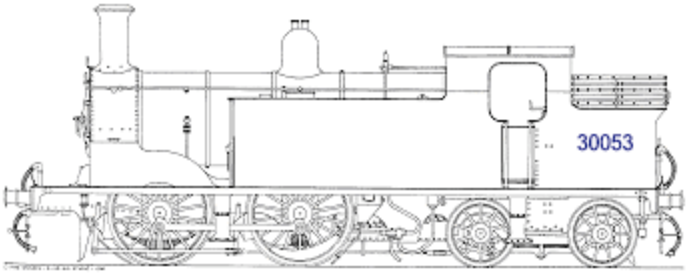
Travellers' Tales

February 2007



From the Chairman

First of all the Directors and I would like to thank all the shareholders for their support and understanding during this overhaul. We well know that things have not gone acording to our 'plan' and though the causes have been unpredictable, we thank you for your forbearance.

To secure the funding necessary to complete the overhaul our position was discussed with the management of the Swanage Railway who agreed that they would make payment for steamings in advance of completion. Their conditions were thorough but not onerous, and included an impartial inspection of the condition of the locomotive and the work done thereto, inspection of the Company's accounts, a letter from the Directors asserting that DLL was a going concern and a schedule of works outstanding on the locomotive at that time. Subsequently, a new Running Agreement was signed by both parties which covers the operation of the locomotive for the next five years. As of the time of writing we have managed without calling upon this facility but there is no doubt that it will be necessary very shortly!

Once the funding had been secured, the works at Portland were informed. However they, of course, had other jobs in progress and these had to take precedence over the renewal of effort on '53 (their main project at that time had Lottery Funding and a fixed completion date.) However, they did manage to start some of the work and it was most fortunate that they did (see main steam pipe Tee, later).

The current plan is to finish the outstanding jobs at Portland, including a hydraulic test on the boiler followed, once successful, by a steam test; both of which must be witnessed by our Boiler Inspector. Once approved the locomotive will return to Swanage for final assembly, followed by valve setting and running in. Only when Frank gives his approval and the locomotive is accepted in traffic will we seek access to the Goods Shed for painting.

Financial Matters

From the Financial Director

Despite the very generous response to various appeals for funds, the Overhaul Fund having benefitted by nearly £1,000 in the past year, and share purchases totalling £12,700 over the same period, we are still a little short of the funds required to complete the overhaul of the M7. In consequence the Board have had to seek a assistance to enable

the work to be completed. Swanage Railway are as anxious as ourselves to have the locomotive back in service and have therefore agreed pay some steaming fees in advance. This means, of course, that we shall start the next period of running with a deficit, rather than be able to put all monies from steaming fees towards the next overhaul. In actual fact this is the same position as DLS were in after the original restoration, however I believe that this time we will hopefully have a better locomotive. Certainly, there were some things done during this overhaul that were not covered or done so well during the original restoration.

Secretary's Snippets

The February issue of Traveller's Tales is a suitable point to review elements of the administration function over the past year. The regular statutory returns and reports have been made to H M Revenue and Customs – for Corporation Tax and VAT – and to Companies House for the issue of shares and the Annual Return.

Whilst accurate figures to 31st January 2007 are not yet available, there was a net recovery of £10,021 of VAT for the twelve months ended 31st October 2006, which compares with £5,562 for the four quarters ended 31st October 2005. Notwithstanding any administrative hassle, the benefits of having registered for VAT are substantial.

Over the past twelve months the Directors have issued and allotted one hundred and twenty-seven shares in the Company, including nine shares to four new members – during the previous period twenty-eight shares issued included thirteen to four new members. No share applications have been refused.

Taken together, the VAT recovered since 1st November 2004 plus proceeds of shares issued since 1st February 2005 have added over £30,000 to the money available for 30053's overhaul which was started at the end of 2004.

On October 2006, the Company signed a five-year running agreement with Swanage Railway Company Limited, which should assure future income to Drummond Locomotives Ltd, subject of course to 30053 behaving itself in service.

Insurance

The Company's insurance premiums for Employers Liability and Third Party Liability were initially paid annually (something in the region of £2,000) . To make this easier to stomach during the period when the locomotive is not earning, it was suggested that the premiums be paid monthly. This we have done; it incurs a small additional charge but does obviate the need to find the entire amount at one time. When the locomotive is earning and the bank accounts healthier we may revert to the initial method.

Locomotive Report

Boiler – This is out of the frames again to enable work to be done on the smoke-box and the back-head prior to hydraulic and steam testing.

One of the major outstanding jobs on the boiler was the replacement of studs that are used to mount items on the top and the back-head; for example, gauge frames, injector steam valves, whistle and so on. This is a normal procedure during an overhaul as the effects of steam and other contaminants causes studs to corrode and also become brittle. The first is what makes them so difficult to remove, the second usually results in a broken stud which then must be drilled out!

The first studs attacked were those holding the main steam pipe Tee on to the top of the smoke-box tube-plate. This is a large and heavy casting to which are attached the two steam pipes feeding the cylinders. With the nuts removed, after the application of heat, an attempt was made to pry the casting away from the tube-plate. It broke into two pieces.
Examination on the floor revealed that the casting, whilst it may be original, was not of the highest quality. The wall thickness on one side of the neck was about 5/16ths but the other side was very much less; it is possible that this was caused by the core box having moved when the piece was being cast. Whatever the reason it meant that boiler pressure was only a few thou' from the smoke-box. If it had ruptured in service with the regulator open it would have caused a blow-back of the fire into the cab with drastic results.
The two broken pieces were sent away immediately to have a pattern made so that a new part could be cast. This has been machined and is now installed in the smoke-box, on new studs.

The design of the boiler is uniquely Drummond: each of the services noted above was mounted on a gun-metal pad (two in the case of each gauge-frame) which was 'fitted' to the steel back-head and held on with four studs; not any ordinary studs, oh, no, but 'collar studs'. I know, I know, some of us used them years ago to hold on our detachable collars (if you didn't, ask your Dad or someone else's). These were completely different; whilst they had some similarity with ordinary studs in that they had threads at both ends, they also had a raised portion in the middle. The idea was that one end would hold the mounting pad to the boiler using the 'collar' and the other end would have a nut to retain the valve or gauge-frame.

The problem arises in making the mounting pads steam-tight because the inner end of the collar studs cannot be caulked to make them steam-tight except by taking the firebox out and that was certainly not going to happen. The only information about this type of pad came from Keith Sturt at the Bluebell who had seen them when the boiler on the S15, No. 847 was overhauled (a Urie boiler, perhaps ?). He also said that re-fitting their pads to the back-head had been a night-mare; the ones with a flat mounting surface had been bad enough but those near the edge, whose mounting surface was curved to match the back-head, nearly drove them insane, The solution proposed by Portland was to follow conventional boiler practice where the mounting pad is made of steel and welded to the

boiler back-head. Those on ’53 have been studded first and then seal-welded by a coded welder to ensure steam-tightness. Naturally, the Boiler Inspector had been consulted before any change was made and the results will be examined closely during the hydraulic and steam tests.

It had been known for some time that the smoke-box was rotten and there had always been some difficulty in making a good seal between the front-plate and the door. This is rather important to the loco crew as it has a significant affect on the production of steam. The firebox operates under a forced draught, created in the smoke-box either by exhaust steam going up the blast-pipe or by use of the blower; both methods creating a vacuum in the smoke-box to draw air through the tubes, though the former is, of course, much more powerful. To create a vacuum it is necessary to have a containment from which the air may be extracted; this is the smoke-box. The interior is an awful environment of not only smoke and steam but all the chemicals which are released when anything combustible is burnt. Consequently, it rots from the inside out; there are sacrificial plates at the bottom of the insides in an attempt to protect the plating which helps but smoke-boxes are not known for their longevity. ‘53’s was probably fitted (or, judging from its condition perhaps, re-fitted) to the boiler when the locomotive had its last Heavy General overhaul at Eastleigh in 1962.

When the chimney had been removed to allow the boiler to be inverted for work to be done to the foundation ring it was noted, without too much surprise, that there was not much metal left to support the chimney. The effects of years of steaming had corroded the plate to the point where it would have to be cut out and a new rolled plate welded in. When work re-started, the smoke-box top was one of the first jobs to be attacked; a section of the top was cut out and exposed yet more surprises.

The smoke-box is basically two rolled angles joined with cladding and a front plate (plus the door) but left open at the bottom where it covers the cylinder block. The front plate also has a smaller rolled angle just inside the door opening to stiffen the plate to aid a good door seal. This had corroded to the point where rivet heads had popped off thus releasing the tension and allowing rust to continue more easily. It had been our intention to replace the lower half of the front plate but the point was quickly reached where the cost of labour to cut and fettle the parts of the old front plate would exceed the cost of a new one. All the rivets were ground or gassed out and the front plate sent away for a new piece to be profiled by laser which has the advantage of extremely close tolerance and of not distorting the plate due to localised heat as well. This has now been fitted together with new sacrificial plates and the smoke-box should provide a few more years service.

Back to the view inside the smoke-box when the top plate was cut away: the horizontal part of the inner rolled angle (rivetted to the smoke-box tube-plate) had been cut off and a new piece of plate welded in though unfortunately, not entirely horizontal. It had probably drooped due to the heat absorbed during welding which meant that the smoke-box top plate would not have fitted closely enough to maintain any vacuum, so another piece of plate had been shaped and laid on top to fill in the gap!

With the chimney and top plate removed it was also possible to see the effects of corrosion on the smoke-box wrapper. Where it remained rivetted to the rolled angles at front and back it was at full thickness as the rivets were doing their job; where the metal was exposed to all the products of combustion it was only half its original thickness.

A new firehole door casting has been ordered from the foundry as the original had gone beyond the point of usefulness. The bottom edge of the door is exposed to the full heat of the fire and whilst the air rushing in does mitigate the heat build-up, years of use take its toll. It is such an important part of the firebox; not only does it automatically seal the opening in the event of a blow back, but also acts as a baffle to prevent the, relatively, cold air from the footplate hitting the tubeplate which would cause contraction and even possibly start tubes leaking. The fireman also uses it to control the amount of 'secondary air' allowed over the fire as part of his job of controlling the fire temperature and thus the rate of steam production.

Frames:

Motion – The four eccentric straps have had their white-metal lining 'puddled' to append more metal to take up the wear. The straps have the eccentrics rotating inside them which converts the rotary motion of the axle to the reciprocating motion necessary to actuate the valves. Both pieces have white-metal rubbing surfaces which are liberally lubricated to reduce wear. The worst offender was No. 2 (Left Hand Back) which had developed a considerable amount of side-play which caused a slapping sound though the valve events did not seem to suffer.

Latest Situation (as of Friday 9th February)

The boiler has been made ready for a hydraulic test with the fittings on the backhead and the first leak found; the copper gasket between the dome casting and the saddle on which it is bolted was too thick and prevented a good seal. They have both been removed and the copper gasket replaced with a much thinner form of gasketing (called 'Walkerite'). This process will continue until there are no leaks anywhere, then arrangements made for the test to be repeated under the eyes of the Boiler Inspector. Once his approval has been given then steam will be raised and the boiler examined again for leaks until he is satisfied. The boiler will then be lagged with insulation and the cladding replaced and the locomotive will be re-assembled ready for its journey back to Swanage

AOB

I hope most share-holders will have had the opportunity at least to examine an example of the new 00 gauge model of the M7 from Hornby Hobbies Ltd. Staff from Hornby came to Swanage to measure and photograph 30053 before making the models which would serve as their prototypes but they did ask us not to publicise their visit which is why no mention of it was made until the new model had been released.

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