



# THE COUPLING



The Official News Letter of the Johannesburg Live Steam Club

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February 1999

## From the Editor

Keith Bradley  
Editor and Secretary

Hello and welcome to the 1999 New Year, and as you can see we have a new look newsletter to go with it!

As this is my first attempt at producing a newsletter I ask you to bear with me through the trials and tribulations that I will encounter through the year.

I will try to provide content that will both be informative and thought provoking, integrating both humour and technical information.

However, as I do not have the years of experience of my predecessor, nor the technical wizardry and skills of the older members, to this end I appeal to all members to write articles, submit drawings or anything that might be of interest.

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## You know you're a Livesteamer when...

Most of us know the name of the comedian Jeff Foxworthy and his you know you're a Redneck when jokes. Well here is one Livesteamers attempt (with no apologies to Jeff).

If you borrow your neighbour's lawnmower and ask him where the bypass valve is, you know you are truly a Live Steamer.

If you have fired up your braai on anthracite, you know you are truly a Live Steamer.

If you buy a Toyota Bakkie only because the ribs on the rear deck are 7 1/4" apart, you know you are truly a Live Steamer.

If you have parked with a date in Germiston yard, you know you are truly a Live Steamer.

If you will drink from the tap, but buy bottled water for your 16DA, you know you are truly a Live Steamer.

If the travel agent speaks of "Dream Destination" and all you can think of is De Arr, Bulawayo yard, and the reverses at Barkly East, you know you are truly a Live Steamer.

If you get to the wedding and find steaming gloves in the pockets of your tuxedo, you know you are truly a Live Steamer.

If your kid can tell the difference between a Pacific and an Atlantic before she can tie her shoes, you know you are truly a Live Steamer.

If you can wash your face with Cleen Green, you know you are truly a Live Steamer.

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I will try to keep to the theme of the club, in so much as our constitution will allow it, by talking about steam related matters, but I am not going to limit myself or the magazine to locomotives only.

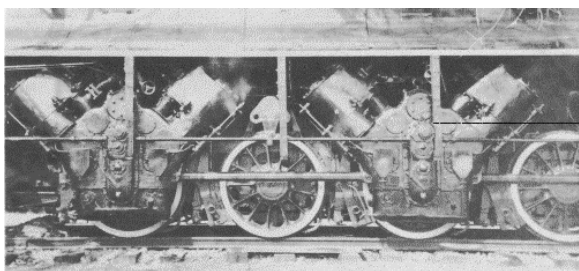
Best Regards  
Keith Bradley

FORGOTTEN EXPERIMENT:  
THE V-8 STEAM LOCOMOTIVE

By James D. Hefner

The decades of the 1920-1930s were years of rapid progress in steam locomotive development. The countries in Europe were vying for the title of the fastest steam locomotive, while in Germany itself, the advocates of steam power on the Deutsche Reichsbahn, led by Dr. R. P. Wagner, were competing against the new threat of the high speed diesel, in the form of the *Flying Hamburger*. During this period, several improvements on the basic steam locomotive were tried. Some of them, such as the addition of a feedwater heater and André Chapelons' refining of steam passages, were considered a success, and were widely copied. Compounding, which the French favoured also saw limited use. Other experiments, with high-pressure water tube boilers and steam turbines, for example, were not so successful.

Most of these experiments attempted to improve the overall efficiency of the steam locomotive. While they did succeed in providing an incremental improvement, these savings in fuel were often more than offset by the increased maintenance requirements. The experimental locomotive shown here may have also been built for greater efficiency; but another goal was probably in mind.



The speed record for steam locomotive still stands at 126 MPH, and was set by A-4 Pacific No. 4468, (named the Mallard) on a slight down-slope stretch on July 3, 1938. Earlier, the German Class 05 Hudson No. 05.002 achieved a speed of 124.5 MPH with a test train on a level stretch in 1936. Several American Atlantic,

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**DID YOU KNOW?**

That the greatest tractive efforts for a non-articulated steam locomotive was the Pennsylvania railroads, Q-2 a 4-4-6-4 at 100,800lbs (115,800 with tender booster)

The greatest tractive effort for an articulated steam locomotive was the Virginian 2-8-8-8-4 at 166,300lbs (compound) 199,560 (simple)

**What is Tractive Effort?**

Tractive effort is a theoretical quantity. Railroads preferred it to HP ratings because HP involved a time quantity, which was determined, in part, by how well the locomotive was being fired (among many other variables). Tractive effort, on the other hand, was determined strictly by the geometry of the locomotive. Tractive effort can be determined by the following equation:

$$TE = \frac{c P (d)^2 s}{D}$$

- TE = tractive effort in lbs.
  - c = a constant determined by the mean effective pressure and friction (usually 85%)
  - P = boiler pressure
  - d = piston diameter
  - s = piston stroke
  - D = driver diameter
- Using the above equation with specifications for a Union Pacific Big Boy yields:  
 Boiler pressure: 300 lbs.  
 Cylinders: 2x 23.75x32 inches  
 Drivers: 68 inch

$$TE = \frac{.85 \cdot 300 \cdot 2(23.75)^2 \cdot 32}{68}$$

$$= 135,375 \text{ lbs.}$$

## CALENDAR OF EVENTS

EVENT: CLUB MEETINGS

PLACE: W. H. COETZER SCHOOL

TIME: LAST TUESDAY OF THE MONTH @ 20H00

Monthly Gathering of Members.

EVENT: CLUB FAMILY DAYS

PLACE: THE TRACK, WEMMER PAN

TIME: LAST SUNDAY OF THE MONTH . 12H00 TO 17H00

Fun and Family day at the track grounds.

EVENT: CLUB WORKS DAY

PLACE: THE TRACK, WEMMER PAN

TIME: SATERDAYS 10H00 TO 15H00

Track maintenance and construction for the 1999 and 2000 steam meetings.

EVENT: SUNDAY PUBLIC RUNNING DAYS

PLACE: THE TRACK, WEMMER PAN

TIME: EVERY SUNDAY FROM 15H00 TO 17H00,

WEATHER PERMITTING

Public passenger haulage also, members and friends.

EVENT: RISK ASSESSMENT DISCUSSION

PLACE: W. H. COETZER SCHOOL

TIME: TUESDAY 30<sup>TH</sup> MARCH 1999, 20H00

Risk assessment discussion with a CSIR consultant

### LONG-RANGE PLANNING

EVENT: GAUTENG STEAM-UP, CARS AT THE PARK

PLACE: THE STATION, WEMMER PAN

TIME: WEEKEND 5 AND 6 JUNE 1999.

EVENT: HOBBIES AND CRAFTS FAIR

PLACE: TRANSPORT MUSEUM, WEMMER PAN

TIME: WEEKEND, 2 AND 3 OCTOBER 1999

EVENT: MEMBER WORKSHOP VISITS

PLACE: CONSENTING MEMBER'S WORKSHOPS

TIME: TO BE ADVISED

Monthly visits to some consenting member's workshops will be arranged

EVENT:

PLACE:

TIME:

If you put your mother's picture in the attic to have room on the mantelpiece for a picture of your 25NC, you know you are truly a Live Steamer.

If you toot your horn three times before backing out of the driveway, you know you are truly a Live Steamer.

If every door hinge in your house is dripping 600W, you know you are truly a Live Steamer.

If your car is onto its third automatic transmission because you tried to "notch up" on the highway...again, you know you are truly a Live Steamer.

If your wife calls out, "Honey, come move this boiler so I can do the dishes," you know you are truly a Live Steamer.

If the shakers on your dining room table are labelled "Salt," "Pepper," and "Coal Soot," you know you are truly a Live Steamer.

If the guy at Audio Centre tells you to bring your favourite CD to listen to the system, and you come in with the sounds of a GMGA, you know you are truly a Live Steamer.

If you have to redecorate completely because you fired up indoors to test the injectors on a cold July morning, you know you are truly a Live Steamer.

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From the Livesteamer  
Mailing list  
G. Keith Motton

## MATTERS ENGINEERING

Have you ever needed a hand rail stanchion, or a ball for the end of a lever? Well look no further than your scrap bin, for old ball bearing races can be broken up and the ball bearings annealed. You then can drill holes in them, tap them, etc.

## Minutes of the AGM

### Apologies

Alex Mitchell  
Chris Greef

### Chairman's year to date report: Chairman's Comment

The club is structured like a locomotive, with all of the parts playing an important role. The Chairman is the akin to the driver, the Treasurer the fireman, etc. Whilst the locomotive is riding the straight and level all is well, and the passengers (Club Members) have naught to say, but when the locomotive runs a grade or the track detours from the normal true and tried way, then the passengers are quick to grumble. The Chair needs all the help it can get to make our locomotive run smoothly and it cannot do this without a strong committee. Over the past year I, as Chairman feel that I have not had the total support of the committee and our club cannot function as a one-man show.

### Track and Construction Report

The past year has seen the part completion of the ground level track station, insertion of new style points at the lead-in to the carriage shed, and by the station area. Chris Greef and friends have almost completed the tunnel for the ground level track. Work on the high level track has been mainly to replace the aging pillars with metal A-frames and repairing the traverses.

The Chairman also commented on workdays, and he wished that people would hold the same concern for workdays, as they do for family days. He suggested that family days be held every three months.

Still outstanding matters are the Compressor, insertion of the loop for the ground level track, painting of the clubhouse and steaming bays.

The functions that we held during the year: Cars in the Park, Hobbies Fair, Birthday and Christmas parties. Also the museum hosted children's day and Clive Chadwick and Len gave a talk on how a locomotive works.

Finally the Chairman thanked every one for the help that they put in over the past year, with special thanks to: -

Clive and Sarah  
Albie and Claudie  
Eddie and Natalie

Looking to the future: -

There has been a lot of talk about the upcoming 2000 nationals, but very little action.

### Treasurers Report

The Treasurers report was read and accepted, with a question being raised why the expenditure for the Xmas party was more than 1998 and only a sum of R155-00 was raised from the people who brought non-members and children over the age of 16. The Chairman replied that he did not think that it was his job to ask those members who where at fault, to pay the extra R15-00 per person. And he felt that every time something did not go right, the members blamed him.

### The Nomination of Committee Members

Nomination for Chairman

Ian Headland

Nomination for Treasurer

Clive Chadwick

Nomination for President

Len Ryneke

Nomination for 2nd Boiler Inspector

Chris Greef

Year 2000 sub-committee

Nomination for Vice Chairman

Clive Chadwick

Nomination for 1st Committee

Member

Peter Micenko

Nomination for Technical Advisor

Johnny Heath

Nomination for Editor

Keith Bradley

Head Co-ordinator

John Bradley

Nomination for Secretary

Keith Bradley

Nomination for 2nd Committee

Member

Bobby Ahlstrom

Nomination for 1st Boiler Inspector

Ernest van Rensburg

Assistant

Lance Devine

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## An Increase in Subscription

A call for the increase of subscriptions was made, and this we be put forward at the next Committee Meeting.

## The New Public Liability Act.

1. Over the past months members have commented on the implementation of the new Public Liability Act, and how it might affect the haulage of public on open days, viz. Safety at the track.

John Bradley has made a provisional arrangement for a Consultant from the C.S.I.R to do a risk assessment of our Clubs facilities, this is to be held provisionally on the 30th March 1999.

## Forthcoming Events

2. "Cars in the park", is scheduled for Sunday, 6th June 1999.
3. "Hobbies and Crafts Fair 1999", scheduled for weekend of the 2nd and 3rd of October 1999.
4. "Gauteng Live Steam Meeting 1999", will be held in conjunction with the "Cars in the Park"

THE NEW COMMITTEE WOULD LIKE TO THANK THE OUTGOING SECRETARY / EDITOR AND THE ACTING TREASURER OF 1998 FOR THEIR EFFORTS DURING 1998.

Keith Bradley  
Secretary

*From page 2*

Pacific and Hudson class locomotives also achieved unofficial speeds that were near or over 110 MPH. All of these seemed to push the limit for what could be achieved with the steam locomotives' massive reciprocating drive train.

Engine 19.1001 seems to have been an attempt to exceed the speeds that could be accomplished with a conventional steam locomotive. I first encountered this locomotive in the form of pictures in a book on the United States Army's Military Railway Service (MRS)\*. The book's only statement about this locomotive was that it was a V-8 steam locomotive found by the US Army when they captured the Henschel & Son locomotive Works Number 1 in Kassel, Germany. It was the Henschel works that built many of the Deutsche Reichsbahn's streamlined locomotives of the 1930s, including No. 61.001, a streamlined 4-6-4 tank engine, and No. 61.002, a streamlined 4-6-6 tank engine.

In designing high-speed steam locomotives, Henschel may have realised that conventional steam locomotives were on a dead-end track in terms of speed. There was a limit as to how fast you could move their reciprocating drive train before the driving rods or connecting rods would give way. You could push the limit by increasing the driving wheel diameter; but there was also a limit here to the practical diameter you could use. (The largest ever used on a working locomotive was 9 feet, used by the British Pearson 9-foot Single Class 4-2-4 locomotives. The Class 05 had a driving wheel diameter of 7 ft. 6.5 in.) Other problems also crept up with larger diameter wheels, including slippage and stress in the driving wheels themselves

*To be continued next issue*

## Steam facts

### The SAR Class 6J .

Manufactured by Nielson Reid & Co.  
Wheel Arrangement 4-6-0  
Working Pressure 190 psi  
Driving Wheel Diameter 54 inches  
Grate Area 18,7 sq. ft  
Cylinders 2 by 17" dia. By 26" stroke  
Tractive Effort 18780 lbs.  
Length 53 feet  
Total Mass (2730 gal water 5.5 tons coal) 83.5 tons  
Axle load 13 tons 8cwt

**PRICE in 1902 WHEN NEW... R7462-00**

## NEXT ISSUE

Where in the world is ING L. D. Porta?  
Introducing a steam locomotive for the 21<sup>st</sup> Century.  
How the GPCS firebox works.  
Titanic Facts