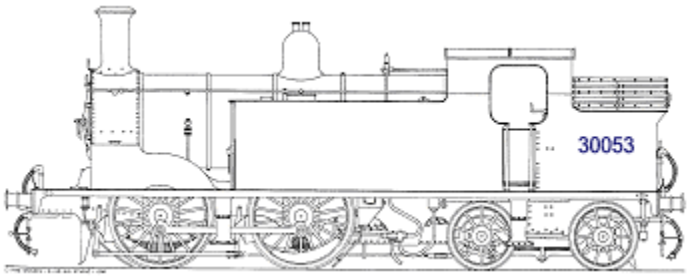
Travellers' Tales July 2012



From the Chairman

The *Traveller* has been travelling again! First Bodmin last year, then the Great Central earlier this year, and now the Mid-Hants. This has been an eventful year for '53 so far and we are only just over half-way through it. The locomotive went by road to Alresford to be a part of the Mid-Hants Spring Gala. The two 'minders' were were on hand and footplate for all running as with previous visits to heritage Railways. The last time '53 had been at Ropley Loco was 1995, on its way to Woking for the Borough's Centenary celebrations.

The locomotive failed twice during the period under review. The first was due to priming on the way from Corfe Castle to Harman's Cross and the second when the early morning crew came on duty and found no water in the boiler. These events are discussed in detail later.

Locomotive Report - June 2012

In mid-January the Locomotive was prepared for a trip to the Great Central Railway; this went off without incident and included some interesting running.

There was no half-term running at Swanage in February this year due to track repairs so the first use of 53 was in early March.

In mid-March new pistons and rings were fitted to reduce the clearance between pistons and cylinder bores which had increased to near the limit of ¼" mainly due to wear on the piston heads.

The end of March saw 53 running at the Mid-Hants spring steam gala – again this went off well.

In early April 53 suffered a bout of priming followed by lack of lubrication to the cylinders. Priming can put excess loading on pistons, cylinder covers, big-ends and little-ends, so 53 was withdrawn from service for examination. The results were:

1. Leakage from cylinder and steam chest covers
2. Increased wear on the new piston rings
3. Some loosening of big- and little-end cotters.

The cylinder covers were removed to examine the pistons and cylinder bores, then cleaned up and refitted. The little-end cotters were fettled up and refitted. The big-end cotters were much more of a job – one was found to be bent, so it was decided to order material and make two new cotters.

All repairs were completed during May and 53 returned to traffic on May 25th. To the end of June 53 had made about 30 steamings this year.

The current annual boiler certificate expires in December at which point 53 will be due for a full internal boiler examination. This will involve removal of all boiler tubes, the firebox brick-arch, steam pipes and blast-pipe from the smokebox and the dome and regulator. Work is being planned at the moment and if the examiner's report is favourable we would hope to have 53 back in traffic during Spring 2013.

Frank Mead.

Operation

When the locomotive was readied for its trip to Alresford I was lucky enough to drive it to Norden and onto John Antell's ramp ready to be pulled onto the trailer. Loading was accomplished in John's usual competent manner and then the side tanks were drained. Unloading went uneventfully at Alresford and the loco was pulled slowly to Ropley Loco to have its side-tanks filled. As water was still in the boiler and warm the fire was lit and preparations made to attach a hose onto a convenient high pressure stand-pipe. Once the side tanks were filled and the light fading a water valve was opened to test the injectors – some water but not in the volume expected. Closing and opening the valve seemed to make no difference. Try the other side – nothing at all. So Frank started to dissassemble an injector – nothing. Now we had to drain the side tanks and it was dark. Finally we found the problem, the sieves in the bottom of the tanks were blocked with rust – but I had driven the locomotive from Swanage to Norden without any problem. The culprit was the force of the water from the high-pressure hose which had washed all the rust in the bottom of the tanks down into the water valves – at Swanage the water is added vertically whereas the high-pressure hose had lain in the bottom of the empty side tank.

The following data was taken directly from the Operations Department report:

Month	Days	Miles
January	1	17 *(testing)*
February	1	6
March	8	303
April	4	233
May	8	462
June	1	66

The figures for April would have been higher but for the first failure. It is believed this occurred when the driver attempted to open the regulator into the 'big' or second valve.

When successful, this is quite impressive – the locomotive is pulling five coaches up a 1 in 80 gradient and when using only the pilot valve (i.e. the first opening) it is a bit of a plod. But if second valve can be successfully obtained the locomotive will accelerate all the way up to Aflington Bridge (the summit). Once there the regulator must be opened fully then swung fully shut – to close the second valve (otherwise you'll be doing about fifty passing the camp site and Murphy says that Harman's Cross Down Home signal will be ON).

When unsuccessful, usually when the water is too high, the results can be catastrophic. If the locomotive picks up the water (primes) immediate action must be taken to prevent any damage caused by the incompressibility of water; open the cylinder drain cocks, shut the regulator and return to 'plodding'. If this is not done quickly enough or the symptoms are ignored then water will be trapped in the cylinders and havoc will ensue.

The water in front of the piston will be forced up against the cylinder cover and either break the seal between cylinder block and cover or burst the cover off its studs. The water behind the piston will be forced against the rear cover which contains the piston rod packings – these are burst by the water pressure and are no longer steam-tight. The force for this is provided by the rotation of the crank axle and the connecting rods which will suffer damage to their big- and small-ends, as happened in this case.

All cylinder lubrication will have been washed out and the pistons will continue to move inside the bores but without oil. This was borne out by the fact that when the new rings were fitted to the new pistons, they were given a gap of $1/16^{th}$ to allow for slight irregularities in the bore. When the cylinder covers were removed after the priming, the gap was $3/8^{ths}$.

This must have been really disappointing for the fitters who had spent so much time and effort during the winter shut-down and later in replacing the pistons and rings (not an easy job) and making sure that 53 was in fine fettle for the coming season - now they had to do it all again. Thankfully, they have and having driven four runs on 53 today (25^{th} July) I can report that it is now running as well as before.

The second failure was more procedural – after the early crew signed on they found that there was no water showing in the gauge glasses although there had been a small fire over night. This was due to improper disposal by the previous day's late crew who had left steam cocks open. The perpetrator has been given a two month suspension from duties.

Many thanks to all the Fitting Staff who took 53 apart again to rectify the damage caused by the priming incident. Thanks too, to the Swanage Railway who had to pay for it!

Segments of video of '53 at the Mid-Hants Railway may be viewed on YouTube by entering Mid-Hants Railway Spring Gala M7 at your browser's prompt.

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