#### A. WELCOME :

Welcome to the first edition of the Reefsteamers Waybill.

This is not really intended to be a replacement to the previously popular and long running Reefsteamers Depot Report, as that communiqué was quite technical in scope and focus. The Reefsteamers Depot Report tied in with the author's own personal railroading interests and incidentally, with the general creedo of Reefsteamers – that of operating with a specific emphasis on 'Technical Excellence.'

The purpose of this newsletter is not to inform readers of the day-to-day or the weekend-by-weekend happenings in our club. There is really no substitute for being actively involved in the work life and the social life of the club. This is an inconvenient truth for our long distance and oversees members, but if I tried to include everything, this document would be 80 pages long and still wouldn't cover everything that happens. The Reefsteamers Depot is a lively place to be!

My emphasis through the Reefsteamers Waybill is to talk of the general progress made, areas where we change or adapt direction or strategy and making goals for the future. One of the exciting goals we have for the future is the declaration of our still primarily original locomotive depot as a National Railway Museum and we include a preliminary announcement in this newsletter.

I will include the Locomotive Status report each month, as an indicator of the status of our engines and also the costing involved or the challenges that we face in keeping existing engines running or restoring machines to operation.

#### B. <u>GEOFF COOKE – 2010 TOUR AGREEMENT SIGNED:</u>

A thoughtless statement was recently made in the international press by steam tour operator Dave Rogers that 3ft 6in steam is dead in South Africa. He apparently had his reasons for saying this, but regardless of the validity thereof, the statement caused a lot of damage to South Africa' reputation as a steam tourism destination.



kee Seamers

Geoff Cooke, of Geoff's trains has since been offered the baton to represent us in South African Steam and the opportunity to prove that steam is still very much alive. Geoff's Trains is a long standing tour operator with international touring experience in England, Europe and so far afield as China.

Mr. Cooke himself used to own and operate the clearstory coach set now belonging to the Shongololo Express, who are long standing tenants within our Depot and upon our track work.

Mr. Cooke recently arranged and ran a successful narrow Gauge Tour of South Africa and was impressed by the potential that 21<sup>st</sup> century South Africa still has for steam, even with the general decline of the rail system in terms of steam opportunities. (e.g.; continued closure and or neglect of branch lines.) Geoff got to speak with the Reefsteamers as they operated the Sandstone fleet section of the Narrow Gauge Tour, as well as during a brief visit to our depot upon the tour group's arrival in South Africa – quickly establishing a mutual liking and trust between the various parties.

Reefsteamers has just signed a preliminary agreement with Geoff's Trains to run a tour next year in conjunction with the 2010 soccer celebration. There will, in fact, be TWO tours running. One will be a photographic \ steam enthusiast tour involving Reefsteamers as the main operator, with several days at the excellent narrow gauge network of Sandstone Estates and some runs by Friends of the Rail. Some of the smaller operators, such as Umgeni Steam railway, Atlantic Rail, Apple Express or Patton County Railway will also be invited to participate.

The second tour will be a train adventure, rather than a steam train effort, and will be a mixed traction tour with steam, diesel and electric traction from Jo'berg to Durban to coincide with the anniversary celebrations.

As an ex-train operator himself, Geoff fully understands the restrictions under which we run as volunteers and the often surprising amount of hidden logistics and planning that go towards a trans-provincial trip. He desires to work in cooperation with Transnet and the changing HRASA. He also understands that the halcyon days of the 1980's have passed, and that a 21<sup>st</sup> century South African steam train tour will need to operate on a national carrier that has to operate under rigid economic and safety constraints. Geoff's Trains is to focus in the experience of the train trip and arranging a full package for their passengers, rather than trying to obtain the maximum number of run pasts, with the stress and competition amongst the photographers as the optimal photography times expire.

We are pleased to be working with a true gentleman such as Geoff and Reefsteamer Association is looking forward to running a successful tour in 2010 and to establish a brand that can be repeated each year.

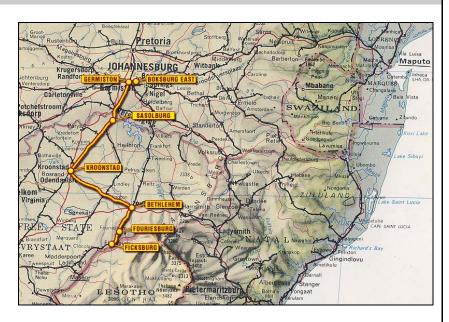
File Name : WYBL - 2009-M06-16.Doc	Date of Print : Thu, 09 Jul 2009
Doc. Author : Lee D. Gates	Page <b>1</b> of <b>17</b>
Reefsteamers Association Incorporated under Section 21 of	f Companies Act. Reg. 950259008

# Reefst amers

### C. CHERRY FESTIVAL TRAIN :

bookings The are almost completely taken up for this year's Cherry Festival run. As it was once desirous to run the entire trip behind steam, Reefsteamers investigated the use of the Balfour line to avoid the current restriction of steam on main lines. In essence, we were given permission to run steam on the route although some of the track appears to have been lifted already. We'll be sending one of the drivers to investigate.

The route is of a lighter gauge rail and can only sustain a 16 ton axle load – which, out of all the locomotives we have available, means only the lightfooted Sandstone GMAM Garratt can run.



The map above shows the usual route that we take to Ficksburg – with only the south-most section of line between Bethlehem and Ficksburg now open to steam. We might be able to get permission to run steam from Kroonstad.

This, coupled with the long service stops for coal trimming and water replenishment of tankers, means that we rather will try and book the Cherry Festival Train to run with electric locos from Boksburg East to either Kroonstad or Bethlehem and them use steam for the rest of the way. With the use of electric locomotives, we can leave industrial Johannesburg early in the morning and be steaming through the beautiful eastern Free State in the late afternoon. The passengers then sleep over night in the coaches at Ficksburg and have the full day the next day to go to the Cherry Festival itself.

Thus, to avoid misconception and rumours, I must announce that the Cherry Festival train is very likely to be a mixed traction train.

Having said that, we now have permission to run on (most of) the Balfour route – which opens possibilities for steam enthusiast specials on a line without too much commercial traffic.

## D. REEFSTEAMERS, STEAM IN ACTION AND HRASA :

Some statements have been made public, to the extent that Transnet have even queried it, that Reefsteamers wishes to disassociate themselves from HRASA.

This is definitely not true for, as an operator, we need to operate under their auspices and authority.

Many of the active members of our club, for instance those that gave of their time and effort to try saving the locomotives at Millsite, amongst other projects, were totally frustrated at the poor performance of the then–HRASA Chairman as well as the lack of action from the bullied and generally ineffectual members of the then HRASA board. HRASA basically ceased to function. Out of a sense of urgency, SIA was formed as a lobbying and action group.



SIA's intention was never to bypass or destroy HRASA, but to goad them into action and then provide the logistic support and fund raising mechanisms required for them to do their job. However, during that time of frustration, statements have been made by some frustrated vocal members of Reefsteamers speaking in their personal capacities – but disassociation from HRASA was never our official position as a club and I want to place this on public record.

We are not sure of the eventual path that SIA will take as that is up to the membership of SIA to decide – and SIA can answer for themselves.

File Name : WYBL - 2009-M06-16.Doc	Date of Print : Thu, 09 Jul 2009
Doc. Author : Lee D. Gates	Page <b>2</b> of <b>17</b>
Reefsteamers Association Incorporated under Section 21 of	Companies Act. Reg. 950259008

Reefsteamers wishes HRASA the best of progress in appointing their new board and getting to grips with their long neglected responsibilities – Chris Janisch of FotR already functioning aly as Chairman. It is hoped that HRASA can reestablish a close working relationship with Susie Mabie of Transnet and once again truly represent the national Heritage Associations.

Ree S eamers

## E. <u>REEFSTEAMERS AND SANDSTONE ESTATES :</u>

Regardless of whether the new HRASA structure succeeds or fails, Reefsteamers will continue to work closely with Wilfred Mole of Sandstone Estates, for he is our friend, our partner, our mentor and now a member of our club. We already operate two of his locomotives and keep another two in safe storage, as well as four of his coaches. A magnificent 99% intact 60t Crowans Sheldon Crane has just been put into our care at Mr. Mole's own personal cost.

Thus, Reefsteamers will always continue to be associated with Sandstone Estates and Wilfred Mole – and this relationship has absolutely nothing to do with SIA, HRASA, THF, Transnet or anyone else as it constitutes a private business arrangement.

Thus nothing must be inferred from our continued relationship with Sandstone Estates whatever happens to SIA or HRASA.

## F. REEFSTEAMERS AS SANDSTONE STEAM RAILROAD OPERATOR :

An operational agreement has been drafted between Sandstone and Reefsteamers. We provide the technical support to prepare the locomotives for future heritage events or for harvest season, and will provide the licensed and competent crews to operate the locomotives and trains. Shaun Ackerman, in his personal capacity, has been spending much time working as a contracted fitter during the weeks, doing repairs on the Sandstone Engines and sometimes bringing parts back to our depot for investigation and further repairs. The recent Sandstone section of Geoff's Trains' Narrow Gauge Tour was held under this agreement and it was quite successful. Future tours at Sandstone will be prepared and operated by Reefsteamers.

We thank Wilfred Mole for the opportunity to strut our stuff as well as his. It is always a treat and a privilege for us to work on unique machinery in the special blend of scenery and the ambience of a professionally operated farm.

## G. GERMISTON DEPOT AS NATIONAL STEAM MUSEUM:

By Shaun Ackerman (Vice Chairman – Reefsteamers Association.)

This is my first term serving on the Board of Reefsteamers Association, but I was a co-opted board member doing all the Logistics prior to my current nomination. Accepting the role of Vice Chairman is something that I wanted to do as I felt that the efforts I have put into Reefsteamers in the last six years was phenomenal and during that time, I have literally dedicated most of my life to the cause. I will continue to do so, simply because this is what I want to do and I feel it is why I was brought here in the first place.

I have a background of steam and railways and as both my late Grandfather, Patrick Thomas Ackerman and my Father, also named Patrick Thomas Ackerman, worked for the South African Railways in communications and signaling. My late Grandfather was also a renowned 'live steam' model locomotive builder for more than 48 years as a hobby and in his time he built eighteen live steam models and two electric models that were all very successful. One of the highlights in his model building hobby was in 1972 when the ex South African Railways Chief Mechanical Engineer Kobus Loubsher found out that an employee in SAR communications built live steam models. Mr. Loubsher invited my Grandfather with his inch and a half scale SAR class 10BR to his office so he could admire it. (1 ½ inch scale means 1 ½ inch to the foot, approximately 1:8 scale.)

We are fortunate to still have pictures of my Grandfather and Kobus Loubsher in his office with the 10BR.

I also worked and was (still am) heavily involved in the Sandstone Heritage Trust and between my younger brother Patrick and I, we were fortunate to have had the opportunity to restore a two foot narrow gauge Lawley locomotive, a narrow gauge Fowler tank locomotive and a narrow gauge SAR class NGG 16 Garratt. This was just some of the projects I was involved in at the time and the learning experience was amazing.

Going off the subject of railways but fortunately still sticking to heritage, where else in the world would a then 22 year old youngster get the opportunity to learn how to set up and operate a portable steam engine and wheat threshing machine as it was done in the late 1800's and early 1900's and lead a team of trained draught oxen ploughing through a field?

File Name : WYBL - 2009-M06-16.Doc	Date of Print : Thu, 09 Jul 2009
Doc. Author : Lee D. Gates	Page <b>3</b> of <b>17</b>
Reefsteamers Association Incorporated under Section 21 of	Companies Act. Reg. 950259008

Well, I have had these opportunities and many more.

I am really thankful for the experiences and memories! Upon leaving Sandstone in 2003, I registered my own business and continued with this till today, I focused on contract management in the construction industry as a contractor. However, in the last year (2008\2009), I have been focusing on heritage work with Sandstone, Reefsteamers and Steam in Action. At this stage, it does not pay well, but that is not what I want. I just want to see the survival of steam and railway heritage in our country!

**Reefs** amers

This is where it all started and the dream continues!

The idea for a railway museum at the old Germiston Steam Depot came about more than ten years ago by our Chief Mechanical Engineer, Andrew King. Andrew, originally immigrating from the UK more than 30 years ago, realized that there was a massive potential to create a genuine working railway museum based on similar principles to the National Railway Museum in York, England. Funding was a serious obstacle and is still the main issue here, as it will cost in the region of R4 000 000 to properly develop such a museum so as to have proper council-supported road access and parking, a safe self or guided walk-about tour and some extras like a souvenir shop and a coffee shop, but to name a few. Andrew King knew his idea would remain just a dream until the funding could be made available. In South Africa as we all realize it is a tough game trying to get sponsorship through government and other sectors, but there seems to be a light at the end of the tunnel. We have seen that running the normal weekend day trips and the odd long distance trip will not bring in that funding either, so alternatives must be put in place.

When I first joined Reefsteamers more than six years ago, Andrew got chatting to me. I heard and understood his ideas and I supported them immediately. I would love to see other people, especially youngsters, have the same unique opportunities to get really involved in heritage machinery and activities, just like I did. But where do we start to make our dream become a viable reality? Well, it really would just have to remain a dream until the real funding came in, but in the interim, we have been upgrading the depot on a regular basis with the funding we could budget to these projects. We have employed several full time staff to assist us in the process, which really does help us, as we are generally only weekend volunteers. We have got the depot to a point that it is reasonably safe to visit and within the standards required to have visitors walk around and look at the locomotives, coaches and machinery in the workshops.

Our biggest problem remains our scruffy and muddy depot access road which runs through a reclaimed mine dump site and onto the old head shunt to the carriage and wagon sidings on the opposite side of the TFR goods line. Further upgrading and restoration of the depot is required, but it would be done in such a way that the ambiance that is experienced in the depot and especially the workshops is kept alive! Ask Wilfred Mole of the Sandstone Heritage Trust, he loves the feel of our depot when it is early morning and a loco is in steam close by. He says it takes him back many years and it feels like he is in the year 1945. I will say the same!

Andrew King, together with Stewart Currie (Editor of the RSSA newsletter) is working on applying for funding by the National Lottery and they are busy with the applications thereof. I am, in the meantime, overseeing the continued upgrading process of our depot as and when funding comes in. Through Steam in Action, we are engaging in government and Transnet to support our dreams so that we can create a National treasure for South Africa.

Think about the Millsite collection, when the negotiation between HRASA and Transnet are concluded, then the process off moving what we can fund to Germiston will begin. Storage space has already been provided for these locomotives and the electric fencing extension project did commence but was since put on hold to see the outcome of the current Millsite debacle. Many other heritage items remain fairly intact. With the help of Transnet, these items could be brought up to the Germiston Steam Loco Depot for safe storage and preservation. Most of the items would only be cosmetically restored, but others would be put on static exhibit till restoration at a later stage.

Transnet has the George Railway Museum which in its own right is a very exiting place to visit. but it has a few negative aspects about it. One of the negatives is that it is off the beaten track as it is where most tourists don't even get to see it. Creating the South African National Railway Museum in Germiston at the old steam sheds would have the following distinct benefits:

- It is very close to the Oliver Tambo International Airport (ex Jans Smuts \ Johannesburg International) and transfer prior to or after a tour directly from the airport is very viable.
- Our depot is a real working steam depot and this creates a scenic ambiance that cannot be faked or copied.
- The museum would create another very needed activity for Johannesburgers to do over weekends with their families.
- School interest groups can be arranged on a regular basis thus showing our children and grandchildren what our railway heritage is all about and how South Africa came to develop.
- We should create interest groups for children between the ages of 8 and 18 where they physically get involved but in a controlled environment. This will create a learning interest for the younger generation and potentially one or two enthusiasts who will stay on as a volunteer for Reefsteamers or at some other railway heritage centre in South Africa when they reach 18.

File Name : WYBL - 2009-M06-16.Doc	Date of Print : Thu, 09 Jul 2009
Doc. Author : Lee D. Gates	Page <b>4</b> of <b>17</b>
Reefsteamers Association Incorporated under Section 21 of	Companies Act. Reg. 950259008

## THE REEFSTEAMER WAYBILL – NO.1

- The local community would be involved, thus creating jobs on a permanent and contractual basis or many people, and in so doing improving the community and their lifestyles somewhat.
- An interest would be created for retired people to get involved in the daily running of the museum so that they to have something to do to keep themselves busy.
- All available heritage assets that are currently not in the direct care of someone or some group will have a safe home to be brought to and we would undertake to care for these items.
- Most of the long distance steam tours could start at Germiston making it logistically easier for the tour operators.
- We would hopefully get to the point that volunteer members could have the option of working full time for Reefsteamers, the fields of work available will be very diverse!
- The old Park Station building plinthed on the southern side of the yard at Braamfontein could possibly, with the help of government and Transnet, be moved to Germiston to create a proper station building from which all trains can depart.

These are just some of my thoughts on this concept. However, ideas should continually be brought forward by others as this is not to be a 'one man show'. Rather, it is a dream that can become a reality through the help of many people. I will continue to add to this as things develop but at least you all have an insight to the idea's and thoughts currently going around.

Shaun Ackerman. (Vice-Chairman – Reefsteamers Association)

## H. LOCOMOTIVE STATUS :

### H.1). Class 25NC No.3472 'Elize:

Status : Restored and operatable – undergoing Boiler Certification.



kee seamers

The mighty Class 25NC is mechanically in 100% operable condition but the three-year boiler certificate has just expired. No problems are expected in getting the boiler recertified and the only known boiler issues are several leaky stay caps. Preparation is under way to seal the boiler for hydraulic testing as a part of the boiler recertification process. The smokebox equipment has just been stripped for visual checks.

This ex-condenser Class 25NC is not a popular choice for day trip trains as she costs a bit too much to run compared to the limited pay load we are allowed to haul. However, she always draws attention and looks great as befitting the flagship of our TFR-sourced fleet – but the 25 Class were designed for sprinting with heavy loads on flat territory.

The locomotive has issues turning on triangles because of the long wheel base and this is causing wear on the flanges. We must either pre-grease the rails of the triangle, or run the locomotive tender first on part of the trip. Fortunately, the 25NC has a double axle Bissel truck which gives the machine good tracking in reverse and allow a reasonable speed, compared to the severely restricted tender-first speed of our single axle Bissel locomotives such as the 15F, 15CA and 12AR. Thus, she will always tend to be on standby for the day-trip work.

The 25NC will be running longer distance tours this year and will see much action during 2010 with the Geoff Cooke tour.

A recent non boiler repair job has been the uncoupling of the tender and a replacement of the 'button' that is mounted on the inter-cushion spring between the tender and the locomotive frames under the cab.

Estimated cost of the Boiler Inspection and Certification = R6 000.

#### H.2). Class 15F No.3046 'Shaun' or 'Smudge' :

Status : 95% complete restoration project.

This mechanically stoked Class 15F was the first locomotive restoration project undertaken by Reefsteamers and was the subject of a total restoration to the extent of the boiler being lifted. The engine is essentially as new, from the axle boxes right up to the new boiler cladding. The locomotive hasn't officially been named yet, but is often referred to as 'Shaun.'

The locomotive is essentially complete, lacking only the pipe work and boiler fittings. We have most of the boiler fittings safely locked in storage but the copper pipe work is an issue – particularly the injector piping and the massive feed water delivery pipes to the boiler clack valves.

File Name : WYBL - 2009-M06-16.Doc	Date of Print : Thu, 09 Jul 2009
Doc. Author : Lee D. Gates	Page <b>5</b> of <b>17</b>
Reefsteamers Association Incorporated under Section 21 of	Companies Act. Reg. 950259008

The rebuild project was put on hold as other more easily restored locomotives came into the care of Reefsteamers. It wasn't so much the new Reefsteamers grabbing exciting new toys, but time was a factor as they needed to get an engine running to earn revenue. Emphasis was then put on the running locomotive fleet, as well as the Hunslet diesel shunter, and infrastructure updates such as the electric coal grab and a generator set for the train. But as more equipment was acquired and put into service, so do did the time required to service and maintain them .So No.3046 was put to one side in long term covered storage in our 15M shed.

Reefsteamers is currently working on a program to source the necessary piping. Peter Labuscagne has expressed a personal interest in taking on the project. We will need to organize a team trip to Ficksburg to remove the piping from the locomotive

Estimated cost of fabricating new pipe-work = R30 000

#### H.3). Class 15F No.3016 'Gerda' :

Status : Restored - Not operating - Awaiting repairs :

This mechanically stoked locomotive was staged from day trip duty when the boiler certificate expired – the last major trip being the David Rogers Drakensberg Explorer 2007 steam tour. The locomotive is 100% intact and in 2997, was treated to a full motion overhaul, including new piston rings and a conversion to vesconite bearings. If one put the grates, fire arch and washout plugs back in, fills up the boiler and puts in a fire, the locomotive will steam up and move under her own power. But she's no longer safe.



ee seamers

The firebox is the issue as the lower sides and the rear corners of the firebox have become wasted and too thin. These need to be replaced, not an easy or cheap job. The firebox stays in the affected areas will also need to be replaced. Lastly, the rivets in the foundation ring need to be replaced.

Estimated cost of the repair project = R85 000, including external costs such as the boiler inspection.

#### H.4). Class 15F No.2914 'Spikkels'

Status : Restored - Not operating - Awaiting repairs :

This is the only restored hand fired 15F in South Africa. As the locomotive is hard work to fire, she's never been too popular but is often used to threaten the confident young newly trained firemen into respectful submission!

This locomotive was staged from day trip duty when the seals failed around the cylinder exhaust within the smokebox. The locomotive literally threw chunks of concrete through the chimney stack into the sky and then struggled to get home with a serious vacuum leak at the front end and thus hardly any draft.



If one bravely fills up the boiler and puts in a fire, the locomotive will steam up and be able move under her own power.

The boiler certificate has since expired. Upon inspection for recertification it was found that, similar to No.3016 'Gerda', the firebox is the issue as the lower sides and the rear corners of the firebox have become wasted and too thin. These need to be replaced, not an easy or cheap job. The firebox stays in the affected areas will also need to be replaced.

The estimated cost of the repair project =  $R85\ 000$ , including external costs such as the boiler inspection. The smokebox repair is simple – the fault being caused by the fact that a previous 'fitter' had used ordinary concrete instead of fire clay to seal the exhaust outlet.

File Name : WYBL - 2009-M06-16.Doc Doc. Author : Lee D. Gates Date of Print : Thu, 09 Jul 2009 Page **6** of **17** 

#### H.5). Class 12AR No.1535 'Susan' :

Status : Newly Repaired - Operating.

This Class 12AR, the last survivor of her type, was recently put back into service after 2 long years of slowly rebuilding the valve motion, converting it to vesconite bearings. Nine of the worn boiler tubes were replaced.

After four weeks of operation, an incident happened in that the locomotive crew got distracted during detection of a lineside fire and had let their boiler water get too low. The train was ordered to be repositioned to fight the lineside fire after the water level problem was detected and then the fire was dropped immediately. The crown sheet overheated and the fusible plugs melted and blew down onto the fire.



ee seamers

This incident caused much distress, not only for the crew, but for the club as a whole as we were relying on this locomotive to keep the money coming in while two other operating locomotives (25NC No.3472 and GMAM No.4079 are 'down' for boiler recertification. We had to fast-track the firebox repairs while squeezing the last few weeks of legal and safe operation from the 25NC.

The 12AR's boiler was initially condemned, but when our boiler inspector, Mr. Dawie Olivier of OSG, looked at it together with a semi-retired locomotive boiler maker from Natal (who is also associated with OSG) – they found the crown sheet warping to still be within limits. The crown sheet was X-rayed and all the stays tested. In the initial tests, at least four firebox stays were detected to have been broken. But the fact that all the crown stays had been pulled and were slightly stretched had given a false positive and eventually none of the stays needed replacement. We are very fortunate in that this potentially very serious problem was caught in the very first stages.

The Class 12AR has since had the stays 'caulked', that is, the round rivet-like heads have been peened back to establish a pressure tight seal. It leaked like a tropical rain forest in that firebox. The newly installed fire arch wasn't dismantled to work in the firebox and thus didn't need to be rebuilt. The locomotive boiler has been successfully tested with the full visual, hydraulic and pressure testing and the locomotive is now back in service.

#### The boiler recertification cost R14 000.

Philip Maurer, our good friend, member and driver from Switzerland, who was the 12AR's driver on that day, kindly donated the full amount to fund the recertification and the remedial work needed.

Another problem that occurred on that fateful trip was a wiped bearing on the trialing axle of the front bogie. The cause of the problem was a worn hydrodynamic wedge. Due to time pressure, the heavy cast white metal bearing was remetalled externally to Reefsteamers. However, we machined the bearings ourselves and refitted them.

#### H.6). Class 15F No.3052 'Avril' :

Status : Restored - Certified - Currently under repair. (Boiler Tubes.)

Dave Shepherd's mechanically stoked Class 15F No.3052 is currently undergoing boiler repairs. A single boiler tube failed on a day trip, but upon investigation, a number of boiler tubes were found to be worn.

We didn't curse the old girl, as she had just taken us to the Cherry Festival 2008 and back, running brilliantly and could have failed then. Since the locomotive was handed to Dave Shepherd's ownership by then-Spoornet in 1992, in spite of several recertification's for sporadic work, the boiler tubes were never replaced.



Wilfred Mole, under whose care the locomotive was passed into, has donated a bundle of boiler tubes that he purchased as a job lot along with his brace of Class 19D locomotives from mining service. They are 2 ½ diameter tubes and happen to fit the Class 15F's tube plate apertures, although they are too short for the boiler. This is gonna be a tough and expensive job but we want to get it done, not only to have extra traction power available, but to make use of the 3 year boiler certificate, which is steadily ticking away in the shed.

A surprising problem that hindered the boiler replacement was the fact that the old tubes needed to be certified. A problem had arisen in that the original supplier of those tubes could not be traced, and then when they were pinned down, they could not identify the batch as there is no invoice. Andrew King cut off samples and sent them in for analysis and the tubes failed. Oh dear. They are intact but have some have incorrect amounts of manganese and others and incorrect amount of silicone on their alloy.

File Name : WYBL - 2009-M06-16.Doc	Date of Print : Thu, 09 Jul 2009
Doc. Author : Lee D. Gates	Page <b>7</b> of <b>17</b>
Reefsteamers Association Incorporated under Section 21 of	Companies Act. Reg. 950259008

It turns out that these are genuine boiler tubes but made to a earlier standard from 1978. That standard only specified maximum amounts of metals in the alloy whereas the current standards also specify the minimum. Our trusted and strict boiler inspector, Dawie Olivier, is okay for the boiler re-tubing to go ahead under the old standards.

The tubes are currently in the process of being withdrawn with their beads being ground off. Chief Mechanical Engineer, Mr. Andrew King, being his usual conservative and perfectionist self, wants to withdraw four other tubes and replace them, to really do a good job although those extra replacement tubes will need to be purchased. As the tubes are too short for the boiler, they will need to have short sections of tubing added on – so called 'safe-ending.' This has to be done by a certified welder, not by one of our guys with a spluttering inverter welder. This will slow the job down some and cost more, but we'll get Avril running again soon!

The rest of the locomotive, unless she has some surprises in store, is in good shape. In fact, even though one of the piston rings is suspected to have fractured, the locomotive pulls and runs exceptionally well. The eccentric rods and the union links had been removed to immobilize the valves when the tubes failed and the boiler had to be depressurized. Without steam, the hydrostatic lubricator doesn't work so you can't tow such a locomotive cold. The immunized valves thus wouldn't be damaged from lack of oil, but a drip feed, comprising of 2 liter coke bottles, had to be made to lubricate the cylinders.

Estimated costs Tube Analysis = R1000. Tube Welding = R13 000 Inspection = R4000.

Although the boiler ticket is still 'in term', due to the extent of the work required, the boiler will need a full recertification.

### H.7). Class 15CA No.2056 :

Status : Restored but not operating – Certified – Waiting for funds.

Our Class 15CA is a sick girl. She suffered a failure on a boiler flue while being steamed up. Upon inspection, many of the boiler flues are worn and need replacement. They are larger and thus more expensive than a boiler tube, and require more work to replace as the flues contain the super heater elements, all of which will need to be removed.

Seven Flues have been found to have failed at the SAR era safe weld



Ree S eamers

This was a major disappointment for Reefsteamers as the boiler was recertified in 2007 and this locomotive was the preferred machine for day trip runs, being both powerful and yet economical. However, the failure of our 15CA was the impetus necessary to get some real progress made on our Class 12AR, also a simple and economic locomotive to run.

The estimated cost to get this boiler back into service by replacing all the boiler flues is R350 000 and the boiler will need to be recertified after such major repair work. However, arrangements are being made to have the welds in the flues individually tested to see if we can get away with only replacing the failed or the near-failed tubes.

The tender's water tank needs attention as it has developed leaks due to rust and corrosion from the interior.

Another planned project is to replace the tender's bogies with their equivalent in roller bearing equipped axles. Not exactly prototypical but an improvement in technology and a reduction in the time consuming running repairs of the locomotive.

The locomotive was called 'Dorothy' but is now awaiting a new name.

### H.8). GMAM Garratt No.4079 'Lyndie Lou' :

Status : Restored and operatable – awaiting boiler certification.

The GMAM is in 100% operable condition but the boiler certificate has just expired. No problems are expected in getting the boiler recertified and the only known issues are several leaky stay caps.

The GMAM is privately owned by Wilfred Mole of Sandstone Estates and has been put into trust with the Reefsteamers. This engine isn't particularly economical to run for our day trips as the scale of the payload is too small in relation to the water and coal consumed. (Although we can and do still run this engine at a profit.) However, the fact that the doubleended locomotive does not need to be turned at the destination is always a time saver.

File Name : WYBL - 2009-M06-16.Doc	
Doc. Author : Lee D. Gates	

Date of Print : Thu, 09 Jul 2009 Page 8 of 17

Regardless, she is in the same 4-6 trip cycle as the other engines. It is very likely that this locomotive will make at least one long distance trip to Ficksburg this year and is likely to see more action on lighter laid branch lines post 2010 – this massive machine having a lighter footprint than any of our single frame locomotives, a factor for which the GMAM was originally designed.

Estimated cost of the Boiler certification = R6 000.

#### H.9). Hunslet Taylor Shunter :

Status : Restored and recently overhauled - Operating :

This locomotive, built in 1952, is often overlooked as a heritage piece simply though being a diesel. The lil' green crittur is now in full service after a long period of overhaul, which was initiated by a stripped gear on the jackshaft drive and water leaks from the engine. As many Andrew King jobs go, while the locomotive was in pieces, other faults and weak points were found and rectified.

The engine received a new set of big end bearings and piston rings, and the water leaks were rectified. During the water testing, the gear driven water pump was found to have seized and the drive shaft was found to have sheared cleanly off. So the engine was running on the thermal cycle only in the cooling system.



During the rebuild, a new alternator was fitted, as well as several replacement hoses. The axial type starter motor was also repaired as it developed problems with the indexing contacts.

The gearbox was rebuilt with a full set of new bearings and a brand new machined jackshaft gear. Faults were found in the lubrication and a set of dippers were made to lubricate a vulnerable bearing that tended to run dry.

Concerning the running gear, the axle boxes were serviced, as well as the brakes and the brake control stand. The entire locomotive has been repainted inside and out, and all the cab's cracked and missing window panes have since been replaced. The locomotive is now in the proper Hunslet green and the Federated Timbers era yellow and red scare striping is under SAR style red buffer beams. Even the power plant has been repainted in bright silver, with red detailing. The name plate was repainted and the missing engine bay doors were replaced (only one still outstanding.)

The Shunter was out of action for an inconveniently long time – necessitating the firing of the steam locomotive for every shunting move. But the investment in repairs means that this tough, useful little locomotive should be running well for a long time to come.

Reefsteamers Association Incorporated under Section 21 of Companies Act. Reg. 950259008

### I. SANDSTONE HERITAGE TRUST 60T COWANS SHELDON CRANE

One of the first fruits of the new agreement between Reclam (Scrappers) and the heritage movement is this magnificent machine that was purchased for scrap metal value from long term covered storage at Danskraal. It has come with lots of spares, including a spare boiler in good condition at scrap weight costs only.

The 60t Crowans Sheldon crane, put into the care of Reefsteamers by the Sandstone Heritage Trust was hauled back to our Depot under electric traction. The move was quite eventful as an outrigger chain failed, an outrigger then swinging out and hitting a cantenerary mast. The mast twisted and the impact bounced the electric contact wire out of its clips – stalling the electric train and blocking the line.



The cab and the boiler end of the 60t Crowans Sheldon Crane safely in our 15M workshop – this picture doesn't do justice to the impressive length of this machine,

File Name : WYBL - 2009-M06-16.Doc Doc. Author : Lee D. Gates Date of Print : Thu, 09 Jul 2009 Page **9** of **17** 

Reefs amers

Drama aside, the crane is now safely in her new home, in the No.1 road that was occupied for so long by the Class 12AR. The crane needs a service and a thoroughly good lube but is 100% complete. It is believed that once we recertify the boiler and do the lube, the crane should be able to rub. It has work to do as we have track work and points that we'd like to relocate, and we may need to do locomotive boiler lifting as well.

Reefsteamers Association takes it's hat off to Sandstone Heritage trust for saving this magnificent machine from being ignominiously cut up for scrap metal.

#### J. CLASS 10BR NO.750 JOINS REEFSTEAMERS MINI FLEET

The mini-fleet of live model steam locomotives was added to this month with the purchase of a 1:12 scale Class 10BR by Lee Gates. (The model fraternity call it '1 inch scale') The model locomotive was built in 1992 by the late grandfather of Patrick and Shaun Ackerman. The locomotive only ran for about six months and then was sold on – as 'Oupa' Patrick Thomas Ackerman often sold models that he had made to bring in funds to improve his workshop. The locomotive went to good friends of his, the Segal family and it was put on indoors static display for about 17 years.

Mr. Segal passed away last year and some items of his model collection were put up for sale in the beginning of the year. Lee Gates was informed via casual conversation - the railroad bush-telegraph operating well. Patrick Ackerman (Slightly Junior) had originally mentioned that the locomotive was for sale but with little hope of availability as it was put on the market six months previously.



Reefs camers

A just unloaded and as yet un-named 1 12<sup>th</sup> sized Class 10BR is admired by those who are more used to dealing with the 100 ton plus efforts !

It was very likely to have gone overseas by this point, as there is a lively market for trading in live steam models. Lee Gates expressed interest regardless and happened to have the funds – and managed to purchase the locomotive upon enquiry. It was a 'blind purchase', merely from a photograph, but with the enthusiastic and trusted assessment of Shaun Ackerman who had gone to check out the model and found it was still 100% intact and free-moving.

The locomotive is to be kept in trust with the Ackerman family, particularly the grandsons and will be moving back into the very same workshop in which it was built. The locomotive model is 100% intact and as it was properly lubricated for it's 17\18 year slumber by the Ackerman boys, who were then 9 and 11 years old, there was no rust or corrosion.

We recently had a steam session at the Rand Society of Model Engineers, when the model was put through her paces, much to the joy of the Ackerman family and many others. It was good to see the little engine building up steam with a trickle of champagne rolling down the smokebox. The only problems found were a sludged up mechanical lubricator, a very stiff lubricator water valve handle and a stiff blow down valve. (Which freed up with the paraffin spray treatment.) The locomotive steamed up and ran faultlessly - a joy to drive although at that size, of insufficient strength to pull more than 2 or maybe three passengers on a moderate upgrade.

Her owner is pleased and proud – and to other people's surprise, took pleasure in watching his crazy steam friends enjoying the little locomotive. (It was hard work prying Michael Thiel away from the cab!) The locomotive + tender is to be modified slightly to enable the model to run with a driver car mounted on wider tracks and thus be more stable and easier to drive. The tall guys of about 6ft were driving with their knees up by their ears! The lower viewing angle will also enable easier viewing of the water glasses. The driver car is being custom built at this very moment.

Lee Gates would like to publicly express his appreciation of the encouragement, enthusiasm and the technical support of the Ackerman family in housing and maintaining the locomotive.

## K. REEFSTEAMERS MEMBERSHIP TRAINING :

Recent observation of the Coaching Staff trying to fight lineside fires has made the Board realize that Reefsteamers members training has been a bit neglected. The same too goes for the newly qualified firemen. For, even though they are qualified, it takes then several months to get the experience that an SAR era fireman would have gotten in a week – simply because we don't run trains every day.

File Name : WYBL - 2009-M06-16.Doc Doc. Author : Lee D. Gates Date of Print : Thu, 09 Jul 2009 Page **10** of **17** 

The Coaching Staff were recently given instructions of fire-fighting, including a practical lesson on how to start and use the fire fighting pump and hose set mounted on one of our water tankers. The lesson was concluded with the putting out of actual fires deliberately started on an isolated overgrown patch of land between our head shunt and the members approach road.

It must be admitted that not all the participants enjoyed the experience – but we have enough people to roster to make up a five man fire fighting team.

The classes for the firemen included such basics as loco minding and fire lighting – as several of them were fast tracked onto the footplate with little in the way of the traditional apprenticeship. They were all reminded of advanced firing techniques and how to 'read' a locomotive's fire and boiler. Both of the member's classes were then taught day-time hand signals for shunting.



a samers

Coach Controllers take a turn in using the train's fire fighting equipment to put out a test fire deliberately lit on an isolated patch of ground.

Such Mutual Improvement Classes are to be held every three months and the next class will be held at the end of August. The firemen will receive more advanced firemen training, while the coaching staff (and other interested people) will be given a basic course on how a steam locomotive actually works.

Lee Gates, Andrew King and Shaun Ackerman are collecting material to be compiled into a single, consistent training manual and reference – with material specific to our kind of operation. Not only would the manuals be good for training, they would also form a part of branded Reefsteamers heritage.

Aidan McCarthy, Board member in charge of logistics, is assembling a safety related manual to form part of a membership induction kit.

## L. MEDIA LIBRARY :

Another project under way is the establishment of a Media Library at Reefsteamers. Apart from the usual books and movies, we are also looking at assembling a collection of drawings, plans and memorabilia. This is not to be a lending library, but a reference library for browsing and research. Material is already coming together and a proposal has been put out for custom made wooden shelving with lockable doors. Once the security aspect is solved, several members who have extensive collections of material stashed at home, will bring them in.

Stewart Currie is already to be seen wrestling to keep thick rolls of technical drawings flat while he reads and records the titles and the drawing numbers.

Access to the media library will only be for Reefsteamers members and will be controlled by two or three librarians. We are proposing opening the library on Saturday afternoons.

### M. DEPOT IMPROVEMENTS - WORKSHOP

Our Depot is one of the last reasonably intact steam locomotive depots in the country and retains much of the original infrastructure. However, it is aged and many of the buildings are not in good shape. However, in between our locomotive-based activities and that of running trains, we are slowly getting the depot into presentable shape. We are not looking at creating a Railway Disneyland but want to make the Depot neat and safe, and to stem the tide of dereliction.

### M.1). Window Panes :

We have recently serviced all the fire fighting equipment and put the water tower back into service, as covered in Depot Repots and Photo Essays of several months ago. Currently, a project is under way to refurbish the approximately 680 window panes in the workshop and the old boiler house. Many of the window panes are broken, and many of those that are intact are loose because of dried out putty, or rust swelling from the window frames corroding beneath. Many of the intact window panes will need to be removed for cleaning as they are totally cataracted, having become blackened from years of locomotive smoke and are impossible to clean in situ.

Derek Walker is currently our friendly glazier and is tacking the projects on Sun day afternoons. It is a tedious job as the windows frames have to be completely scraped back, cleaned and primered before installing the new glass. Derek is currently working on some of the window panes in the machine shop, concentrating his energies where the machines and electrical equipment are exposed to rain entering in through broken or missing windows.

File Name : WYBL - 2009-M06-16.Doc Doc. Author : Lee D. Gates	Date of Print : Thu, 09 Jul 2009 Page <b>11</b> of <b>17</b>
Reefsteamers Association Incorporated under Section 21 of	Companies Act. Reg. 950259008

Derek needs help has he has limited time for this project. He also has bad knees and will struggle to use ladders and scaffolds for the higher windows. Thus we appeal for help from our membership for volunteers who are perhaps not skilled to work with machinery or locomotive repairs, to contribute in a practical way to steam preservation with putty scented fingers. If you can help, call Lee Gates at 083 630 6618, or email at <u>clubsecretary@reefsteamers.co.za</u> and we can put you to work.

#### M.2). Workshop Relocation :

A current project is the relocation of the workshop from the old Boiler House, which we now use as our Running Shed. The workshop was exposed to the weather through the then broken windows (since repaired) but also very prone to flooding with rain water entry through the open deck clearstory roof of the shed. Operating electrical machinery while standing in puddles is rather unpleasant, and can put the skids under your boots when trying move around the shed or cross the railway tracks – with a 4 ft pit beneath your stride. More importantly though, is the risk of electric shock from operating a lathe or a grinder while standing with the soles of your feet immersed in water and it is gradually seeping in through your boots to make sure you are perfectly electrically grounded.

A less obvious safety hazard is the fact that the person working in the Top Shed workshop usually works alone and he may not be discovered if he injures himself. It is socially lonely too – we Reefsteamers come for the company as well as to work together. (We have adopted a policy that no-one works alone if possible.)

A more long term reason is to consolidate our two workshops into one for ease of monitoring and eventually the fencingoff that will be required should the depot be opened to the public as a live steam museum. Members of the public must not have access to the machinery.

A lathe and a drilling machine have since been moved – with the help of ingeniously applied slings and the hydraulic coal grab wagon. Unfortunately, the lathe took a tumble and fell over onto its control panel, breaking several of the levers and bending the traversing wheel. It was moved regardless and as other remedial work was required, the lathe's tool stand and the racks were stripped and rebuilt with new plates, bolts and controls. While the lathe was partially dismantled, a long standing internal gear selection problem was resolved. Several already-missing control levers were re-fabricated and replaced in the gear selection controls. So the lathe ended up in a better condition after its little mishap than it would have done before.

This happens at Reefsteamers when there is a sudden failure or perhaps a small accident – the item or machine, while under repair for what got damaged, has other faults rectified as well and the item ends up much improved. This fix-it-while-it-is-stripped mentality has gotten Chief Mechanical Engineer Andrew King into some hot water at times, especially when our Hunslet Taylor shunter ended up spread out in an area of about 30sq meters – but we do enjoy the reliability of the finished product.

The drill press was also stripped to resolve a long standing problem with the gear selection. This was a James Thomson project and he was cursing the strange internal toothed selector design as adopted by the Portuguese company that made that drill. Nothing is accessible and everything within the complicated gear train is held together by small, hard to access pins. The drill is now mechanically intact and now has all 12 speeds available as designed.

As of the 20<sup>th</sup> June, the Lathe and the Drill press have been moved into their new positions, shimmed and connected up. The lathe is under the reach of pillar mounted hoist and is thus safe to move again if required.

A pedestal grinder needs to be relocated still.

#### M.3). Mechanical Saw :

A mechanical saw that was rarely used in the Running Shed has been removed, along with its electrical switch gear and has been sent for scrap. It was too small for our use, badly worn and water damaged by the ingress of weather as already mentioned.

Bosworth Engineering has donated a much larger and more robust reciprocating saw for our use. It is currently sitting loose in the man workshop but now the other machines are being moved, it will soon be put into its final location with consideration that it may be used to cut long objects which may need to protrude through into the walk spaces or other machining areas.

The 'Wicksteed' manufactured reciprocating saw is intact, including the motor and drive but needs cleaning and servicing before it can be operated again. Visually, the main repairs required appear to be rerouting of the lubrication lines and rebuilding of the motor's switchgear.



Reefs camers

The Wicksteed saw in a safe temporary location. The object protruding from the right is a block of wood inserted to protect the saw blade.

File Name : WYBL - 2009-M06-16.Doc Doc. Author : Lee D. Gates Date of Print : Thu, 09 Jul 2009 Page **12** of **17** 

#### M.4). Dean Smith Lathe :

The 7 Ton Dean Smith and Grace Lathe is still out of action. It was also experiencing gear selection problems but while the Depot Staff were working on that lathe, they dropped a spanner and some bolts into the gearbox requiring further dismantling work to extract the errant items - we literally did have a spanner in the works. The fishing tricks and magnetic probes didn't work past those tightly packed shafts, gears and dog clutches.

A new keyed longitudinal auto-feed shaft has been machined and is to be refitted. The bearings are being re-machined now for its drive and the tender end. Master Machinist James Thompson is busy with this job - using the newly positioned small lathe to rebuild the monster.

## N. LONG DISTANCE STEAMERS :

There is something guite sweet and special about being present when a young steam enthusiast gets his very first burn from a real locomotive. It is a brand, literally, that marks you as one of the steam lovin' fraternity.

Reefsteamers long-distance member Ryan Fincham, picked up a loconibble on the knuckle of his left thumb, while operating the outboard injector's water valve on our Class 25NC. The clearance between that hinged valve lever and the sizzlin' hot valve body for the stoker's modulating valve is tight - if you keep your left hand horizontal, or use your right hand with your arm crossed over your chest, you're gonna get branded.

What made this exercise special is that Ryan hails all the way from Durban, the land of sunshine, humidity and seriously big cockroaches.

Ryan occasionally takes a flight up to the depot to spend a weekend with us, perhaps riding a train and then getting marvelously messy doing some real locomotive work. He enjoyed the adventure, sleeping in caboose overnight with the usual small gang of misfits and bachelors hanging around the rails.

He even enjoyed his firebox experience - being directed to squeeze his muscular frame into the tight firing hole of Dave Shepherd's Class 15F No.3052 'Avril' - and start grinding down the welds of some the tubes that are going to be replaced. He clambered out quite dirty but quite satisfied at being able to do some real locomotive work. Ryan also had the bonus of being present to seeing the newly rescued 60t Cowans Sheldon Crane being transferred into the Reefsteamers Depot on behalf of Sandstone Heritage Trust.

#### N.1). Weekend stay at Depot :

Reefsteamers cordially extends an invitation to any long distance steam enthusiasts to fly up on one of the several cheaper airlines to spend a weekend with us.

We'll provide transport to and from the airport. We will put you to work but you will get to experience the many aspects of steam - locomotive maintenance, heavy repairs, the general workshop ambiance, servicing, running shunting and in general spending time with to-the-bone steam lovers. The accommodation isn't five star - but you will have a clean bunk with blankets, access to ablutions with ample hot water, electricity and a coal fired stove in the caboose. If you happen to be of the XY chromosomic persuasion, we can make sure you have a private compartment - the toilets and showers are private too.

There are normally always at least one or two people at the depot over the weekend and Reefsteamers generally provides lunch on a Saturday too. You need only chip in a really nominal amount like R20 for Sunday's meal and perhaps some firebox filler on Friday night if the airline staff don't feed you!

We look forward to seeing more people around the country stepping out for a weekend of railway depot adventure.



although the Cru-Boose's stove's chimney actually discharges at that point as well.

Reefsteamers Association Incorporated under Section 21 of Companies Act. Reg. 950259008

Long Distance enthusiastic, Ryan Fincham, tries his hand at some footplate cooking during his first night's loco minding with yours truly.





lathe to get it to stand stable and level.



File Name : WYBL - 2009-M06-16.Doc Doc. Author : Lee D. Gates

Date of Print : Thu, 09 Jul 2009 Page 13 of 17

#### N.2). Luca Lategan – 6 month stay :

In similar vein, Luca Lategan will be joining us from mid-July onwards and will be staying at our depot for at least three months, sampling the delights of the Management Coach No.42 – actually living at the Depot. Luca is to be put to work within the workshops but primarily to work on the locomotives, and to get some footplate experience as well. Luca will be living rent free at our depot, but will be working as a volunteer – only receiving a subsidy for food to help his expenses. This is someone who loves steam and we hope that when he returns to the Cape region, that he takes his enthusiasm and new-found knowledge with him and is able to help the heritage bodies down that way!

**Reefsteamers** 

## O. SECURITY RULES :

It is frequently said that Africa is not for sissies and this is definitely true in terms of theft and crime. South Africans of all races learn to live in a state of low level alert if they expect to survive unmolested. The Reefsteamers Depot is a juicy target for theft. Surprisingly, we don't face much risk of theft for items for their intrinsic practical value, such as tools, gardening equipment and crockery, but we Reefsteamers have to be constantly alert for theft of items and locomotive parts for their scrap metal value. Brass and copper are favourites with the scrap rats, but even large plain ferrous items such as brake vacuum cylinder covers and coach trestles are worth a loaf of bread and a can of tomato pilchards if they can be carted away.

We are bracketed by two informal settlements, shanty towns where unemployment is high and money is short. Adding to this risk are THREE scrap metal recyclers within walking distance, said distance depending of course, on the size of the item that has just been stolen.

However, the newly increased security has caused some inconvenience for people passing through the gates and some club members and visitors have been obstructive and very rude towards the security guards who are just doing their job. This will not be tolerated on behalf of the club's members.

Reefsteamers requests that all visitors and occasional members please abide by the security rules and comply to the instructions of the Security Guards. Not only are they there to protect materials and tool from being stolen, but also to prevent vandalism or criminal intrusion onto the property. In addition to the sign in procedures, the Security Guards have been instructed to search all vehicles upon entrance and exit, even those of regular members and members of the board.

Please remember that Reefsteamers, as an independent entity, exercise the Right of Admission and have instructed the security guards to deny admission if necessary. You may also be held and possibly detained at the gate if your vehicle is found to have undeclared or un-waybilled tools, materials or parts that the security staff deem to have been taken from the Depot.

## P. OFFICIAL STATEMENT – PIET STEENKAMP :

I (Lee Gates) was instructed to post this official statement on behalf of the Reefsteamers Board.

"Kindly take notice that Mr. Piet Steenkamp's membership of Reefsteamers Association was permanently revoked with effect from 25 November 2008 by a unanimous decision of the Board of Directors of Reefsteamers."

It was an internal matter and the details thereof do not concern any outsider.'

Reefsteamers Board - 2009.

### Q. LOGISTIC CHALLENGE - COMPOUNDED STEAM OIL :

Reefsteamers faces an issue in the supply of the special compounded oil that we use to lubricate the cylinders and the valves of the locomotives.

In South Africa, it is only going to be made in one batch per year. When stocks run out ... tough luck. Equivalent oils are made overseas but importing them in sufficient quantities for our Steam locomotives would be much too costly.

Contrary to popular belief though, compounded steam oil hasn't gone extinct along with the steam engine as it has found an equivalent modern application in highly loaded worm gear drives. (Which are notoriously difficult to lubricate due to extremely high shear-stresses imposed on the lubricating film.) It is also used in the food and food packaging industry where steam is often used for cooking or sterilizing,

In the early days of steam power, beef tallow was used as a lubricant. It works well but goes rancid in storage, and can also form acids within the reciprocating engine if the cylinders and valve chests are left wet between uses. Newly discovered petroleum based oil was then substituted. Unfortunately it doesn't handle steam and water well at all and is unable to form a lubricating film within a steam engine.

Castor oil, although it does form a film in steam engines, is too thin to withstand the mechanical load – although it was used in racing engines and for aviation applications in the early years of the 20<sup>th</sup> century.

File Name : WYBL - 2009-M06-16.Doc	Date of Print : Thu, 09 Jul 2009
Doc. Author : Lee D. Gates	Page <b>14</b> of <b>17</b>
Reafstanmars Association Incornerated under Section 21 of Companies Act. Dog. 050250008	

Compounded Steam Oil, or as we usually just call it, 'Valve Oil', has a mineral base but has animal fats rendered into it, along with the appropriate stabilizers to avoid oxidation. 'Valve Oil' typically has chicken or pork fat at about 4% by volume. The fat actually 'wets' the oil, somewhat like a few drops of dishwashing liquid breaks the surface tension of a whole sink load of water. The compounded oil is emulsified by the steam, forming an almost soapy mixture that is able to cling to the working surfaces and form a protective film of lubricant. Remember that unlike within an internal combustion engine, the pistons of a steam locomotive do not contact the cylinder walls as they are held centralized by the cross heads – only the rings need to be sealed and lubricated. (Same goes for the valves.)

Using heavy grade machine oil, or oils for gearboxes and differentials (Such as EP90) would just result in the oil being slickly and uselessly carried right through the engine and blown out the chimney stack.



kee Seamers

A winter-night-cold can of Compounded Steam Oil ('Valve Oil') being heated on the Class 12AR's flame plate to render it fluid enough for easy pouring.

The addition of the animal fat is the reason why the oil goes so thick and viscous on a cold day, and is the reasons why you will often see a green can of oil heating up on the flame plate of a locomotive during the morning preparation. (As per the photo above) With the ambient temperature in the pre-teens, this stuff pours in a thin, stiffly reluctant stream like green coloured honey. Once it is in the lubricator, or the oil tank of a mechanically lubricated engine, the heat of the castings and of the oil tank's heater line thins the oil out. As you can see, it is a very specialized oil that cannot be substituted.

If any of our members know of any sources of compounded steam oil, or of any that is held in stock in Depot sized quantities, please let us know as we can't run our trains without the stuff.

### R. SOME NEW MEMBERS :

I asked some of our newest members in the workshop and locomotive teams to write a bit about themselves and why they love steam. Although working on Steam Locomotives does have has it compensations, it is often a rough, dirty and thankless job. Most of actually don't know why we continue at times. But to claim the often touted African principle of 'Ubuntu', a person is the sum of those around him (or her) – and by understanding each other, we understand our selves. The racists amongst the whites would tend to decry this concept, especially with the violence and racial hatred extant in this country, with politicians using the principle of 'Ubuntu' to score cheap points and to cover their own lack of performance.

In steam preservation, the principle of 'Ubuntu' is true, and I personally and always fascinated by the different types of people that share an abiding love for steam – that abiding love that makes them come back for more.

#### R.1). Riaan Coetzee :

Riaan says

'My father started in 1970 as a fireman in Hartenbos. His passion for steam is now my passion.

I can still remember the days when Class 25NC No.3476 pulled the Trans Karoo to Klerksdorp and back, that why I have this passion. My uncle Fanie Coetzee was manager of the steam deport in Springs, and he also had a big influence on my love for steam. I joined Reefsteamers because Oom (Uncle) Piet Steenkamp, Att de Necker and Coen Pretorius are my heroes. I also want to become a great steam driver like those three men.

There is nothing in this world that you can compare with these big powerful ladies, and I would do anything in my power to keep them alive!



Riaan Coetzee enjoys a footplate ride on the Class 25NC that he assisted to light up that very morning – and his dad visited the depot that day too!

Riaan has joined us primarily in the workshop, especially as he operates a boring mill for a living. He has just started doing locomotive minding and is currently doing most of the midnight shifts to get as much knowledge as he can as he starts on the same road that his heroes of steam did in doing shed based work before training as a fireman, and eventually to become a driver. He has already taken his first training trip as a fireman.

File Name : WYBL - 2009-M06-16.Doc	Date of Print : Thu, 09 Jul 2009
Doc. Author : Lee D. Gates	Page <b>15</b> of <b>17</b>
Reefsteamers Association Incorporated under Section 21 of	Companies Act. Reg. 950259008

#### R.2). Robert Davis-Hannibal:

Robbie says,

To be honest, I don't know where my interest in rains comes from. I can only assume I was born with the interest, because for as long as I can remember, trains have always been a part of my life. I can still remember my first HO scale model (A Marklin 3-rail set) which I have now passed on to my son. He was also the cause of the rest of my HO scale layout going into storage, as it was set up on what became his bedroom after he was born.

Onto the real thing, the power of steam has always fascinated me, be it powering locomotives, ships, cars, trucks or tractors. Steam power to me is the closest man will ever get to building a living, breathing, eating and drinking machine.

Lacking the technical knowledge to get involved, I have always watched from the sidelines. Also, I believe that a priority has always been family, so PTA's and Governing Bodies etc have taken large lumps of my time.



ee seamers

In one of his first tasks around the Depot, Robbie comes to grips with the ash pan cooler supply unions on the Class 25NC No.3472 'Elize.'

Now the family is all grown up, I can do what I want, hence the plunge into joining Reefsteamers. I hope now to make up for some of the lost time and learn as much as possible about how to treat these grand old ladies

Robbie has joined us primarily in the workshops. He has already been put to work doing light mechanical repairs on the locomotives. We have four locomotives which are to go through hydrostatic testing (one already done) and so Robbie is getting lots of practice with the boiler preparation. He has also had a stint in using the coal grab.

Robbie mentions that his family kept his interest dormant. This is true in many cases and it is perhaps no accident that the core Reefsteamers team, particularly in the workshops, are mainly single people. However, we are flexible and even if individuals can only donate a single afternoon in a month to assist – it is greatly appreciated. The eventual demise of steam will not be through lack of spares, but through the sheer lack of manpower to run and service these mighty machines, not to mention assisting with the marketing, administration, the coach work, etc.

### R.3). Colin Hall

#### Colin says,

'I am a fanatical photographer having previously been Chairman of the Edenvale Photographic Club. Steam Trains must be one of the most beautiful and compelling subjects that one can photograph. The monstrous size of the locomotives, together with the atmospheric clouds of smoke and steam just evokes such an emotional response from deep within me.

The historical importance of steam becomes increasingly significant as time passes and we must sadly watch as many icons of our heritage become extinct.

Having always had an interest in engineering and machinery (I have a post graduate degree in genetics – which has nothing to do with engineering nor machines), I hope to be able to get my hands dirty helping real engineers and learning more about how steam trains work.



Colin Hall concentrates hard as he runs through the routine of starting the fire pump engine in front on 1  $\frac{1}{2}$  dozen spectators during a recent training class.

I'm not too sure what I have to offer but I can carry quite heavy things! Whilst I don't have any family who were involved with the railways, I am old enough to remember the steam whistles as the trains left the station not far from where I grew up in Johannesburg.'

Colin is one of the Reefsteamers with a very unusual job description – he works in the horse racing industry, matching DNA types, maintaining a stud book and micro-chipping the foals. He hasn't really found his feet at the Reefsteamers yet – preferring to work in the workshops but presently working on the coaches to get a different viewpoint on our operation and to help fill out the ranks of the limited number of Coach Controllers.

File Name : WYBL - 2009-M06-16.Doc Doc. Author : Lee D. Gates Date of Print : Thu, 09 Jul 2009 Page **16** of **17** 

### S. REEFSTEAMERS COACHES - SMOKING RULES :

Something that has been causing issues on board our coaches is the smoking. We have a general smoking ban on passengers during winter, especially as many will simply toss their cigarette 'stompies' (stubs) out of the windows. There's many a veldt fire that has been cause by a cigarette, but the steam locomotive gets the blame.

Legally speaking, no smoking is allowed at all on the coaches, as smoking is prohibited on a public conveyance, according to the laws passed by the government. We were using the lounge and bar cars in the center of the train set to provide a smoking vehicle. Technically, this is illegal as non-smokers from half of the train have to pass through the smoking cars to reach the catering car to buy their food.



Reefs amers

Adding to the problem is that some of our own members are smoking when passengers are not allowed to smoke. Our members know well not to toss cigarette butts out of the windows - but it makes passengers justifiably very irate to be told not to smoke when they can see someone smoking, or ash trays are laid out, or they can just smell that someone has been sneaking a puff.

The Reefsteamers Board has imposed a total smoking ban on every coach within the train, and this ban extends to Reefsteamers members whether they are presently on duty or not. A member who breaks this ban will be removed from the duty roster. The Board realizes that this is an emotive issue - but we must stick to the rules for the sake of the passengers. If people can fly in an aircraft for 12 hours without smoking, they can ride ina train for 1 1/2 hours without harm.

There are long term plans to create a smoking car with sealed windows and extractor fans - but for now, quite frankly, we have more important things to do.

### T. REEFSTEAMERS CONTACT DETAILS "

This newsletter was compiled by Lee D. Gates on behalf of Reefsteamers. For observations, corrections and suggestions - email me at webmaster@reefsteamers.co.za

Germiston Steam Locomotive Depot. Click here to download the location map.

Postal Address = PO Box 15083, Riverfield 1559 Depot Mobile = 076 371 7608 Web Master = webmaster@reefsteamers co.za

Web Site = www.reefsteamers.co.za Enquiries Email = elize@reefsteamers.co.za Technical Email = shaun@reefsteamers.co.za Bookings and Marketing : Les Smith Bookings: bookings@reefsteamers.co.za Marketing : marketing@reefsteamers.co.za

#### **COPYRIGHT**:

The document may be freely distributed as it is. Contact details and copy right notice must remain intact. This document is not to be sold. This document is not to be included in whole or in part on any other media, whether optical, magnetic, printed - including forums, websites and newsletters, without the prior express permission of the Author or of the Reefsteamers Board.

File Name :	WYBL - 2009-M06-16.Doc
Doc. Author :	Lee D. Gates

Date of Print : Thu, 09 Jul 2009 Page 17 of 17