

The Chairman's Notes

I regret to say that this month I have been unable to attend any Society meetings or activities with the exception of the Wembley Exhibition and the Council meeting.

I have been spending quite a lot of weekends in my wife's hometown of Hay-on-Wye recently. Now apart from producing first class wives Hay is renowned for its second-hand bookshops and just recently I acquired a copy of L.B.S.C.'s *Live Steam Book*. This was particularly useful as I needed a new pump for a gauge 1 engine and lo and behold all the design work was there and the clearest of instructions. It was with much regret that I heard of the passing of Martin Evans another such writer. He will be a sad loss to the world of model engineering; our hobby owes an enormous debt to writers such as Martin and LBSC.

John Squire

Treasurer Twittering

Nothing much has changed on the financial front since last month except that our insurance premiums are all due shortly. The Southern federation has handed their insurance business over to a broker this year and I propose to get another quote for comparison purposes.

The most important thing I have to say is to remind all members that subscriptions are due by April 1st!

Bernard Lambert

From the Membership Secretary

Membership now stands at 242 comprising 156 Full, 41 OAP, 17 Junior, 17 Country and 11 Honorary Members.

We have no new members this month but do have three changes of address:

Geoffrey Wren, Ian Murray, Graham Price

Bernard Lambert

General Meeting 5 March 2004: Not Just a Hole in the Ground

I wondered about using the phrase '*Alas Poor Yoric ...*' as a title for this presentation by our own John West, whose work at Hendon Cemetery involves the preparation of graves for the recently departed. In his inimitable style, John will describe the history of Hendon Cemetery from the turn of the century, and discuss the mechanics of interment and cremation there.

This topic may not suit all tastes, and it is suggested that anyone who has recently lost a loved one may not wish to attend.

The meeting, which will take place at our Headquarters in Legion Way, North Finchley, is scheduled to begin at 8pm and finish around 10pm, with refreshing tea and biscuits at about 9pm, courtesy of our own Frank Dell.

Next month (2 April) will be Work in Progress. Several members have had their arms twisted but we would like to see *your* current project too!

See you there!

Mike Chrisp

The London Model Engineering Exhibition

I would like to thank all the members who assisted in setting up the stand for the 2004 exhibition and for supplying the models.

There were 700 models on display in the exhibition showing all aspects of model engineering.

The show was a great success and we received a donation from the organisers for our society funds. We have also been invited to attend again next year.

Maurice Cummins

Marine Mutterings By Bernard Lambert

Working Parties continue. We have finished removing the mound and are have completed the base for our new shelter. The 'Chester' seat is progressing well.

We are ready to start building the new 12'x12' wooden 'gazebo' and are preparing for grass seeding on the new flat area.

We have finalised the following dates for 2004:

Sunday 16 May. Visit to Colney Heath by the Vintage Boat Club.
Sunday 23 May. Marine Open Day.
Sunday 25 July. Marine Open Day.
Sunday 1 August. Visit to Colney Heath by the Vintage Boat Club.

News from the Tyttenhanger Committee

By Donal Corcoran

The Tyttenhanger Committee held its February meeting on the 3rd, where it was good to hear that the work being undertaken all around the site is on schedule for Easter. As usual we will always welcome new faces to work parties, and there are still jobs we would like to do this winter which have not been started.

Some of you will have noticed that the car park has effectively been closed for parking. It is envisaged that this will be the case up until we open in Easter and should allow the grass to recover in time for the running season. We would like to take this opportunity to ask members to park in a manner considerate to our water board neighbours and the surrounding houses, as we do not wish to upset anyone.

As the running season will soon be upon us, we would like to take the opportunity to inform members that the Society's 2 ½" Dyak, will be available for members to run on the Cuckoo Line throughout the season. Mick Avery has volunteered to be responsible for this engine; therefore if you wish to run Dyak please contact Mick.

Dyak will have a log book stored with it and we would appreciate it if members could fill out the information requested in the log book as this will enable us to ensure that the engine is kept in running order for all to enjoy.

Tyttenhanger Gazette

by Roger Bell

Thank you for your good wishes and to Ian for writing the Gazette in my absence, I am pleased to say that I am now fully recovered

The topic for the February Locomotive Section meeting was a discussion by Donal Corcoran entitled 'The way ahead for Tyttenhanger' Part Two. Part One was held at the December meeting.

After some discussions it has been decided to revise the rulebook for running at the track in the interest of safety and general efficiency. This season we will have a senior track steward, steaming bay steward, station steward and one floating steward apart from the two that make the tea. Their duties will be written on a laminated board for reference and kept with the stewarding badges. The duties of drivers were clarified and all of these rules will appear in the News Sheet.

Donal then spoke of the progress of work at the track, which included the following areas:

The ground level terminus and level crossing, car park, main line steaming bays, the garage and container, main line station area, toilet block area, boating lake and the garden railway. Following on from that some long-term future projects were also discussed.

During the meeting appreciation was expressed for Donal's work on this arduous task, which will improve safety and security for us all. As the meeting closed we thanked Donal for his presentation.

Forgotton Motorbikes Some Additions and Perhaps Some Deletions?

Mike Collingwood's suggestion inviting members to add to the list of pre-war motorbikes (February 2004 News Sheet) has certainly stimulated interest from members.

Tim Clementson has suggested DOT, SPRITE, COTTON, BENELLI, CZ and JAWA.

Frank Dell has suggested HENDERSON, OFC, DKW, COTTON, OSS, WOLSELY, WILKINSON, ROVER, REX, ACME, FN, PREMIER, LEVIS, BENNELI, MORINI, DUNNELT, MCKENZIE, PEUGEOT, HUMBER, BLACKBOURNE, DOT, AMMBASADOR, NORMAN, WELBIKE, ABC, MONOT GOYAN. Frank also points out that ZANDUPP should be spelt ZANDAPP and that VILLIERS did not make bikes, only engines.

Bernard Lambert has suggested AUTOGLIDER, BAT, BEARDMORE, CENTAUR, CLYNO, CONOUGHT, COVENTRY EAGLE, DUNNELT VULTURE, LEVIS, MINERVA, NLG, NER-A-CAR, OEC, P&M, RADCO, REX, ROYAL RUBY, SHEFFIELD, SINGER, VELOPEDE, WILKINSON, WILLIAMSON, WOLF, WOOLLER

Peter Kearon has interesting memories:

In the early post-war Earl's Court Motorcycle shows there was always a stand for the Wooller machine, a strange horizontally opposed engine with bell-crank mechanisms. Fascinating, but did one ever reach a sale? My friend had an OEC Commander, a bike which sported car-type swinging-arm front suspension when girder forks were standard. Teles' were a rarity confined only, if I remember, to the ex-Army Matchless. The OEC steering was self-centering to such an extent that it actively opposed any effort to turn the bike into even the most gentle of corners. Nice to hand back to the owner!

Allan Hawkes has written:

I think that the very early motorcycles must be excluded from the list as many cycle manufacturers produced these. They had engine drive but also pedal power to assist on hills. Humber, for instance, had their Pennington two-horsepower machine at the International

Horseless Carriage Exhibition in 1896. They continued until 1930, though their last machine, a very handsome OHC, signalled the end as Rootes took over. HUMBER, then, should go on the list. BLACKBURNE made engines – did they also make complete machines? VILLIERS is also listed – did they also make complete motorcycles? I doubt it. COTTON had a very loyal following. What about DOT? Several CENTAURS still survive; they must be pre-1926. I once saw a machine with a sleeve-valve engine; I think it was a BARR & STROUD....date unknown. CHATER-LEA also made a few motor-cycles.

What about COVENTRY EAGLE, DREADNOUGHT, BEARDMORE, DUNNELT? They all competed at Brooklands.

Allan's point about the very early motorcycles needs resolution and I'd like to invite comment from members on his suggestion. In order to make this list authentic, the spelling of the manufacturers must be correct. Since I am no expert on pre-war motorcycles I would be grateful if any spelling mistakes are pointed out to me. For the present, the revised list is as follows:

ABC, ACME, AJS, AMBASSADOR, ARIEL, AUTOGLIDER, BAR & STROUD, BAT, BEARDMORE, BMW, BSA, BELEPEDE, BENELLI, BLACKBOURNE (Should this be BLACKBURNE?), BROUGH, CALTHORPE, CENTAUR, CHATER-LEA, CLYNO, CONOUGHT, COTTON, COVENTRY EAGLE, CYCLE-MASTER, CZ, DOT, DOUGLAS, DKW, DREADNOUGHT, DUCATI, DUNNELT, EXCELSIOR FN, FRANCIS BARNET, GILERA, GREEVES, HRD, HARLEY DAVIDSON, HENDERSON, HUMBER, INDIAN, JAMES, JAWA, LEVIS, MZ, M V AUGUSTA, MATCHLESS, MCKENZIE, MINERVA, MONOT GOYAN, MONTGOMERY, MORINI, MOTO GUZZI, NER-A-CAR, NEW HUDSON, NEW IMPERIAL, NLG, NORMAN, NORTON, NSU, OEC, OFC, OHC, OSS, O K SUPREME, PANTHER, P&M, PEUGEOT, PREMIER, RADCO, RALEIGH, REX, ROVER, ROYAL ENFIELD, ROYAL RUBY, RUDGE, SCOTT, SHEFFIELD, SINGER, SPRITE, SUNBEAM, TRIUMPH, VELOCETTE, VELOPEDE, WELBIKE, WILKINSON, WILLIAMSON, WOLF, WOLSELY, WOOLLER, ZANDAPP, ZENITH.

Spotlight on Jim Robson

Part Two

The Early Years at Marconi

Having taken my talents to Marconi Instruments on July 23rd 1957 I started at £8-10-10 as an Instrument Fitter, with no knowledge of the industry. That was a basic rate for a 35hr week (despite working a standard 44hr week) below which you couldn't fall but since M.I. worked on piece-rate you could get more. If the rate-fixer had set the time for a part to be made as 60min and you made it in 30min you got 50% over the hourly rate, so long as you could keep up the pace. (If you took 61min you didn't get anything above the minimum rate.) While I was still at the Odeon I used to potter about with radio; crystal sets, radios and amplifiers etc. Since I could read a circuit and thought I knew how to solder I imagined I would be taken on as a prototype wireman. I was soon disabused of that illusion and started in electrical assembly to learn as I went along. I was fortunate enough to be started on the TF 1066 signal generator, which, since it was a tricky job, merited a coveted blue-edged job-card automatically guarantying a minimum of 25%. I was put next to Bernard, an experienced hand, to teach me the ropes. His first piece of advice was, "Don't hurry; if you do the job too fast they'll take it off blue-edged." The first thing I discovered was that I didn't have the first idea of the standard of soldering for industrial requirement. We were part of a line, doing final assembly, on completion we passed the instrument to the inspector at the end of the bench. If it was not up to spec it was passed back, with a chit enumerating the faults for the culprit to rectify. I presented my first completed instrument with pride. The inspector, an ex-navy man, said "you've got enough *#! solder on these joints to sink the* Queen Mary."

Later it was something of a rude awakening to go on to piecework and have to go like the clappers just to stay ahead. By this time I was working overtime; to 8pm every evening plus Saturday and Sunday mornings. I still have the "penny notebook" which everyone had to keep tabs on time spent. Those of us on overtime would be greeted by those clocking out by cries of "grabbers" and "you'll never live to spend it." Likewise if you had a cold and sneezed, rather than cries of sympathy it would be "Die you bastard!" But all in good spirit, they were always there for you when there was a problem.

I well remember going on the dreaded TF 867 on which almost nobody had succeeded in making time. I spent 67½ hrs but only got paid for 35hr. since I couldn't make them in the set time, let alone beat it! I considered leaving but decided I wouldn't be beaten. When I started I was issued with a basic set of tools and I added my own to these; a short handled screwdriver, a box spanner which I ground narrow at one end to fit the nuts on the bushes and a pair of round tipped pliers to form loops in the tinned connecting supply wires. The next week I made the time and gradually improved on it over the following weeks so that I managed to get up to 25%. I think I got it up to 30 odd % by the time I had completed the batch of 200. They weighed 108lb when fully assembled and I remember getting a bit uncomfortable in the groin department. The inspector at the end of the line ('Queen Mary') had three weeks off having put his back out. (Ironically, about a year later, two other chaps were doing the same job and complained so vociferously that it was agreed to retime it. I used every ploy available

to stretch out the time. Despite this I did it well under the allotted period. The two involved called me everything except a Christian. We are still on good terms, and occasionally they don't remind me of it.)

The following May I got married. We went to the Isle of Man for our honeymoon. Imagine my surprise when it turned out to be TT week. (Having been the previous 7 years you might have thought that I would have realised a slight clash of events.) In the autumn of 1958 I enrolled for a four year City & Guilds Telecommunication Technicians course. MI management was always on the lookout for employees trying to better themselves, (especially when the employee was paying the fees). Within two months I was made up to Senior Wireman and put on to prototype wiring, a rise in pay, no more piecework and being paid for doing my hobby! Having made one complete instrument and had it tested by a calibrator, if all was well it was duly labelled and signed as a COPY. I then proceeded to make copies of the individual parts, the cableform/s, rotary (Oak) switches with the appropriate components and lengths of wire with the ends stripped. All the sub assemblies had to be made checked and given copy labels so that various departments could make them up in appropriate numbers for a batch or 'J' could be assembled.

Occasionally I would have to give instruction if the part was tricky in some way. This Nirvana lasted for several months and then the prototype wiring section was split up, one Senior Wireman being sent to each of the six assembly groups, each run by a chargehand. Initially things continued as before but before long the amount of instruction work increased to the point where I became an assistant chargehand and a second wireman was brought in to do what I had been doing before! I never minded telling people what to do but I never liked having to be a policeman and telling people to stop talking and urging them to greater output. It wasn't fun any more, instead of being part of the crowd, them and us; I was suddenly 'them'. Then the chargehand, Bill Edmunds, went sick for three months and I was in charge of 26 unruly folk, mostly female (more deadly than the male). Every week it was the same pattern. Each section had a target. Things started off quietly on Monday rising to a frantic crescendo on a Friday. Nothing counted as output until it had gone to Calibration Dept. Then all the section heads would gather in the Manager's Office, Geoff Coquantin, ('Coke'), to discuss the weeks output etc. I was quite pleased with myself because our section had exceeded all its targets. 'Coke' used sit back in his office chair and roll his necktie up and beam upon us, I was waiting for words of praise but all I got was "jolly good Jim, we'll increase your targets for next week". I didn't make that mistake again.

Bill came back and life went on but it was always the same pattern, working up towards frantic Friday knowing it was all going to start again on Monday. I was still doing evening classes and I wanted to get into the Calibration Dept. Previously my greatest ambition was to be a Senior Wireman and if they had let me continue with the hands on part of the job I would have probably been content for years but I felt I had to get away from the treadmill of minor management.

So, after four years in assembly I got transferred to Calibration, one of the elite, issued with my badge of office, an Avo 8 multimeter. I thought, life has nothing better to offer than this. Initially it was a bit of a shock since although I had done quite well at C&G they only taught theory and I didn't even know how to use the Avo never mind the rest of the equipment! However with a little help from my new colleagues I soon

found my way round them. The first job was to calibrate an a.f. attenuator, a good starting point since it was an unpowered instrument so I didn't have any mains or h.t. to worry about. Whereas the more complex instruments would have a team of 5 or more, each calibrating one section, I was the whole works with 50 of them to do. The scale was calibrated against a known attenuator; both boxes driven by an oscillator to form a bridge with a mirror galvanometer to indicate when they were balanced. Having set the known to 1dB and balanced the one under test you marked its blank scale with a pencil line and added 1. Having got round to 10 you calibrated the other scale in 10dB increments. To get a decent signal the oscillator was set at 30V output, quite lively for an oscillator, having finished my first instrument I disconnected the oscillator and received my first practical demonstration of back emf. (For the uninitiated, if you apply a voltage across an inductance and then disconnect it a much higher voltage is created momentarily. This is what makes ignition coils give off enough voltage to give a spark between the spark plug points.) The attenuator was made up of a collection of resistors wound on ceramic coils to give the required attenuation. They were in series so that when you had reached the maximum point you had quite a bit of inductance hence the tendency to make the original 30V bite.

I told my colleagues who, when they had stopped laughing, said that all I had to do was to turn the oscillator off and short the input. They also pointed out that those who did that were considered wimps and would be unprepared for the far greater perils of other 'live' instruments that they very considerably described in great detail. Great camaraderie in those days. Having finished my 50 little boxes I was assigned to the 144 team. The TF144 was a signal generator which had been in continuous production since 1934. This was the latest development of the line, TF144H. I was put on valving up, a task normally given to apprentices but given to me to get a feel for the instrument and ease me into the line gently. The 144s had just arrived from assembly and could have wiring or component faults so the first part of the operation was a check for short circuits etc. Next inserting the appropriate valves before gingerly switching on; this was for real, a bare chassis with live mains and 300V h.t. If there was an ht short and you had missed it the anode of the ht regulator valve would glow bright red and if you weren't quick enough to switch off it would melt the glass and the valve would implode. I then set the ht and Lt to their correct voltages; the Lt feed to the valve heaters was 6.3Vdc (dc to reduce hum). After a couple of months of this, which was quite educational, I moved on to the next operation. Although we all had a Test Schedule the information contained therein was rather scanty. The first page told you all the voltages that ought to appear at each pin of each valve base as a guide to fault finding; the remainder was scanty. This was supplemented by word of mouth as an instruction period from someone experienced in that operation plus tips as what to do when something didn't do what it should. Most of the old hands had a small notebook full of things they had noted over a period of doing some particular task with hints and voltage readings and solutions to problems verging on black art. These personal notes were jealously guarded and not passed on willy-nilly. "Let 'em find out the hard way, same as I had to." This was partially due to the practice, long since discontinued by the time I joined Calibration of doing 'piecework the same as assembly. It was a bit of a strange situation among colleagues who in every other respect were so helpful.

All the instruments used valves, the only concession to solid-state being the odd diode and transistors in power supply regulation. It made working with them quite lively,

apart from mains and ht volts up to 380V (albeit at low current); oscilloscopes had at least 14kV on the tube. After the 144 we did a few batches of my old enemy the 867. It was just as unfriendly and likely to bite. We used to put instruments on 'soak', (switch them on and leave them for several days to settle down.) I vividly remember picking one up, forgetting to switch it off. To lift it I put my hands under the bottom power supply tray, neatly spreading my fingers across the rectifiers with some 380V of unregulated supply. This threw me back into a chair, which was fortunately behind me, but the 867 being heavy I just sat there nursing it until someone switched it off. Oh how we laughed. (In later years we were not allowed to do overtime on live instruments unless someone else was present.)

To be continued

A Mixed Bag – The Lot of a Trainee Fireman

By Owen Chapman

I have been involved for some years now as a volunteer in the workshops of the Festiniog Railway and pay the Land of Wales several visits a year. I was delighted earlier this year to be officially entered onto the locomotive roster as a trainee fireman on both the FR and the newly reopened section of the Welsh Highland Railway (WHR) and would like to describe a weekend I spent on the two lines at the beginning of October 2003 which threw just about everything from the best to the worst at me.

The weekend of October 11th and 12th was marketed as the Winteractive weekend, a new follow up weekend of Interactive gala which allows visitors to take part in the train operations from footplate rides to driving freight trains. I had booked on to the railway many weeks before the event was announced and so was very hopeful that I would not lose my expected turns in the name of marketing. So with pleasure I found that I was booked to fire *Linda* on the early turn on Saturday and the same on the later turn on Sunday.

These arrangements would see me leaving Hertfordshire at 3 am to be at Boston Lodge to light up at 8.00. I arrived at 7.30 and checked the roster board. Everything had changed; I was now to fire *Linda* on the late turn that day (so I could have spent an extra hour and a half in bed) and *Prince* on the WHR on a long turn on Sunday.

I decided to take a quick nap and rest before I set about the preparations to the engine and the arrival of the rest of my crew. Since I last fired *Linda* in July she had had her motion re-metalled and her boiler and burners (FR/WHR main locomotives are oil fired) de-coked so she should behave better for me than before - and so it proved. But first we had three engines in steam that day, and each one needed to be connected to the air compressor to start the oil fire before enough steam was available for working the blower and atomiser (which blows the fire out into a ball in the firebox).

The first locomotive needing to be steamed was double Fairlie, *Earl of Merionedd*, which has a large double boiler and had not been in steam for over a week, so was stone cold. Usually someone in the works warms up the locomotives that have not

been in service for a while the day before, but this obviously hadn't happened, with the result that "the Earl" needed air for a very long time before steam was raised. She still needed the air right up to the time she went off shed and then only had 50psi on the clock! The fireman of *David Lloyd George* also needed it and we all had to be off shed within the next hour! All this meant that I had to break a fundamental rule with locomotive boilers, not to raise steam too quickly. However, *Linda* was warm, having been in service on Friday, so fortunately it was not long before I had 40psi and passed over the airline to *DLG's* fireman. I then had to roar the blower and use lots of fuel and a big fire to bring the pressure round to 155psi so we could go off shed and pull our train to Porthmadog, ten minutes later!

This drama over, we ran the 11.20 return to Blaenau. As there was an extra service, we would run round straight away and return to Porthmadog, where we would have a two-hour break before taking the 16.00. This trip ran well, *Linda* steamed much better than before, though as I was a little out of practice, we ran with a lower pressure than I would have liked and could have done with more water in the glass; but overall we did fine. By the time we had got to Blaenau I had now got back in my stride and I resolved to better the above shortcomings, pointed out to me by my trainer Bill Haynes.

After firing back to Port' we did some shunting and amused the lunchtime crowd and I then set up for the 16.00. A steam boiler does not have instant reactions. If you go from idling to working flat out, the boiler needs to warm up before it makes steam, which takes a little time. We get round this by increasing the size of the fire and blower opening about five minutes before departure, using the now rapidly rising pressure to add more water so we leave with most of the glass full. But there needs to be some steam space and you MUST NOT blow off in Port', as there are flats nearby. It does not bear thinking what would happen if the guard were late. We left at 16.01, just before the pops lifted, the edge taken off by the opening of the regulator!

Now *Linda* and I were warmed up, we ran with full pressure and $\frac{3}{4}$ water all the way up, but my slightly more aggressive firing on this run had me working too much water in places, and I didn't set the fire back enough just before coming in to Ddualt and so the pops blew! Properly set locomotive safety valves drop the pressure by 10psi before they shut, and so I now had to raise the pressure again!

We then had an unexpected stop at Tanygrisiau, which is the bottom of the only down grade on the FR on the up trip. Again, I was warming through the boiler, then realised I had too much water again. We started off and just as Ray opened up we blew off again on the Penlan embankment. This is surrounded on one side by rock cliff and about 400 feet below, the houses on the outskirts of Blaenau – the worst possible place to blow off, except Porth'!

We returned to Boston Lodge shed, just before the night's rain started, without further incident, and I thought the day had gone well considering! Now was the crunch time, Ray Foster, the driver, had to grade my firing log! Completely opposite to Bill's comments that day, Ray told me that the first trip was excellent, and the second was not good, despite running with more water and the pressure on the red line. The blowing off was against me!

After a short time in the pub I 'earlied' to bed after a quick look at the new rules for the WHR section to Rhyd Ddu. I had never footplated the WHR before and never fired *Prince* on the run, so I looked forward to the day ahead.

I arrived at Dinas early and helped with some shunting and the removal of the piston valves from Garratt 138 for winter overhaul. Nigel Musket, our fireman, still hadn't turned up, so Mike Middleton (the driver) asked me to prepare *Prince* without him. First problem, no tube-brush to clean the tubes. 'OK leave that,' says Mike. No pit and no lead lamp or compressor. Mike went off to find the mobile compressor, whilst I resorted to checking the tube plates, fusible plugs and cleaning the burner and firebox with the aid of a bardick lamp.

We had started the mobile compressor and started to raise the steam pressure when Nigel finally arrived. I explained to him I had not fired *Prince* on a train before and that I had not been on the WHR before at all. I went about my duties hoping he would let me route learn and show me some tips about Prince on the first of our two and half round trips that day.

However, I was firing from the start. I had only basic route knowledge and had to deal with *Prince*, who I found later, likes to give everyone a hard time. He likes practically no atomiser pressure when idling, or the fire is blown out - so I discovered twice before we went off shed! Then you need high water in the small glasses all the time, so you felt like you were risking priming. On an oil-fired engine if you prime you blow the fire out!! This is because the water goes down the atomiser as well as into the dome, and usually before as the take off pipe is lower on most boilers.

I felt I did very well on the trip to and from Caernarfon, controlling the steam and water well to avoid blowing off at Hendy crossing, an ungated level crossing, where all trains have to stop before proceeding, half way up the 1:40 gradient. Nigel gave me some pointers on this section, as he knew it well.

We then went off to Waunfawr. I had the hang of *Prince's* steaming at this point and the red line and needle remained close Then I saw I had too much water again, so I backed the fire down and cut off the injector so we would use some, remembering yesterdays trip on Linda. Big mistake. Nigel shouts me for more heat and to put the injector back on. I soon found out the explanation for this. There was a down grade ahead and so the water level would reverse. No sooner had I got the injector on than Mike shut off and I then had to struggle the fire down without making too much black smoke. I was not quick enough and we left a nasty cloud behind us!

From Waunfawr we were on the new section to Rhyd Ddu. I had no clue as to what was to come, and how we got up to the top I don't know, but we did, with only one incident of the safety valves blowing at Plas Y Nant. Oh well, I now knew what was to come and hopefully would do better on the second trip.

Now for the down trip. I wasn't expecting *Prince* to use so much steam on just the brake ejector, and I was struggling for water and pressure on the way down. I kept wanting to open the blower and increase the fire to blow up a bit, but each time I opened the blower so Nigel stopped me and I was not happy all the way down. Just above Waunfawr I put the injector on in the hope that we would recover in the station.

“Fires out” cries Mike, just as we hit the leveler straight section before the station! I clear the atomiser and start the blower, but I can’t get to light a rag to ignite the fuel. I struggle for what seems like ages, then Nigel banished me to the tender. No accusations, but he has a big blow up in the station whilst I change the token. Then he lectures me about how to use the blower to generate more steam if needed!

I then have charge of the boiler again, down from Waunfawr to Caernarfon and back with no further incident. I was now looking forward to taking the new section to Rhyd Ddu again but Nigel takes over since he has not done the section yet and wants a go.

I watch and try to learn the line more, whilst my digital camera makes an appearance to photograph the fantastic scenery. It’s not all plain sailing although the fire does stay in!

At Waunfawr I take over again for the down trip and remaining run back from Caernarfon to Dinas. *Prince* behaved himself and on the final trip to Dinas, Mike let Nigel drive and the sun came out to warm Caernarfonshire and its little trains. We accelerated up the 1:40, now for the third time. Nigel used more regulator than Mike and I had to get *Prince* to steam slightly harder, but we charged up the grade under the old bridges, the exhaust deafening and the pressure steady on the red line and the injector on: I could now relax a bit. I knew what was coming and I could enjoy the sounds of the 140-year-old engine working and wave to passers by.

At Dinas we disposed of the train and put *Prince* to bed, only having used 400 gallons of fuel oil all day, which I thought was pretty good. The Garratts use 1200 for the same duty. Nigel left first and Mike and I went to discuss my log sheet. We decided to put the day down to experience and not write it up and spoil my otherwise improving record. We then locked up and went down the pub!

I would like to thank Bill, Mike and Nigel for my training over the weekend. I am reliably informed that I am progressing well as a fireman and should be passed out, I hope, before not too long. I consider, though, that I have unfinished business with *Prince* and Rhyd Ddu!

So this is the verity and spice that working on a full sized railway can bring, especially when it is operated like a main line. It very much brings it home to me that these two heritage railways are very demanding. On the FR and the WHR we are running very hard on quite steep gradients whereas on most preserved standard gauge lines locomotives are far more powerful yet are only operated at say 25mph. Oil firing is not the poor man’s way out and requires high levels of concentration and team work, even if it is not quite so physical as coal.

Further information on these two marvellous railways can be found at www.festrail.co.uk and www.bangor.ac.uk/ml/whr, for those with access to the Internet.

Oil Firing Fact Panel

To create a fire in the firebox, the burner must discharge the fuel in such a way that it creates the flame size you need to maintain your steam pressure. Regardless of the system employed, it was discovered the way to do this was to atomise the fuel into tiny droplets as it enters the firebox. The flames become more like a ball that fills the open space in the box. To get a bigger fire you increase the pressure of the atomiser simultaneously with the amount of fuel you are burning. The Laidlaw Drew system, used by Festiniog Railway engines, uses gravity fed fuel with separate control for the atomiser and fuel. The burner assembly itself combines the oil and atomiser points. Air is let in through specially angled inlet holes under the burner and in the panplate and there is often a swirler head that deflects the flame around the box in a circular pattern, instead of a static flame. It is actually very similar to using a Bunsen Burner.

You can track how well you are firing with the colour of the smoke. If you have a light haze the fire is at its most efficient; smoke indicates too much fuel for the atomiser setting. Blue smoke means the atomiser is too strong and could blow the fire out, so you would decrease the atomiser or use more oil. The draft the engine is making helps with this too, so when the engine is working hard and you have high oil and atomiser settings, and the driver shuts off suddenly without telling you, black smoke will cover the surrounds and there will no longer be a good enough draft. If you need to keep the steaming rate at the previous high rate, then you use lots of blower to force the draft. This can be useful for station stops. In my article I said that I did not like to do that when first steaming a boiler in the morning due to the stresses it puts on the boiler.

Oil firing generates soot deposits on the boiler tubes, especially when too much fuel is used. A cup of sand is often then pored down the firebox inspection tube, which sand blasts the tubes clean again for better heat transfer.

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