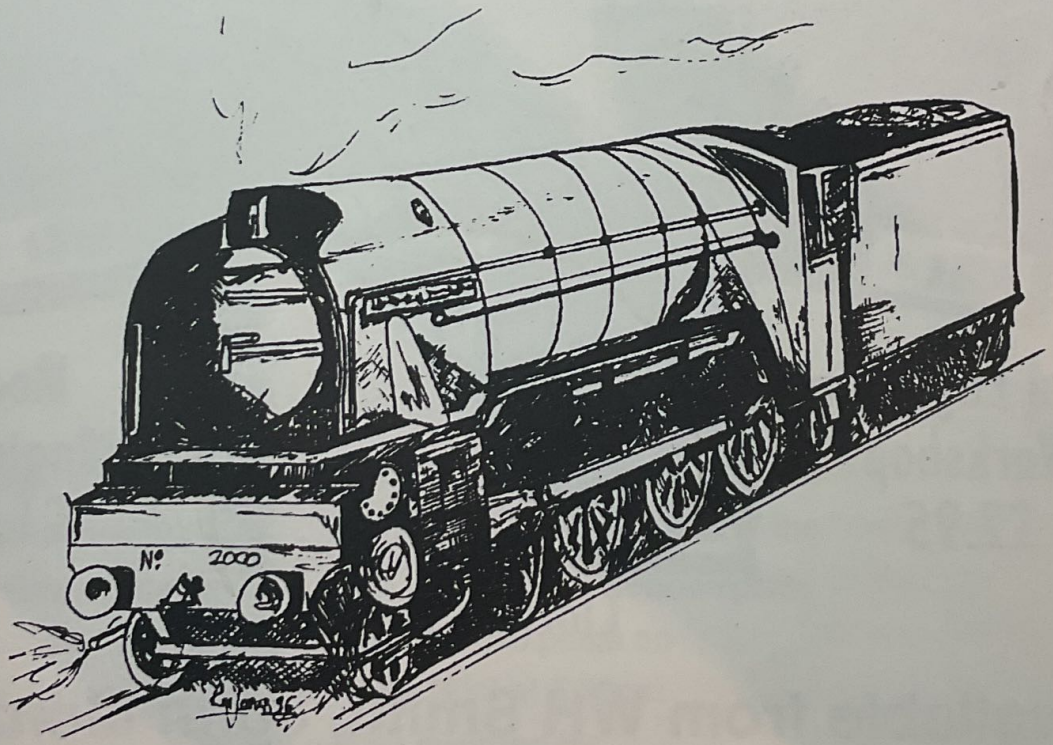
NORTHAMPTON SOCIETY OF MODEL ENGINEERS LTD

The 28th International Model Locomotive Efficiency Competition



Official Programme

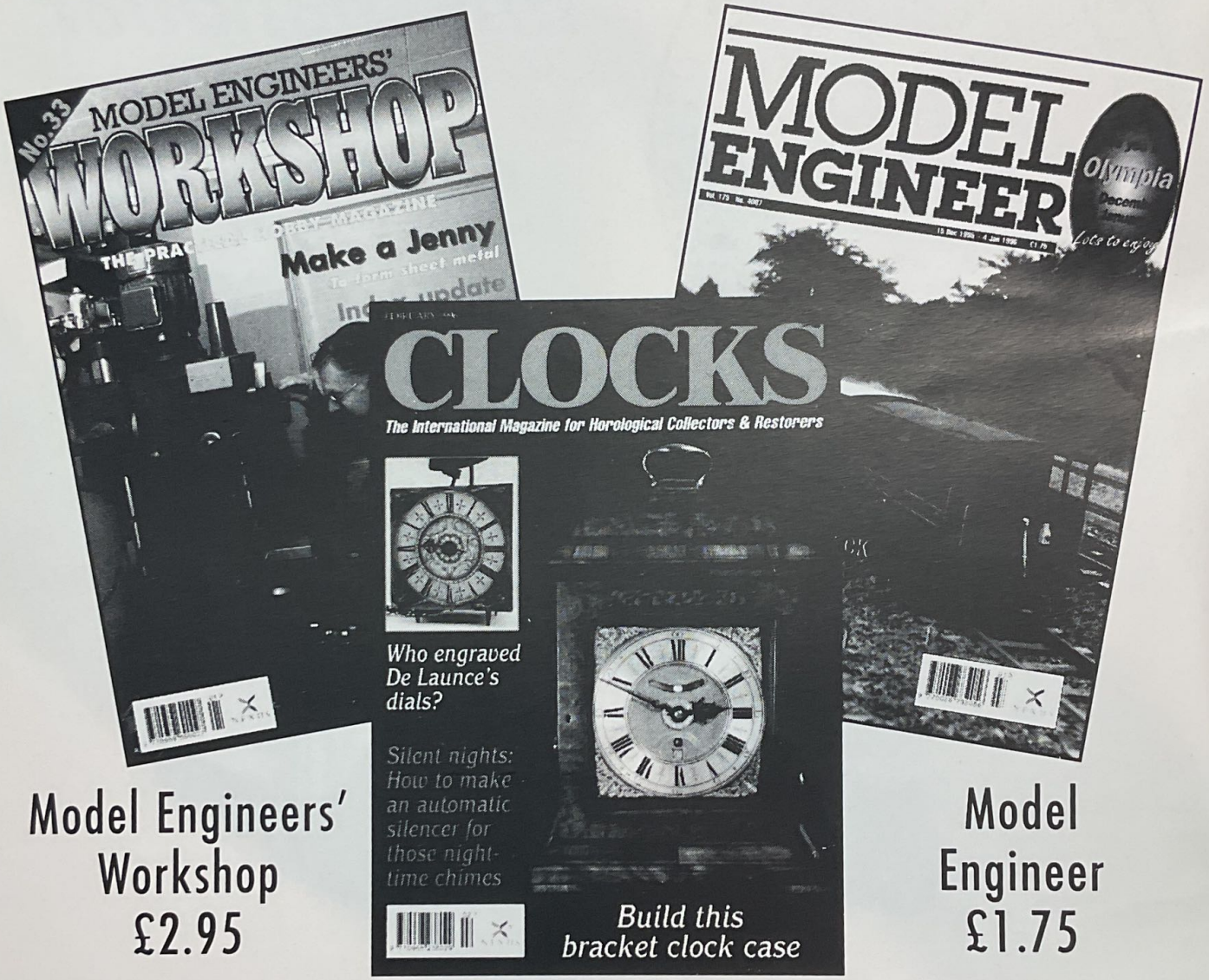
At the Club track of
Northampton Society of Model Engineers Ltd.
Lower Delapre Park, Northampton.

Saturday 13th July and
Sunday 14th July 1996

ESSENTIAL READING

FOR THE ENGINEERING HOBBYIST

Magazines with Technical Back-Up



Model Engineers' Workshop £2.95

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Please write for further information: **Nexus Special Interests, Boundary Way, Hemel Hempstead, Herts. HP2 7ST.**

Alternatively call the Subscription Enquiry Hotline: on 01858 435322 Our team of telephone operators will be happy to help with any query.

The 28th International Model Locomotive Efficiency Competition for the MARTIN EVANS CHALLENGE TROPHY

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Presentation of Prizes

Presentations, by **Mr Tony Clarke** who is Chair of the Environmental Services Committee of Northampton Borough Council, will take place on Sunday 14th July 1996 at 5.30pm

Prizes will be awarded for 1st, 2nd, 3rd and 4th places plus for the best 3½" if it is not in the first 4 places.

All competitors will receive a commemorative badge.

IMLEC OFFICIALS

Overall Adjudicator....	Fred Winsall
Observers....	Chris Orchard
	Glyn Winsall
	Dennis Billington
	Andy Waller
	David Cleworth
Calculations....	Brian Reeve
Track Engineers....	Peter Spikings & Mike Smith
Steaming Bay Marshals....	Steve Winter & Peter Simpson
Time Keepers/Station Marshals....	Keith Nichols & Bernard Clarke
Exhibition and Trade Stand Organiser....	Bob Spikings
Catering and Ticket Sales....	Margaret Spikings & John Tomlinson
Public Address....	Chris Sanders
First Aid....	Harvey Fisher & Nick Wake

ACKNOWLEDGEMENTS

We would like to thank extend our thanks for assistance to:
The Northampton Borough Council for allowing us to use Delapre Park.
The Birmingham and Bristol Clubs for the loan of the Dynamometer Cars.
Leyland Club for the loan of the Scoreboards.
The First Aid Staff.
The Boy Scouts Association for lending the Marquees and the Venture Scouts for putting them up.
All of our wives and friends who have helped to make the event possible.

TIMETABLE

Saturday 13th July 1996

08:30	Catering Commence
09:05	Competition Commence
10:00	Ground level (71/4") Rides commence
12:40	Passenger rides on raised track
13:30	Competition resumes
17:35	Last competition run of the day
19:00	Barbecue commence
23:00	Close

Sunday 14th July 1996

08:30	Catering Commence
09:05	Competition Commence
10:00	Ground level (71/4") Rides commence
12:40	Passenger rides on raised track
13:30	Competition resumes
16:00	Prize Draw
16:25	Last competition run
17:30	Speeches and Prize Giving
18:00	Close

Welcome to Northampton

As Chairman of the Northampton Society of Model Engineers Ltd may I welcome you to our track in Lower Delapre Park this weekend for the 28th International Model Locomotive Efficiency Competition.

This the first time we have hosted this famous event and it was only after a lot of discussion amongst ourselves at the beginning of 1994 that we decided to offer to the run the event this year.

Since making that decision we have worked very hard to improve the site and to put in the 7¼" ground level track with all the associated bridges, platforms, turntable and new pathways. The amount of work involved in this has been enormous and the dedication of our members in accomplishing this task has been second to none with a lot of members devoting much of their free time to ensure that the tasks were completed in time for the this weekend.

Work started in earnest on the organisation for this weekend after last years superbly run IMLEC at Kinver and has steadily gained momentum ever since so hopefully we have not forgotten anything that will spoil your enjoyment of the weekend.

It is only now that we are beginning to wonder why we offered to host IMLEC in the first place and, having decided to do so, how we managed to achieve our self-imposed goals in such a relatively short time.

I would also like to welcome the members of the other Modelling Clubs from Northampton who have put on various exhibitions and displays for your entertainment over the weekend and to thank them for their efforts in trying to show that there is more to modelling than just our particular discipline.

Finally let's hope that the weather is kind to us and that we can all relax and enjoy the competition either as a spectator or as a competitor. If you are a competitor may I wish you evey success with your run and may the best Locomotive win.

Gordon Lane
Chairman

Northampton Society Of Model Engineers Ltd.
Lower Delapre Park, Northampton
28th IMLEC 13th - 14th July 1996
Rules and Organisation

1. The competition will commence at 08.30 on both Saturday and Sunday. Competitors will be allocated a run number and start time. This information will be given with the instruction pack issued after being accepted to the competition.

2 Competitors must arrive at the track at least one and a half hours before their run and report to the steaming bay reception. Competitors must, at this time, present a current boiler certificate for the locomotive to be used in the competition and state the number of passengers required for the run.

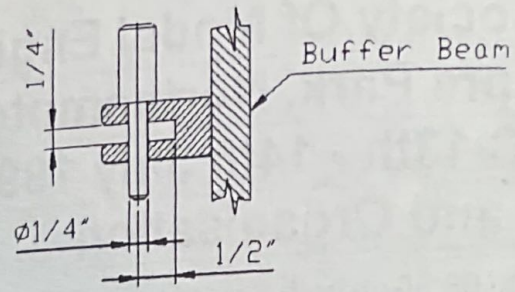
3. One hour before the commencement of the run, the Driver will be allocated an Observer and asked the size and the amount of coal that is required for the run. This will be weighed and allocated in presence of the Driver. Additional coal will be available on the run and all excess will be returned and debited off the total in the Driver's presence.

4. Drivers must use their discretion in when to commence lighting up, but must be ready to start their run at the time allotted. Any time slippage will be notified to the Driver before lighting up.

5. When ready to raise steam for the run, the Driver will be provided with as much dry, or paraffin soaked, charcoal and wood as required to raise steam. The Driver may change over to the measured coal when he likes, but all coal used is included in the weighed amount for the run. The Driver must have a good coal fire burning before going out onto the track.
(NOTE: 12 & 24 Volt D.C. power is available to drive steam raising blowers on all the steaming bays.)

6. The train will be prepared for the Driver with the dynamometer car at the front and sufficient passenger cars to carry the number of passengers he/she requires.

7. The competing locomotive must be equipped with a forked towing coupling that will accept a 1/8 inch thick coupling plate to be attached using a 1/4 inch diameter pin, the plate and pin will be supplied by the host society. The suggested forked coupling dimensions are shown below.



8. The Steaming Bay Marshal will tell the Driver when to put the locomotive onto the transporter and move it onto the running track.

9. All coupling and uncoupling of the locomotive to the train must be carried out by N.S.M.E. officials.

10. The train will then be backed round to the station to take on the passenger load.

11. The Observer will record the initial dynamometer car readings in the presence of the Driver.

12. The Driver will tell the Observer when he is ready and the Timekeeper will then give the Driver permission to start.

13. The duration of the run is a nominal 30 minutes. No time allowance will be made for stops except for derailments. A competitor may opt to stop once 25 minutes have been completed but the run must terminate in the station. Any competitor not completing 25 minutes will be deemed to have retired. A line side clock will be provided so that the Driver can see the progress of his run. The Driver will be advised when he/she has ten and five minutes remaining and when on the last lap. The total period the train may stop during the run will be eight minutes. If this is exceeded then the Driver will be deemed to have retired.

14. Any re-run will be run under the same conditions as the original run (same number of passengers etc.).

15. The run will end at the station. 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 in the station. Once the run has finished the Locomotive will be uncoupled from the train and the driver will move the Locomotive along the track into the tunnel and wait until the next Locomotive to run has been brought onto the track before moving back onto the steaming bays.

16. All the unused coal will be collected immediately the run finishes and weighed in the Drivers presence by one of the Judges. Only the total coal burnt will be used in the calculations. No allowance will be made for any unburnt coal left in the firebox. The result will be calculated and put up onto the results board as soon as possible after the completion of each run.

17. A maximum speed limit of 8 mph will be in operation for the competition. The dynamometer car provides a speed indication at the Drivers position. The Observer will remind the Driver of the speed limit if the speed of the train should approach 8 mph. The Observer will issue a warning to the Driver should the speed exceed 8mph. Three such warnings will result in disqualification.

18. The Driver must not lean on the locomotive/tender or apply the hand brake in such a manner as to increase the drawbar pull. Infringement of this rule will result in disqualification.

19. The use of the handpump is not permitted once the run has commenced. However it may be used in emergencies when all other means of water feed have failed and in which case the locomotive must be retired and the run terminated immediately.

20. Water will be provided in suitable containers during the run to enable locomotive water tanks to be topped up without stopping. The amount of water used is not recorded or limited in any way.

21. Passengers and carriages may be dropped off during the run if the initial load proves to be too heavy, but only when the train is stationary and it is safe to do so. Additional passengers may not be added at any time.

22. No external assistance is to be given to the train in any way whatsoever at any time during the run.

23. Ballast (including water) added externally to the scale outline of the loco (or in the case of a freelance model, the likely scale outline) is not permitted.

24. For practical reasons it may be necessary to limit the load or number of carriages pulled in the contest.

25. The decision of the Judges is final in all matters relating to the competition. The Judges are appointed by the Northampton Society of Model Engineers Limited.

The Northampton Society of Model Engineers Ltd.

A Brief History of the Society

The Northampton Amateur Model Engineering Society was founded in October 1945 and met every Tuesday at various venues in and around the Town until in due course some rooms at a Community Centre in Thornton Park in Northampton were found and used. At that time the Society did not have a permanent track.

In 1965 the present site at Delapre Park was acquired and work began on the construction of the first 3½" and 5" elevated track which was completed in 1967. The Club members then used both Thornton Park and Delapre Park until 1984 when the Clubhouse was built at Delapre Park. Once the Clubhouse was complete the facilities at Thornton Park were dispensed with and all activities moved to Delapre Park, the membership at that time totalled approximately 30 people. Also during this period the name was changed to Northampton Society of Model Engineers and then in November 1976 became a Registered Company.

In the late 1980's it was decided that the track needed to be rebuilt and the track as you see it now was completed in 1990, a plan of the site and track is shown on page ? of this programme.

In 1993 an Extraordinary General Meeting was called and the decision was taken to extend the Clubhouse and to build a ground level 7¼" and 5" track which , when finished, will be approximately 1700 feet long. The Clubhouse has now been extended and progress on the building of new track is well on with over 500 feet already laid and in use.

The membership has now risen to over 60 but more new members are needed so if you live locally and are interested why not come and join this exciting Society and help us to improve still more the facilities we have to offer.

Members meet every Tuesday evening and on Sunday mornings when the majority of the necessary work on the site is carried out.

Two years ago we hosted our first National Rally, the Don Young Rally. Uunfortunately Don died the week before the Rally which cast a black cloud over the day although those who did attend thoroughly enjoyed themselves. Last year we hosted the Midland Federation Rally and the Martin Evans Rally.

In 1997 it has been agreed that the Southern Federation Spring Rally will be held here at Northampton.

Finally, the Northampton Society of Model Engineers Ltd. thank you for coming this weekend and hope to see you again in the future.

Previous IMLEC winners 1969 - 1995

Year	Host Club	Engine	Gauge	Efficy	Driver/Society
1969	Birmingham	Royal Scot	5in	?	J Drury, Birmingham
1970	Whitney	Firefly	5in	?	L Labram, Birmingham
1971	Southampton	Dean Single	5in	?	A Haydon, Newton Abbott
1972	Tyneside	GWR 57XX	5in	1.066%	N Spink. Chesterfield
1973	Chingford	LNERLI Tank	5in	1.60%	B Longstaff, S Durham
1974	Bristol	'Nigel Gresley'	5in	2.54%	F Winsall, Rugby
1975	Tyneside	GWR King	3½in	1.55%	L Joyce, Chingford
1976	Kinver	Speedy	5in	1.58%	B Perrett, Southampton
1977	Chingford	Speedy	5in	2.32%	B Perrett, Southampton
1978	Guildford	'Maid of Kent'	5in	1.61%	PWood Chingford
1979	Bristol	Sterling Single	5in	2.17%	D Morris, Urmston
1980	Bedford	BR Class 7	3½in	1.37%	P.Wood (Private entry)
1981	Bournemouth	LNER J39	5in	2.41%	P.Wood, Chingford
1982	Leyland	GWR de Glen	5in	1.50%	R Amsbury, Derby
1983	Guildford	Royal Scot	5in	1.35%	L Prichard, Harlington
1984	Bristol	Royal Scot	5in	3.66%	L Prichard, Harlington
1985	Urmston	'Nigel Gresley'	5 in	1.85%	A Crossfield (P/entry)
1986	Bournemouth	'Nigel Gresley'	5in	1.64%	A Crossfield (P/entry)
1987	Birmingham	LSWR Adams	5in	2.29%	K Moonie, Chingford
1988	Leeds	BR Prop. 2-8-2	5in	4.392%	L Flippance, Guildford
1989	Leyland	BR Prop. 2-8-2	5in	3.02%	L Flippance, Guildford
1990	Guildford	BR Prop. 2-8-2	5in	3.317%	L Flippance, Guildford
1991	Bristol	BR Prop. 2-8-2	5in	1.733%	K Ayling of Worthing
1992	Leeds	7FS&D	5in	1.886%	D Sutcliffe, Ribble Valley, Dorset
1993	Leyland	LMS Stanier	5in	2.08%	J Heslop, Rydale
1994	Gravesend	LMS Stanier	5in	1.511%	J Heslop, Rydale
1995	Kinver	LNER Class P2	5in	3.32%	J.Heslop, Rydale

IMLEC at Northampton - Results

Saturday 13th July

Run Number	Locomotive Type	Gauge (Inches)	Wheel Configuration	Owner	Society	Passengers Excl Crew	Coal Used	Distance Run	Work Done	Running Time (Mins)	Average Drawbar H.P.	Coal Consumtion Rate (lb/hr)	Specific Fuel Consumption (lbs.DBHP/hr)	Thermal Efficiency (%)	Final Placing
1	Simplex	5	0-6-0	Alan Hutfield	Bristol M.E.S.										
2	Simplex	5	0-6-0 T	Ian Brown	Reading S.M.E.										
3	L.N.E.R. B.1	5	4-6-0	Anthony Baker	Harrow and Wembley S.M.E.										
4	G.W.R. 55XX	5	2-6-2 T	Robert Willis	Ryedale S.M.E.E.										
5	L.N.E.R. Claud Hamilton	5	4-4-0	Jeff Rodway	Newport M.E.S.										
6	Jubilee 5XP	5	4-6-0	Richard Folwell	Northampton S.M.E.										
7	Torquay Manor	5	4-6-0	Dennis Pearson	LLanelli M.E.S.										
8	L.M.S. Black Five	5	4-6-0	Michael Halliday	Grimsby and Cleethorpes M.E.S.										
9	Speedy	5	0-6-0	Martin Pearson	LLanelli M.E.S.										
10	Thompson B.1.	5	4-6-0	Terence Tipping	Brighouse and Halifax M.E.S.										
11	Teutonic	5	2-2-2-0	David Roberts	Urmaston and District M.E.S.										
12	Conway	3½	0-4-0	Nigel Thompson	Erewash Valley M.E.S.										
13	Freelance Woodburner	3½	2-6-0	Bryan Woolston	Rugby S.M.E.E.										
14	I.O.M. Beyer Peacock	5	2-4-0	Mike Casey	Manx Steam & M.E.S.										

Sunday 14th July

Run Number	Locomotive Type	Gauge (Inches)	Wheel Configuration	Owner	Society	Passengers Excl Crew	Coal Used	Distance Run	Work Done	Running Time (Mins)	Average Drawbar H.P.	Coal Consumtion Rate (lb/hr)	Specific Fuel Consumption (lbs.DBHP/hr)	Thermal Efficiency (%)	Final Placing
15	Speedy	5	0-6-0	Edward Beales	Norwich and District M.E.S.										
16	Gresley A4 Pacific	3½	4-6-2	Paul Tompkins	Guildford M.E.S.										
17	Britannia	3½	4-6-2	Dennis White	Warrington & Dist. M.E.S.										
18	Leader	5	0-6-0 0-6-0	Kevan Ayling	Worthing and District S.M.E.										
19	Manor Class	5	4-6-0	Alan Crossfield	Leyland S.M.E.										
20	Dolphour	5	2-8-4	Richard Sourbutts	Llanelli										
21	Stirling Single	5	4-2-2	William Moss	Private										
22	J Class	5	4-8-2	Bill Dwyer	Private										
23	Metro Tank	5	2-4-0	Allan Foster	Newport M.E.S.										
24	Jubilee "Thunderer"	5	4-6-0	J.M.Hurley	Kinver M.E.S.										
25	GWR 57XX	5	0-6-0	G.Harris	Private										
26	Greenhill Manor	5	4-6-0	Geoff Tomlinson	West Riding Small Loco Soc.										

CALCULATION OF RESULTS

The dynamometer car measures and gives reading of Total Work Done in foot-pounds and Total Distance Travelled in feet. In addition the Overall Run Time (in minutes) and the Weight of Coal (in pounds) are recorded. From these parameters the following calculations can be made.

$$\text{Overall Thermal Efficiency \%} = \frac{\text{Work Output x 100}}{\text{Heat Input}}$$

The fuel being used has a calorific value of 13748 BTU per Pound. Using the value 778 Ft/Lbs = 1 British Thermal Unit:-

$$\text{Overall Thermal Efficiency \%} = \frac{\text{Total Work Done x 100}}{\text{Weight of Coal Used x Cal Val x 778}}$$

The Locomotive that returns the highest efficiency is the winner of the competition.

Some interesting subsidiary calculations are :-

$$\text{Average Drawbar Horsepower} = \frac{\text{Total Work Done (Ft/Lb)}}{\text{Overall Run Time(mins) x 33000}}$$

$$\text{Coal Consumption Rate} = \frac{\text{Weight of Coal Used (Lb) x 60}}{\text{Overall Run Time(mins)}}$$

$$\text{Specific Fuel Consumption} = \frac{\text{Coal Consumption Rate}}{\text{Average Drawbar Horsepower}}$$

$$\text{Average Drawbar Pull} = \frac{\text{Total Work Done}}{\text{Total Distance Travelled}}$$

The Competitors

by Glynn Winsall

Kevan Ayling - 5" gauge 0-6-0 - 0-6-0 "Leader" Built from BR works drawing this 5" gauge model of Bullieds ill fated Leader class locomotive is fitted with conventional boiler, valves and valve gear in place of the original's dry firebox, all enclosed chain driven gear and extremely problematic sleeve valves. The locomotive was started in 1991 and first steamed in December 1995. It is Kevan's fourth locomotive. Kevan was winner of IMLEC 1991 and runner up in 1990 with his BR 2-8-2 proposed locomotive. He will be representing the Worthing & District SME.

Anthony Baker - 5" gauge LNER B1 This 5" gauge LNER BI was constructed to the Martin Evans Springbok design between 1976 and 1980.The locomotive has recently undergone a complete overhaul.It will be driven by Les Pritchard who is a very competent driver with two IMLEC wins to his credit in 1983 at Guildford, 1984 at Bristol, plus third place 1985 at Urmston. He will be representing the Harrow & Wembly SME.

Paul Tompkins - 3 1/2" gauge A4 Pacific. Paul is our youngest competitor at just 17 years of age. He had so much fun last year at Kinver with his Railmotor that he could not resist having another go. The locomotive was completed back in 1984 by Bill Dwyer. It incorporates a Heilan Lassie boiler and no castings were used in its construction. Paul has been well and truly bitten by the Model Engineering bug and he and his father are busy building a workshop to enable Paul to start on his own model.

Robert Willis - 5" gauge GWR 55XX Built to Martin Evans Firefly design this locomotive features Piston valve cylinders, Hydrostatic lubrication and Smokebox draughting to Don Young principals. The locomotive was completed in 1983 and overhauled in 1994/95. It is a regular club passenger hauler and performer at the Gilling Main Line Rallies. Robert is the current Chairman of the Rydale SME.

Jeff Rodway - 5" gauge GER "Claud Hamilton" Jeff has appeared in IMLEC many times and in 1989 took fourth place at Leyland with this locomotive. It is built to Martin Evans "Claud Hamilton" design, the only deviation being the addition of a vacuum brake system. On this occasion Jeff has handed over the footplate to Barry Sumsion, a fellow Newport MES member.

Michael Halliday - 5" gauge Class Five Built to Don Young's design with added detail, the locomotive was-completed seven years ago and took six years to complete. New piston valves and liners were fitted two years ago. Michael, who is now building a 7¼" gauge version of this locomotive is representing the Grimsby and Cleethorpes MES.

Dennis Pearson - 5" gauge "Arden Manor Dennis is representing the Llanelli MES and is a prolific builder of model locomotives, "Arden Manor" being his sixth. It is built to Martin Evans Torquay Manor design and took 3 years to complete.The locomotive will be driven by Dennis Taylor, a fellow member of the Llanelli Club,who drove it to ninth place in 1994 at Gravesend.

Nigel Thompson - 3 ½" gauge 0-4-0 "Conway" Built to Martin Evans design with the addition of cylinder drain cocks. The locomotive is now three years old. Nigel is representing the Erewash Valley MES. Driving the locomotive today will be Alf Manktelow, a professional British Railways driver since 1952 and very keen model locomotive driver.

Martin Pearson - 5" gauge "Speedy" Built to LBSC's words and music without deviation, this is Martins first attempt at locomotive building. The locomotive took four year to complete and was first run in 1994. Martin had a good run at Kinver last year and having been bitten by the IMLEC bug hopes to improve on his position this year. Martin is a private entry.

Bristol MES Club Locomctive - 5" gauge "Simplex" Built over a period of many years by several club members and finally completed by John Coleman, the locomotive is maintained by John Milton. Driving today will be Alan Hutfield a keen follower of IMLEC who fulfills an ambition to compete today.

Alan Crossfield - 5" gauge "Barcote Manor". This ex-GWR 7800 class 4-6-0 is built to Martin Evans drawings with added detail from works drawings and a scale backhead. It was awarded the "Reeves Trophy" at the Midlands Model Engineering Exhibition in 1994 and came an extremely close second at IMLEC last year at Kinver. Alan is an experienced hand with the regulator, with two wins and a second place to his credit driving his GNR 2-8-0 Nigel Gresely. Alan represents the Leyland SME.

John Hurley - 5" gauge Jubilee "Thunderer" John was inspired to build a model of this locomotive when he used to clean it at Bushbury shed in 1950 in readiness for express duties.It is built to works drawings and was started in 1974. For many years John was a driver on the Severn Valley Railway.

David Roberts - 5" gauge LNWR "Teutonic Class" Built to David's own design this 2-2-2-0 Three cylinder compound was completed in 1995 after five years work. David confesses that it is difficult to start with a load and is happiest at around 20 mph! (Unfortunately David, our speed limit for the competition is 8 mph). David represents the Urmston District MES LTD.

Terence Tipping - 5" gauge LNER BI "INYALA" Built to Martin Evans "Springbok" design with no deviation, the loco relies entirely on injectors for boiler feed. It will be driven by David Wainwright of the Brighouse and Halifax MES who drove the locomotive into fourth place last Kinver. Can he improve on that this year?

Bill Dywer - 5" gauge 4-8-2 American "J" class. A three cylinder locomotive with conjugated valve gear. The grate area is 65 square inches and it is fitted with a brick arch. The superstructure is removeable in one piece for ease of maintenance. Driver Terry Young will be using a smaller version of the tender which he would normally sit in!

William Moss - 5" gauge GNR 4-2-2 Stirling single. William comes from Wigan and is a private entry. The locomotive is built to the drawings of J.K.Scarth, produced by A J Reeves of Birmingham. It was started in 1976 and took eleven years to complete. It will be driven by William's son Derek who is employed by British Railways Telecomms Department (now Racal BRT).

Allan Foster - 5" gauge Metro Tank. Built straight to Martin Evans drawings the locomotive took four years to build and was completed in 1993. The locomotive will be driven by Allan's nephew, 18 year old Stephen Foster, a very competent driver and fellow member of the Newport MES.

Richard Folwell - 5" gauge Stanier Jubilee. Representing the host sooclety. Richard used Martin Evans "Leander" design but without the middle cylinder to produce this award winninq model. It is Richards first attempt at locomotive building and took 16 years to complete. In 1994 it won the Campbell cup at the Stonleigh Town and County Festival, and gained second place at the Midlands ME Exhibition. At the Model Engineering Exhibition at Olympia it was awarded a Bronze Medal and the Bill Deanel Memorial Trophy.

Dennis White - 3½" gauge Britannia "Hereward the Wake". Built by Mr Walter Ogden of Newport, the locomotive was purchased in 1991 having never run. Dennis has since carried out extensive modifications including the cylinders and valve gear, fitted stainless steel radiant superheaters and replaced the axle pump with two injectors. It is now a regular performer at Peterborough MES and many other tracks around the country.

Richard Sourbutts - 5" gauge 2-8-4T "Dolphour". Completed in 1990 after 4 1/2 years work this powerful narrow gauge locomotive features an unsuperheated boiler fitted with a Thermic Syphon, steel tyres on the driving wheels and superstruture to Richard's own design. It was originally built with a steel boiler which expired at IMLEC at Leeds in 1992. Richard is a private entry.

Bryan Woolston - 3½" gauge American mogul. A freelance representation of the pre 1900 American woodburning 2-6-O's built from various outline drawings to Bryans own design. It was originally started in 1963 but work ceased whilst two 5" gauge American locomotives were built. Construction eventually restarted in 1993 and was completed 2 years later. Bryan, who was a Bomber Pilot during the war is now 80 years young.

Ian Brown - 5" gauge "Simplex". Built in 1987, Ian won the Reading SME's efficiency trials with it in 1989 and was placed 11th in the 1991 IMLEC at Bristol. The locomotive has just undergone a major overhaul. Ian is a very enthusiastic driver and relishes the challenge of IMLEC.

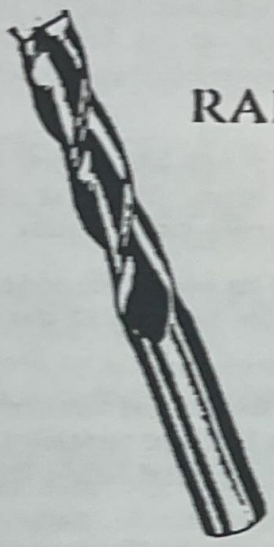
Mike Casey - 5" gauge 2-4-0T "Peveril". An accurate model of one of the Beyer Peacock engines which form the motive power for the Isle of Man Railway. It was built between 1973 and 1983 and won a Silver Medal and the "Henry Greenly Trophy" at the 1983 Model Engineering Exhibition. Mike, who has just retired from marine engineering, represents the Manx Steam and Model Engineering Club.

Graham Harris - 5" gauge GWR 57xx. Built to LBSC's "Pansy" design with added detail, the loco was entered in the 25th IMLEC at Leyland but unfortunately failed. The locomotive normally performs very well on the track and Graham will be hoping to make amends today.

Edward Beales 5"gauge "Speedy" Edward has been a engineer all his working life and built his loco over a 16 year period starting in 1976. The engine has since been rebuilt and re-boilered. Edward is representing the Norwich and District M.E.S.

Geoff Tomlinson - 5" gauge "Greenhill Manor". Geoff is a retired fireman and has been a Model Engineer for 30 years. The engine was started by Mr Whitfield in 1988 and completed by Geoff. This is his first time in the competition and he is representing the West Riding Small Loco Society.

Rapier
CARBIDE TOOLS
MANUFACTURING AND RECONDITIONING BY CNC



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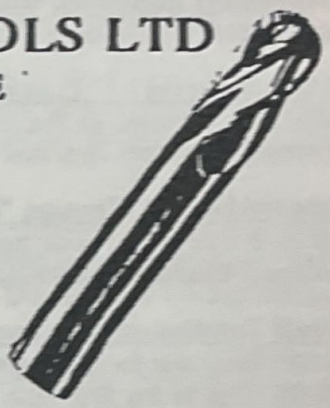
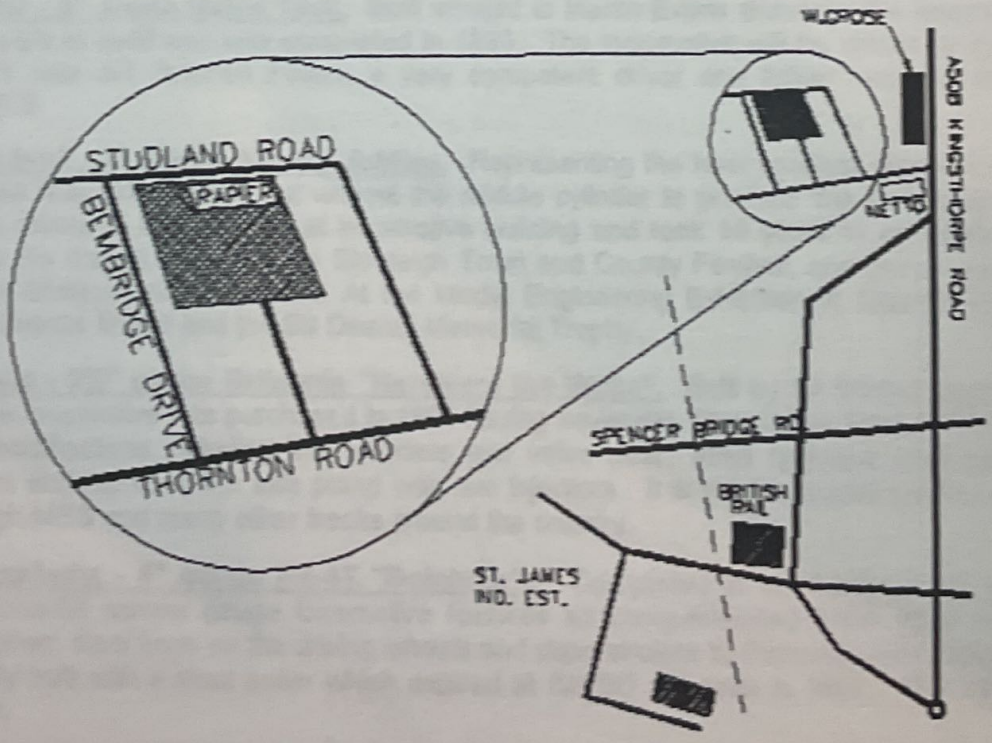


HOW TO FIND US



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5" L.N.E.R. CL. B2 4-6-0 ROYAL SOVEREIGN
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5"G L.M.S.R. CL. A4 4-6-2 MALLARD /SIR NIGEL GRESLEY
5"G L.M.S.R. CL. 4-6-2 DUCHESS OF HAMILTON
5"G L.N.E.R. CL. AI 4-6-2 (PEPPERCORN) SEA EAGLE
5"G L.N.E.R. CL. P2 2-8-2 COCK 'O' THE NORTH
5"G L.N.E.R. CL. B17 4-6-0 SANDRINGHAM
5"G FREELANCE CL. B20 4-6-0 3CYL SHERGAR
7¼"G L.N.E.R. CL. B1 4-6-0 STEMBOK

Drawings in preparation:

5"G L.N.E.R. CL. P1 2-8-2 SHAFTHOLME
5"G FREELANCE CL. R1 4-8-2 RAVENSWOOD
5"G FREELANCE CL. T2 4-8-0 ANDRE CHAPELON

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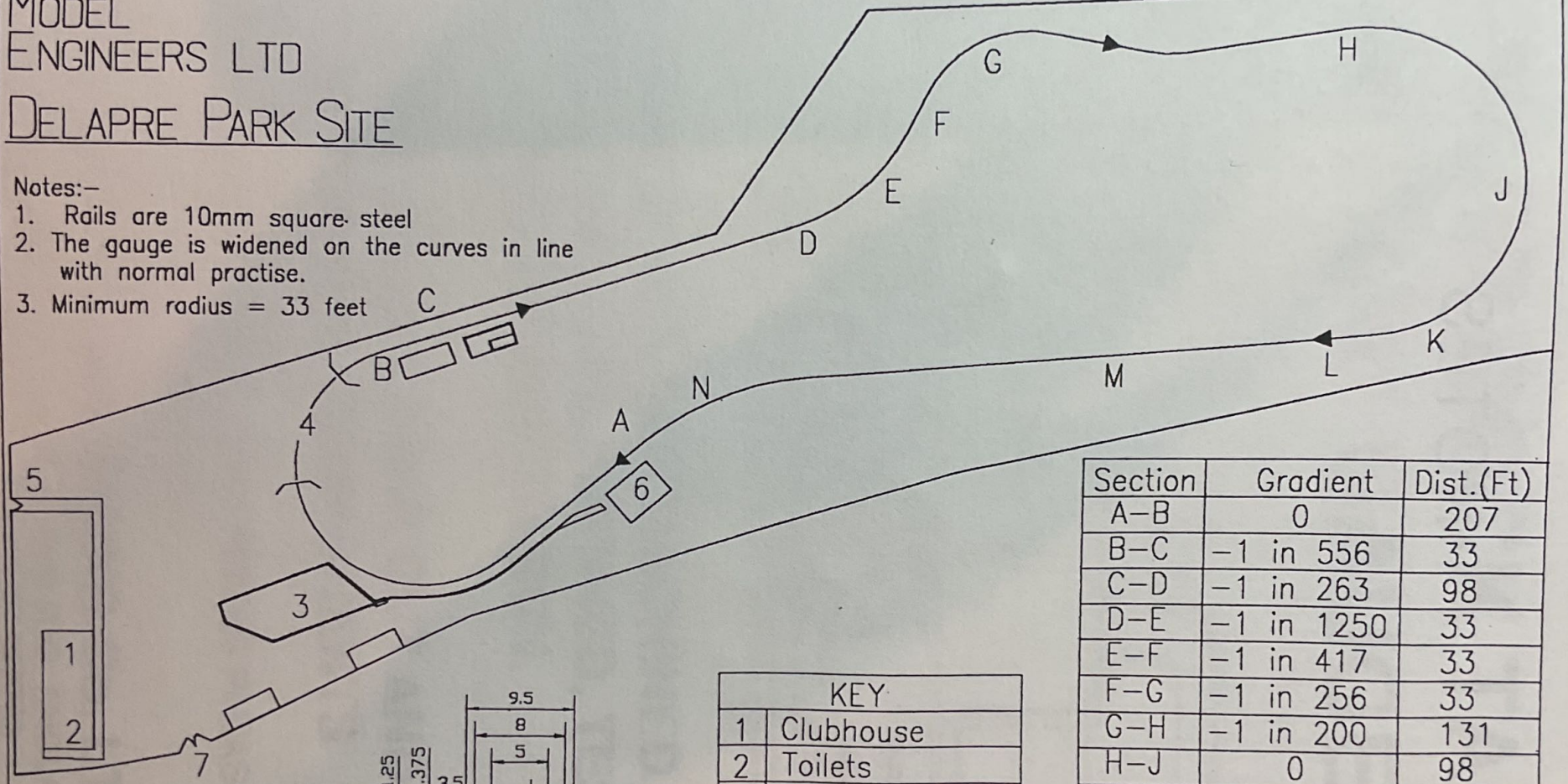
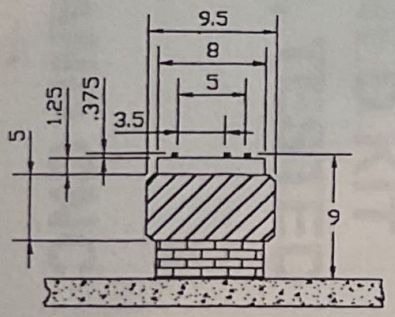
Notes:–
1. Rails are 10mm square steel
2. The gauge is widened on the curves in line with normal practise.
3. Minimum radius = 33 feet



Section Through Raised Track (Inches)

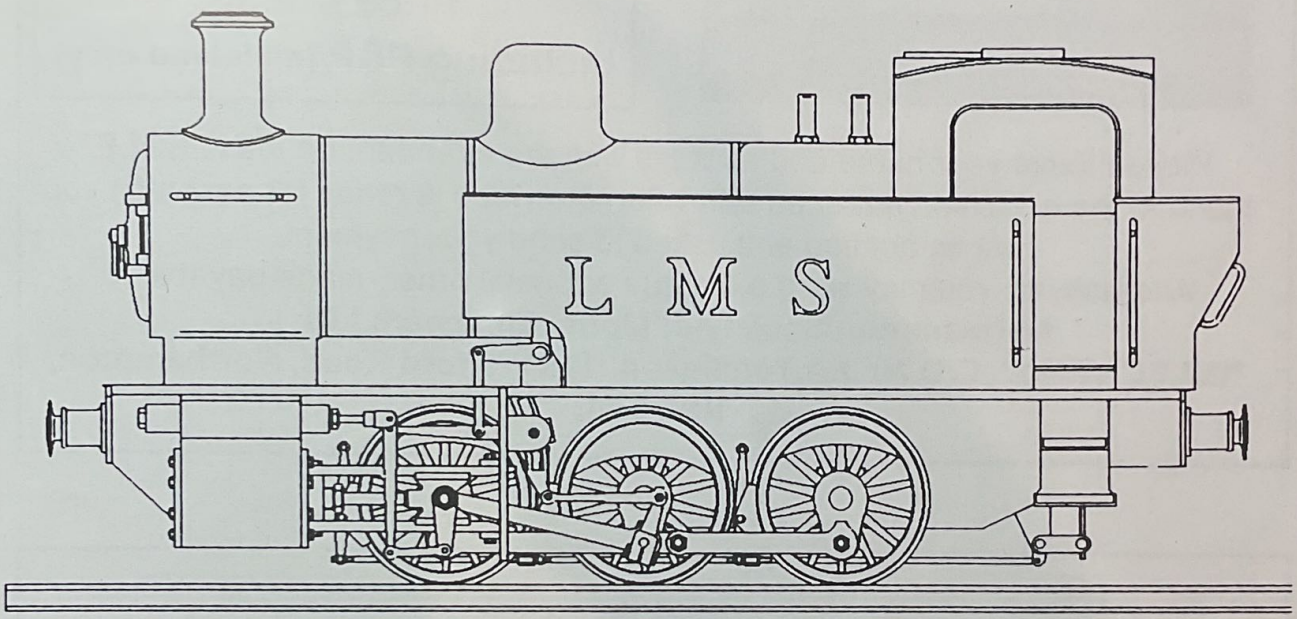


KEY	
1	Clubhouse
2	Toilets
3	Steaming Bay
4	Tunnel
5	Pedestrian Gate
6	Station
7	Main Gate

Section	Gradient	Dist.(Ft)
A–B	0	207
B–C	–1 in 556	33
C–D	–1 in 263	98
D–E	–1 in 1250	33
E–F	–1 in 417	33
F–G	–1 in 256	33
G–H	–1 in 200	131
H–J	0	98
J–K	1 in 1250	67
K–L	1 in 435	33
L–M	1 in 235	67
M–N	1 in 183	131
N–A	1 in 233	33

NOTES

FOWLER DOCK TANK IN 7 1/4" GAUGE



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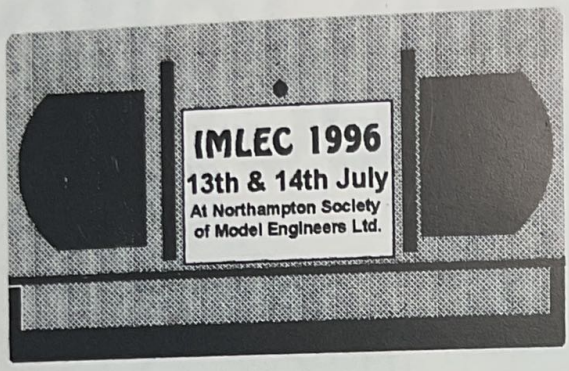

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