

1). PROJECT – STEAM CRANE NO.578 – FEEDWATER PUMP STRIP DOWN:



D01 – His name is James and he can make a lathe sit up and beg! But for now, he is happily absorbed, with a cup cake inside him, with further strip-down of one of the boiler feed-water pumps from Sandstone's Steam Crane No.578.



D02 – Here is a very similar duplex feedwater pump as fitted to the 36 ton Booth Rodley Crane No.96. The twin cylinder steam engine is to the right, with the water pump at the left, and you can see the valve hammers in between.



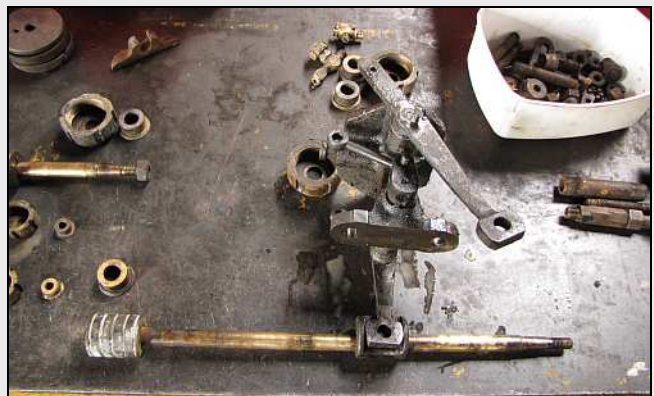
D03 – The outlet valves (four for each feed-water pump) all survived in reasonable condition, with springs and adjusting nuts intact. They just need to be cleaned, matched to their seats and then individually lapped in again.



D04 – The valve gear all survived intact, but with serious wear at every joint and at every gland. Here you can see the valve chest between the piston rods and packing nuts. The water pump rings (L) had corroded into their grooves.



D05 – The two steam-driven pistons are worn as well and new ones will need to be made. They will need to be made to match the cylinder sleeves, which need to be bored out oversized and parallel. The piston and valve rods are also worn, but they will be machined to consistent sizes and re-used with seats and bearings remade for a custom fit. It will save time but has the disadvantage of rendering the pump parts no longer interchangeable with each other.



D06 – The valve relay tower and fingers shown in position on a piston rod, each piston operating the valve on the other side. There was so much wear within the valve motion that there was hardly any of the valve events left. We initially blamed the abrasive coal deposits, but the cleaner water tank's pump was also badly worn. So it was basically a consistent lack of lubrication – especially over a steam crane's typically short duty cycle style of operation.

2). PROJECT – 12AR NO.1535 RUNNING REPAIRS:



R01 – Lil' Susie was treated to some running repairs after her first run after recommissioning. We had no lights as our electricity bill was stated as being in credit, and then suddenly switched off due to non-payment. But the 'Top Shed' was light enough to work in, even on a cloudy day.



R02 – This pair of goofballs are Andreas 'Bob-Tail' Matthee (L) and Dawie 'Swakhart' Viljoen. They had just camped-out up top of the Class 12AR's boiler to start with re-lapping the clack valves that were leaking. Dawie had just taken his hard hat off, hence the rather wild 'kuifie' hairstyle.



R03 – The old ballast scraper was being worked on by five volunteers at this moment, although only two of them can be seen perched up top. You can see that the person who previously cleaned the buffer beam never got to the center!



R04 – Ooh and there were some naughty Afrikaans words coming out from under the running board when the time came to open and service the non-return valves. The standardized valves are too tall for the piping center line.



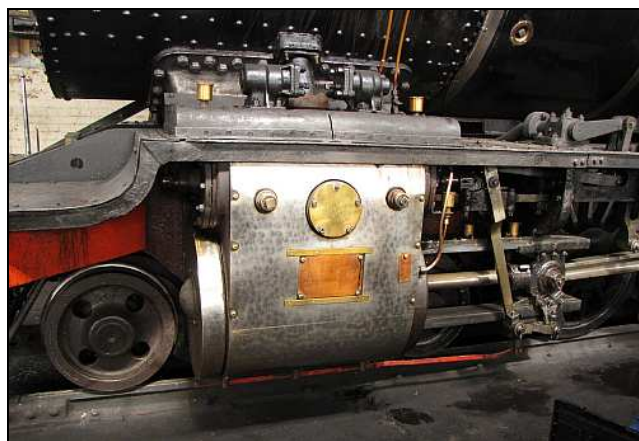
R05 – A side-on view of the equalizing beam (in red) and the rear suspension. Notice the small upper oval-shaped access holes which make that ash pan such a joy to clean.



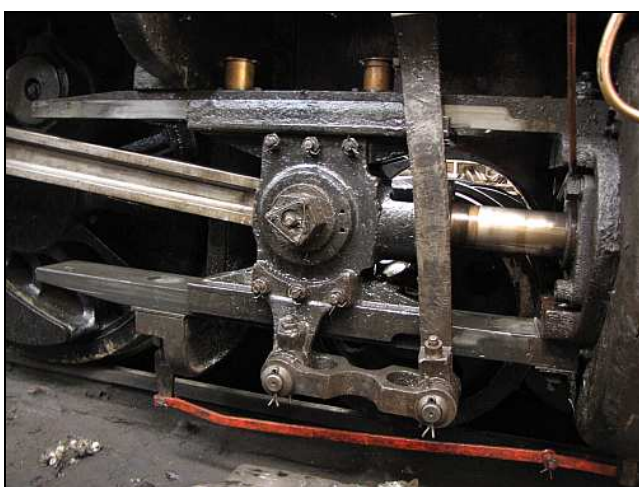
R06 – Susan, the last surviving Class 12AR – A forehead view. Note the clench bars resting on the front risers – the smokebox door wasn't latched closed.



R07 – A view of Susan's recently-painted bypass valves. The steam down pipe is currently sans its cowling for quick rectification of any stuffing box or gasket issues. The horizontal sparkplug-like device is the steam oil atomizer.



R08 – The business end of the motion on the left side. The piston is at rear-dead center at mid-gear. The crosshead on the other side had been set at mid-point to measure the clearances in the most-worn parts of the slide bars.



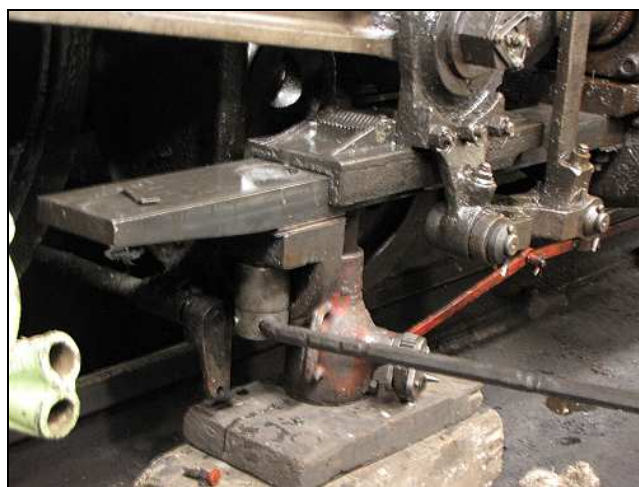
R09 – Here is other side's crosshead at mid-stroke. The clearance between the slippers and the two separate slide bars was about 5mm in the center. To complicate matters, the center parts wear more than the ends. Setting the center clearance correct would make the ends too tight.



R10 – The ideal slipper gap on this locomotive would be 1mm. The slide bars are too unevenly worn to get this clearance set up, so a compromise had to be made. Eventually, the four slide bars will need to be removed, and the white-metal surfaces re-machined straight and parallel.



R11 – Doctor Smudge is tightening up the rear shim bolt to seat a newly inserted shim on top of the existing shim-stack. The front end is held on by two smaller bolts. Note the jack under the crank rod – it is taking the weight of the rod, bushing and crosshead away from the lower slide for measuring.



R12 – In this slightly blurred view, you can clearly see three rust-tinted shim plates above the tube spanner. Not only does a loose crosshead cause knocking and problems at the cylinder's garter ring & packing gear, the points of the pivoting cross head also stresses the oil film as the surface area is much lower. (Hence, exerting higher pressure.)



R13 – Yeah, so the action was mainly hidden away on this side of the locomotive at the moment. That's 'Noddy' King reaching for tools with Jeremy Wood watching.



R14 – Rail heads are naturally plentiful around any loco depot and they are also useful as impromptu anvils. The incomparable Dr. Smudge is seen tapping a bend out of one of the rectangular two-holed front shims.



R15 – A close-up of one of the double-conical olives that seal the joint between the water column cocks and the backhead's flanges. Unlike compression olives, as in many solid-wall fuel or hydraulic lines, these don't crush into place. Unfortunately, they can shift during installation and a dry, cold fit can't be tested. Fitting water column cocks onto a steam locomotive is a lot trickier than it looks!



R16 – The olives are lapped in like a poppet valve against its seat. Grinding paste is applied to the conical surface and the olive rubbed vigorously against its matching recess. The same process is done with the other side for the backhead and the two sides must not be flipped. But even a ground-in olive will leak if the cock and its flange are not parallel or the flanges are distorted.



R17 – A sign of a good seal would be a matching contiguous, concentric ring of bright, clean metal on the seat and on the sealing olive itself. This one is only half way through the process.



R18 – Not strictly a repair picture. Susie's replacement dynamo (Technically, a turbine-driven magneto) governor cover still has crisp-edged lettering for good ol' J. Stone and Company.

3). FETCHING A DONATED FLY PRESS – 13TH APRIL:



F01 – On 13th April, we assembled a delegation of suckers together to go and fetch an old-fashioned ‘Fly Press’ to be donated to Reefsteamers by one of James’ contacts. (The gent in the center.) Here, the chaps check out the press.



F02 – The fly press was smaller than any of us imagined it would be, but none of us were fooled by its ‘diminutive’ size in terms of weight. We took turns in removing the guide rod nuts to split the press into two easier-to-handle pieces.



F03 – Although the press had long been exposed to the weather, the nuts weren’t badly seized and it came apart OK. We managed to load it without smashing fingers, toes or tail lights – although the tailgate cables were a concern.



F04 – A view of the press itself. Fly presses use weights on long levers to add inertia to the turning motion. They can be used as die punches too. This press used to have a weighted fly wheel – of which some spokes can be seen.



F05 – The depot’s favourite fly-weight takes station on top of the fly press. He must have a tushie like an ice-breaker’s bows to handle sitting on those thin steel bars.



F06 – A freshly painted ‘Andrew’ the Hunslet, ably driven by Andrew the King, is being backed up onto the cross over. He was enroute to pick up the coal handling wagon.



F07 – The other end of the shunt – the coal handling wagon is approaching. Seen from the ends, its genesis from a DZ type gondola wagon is clear. In this pic, I liked how the brown leaves of the foreground tree merge in with the T&P tree which is actually far away in the background.



F08 – A nice easy load for the coal grab and the fly press's stand is lifted upside down. The 4-way octopus chains hanging from the coal grab's bucket are shackled to the central impulse plate and they are removed for coal loading service. Dawie (R) and Dennis had come out for a look.



F09 – Another contender for the 'Smudge' title – there was 1/12th inch of exposed, fossilized grease on that whole fly press and Andrew STILL managed to smear himself. He's standing inside the coal bunker to direct landing operations.



F10 – A top view of the press going up. By replacement of that handle with a properly weighted one, we expect this to be useful for small work. The two existing hydraulic presses are powerful, but they are also hard to modulate.



F11 – Pick-a-press, a new Reefsteamers game of skill and dexterity. You start with 100 points and lose 10 points every time you clonk the gantry beams, and you lose 25 points if you clock-out the Smudge – losing 40 points if there is cranial injury. They managed OK this time around.



F12 – Andrew took over on the grab's controls in the 15M yard to warm up before tackling the next project – the Tube Swager. Notice the damage to the coal grab's bucket – done by a previous staff member by directly lifting coach bogies. Repair work started on the bucket last week. (21st)

4). MOVING TWO HALVES OF A TUBE SWAGER – 23 MARCH + 13TH APRIL:



S01 – The ex-SANRASM Tube Swager was dismantled into 2 main pieces and the upper set of beams were moved on Sat, 23 March. Here, you can see the upper half waiting to be unloaded, using the Wheel Lathe's gantry crane.



S02 – The swager gang managed to lift it with a cable sling using the pneumatically powered crane – but the load was too asymmetrical. The coal grab was used carefully at the end to keep the cable sling from running through the hook.



S03 – Juan guides the suspended load straight as the beams are carefully lowered, with the other, heavier end (with the clamping plates and rams) already on the ground. The strange, sideways tarp in the middle-ground is covering the two tool towers for the wheel lathe.



S04 – In this view, the double C-Beam construction of this large but simple machine is obvious. The use of wood blocks eases the slinging in future. The second half would have to be unloaded without the crane, as these guys had unavoidably taken that unloading spot under the gantry.



S05 – On 13th April, we had to 'swagger' the lower half of the swager in towards the rails. It was delivered by road truck, hence the awkward angle. Care had to be taken not to roll this lot over, as it is top-heavy on those pedestals and the foot flanges tended to dig into the soft ground.



S06 – Once we worked out where the center-of-gravity was, and with the help of a heavy, loose tube stopper as a counterweight, Shaun and I'll' me assisted Andrew into this snug side-saddle type position shown here. All fingers intact and no toes crushed. Just one bent scuttle panel.



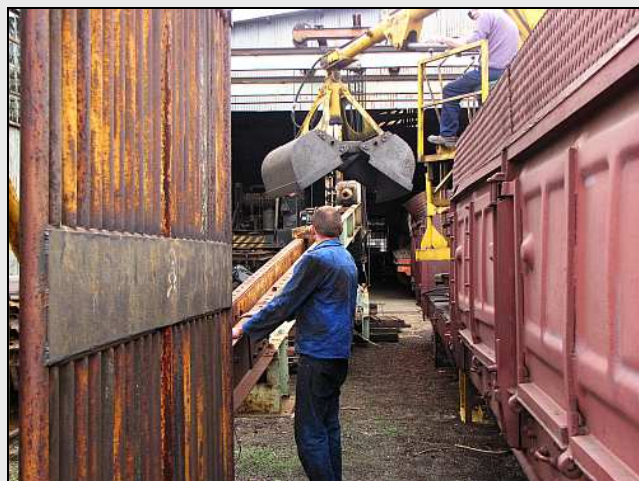
S07 – Looking past the driver’s left temporal lobe at the slow-moving train and a smiling King in his eyrie up above. I was just about to cross the cab and dismount to bend a few points. Of course, I forgot one of the three that I had to change and I was getting a few polite honks from the loco.



S08 – Onward towards the 15M shops. Getting the side-slung load past this lonely rail pole would be a squeeze. The pole was one of Andre van Dyk’s poles for the original planned fencing project. Andrew was also instinctively using crane-away signals instead of shunters’ signals too.



S09 – Nah, it ain’t gonna make it. The grab bucket got through with bit of a scrape but the control panels didn’t. I thought we’d end up torching the panels off but instead we wrestled that pole and had it laid down flat to the ground.



S10 – Unloading the Tube Swager in the rapidly filling area between Bays One and Two. Aidan McCarthy is actually ‘counter-weighting’ (hidden behind the bars of the gates), so we could get the pedestals clear of the stored bogies.



S11 – The lower half of the swager is guided into position. In mid-field you can see the tube stopper that acted as a very useful adjustable counterweight during the operation. In the background, alongside those windows, is the location to which the Tube Swager will eventually be moved.



L12 – The Tube Swager at SANRASM North Site’ Machine Shed in Sept. 2010 – it also held up the shelving and the shed roof itself! Visible are the tube V clamps and vertical rams to hold the tubes in place. The center piece can be unbolted and relocated to suit the length of the boiler tubes.

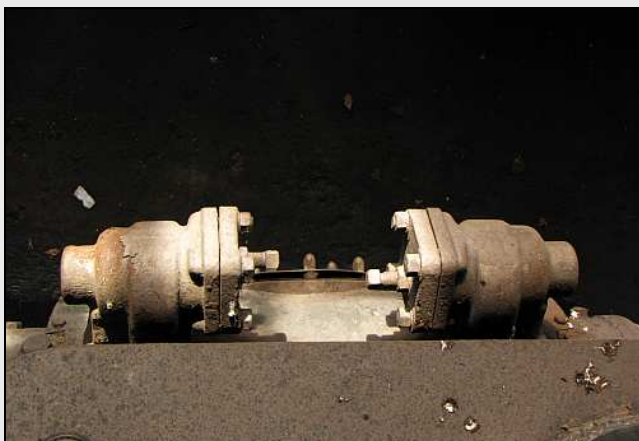
5). PICTURES FROM AROUND THE DEPOT:



M01 – Caught in the act! James Thomson is just about to tidy a stray cupcake away. We had a pile of leftover cakes from a birthday party. The depot is crawling with neglected bachelors parked at the back of life's great sales lot, and any food left at the depot will be efficiently taken care of! ☺



M02 – A coach is warmly lit at the end of a bleak day. We are soon going to start a fix-the-coaches drive, aiming to increase capacity with 'straight' day sitters (including 'Dusty' the Semuma Coach), and getting Locomotion into service so Kango No.127 can be pulled out for service and mods.



M03 – A different view of the RHS bypass valves (and a few birdie splats) on the GMAM Garratt No.4079 'Lyndie Lou.' You can't get this view on a standard locomotive, as the smokebox would be where I was then standing.



M04 – Another view of three old ladies awaiting major repairs. In the foreground, 12R 1947 'Rosie', Middle 15F 2914 and rear, 15CA 2046. Doesn't anyone out there have a million bucks that they want to donate to a good cause?



M05 – A bunch of Reefsteamers grit-gangers stride off assertively on a mission – in this case, to go and fetch the donated fly press. I'd hate to be the collared loco-brass thief who ever has to face this lot in a retributive mood!



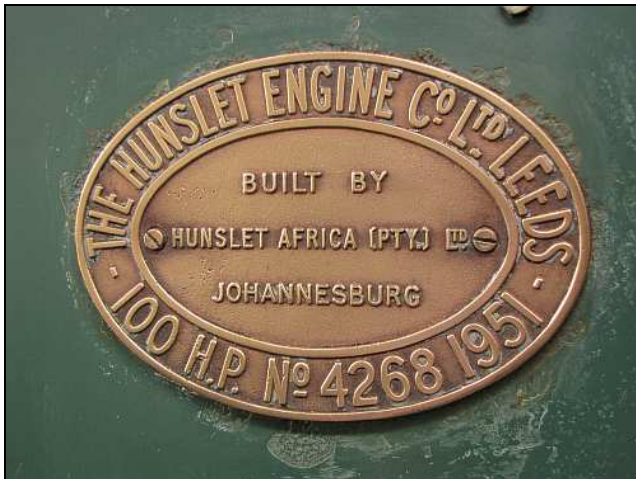
M06 – The Scottish Controller on a casual works visit. Topping his dome is the trademark Clanking Tam-o-Shanter Mk.II. The first version ran out of fabric real estate to pin on any more badges!



M07 – Steam Crane No.578 makes an interesting line up with 15F No.3046 (middle) and 25NC No.3472. (Rear.) Notice that both of the locos are still wearing their wings, as the currently operating 12AR loco has nowhere to put them!



M08 – ‘Andrew’ the Hunslet Taylor shunter has recently been smartened with painted wheels, rods, walkways and buffer beams. Notice one of two new engine covers. It is of corrosion resistant steel, but will still need painting soon.



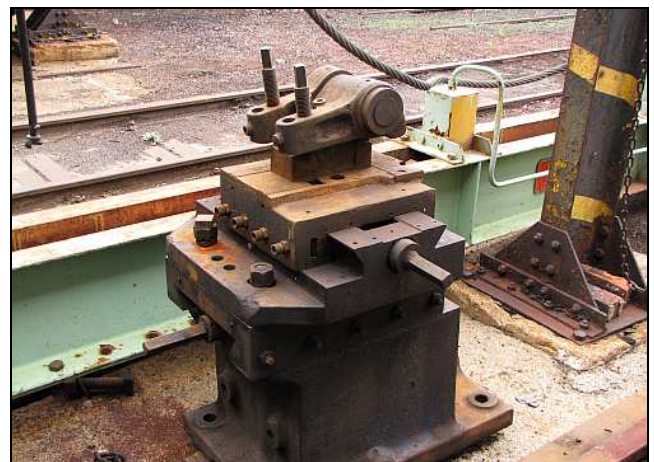
M09 – ‘Andrew’ the Hunslet’s builder’s plates. Built in 1951, he’s actually older than the 25NC 3472 (1953) and the Garratt No.4079. (1956) Trivia of the day : Did you know that the parent Hunslet Engine Co. still owns the names and designs of many North British locomotives?



M10 – Parking the Coal Handling Wagon’s Boom away after a long day. The clamshell buckets have since been dismantled and the bent sections cut out, pressed flat in the 50 ton hydraulic press and made ready for re-welding.



M11 – The newly rebuilt motor for the Wheel Lathe. We now have everything we need to start reassembling the gearboxes and the drive .. except for time. Once 15F 3046 is ready for boiler inspection, this will be Depot Manager’s Gordon’s next major project amongst his normal tasks.



M12 – One of the two tool towers for the wheel lathe – intact and just needing a good cleaning and lube session. The shaft protruding to the left is the one which the chain-driven clutch is mounted as an automatic tool feed.



This Depot Report was compiled by Mr. Lee D. Gates on behalf of Reefsteamers Association NPC.
For observations, corrections and suggestions – email me at documenter@reefsteamers.com

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