

The Chairman's Notes

Due to pressure of work now that I am better, I have been little involved in recent Club activities. However I must congratulate the Slot Car Section for the entertainment they provided at the last General Meeting. All of us who took part thoroughly enjoyed ourselves. I myself proved categorically that steamroller drivers are better at slow running than racing.

John Squire

From the Membership Secretary

This month we welcome five new members:

**Peter Brazier,
Geoffrey Bullock,
Peter Weeks,
David Woolveridge,
Peter Smith,**

Bernard Lambert

Tytenhanger Gazette By Roger Bell

The February Loco Meeting was a Work in Progress and the first to speak was Ron T. who had set up his weight driven egg timer on a stand mounted off the table to simulate its mounting on a wall. It looked like a pendulum clock and whilst Ron described it as 'a nonsense really', it was a model engineering job on the lighter side and his wife does use it for timing the eggs. It carried the egg theme throughout its styling, there was one on the top of the pendulum. John Wilding designed it and there are only two other escapements like it in the U.K. As there are no milling cutters for the teeth on one of the wheels it was cut by hand. The timer's movement was demonstrated by raising the weight to position the hand on the minute mark. They were calibrated one to six around the face. As it ran it gave the sound of a heavy tick characteristic of the grandfather clock. As the time elapsed a loud ding chimed out. The brass work really shone. This had been polished with fine emery, crocus paper and a car type polish, then varnished and the varnish was of a special type bought from a clock shop. The speed of the timer was not adjustable apart from changing the weight of the weight.

Mike C. then described a clack valve he had made from a design recommended by Brian A. Instead of using a ball to seal, it has a bobbin with a silicon or viton 'O' ring. To keep it upright the bobbin has a chamfered base which mates with a countersink in the body. It also has a tail to support it. Mike also bought along what appeared to be an electronic thermometer with two wires coming out plaited together at the ends. He

asked, 'How does it work?' Apparently it is a thermocouple. The two wires are of different material and a variety of probes can be fitted to the wires for reading temperatures in different places. It can read up to 950 degrees centigrade.

The small stationary horizontal engine mounted on a wooden plinth had been repaired by Peter W. It was made in the U.K. and bore the name 'Torch' on its side. He asked of its origin. It seemed that it was Victorian and would run on 6-volt electricity. The motor was inside the cylinder perhaps like an induction coil. More information was expected to come from another member he was to meet.

The four-wheel power bogie on the table was for Mike F. Class 20 loco, it has two 24-volt motors geared through an 8:1 ratio in a sealed gearbox. An electric fan in the bodywork blows air through a hose and into each motor for cooling. Mike has been adding air brakes to make it more interesting to drive. The parts seem to come in multiples of eight or sixteen making the work repetitious. It will have one air brake cylinder per wheel. The air pump mounted in the loco body is the 12-volt type used for inflating car tyres. It will compress up to 100-p.s.i. A reducing valve brings the pressure to 50-p.s.i.

The Simplex at the chassis and wheels stage was the work of David M.; he asked how he was to polish the expansion link and its hole after case hardening. It was suggested that the hole be polished with a mild steel rod and Brasso or silicon carbide, which can be obtained from a craft shop and is used for polishing pebbles. The work must be washed afterwards. It was also said that it does not need case hardening, as any wear that would take place would aid the free running of the loco. Many builders had found that this link had to be re-profiled to provide clearance, so the valve gear ought to be built and proven before the link is finished. The loco was started two and a half years ago using laser cut frames.

It was found that the rear piston cover together with rod could not be assembled with the cylinder fitted to the frame. It was suggested that the cylinder assembly be built up first, then fitted to the frame. The piston rod was too long and it was not known how much to take off. The important thing here is that the piston does not touch either of the cylinder covers. The method to use is to assemble the lot together, but with the rod just pushed home in the crosshead, then measure the clearance at each end of the piston's stroke between the piston and the end cover using the holes in the covers for the pressure relief valves. If no valves are fitted, another way is to measure the length of stroke of the piston with the front cylinder cover removed, and by calculation determine the piston to cover clearance. Then with the piston at the forward end of its stroke measure what that distance is, less the cover recess thickness and reduce the rod length accordingly.

Marcel B. has made a twin cylinder double acting steam engine and ran it on compressed air. He is now making a boiler for it from a design in the Model Engineer magazine. He is about to form the domed end plates which are about 2" diameter. A press tool was made, and anticipating a problem removing the plates off the punch should it stick, he has drilled a hole through the centre of the punch. This opened up an interesting phenomenon: the hole in the punch is 3/16" diameter counter bored 1/4" diameter. The plate would be placed on a piece of soft wood the punch on top, oil placed in the hole then a piece of bar 1/4" diameter inserted in the hole. This is struck

with a hammer and the resulting build up of hydraulic pressure blows the punch off the end plate.

Ian J. had chaired the meeting throughout and thanked contributors for giving a talk, especially as an element of braveness is involved. There were still two others wishing to speak and due to a shortage of time they will save theirs until next time.

Editorial

A Skeleton in the Great Western's Cupboard!

One of the best things about being Editor of the News Sheet is that every now and again a member will send me an article which I find riveting reading and I see it first. A few months ago such an occasion occurred when I received a thick package from Peter Kearon. Peter, a regular contributor of fine articles to our News Sheet, has written for 'hard-back' railway publications and was editor of a national journal at one time. Well, I have to tell you he has pulled out all the stops this time with a three-part account of the woes encountered in 1924 by the new Great Western 5600 series locomotives. It is written in an engaging, provocative style with many 'human' threads.

Peter writes, 'The necessary modifications to these locos and reasons behind them were eventually uncovered with the help of men who were personally associated with the events. I did not take any direct part in this history but I did work with the men who were there, fitters, boilermakers and drivers of Barry Loco who had lived through the Great Western takeover. Many were happy to unload memories on a young apprentice.

Arthur Beck, my senior fitter on the pits, was my mentor and guide and it was he who opened the door to this unhappy and perhaps unnecessary series of debacles. Later I talked to Eric Mountford, that most precise and thorough of all railway historians, about the disastrous introduction of the first 5600 class engines. All in all I feel that the history set out in my series is correct and offers some slight proof that even the great Great Western had skeletons in its cupboard.'

The first in the series of articles entitled *Collett's Folly* is published in this News Sheet and subsequent episodes will appear in the coming months. This is a 'must read' even if you are not a Great Western fan. But who couldn't be a GW fan when such lovely engines as Speedy, Firefly, Pansy, 1400, King, Castle, City, Hall and Saint have all run at Colney Heath?

Grahame Ainge

Marine Mutterings

By Bernard Lambert

The winter work program is still proceeding well – there are no more small trees to grub out! May I offer my sincere thanks to those who worked so hard on the trees and on the landscaping?

All the landscaping is now complete leaving only the detail work and preparation for grassing outstanding. This is still a sizable task and more help is always appreciated to speed up completion of the work.

John is putting together next season's fixture list – details should be available next month.

On Friday 18th April at 7.00pm.

There is a Marine & Garden Railway meeting at Colney Heath – members will be able to sail on the Lake and have tea and a chat by the Lakeside or in the Coach if the weather is still cold.

Enjoy the boating.

Slot Car News

By Steve Francis

It is now full steam ahead for the Slot Car Section on the racing front and at long last the track and clubroom alterations.

We recently had a very successful Open Evening throwing open our doors to the rest of the Society. On display were a selection of cars that we race both modern and historic and some of the tools and materials that we use. An evening's racing was also organised for our guests. Being used to a rather more sedate form of transport, everyone was impressed with the speed of the cars. Some found it so fast that they lost sight of which car they were driving. The evening finished off with Ian, John and myself giving a demonstration of our faster cars. I am glad to say that everyone enjoyed themselves and hopefully we can repeat the event soon and show off our shiny new, clubroom. Talking of which, we have now started to do the improvements to the track and room. It was good to see that nearly all of our Section turned up to lend a hand for the first night. The plans are being discussed, the carpet has come up, the posters are off the wall and we have started decorating. By the time you read this we will have attacked the track with a jigsaw ready for the new sections of track to go in.

On the racing front, Ian's excellent Southern 32 series has got under way again starting at Oaklands in Birmingham but our drivers finding it harder to win with the local drivers home track advantage. Also at Oaklands a Tottenham retro event was

held recently. John was particularly successful and came away with a box full of trophies. The area qualification rounds for the national finals have also got under way with Ian winning Saloon in two rounds held so far.

The London Model Engineering Show Wembley January 2003

By John Morgan

With the demise of the football stadium, navigation and parking around the area proved quiet a task. Those of us who ignored the "Road Closed" signs did okay, well on the Thursday anyway. Sunday, with the market was another story... Once the much larger stadium has been built I do wonder how much parking space will be left on the site.

I spent most of the time with my friends from model makers Martin, Howes and Baylis, so probably have a traders view of the weekend. The Friday of the Show looked like being a repeat of last year, very busy with those who are experienced/interested in actually taking part in the hobby, until 15:00 when it suddenly died (long distance coaches departed?). No matter, for that gave us a chance to leave the stands and have a look around. The weekend clientele was more there to view and see what we got up to in our spare time.

Comparing the Show Guide year to year there were seven more Clubs present and an overall increase of one trader - that is, some did not return but they were just outnumbered by the new-comers. This publication has given me up-to-date Club contacts for sending Marine Open Day dates to, so was worth the princely sum of 50p for that alone.

I thought the standard from all the Clubs was excellent and it was good to see some aspects I've not seen before being shown in their own right, like the Hydroplane Club and UK Rocket association joining the ranks of the existing "specialists", Association of Submariners; Warship Association and Coastal Forces. I'm reliably informed that there were 800 models on show.

The Gauge One brigade continues to expand at a great rate, all types of established traders now branching out to sell kits or ready-built models. I suspect that the manufacturers are driving this to an extent by increasing the range of models available.

As far as the North London stand was concerned, what was on show varied from very good to stunning, it was also nice to see the many new models underway or nearing completion. Hmmm, now having just read our January magazine, it would appear that all may be not as it appeared...

The membership gave Maurice (Cummins) plenty of support and we should thank him for all his hard work in organising such an excellent display. Thanks also to all those who turned out over the four days to help build, man and take down the stand, many hands did indeed make light work!

From a personal point of view, I wish there were more opportunities to run our models, a pool and tracks for the larger scale railways, like we were used to with the Model Engineer Show at Olympia. However, I'm not sure I would wish to go back to that hall - too inconvenient and expensive a place to get to, especially on set-up day.

Every year the organisers threaten to call our bluff and supply a boating pool, but as you may be aware, it has yet to happen. Trouble is space. To enlarge the floor space and hire the room next door would mean additional cost, which may not be covered in sufficient numbers by new traders.

A good Show - one of the few for us who are just north of the River to get at.

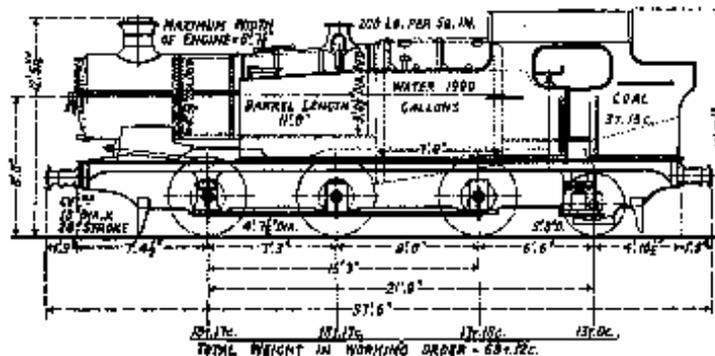
Our honourable treasurer has received a cheque from Meridenne Exhibitions as a "thank you" for our trouble. It was they who also paid our car parking fees.

COLLETT'S FOLLY

By Peter Kearon

*The Saga of the Missing Pony Truck.
Or how clinging to the great man's coat tails was better than unthinking, ill-considered original design.*

Part One



HEATING SURFACE, TUBES—		SUPERHEATER TUBES (TRIPLE ELEMENTS)...	36-1 IN. DIA. OUTS.
LARGE AND SMALL 1,144.95 SQ. FT.	LARGE TUBES 6-5 1/2 IN. DIA. OUTS.	11 FT. 4 1/2 IN.
FIREBOX	121.80 ..	SMALL TUBES 2 1/8-1 1/2 IN. DIA. OUTS.	NET. TUBEPLATES
TOTAL (EVAPORATIVE)	1,266.75 ..	GRATE AREA	20.35 SQ. FT.
SUPERHEATER	82.20 ..	TRACTION EFFORT (AT 85 PER CENT. B.P.) ...	35,800 LB
COMBINED HEATING SURFACES	1,348.95 ..		

An outline of the 5600-class radial tank. The small widely spaced wheels made Collett's only original design unsuitable for operating on minimum-radius curves. The long front overhang and extended smokebox gave these engines an undeniably ugly profile.

Background

In May, 1922 the Barry Railway Company became a “Constituent” of the Great Western Railway Company. Casting euphemisms aside this meant that the GWR gobbled up the ‘Barry’ along with all other Welsh railway companies so completely that they were never seen again.

Apart from the railway systems, the GWR took over six extensive docks and rather more than 900 locomotives, 80% of which came from those companies operating within the coal-field areas of east South Wales. To give some background to this article it can be mentioned that the 0-6-2T layout was used in some half of all absorbed Welsh railway locomotives.

Naturally the GWR had to assert its newly acquired authority and arranged a thorough examination of the various locomotive fleets. The GWR was justly proud of its boilers; not surprisingly its boilermakers held a dominant position within the workforce. (These skilled men were by necessity members of the so-powerful Boilermakers Union, which held widespread influence over the greater part of British heavy industry. Woe betide any employer who dared to cross its path. Industrial action - then known as going on strike – was quickly threatened and if necessary carried out. At last, in the 1950s a Welsh ship repair yard took up the challenge over the use of non-boilermakers to carry out electric welding. The lengthy and acrimonious strike, which followed, was eventually faced down. Just ten years later locomotive boilermaking became a redundant trade.

Teams of boilermakers were sent to the South Wales sheds to examine boilers and fittings and perhaps not surprisingly what they found was simply unacceptable. It must be remembered that builders of new machinery, be it boilers, ships or cars can see little good in dirty used products. These inspectors came from Swindon with the inbuilt understanding that only GWR standards could be accepted. They were armed with unchallengeable authority to discard anything, which did not reach these high standards.

Nowadays railway men have a reputation of having a “couldn’t care less” attitude but there was a time when ‘Company Servants’ took pride in their employers’ interests and despite changes remained loyal to the original company. When I joined the GWR I met many ‘Old Barry’ men who could remember past times and remembered how good they had been. Such men never really accepted the changes inflicted on them by the unwanted GWR and its newfangled ways dictated from far-away Swindon and even further away Paddington. (In the same way I feel that I am a Great Western man – who could doubt it – although I served longer under the British Railways, as it then was, lion and wheel logo than under the GWR or G Crest W insignia).

Barry men were quite unanimous in their condemnation of the behaviour that they had seen, and suffered, from the Swindon boilermakers. Although it was more than 20 years since inspectors had descended on Barry sheds (and doubtless the Taff Vale shed at Cathays and the Rhymney shed at Radyr) there were many foremen, chargehands and even fitters who were ready to recall to me their outrage at the way the inspectors had mocked what had previously been perfectly acceptable practice and their ridicule of the way in which maintenance had been carried out. Descriptions

such as high-handed, dictatorial, overbearing and obnoxious were commonly interspersed in any description of those not-forgotten times.

Engines were condemned at what appeared to be almost a whim. The very name Sharp Stewart, Hudswell Clarke or Vulcan Foundry was enough to make inspectors reach for their red pencils. A builders' plate from the Cooke Locomotive Company of America probably caused even greater pain. Whatever, the rights and wrongs may have been, the result was clear for all to see – rows of boiler-condemned engines filling the shed roads with more stored in sidings on the dock. Many were hauled away to the Swindon scrapyards and photographs taken at that time showed rows of Constituent engines, which had been judged inadequate or even dangerous.

The classes which brought out the most fondly remembered nostalgia were the handful of 2-4-2T and 0-4-4Ts which had handled the Barry's passenger services. They were, I was told, kept well polished and many recalled their unrivalled speed. That dozen of all craftsmen at the Barry Works, Jack Dunne, leader of the prestigious front end gang (cylinder and valve boring and facing, wheel alignment and valve setting), recalled to me how these little engines came across the viaduct (above the GW main line at St. Fagons), at 60mph with their wheels and rods just a blur. Such prowess cut no ice with Swindon and within a year they too had gone. Incidentally, Jack held Barry Works brass check No. 1, an honourable and admired achievement. My check number was 592.

But work had to go on. For South Wales this meant hauling vast quantities of coal from the valleys to the Bristol Channel ports. During each year of the 1920's, Cardiff alone handled some seven million tons with Barry shipping hardly less. As coal trains were generally made up of 60 ten-ton wagons it is clear that a huge number of movements were needed and of necessity the provision of a great number of locomotives. Very soon the withdrawal of so many engines had a decaying influence on the railways' ability to fulfil mineowners' demands to move coal away from pitheads and to supply empty wagons. In turn the docks were starved of their basic trade.

The problem was referred back to Swindon, the cause of all this perhaps unnecessary upheaval, and its response was predictable: sheds throughout the GW system were instructed to send an allocation of engines to the South Wales sheds to help keep things going until something better could be arranged. Now we all know that every shed has a collection of unwanted, rundown or simply troublesome engines usually found lurking at the back of shed roads and naturally they were the ones most willingly passed on to the needy newcomers.

Barry, I was told, was soon inundated with a host of Wolverhampton-built open-backed panniers and saddlebacks. Worthless additions were a trio of worn-out 2-6-0 Aberdares and a pair of 0-6-0 Dean goods engines, none of which could be trusted with tender-first running on the Valley lines. There were no turntables.

However, amongst this lot of brick-a-brac there appeared two real stars, a couple of worthwhile large prairie tanks and these proved to be a revelation. Barry drivers had never experienced such power and smoothness while firemen were impressed by their easy steaming. The Barry shed foreman was reported as saying that given a fleet of

these engines he would willingly send the rest of the Barry stock for scrap. But it was not to be.

The Makings of a Disaster

1922 not only recorded the grouping of the railways but the retirement of George Jackson Churchward. His preferred choice as successor, Charles Collett, became Chief Mechanical Engineer of the GWR. Collett was a most excellent workshop man with a flair for modifying and upgrading (as distinct from improving). Quite magically he put a bigger boiler on a Star and produced a Castle. An even bigger boiler on a Castle gave the King design. Smaller wheels on an otherwise unchanged Saint gave the much-copied Hall while another axle on the Moguls and the result was the Grange and Manor classes. A thoughtful update of Armstrong and Dean saddlebacks produced attractive and efficient pannier tanks.

No doubt admirable work but in every case Collett was adapting a proven excellent basic design. (It is interesting to consider what may have happened to GW engine design had Churchward instead chosen the five years younger Stanier. It seems likely that the Castle design would have appeared but after that? Stanier too had considerable skills in updating existing designs, notably the unattractive but excellent 2-6-4Ts produced for the Midland Railway at Derby under the dull leadership of Fowler. A new boiler and cab produced handsome and still efficient engines with which, even years later, a Thompson design with the same layout proved to be no match. Even so Stanier did not produce a prairie tank of any value perhaps because he tried to improve the wishy washy Fowler design rather than take a lesson from Churchward's fine 3100 class 2-6-2Ts of which he must have had first hand experience. The 2-6-4T design, being excellent and LMS was used as the basis for British Railway's 80,000 series. The 2-6-2T design, being poor but LMS was used as a BR standard in the shape of the namby pamby 82,000 series, engines which could not be given away. By some good fortune none has been preserved.

Roland Bond, one time works manager at Crewe, relates that Stanier took the worn out Fowler Royal Scots, renewed the frames, cylinders, boiler and tender, kept the cab and some nameplates and produced a real winner. Hardly a rebuild except in accountancy manipulation. What would Stanier have achieved at Swindon? We shall never know).

Successful though Collett was at updating, in only a single, and I would say unhappy, case did he design a locomotive. Perhaps driven by the sudden death of steam power which followed the scrapping of 20% of Welsh system engines (or 5% of the entire GW stock not forgetting the hundreds of locomotives which had merely been laid aside until GW standard boiler mountings had been provided or, in some cases new boilers fitted). Collett chose to design from scratch a replacement class to fill the serious gap in available locomotive numbers. Possibly he felt in the shadow of Churchward, whose mental and physical presence, until his death under the wheels of "Berkeley Castle" in 1933, was always at his elbow. He may have decided to show that he was his own man.

It would be reasonable to assume that he studied the types of engines preferred by the railway companies of South Wales and could not have failed to see that the 0-6-2T

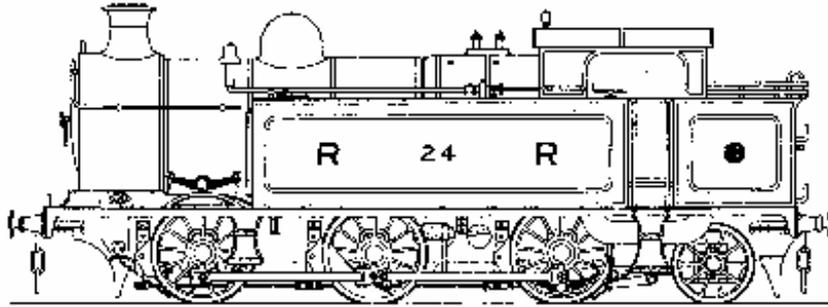
layout had been overwhelmingly adopted. But in this writer's personal opinion his choice was ill considered. Churchward was the undoubted master and it is easy to see that his preferred standard range studiously avoided the use of the 0-6-2T wheel arrangement. He is quoted as saying that locomotives must be guided around curves and the accepted way of doing this is to provide a four-wheeled bogie or a spring-controlled pony truck. Running bunker first radial wheels will guide an 0-6-2T engine but when running chimney first only the flanges of the leading wheels can do this work, a demand which is hugely exaggerated on South Wales mineral lines. (Records show that Stanier too shunned the 0-6-2T layout).

But Collett went one stage further and selected to use the long wheel centre dimensions of the 'R' class of the otherwise despised Rhymney Railway. These were 7'-3" + 8'-0" + 6'-6" and in consequence even longer than the corresponding dimensions of a Castle at 7'-0" + 7'-9". Imagine a Castle with 4'-7½" wheels. The rest of the construction was pure Great Western. Strong hornblocks, well lubricated axleboxes, standard 4'-7½" wheels. (The 'R' class used 4'-6" coupled wheels but it was known in later days for 5600-class wheel sets to be used), compensated braking, Stephenson's link motion taken directly from the Saint layout but without the final inside/outside hanging link, driving directly to 8" diameter inside admission piston valves arranged high in an inside cylinder block cast complete with saddle. A new design of three-bar crosshead (later used in a smaller version in the 6400 and 4800 classes), 18" diameter pistons on a 26" stroke gave substantial power while a standard Swindon No. 2 superheated boiler with polished chimney cap gave ample steam.

But in my own opinion the result was an ugly engine with small, widely placed wheels and an overhanging front end. On a purely personal choice I found the Rhymney 'R' class, which long outlasted my railway service, to be an attractive engine helped perhaps by the use of a fat parallel Belpaire boiler with a full size smokebox capped with what could well be described as a curvy Great Central chimney.

Under severe pressure from powerful South Wales mineowners, some of whom were almost certainly GW shareholders, work was progressed on building the new class but even so it was not until late in 1924 that the first example, 5600, emerged from Swindon Works and was photographed in the usual shop grey. For some unknown reason the running trials were held between Swindon and Didcot rather than the more usual Swindon – Stoke Gifford route. First reports were good; the engine performed smoothly on the 50 mile round trip and all looked set for a successful future.

Shortly the first five engines were ready and were sent off to Barry and Cathays sheds with the prototype going to Ferndale. Immediately troubles began as these new engines simply would not run. Overheated wheel bearings (hot boxes) put engines out of service on virtually a daily basis and soon there were more engines under repair in Barry or Caerphilly Works than were in operation. When the 15th new engine arrived in South Wales only five of the class were in working order. At that time, although production continued, release from Swindon was brought to a halt.



Outline drawing of a Rhymney Railway 'R' class locomotive. These pure mineral locomotives were not vacuum fitted and for easy coupling only simple three-link chains were provided. This illustration, showing later Great Western fittings such as safety valves and top feed was taken from the cover of Eric Mountford's classic account "Caerphilly Works 1901-1964".

To be continued

Letters Page

A Smashing Time with the Slot Car Section at HQ

The Slot Car Section was pleased to welcome members from all Sections to the General Meeting on 7 February. John Secchi, Steve Francis and myself displayed a variety of slot cars ranging in age over the last 40 years. John's collection of cars he has acquired and built over the years is always fascinating. After some interesting informal discussions about slot and full size racing history, the present sport and all sorts of model engineering, 10 of those assembled tried their hands at some actual slot racing on the track. This was a steep learning experience for some but in the end some good close racing resulted and I hope you all enjoyed the experience as much as it seemed at the time.

We'd be pleased to welcome members to our Thursday night meetings. Some track modifications are about to be started but we'll be racing again soon. If a group of you would like a special event or some Scalextric type racing, do please ask me.

We expected a fair amount of accidents and damage to the slot cars and weren't disappointed there! All part of the fun. What did sour the end of the evening a little for me was to find that the same attitude to accidents continued outside the building. Loading up my silver Fiesta I discovered that someone had dented the boot lid and departed without comment. Just as in full size motor racing you should remember that acceptable behaviour on the race track is not acceptable behaviour in normal driving.

Regards,

Ian Fisher

The views expressed in this News Sheet are not necessarily
those of the Chairman or Council of the NLSME