

1). INTRODUCTION :

A new project underway at Reefsteamers is the commissioning of a new boiler for the magnificent 60t Cowans Sheldon Crane sitting patiently, snuggled up to its 'Match Wagon' in track number one of the 15M workshop. This crane is owned by Sandstone Heritage Trust. With the welcome cooperation by REKLAM, the crane and many spares were rescued from being cut up for scrap and were brought to Reefsteamers for safe storage. The crane itself is mechanically intact and barring unforeseen surprises, needs little more than a thorough cleaning and lubrication to be restored to operation. The vertical boiler needs to be re-commissioned and missing boiler fittings replaced and obviously the cables n' rigging will need to be inspected before use.

We are hoping to be able to use the crane in a practical fashion by moving heavy machinery that remains at the SANRASM museum sites that are closing. There are a number of items there, including a useful tube swaging machine, which will need lifting. Later, we can use the same crane to help us with the maintenance of our own right of way and even to help us with heavy repairs to our own locomotives or for sorting out a derailment incident, should this be required.

Roughly six months ago, queries were made on behalf of Reefsteamers in terms of training specific operators for the steam crane(s). As Reefsteamers Association is an independent Section 21 company, in terms of hoisting and rigging training, Reefsteamers Association falls under the national Department of Labour. We have established contacts that are ready to train crane operators according to national approved standards. These individuals will need to inspect the crane before hand to compile their advice in terms of the weight, center of gravity, counterbalancing, the sling configuration, the stabilizers and such. Any assistance and advice from the experienced railways people would also be appreciated. But we need to get the 'pepper pot' boiler in steam first!

Reefsteamers has two spare boilers for this crane, both of which were rescued from scrapping. One of those boilers has a bad foundation ring and will need much work to be commissioned in our time frame. The other boiler had been partially blanked for boiler testing and turned out to have new tubes. Bonus!

The original crane boiler had been removed and our Peter Labuscagne got busy de-scaling, stripping and priming the 'new tube' boiler. It looks a picture in a clean coat of oxide red primer! Hydraulic testing was scheduled for this week and had an unwelcome surprise. The boiler doesn't hold water under gravity, much less under pressure! It turns out that the rivets that attach the foundation ring have not been formed properly and they are not water tight. So all those rivets will need to be removed and replaced with new ones after the jointing surfaces have been re-prepared.

Oh well. © I include some photos of that boiler as it stood in its new makeup on Saturday 15th January.



B01 – Sheldon the Crane.

Here is Sandstone's Crane No.578, as captured by camera during our last Open Day in July 2010. This is a rare photo opportunity as the foreground bay is normally always filled as this No.2 road has been adopted as the medium-level engineering road by Peter Labuscagne. This view is normally blocked by some rolling iron booked in for repairs.

In this photo, the original boiler is still in place in this picture but the boiler platform's roof had already been removed. The boiler's cladding had been removed as well. Many of the pieces were retained as patterns.



B02 - Boiler

Here's the boiler in its red oxide glory. What is interesting to see is how UN-symmetrical it is, compared to a steam locomotive's boiler backhead. This boiler came with the blanking plates attached, which saved us a lot of work.

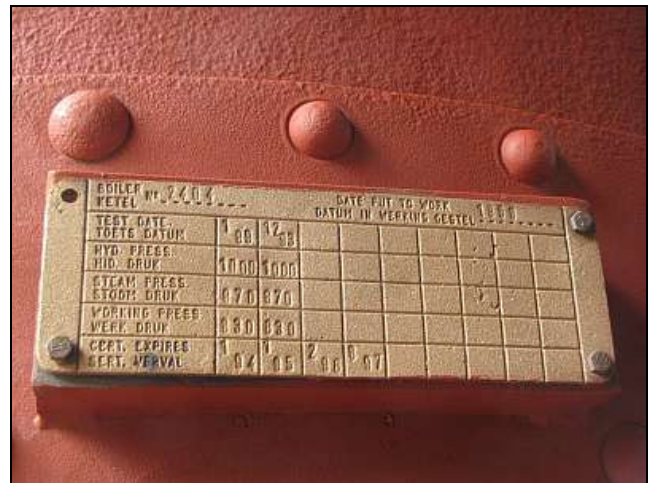
The 12AR No.1535 'Susan' is in the 15M Workshop for repair and refitting of her right-side valve spool. The stock rings are slightly over diameter, which is causing cracks on the outer surfaces. We are still needing to get foundry stock made up to specifically suit Susan's valve chest.

She needs to be running for our coming open day on the 29th January. Hint! Hint!

**B03 – Side View.**

There is some interesting rivet and plating work on the boiler shell, particularly around the manholes. There are two sets of large paired manhole covers on either side and one higher up on the rear. This boiler came with all of its bridge clamps. The manhole doors are oval shaped, so they can be rotated and drawn out from the inside. The lower port (above the cart's wheel) is called a 'mud hole,' but it works on the same principle.

In the background, Sandstone's GMAM Garratt No.4079 Lyndie Lou' awaits attention to her mechanical lubricator on the rear engine unit. This is the locomotive that is to be hauling our public passenger trains to Boksburg east on the 29th. Her bi-directional ability will be very useful as there are no turning facilities there.

**B04 – Boiler Plate.**

Here's the boiler plate. The boiler certificate only expired in 1997 – relatively recently in steam preservation terms. The boiler had been hydraulically tested to a pressure of 170kPa higher than the working pressure.

In the picture to the left you see the boiler has many exit points and tap offs. This is because the steam reticulation doesn't use a manifold like a steam locomotive's turret but rather, local valves for each fitting or function.

A boiler like this is designed to raise steam quickly but has relatively little water within. Thus, it doesn't have much of a thermal or a steam reserve. It is designed to supply steam for intermittent operation – but to be able recover pressure quickly in between the movements of the crane.

**B05 – Circular Grate.**

Here's the grate and some of the suspension hardware. No grate shaker on this baby! The center irons can be hooked out to drop a nuggety fire. Alternatively, the ashes are manually raked and pushed through the bars, or can be shoveled out through the fire-door.

A few of the fire bars are cracked but it's not serious here. Any coals that fall through will harmlessly hit the heavy steel deck beneath the boiler. There is no ash pan. Ash is removed via a hinged door that faces the rear of the crane – the door visible in line with the coupler in the first picture.

**B06 – Boiler Tubes**

These boiler tubes are so new they haven't even seen a fire – their protective coating is still largely in place with the ferrous patina of a decade of disuse.

This boiler is a double-shelled vertical boiler, which is an early type of low-pressure water-tube boiler. The water tubes cross the fire space rather like the Galloway tubes in the flues of some more advanced Lancashire type boilers. Whereas the tubes in a conventional locomotive boiler (Single-pass fire-tube) are surrounded by water and contain the combustion gases, the tubes in this boiler are surrounded by the hot gasses and contain the water. This bundle of tubes are actually right above the firebox door.



B07 – Class 24 at rest.

Finally in out of the weather, Class 24 No. 3647 is finally undergoing restoration. This locomotive was purchased from the North British Locomotive Society by Greg McLennan who has started restoration work. There are no initial plans for the locomotive so far as we know and restoration will proceed on an individual basis.

We will assist Greg with the heavy lifting that will be required, and shunting when necessary but this is primarily to be an individual project.



B08 – Tender work.

The tender was prepared for moving on 8th Saturday. All the missing axle bearings were replaced with insulated rail chair packing by Lucas Dreyer and Alan Lawton. The hard plastic castings were ground narrower to fit the axle boxes and the radial triangular cavities within the packing plates served well to retain generous handfuls of grease.

Although de-rusting and priming has started on the locomotive's cab, the main initial effort will be the tender. It is to be disconnected from the locomotive and the body work to be lifted from the frames to provide access.



This Depot Report was compiled by Lee D. Gates on behalf of Reefsteamers
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