

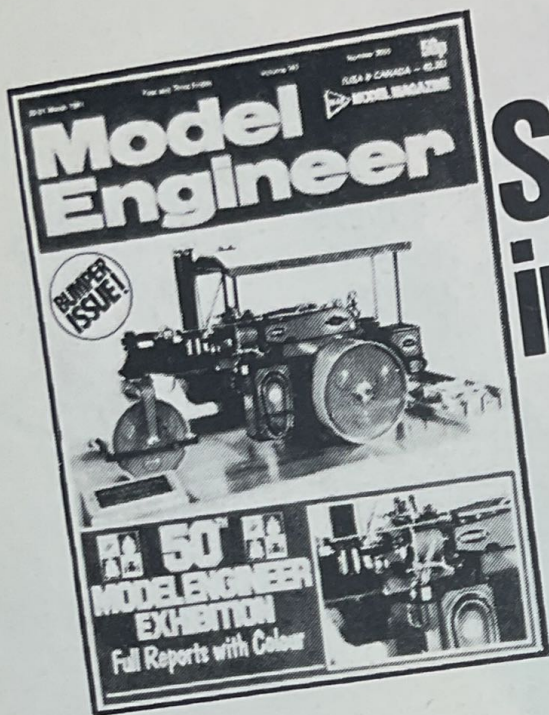
I.M.L.E.C.

XIV Annual '82

**International
Model
Locomotive
Efficiency
Competition**



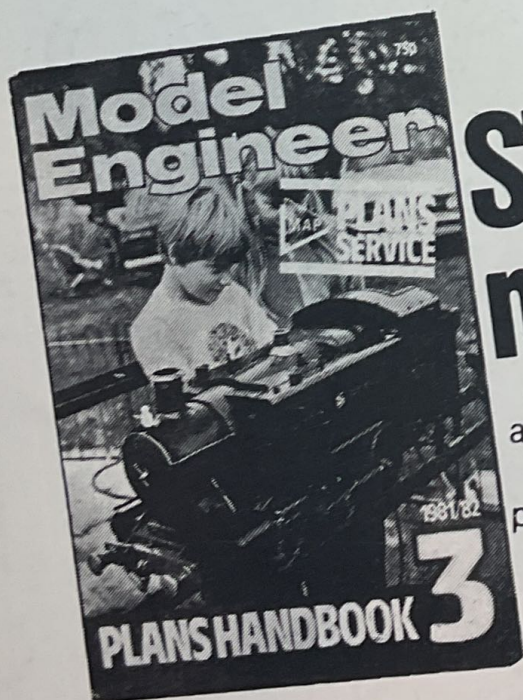
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IMLEC 82

HOSTED BY

Leyland Society of Model Engineers

on Saturday & Sunday, 3rd & 4th July 1982

at

WORDEN PARK TRACK LEYLAND

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Mrs Ella Griffiths of The Bristol Society of Model & Experimental Engineers for the loan of their dynamometer car.

The Birmingham Society of Model Engineers for the loan of their dynamometer car.

The Guildford Society of Model Engineers for the loan of their half hour clock.

Messrs Avery Ltd for the kind loan of their scales.

Cover Artwork by Stuart James.

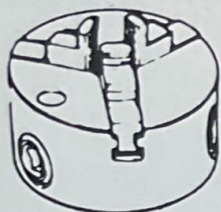
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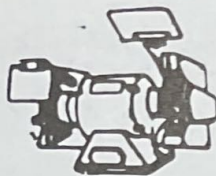
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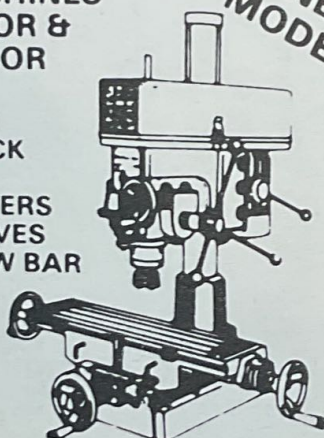


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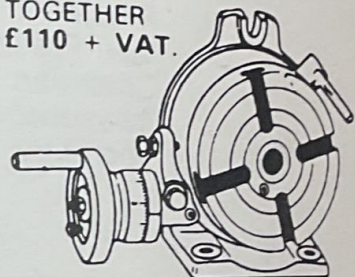
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for the
Martin Evans Challenge Trophy

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The overall winner will receive The Challenge Trophy and £50; Second – £25; Third – £10; Fourth – One year's subscription to *Model Engineer*. A special prize will be awarded to the best 3½" G if not in the first four.

In addition Leyland S.M.E. are awarding a trophy for the best locomotive on each day to be retained permanently by the winners.

PRESENTATION OF PRIZES

Councillor J. Marsden, J.P., will present the prizes on Saturday, 3rd July.

Councillor Dr J. Hall, Mayor of South Ribble will present the prizes on Sunday, 4th July.

Presentations will take place at approximately 6.30pm on each day.

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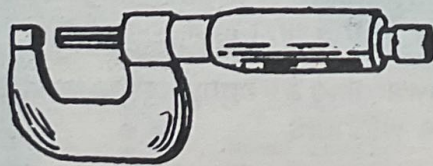
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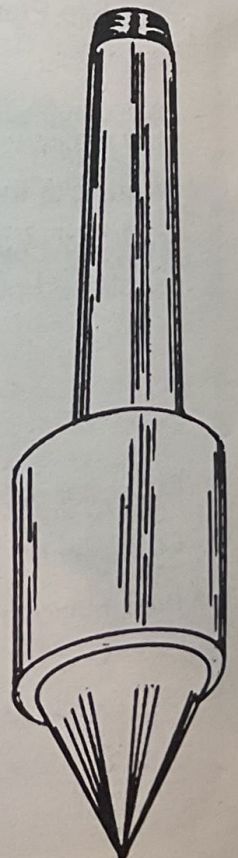
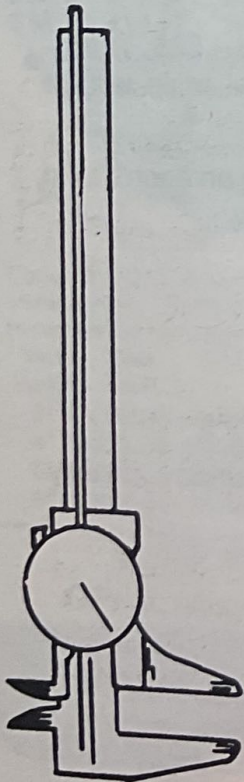


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LEYLAND SOCIETY OF MODEL ENGINEERS

The present Society are the successors of the formerly named Preston Society of Model Engineers. The Preston Society was active during the 1930s but at the outbreak of the second World War it fell common to the attitudes of the time and more or less died through lack of interest and members. At cessation of hostilities about eight members re-incarnated the Preston and District Society of Model Engineers.

From this date the Society grew and was able to stage an exhibition of models to coincide with the 1952 Preston Guild. The problem of finding space for a locomotive track arose and it was thought logical to approach Preston Corporation for assistance in the matter. They in turn made it very clear that no such assistance would be forthcoming. Undaunted, the members continued prospecting and land was located in Towngate, Leyland. This site now houses the Lancastria Co-op. No security of tenure was possible but the members were satisfied to build a track and run on it for a few years.

An approach to the then named Leyland Urban District Council met with a very different response to that experienced with Preston. They provided the present idyllic setting at a peppercorn rent, the only stipulation being that Leyland was incorporated into the Society's title.

The re-naming very quickly produced the Leyland, Preston and District Society of Model Engineers. Armed with this ponderous title the members set to work during the 1952/3 Winter and erected a 2½, 3½ and 5 inch track.

This 300-foot-long track was opened at Easter 1954 by Mrs Kelly who was then Chairman of Leyland Urban District Council. Happily both Mr and Mrs Kelly are still regular visitors to our track. Consequently, on the increase of Society membership and locomotive population, the track was extended in 1968 to 565 feet. We again extended in 1972 to 805 feet and again in 1978 to the present size. Although not a huge track I think visitors are always impressed with the pleasant surroundings. We rarely have pedestrians walking on the track but we do have an indigenous population of squirrels. They probably prefer the nuts on our locomotives to the ones they normally eat.

Not having an 'Off' season we run all the year round, weather permitting, and can claim to have delighted generations of children with rides on the track in picturesque surroundings. Worden Park Railway has become a way of life for many children.

Last year we decided that to streamline our title we should re-name the Society and we are now officially known as Leyland Society of Model Engineers.

In case the casual visitor should think that building and running locomotives are our prime concern, it must be emphasised that we are Model Engineers and stationary engines, traction engines, even amphibious motor vehicles populate the members' stock of 'Goodies'.

Newer members, faced with inflation, find it very difficult to assemble workshops needed to produce models and we are constantly trying to establish a Society workshop. Most members are willing to assist other members and we do manage to get by. I doubt if any member of our Society is ever stumped for either machining facilities or materials. Long may this situation continue.

We are not an insular Society, we have members quite willing and even eager to interfere in matters outside the Society. Model Engineers in Lancashire, Cheshire, Yorkshire and Cumbria are completely integrated. Many of them have dual, treble and even quadruple membership of Societies. As a result what one Society does today was known about yesterday in other Societies.

Leyland have acted as organising Society for the Northern Federation of Model Engineering Societies. A neighbouring Society was offered full facilities when they suffered the loss of their track site and I hope this offer went a long way towards helping keep the membership intact. They are, happily, now re-located and as strong as ever, if not stronger. We host open days when the policy is that we do not run our own locomotives unless requested to do so by the visitors. We hold barbeques accompanied by night running when some hilarious activities take place. Not, I hasten to add, to the detriment of Track running safety. We are very proud of our track record for safety which is due in no small way to the excellent rolling stock.

We consider the honour of running IMLEC to be the natural culmination of years of members' dedication and must thank the staff of *Model Engineer* for the opportunity and also Martin Evans for having conceived the initial concept and naming of the trophy.

The facilities provided by the Local Authority are admirable and I hope will show that amicable arrangements are still possible even in these days of increasing bureaucracy.

Anyone interested enough to want to join us can chat up any members or officials visible, and Michael Heathcote, our overworked, underpaid Secretary, can be contacted at the address shown elsewhere in this programme.

Many people have helped to make this weekend into what is hoped will be a memorable one. I am sure that a more complete list of those concerned will be shown somewhere in this booklet but, as Chairman, I must extend my personal thanks to the IMLEC organising Committee under the Chairmanship of Eric Lindsey for the sterling work over the last 12 months. To paraphrase, never have so few laboured for the pleasure of so many.

To the competitors, we hope you all enjoy the visit and go away satisfied that conditions were suitable.

Happy coal burning.

JACK COULSON
Chairman, Leyland S.M.E.

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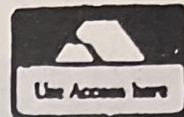
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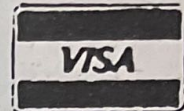
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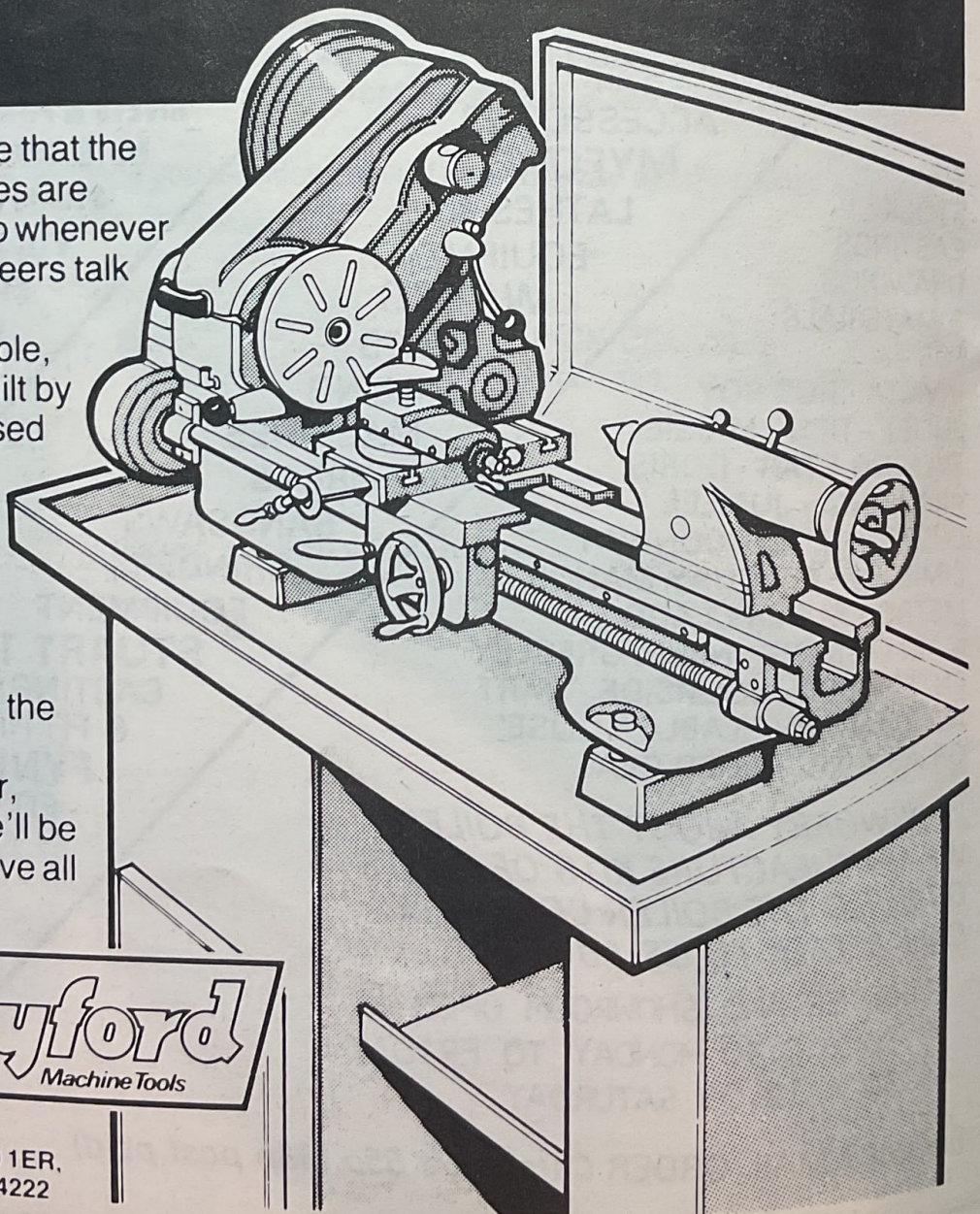
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ABOUT I.M.L.E.C.

With acknowledgement to:

BOURNEMOUTH & DISTRICT SOCIETY OF MODEL ENGINEERS

IT WAS ABOUT 1964, that Martin Evans first had the idea that an efficiency competition might be staged for model steam locomotives. He put the idea to the late Leslie Howard, who was then Editor of *Model Engineer*. Howard was immediately enthusiastic, and very soon published the suggestion in one of his "Smoke Rings", to see what sort of response there might be. The late LBSC expressed doubts, and one or two readers thought that although there was much to be said for the proposal, the idea of having a competition might lead to ill-feeling among the competitors. Fortunately, the fears of these readers never materialised. However, nothing was done until early in 1968, when Martin Evans, who by that time had become Editor of *Model Engineer*, raised the matter again.

In view of the popularity of the 3½ in. and 5 in. gauges, and the difficulty of comparing the performance between locomotives of widely differing gauges, it was proposed that the competition should be for these gauges only. A further point was the likely availability of a track suitable for the event. Apart from the track itself, one of the biggest problems was to cope with the number of cars that might have to be accommodated, there being no idea at the time as to the number that might arrive, the idea being of course that the general public, not necessarily readers of the *Model Engineer* would be invited to attend. A search was then made for a Model Engineering Society with the required track and car parking space, and most important, the willingness of its members to undertake what was likely to be a considerable task. In the event, the Birmingham Society volunteered to stage the first competition on their Illshaw Heath track.

Martin Evans then produced a very fine Trophy, suitable engraved with the outline of a locomotive, which was to act as the first prize, plus a modest cheque. Prizes were also arranged for the competitors who would come in second, third and fourth. Special insurance had to be arranged to cover the event, which was scheduled for the first Sunday in July, 1969. Other matters that had to be seen to the provision were of adequate parking space, the printing of tickets (a small charge was made for admission), the provision of suitable catering – as the event was expected to last for a whole day – toilets, and in case of accidents – a squad from the St. John's Ambulance.

While the preparations were going ahead, members of the Birmingham Society, under the energetic leadership of Brian Hughes, built a Dynamometer Car, that could be hauled behind the competing locomotive, to record speed, drawbar pull etc., so that comparison could be made between each competitor. The coal for the competing locomotives was carefully weighed and handed to the competitors in sealed bags. At the end of the run, any coal left unburnt in tender or bunker was to be returned to the Officials and weighed, so that the amount consumed by the locomotive could be determined. It was decided to allow each competitor to choose the load he thought most suitable for his engine, and to allow him to run for 30 minutes, which with the possibility of 15 or more competitors, was as long as was thought wise. Most fortunately, the weather could not have been better, and well over 600 visitors turned up to watch the fun. At the end of an arduous day, the winner was adjudged to be the Birmingham Society's own entry – a 5 in. gauge "Royal Scot".

With the great success of the first competition, now entitled the International Model Locomotive Efficiency Competition, a second event was arranged, and with the willing cooperation of the Witney & West Oxfordshire Society, plus the permission of the Duke of Marlborough, this was held in the grounds of Blenheim Park, and was again a great success, the winner being again the Birmingham representative in the person of Len Labram with his 5 in. gauge 2-6-2T. "Firefly".

Since 1970, the Competition has gone from strength to strength; in 1971, it was held at Southampton, 1972 – Newcastle, 1973 – Chingford, 1974 – Bristol, 1975 – Newcastle again, 1976 – Kinver, 1977 – Chingford again, 1978 – Guildford, 1979 – Bristol again, 1980 – Bedford, 1981 – Bournemouth.

It should perhaps be emphasised that I.M.L.E.C. is not a "scientific" competition – it cannot be in the time available – but it does give some idea of the prowess of the competing locomotives. It is, however, quite a stern test of the drivers; in fact many observers think that the skill of the driver counts for more than the efficiency or otherwise of the locomotives! More importantly, the competitions are great fun, and as one visitor put it – "a great Gathering of the Clans!"

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The Quarterly Magazine for the Steam Enthusiast

wish Leyland Society of Model Engineers, and all Competitors,
a successful IMLEC 1982

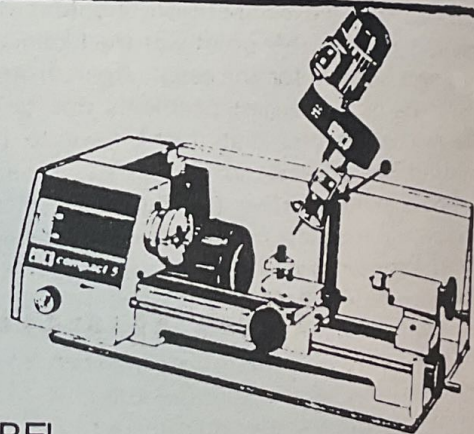
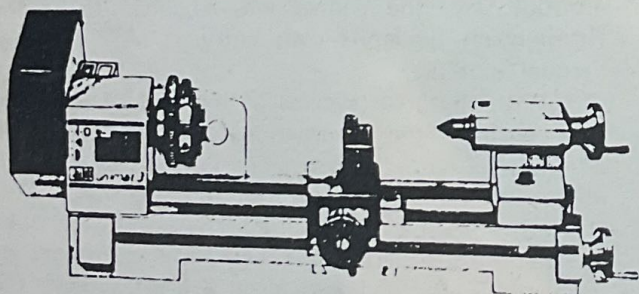
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Some encouragement from Mary Jolliffe of Percy's home club before his winning run at IMLEC 1981.

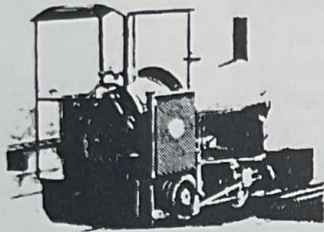


Geof Moore "Under starters orders" at Bournemouth In 1981



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LEYLAND SOCIETY OF MODEL ENGINEERS

IMLEC 1982

Worden Park Track, Leyland

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1. On arriving at the track, report to competitors' reception where a run number will be allocated to you and an approximate run start time given. One hour before the beginning of your run, you will be called to prepare for your run and you will be allocated an observer and assistant.
2. Welsh steam coal and anthracite will be available, each in two grades, one large and the other small, in suitably measured quantities. You will be required to select the type and quantity of coal you need and the weight will be checked in your presence.
3. You must use your own discretion as to when to begin lighting up, but you must be ready to start your run at the time allocated. Any change to this allocated time will be given to you as soon as possible.
4. When ready to raise steam for the run, the observer's assistant will provide an electric blower and as much paraffin, charcoal or wood as required to raise steam. If you wish to bring your own blower our supply is 18V DC. You may change over to coal when you like, but all coal used is included in the weighed amount for the run. You must have a good coal fire burning before going out on the track.
5. The train will be prepared for you with sufficient trucks to carry the number of passengers you request. You may select the number of passengers you require and these and the trucks will be waiting for you at the station. The observer will tell you when to go onto the track and will assist in coupling your engine to the train.
6. The engine and the dynamometer car are driven light round to the station with just the driver and observer on board. (For small $3\frac{1}{2}$ " G locomotives you may choose for the observer to walk beside you to the station). The remaining trucks and passengers will join you at the station where the official run will begin and time recording will commence. The measurement of work done will commence from the initial start to the steaming bays and hence the light run from the steaming bays to the station will be included. The observer will tell you when to start.
7. The duration of the run is to be a nominal 30 minutes. No time allowance will be made for stops except for derailments and any competitor not completing 25 minutes will be deemed to have retired. A lineside clock will be provided so that you can see the progress of your run. The timekeeper will give an indication when you have ten and five minutes to go and when on your last lap.
8. The run will end at the station and any competitor stopping short of the station because of lack of steam must raise sufficient steam to bring the train into the station before the run is deemed to be completed. All recordings will end at the station. The engine will then run forward to the steaming bays together with the dynamometer car.
9. All the unused coal will be collected in a labelled plastic bag by the observer's assistant and weighed in your presence by one of the judges. No allowance will be made for any unburnt coal left in the firebox. The result will be calculated by the results team and put up on the results board as soon as it is ready.
10. A maximum speed limit of 10mph will be in operation for the competition. The observer will give a reminder if you approach this speed. He will give a warning should your speed exceed 10mph, three such warnings resulting in disqualification.
11. You must not lean on the locomotive/tender or apply the hand brake in such a manner as to increase the draw bar pull. Infringement of this rule will result in disqualification. The use of the handpump is not permitted except in emergencies when all other means of water feed have failed and the engine must then be retired.
12. The use of sand is not permitted except for starting the run.
13. At no time during the measured run may any external assistance be given. All work done must be provided by the locomotive.
14. The decision of the Chief Judge is final on all matters.

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Calculation of Results (with acknowledgements to the Bristol S.M.E.E.)

(NOTE: Parameters marked * are shown on Results Board and can be logged on the centre pages of the Programme).

The dynamometer car measures and gives a direct reading of Total Work Done* in foot pounds and Total Distance Travelled* in feet. In addition the Overall Run Time* (minutes) and Weight of Coal Used* (pounds) are recorded.

From these parameters the following calculations can be made:—

Average Draw Bar Horse Power =

$$\frac{\text{Total Work Done (ft. lb.)}}{\text{Overall Run Time (mins.)} \times 33,000} \quad \text{h.p.*} \quad \dots \dots \dots (1)$$

Coal Consumption Rate =

$$\frac{\text{Weight of Coal Used (lb.)} \times 60}{\text{Overall Run Time (mins.)}} \quad \text{lb./hr.} \quad \dots \dots \dots (2)$$

Specific Fuel Consumption (S.F.C.) =

$$\frac{\text{Coal Consumption Rate}}{\text{Average Draw Bar Horse Power}} \quad \dots \dots \dots (3)$$

Substituting (1) and (2) in (3)

$$\text{S.F.C.} = \frac{\text{Weight of Coal Used (lb.)} \times 1,980,000}{\text{Total Work Done (ft. lb.)}} \quad \text{lb./D.B.H.P. hr.*} \quad \dots \dots \dots (4)$$

Now, Overall Thermal Efficiency =

$$\frac{\text{Work Output} \times 100\%}{\text{Heat Input}}$$

Assuming the calorific yield of the coal to be 14,000 B.Th.U./lb., 1 lb. of coal will yield 14000 x 778 ft. lb. of heat where 778 is the number of ft. lb. per B.Th.U.

From (4)

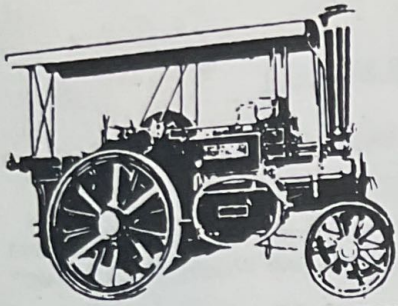
Overall Thermal Efficiency * =

$$\frac{1,980,000 \times 100}{\text{S.F.C.} \times 14,000 \times 778} \quad \% \quad \dots \dots \dots (5)$$

$$= \frac{18,1785}{\text{S.F.C.}} \quad \% \quad \dots \dots \dots (6)$$

The locomotive which returns the highest Overall Thermal Efficiency is the winner.

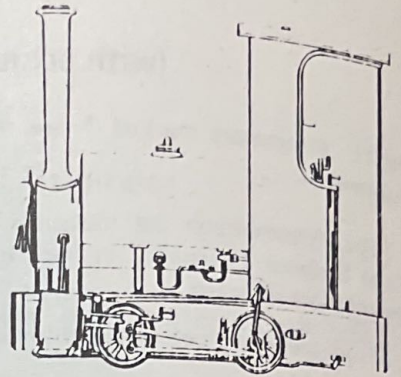
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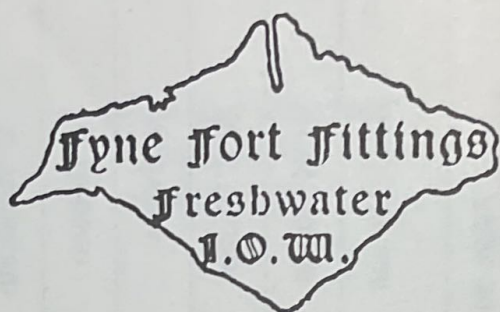


NOT IN RUNNING ORDER

IMLEC 82

SATURDAY 3rd JULY 1982

Owner	Driver	Society	Locomotive Type	Wheel Arrangement	Gauge (inches)
T. E. Aitchison	J. W. Aikin	Rolls-Royce M.E.C., Glasgow	GWR 81XX	2-6-2 T	3½
D. Ashworth	D. Ashworth	Rochdale S.M.E	Marin Evans "Jubilee"	2-6-4 T	3½
J. Dabson	J. Dabson	Chingford M.E.C.	LMS "Duchess"	4-6-2	3½
J. Evans	J. Evans	Kinver & West Midland S.M.E.	Stanier 4 MT "Jubilee"	2-6-4 T	3½
V. C. Gotrel	V. C. Gotrel	Birmingham S.M.E. Ltd	LMS 3-Cyl. Compound	4-4-0	3½
H. K. Jones	H. K. Jones	Wirral M.E.S.	GWR Armstrong Goods	0-6-0	3½
F. G. Winsall	F. G. Winsall	Rugby S.M.E.	Welsh Highland Railway Narrow Gauge "Russell"	2-6-2 T	3½
M. F. Zabrocki	M. F. Zabrocki	Romney Marsh M.E.S.	LBSC "Mona"	0-6-2 T	3½
L. Barker	L. Barker	Kinver & West Midland S.M.E.	LBSC "Speedy"	0-6-0 PT	5
A. D. Daniels	A. D. Daniels	Stockport & District S.M.E.	"Simplex" Modified to GWR Pannier Tank	0-6-0 PT	5
J. S. Richardson	J. S. Richardson	Keighley & District M.E.S. Ltd	LBSC Minx (Joy Valve Gear)	0-6-0	5
T. Vaughan/J. Downs	T. Vaughan	Wrexham & District S.M.E.	Simplex	0-6-0	5



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Sorry we aren't able to be with you this year - but, see you next time around.

NOT IN RUNNING ORDER

IMLEC 82

SUNDAY 4th JULY 1982

Owner	Driver	Society	Locomotive Type	Wheel Arrangement	Gauge (inches)
C. R. Amsbury	C. R. Amsbury	Derby S.M.E.E.	4-Cylinder Compound French Atlantic "President"	4-4-2	5
D. S. Connor	D. S. Connor	Tonbridge S.M.E.	BR Class 7 "William Wordsworth"	4-6-2	5
A. Crossfield	A. Crossfield	Blackburn M.E.S.	"Nigel Gresley"	2-8-0	5
P. Forsyth	K. Attenborough	Private	GNSR Cowan Goods	4-4-0	5
G. Harrison	G. Harrison	Private	Denver & Rio Grande Freelance Narrow Gauge	2-4-2	5
J. Hartup	J. Hartup	Wigan & District M.E.S.	Anglo Chilean Nitrate Railway Kitson Articulated Narrow Gauge	0-6-6-0	5
G. Moore	G. Moor	Guildford M.E.S.	LBSC "Minx"	0-6-0	5
L. O. Nelson	L. O. Nelson	Wakefield S.M.E.	A1 3-Cylinder "Flying Scotsman"	4-6-2	5
K. R. H. Rose	K. R. H. Rose	Canterbury S.M.E.	Buenos Aires Pacific Railway 5/6" Gauge Passenger Loco	4-6-4 T	5
G. Storey	G. Storey	Bristol S.M.E.	Freelance Continental	2-6-0	5
C. J. Summersall	C. J. Summersall	Harrogate M.E.S.	"Simplex"	0-6-0	5
G. Thomas	G. Thomas	Private	GWR Manor	4-6-0	5
P. A. Wood	P. A. Wood	Chingford M.E.C.	LNER J 39	0-6-0	5

ABOUT THIS YEARS' ENTRIES

No. 1. Rolls-Royce Model Engineering Club, Glasgow. Entry by Thomas E. Aitchison. Locomotive 3½" gauge. GWR 81XX. Wheel arrangement 2-6-2.

No. 2. Rochdale Society of Model Engineers. Entry by Dave Ashworth. Locomotive is a 3½" gauge tank 2-6-4 wheel arrangement to Martin Evans' "Jubilee" design. Dave is a joiner by trade and this is his first attempt at locomotive building, it took him two years to build and was completed in August 1981, since then it has worked every weekend on the Society's track quite successfully. It is finished in LMS black and won the Rochdale Society's Novice Trophy at their recent exhibition.

No. 3. Chingford & District Model Engineering Club. A 3½" gauge 4-6-2 "Duchess" class locomotive No. 6251 "City of Nottingham", based on the design of the late H. P. Jackson. It took John Dabson four years to build and has run many miles since its completion in 1969, including being placed 3rd in the 1979 IMLEC at Bristol.

No. 4. Kinver & West Midland Society of Model Engineers. Entry by John Evans. A 3½" gauge Stanier 4MT to Martin Evans' design of "Jubilee". Wheel arrangement of 2-6-4. John has piston rings working in cast iron cylinders on this locomotive.

No. 5. Birmingham Society of Model Engineers Ltd. Vincent Gotril is a watch and clock repairer who worked for several years in the 1940s for LMS-BR and fired the full size LMS standard 4-4-0 three-cylinder compounds quite frequently. Obviously this had a major bearing on his decision to build a model of the same type. Now, with a 3½" gauge completed, with slide valve operation to the two low pressure cylinders and piston valve controlling the central high pressure cylinder all operated by three sets of Stephenson's Link Valve Gear, a Deeley type regulator located in the dome for simple engine operation from moving off to gradually changing to full compound, complements the authenticity of this locomotive.

No. 6. Wirral Model Engineering Society. Entered by Howard Kenneth Jones (Ken). A 3½" gauge 0-6-0 Great Western Armstrong goods locomotive, the prototype of which was built at Swindon in 1872. This model was completed in time for the 1981 Model Engineer Exhibition from drawings prepared from J. N. Maskelyne's design. Ken hopes to do well at IMLEC and can be seen in action early on Saturday morning.

No. 7. Rugby Society of Model Engineers. Fred Winsall's entry "Russell" is a 1¾" to 1' model of a 2-6-2 tank engine that ran on the old Welsh Highland railway, built by Hunslett in 1906, Works No. 901. Fred has past experience at IMLEC, this being his 6th time. He has been placed 1st, 2nd, 2nd, 3rd and 6th in that order and, as Fred says, he is gradually working his way to the bottom of the board. We hope that he reverses this flow and starts climbing up again.

No. 8. Romney Marsh Model Engineering Society. Melvyn Francis Zabrocki, a television engineer who took two years to build his 3½" gauge "Mona" to an LBSC design. The locomotive is finished in British Rail Green with orange/black lining. As Melvyn says model engineering and television are far removed with the only common factor being the amount of patience required.

No. 9 Kinver & West Midland Society of Model Engineers. Larry Barker, a carpenter and joiner by trade, completed building "Speedy" four-and-a-half years ago. Since then he has spent the time running the engine and building his own house in Wolverhampton. He did find time in 1981 to enter, and win, the Midlands Efficiency trials. May we see a repeat in 1982 at IMLEC.

No. 10 Stockport & District Society of Model Engineers. Danny Daniels at 67, officially classed as an O.A.P., is having difficulty in living up to it. He recently raised £200 for the British Red Cross, not by model engineering but by jumping out of aeroplanes (with a parachute of course). We may need a parachute to stop him when he sits behind his "Simplex" locomotive modified to Great Western Railway Panier tank design with a fully stoved and lined finish with one special feature, the large dome was beaten from a length of brass tube. Danny completed the locomotive in 1979 and has done many passenger hauling miles since.

No. 11. Keighley & District Model Engineers Society Ltd. A previous entrant at IMLEC in 1976, John Richardson's locomotive "Minx" to LBSC design with Joy Valve Gear appears again. With many passenger hauling miles completed and a full overhaul carried out during last winter, which included painting and lining in British Rail goods livery, John hopes to do well.

No. 12. Wrexham & District Society of Model Engineers. One of the most popular Martin Evans designs. This "Simplex" 5" gauge 0-6-0 T is one of the pair jointly built by Club Secretary Terry Vaughan, and John Downes. Both engines were started in November 1979 and finished March 1982. They are to Martin Evans drawings with no modifications.

No. 13. Derby Society of Model and Experimental Engineers. Entry by Roy Amsbury, a very well known name in Model Engineering circles. Roy is entering his new locomotive "President", a De Glen four cylinder compound in 5" gauge which took five years to build and is currently being described in *Model Engineer*. It was built from works drawings, a mixture of French and English ones, and is complete with all the trimmings, i.e. simplifying system, L.P. regulator, vacuum brakes and adjustable blast nozzle, as Roy says: "So many bits, I don't know which to twiddle when".

No. 14 Tonbridge Model Engineering Society. Bill Conner, a company engineer to a Road Tanker operator, started locomotive building during the war. His father supplying the "know-how", treadle lathe and assorted tools. Bill's entry at IMLEC is a BR Class 7 Pacific locomotive "William Wordsworth" which took four years to build, being finished in 1981 it has since logged up over 250 trouble-free miles.

No. 15. Blackburn Model Engineering Society. Entry by Alan Crossfield, a telephone engineer who plays guitar in a rock band during his spare time, although he still found time to build a 5" gauge GNR "O1". The name of this locomotive "Nigel Gresley" is a point of confusion to many. The model is based on the GNR O1 class, two cylinder goods engine of 1913. It was built with the aid of Martin Evans drawings plus photographs of the original. Started in 1978 and completed in August 1981, the locomotive has since proved itself reliable and easy to drive (an important feature for a first time builder/driver).

No. 16. A private entry by Paul Forsyth of Northampton, the model is a 5" gauge version of the "William Cowan" goods engine of 1866, based on the original built by Neilson & Co. for the GNSR. Paul found some original outline drawings in a Victorian book and produced his own full size drawing to 5" gauge from them, making all his own patterns, he completed the task of building the locomotive in 15 months.

No. 17. The second private entry is by G. Harrison of Manchester and is a 5" gauge Denver & Rio Grande Freelance narrow gauge locomotive. He says the engine came into being almost by accident, using a stationary boiler, Don Youngs cylinder castings for a Lucky Seven and a 7 $\frac{1}{4}$ " gauge tender chassis. N.G. was the "IN" thing at the time, so the D & RG was born.

No. 18. Wigan & District Model Engineering Society. John Hartup, Chief Photographer with his local newspaper at Lancaster and a member of the Wigan & District M.E.S. for the past ten years. He built the 0-6-6-0 Meyer locomotive from works drawings scaling down to 1.430" to the foot. Building was spread over seven years with lots of encouragement from his wife Mavis and good friends at Wigan M.E.S. John is also a member of the recently formed Lancaster & Morecambe M.E.S. and won the championship cup with the Meyer at the 50th Model Engineer Exhibition at Wembley. The prototype on which John's model is based was delivered to the Anglo Chilean Nitrate Railways in 1903 for 3'6" gauge.

No. 19. Guildford Model Engineering Society. Built by Geoff Moore over a period of ten years, this 5" gauge 0-6-0 LBSC Minx has a Heltaine fire box, Joy valve gear, gun metal cylinders fitted with aluminium alloy pistons and 'O' rings. Since finishing third at IMLEC 1981 in Bournemouth, Geoff has fitted Radiant super heaters in place of the original LBSC spearhead type, stainless steel grate and thermocouple fitted in the steam chest completes the modification. Geoff is obviously looking to beat his last years placing.

No. 20 Wakefield Society of Model Engineers. A 5" gauge "A1" three cylinder locomotive "Flying Scotsman" by Leslie Nelson of Huddersfield. The model is built to re-create the original locomotive as prepared for the British Empire Exhibition at Wembley in 1924. Some noteworthy features of this locomotive are: Correct "bellied" coupling rods, authentic oilers on tender axle boxes, square drive to return crank, original swing link type front bogie, fully compensated steam brakes. All lining and painting carried out by the builder including hand painted crests on cab sides.

No. 21. Canterbury & District Society of Model Engineers. 5" gauge 4-6-4 tank locomotive, the prototype of which was built in Darlington in 1930 for the Buenos Aires Pacific Railway. Ken Rose, the owner and driver, working from the manufacturer's full size drawings, spent 6,500 hours and burnt much "midnight oil" in constructing a locomotive of great power, very handsome and of typical British design. Note the steam driven turbo electricity generator mounted on top of the boiler.

No. 22. Bristol Society of Model Engineers. The Bristol entry is a 5" gauge 2-6-0 Freelance locomotive "Unique". Cannon axle boxes and single cylinder feedwater steam pump were incorporated by the builder Gordon Storey, and since its completion six years ago has covered many passenger hauling miles.

No. 23. Harrogate Model Engineering Society. The entry from this Society is the well known Martin Evans 0-6-0 5" gauge Simplex with modified boiler and radiant type super heaters, built and owned by Chris Summersall. Construction of this locomotive was started in December 1975 and completed 18 months later in 1977. The locomotive has been run quite frequently on the club's portable track at many local events.

No. 24. A private entry, this time by George Thomas. His 5" gauge 4-6-0 "Kensington Manor", modelled from Martin Evans plans as published in *Model Engineer*, reflects great credit to this father and son team and we wish them well. George's wife keeps them well supplied with the necessary lubrication. What would we do without the ladies.

No. 25. Chingford & District Model Engineering Club. Last, but by no means least, winner last year, the year before, and in 1978, Percy Wood will again be entering his 5" gauge LNER J39 0-6-0 which he finished just in time for 1981 INLEC, 12 months on, this locomotive will be well run-in and ready to show its heels to all. We wish him well.

PREVIOUS RESULTS

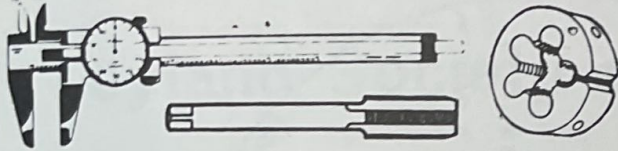
Year	Host Club	Place	Owner	Club	Engine	Gauge (ins)	Efficiency (per cent)
1969	Birmingham S.M.E.	1st	J. Drury	Birmingham	Royal Scot	5	Not Quoted
		2nd	N. Spink	Private Entry	GWR Gooch	5	
		3rd	A. Bowling	Cheltenham	Green Arrow	3½	
1970	Whitney & West Oxford S.M.E.	1st	L. Labram	Birmingham	"Firefly"	5	Not Quoted
		2nd	P. Dupen	Romford	MR "999"	5	
		3rd	J. Cousins	Willesden & W. London	"Speedy"	5	
		1st 3½"	E. Kellet	Bristol	GWR Hall	3½	
1971	Southampton & District S.M.E.	1st	A. Heyden	Newton Abbott	GWR Dean Single	5	Not Quoted
		2nd	C. R. Amsbury	Derby	GWR 51XX	5	
		3rd	G. Hawkins	Bristol	GWR King	5	
		1st 3½"	F. Morley	Portsmouth	"Maid of Kent"	3½	
1972	Tyneside S.M.E.	1st	N. Spink	Chesterfield	GWR 57XX	5	1.06
		2nd	L. Bennett	Chingford	GCR Director	5	1.05
		3rd	H. Reeve	Kiver & W. Midland	"Nigel Gresley"	5	—
		1st 3½"	A. Jacobs	Romford	GWR Hall	3½	1.03
1973	Chingford & District M.E.C.	1st	W. Longstaff	S. Durham	LNER L1	5	1.6
		2nd	L. Labram	Birmingham	"Firefly"	5	1.58
		3rd	T. Arnott	Sunderland	"Doris"	3½	1.47
1974	Bristol S.M.E.E.	1st	F. G. Winsall	Rugby	"Nigel Gresley"	5	2.54
		2nd	C. R. Amsbury	Derby	GWR 51XX	5	2.138
		3rd	A. H. Castle	Worcester	Freelance	5	1.933
		1st 3½"	D. Alford	Bracknell	GNR K2	3½	1.018
1975	Tyneside S.M.E.E.	1st	L. Joyce	Chingford	GWR King	3½	1.552
		2nd	F. G. Winsall	Rugby	"Nigel Gresley"	5	1.392
		3rd	D. W. Horsfall	Brighouse	LSWR	5	1.355
1976	Kinver & W. Midland	1st	W. Perret	Southampton	"Speedy"	5	1.58
		2nd	F. Winsall	Rugby	"Torquay Manor"	5	1.37
		3rd	J. Coleman	Bristol	SECR 'D'	5	1.36
		4th	P. Wood	Chingford	"Maid of Kent"	5	1.21
1977	Chingford & District M.E.S.	1st	W. Perret	Southampton	"Speedy"	5	2.32
		2nd	Club Loco	Rugby	"Netta"	5	1.79
		3rd	F. A. Beard	Peterborough	"Eva May"	5	1.694
		4th	B. Woolston	Coventry	"General D'Arcy"	5	1.687
		1st 3½"	B. H. Dunster	Canterbury	LNER A4	3½	0.68
1978	Guildford Model Engineering	1st	P. Wood	Chingford	"Maid of Kent"	5	1.614
		2nd	D. Pring	Bristol	"Pansy"	5	1.469
		3rd	B. Perryman	Worthing	LBSC "Gladstone"	5	1.266
		4th	G. Thomas	Llanelli	LNER B1	5	1.99
1979	Bristol S.M.E.E.	1st	D. Morris	Urmston	GNR Stirling Single	5	2.178
		2nd	A. Hall	Harlington	LNER B1	5	1.984
		3rd	G. Thomas	Llanelli	LNER B1	5	1.892
		4th	M. Leahy	Romford	GWR Manor	5	1.787
		1st 3½"	J. Love	S. Africa	SAR C1.6C	3½	1.786
1980	Bedford M.E.S.	1st	P. Wood	Private	BR C1.7	3½	1.378
		2nd	K. Moonie	Chingford	LSWR Adams Radial T	5	1.231
		3rd	R. Wilkinson	Erith	GWR Manor	5	1.209
		4th	A. Hall	Harlington	LNER B1	5	1.167
1981	Bournemouth & District S.M.E.	1st	P. Wood	Chingford	LNER J39	5	2.419
		2nd	R. Wilkinson	Erith	Torquay Manor	5	2.133
		3rd	G. Moore	Guildford	LBSCR "Minx"	5	2.018
		1st 3½"	L. Gillett	Northampton	SR Merchant Navy	3½	1.641

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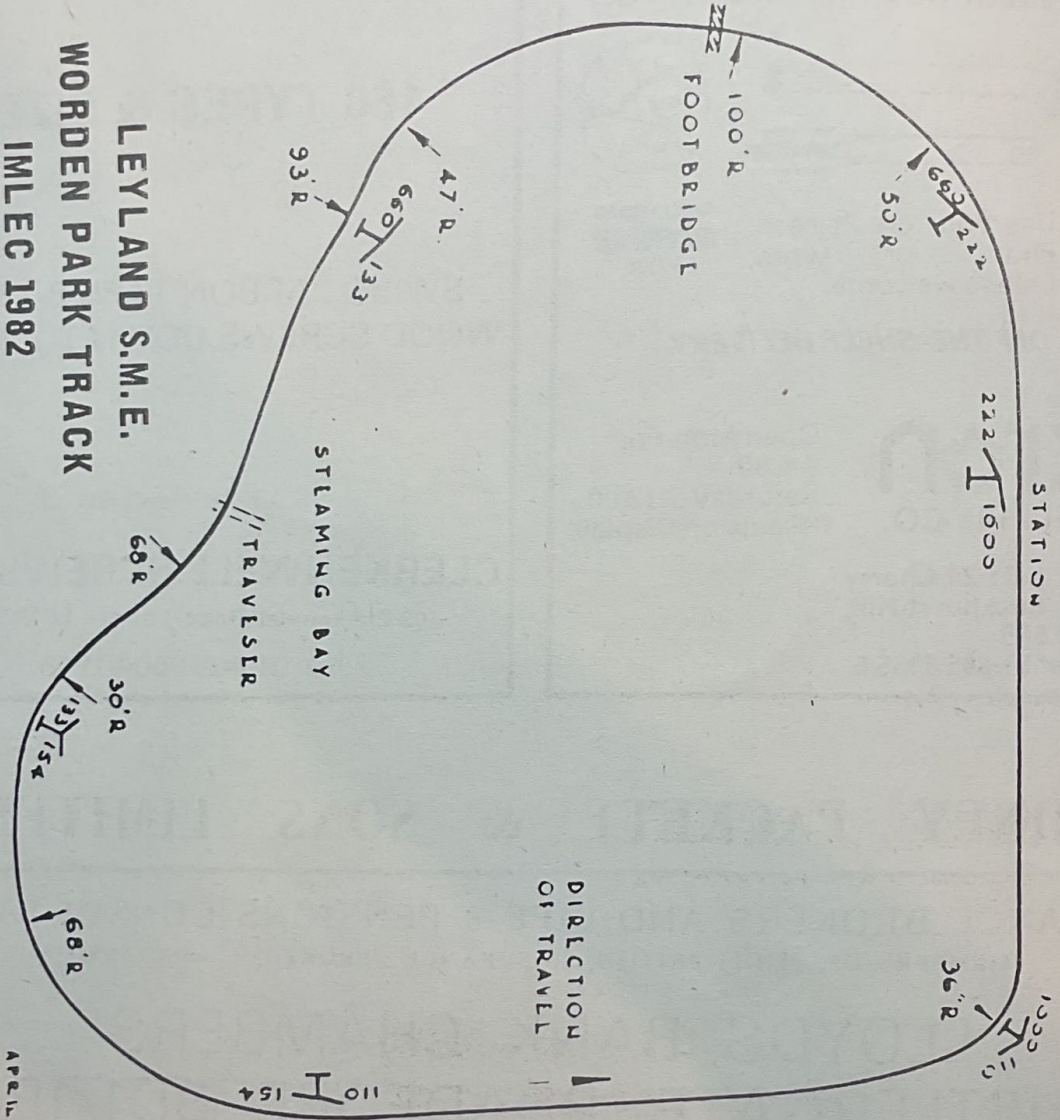
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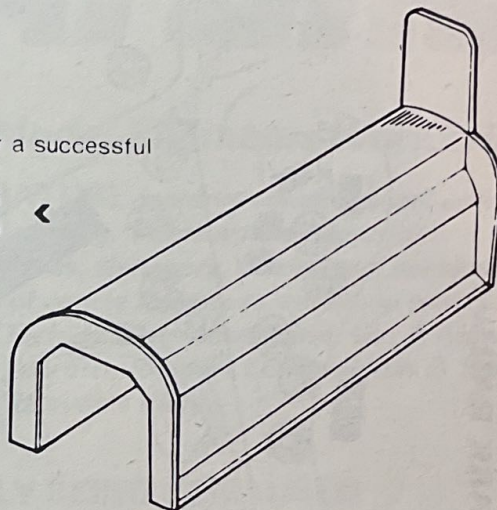
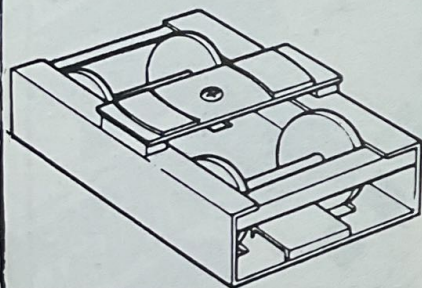
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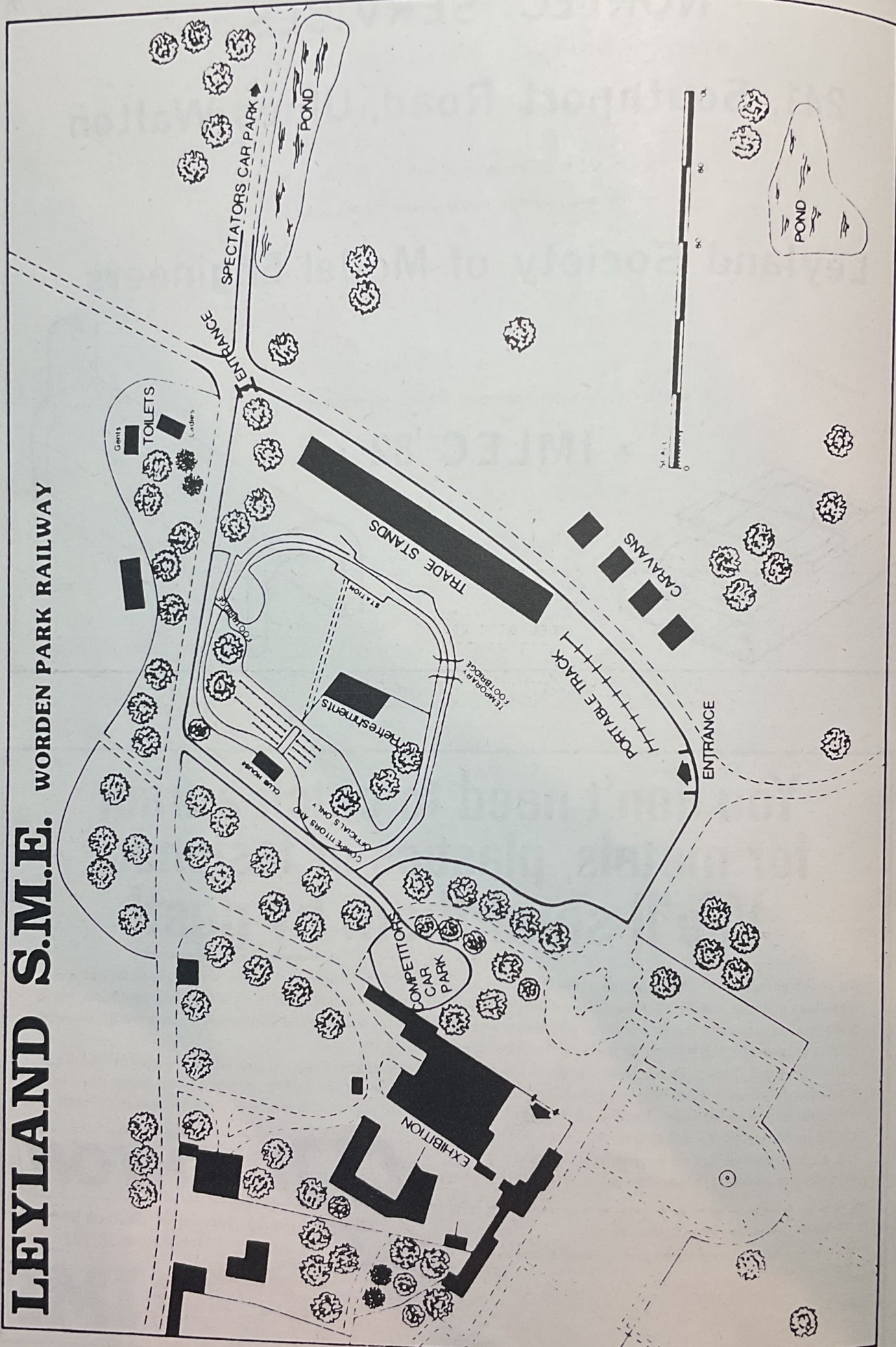
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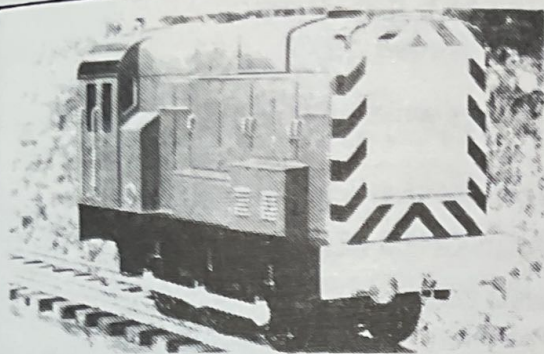
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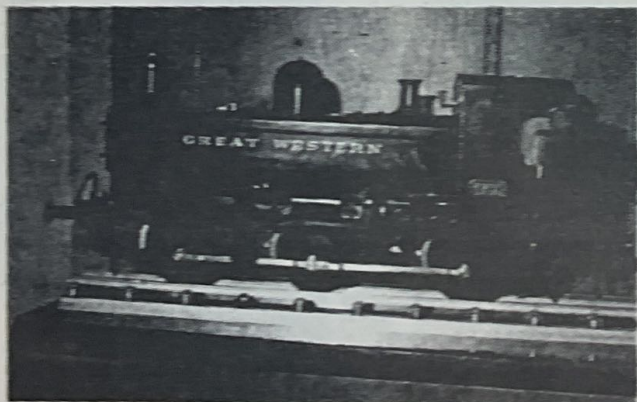


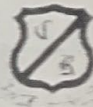
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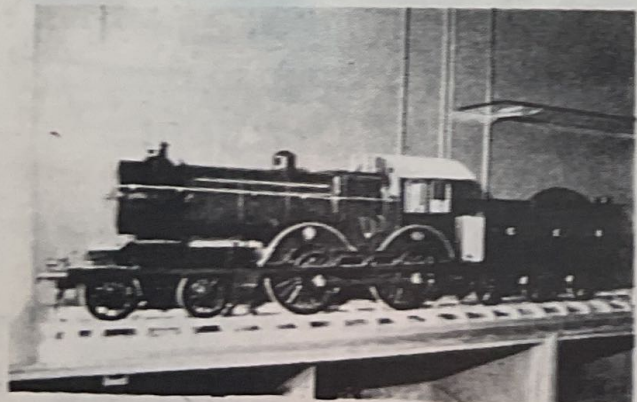
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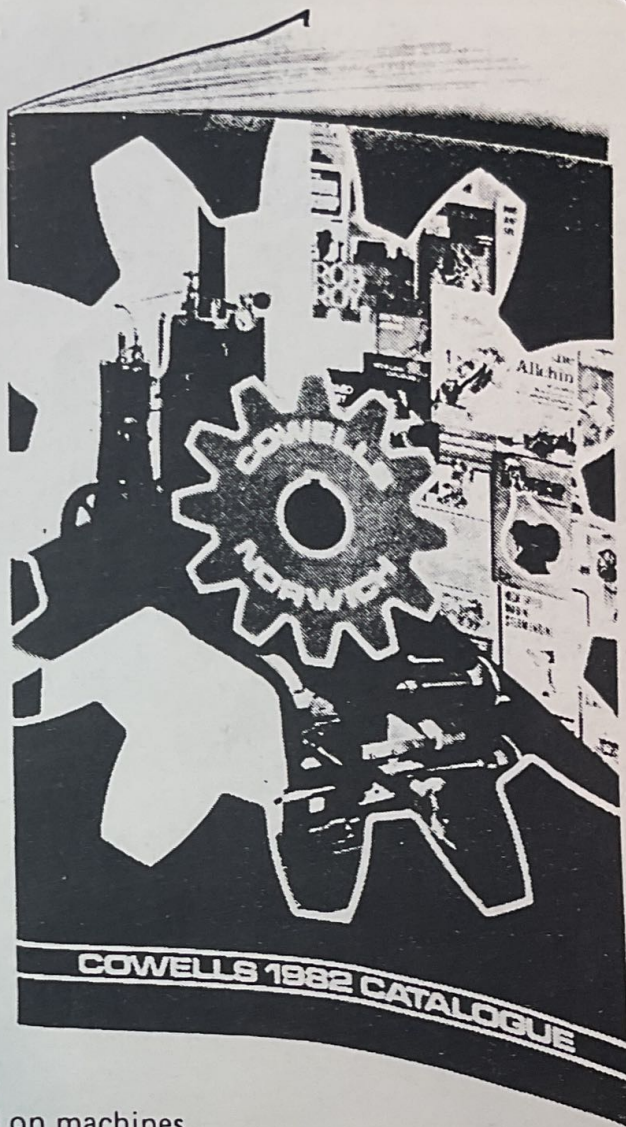
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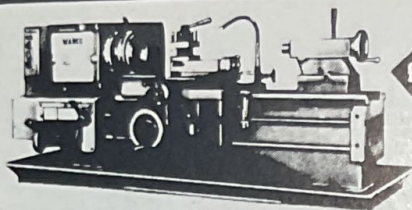


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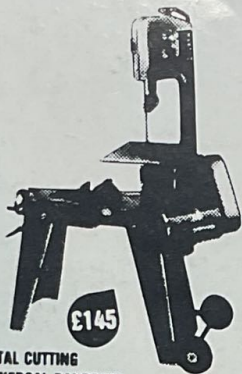
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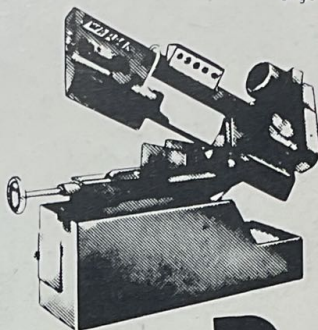
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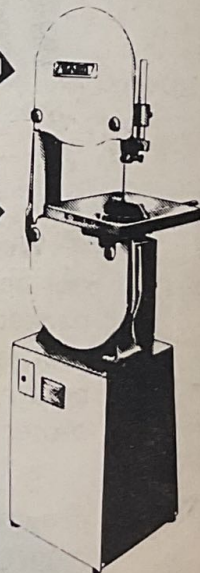
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Single Phase

£398



£1590

MODEL A15 TURRET MILL

Robust Vertical Mill Swivel Head Fine Feed Compound Table Coolant System Lighting Coolant Tray Single or Three Phase

MODEL 2B BENCH DRILL

3/8" Capacity 12 Speeds Two Morse Taper Single Phase

£148

MODEL 2F DRILL

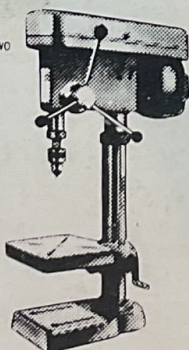
Floor Standing Drill 3/8" Capacity 12 Speeds Two Morse Taper Single Phase

£190

£340

MODEL 3F DRILL

Floor Standing Drill 3 Morse Taper 9 Speeds Single Phase One H.P. Motor All fitted with Rack Elevating Square Tilting Tables All supplied with Genuine Jacobs British Made Chucks. Send for free leaflets



£98

HOBBY DRILL

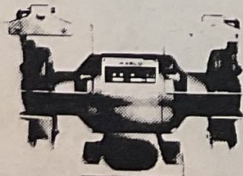
5 Speed up to 3000 r.p.m. 1/2" Jacobs Chuck Single Phase Motor Tilting Table



BENCH GRINDERS

Supplied with tool rests eye shields 1 medium stone 1 fine stone Single phase

5 £28 6 £36 8 £59



£220

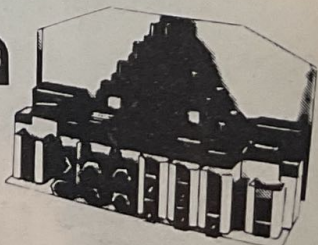
COMPOUND TABLE

2 Axis Movement Table Size 20" x 10" Calibrated Handwheels Micrometer rule on longitudinal travel

£48

CLAMP KIT

For secure clamping of work piece for Milling Drilling Grinding Planning Two sizes 52 individual pieces tee nuts studs etc Complete with steel rack



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I.M.L.E.C.

'82

Exhibition

Welcome to the I.M.L.E.C. 82, Exhibition, Leyland S.M.E. wish to acknowledge the support of other Northern societies in this exhibition. We hope that you the visitor will appreciate the contents.

Exhibit.

1. 3½" gauge L.M.S. 4-6-0 class 5xp locomotive.
2. 3½" " G.W.R. 4-6-0 County of Merioneth.

The above locomotives were built by two well respected members of Leyland S.M.E. they were the late Tom Withnell and the late Alf Almond, for many years since the track was built in Worden Park during 1954 (then only 300' long) these locomotives and their builders kept the society alive with their drive and enthusiasm when the membership dwindled to only five.

From the very foundation they laid one can see the structure of the present day Leyland society- it is sad that Tom and Alf are not with us to enjoy this occasion.

3. 3½" gauge L.M.S. 4-6-0 Black 5 by the late T. Withnell.
4. 5" gauge L.M.S. 4-6-0 Royal Scot, A. Howarth. Leyland S.M.E. 1980 M.E. cup.
5. 5" gauge MEYER articulated locomotive. J.Hartup. Lancaster. 1981 M.E. cup.
6. 5" gauge LAY 0-6-0 Locomotive & tender. K.Taylor. Blackburn. 1982 M.E. cup.

The exhibits 4,5 and 6 have each won the Championship award for the last three years at the Model Engineer Exhibition, London. Proof that cup winning models are working locomotives can be seen on Sunday 4th when exhibit number 5 will run on the track in I.M.L.E.C.

- | | | |
|---|----------------|-----------------|
| 7. 12" Bending Rolls. | A.Hinchcliffe. | Leyland. S.M.E. |
| 8. Boring Head to G.Thomas design. | " | " " |
| 9. 3½" gauge G.N. Atlantic locomotive. | " | " " |
| 10. 3½" gauge L.M.S. 4-6-0 Black 5. | T.Collyer. | " " |
| 11. 5" " G.W.R. 78xx class (incomplete) | T.Collyer. | " " |
| 12. 5" " " Hunslet " (incomplete) | T.H.Pomfret. | " " |

13. 3½" gauge Rob Roy.	P and J.Davis.	Leyland.	S.M.E.
14. 3½" " L.M.S. 2-6-4 T (incomplete)	B.Williams.	"	"
15. 'Quorn' Tool and Cutter Grinder.	E.Lindsay.	"	"
16. 5" gauge 'Lion' Locomotive.	"	"	"
17. Boring Head to G.Thomas design.	"	"	"
18. 'Radford' Ball Turning Tool.	"	"	"
19. 3½" gauge B.R. 4-6-2 Britannia.	K.Hickson.	"	"
20. Stuart IO V Steam Engine.	"	"	"
21. 5" gauge 'Porter'. Chassis only.	"	"	"
22. Stuart IO Steam Engine.	B.Williams.	"	"
23. Dividing Head.	D.G.Williams.	"	"
24. Tapping and Staking Tool.	"	"	"
25. 3½" gauge 4-6-2 Flying Scotsman. (incomplete)	A.Moon.	"	"
26. 2" scale Steam Wagon.	A.Brookes.	"	"
27. 3½" gauge 'Lilla' (incomplete)	"	"	"
28. 3½" " 0-6-0 Rob Roy (incomplete)	J.Petrie.	"	"
29. Stuart IO Horizontal Steam Engine.	"	"	"
30. Stuart B 50 Steam Engine.	"	"	"
31. 5" gauge 0-6-0 'Speedy' (incomplete)	J.Berry.	"	"
32. 5" " G.W.R. 2-4-0 Metro (incomplete)	J.Coulson.	"	"
33. 5" " Slate Quarry Wagon.	"	"	"
34. 3½" " Slate Quarry Locomotive.	"	"	"
35. 5" " Modified Rail Motor.	"	"	"
36. 5" " Mountaineer (chassis only)	R.Burns.	Blackburn	S.M.E.
37. 2½" " AI Pacific Locomotive.	J.Chadwick.	"	"
38. 2½" " G.S.W.R. Mogul.	P.Bibby.	"	"
39. 3½" " 'Invicta'.	P.Speakman.	"	"
40. 3½" " L.M.S. 4-6-2 'Duchess'	T.Schofield.	"	"
41. Stuart 9 Steam Engine.	J.Moorby.	"	"
42. 3½" gauge Rob Roy. (chassis only)	D.Goodwin.	"	"
43. 'Quorn' Tool and Cutter Grinder.	K.Taylor.	"	"
44. 3½" gauge 'Hielan Lassie'.	E.Barnon.	"	"
45. Petrol Engine.	J.Marsden.	"	"
46. M.E. Beam Engine.	J.Scott.	"	"
47. Clayton Steam Lorry Chassis.	H.Holder.	Lancaster & Morecambe	M.E.S.
48. Stuart IO Steam Engine.	J.A. Smithies.	"	"
49. Model Farm Cart and Plough.	R.Phizacklea.	"	"
50. 3½" gauge 4-4-0 'Virginia'.	J.Tyres.	"	"
51. Model Steam Hammer.	"	"	"
52. Skeleton Clock.	"	"	"
53. 3½" gauge L.M.S. Fowler 2-6-4 T.	R.A.Sumner.	"	"
54. Machine Dividing Head.	J.A.Hartup.	"	"

55. Model Steam Crane.	J.A.Hartup.	Lancaster & Morecambe M.E.S.
56. 3½" gauge 0-4-0 'Tich'.	M.Newsham.	"
57. 5" " B.R. 4-6-2 Britannia boiler.	"	"
58. 5" " " " tender.	"	"
59. 3½" " Bob Roy (chassis only).	H.Lewis.	"
60. 5" " 'Hardwick'.	H.Shall.	Wigan M.E.S.
61. 3½" " Merchant Navy Class.	"	"
62. 5" " Stirling Single. (chassis only)	W.Moss.	"
63. 5" " B.R. standard class 2.	W.Unsworth.	"
64. 3½" " 'Invicta'.	"	"
65. 5" " 0-4-0 freelance 'Diesel' Shunter.	D.Unsworth.	"
66. 3½" " G.N. Atlantic 'Maisie'.	V.M.Geever.	"
67. 1" scale 'Minnie' Traction Engine.	J.B.Douglas.	"
68. 2" " Wallis & Stevens Advance Roller.	"	"
69. 3½" gauge 0-6-0 4F Goods Engine.	A.Soldon.	"
70. 5" " G.W.R. 1500 class Pannier Tank.	N.Lowe	"
71. 5" " L&Y 2-4-2 Radial Tank Loco.	"	"
72. 5" " G.W.S. Pannier Tank Loco.	A.Atherton.	"
73. 3½" " L.M.S. Ivatt 2-6-2 Tank loco.	N.Mathews.	Pilkington Glass S.M.E.
74. 3½" " German Federal Railways 2-10-0.	"	"
75. 3½" " L.M.S. 2-6-0 Princess Marina.	A.Jones.	"
76. 2½" " S.R. 4-6-0 King Arthur.	"	"
77. 3½" " 0-6-0 Tank Locomotive.	G.Davies.	"
78. 3½" " B.R. 4-6-2 'Britannia'.	"	"
79. Four Stationary type Steam Engines.	F.C.Brailsford & Son	"
80. Stuart Steam Hammer.	"	"
81. Motor Torpedo Boat.	A.Greenall.	"
82. 5" gauge 0-4-0 Tank Locomotive 'Henry'.	A.Howarth.	Leyland, S.M.E.
83. 3½" " 10 ton Merchandise Wagon.	"	"
84. 4½" scale Burrell Traction Engine parts.	"	"
85. 24" Sheet Bending Rolls.	"	"
86. 5" gauge Freelance Locomotive.	G.Carson.	"
87. 5" " Coal Wagon.	K.Grubb.	"
88. 5" " 2-4-2 L & Y Tank Loco (chassis)	The late T.Withnell.	"
89. Tailstock Turret for a Centre Lathe.	J.Norburn.	"
90. Drill Grinding Jig.	"	"
91. 3½" gauge L.M.S. class 5 (chassis only)	"	"
92. Freelance Vertical Steam Engine.	T.Seed.	"
93. 5" gauge G.W.R. 2-6-2 T 'Firefly'.	J.Roulings.	"
94. 5" " G.N.R. OI class 2-8-0 'Nigel Gresley'	A. Croasfield.	"

The above locomotive can also be seen competing in I.M.L.E.C. on Sunday 4th.