IMLEC 2004

The 35th International Model Locomotive Efficiency Competition

Saturday & Sunday 11th & 12th July
for the Martin Evans Challenge Trophy

The Kinver & West Midlands Society of Model Engineers Ltd

The 35th International Model Locomotive Efficiency Competition

for the

Martin Evans Challenge Trophy

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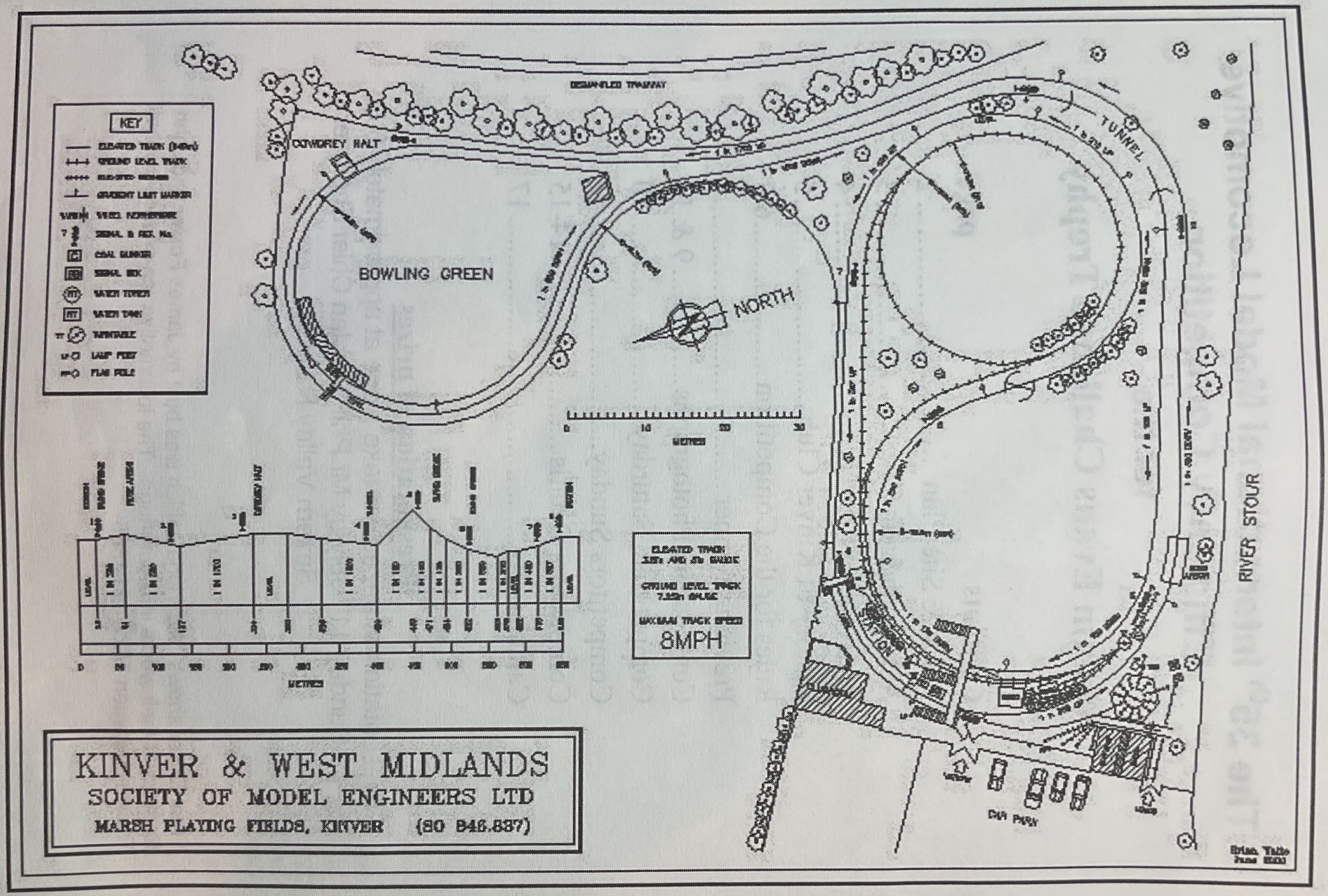
Presentation of prizes

Presentation of prizes will take place at approximately 5-30 on Sunday 11th July by Mr Phil Sowden Chief Engineer Severn Valley Railway

Front Cover shows "Agenoria" which was built by James Foster and John Rastrick at their works in Stourbridge. The locomotive ran on the Pensnett Railway between 1829 and 1865


KEY
ELEVATED TRACK (140m)
GROUND LEVEL TRACK
GRADIENT LIMIT MARKER
WHEEL INTERFERENCE
SIGNAL & REF. No.
COAL BUNKER
SIGNAL BOX
WATER TOWER
WATER TANK
TURNTABLE
LAMP POST
FLAG POLE
DESHANFLEX TRAMWAY
OLDWOREY HALT
BOWLING GREEN
NORTH
TUNNEL
RIVER STOUR
STATION
CAR PARK
ELEVATED TRACK
3.05m AND 2m RADIUS
GROUND LEVEL TRACK
7.32m RADIUS
MAXIMUM TRACK SPEED
8MPH
METRES
KINVER & WEST MIDLANDS
SOCIETY OF MODEL ENGINEERS LTD
MARSH PLAYING FIELDS, KINVER (SO 846.837)

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..... Mike Evans, John Cowley, Warwick Jackson
Exhibition ..... John Jordan
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ACKNOWLEDGEMENTS

We would like to extend our thanks to:

Bristol & Guildford Clubs for the use of their dynamometer cars.

Leeds for their score board.

1st Wollascote St Andrews Scout Group for their assistance in car parking and communications.

To the ladies working in the catering and to all our friends and club members for their help & assistance on the day

Mr Len Crane and our friends at the Black Country Steamers for their contribution to the show

Welcome to Kinver

The Kinver and West Midlands Society of Model Engineers is pleased to welcome everyone to our club track this weekend for The Thirty Fifth International Model Locomotive Competition.

We are proud to be hosting for the 4th time what has become a truly international event with at least one entrant travelling from abroad. This competitor has travelled about as far as you can to be here, coming from the southern most tip of south island New Zealand.

This year we have tried to make the competition a little different by giving past winners the opportunity to enter a competition again. Both competitions will run simultaneously and should give the spectator something very interesting to watch with some beautiful models taking part.

May the best person win.

John Campbell
Chairman K & W M S M E

THE KINVER AND WEST MIDLANDS SOCIETY OF MODEL ENGINEERS

A BRIEF HISTORY

The Kinver and West Midlands Society of Model Engineers has been on its present site for forty two years and in that time has gained a reputation for fine model making and has hosted many events including I M LE C in 1976 1995 & 1997.

The club started in the 1920s when a group of enthusiasts interested in model boats and steam locomotives formed themselves into the West Midlands Model Engineering Society whose headquarters was on a piece of land adjoining the gas works and Dawley brook at Kingswinford. The members built a $3^1/_2$" gauge track around a pool constructed with water sluiced from the near-bye brook.

The club continued to thrive there until the onset of war when due to the problems of travel a number of members formed themselves into an allied club known as the West Midlands Model Engineers Wolverhampton Branch. At a meeting in May 1943 held at the then headquarters of the club in Wolverhampton library the society decided by a majority vote to become the Wolverhampton Model Engineering Society. The club continued to prosper, moving to Wombourne after the end of the war in 1946.

In 1951, under the guidance of the secretary Mr B. Princip, the society formed itself into a limited company and became the Wolverhampton Society of Model Engineers Ltd. The reason for this change was to obviate insurance problems and in retrospect was a very good idea as now many societies have done the same. The club continued to operate from Wombourne until 1961 when the grounds at the back of the Mount Pleasant inn were sold, enforcing the move of the clubs 600ft track.

In 1962 the management of the club managed to secure a twenty-year lease on the acre of land at the Marsh Playing Fields Kinver. In 1970, as the clubs interests lay in Kinver, by a majority vote the society became the Kinver and West Midlands Society Of Model Engineers Ltd. In 1971 the track was extended to 1,200 ft and again in 1986 to 2128ft, almost half a mile. The club is now in the process of relaying the $7^1/_4$" track. One of the founder members is still model making and his son is carrying on the tradition as a member. The club is now pleased to announce that we are in the final stages of negotiating the purchase of the main parcel of land, thus ensuring the continuation of the club at Kinver.

We are now proud to host the International Model Locomotive Efficiency Competition for the forth time.

Jim Piddock 2004 IMLEC Committee.

Kinver & West Midlands Society of Model Engineers
Marsh Playing Fields, Kinver 35th IMLEC 11th & 12th July 2004

Rules & Organization

1. The competition will be open to all $3^1/_2$ & 5" gauge steam locomotives capable of running on raised track
2. The competition will be open to previous IMLEC winners, previous competitors and newcomers on a first come first served basis. Entries will be restricted to fifteen per day. (no previous entry restrictions apply)
3. The competition will comprise. A "previous winners" competition and The annual "IMLEC" competition to run concurrently. (Drivers or locomotives who have won IMLEC previously go into the Winners competition).
4. The competition will run under the Midland Federation efficiency rules.
5. Locomotives must be in possession of a current boiler certificate and the original must be presented on arrival.
6. Competitors must arrive at the track-site at least one and a half hours before their run is due to commence and must report to the steaming bay reception where the boiler certificate will be examined. The run number will be confirmed and approximate run time given. The approximate number of passengers will be noted.
7. The allocated an observer/helper will advise the competitor when to light up and provide them with as much wood, charcoal and paraffin as required. The coal for the first warming up lap will be provided.
8. The competitor must tell the observer how much coal will be required for the run and this will be provided in suitably measured quantities and weighed in their presence. Coal not used will be collected and weighed in their presence at the end of the run.
9. Competitors should have a good fire burning and have tested injectors, water gauge(s) and safety valves before going onto the track.
10. The track marshall will tell the competitor when to back down the spur onto the track where the train will have been prepared with dynamometer car and sufficient passengers cars to carry the number of passengers requested. The observer will couple the locomotive to the dynamometer car.
11. The competitor will be given the signal to commence their warming up lap to enable them to build up the fire and judge if their passenger load is correct. Sand will be available for starting from the station and at the judge discretion, during the run. Reversing the train is not possible, as the passenger trolleys have overrun brakes.

12. The competitor will stop at the start line at the end of the warming up lap were the bunker or tender will be emptied of all coal. The observer will issue the weighed requested amount of coal to the driver.
13. The fire will be measured and at the end of the run, be brought back up to this level by adding the competitor's coal to the fire as necessary.
14. When the competitor is ready, the timekeeper will start the run. The duration of the run is a nominal twenty-five (25) minutes. A maximum of seven (7) minutes will be allowed for stoppages, blowups etc. The competitor will be retired from the competition if this is exceeded. The competitor may choose to finish the run after twenty (20) minutes have been completed but the run must stop at the start/finish line in the station, raising steam if necessary to complete the lap. Pushing the train into the station will disqualify the competitor. A line-side clock will be provided so that the progress of the run can be seen. The observer will advise the competitor when there are ten (10) and five (5)minutes to go and when the last lap is commenced.
15. Any re-run will be under the same conditions as the original (same number of passengers, carriages etc).
16. A speed limit of ten (10) M.P.H. will be in force. The observer will warn the competitor if the speed is exceeded. Three warnings will result in disqualification.
17. Water will be supplied in suitable containers during the run to allow tanks to be topped up on the run. There is no limit on the amount of water used.
18. Passengers and carriages may be dropped off during the run if the initial load proves to be too much.(only when the train is stationary and if it is safe to do so. Additional passengers may not be added at any time.
19. No external assistance is to be given to the train at anytime during the course of the run.
20. The use of ballast, including water, added externally to the scale outline of the loco (or in the case of a freelance model, the likely outline) is not acceptable.
21. For practical reasons it may be necessary to limit the load or number of carriages pulled in the contest.
22. Judges are appointed by the K&WMSME and their decisions are final in all matters relating to the competition.

Previous I M L E C winners

Year	host club	engine	gauge	eff'y	driver/society
1969	Birmingham	Royal Scot	5"	5.03	J Dury Birmingham
1970	Whitney	Firefly	5"	1.41	L Laram Birmingham
1971	Southampton	Dean Single	5"	2.28	A Haydon Newton Abbot
1972	Tynside	GWR 57XX	5"	1.06	N Spink Chesterfield
1973	Chingford	LNER L1Tnk	5"	1.6	B Longstaff S Duram
1974	Bristol	Nigel Gresley	5"	2.54	F Winsall Rugby
1975	Tynside	GWR King	3 _"	1.55	L Joyce Chingford
1976	Kinver	Speedy	5"	1.58	B Perret Southampton
1977	Chingford	Speedy	5"	2.32	B Perret Southampton
1978	Guildford	Maid of Kent	5"	1.61	P Wood Chingford
1979	Bristol	Stirling Single	5"	2.17	D Morris Urmston
1980	Bedford	BR class 7	3 _"	1.37	P Wood Private
1981	Bournmouth	LNER J 39	5"	2.41	P Wood Private
1982	Leyland	GWR De Glen	5"	1.5	R Armsbury Derby
1983	Guildford	Royal Scot	5"	1.35	L Pritchard Harlington
1984	Bristol	Royal Scot	5"	3.66	L Pritchard Harlington
1985	Urmston	Nigel Gresley	5"	1.85	A Crossfield Private
1986	Bourmouth	Nigel Gresley	5"	1.64	A Crossfield Private
1987	Birmingham	LSWR Adams	5"	2.29	K Moonie Chingford
1988	Leeds	BR prop 2-8-2	5"	4.39	L Flippance Guildford
1989	Leyland	BR prop 2-8-2	5"	3.02	L Flippance Guildford
1990	Guildford	BR prop 2-8-2	5"	3.31	L Flippance Guildford
1991	Bristol	BR prop 2-8-2	5"	1.73	K Ayling Worthing
1992	Leeds	S&D 7F	5"	1.86	D Sutcliffe Ribble Valley
1993	Leyland	LMS Stannier	5"	2.08	J Heslop Rydale
1994	Gravesend	LMS Stannier	5"	1.51	J Heslop Rydale
1995	Kinver	LNER P2	5"	3.32	J Heslop Rydale
1996	Northampton	GWR Manor	5"	2.43	A Crossfield Leyland
1997	Llanelli	Britannia	5"	1.88	L Steel S T E A M
1998	Kinver	BR prop 2-8-2	5"	2.27	K Ayling Worthing
1999	Northampton	Speedy	5"	1.78	J Elliot Staines
2000	Leyland	BR Prop 2-8-2	5"	3.13	L Flippance SMEE
2001	Competition not held due to foot & mouth epidemic				
2002	Leeds	LNER B1 4-6-0	5"	1.82	G Moore Guildford
2003	Bristol	Minx 0-6-0	5"		J Elliss Guildfrd

Michael Casey's Merchant Navy Class

John Cantwell's rebuilt Scott

IMLEC at Kinver 2004

Saturday 11thJuly

run	locomotive	gauge	wheels	entrant	Society
1					
2	8 F (Euston)	3½"	2-8-0	D Kerry	Chesterfield S M E
3	Simplex	5"	0-6-0	P Brierly	Guildford S M E
4	Black Five	5"	4-6-0	D Roberts	Urmston S M E
5	Minx LBSC Tank	5"	0-6-0	G Moore	Guildford S M E
6	Royal Scot	5"	4-6-0	J Cantwell	Urmston S M E
7	Nigel Gresley	5"	2-8-0	A Crossfield	Leyland S M E
8	S & D 7F	5"	2-8-0	P Tompkins	Guildford S M E
9	Britannia	5"	4-6-2	S Eaton	Chesterfield S M E
10	Merchant Navy	5"	4-6-2	M Casey	Manx S &E C
11	L & York	5"	0-6-0	L Pritchard	
12	B R Proposed	5"	2-8-2	L Flippance	Guildford S M E
13	Garth Hall	5"	4-6-0	S. Coles	
14					
15					

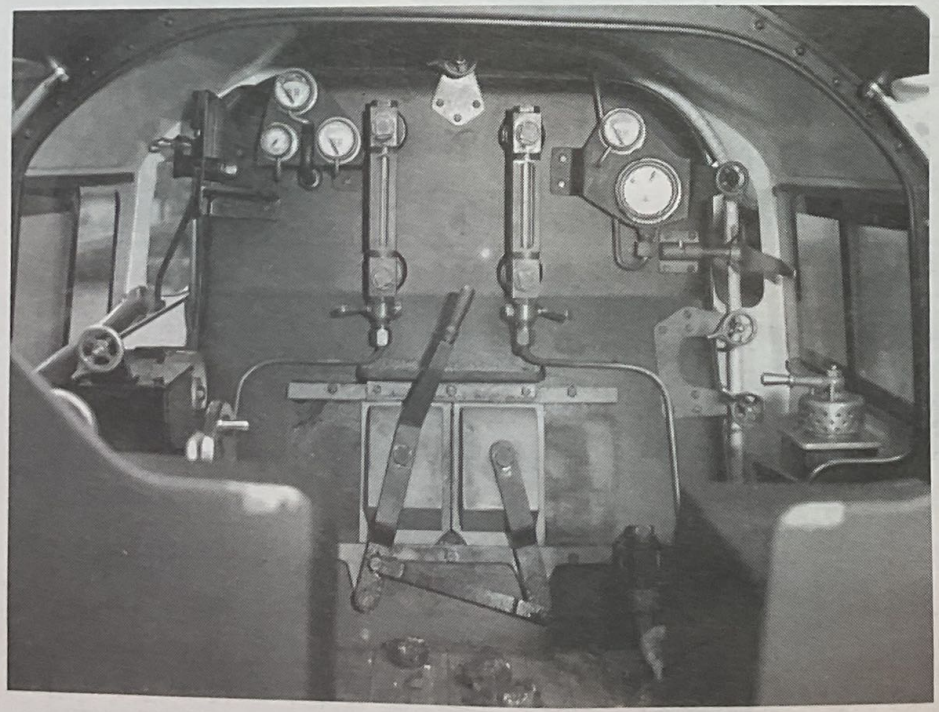
Sunday 12th July

16	GWR Manor			D Ball	
17	4 F MR	3½"	0-6-0	D Mayall	
18	LBSC Doris Black 5	3½"	4-6-0	B Eatock	Chesterfield S M E
19	Speedy	5"	0-6-0	J Elliott	City of Oxford S M E
20	Simplex	5"	0-6-0	D Williams	Bristol S M E
21	Britannia	5"	4-6-2	L Steel	Guildford S M E
22	Maid of Kent	5"	4-4-0	K Midgley	
23	Sweet Pea	5"	0-4-2	B Remnant	
24	Arden Manor	5"	4-6-0	D Pearson	
25	Unrblt Merchant Navy	5"	4-6-2	J Lloyd	
26	LNER 01	5"	2-8-0	G Winsall	Rugby S M E
27	L N E R B1	5"	4-6-0	G Elliott	
28	L N E A2	5"	4-6-2	A Eve	
29					
30					

Saturday 11thJuly

Load Passenger	Running Time (mins)	Distance (feet)	Total Work (ft/lbs)	Average Drawbar H P	Coal Used (lbs)	SFC	efficiency (%)	Position

Sunday 12th July



Steve Eaton's Britannia

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The Competition entrants
(at the time of going to press)

John Cantwell will be representing Urmston & District Society with his fine 5" gauge model of a Rebuilt Scott, "Highland Light Infantry". **Andrew Wilcox** from the same club will be driving.

Dave Roberts again from Urmston & District Society will be driving his own built 5"gauge model of a "Black Five".

Alan Crossfield of the Leyland Society will be driving his 5" gauge G.N.R. 01 "Nigel Gresley" built by himself.

Michael Casey of The Manx Steam & Engineering Club built his beautiful 5" gauge Merchant Navy Class "Steam Packet Co Ltd." The loco will be driven by the man who must be the keenest driver in the competition, coming all the way from Dunedin, South Island New Zealand, **Jimmy Woods.**

Jim Elliott of the City of Oxford Society will be driving his 5" gauge "Speedy" 1500 class tank that he built.

Geoff Moore of the Guildford Society will drive his 5" gauge LBSCR C2X loco "Minx" which he built.

Len Steel again from Guildford Society will drive his 5" gauge Britannia "Coer-de-Lion" which was built by Lionel Flipance.

Paul Tompkins of Guildford Society is driving his 5" gauge Somerset & Dorset 7F which he built. Paul first drove at Kinver in his first IMLEC aged fifteen in 1995 and has not missed ever-since.

Glyn Winsal of the Rugby Society is driving the 5" gauge LNER Thompson 01 locomotive he built

David Williams of the Bristol Society has entered his 5" gauge Simplex he built. **Barbara Milton** will be driving.

David Kerry of Chesterfield Society will drive his $3^1/_2$" gauge 8F locomotive "Euston" built by E Woodcock.

Lionel Flippance of the Guildford society will be driving his proposed B R 2-8-2 loco made to his own design. This 5" gauge model includes many innovations developed by Lionel to aid its efficiency.

Dennis Pearson of Llanelli club built his 5" gauge Arden Manor over a three year period. Dennis will be driving himself and hoping for success after modification to the wheels for improved adhesion.

Brian Eatock of Chesterfield club built his $3^1/_2$" gauge, black five to the Doris design. Brian will be driving himself.

Steve Eaton of the Chesterfield society built his 5" gauge Britannia with his father Fred. Steve will be driving the loco, which is unusually black, named "Rough Diamond".

Peter Brierly will be driving his 5" gauge Simplex "Alice" which was built by members of his club, the Guildford society.

Space for your calculations

Calculation of results

The dynamometer car measures and gives readings of **total work done** in foot-pounds and the total **distance travelled** in feet. In addition, the **overall run time** (in minutes) and **weight of coal** (in pounds) are recorded. From these parameters the following calculations are made.

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

Competitors will use the standard coal issued
The number of Ft/Lbs per BTU is778, thus;

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

The Locomotive that returns the Highest Efficiency is the Winner of Each Category

Some other subsidiary calculations are;

$$\text{Average Draw-Bar Horse Power} = \frac{\text{Total Work Done (ft/Lbs)}}{\text{Overall Run Time (mins) x 33000}}$$

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

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

$$\text{Average Draw-Bar Pull} = \frac{\text{Total Work Done}}{\text{Total Distance Traveled}}$$

The exact calorific value used for the calculations is displayed on the score board

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