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**7¹/₄ in. L.E.C.
Results and report**

MAKING A MICROSCOPE



THIRD 7¹/₄in. L.E.C.

This newly established event which this year held a few surprises for competitors and visitors alike, was hosted on a lovely summer day by our friends of Malden D.S.M.E. at their Claygate Lane, Thames Ditton track site.

1: Stan Williams looks pensive as he and the Duchess pass under the distant signal gantry on the approach to the station. This was just after the left hand lubricator drive failed.

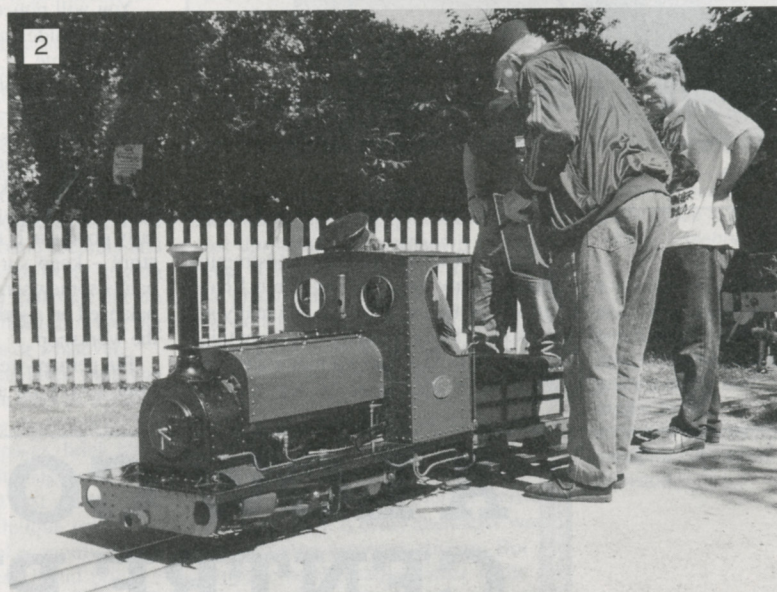
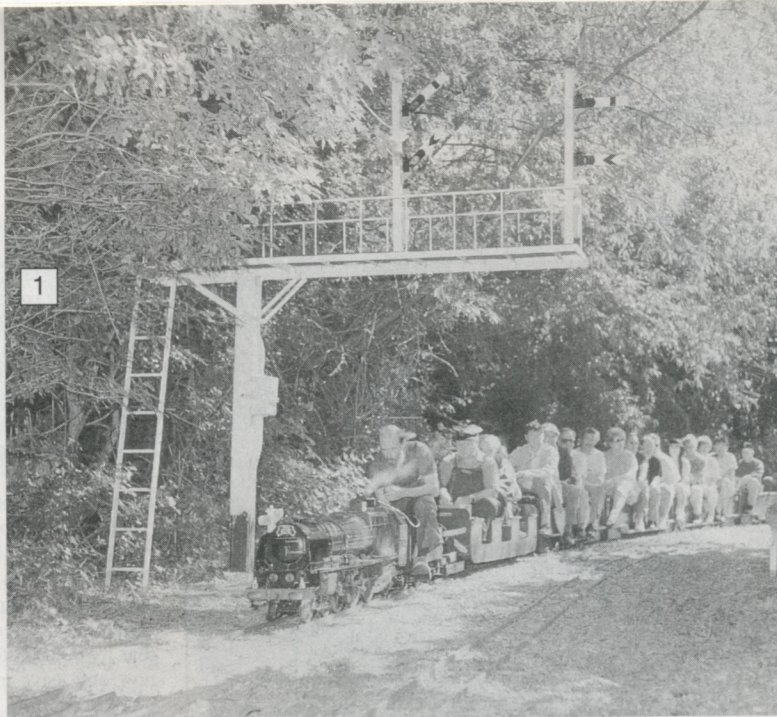
2: Chief Judge, Jack Rowlands (back to camera) discusses the run with Stuart Duncan whose blue Hunslet has just come off its train.

No sooner had Malden & District Society of Model Engineers agreed to run the 1993 7¹/₄in. L.E.C. than they wisely formed an organising Sub-Committee, and what a superb job they managed. Invidious to single out individuals for an effort in which so many were involved, but the hard work put into this event by John Osborne, Bruce Davey, Martin Baker, Mike Evans, Jack Rowlands, John Mottram and Stella Evans who headed up the catering team, should not go unrecorded. Naming these individuals is not, in any way, intended to diminish our appreciation of the efforts of other members of the society who set about a variety of tasks efficiently and with cheerfulness and enthusiasm.

As with any outdoor event the weather played its part. The day remained warm, sunny and dry and passed smoothly apart from a couple of very minor hitches which couldn't have been foreseen. The competition ran slickly and at the end of the day, tired but still cheerful, the crew dispersed with feelings of a good job well done.

Malden Society share their site with a local Scout group who very kindly allowed the use of their H.Q. building and loaned marquees and other equipment for our comfort during the day. Parking for non-competitors had been arranged close by in the grounds of the Milk Marketing Board H.Q. Building. Anthracite used for the competition was supplied by Charringtons Solid Fuel and another local company, Sartorius Ltd., kindly loaned a set of super accurate electronic scales for weighing the coal, a vital component of the calculations and essential contributor to the success of the day. We extend our thanks to all these organisations and to the local first aiders whose expertise, fortunately, wasn't required but whose presence was much appreciated.

Model engineering suppliers and local traders were present with their stalls set up on the infield. Engineering stands included Bruce Engineering, Proops,



Maxitrak, Pat Price Transport Books, Swan Model Engineering Services, Maidstone Engineering, Everett M.E. Supplies, Paul Gammon and Sumitomo Electric Tooling. The host Society ran a Bring and Buy Engineering Stall, on which many bargains were to be found.

The dynamometer car used was loaned by Sutton Coldfield M.E.S. and was essentially the same vehicle as used in last year's trials for, after all, the central purpose of the day was to discover the Thermal Efficiency of participating 7¹/₄in. gauge locomotives. With nine entries this year, after a brief review of the organisation for the day, each run will be described in turn.

With a temporary driving car if required, each loco backed down light engine from the roundhouse. Once on the station area it was put into a head shunt until completion of the previous run. When its run was finished the previous engine was uncoupled and moved off whilst the new engine set back onto the train which the station crew had, in the meantime, made up to the new driver's

specification. The passenger load was then arranged to the driver's requirements and the train set off on a familiarisation circuit. By setting off from the platform bay each driver had two circuits of the track to adjust his load and get used to the various local speed restrictions and blanket speed limit imposed for the event.

On completing this first circuit, the train was brought back into the station so that the driver could make up his fire, replenish his water supply and bring the water in his gauge glass to his desired level. The fire was then levelled off and the Judge, armed with a fire level indicating gauge, agreed this with the driver. The Judge also noted boiler pressure and water level. At this stage all coal was removed from the tender to be replaced by the weighed fuel. The test had begun.

About half-an-hour later, at the end of the run, the train was brought to rest in the station bay, passengers alighted, the engine was uncoupled and moved off onto a siding whilst the next competitor



to anyone as a veteran, but Stuart Duncan with his Hunslet narrow gauge locomotive has competed in each. This year representing Bristol S.M.E.E., he chose to haul 21 passengers. He too made a competent, steady start with the engine, typically for these 0-4-0s, shouldering under the load in a quite spectacular fashion after which Stuart just sat back and let the loco get on with it. In a spirit of tidiness he was observed to throw his dog-end into the firebox but, compared with all the coal he used, this was but a drop in the ocean. Stuart's Hunslet was quite heavy on fuel and he disposed of 6.36lb of coal during his run. Most of it seemed to go up the chimney as ash, Duncan completed his run well covered! Spending much of its working life giving rides in a pub garden, perhaps the loco missed its normal diet of watered-down bitter beer!

3: Now for the hard work! John Hampshire glides the big 2-10-0 class 9F into the platform road at the end of his familiarisation run.



John Hampshire took his B.R. Standard 9F 2-10-0 into run No.3. John has owned this engine for 3½ years. It normally operates at Woking Homes Miniature Railway. Unhappily, it led to the first slight hitch of the day. Due to some design peculiarity, the engine would not couple to the dynamometer car so Malden members had to bustle about in the club workshop to make a new one to fit. In itself this presented no problem, but it did absorb some of the day's contingency time allowance. With the problem speedily solved John set off on his trial lap. A good thing too! His fire must have been in some trouble after the long stand. I took the chance to ride

4: Will she slip? Don Freeman has an anxious moment at the very start of his run with this well turned out Romulus.

5: With a contented grin on his face, John Morgan eases his train into the stopping platform at the end of quiet well driven run.

backed onto the train. Boiler pressure and water level were restored and the fire returned to its originally agreed level from the supply of weighed coal. All surplus coal was then removed for weighing; all final readings were recorded at this point. The system has advantages in eliminating from the contest a certain amount of gamesmanship, without the fire level being agreed it could be possible to arrive back at the station with a virtually empty firebox!

First run fell to local member Stan Williams with his L.M.S. Pacific 4-6-2, *Duchess of Hamilton*. A regular performer at Open Days, Stan chose a load of 23 passengers. After a slightly slow but well controlled start he slipped to a stand at the level crossing and chose to drop five passengers. He set back and started again from the station, this time getting his load away quite comfortably. After the familiarisation run he made another nice start and ran steadily for several circuits. The left hand lubricator drive had become detached. After a brief stop to lubricate the cylinder manually, Stan carried on to complete a steady, well driven run.

After just three competitions so far in the series it would hardly be fair to refer





6: One beauty of the little 'uns is that they can be up-ended for routine chores such as oiling up. Stuart Duncan holds Tich, whilst John Painter checks the between the frames workings, prior to his run.

6A: Lots of activity on the run as Stuart chases alongside Tich whilst feeding water into the big red funnel on the little yellow loco. Note driver John Painter's natty gent's suiting!

7: We couldn't resist this shot of several of the competing engines parked on the very impressive roundhouse bays at Malden.

on this part of the run and noticed that the engine seemed a little light on its feet - maybe your editor's unanticipated additional weight made the difference. Despite this we rattled along with a full load. I left the train before the test commenced, leaving John with his specified load of 19 passengers. It was lovely to see his little daughter wave to Dad each time he drove past. Steady and trouble free, John's run was marred only by a slight fire on the bank caused by a cinder from the engine. Very soon under control, the conflagration in no way impeded the run.

Next on track, with a load of 21 including 6 youngsters, was Don Freeman from Frimley & Ascot L.C. with his Romulus 0-4-0 which set off in a spirited and well controlled manner. Completing his run without event or mishap apart from a minor derailment of one bogie Don, as with all other competitors, received a well deserved round of applause when he returned to the station. Don used the greatest amount of coal, perhaps not unexpected since these narrow gauge locomotives were not originally designed for continuous main line running. They spent much of their working lives simmering gently, awaiting their next load before busting into activity. Accordingly, the boiler was designed to cope with this duty and it takes considerable care to minimise fuel consumption when an engine is asked to perform in a non-prototypical manner.

Lunchtime was by now upon us and many of those present chose to watch run No.5 in the warmth of bright sunshine from the comfort of the tables and chairs outside Stella's Railway Buffet. With a superb range of tempting fare and ever-cheerful during the day, the volunteer(?) catering staff excelled themselves.



6a

Run No.	Loco Type	Wheel arrg't	Driver	Society	Load (adults)	istan un (
5	Bulleid MN	4-6-2	John Morgan	Malden DSME	20	1798
7	Hunslet	0-4-0	Peter Davis	White Gables LR	17	1798
1	Duchess	4-6-2	Stan Williams	Malden DSME	18	1797
3	B.R.Std.9F	2-10-0	John Hampshire	Woking Grange MR	19	1797
9	Romulus	0-4-0	Fred Bond	Swansea SME	14	1798
2	Hunslet	0-4-0	Stuart Duncan	Bristol SMEE	21	1798
6	Big Tich	0-4-0	John Painter	Swindon SME	10	1949
8	Romulus	0-4-0	Harvey Fisher	Abbey MEC	18	1199
4	Romulus	0-4-0	Don Freeman	Frimley & Ascot LC	21	1783



7

Providing also a good opportunity for a chinwag, although the view from the terrace was limited, it was reassuring to see John Morgan's magnificent rebuilt Merchant Navy Pacific locomotive running lap after lap with 20 passengers,

including 3 youngsters, seemingly without effort. At the start of his run John experienced a slight but authentic bout of slipping, so reminiscent of the way I recall its prototypical counterparts used to pull away from the up platform at



THIRD 7¼in. GAUGE LOCOMOTIVE EFFICIENCY COMPETITION
MALDEN & DISTRICT SOCIETY OF MODEL ENGINEERS
 Thames Ditton, 27 June 1993

Distance Run (ft.)	Run Duration (mins.)	Total Work (ft. lb)	Average Drawbar H.P.	Coal Used (lbs)	Coal Consumption Rate (lb/hr)	Specific Fuel Consumption (SFC) (lb/DBHP hr)	Thermal Efficiency (%)	Average Speed (MPH)	Final Position
17986	30.10	503951	0.51	2.25	4.48	8.83	1.99	6.79	1
17982	30.04	385695	0.39	1.88	3.75	9.63	1.82	6.80	2
17979	29.15	529277	0.55	3.78	7.78	14.14	1.24	7.01	3
17972	31.38	563270	0.54	4.22	8.07	14.84	1.18	6.51	4
17982	32.55	483994	0.45	3.90	7.18	15.94	1.10	6.28	5
17984	30.43	713002	0.71	6.36	12.55	17.67	0.99	6.72	6
19492	30.00	233799	0.24	2.16	4.32	18.29	0.96	7.38	7
11990	31.17	255207	0.25	3.37	6.50	26.18	0.67	4.37	8
17833	31.34	504086	0.49	7.63	14.61	29.98	0.59	6.47	9

Bournemouth Central all those years ago. She even had a smokebox exhaust boom which I always associated with her full size sisters. Locomotive and driver put up a faultless performance; John seemed to be firing every time he passed my vantage point but perhaps I chose the only point on the circuit where he did so since he only used a meagre 2.25lb of coal.

The competition is still quite young, yet we have come to expect some antics from John Painter, our other regular contestant. This year representing North Wilts S.M.E., his steed was still the same orange *Big Tich*. Readers may remember that this loco has a reputation for throwing 'robins' and oil but John assured me that he had considerably reduced the emission rate. However, when the locomotive appeared for its run John, whose other hobby is motor sport, chose to turn out in full racing kit with flameproof overalls, full face crash helmet, gloves, the lot. This is a hard working little engine. Perhaps somewhat optimistically John set off with 11 passengers, slipped to a stand on his first



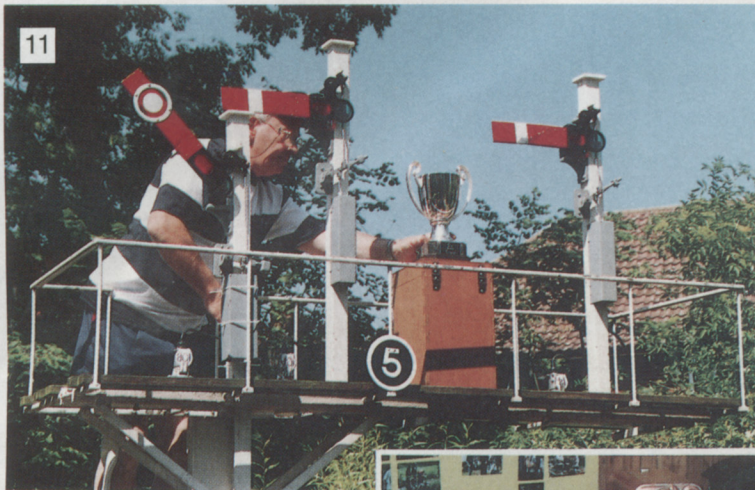
circuit, set back into the station, wisely dropped a passenger and set off again in fine style. Whether it was all the jerking about, or a misunderstanding with the platform staff over the coupling we shall never know, but *Big orange Tich*

managed to break free from her train during the familiarisation run. From his unusual driving position perched forward of the dynamometer car and with great presence of mind John was able to launch himself from the train to

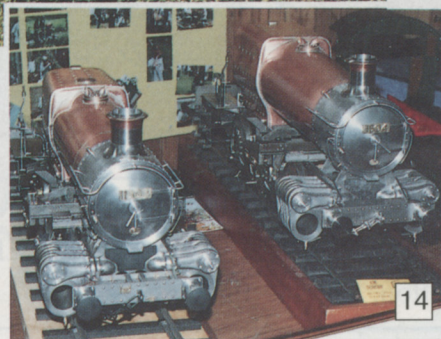
8: Last year's winner Red Rum with Peter Davis at the regulator eases back onto the train.

9: Harvey's expression says it all: "Thank Heavens that's over!" He had had a traumatic thirty minutes nursing a loco with a temperamental injector and was looking forward to a well deserved cuppa at the end of his run.

10: Note the very neat smoke deflector fitted to the chimney cap on Fred Bond's Romulus. This engine is well versed in passenger hauling, it ran at last year's Welsh Garden Festival.



11: A Malden member places the Bristol Cup on the signal gantry above the main platform, it remained on display until the end of the day.



12: The cotton coal sacks were imprinted with the club's name and the event. Secretary John Osborne waits on the balcony of the pavilion to hand these filled and weighed samples to the riding marshal on the next run. Each competitor was given a sack as a memento, and invited to fill it from the reserve coal stocks.

13: One small part of the exhibition, this lovely 5in. gauge private owner waggon built by Paul Gammon.

14: A glutton for punishment - Jim Scruby is building two 5in. gauge class 15xx locomotives. One is fitted with the correct G.W.R. taper boiler, the other with the LBSC style Speedy type. Both exhibit a superb quality of workmanship.

15: The end of the day, the winner John Morgan is presented with the Bristol Cup by the Chief Judge, Jack Rowlands.

catch the locomotive. His protective gear proved its worth when, by means of a flying rugby tackle, he shut the regulator and brought the engine to a stand and returned with it to the station.

After a brief respite during which the coupling was checked and rechecked for security whilst John got the fire and his breathing rate back together, he set off once more unawed by his frisky steed. The run, now with a total of 10 on board was accomplished in brisk style. Watering this engine on the run was quite a game; friend and fellow competitor Stuart Duncan found a convenient point on the track and lurked with a bottle of water awaiting the moment when the engine slowed down at which point Stuart somehow managed to empty most of its contents into a funnel wedged into a side tank whilst trotting along with the engine. This wasn't perhaps the most efficient run, but was certainly one with great entertainment value, much enjoyed by crew and onlookers alike.

Next engine to run was last year's winner: *Red Rum*. Peter Davis and his Hunslet are from White Gables L.R., near Blackpool. There was very little fuss as the train of 17 passengers was eased away to a well controlled start. Shouldering, typical of an 0-4-0 was evident, but the note from the chimney was a soft chuff rather than a bark which indicated that the engine was working well within capacity as was the case last year. With a steady run taken at moderate pace, Peter found time to sit back and enjoy his ride without a whisper of steam escaping from the valves. It was just the sort of quiet, well controlled run which is likely to feature towards the top of the score sheet. With

excellent enginemanship Peter managed his run using just 1.88lb of coal.

Representing Abbey M.E.C., Harvey Fisher presented himself for run No.8 with a Romulus 0-4-0. Associated with Abbey Lifts, Northampton, the locomotive had been built some years ago by apprentices and, during the last couple of years has been systematically debugged by Harvey and other members. We understand that whilst running the previous evening, the loco suffered injector failure, traced to a carry over of foreign matter from the tank including rust, scale and the like. Harvey took the trouble to go back to Northampton, make a filter, return to Malden and fit it to the engine. After a 250 mile round trip, having already made the journey down once, he was understandably unable to test his handiwork on the track and thus started the competition run at a disadvantage. His run was marred by difficulty in starting the injectors; despite the filter they were still in difficulties, and although he was able to complete the run he must have had a few heartsearching moments in deciding whether it was safe to continue. It would therefore be unfair to criticise Harvey's driving skills in recording near lowest efficiency figure in this year's event.

The final run of the day was by Fred Bond of Swansea S.M.E. with a Romulus built specially for the recent Garden Festival in Wales at which it was the mainstay of the passenger service. I particularly approved of its neat smoke deflector, a piece of folded gauze which presented very little obstruction to the exhaust but certainly deflected the smoke to give the driver a clear view of the track ahead. Fred elected to take a

total load of 14 passengers including two youngsters. This was another steady, unspectacular run. If honest I would admit to feeling that the engine was perhaps slightly underloaded for best efficiency. It ran steadily and reliably for the full half hour, with never a wisp of steam from the safety valves, or apparently much variation in speed around the track.

At the end of the day John Osborne fed the results into the computer temporarily housed in the pavilion and we waited to see whether this final run had affected the outcome. In the event there was no change on the leader board, outright winner was John Morgan of the home club with an impressive 1.99% efficiency. Each driver received a memento of the competition in the form of a handsome mug and, imprinted with the Malden D.S.M.E. name, one of the cotton coal sacks which had been used to carry the measured coal. They were given the chance of filling these from a reserve supply.

Outright winner, John Morgan, received the Bristol Trophy and a set of superb scale fire irons generously donated by manufacturer, Dave Dolan. After the usual speeches, the gathering dispersed, visitors departed and our hosts engaged themselves in restoring the site to normality after a very busy but satisfying day. Our thanks to all who made the event so enjoyable. As a tailpiece I have a request; we have as yet no host society primed to stage the event in 1994. Is there a club which would care to host this event for us? *Ted Laffey*