

The Bluebell Standard

Newsletter of the Bluebell Railway Standard Class 2 Project
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Issue 1

Locomotive Report

At the start of this period on the project, the frames were rechecked to see that they were still level on their stands in the yard and the condition of liner plates assessed. The majority were found to require replacement, not because of significant wear, but due to corrosion damage whilst at Barry scrap yard.

The condition of the coupled wheel axle boxes was also assessed. Although the boxes themselves are in good condition, the majority of the liner plates will require replacement. It was found from drawings obtained from the National Railway Museum that British Railways had updated the attachment method for both axle box and horn guide liner plates from those on the locomotive as built. Accordingly a modified design for each of the four liner components, incorporating the new fixings and enabling the existing axle boxes and liner supports to be used, has been developed. Wear resistant, manganese steel plate was obtained and a complete set of axle box and horn-guide liner plates to this design has been cut using nitrogen blown laser system by Cirrus Laser in Burgess Hill. We await machining capacity in the workshop for the removal of the liners requiring replacement. The front pony truck frame stretcher and front buffer beam were corroded and badly damaged during a shunt at Barry. The buffer beam had been straightened and, despite the corrosion, should prove to be serviceable. Replacement parts had been obtained to rebuild a new pony truck stretcher using the truck centre and parts of the draw-gear salvaged from original engine. The stretcher parts have been prepared and tacked together ready for the completion of the welding.

Drawings have been prepared for the seven flanged stretchers required to build the rear frame extension and the cut/attachment point to the existing frames has been selected as the point of least stress and marked out to enable the frame plates to be ordered. Although the front pony truck stretcher was sourced without difficulty, we are, at present, experiencing problems sourcing flanged plates to the same tolerances and that meet the tight radii used by British Railways. The stretcher flanges need machining to fit the frames without an excessive loss of flange thickness as indicated by measurements taken on the engine. It may prove necessary to attach the flanges by welding, a method used widely on the original engine. The necessary two additional axle boxes and two under keep castings are to hand. Two side control retarding units, complete with springs have been made, and we have the necessary horn plates.

In 2005, the frames, which had been standing in yard without cover, were de-rusted and repainted where necessary to protect them from corrosion. A number of unwanted rivets were removed from the frames. The two rear trailing wheel spring hangers, which will require modification to support the rear pony truck, were also taken off. The boiler side bearers were removed to halt distortion due to growth of the underlying scale. The rear part of the frames has been tidied up pending removal when the hind extension assembly is ready to be attached. The frames were also covered with PVC sheeting to improve protection, though this will need to be renewed periodically unless more permanent cover can be arranged.

A 20 foot steel container has been obtained and, by the end of 2005, this had been lined throughout to reduce condensation and covered to house the smaller components of the engine, some of which had been deteriorating in less than satisfactory conditions. Work is now in hand to clean, inspect and, where appropriate, paint these items and store them in an orderly way. Recent work has included sanding valves, damper gear and pipe clips and brackets. There are more parts still stored in the yard and in a ply-sided van at Sheffield Park which need to be given better conditions as soon as possible.

Work on components of the motion has also been progressing. Recently the coupling rods have been moved nearer to the project's working area and will be prepared for crack detection to ensure that sound rods are selected from those available for cleaning to a bright state and for work on their journals. A forging has been obtained for one of the two connecting rods, the other was salvaged and will also be checked for soundness and restored. The two radius rods and two combination levers have also been restored to a bright condition. The crossheads have been grit-blasted and painted, the existing white metal has been removed, their cotters have been cleaned and marking out marks refreshed. The cross head brackets and links have also been restored.

Alignment of the reversing link trunnion brackets on the right hand and left hand motion plates have been checked and found to be acceptable. The trunnion brackets themselves have been removed and new bushes machined, pressed into place and secured. They have been test fitted on their bearing pins. The reversing links have been reconditioned, including the slides, which have been case hardened and ground. Countersunk head fitted bolts, nuts and flat cotters for re-assembling the reversing links have been made. New phosphor-bronze die block castings have been delivered from the foundry and these now await marking off, turning and milling to suit the reconditioned reversing links. The reversing shaft has been re-furbished, holes ground and new case-hardened pins made. The pins are now ready for cylindrical grinding.

Work has commenced to assess the condition of the bearing springs for the coupled wheels. These have been cleaned and inspected for leaf damage. Repair work will be necessary and a number of leaves will require replacement. Whether this is done in house will depend on obtaining the best use of funds. A full set of new springs is available for both front and rear pony trucks. We also have a set of castings, made from patterns produced in-house, for the rear pony truck spring shoes in a part machined state and location pins have been made but are not yet case hardened. The rubber/steel auxiliary bearing springs for the coupled wheels have been renewed using stainless steel plates and bonded with a rubber adhesive.

Brake hangers, brake cross-beams and pull rods have been refurbished, with new steel bushes fitted as necessary to deal with wear and corrosion. Some of the new pins needed have been made. Currently the details of the tank and tender engine brake gear, which are due mainly to the differences in the arrangements for the hand brake, are being compared to identify where new forgings are needed.

The boiler is now on the railways large boiler trolley and has been washed out to remove scale. Some preventative maintenance has also been carried out.

Work Planned

The short term goals are to complete and fit the front frame stretcher and buffer beam, to complete the hind frame extension with its buffer beam and to attach this to the rest of the frames. Meanwhile work will continue to restore the horn-guides and axle boxes, restore the motion and build the pony tucks so that the engine can be wheeled and the motion fitted. Once this is completed work can turn to erecting the side tanks and the cab and bunker before the engine can be assembled. The boiler overhaul will be the last area of attention.

Fundraising

Due to changes that have been made to the locomotive yard at Sheffield Park recently the collection chimney had become inaccessible to the public. In March this was moved to a new location outside the Locomotive Workshop to be once again accessible to visitors and hopefully the benefits of this will soon be seen. The Bluebell Railway Trust has agreed to process financial contributions from individuals of £20 or more to the Project as charitable gifts, this will mean that for every £1 donated to the Standard Class 2 Project we will get another 28 pence back from the government. The project's fundraising leaflet has been updated accordingly. The Bluebell Railway Trust has also agreed that they will administer a scheme so that regular donors can make quarterly or annual donations to the fund by standing order.

Following the Bluebell's successful collectors fair last year organisers Barry Jones and John Bloom generously agreed to donate the profits from the event to the Standard Class 2 Project. We would like to pass on thanks from everyone involved with the locomotive for that.

John Jesson and Stan Pontin organised a raffle in aid of the Project during the Giants of Steam event and raised a very useful amount for the locomotive. All prizes had been donated and first prize was a painting of an LMS Jinty.

A further £1000 has been donated to the fund from the money raised from the sale of refreshments on the Santa Special trains.