RS DEPOT UPDATES

ROLLING OUT THE BOGIE AXLE – SAT, 05 APRIL 2014

1). 12AR 1535 – REMOVING AN AXLE FROM THE FRONT BOGIE:

P01 - With the front bogie rolled out and the wheels safely chocked ('Scotched') it was now time to start jacking the bogie up to get the axle horns clear of the front axle bearings. We could have used a wheel pit to just 'drop' the axle, but wanted to expose the whole bogie for servicing.

P02 - Grimacing in concentration (Trying to remember which way the nut turns?) Michael applies the slogging spanner. These spanners are intended for whacking to spring tightened threads loose, and the slender handle is also intended to be slipped into tubing for extra leverage.

P03 - Before the bogie could be jacked, both of the front axle's tubular axle keeps needed to be removed. These span the bottom of the axle horn space under the axle bearing. In SAR steam practice, the term 'Axle Keep' is often also used to refer to the lubrication hardware such as the removable oil sock boxes and grease pad holders.

P04 - The left side (Right in the pic) came out easily enough. The nut actually span right off by hand on the decent threads after the initial 'set' had been slogged out. But the other side was binding – and 'Swak Hart' Dawie hams it up here for the camera.

P05 - Team work … gimmie that nut and washer before they get kicked amongst the fallen autumn leaves and lost!

P06 - Due to misalignment, the long keep bolt was binding – even with a spanner used to drift it out under the head.

P07 - The bolt came out reluctantly but then jammed when its threads met the frame. The keep and its 'core' bolt was tilting upwards slightly. A click-clack jack was brought out to lift the frame relative to that keep and to use the weight of the axle (still on the rail) to press the keep down slightly. It worked and the bolt was then withdrawn by hand.

P08 - The tubular keeps exposed. The keeps are cast with generous ends to allow them to either be mildly skimmed down or to shimmed-up to suit different axle horn spans. They are not intended to be the primary adjustment for longitudinal axle box clearances though, as they would pinch or spread the axle horns out of parallel.

P09 - The green 'click clack' jack was changed for a 'Simplex' jack with a safer (less worn) ratchet and a lower lifting arm. It hasn't been used for a while, so Simon applies the slippery stuff before it is put into service.

P10 - This is the first stage of a two-stage jack, block and then jack-some more operation. You can clearly see the brass axle boxes being gradually exposed as the frame lifts relative to the axle.

P11 - As soon as the tips of the equalizer beam clear its recess, the brass oil lids were removed from the oil basins set within the crown of the bearing.

P12 - Almost at the limit of the jack and trying to get enough space for a sleeper to cross the track under the frames. Jeandre is watching the bearings as when the brasses are released, they can just pivot freely around the axle and fall off, like a horse shoe being rotated on a broom stick.

P13 - This was, of course, all very entertaining to watch! The boss is sitting at the right end of this motley crew.

P14 - Dawie and Michael lift the jack away from the blocked-up bogie before the axle could be rolled out.

P15 - The heavy brasses are rotated on the axle to clear the keep bolt eyes – and both of them have to be turned around at the same time, preferably without denting the horn faces. This is a deceptive operation as the axle takes the weight, but not the inertia, and it is easy to rotate the bearing too far and suddenly lose your oily grip.

P16 - The front axle is now completely out and being rolled carefully towards the viewer. Notice how Dawie (L) and Jeandre (C) are supporting the bearings against the counter-drag of the rotation. Dawie needed a more secure grip as he had the damaged bearing with the grooved axle journal applying more force.

P17 - The axle was rolled over the walkway and was scotched-down by Aidan while Jeandre continued to stabilise the two bearings from accidental rotation. (Even though they didn't have far to fall – the purpose of this location.) Thus, you get a view of a complete loco bogie axle and its two 'plain' bearings in situ on the axle journals.

P18 - Another view of the crown reservoir. It looks empty … which is normal as the wicks continue to deliver oil even when the locomotive is out of use. (All wick-type oil cellars auto-feed until empty.) The fault turned out to be elderly axle oil socks that collapsed under the bearing journal – and it is those socks that provide the main lubrication when the engine is in motion. This axle was relatively new and did tend to a bit run warmer than the trailing axle anyway.