincided with unexpected changes in the staff at Liverpool Museum. This change in curatorial responsibility leaves many questions of future policy both in the long-term and in the immediate future to be resolved. OLCO has, of course, offered full support to the new staff at the Museum both in terms of practical assistance and also by advice based on our experience with all aspects of running the locomotive and its train.

When OLCO held the 1988 Annual General Meeting at the Crewe Heritage Centre we already knew of the heroic efforts made by both Hunslet and Dinting first to fit the new, correctly-sized tyres to the leading coupled wheelset and then to re-fit this to the locomotive and re-build the motion. The efforts at Dinting were particularly noteworthy and it was unfortunate that the delay in getting

LION on the road again - in no way due to Dinting - meant that no public steaming was possible there in 1988. In view of the news this year regarding the possibility of Dinting Railway Centre closing, it is sad to realise that the 1987 A.G.M. held at Dinting and combined with LIONSMEET is unlikely ever to be repeated. We now send our best wishes to our friends at Dinting for a successful outcome to their quest for satisfactory new arrangements.

The first public steamings of LION in 1988 were at Steamport Southport, where the warmth of our welcome quite made up for the miserable weather on most steaming days. Steve Alsopp and his team had set up LION so well that there were virtually no problems in running from first raising steam. The docile nature of LION when things are going well and she is properly handled must not blind us to the fact that this is only achieved by constant correct and careful handling (such as the Museum Representatives and OLCO provide). Even so, things can go wrong unexpectedly.

From Southport the locomotive went to Crewe where we were able to note many developments since 1987 - not least the installation of the last remaining Advanced Passenger Train (APT) set just in time for us to hold our annual dinner in it after the AGM in the Heritage Centre Signal Box itself. Even as a static display, the APT had its problems and we finished our excellent dinner by candlelight.

After Crewe, we had one weekend at the Birmingham Railway Museum, Tyseley, before the locomotive went to the Museum of Science and Industry, Manchester. After an initial, uneventful weekend, it was here that LION played her unexpected card by failing her boiler test. The inspector, however, agreed that, subject to replacing 9 firebox stays in the bottom of the throat plate, a 3-month certificate could be granted to cover the remainder of the programme planned for the birthday year. By extreme good fortune, the Manchester Museum Workshops possessed a screwing machine capable of making the stays so that, by dint of day and night working by all concerned - boiler-smiths, Museum staff and OLCO members, LION was back in steam by the end of the week that the trouble had first been diagnosed.

It was an unusual experience for OLCO members to be in costume in the authentic surroundings of the world's first passenger station at Liverpool Road, Manchester. There had been previous costume days at Crewe, but not at Southport.

continued overleaf

The August Bank Holiday carnival weekend in Manchester was followed by the Wroughton weekend - the last there to be held under the guidance of Tony Hall-Patch. The weather was better than we have had in five years there and the new arrangements, complete with a portable track for the model LIONS, worked out very well. The miniature track allowed us to have a non-competitive LIONSMEET with LION herself running alongside the models. A memorable public day was preceded by a successful OLCO barbecue on the Saturday evening and the Science Museum provided a reception for volunteers on the Sunday evening. Only two negative thoughts clouded our enjoyment: the first being that OLCO would not be participating at Wroughton in 1989 and the second that, for the second year running, the LIONBUS had failed to make it to Wroughton.

The interior of the 'Atlantean' had been modified slightly since 1987. As there was no convenient place to park, she did not go to Southport but was in use at both Crewe and Manchester. Tyseley was as far as she got on the way to Wroughton and there she remained until the end of steaming in November.

A hasty journey from Wroughton back to Tyseley enabled LION to be in steam on the day of HRH The Prince of Wales' visit. Adrian Jarvis thus had the honour at last of driving a member of the Royal Family actually on the footplate of LION. Members were in costume in support.

This was followed by the very successful London and Birmingham Railway 150th anniversary weekend in which LION played a full part - just as she had for the centenary at Euston in 1938.

And so there were various steaming days until a final week at the beginning of November just before the boiler certificate ran out. The weather on the last day was superb - not a cloud in the sky and the usual faultless performance on a truly memorable occasion.

The locomotive remained at Tyseley over the winter as a static exhibit (before moving to Dinting and spending the next winter there).

One feature of the 1988/1989 season which must be mentioned was the series of film shows by John Huntley at a wide range of venues. Half is devoted to MALLARD in the year of the 50th anniversary of her world speed record and half is about LION. The formula has proved successful and John welcomed the support of an OLCO stand wherever we could provide one. Useful sales have been made, so the effort involved was well worthwhile.

Before leaving the record of a memorable birthday season of steaming we should record the friendly reception and helpfulness which we have met at all the various venues - each in its own way and so very different from each other. We have made many new friends and renewed old acquaintanceships.

LION and BELLEROPHON at Crewe  
Photo: Eddie Ball

