

1). INTRODUCTION :

With the 12AR chugging around out on a Magaliesburg day trip, the depot was fairly quiet with 5 people at work. All of the action was centered on Sandstone Heritage Trust's 'Locomotion' coach with continuing work on modifying and servicing the brake system. The one exception was Robbie Davies-Hannibal, who was in orbit and patrolling the electric fence for niggles, before his orbit decayed and he came in to land by the coach team.

The running gear repairs and lubrication service for the restaurant coach's undercarriage are done. She's now properly braked, properly suspended and is thus just about ready for mainline service from a mechanical point-of-view. The draft gear and the scuff plates need to be greased and checked for ride height. It would be prudent to re-grease the axle bearings. The brake gear and coach frames need to be stenciled with inspection dates. That's Carriage n' Wagon work and doesn't need a bay in the 15M workshop.

'Locomotion' now needs the 'through wiring' to be done and the kitchenette needs to be plumbed in. However, there is much interior work that needs to be done and we are going to need to re-convene the coach team as volunteers to assist. The technical team needs to do other things and we cannot expect Oom Frans van Dyk to refinish the interior as well as fitting the bar, stores and kitchen. Under our lean-mixture austerity mode, we are not willing to hire paid casuals or contractors to finish the paint work. (They'd probably do a crap job anyway.)

Unfortunately the colour codes for the adopted standard two-tone paint scheme have been lost, so we'll have to take paint samples. This is the hold up with the 2nd Sandstone Day sitter as well. Even if their paint work was still intact, we'd still want to standardize the two aforementioned coaches to avoid the circus-train effect of having pink, minty green, beige, old-marge yellow, brown, SAR green and plain laminate coloured coach interiors.

To recap – 'Locomotion' and the works caboose will be attached to the day trip train. 'Kango' the kitchen coach, not really suited as a tuck shop, and the existing power van, with a large generator for the geysers, will be coupled to the sleeper train. This allows the sleeper train to be independent from the day-trip coach-set and both can run simultaneously. The sleeper train will tend to go out on holidays and long weekends, which is normally when we want to run the day-tips anyway. Hopefully, some added flexibility and the ability to have two coach sets simultaneously out on the high irons will help bring in much-needed income!

**B01 – Barred.**

The shelves that saw such good service in this coach end's 'Puffing Billy Salon' days are to be retained. Shelf runners have been fitted to protect the contents from falling, as this coach will be in motion rather than standing static as it did for so many years. An end-panel needs to be cut out and fitted to the nearside end, as this is where the partition wall used to be between the bar and the 'Lilliputian' restaurant.

Steam Driver Frans van Dyk, who did such a good job of our existing lounge/bar coach and also of the refitted kitchen in the S&B van, is redoing the bar of the Locomotion Coach – and he does good quality work.

We are getting tired of the poor quality work from the typical South African painting and interior type contractor.

**B02 – The bar has landed.**

The cabinets have now been aligned and bolted down. The various doors have been refitted. These once served as an on-board laundry's counter in the service coach of the defunct Setimela Tours company.

The paintwork in this coach is now dreadful, a pale pink paint that we suspect is exterior grade Crown Microtec™ or something similar. Apart from the roughly brush-painted finish, the paint itself has dried to the rough texture of a lion's tongue. It's a good built-in self-defense mechanism to keep the walls clean as if you are unfortunate enough to rub up against the walls, you lose some skin n' surface hair.

The whole coach interior now needs to be sanded down smooth and repainted to our standard two-tone brown.

**B03 – Service End.**

The extra gap at this end of the bar is to be occupied by a free-range chest freezer ; said well-travelled freezer originating from Management Coach No.42 and presently serving in the S&B van. The freezer, with the thermostat dialed down, will be for the drinks and have the advantage of giving us a flat top to work with when it is not being used.

Both of the toilet compartments are to have their intact fittings removed and stored. The left compartment is to be converted into a little kitchenette, while the right side toilet will be converted into a store room.

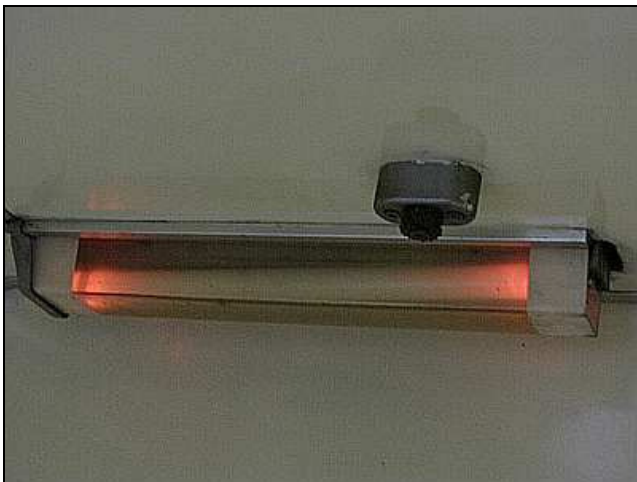
The two similar toilets at the other end of the coach are being converted into store rooms as well. Not only does this give us more space to lose stuff in, it complies with building plan regulations. It is not legal to have a toilet opening directly into an eating space, or where food stuffs are prepared, served or stored. Even though we're gonna be eating on a train, the land-bound rules still apply.

**B04 – Constellation.**

A land-power line has been 'cut into' the coach's wiring and the coach's lights have been energized. Nothing went bang. The 'Locomotion' coach was already wired for 220V mains electrical service when it was serving as a restaurant and bar coach in Weenen. However, we still need to install the main 'through wiring' and the inter-coach power couplers.

Some electrical repairs were made by the Ekurhuleni contractors and the repairs seem to have held. We do need to meter-through the earth return circuits – something often bodged by so-called electricians.

The bar end had already been rewired to BS546 (Type M), the standard South African 3-pin plug – so that will be convenient for the patrons as well as the staff.

**B05 – Dark Light.**

They missed this one out though. This dud hot-cathode fluorescent lamp in the future kitchenette didn't have a trace of a flash in its tubular self. Looks like starter failure.

I hadn't seen a light fitting quite like this in an SAR coach's toilet before though. Normally the diffuser is a quadrant cross section and the entire lamp is mounted at the juncture of the ceiling and the wall.

The push button-like object in the foreground is a door stop.

**B06 – Trust Me.**

Here is a bit of the coach's history that will probably need to be removed. This coach came from Sandstone still fitted with original pressed-steel communal drinking cups still intact within both vestibules. In these days of bodacious bacteria and vivacious viruses, I don't think they are going to be a popular and trusted feature!

Notice the matching cup clip on the end wall.

**B07 – Cunha Humour ***

In keeping with the wood plaque scheme, here is an unusual and roughly-made home-made sign on the toilet door. This, er, 'heritage item' definitely has to go. However, you can see the already-mentioned rough texture of the paint work. We are gonna have to get the coach team re-convened and enthusiastically oscillating sand paper!

(*) Well, either Sid or Porky Cunha would be the prime suspects!

**B08 – Strip-Out.**

After a long morning chasing out short circuits and other gremlins from the wires of the electric fence, Robbie got going on removing this corner-mounted basin and the classic SAR-style quadrant panel. Except for the pipes, the whole thing is held in with wood screws. Notice that there is no water trap on the sink's drain – not necessary on a drain that discharges onto the ballast instead of a sewer.

Robbie cleverly let Alan Lawton and then Aidan McCarthy battle with the rusted clips of the scat pipes on the toilets.

2). THE END OF GMAM 4148 :

**G01 – Pickup Sticks.**

A few piles of mixed boiler tubes and flues are all that remain of Ian Welsch's GMAM No.4148. (Ex-Tweefontien United Collieries No.6) The locomotive was too clapped-out for economic restoration in South Africa – where there is very little financial support external to what the various clubs can raise themselves. It wouldn't have even been roadworthy to be railed out and anyone who wants to move a stripped 200 ton articulated locomotive by road (whether in one piece or in three) is welcome to contribute the funds!

These tubes have been set aside by the scrapping team upon request to be used as heavy duty tubular fence poles by one of Mr. Welsch's associates.

**G02 – Flue Sections.**

Taking pictures of scrapped locomotives and their remains are often educational in terms of unusual and real life cross sectioned views – as sad as the subject matter may be.

Here are sectioned views of the so-called boiler FLUES, as opposed to the smaller tubes. The four truncated tubes within are the tubes for the super heater elements. The bundle of four tubes is not actually physically attached to the flue in any way.

In practice, the super heater elements slide in a single 'bundle' out of the flues once they are disconnected from the headers up front.

3). 'THE LOCOMOTION COACH' – CARRIAGE AND WAGON WORK :**C01 – Rigged.**

As per the other end, the brake rigging has been stripped and rebuilt to operate brake shoes on the inboard edges of the wheels, to match the rest of our fleet of cans. The job this end was a scalp-scratcher as several joints had holes that were too big for the original pivots. Larger spare pins were found but as they were hardened, they could not be turned down to fit. Sleeves had to be fitted to the pins to get them to snuggle home.

The brakes would have worked, but would have required excessive travel of the piston rod before applying – and the brakes at the other end would have applied first. Notice the new split pin. It is only on temporarily as we may have needed to strip the rigging again if clearances were wrong.

**C02 – Chains for Trains.**

The orig. safety chains were attached and tightly torqued. Aidan McCarthy is sitting comfortably cross-legged on the floor slab while Alan Lawton is holding the spanner on the nut while standing at almost full stretch in the loco pit.

These chains play no role when the train is calmly steel-wheeling along. But should the train derail, they help to keep the bogie attached to the chassis. A wildly twisting bogie may flip the coach or even punch through the floor.

The box in front of Aidan's dial is a hinged cover for a land-line link with screwed in terminals. This link is intended for DC power upon which the original wiring ran – the heavy gauge wires tell of the higher amperages used.

**C03 – Shoeing Up.**

Alan and Andrew, both being tough but short of stature, are the prime candidates for under-coach work. Alan is seen tapping a retaining spring out before changing out a shoe. The other end of the coach was fitted with new shoes while this end got good thick used shoes. The two systems for the bogie brakes are independent from each other.

Notice the many safety straps hanging underneath. The small ones in the foreground were cut off and re-fabricated to suit the relocated brake beams. This coach also has wide safety straps for the traverse leaf springs – something that is absent on a coil-sprung bogie.

**C04 – Triple Springs.**

Here is a pair of triple concentric coil springs that had been swapped out from the primary suspension (Equalizer Beam) at the restaurant end of the 'Locomotion' coach. The springs that we fitted to the caboose to raise the caboose's height were insufficient to do the job. However, they later worked to bring the height of the restaurant end down to specifications. The twin washers removed from the bolster pivot helped matters muchly as well !

In day-trip service, this coach will be semi-permanently coupled to the recently converted works caboose.



C05 – Up yer kilt.

Here's an underside view of the draft gear and buffer plate of this elderly coach. The actual buffering forces are taken up by the centrally mounted draft gear, while the spring loaded rods at the sides, that look like traditional buffers, keep the gang-way scuff plates together.

This bone-dry draft gear really needs some TLC, and some sanding mixed in with a few generous handfuls of graphite grease. The coupler itself will probably need shiming. But the greasing will likely be left for the C&W boys when the coach is no longer being worked on in the 15M shed.



C06 – Crusty.

The fossilized external-bridge lead-acid batteries have been removed and will be going for scrap. That's almost a ton of weight removed from the coach.

The bent jacking pad at this end has also been removed. While it didn't affect the operation of the coach, it might have hurt somebody walking along in the narrow confines between the vehicles and not noticing a lump of metal stuck out sideways. It was also at risk of fouling a station platform.



C07 – Cut cable.

Here's something that can hurt a shunter in their duties. The cut cable to the right of the coupler has frayed, rusted and eventually snapped. That means you'd have to get between the vehicles to set the coupler to uncouple by lifting the locking pin – or somehow cross the vehicles to get to the cut cable on the adjoining vehicle. (Said cable will automatically be on the other side.)

Passenger coaches are nasty for access to the lifting-lever as the buffers and the scuff plates cover the lever, whereas it is conveniently in the open on most goods vehicles.



C08 – Cable Span.

Here's a new cut cable ready for installation while the brackets are being removed. We still have a good stock of ready-made cables. The tubular handle will need to be painted 'sunshine' yellow to satisfy safety requirements before 'Locomotion' returns to full service.

Somebody needs to go for a wheel alignment – just look at the uneven, blown-out tread on the left heel! Actually, the depot is hard on boots and many a good pair have been started on the road to premature sole failure by standing on hot coals.

4). 'THE LOCOMOTION COACH' – BRAKE WORK :**V01 – Leverage.**

Getting the vacuum cylinders off is always 'fun.' (Putting them back is even worse.) The coach label shows who is nutty enough to do this on a pleasant Saturday afternoon. They should have put the big fellow, Robbie, on the end of the lever as the backstop instead as they did a little later. But even Robbie eventually ended up hanging futilely on the lever with his feet suspended in the air.

That wheeled lever cart had been modified in SAR days and the effort end had been lengthened for extra vertical reach – losing a lot of the vital leverage in the process.

**V02 – Pan Lid.**

It looks as if this inverted cover was sourced from stores in September, 1986, but the other marks are cryptic. It's a bit odd to think of those engineering chalk scrawlings remaining intact inside the cylinder and hidden from view for 25 years. There is a very slight patina of rust on the unmachined surfaces on the cover – but as the cylinder and piston are 100% rust free, this must have been the preexisting condition. This is a 21 inch cylinder.

The o-ring type gasket in view needed to be replaced as this one was squished and had taken on an oval shape.

**V03 – Heave!**

The deeply-dished piston kept tilting and jamming upon attempts of withdrawal, so the piston rod was screwed back in and used as a tee-handle in combo with a short 'gwala'. I'm just about to stow my camera and apply my foot to the nearside pivot boss to hold the cylinder down against the stubborn tractive effort of the Lawking combination.

The roller ring turned out to be in good condition and the chalk markings on the piston indicate it was last inspected in 1991. As the roller rings are not natural rubber they don't crack with surface oxidation in stasis – as car tyres, for instance, do. The neck seal was in good shape (as the rod isn't pitted with rust, as often happens in disuse.) and the cylinder is rust free, so it just needed a new cover gasket and some grease on the bosses before being reinstalled.

**V04 – Grease Job.**

The handbrake gearing and follower nut were clogged with fossilized grease and dirt, although not nearly as rusty as initially thought. I got the job of freeing it all up with a wire brush and then 'rinsing' it down with MH oil lovingly trickled into those myriad crusty crevices. Then the actual grease was applied – and the handbrake freed up handsomely. The loose clevis-ended rod is the handbrake's pull rod from the bell crank behind my head.

The inner trunnion for the brake cylinder is lower center.

Aidan was asked to cut down the bracket on the lever cart to allow the cylinder to tilt back. Once that was done, the cylinder was in and hand-bolted within 5 minutes. No photos though, as I stayed at basement level to help guide the heavy cylinder back into the trunnions.

5). FUN WITH SUNLIGHT :**L01 – Late afternoon.**

The rear-guard coaches of the Shongololo Express 'Dune Express' train pick up the late afternoon sunshine even as the evening's allocation of clouds is already moving in.

The coach arrangement is facing east instead of west, so there could be some coach shunting in Oom Attie's near future. The clearstory coach at the end is an early 50's Metro-Cammel.

**L02 – Spot-Lit Aidan.**

Aidan McCarthy gets to work on a toilet's scat pipe (thankfully dry) next to a 'Locomotion' coach bogie beautifully spot-lit by the sun.

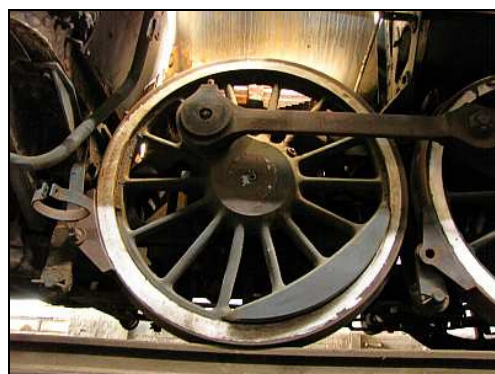
He wasn't happy though as the sunlight was diffracting through the ground edges of his frameless spectacles and giving him optical artifacts through which to squint.

**L03 – Lights, Camera, GMAM :**

As the sun's path settles for the approaching winter, one gets an ever-changing play of lights and shadow at different times of the day.

Here, the boiler fittings of Sandstone's GMAM No.4079 are highlighted by the afternoon sun. The Locomotion restaurant coach is being worked on next track to the left.

Madame 'Lyndie Lou' isn't as nearly dusty as she looks – the sunshine's angle is just rather unflattering to the inevitable toppings on the boiler cladding. Even steam locos need good lighting to hide their dust and wrinkles.

**L04 – A nice sunlit tummy.**

There is nothing like a nice warm sun-lit tummy to induce an afternoon snooze. The boiler underside and the axle spring on the right-side rear driver of derelict ex-Springs Class 15F No.3135 catches the afternoon sun peeking in through the slatted roof of the old running shed.

L05 – (Below) – Backlit Valve Gear Hangar

6). PICS AROUND THE DEPOT :**M01 – Brake-en Forklift.**

The useful LPG gas-powered Hyster forklift sadly hasn't run for a while. It has had the starter motor rebuilt and now the bendix shaft seals leak. The Hyster uses an oil-filled wet clutch, so the starter's pinion runs immersed in oil, rather than in air as opposed to a conventional arrangement.

Unfortunately, somebody 'helpfully' topped up the hydraulic brake system with mineral based hydraulic oil. The fresh oil reacted with the natural rubber seals and made them go all gooey and kablooey. The entire brake system now needs to be stripped, flushed and rebuilt with new seals.

**M02 – Gone to Pot.**

Here's something I found while rooting around the oil store ; pair of saucepans welded together to make a steam-jacketed cooking pot. Notice the steam nozzle to the right.

All the adapters and the supply hose are present.

Reefsteamers Service Announcement : The pot is now safely in my locker so it doesn't 'walk' off site and everyone knows where it is.

I'm looking forward to cleaning it up and trying it out on my next footplate exercise. Perhaps a nice guard dog stew...

**M03 – Grey Bogie.**

The Shongololo Express boys have been servicing a lot of bogies lately and the beautifully prepared Commonwealth type bogies are starting to appear resplendently under their steel coach set. (The Dune Express.)

This bogie design is interesting. The swing links (Vertical rods) are externally mounted and readily accessible – using the flexibility of the spring to substitute for the bottom hinge. (Thus, the swing link lower ends are slotted instead of pivoted.) The secondary suspension (big coil spring) incorporates a drag strut to control longitudinal motion of the sprung bogie frame. (As the big coil spring can otherwise deflect longitudinally along the bogie's axis) The primary suspension (small coil springs and the compensating beams) has a damper on both ends.

The so called 'Commonwealth Bogie' was designed and first manufactured in 1935 by the 'General Steel Casting Cooperation' in Granite City – Illinois, USA. The actual factory they used to cast and assemble the early bogies was previously owned by the 'Commonwealth Steel Company.' The purchased factory was then colloquially known as 'The Commonwealth Plant.' This type of bogie inherited the name ever since.

These are also called 'Equalizer Bar Bogies.' They are classified as high speed bogies (for their time) with some designs capable of 160kph. These SAR Commonwealths are rated at 120kph. They are a popular, smooth riding and easily serviced bogie.

They have the disadvantage of being costly to make and being fairly heavy because of the complicated casting of the frame. Standard gauge examples can weight 6 ½ tons. These ones weigh nearly 5 tons a piece.

They also restrict access to inboard brake shoes.

Leaf springs on ye olde bogie designs provide their own damping to a small degree (via inter-leaf friction) but coil springs do not. Hence the need for separate dampers. But the different pitches, lengths and tensions of the concentric coil springs allow for tuning of the ride height of a bogie under differently weighted coaches. (As we've been doing) The coil springs can also be selected to eliminate or shift the nodes for resonant frequency – eliminating coach-bounce on known undulatory track.

**M05 – Zap Gear.**

A sure mark that 'Honeyball' has been 'walking the long mile.' Strand after strand of electric fence to be checked.

Remember what I said about stupid contractors? The team which cut up Ian Welch's GMAM 4148 deliberately shorted out the live electric fence by twisting two conductors together next to the site of the old turntable. The sustained short circuit eventually damaged the energizer. A spare energizer has been fitted and this one is going in for repairs.

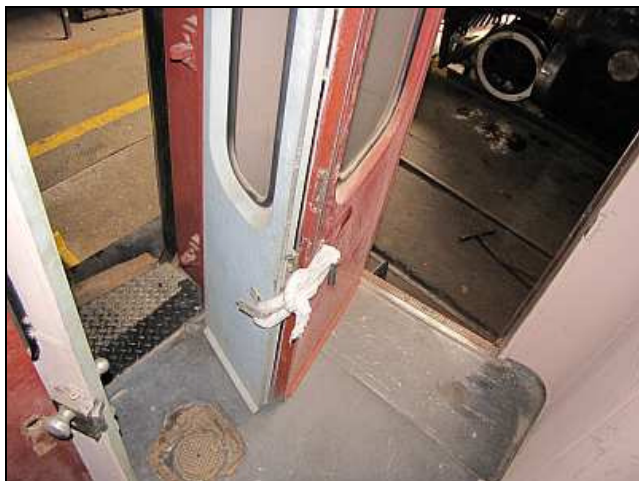
You always have to remember to watch out for the awkward padlocks and hasps on the sagging Gate No.6, the Member's Gate after Robbie has been on the job – those nearby wires kick like a mule and bite like adders.

**M06 – Water Mains**

Our delightfully quaint water mains failed THREE times during the previous week. The patch density is ever increasing and we'll soon have more patches than piping. The three failures had our resident 'Yorkie' muttering vile imprecations and getting his car beautifully muddled on the approach road. (The old railway underpass comprising our final entrance road is still under the summer water table.)

The water mains donation drive is still on – so before you blow your salary on useless things like food, mortgage and car payments, please consider what you can give towards the approx. R12,000 we need to complete this project and stop wasting expensive water via the frequent leaks.

I've personally donated my share towards this project – so this author is not one who preaches without practicing...

**M07 – Tie back.**

Not quite what the good ol' South African Railways and Harbours has in mind when designing this conflicted vestibule door layout. An old ragged cloth (on a hill far away *) makes a useful double-door tie back for ease of access. Notice that the door handle knob on the left gangway door is being used as a built-in tieback for the vestibule door on the opposite side – quite canny people, these Reefsteamers!

(*) Those who know Christian campfire songs will get the reference.

**M08 – Booty Boogie.**

S-s-s-shake it! (And you might 'make it')

It's been a while since the 15M workshop's floor was swept and the evidence shows on the seriously dirty booty of an unidentified Reefsteamer intently bent at his work.

The trademark blue boiler suit and the portly physique might be a good clue as to the owner's identity though...

**M09 – Exhausted.**

The newly installed Ford Industries Turbo-Diesel generator is ready to rock with its new exhaust system. Unlike the installation on S&B van, the silencer have been mounted outside. It'll make the train nosier at this end but hopefully a bit quieter in the kitchenette \ tuck-shop end of 'Locomotion' which will adjoin the caboose

The caboose's roof leaks and an attempt has been made to seal it. It will probably need several attempts and several 'test' rain storms to collar all the drips.



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