

## The restoration of Class NG10 number 61, 2017 progress.

### Boiler report from Keith Stevens, 5<sup>th</sup> May

To date we have removed all the boiler barrel sections which will be replaced with new pieces which we have already acquired. We are still busy drilling a few stays and rivets on the firebox (there are 304 stays to be removed and 150 rivets to be drilled out). We have also cut a big section out of the backhead and throat plate of the boiler for replacement.

We are at present hopefully soon to be a position to remove the firebox to enable us to measure up and manufacture a new one. Also we have to drill out and remove the remains of the crown stays in the outer wrapper +/- 80 and remove the remaining parts of the longitudinal stays.



*Removing rivets*



*Rivets removed*



*Stripping the dome section*



*Cutting the stay heads off*



*The crown stays after being cut off*





*The throat plate stays being drilled out*

The boiler barrel also has a large bulge that must be attended to and our pictures from Keith show the work to repair the bulge.



*The extent of the bulge in the NG10 boiler barrel*



*Heating the area prior to the pressing out of the bulge*



*Pressing out the bulge in the boiler barrel*

#### **Bloemfontein Report 5<sup>th</sup> May 2017 from Lukas Nel.**

The locomotive and tender have been completely stripped. And both the locomotive and tender need extensive repairs due to rust and as the locomotive was used as an exhibit in the museum at Humewood Road, most of the spares like the chimney and boiler mounts, as well as a lot of other parts were fabricated from wood and steel plates or hollow within.

We have started with some repairs to the frames but needed to assemble the wheels into the frames before we could finish the repairs to enable us to move the locomotive.

Work completed at the moment:

Tender tank body and the locomotive spring gear as well as the complete refurbishment of the front bogie center.

We have started to weld and replace most of the belly brackets and frame stretchers that were badly corroded.

The photos show the stripped spares of both the locomotive and tender plus work in progress on the buffer beam and frames.



*The refurbished front bogie center.*



*The new tender tank.*



*The boiler belly plate.*



*The front bogie.*





*The tender vacuum cylinder and brake gear.*



*The tender draw gear.*



*The rear bissel frame.*



*The NG10 boiler saddle casting.*



*The wasted interior of the old tender tank.*



*Setting up the alignment of the buffer beam.*





*Another view of the buffer beam.*



*The buffer beam after being re-aligned.*

### **Bloemfontein Report 27<sup>th</sup> May from Lukas Nel**

While boiler repairs continue at Keith Stevens Mechanical in Howick, Lukas Nel and his team have been hard at work on the frames of 61 in Bloemfontein. This is a long process after the locomotive was subject to extreme corrosion since 1961. Our pictures show the repaired buffer beam, the new bissel frame and stretcher and the new frame support.



*The repaired buffer beam*





*The new bissel frame and stretcher*



*The new frame support*

## Boiler Report from Keith Stevens 8<sup>th</sup> June

Keith Stevens is moving ahead well with the boiler repairs for NG10 number 61. The photographs show the progress we are now making with the NGG10 Locomotive Boiler. Completion is estimated at around end of September or probably first half of October.

As you can see by all the dismantled parts there is still a mountain of work to be done.



*Riveting the dome to the boiler barrel*



*Heating up rivets*





*Riveting the dome*



*Job complete*



*Fitting butt strap on front boiler barrel section*



*Scaling back end of boiler*





*Riveting up butt strap*

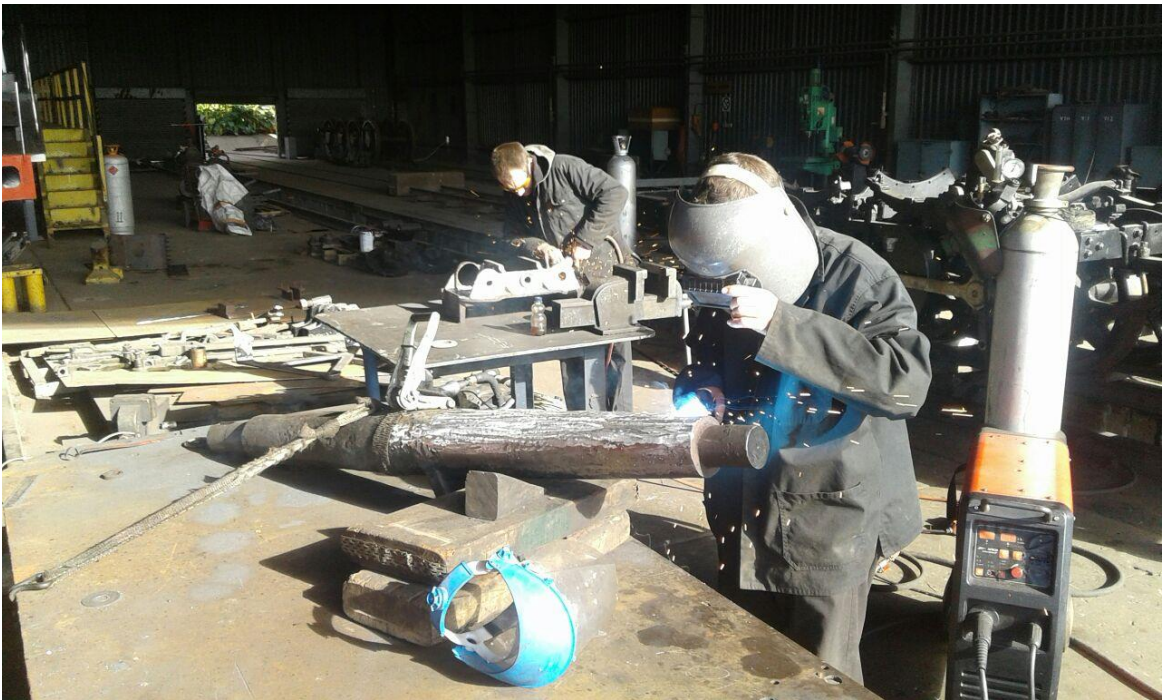


*Putting the tube plate in position*

### **Bloemfontein Report 13<sup>th</sup> June from Lukas Nel**

The new bissel castings and brake shaft are being prepared for some major machining work and welding over the next few weeks. Our pictures show the bissel being prepared by Isak vd Berg and a volunteer at work on the brake shaft. Lukas Nel has also retrieved the original boiler plate from number 61 showing its boiler is from 1916 and the last steam test was in October 1958. Renewal was due in November 61 but this was not done. This coincides with our information that the loco was withdrawn in 1961 for preservation but not in working order.









#### Bloemfontein Report 27<sup>th</sup> June from Lukas Nel

The bissel components have been returned from machining and the bissel reassembled. Work now continues on the frames and other components. As we have mentioned before this is probably the most difficult restoration done by Sandstone and so our updates tend to be about seemingly small items but which are key to the locomotive' reconstruction, and yes in reality, given the deterioration of the NG10, the restoration probably will be classified as a reconstruction.

Our pictures show the bissel components and the bissel completed plus the brake shaft which needs further work.







## Bloemfontein Report 11<sup>th</sup> July from Lukas Nel

While spares are awaited to finish the bissel truck attention has shifted to the front bogie of the NG10 in Bloemfontein. Our picture gallery shows Isak vd Berg profiling the wheel flanges which were then mounted in the bogie and trembled to settle them. As they were misaligned and the axleboxes did not have the desired play to correct this, liners were welded to the bogie frame and then machined to the correct size. Remetalled axle boxes were fitted to the wheel journals and the bogie reassembled. As Sandstone has a complete set of original drawings for the NG10 new axle box covers were fabricated and the bogie is now complete and on rail.











**Bloemfontein Report 3<sup>rd</sup> August from Lukas Nel**

Attention has now been given to the cylinder and valve covers as all the studs were rusted solid and could not be unscrewed. They have now been drilled out, retapped and replaced with new studs as our pictures show.



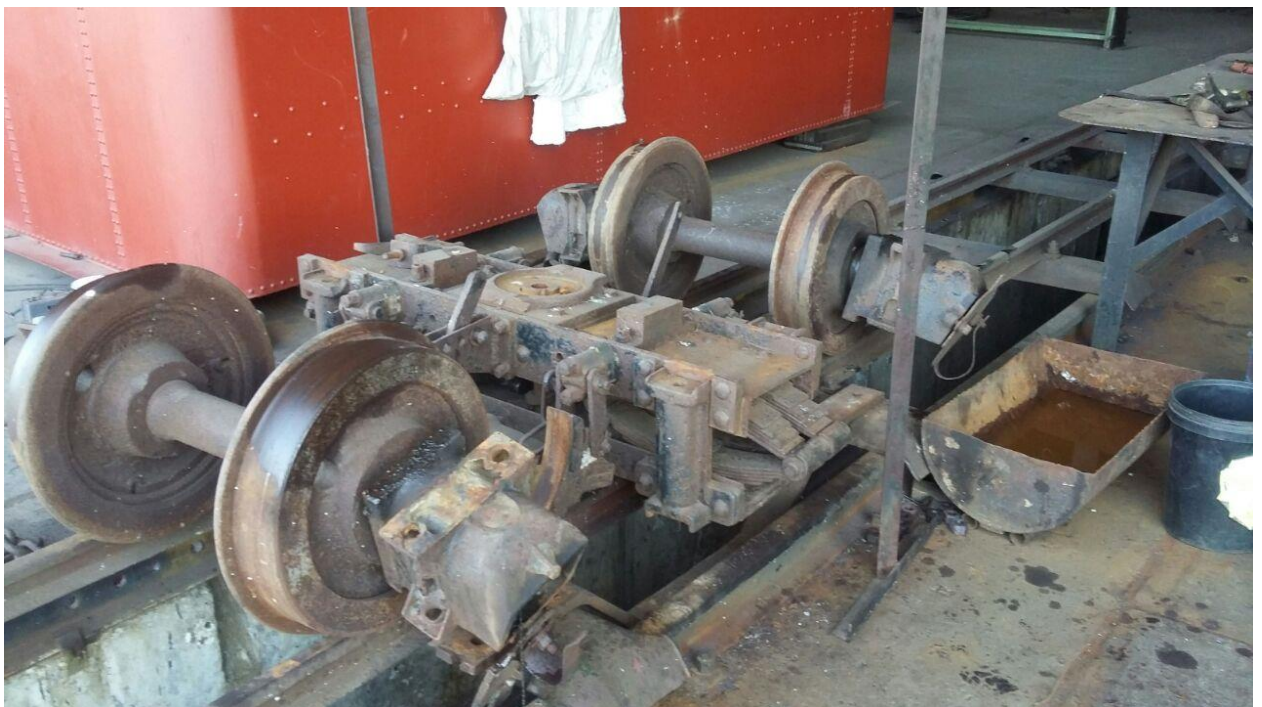


*Transnet's 15E 2878 and Sandstone's 19D 2654 rest peacefully in the background*

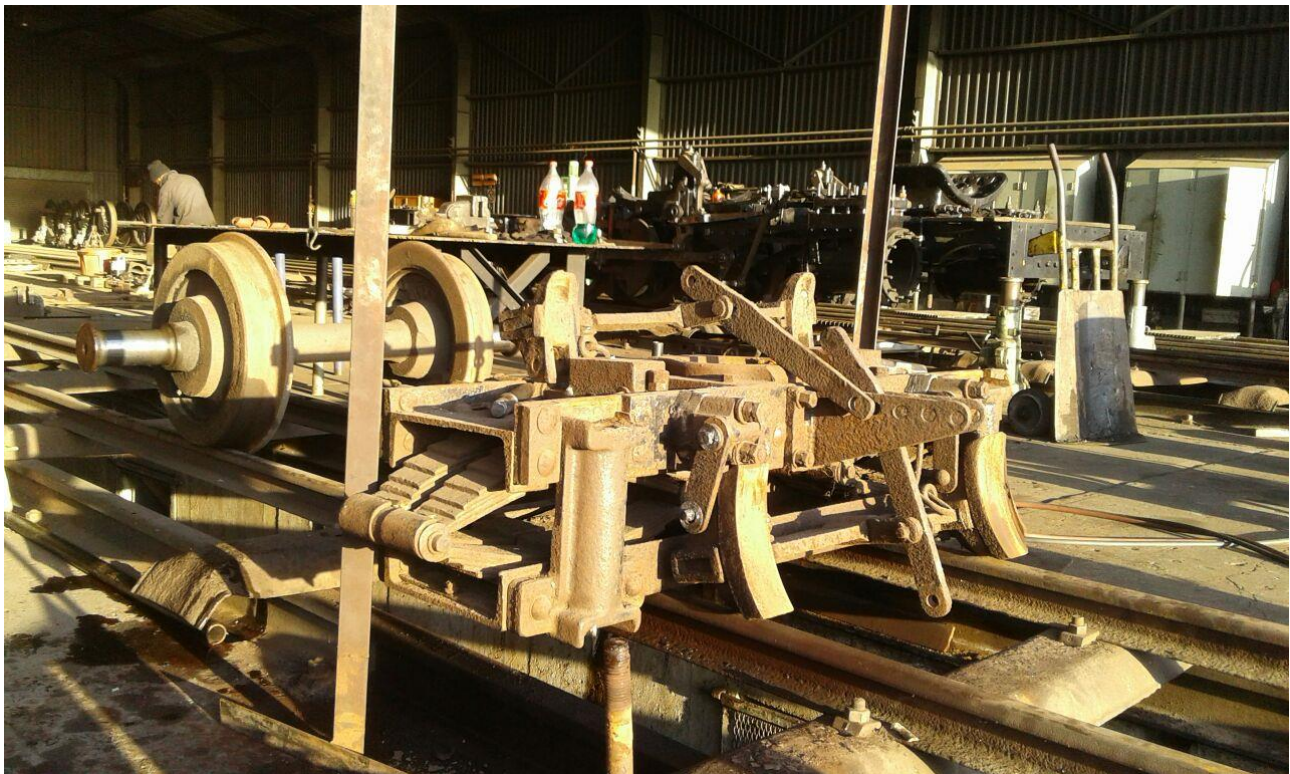


## Bloemfontein Report 8<sup>th</sup> August from Lukas Nel

Following on from our last update, the Bloemfontein team are waiting for some parts for the motion and in the meantime have begun to strip the number two tender bogie for assessment and repairs. A complete overhaul is required as expected as many parts are damaged and all are very badly rusted.









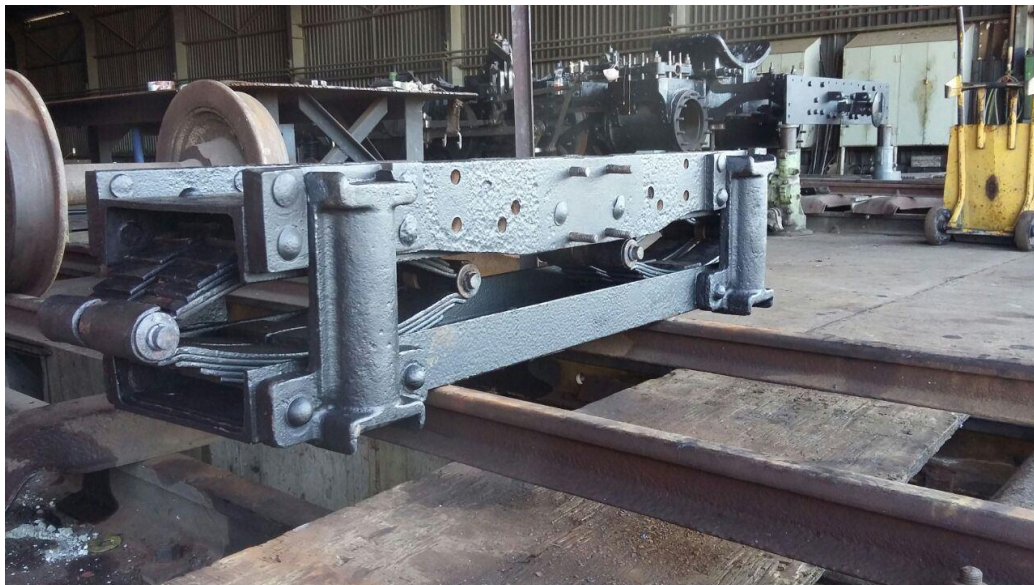


**Bloemfontein Report 16<sup>th</sup> August from Lukas Nel**

Attention has shifted to the tender bogie where some problems have been experienced. Many parts are not original with some items such as the axle box dust shields shown in the photo actually fabricated from wood. This is believed to have happened when the loco was



originally set aside for preservation. Lukas Nel and his team are looking for parts with the original look or will fabricate new ones from the NG10 drawings we have. The springs on the bogie have been pressure tested and the centre part of the bogie is being assembled. All this work is time consuming but necessary to complete the standard of restoration required.







### **Bloemfontein Report 26<sup>th</sup> September from Lukas Nel**

The Bloemfontein team have received some spares from the machine shop but exciting news is the acquisition of some axle boxes that may be modified so that the rebuilt tender will now have eight boxes of the same type



### **Bloemfontein Report 5<sup>th</sup> October from Lukas Nel**

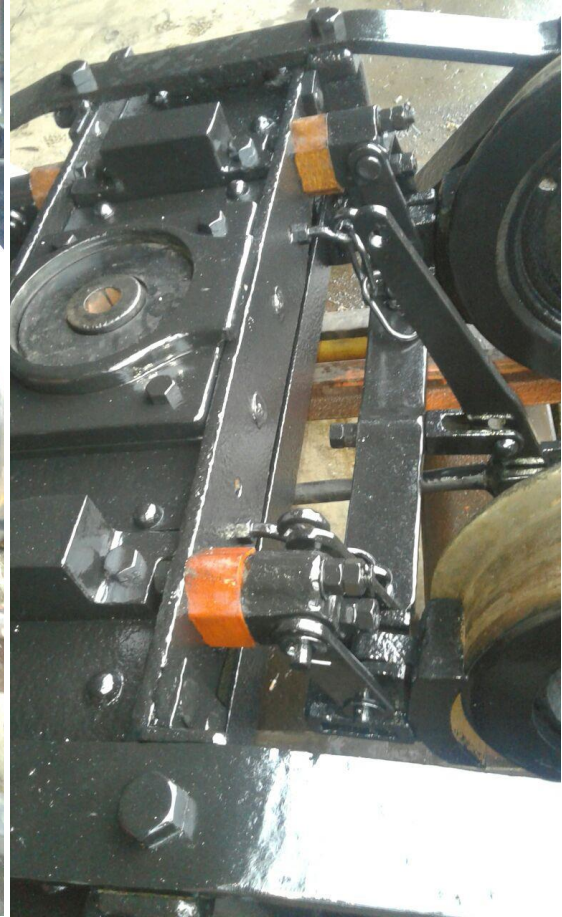
The hard work put in by Lukas Nel and his team over the last few months is now coming to fruition with the completion of the first of the two tender bogies for NG10 number 61. Our pictures of the first completed bogey show how the team almost travelled back in time to



produce the units as they were in 1915 when the locomotive rolled out of the Baldwin workshops in the USA.







### **Boiler Report from Keith Stevens 9<sup>th</sup> October**

We are now busy finishing off the Firebox and drilling this for the stays. There are over 350 stays in the Firebox which are being manufactured this week. The fitting of the stays is a huge job and at the moment I do not see completion of this Boiler until approximately end of November. We can only fit the Firebox into the main Boiler after it has had a full Inspection on the Boiler and the Firebox.