

The MICROMETER

THE AUCKLAND SOCIETY OF MODEL ENGINEERS INCORPORATED

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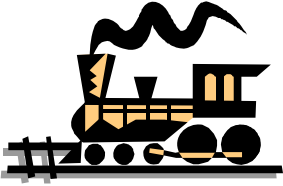
In this Months Edition

Roger van Ryn's Outrunner Motor

Paris to St Pancras: A two-hour rail trip



Eurostar leaves St Pancras for Paris



Train Roster

Date	<u>Electric</u>	<u>Electric</u>	<u>Steam</u>	<u>Steam</u>	<u>Station</u>	<u>Station</u>	<u>Station</u>	<u>Extra Guard</u>
7-Sep-08	M Granger	J Harrison	<u>G Anderson</u>	G Bell	W Green	D Hamp	M Hollis*	
14-Sep-08	D Housley	S Locke	E Burns	<u>L Farquhar</u>	P Jones*	K Knight	D Leybourne	
21-Sep-08	P Moy	M Plant	A Gasteen	<u>M Jack</u>	I Lyons	H Martin*	G Murray	
27-Sep-08	----- ASME Exhibition day - Volunteers on the day -----							
28-Sep-08	----- ASME Exhibition day - Volunteers on the day -----							
5-Oct-08	T Robinson	D Simons	<u>B Piggott</u>	A Pritchard	E North	J Olsen*	B Parker	
12-Oct-08	J W-Buys	P Woodford	<u>D Russell</u>	R VanRyn	F Putt*	G Quayle	R Reichardt	
19-Oct-08	J Yearn	<u>D Black</u>	G Bell	G Anderson	M Richardson	A Roberts	K Ryan*	
26-Oct-08	D Booth	T Boyd	<u>G Wills</u>	E Burns	A Shirley	R Stratton	R Street*	P Dowdeswell

Bold and Underlined name – is the designated **Train Controller**, i.e. the person in overall control of all operations for the day.

Bold with Asterisked* name – is the designated **Stationmaster**, i.e. the person responsible for activities in the station area for the day. The Stationmaster is also responsible to account for the day's takings.

Important Notice for Station staff: Young Passengers, Loading trains

It has been observed that from time to time a parent asks to seat a small child behind them or in some cases behind an older sibling. In the interests of ongoing safety practices, if a child cannot place their feet flat on the trolley running board they must have an adult or older child ride immediately behind them and this person should be instructed to hold onto the child in front of them. Station Masters and staff should watch for this

Club Calendar September 2008

September 2 nd	Monthly General Club Meeting, 7.30pm
September 6 th	Working Bee at Clubrooms, from about 9.00am
September 9 th	Committee meeting
September 16 th	Beginners night at Mike Jacks workshop
September 27 th & 28 th	ASME Annual Exhibition & Open Weekend
Every Tuesday	Tuesday Club

Presidents Report

I would first like to thank those of you already helping with the planning for the Jubilee. The likes of Hugh Martin, Grant Anderson and Gary Farquhar have got things rolling but there is still the need for someone else to play a central roll in organising this event. Greville has taken on the job as a go-between. He passes on any information to and from the committee and if appropriate we can authorise any actions needed. This takes out the time delay which would otherwise occur if decisions were not made until the next committee meeting. The latest news about this event is that the booking has been made to hold the event at Waipuna Lodge. The dates are 1st October to 4th October 2009. The first day is a set up day.

You will remember the chap from Machinery House, Bill Lee, who gave us a quick chat a couple of months ago. He showed me the flyer they have printed for their upcoming sale at the end of September. On it is mention that there will be steam locomotives on show which is what we had agreed to do in return for some sponsorship. I therefore ask that you consider having on display and perhaps staying with them for a rostered period to answer questions about our club. I'll find out when they would like us there and get a clip board circulated at the next meeting so that you can indicate your support.

Following closely after that is the annual exhibition starting on the 27th September. The annual dinner will be on the Saturday night where the cups will be given out for the winners of our numerous categories. Again clip boards will be circulated for the several jobs we need people to do- namely driving, station and exhibition.

David Black will be standing in for me during the exhibition and the October meetings. My employer didn't consult with me when organising [why can't this stupid programme understand that in New Zealand we spell "organizing" with an "s"?] the schedule for relocating the motor line to Thailand! This means that I miss the auction as well so someone else will have to make those opening bids on thing they don't really want and occasionally get stuck with them. Also in October, the workshop night will be held at Graeme Murray's workshop so if you want inspiration and to see the gadget guru's methods take a trip to Pakuranga on the third Tuesday.

Last night I was surfing You-Tube and saw a clip of the new A1 locomotive under its own steam for the first time. There are plenty of interesting clips to view. Try searching for "model engineering" etc. There is a good one of a trip around the Hamilton track which has only just been posted. Another fun one to search for is "bad landings". Quite a few of the clips are of Wellington's airport! I digress...

Happy Modeling
Mike Jack

50th Anniversary Celebrations

It is now confirmed the 50th anniversary celebrations and exhibition will be held 2nd - 4th October 2009. The booking has been made with Waipuna conference centre. A year away still but a good time to mark your calendars.

In conjunction with the upcoming celebration, a booklet on the history of the ASME is in initial preparations. To assist with this we are seeking stories photos, memories, from both present and past members. You don't have to write it down. We are happy to talk to you and record it ourselves. If you have any information that you wish to share with us please contact Gary Farquhar (09) 5767025 or Murray Lane.(09) 534 8396. If you wish to write it down or send other information please send to Gary Farquhar P.O. Box 51277 Pakuranga, Manukau City

We are also starting a database of past members who may be interested in being contacted to be involved in the celebrations/ exhibition. If you are able to provide some information to assist please also contact the above. For example we are trying to trace the family of the late Basil Wilson to try and track down some of his models. Can anyone help? **Gary Farquhar**

Bits and Pieces Table June 2008

Hugh Martin produced the safety valve and check valve assembly for his GWR loco. All very well machined from a quite complicated casting. **Photo A**

Mike Jack showed some lifting links he had made for Greg Burrow's large marine engine. **Photo B**

Graeme Quayle modified a Boxford quick-change tool post to make it indexing. **Photo C**

Mark Richardson brought along a tool post grinder attachment, I understand it is for sale. More details from Mark if interested. **Photo D**

John Olsen had some full size gauge glass fittings he needed seals for. Hugh was able to identify the make as Hattersley. **Photo E**

Martin Plant had some rings for the piston valves of his B1 Springbok **Photo F**. Also some patterns for Britannia spring hangers with the CAD drawings He is seeking someone to produce them in iron by the lost wax method. **Photo G**

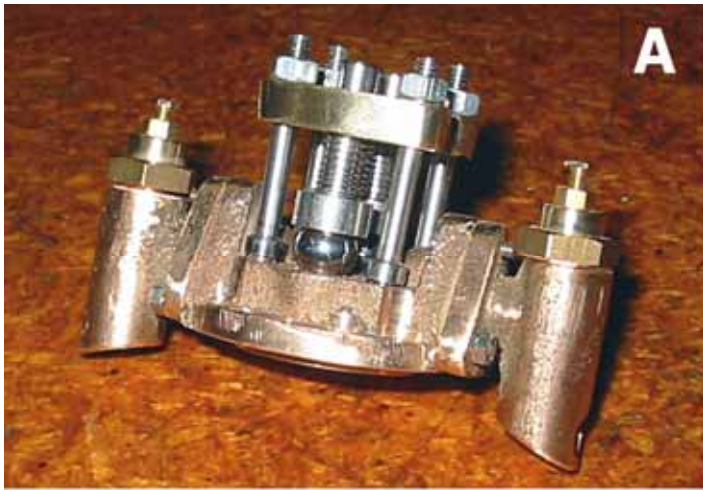
Dave Russell has a book on model jet engines and some planes for same. Available on loan to anyone interested.

Alan Prichard has fitted a 4 jaw chuck with a stub that can be held in the 3 jaw chuck. **Photo H**

Trevor Taylor showed the running boards for his Ajax [Kathleen] he is overhauling. **Photo I**

Roger Van Ryn brought along a filing machine he made from a sabre saw **Photo J** and an electric motor based on an Outrunner aero engine. The motor seemed to produce a lot of power from very small batteries **Photo K**

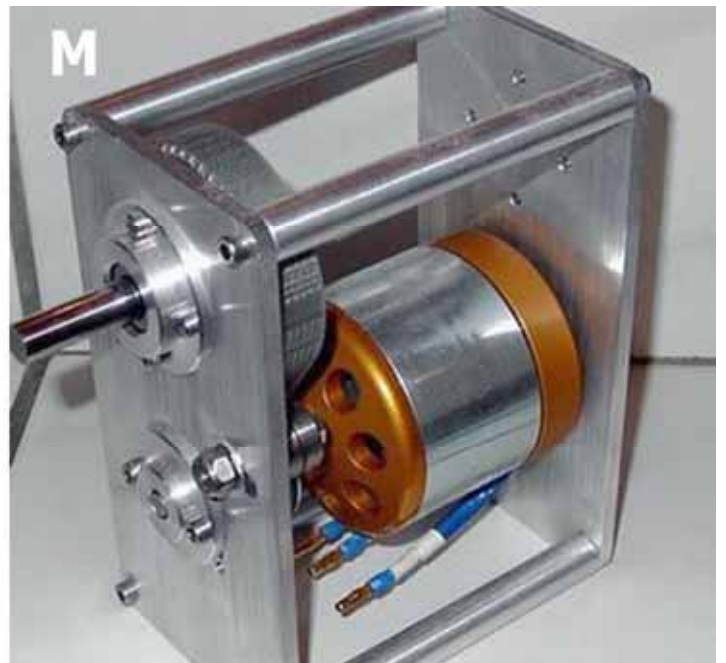
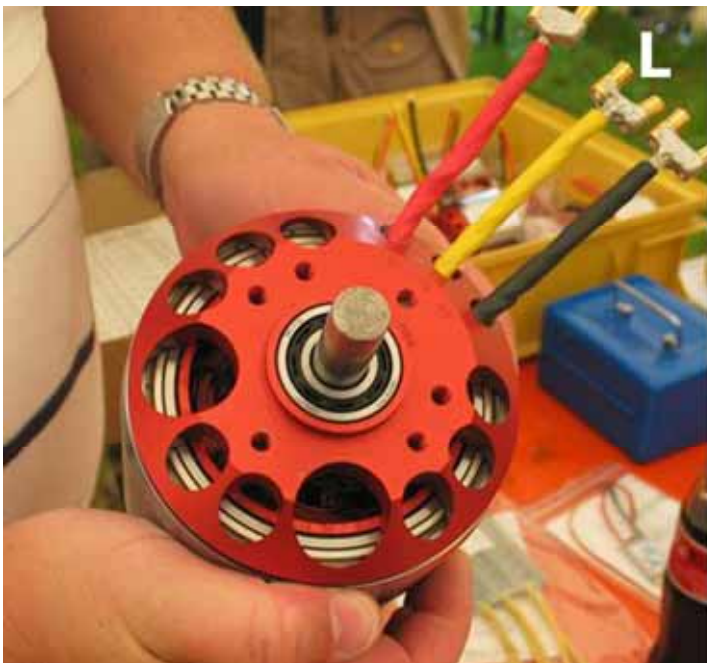
Alan E





Roger van Ryn's "Outrunner"

Just a short note regarding the 'Outrunner' I brought in to the 'bits'n'pieces' the other night. It seemed to garner a lot of interest as quite a few members had comments and suggestions. *Continued...*



Thanks here to Bob Fosbury who sent me an article out a recent 'Model Engineers Workshop'. This is a very good article about converting cheap mains motors into Outrunners. The author converted a hand drill motor for a model engine and gets 2,5KW. At better than 80% output efficiency this is still heaps for a model aeroplane. Along with the new Li-Poly batteries (which need no mechanical pressure hold them together to work, thus obviating a metal can.), aerobatic electric flight with vertical take-offs are a reality.

I was inspired and based the size of my 'concept model' by one I saw on:

<http://www.electricppg.com/Developments/LemakMotor/index.htm> **Photo L**

You can see from the photo that its quite small and puts out 20KW!! (That's around 27 H.P.!) The article shows a parafoil project where they plan to use the motor.

The biggest 'off-the-shelf' one I could find is this one:

http://www.torcman.de/index_e.htm **Photo M**

Its 99mm long 89mm diameter and can put out 4,5KW. (about 6 H.P.?)

I emailed them and asked for a price, and forgot about buying one. At 1000 Euro plus controller, it's a bit much. Back to the prototype.

As mentioned on the night, the thing that makes it all possible is the controllers. Capable of handling over 100 Amps with standard RC servo control, and very cheap. The 50Amp one I got was only about \$45.

My prototype motor is a reverse engineered cheepo I bought from an RC shop by the WOF place. In the industrial area corner Ti-Rakau and East Tamaki. (Will try find name for you Dave. Will also try send picture of reverse engineered model motor.)

I was determined to make it totally non-ferrous as per the KADAC motors that where invented here in N.Z. some years ago. They have NO armature and rely on close spacing of the windings for high flux density. (Hard to reverse engineer though.) I also wanted to have an non-ferrous rotor cage as per 'Smart Drive'. These two combined 'wants' have so far produced a weak motor, along with the cheap ferrous magnets I used.

I used a lot of 'New Tech' car bog as it sets up quickly and one can start turning on the lathe within an hour. After version 2 exploded at high RPM I have decided to leave the casting can on the job to hold it together. So far my one is not self starting and needs a bit of help to get going. Once the controller detects the phases from the feedback of the coils it 'locks on' to the rotor and you can hear it gear up. I believe the magnetic flux rotates at 10 times the rotor speed? There is 'heaps' to read on the internet about how they work etc.... all one needs is 'heaps' of time!

Above all.... It's been fun! If I ever manage to make one that performs properly, it will have many uses around the workshop (direct drive Drilling machine, lathe, mill?) and beyond.... Bicycle perhaps?

Roger

Paris to St Pancras: a two-hour rail trip

By Jonathan Brown

The Independent, Wednesday, 5 September 2007

The moment was loaded with symbolism. Exactly half way through the Channel Tunnel yesterday, unobserved by their passengers and the rest of the world, Francis Queret handed the controls of Eurostar 3223 to his British colleague Neil Meare and with it a small but important piece of British national pride was restored.

From that moment Mr Meare was able to drive his train at full speed all the way back to his destination in London – something French drivers have been doing in their country with trademark Gallic nonchalance for the past 13 years.

By the time the train and its invited 400 passengers pulled into the new St Pancras terminal, two hours, three minutes and 39 seconds after departing Gare du Nord, the two drivers had set a new record for the Paris to London run, shaving 30 minutes off the current journey time and 12 minutes off what will become

the schedule when the new high-speed link comes into full service in November.

Posing for the cameras, as a welcoming brass band struck up the "King's Hunting Jig" beneath the soaring heights of William Barlow's imposing railway shed, the two men agreed it was a milestone moment not just in the development of the British railway but also a new high in Anglo-French co-operation.

"I felt very proud; it is an honour to be the first one into St Pancras. This is a record that will never be broken" said Mr Meare.

M. Queret was even more fired with optimism. "It feels very, very good. I am very satisfied we have achieved our objective. Now anything is possible," he said.

It has taken nine years and cost £5.8bn to complete the last 68 miles of the high-speed rail link that brings London and Paris into the sought-after "two hour club" of major European cities linked by fast modern rail lines.

No longer will travellers soar through the Pas de Calais at 200mph only to judder to a crawl on arriving in Britain where they can, as President Mitterand once sarcastically pointed out, enjoy the Kent countryside at their leisure.

For the French too, there are positives. They will no longer suffer the ignominy of having to disembark at Waterloo, a station named after the most notorious military defeat of their greatest general, while the imminent completion ends what has become an irritating wait for the dream of city-to-city high-speed rail travel to become a reality between Paris and London.

During the inaugural journey yesterday, Eurostar touched 200mph at its swiftest point as it crossed the Medway and sped towards the Thames. There it entered a tunnel emerging just a few minutes later in the vast construction site of the old King's Cross goods yard.

The drivers believe they would have been able to shave another two minutes off their record time, taking it tantalisingly close to the two-hour mark, were it not for speed restrictions near Calais caused by subsidence.

Eurostar, an unincorporated joint venture between Britain, France and Belgian rail companies, hopes to carry 10 million passengers by 2010 – two million more than this year but nowhere near the 20 million it was once claimed would use the service. Yet the British chief executive Richard Brown believes his is a business whose time has come.

Addressing a champagne reception at the Pavillon d'Armenoville in Paris on the eve of the record attempt, Mr Brown trumpeted the environmental credentials of rail over air and poured scorn on the day-to-day experience of plane passengers compared to those happy to let the train take the strain.

His confidence is based on the fact that the station at St Pancras puts high-speed rail travel within the reach of the majority of the British population who live north of London. Another station at Ebbsfleet in Kent will bring the service closer to 10 million potential customers in the South-east.

And more is to come. A new high-speed service linking Brussels and Amsterdam will bring the Dutch city within four hours of London.

Why Britain still lags behind France

By Simon Calder

The Independent, Wednesday, 5 September 2007

Victorian railway engineers, of whom Brunel was the greatest, would be proud to know that their achievements are still used by travellers every year.

Today, dozens of trains capable of speeds of 125mph will slow to a crawl to cross the single-track Royal Albert Bridge across the Tamar outside Plymouth. In 2009 there will, no doubt, be great celebrations of Brunel's genius on the 150th anniversary of Prince Albert opening the elegant span to Cornwall. Mechanical genius, sure; but the fact that this ancient infrastructure is still an essential component in Britain's railway network shows how far behind the railway curve the UK has slipped.

Further evidence, if it were needed, is provided by the airline schedules. Between 6.30am and 9am today, three flights are scheduled to take off from Parisian airports for the 300-mile trip to Lyons. From the London airports to Manchester, less than 200 miles away, nine flights are scheduled. The French capital has had high-speed trains since 1981. When London's first such link opens in November, the only place you will be able to reach is France.

Showing how lamentable Britain's rail network has become is easy; explaining why is much tougher. The

primary cause is decades of lack of political belief, from both main parties, that the railways should provide mobility for the masses.

As Prime Minister, Margaret Thatcher shunned the train on both a personal and political level; John Major presided over a botched privatisation that saw funds diverted from investment to shrewd investors' pockets; and successive Labour transport secretaries have said all the right things in the House about greener travel, while showing no great vision about how to achieve it.

Spain, well behind Britain two decades ago and saddled with an antiquated network and a mix of gauges, has ploughed billions of euros into new lines and trains that are so reliable that fares are refunded in the event of a delay of five minutes. As the startling new line carving through the Pyrenean foothills shows, railways can – indeed should – be beautiful - something understood by Isambard Kingdom Brunel.

September Exhibition and Open Weekend

Time is marching on and the Annual club Exhibition and open weekend is on September 27th and 28th. With this in mind it is probably a good time to get those items for display off the shelf and dusted off ready for the exhibition and award judging. There has been some steady progress on some projects going by the number of items on the bits and pieces table every club meeting. There will be a dinner as in the past and tickets will be available at the September club meeting, the price will be subsidised by the club and will be \$20 per person.

Around the Clubs

Blast Pipe, Hutt Valley, August 08

Good articles on one metre yachts and gear cutting, plus photos from the track. Also a site to view the old NZ Railways Magazine <http://www.nzetc.org/tm/scholarly/tei-corpus-railways.html>

Mailship, July 08

Picture and story on the building of a large model ketch. Power provided by a windscreen wiper motor.

Steamers and Dreamers, June 08

Very successful Queen's Birthday weekend. Dave's new Shay being a great attraction.

Swarf, June 08

Good Club and track photos.

Conrod Otago, July 08

Article on a model ALCO P A diesel loco in [I think] 71/4". Powered by a Briggs and Stratton, 16HP, 2 cylinder engine driving 8 motors it should be a powerful loco.

Canterbury Tales, June 08

CSMEE are to celebrate their 75th anniversary on the 14-16 Nov at Halswell Domain. Visit to China and a trip on the Yangtze river.

Northern Views, June 08

Pictures of the re-powered DX.

Wheels and Floats, Tauranga, July 08

Progress with the Health and Safety plan. Tony Ray turns 89. Good funny.

Blast Pipe, July 08

Boat pond photos from Blenheim. Tribute to Dave Watts. Hutt Valley to celebrate their 50th next year. More on the Alco P A.

Nelson Society of Modellers.

Impressive photo of their bridge. Windmill under repair.

Expansion Link, Hamilton, July 08.

Write up on Thames Weekend and the symptoms of getting older.

Engine Booster, Los Angeles, July 08.

Good support for their City of Hope run. Photo of the party run put on for Bombadier, the makers of the Metrolink Trains.

Piston and Prop, August 08.

Club news on the boat and aircraft sections.

Durban Society of Model Engineers, July 08.

Club news and an article on Linux.

Alan E

ASME Stores Update

We now have in the ASME Stores 0.5mm Brass Sheet, ideal for boiler lagging @ \$42.20 per 1/2 square metre- This should be sufficient for lagging most boilers.

Contact Gary Farquhar (ourgaza@slingshot.co.nz) if you require any.