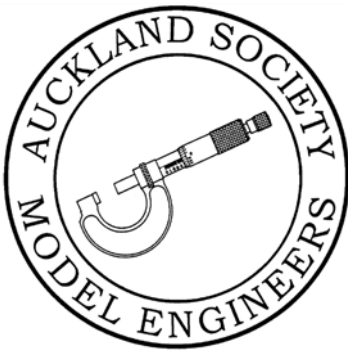


# AUCKLAND SOCIETY OF MODEL ENGINEERS INCORPORATED

*Peterson Reserve, Panmure, Auckland  
PO Box 14570, Panmure, Auckland 1741, NEW ZEALAND*



*February 2011  
Number 554*

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[www.asme.org.nz](http://www.asme.org.nz)

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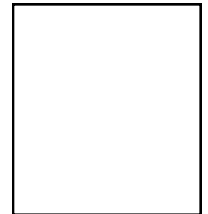
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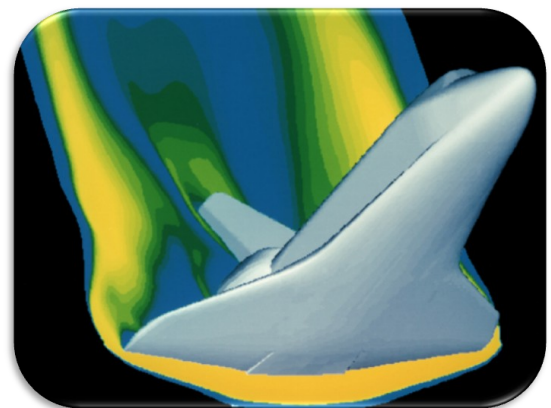
**REGISTERED NEW ZEALAND PUBLICATION**

ASME INC.

# *The MICROMETER*

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A computer simulation of high velocity air flow around the Space Shuttle during re-entry. Solutions to the flow require modelling of the combined effects of the fluid flow and heat equations.



# Train Roster



	Date	Electric	Electric	Steam	Steam	Station	Station	Station	Extra Guard #
	<b>6-Feb-11</b>	D Housley	J McManus	<b><u>G Wills</u></b>		B Currie	G Dickey	<b>A Foster*</b>	P Dowdeswell
	<b>13-Feb-11</b>	P Moy	A Murley	<b><u>G Anderson</u></b>		<b>D Hamp*</b>	R Hannah	P Haycock	
am	<b>20-Feb-11</b>	R Purdy	H Purdy	<b><u>G Bell</u></b>		<b>G Healy*</b>	P Jones	G Kemp	
pm	<b>20-Feb-11</b>	T Robinson	J W-Buys	<b><u>S Day</u></b>		<b>J Lankow*</b>	D Leybourne	M Luxton	
	<b>27-Feb-11</b>	P Woodford	D Black	<b><u>L Farguhar</u></b>		<b>I Lyons*</b>	H Martin	S Meikle	
	<b>6-Mar-11</b>	D Booth	B Cotton	<b><u>A Gasteen</u></b>		G Murray	<b>J Olsen*</b>	B Parker M	
	<b>13-Mar-11</b>	T Crake	P Eaton	<b><u>M Jack</u></b>		<b>G Quayle*</b>	R Reichardt	Richardson	
	<b>20-Mar-11</b>	M Granger	J Harrison	<b><u>T Lawrence</u></b>		<b>K Ryan*</b>	B Sanford	A Shirley	
	<b>27-Mar-11</b>	M Hollis	D Housley	<b><u>M Orange</u></b>		R Stratton	<b>R Street*</b>	T Taylor	

## IMPORTANT NOTE:

There are two rosters for the Panmure Basin Festival Day on the 20th Feb 2011.  
Morning shift is 10:00am through 1:00pm, Afternoon shift as usual 1:00pm through 4:00pm.

### **Bold and Underlined** name:

This is the designated **Train Controller**, i.e. the person in overall control of all operations for the day.  
If you are the **Train Controller** you should phone around the others rostered for that day to make sure they remember to turn up.

### **Bold with Asterisked\*** name :

This 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.

**Please Note**, there is no expiry period or date on train ride tickets previously sold.

### **Please Note:**

You will notice from the above roster that new members to the club have been rostered on as the Extra Guard. The committee has decided to do this so that the new member has a chance to learn the ropes at the station without being under undue pressure. Please note on your rostered day you should arrive by 12.45pm to get prepared for the days running.

# Club Calendar

ASME Events	
1 <sup>st</sup> February	General Meeting, Peter Woodford will give a talk on Nigel Gresley the Engineer.
8 <sup>th</sup> February	Committee Meeting.
12 <sup>th</sup> February	Working Bee, Need lots of helpers to prepare for the new fence at the station, bring spades, grubbers, wheelbarrows.
15 <sup>th</sup> February	Workshop Night, At the clubrooms
20 <sup>th</sup> February	Panmure Basin Festival Day (double running roster)
1 <sup>st</sup> March	General Meeting, Michael Cryns will present a talk and slides on his visit to Europe (featuring clocks)

## Presidents Report

### *January/February 2011*

The holiday season is well over and we are now well into a new year; I trust it will be a successful one for the Club and members alike. I hope you all got some quality time with your families and some restful time to recharge the batteries. It certainly has been a hot summer so far – I found that so even in my basement workshop!

As mentioned at the last general meeting for 2010, John Reavley has had to resign and return to UK indefinitely and so there is now a vacancy on the Committee. Also, as John had taken on the new role of the Social Co-coordinator (the main duty being the contact person for any matters regarding member's health and welfare) we need someone to take on that role too. So if you can help out with either job, please let me know as soon as possible.

At the December committee meeting, Tim Robinson and Tony Lawrence were appointed as the committee members responsible for managing works items and this includes liaison with the Tuesday Club as part of their brief. Bruce Piggott was appointed the DTO (driver training officer) for steam licenses.

The Christmas Dinner and 2010 Awards Night held on 11<sup>th</sup> December seemed to be well enjoyed by the 48 members and partners who attended. A short film was shown of past member Frank Roberts garden railway and it was interesting that this had evidently not been seen before by a number of members.

Gourmet-Shuttle prepared a very nice hot meal and dessert, with a cuppa provided afterwards by the Club. Murray Lane had arranged the engraving of all the awards and it was great to be able to hand out these to the winners in a completed fashion – thanks Murray.

Elsewhere you will note a calling for volunteers for a working bee on Saturday 12 February to prepare the area adjacent to the station for concreting which will be done by a contractor on the following Tuesday. It would be much appreciated if we could have a good turnout of members with shovels and wheel barrows to prepare the area – the old saying “many hands make light work” will certainly apply on this job. The Tuesday Club have done most of the work on this project to install additional safety fencing at the station, so come along and help in this final phase. The goal is to have this job all finished for the Panmure Festival Day on Sunday 20<sup>th</sup> February.

While on the Festival Day, please note this is usually a good earner for the Club and while we have two teams rostered on for train running duties, any additional volunteers who can come along any time between 10am and 4 pm to help out, will be much appreciated.

Last year I had the pleasure to use some coal provided by the Hawkes Bay ME Club, which had been through their coal crusher. It was a change to be able to put this straight into the firebox of Hotpot without having to break any large pieces up and sped up the process of putting on a fire during running. I have now received some sketches and photos of their crusher – a fairly simple yet effective device – and ask whether any member(s) might take on the project to build one for ASME. HB tell me they can grade a bag in about 1 min; and vary the size to suit requirements.

The Committee held a special meeting earlier this month to receive the reports of the track and trolley sub-committee and to discuss the pros and cons of various options. It was decided that a background paper would be prepared for circulation to the membership, and for a survey form to be included so that members could respond with which option (if any) they might favour. I expect that once the full committee has approved this paper it can be sent to members for consideration probably during March. The results will be made known for discussion at a future general meeting.

Our old Masport two stroke lawnmower is just about on its last legs and before the Club buys a replacement, I ask whether any member may have a suitable mower which is surplus to their requirements. Please let me know if you can help the Club at all in this regard.

Have you planned your model engineering goals for this year yet? Seems to me that the first step of writing a list of what you want to achieve during the year normally helps in getting things done!

Happy Modeling for 2011,

*Grant Anderson*

17 January 2011

# Alan Gasteen's B Class 1V

Another finely crafted locomotive from Alan Gasteen, this time a (British Rail ) B Class 1V 2--6 --4 Tank in 5in gauge from drawings and castings by Doug Hewson.

The detail in this model is endless and, as you would expect, to a very high standard and well executed. Alan says he could add considerable more such as steam breaks, heating systems etc but that may come later.

Having previously completed five steam locos and two electric Alan found this one tested his skills to the limit, particularly when it came to the final assemble stage when at time it seemed an impossible task but the end result has been well worth it.

The castings, fittings and drawing were originally obtained from a deceased estate in 1998 and like so many of these things sat in a box in the workshop until 2004 when a start was made, eventually being completed to the running stage in December 2010.

During this time we have all been privy to progress through various BITS and PIECES evenings and club EXHIBITIONS, over this period some three awards were given.

The result of Alan's efforts to date are pictured above back in the clubs steaming bay following its initial track outing.



# Bits & Pieces

## *General Meeting, 10th of December 2010*

*Hosted by Mike Banks, reported by Roger van Ryn*

A very well stocked and interesting table this evening was provided by the members.

Mike Jacks setup comprised his home made V blocks and large vice holding a smaller version of the same. This allows repeatability in holding multitudes of the same shaped object, in this case, quick-change tool holders. **Photo A**

Murray Lane's re-conditioning a large lathe and had the ball-bearings apart, these having done many years of service. **Photo B** The replacement ones cost in the region of \$860, as they are large and ground in pairs. Murray had to conjure up many sorts of levers to assist in the removal of the old parts. **Photo D**

A selection of drive gear including an expanding pulley was also from this lathe. **Photo C**

Murray also had fun and games with surface grinding some steel plate for a saw table that had a mind of its own and wouldn't behave by staying flat! **Photo E**

John Olsen finished off a very nice lever feed for his Unimat tail-stock, complete with vernier depth gauge. As an aside he mentioned the unwanted crackle finish the expensive two-part paint gave his boat. At \$70 per litre one doesn't expect poor results but the supplier is unsympathetic. **Photo F**

Paul Farquhar showed some samples and gave us an interesting short talk on the modern high-voltage cable that Transpower are installing around Otahuhu power station. The larger of which (I hope I have the figures right!) is about 300mm in diameter and weighs about 38kg/metre. It also costs about \$1500/metre and carries 220kV underground. Paul also had samples of smaller diameter (and less heavy) pieces for us to see. Very interesting. Apparently the electricity that flows in this wire pays for it in a few months. **Photo G**

A plethora of engines was presented by Ross and Hayden Purdy, all immaculately finished. The red one is an hot-air engine in progress by Ross, and the anodised glow-plug engine also by him. This is of 1.5cc and ran at 9000rpm. **Photos H & I**

Hayden's lovely two-cylinder horizontally opposed compressed air engine was well presented and his clear Perspex engine went down well for his Cambridge Technology course. **Photo H**

Mike Oranges latest Phantom was one wheel less, as it was on the table showing the tire Mike had shrink-fitted on, with an interference of 6thou. **Photo J**

A huge spectacle plate template for Bill Parker's sons 7 1/4 loco shows how big its going to be. **Photo K**

Greville Wills made some bike brake parts (circled in Photo L), as the shop wouldn't part with only the faulty bit. A collection of scorched electrical bits reminds us all about the trouble and danger with old (only 25 years) rubber insulated house wiring. Greville has also been busy making a selection of engineers clamps. **Photo L**

Graeme Quayle's mass production of 3 horizontal engines for the grand-children is showing progress. They will be colour coded, we believe. (The engines that is.) **Photo M**

Graeme Murray gave a short-talk on the parts he is making for a replica "Agee-Jar humidifier" that Fischer and Paykel made as a prototype many years and half a billion dollars ago. **Photo N**

Alan Fosters Blower for his Commer engine is a "scavenger" too, but don't ask me to explain. It looks like a very fine casting except Alan carved the whole from a lump of ali' then shot peened it a bit. The result looks amazing. When asked how it works, "long as it makes smoke", says Alan. **Photo O**

Alan Emerson brought in a tail light fixture for the last coach of the train in front, to ward off exuberant tail-gaters. (A shot gun might be more effective?) Circled in **Photo K**

Christopher Ratcliffe brought in a very neat blower and exhaust assembly for his "9F", as well as some strip LEDs which make a great inspection lamp, and a sample of variable diameter hydraulic hose (?) which allows you to make changes in tubing size without having to find the right fitting! **Photos P & Q**

Dave Russell had a neat cure for errant chuck-key "Tommy" bars, which still allowed the bar to be adjusted, but not lost, this utilised short pieces of rubber tube. **Photo R**

Dave also showed the knurling tool he made and a sample of some knurling on a dentist mirror handle he made. Very nice. **Photo S**

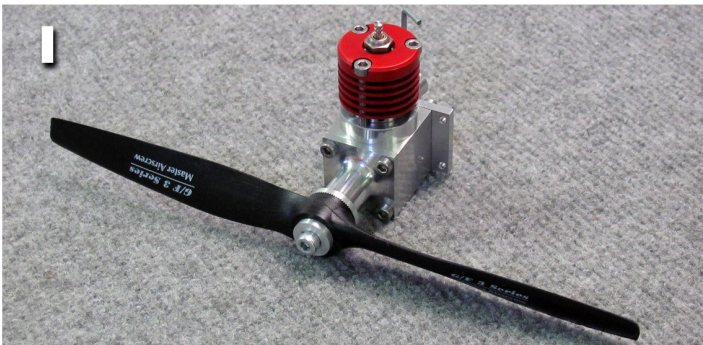
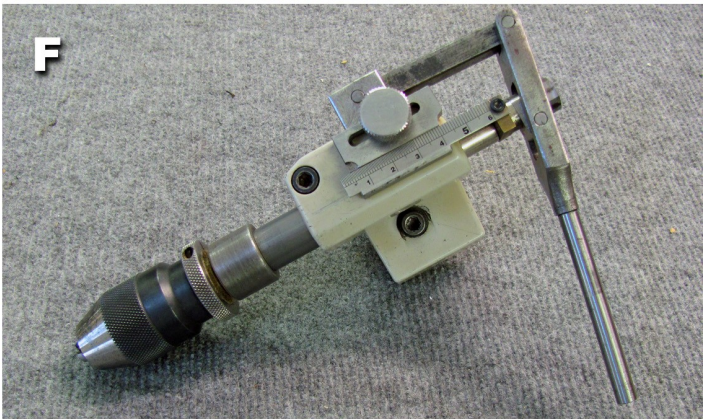
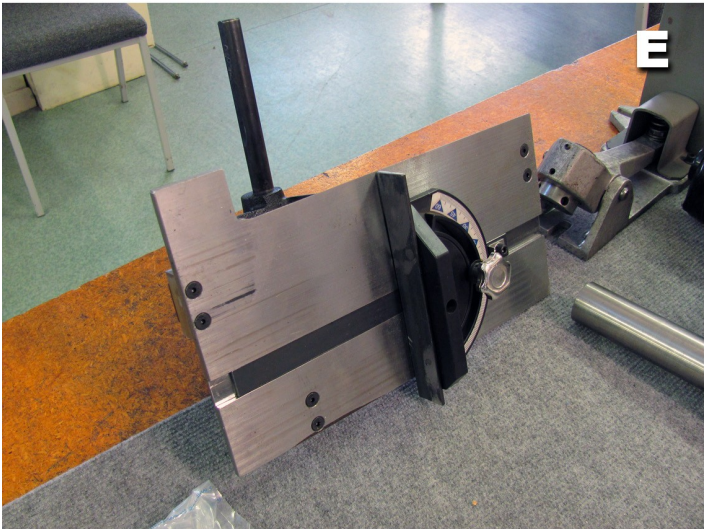
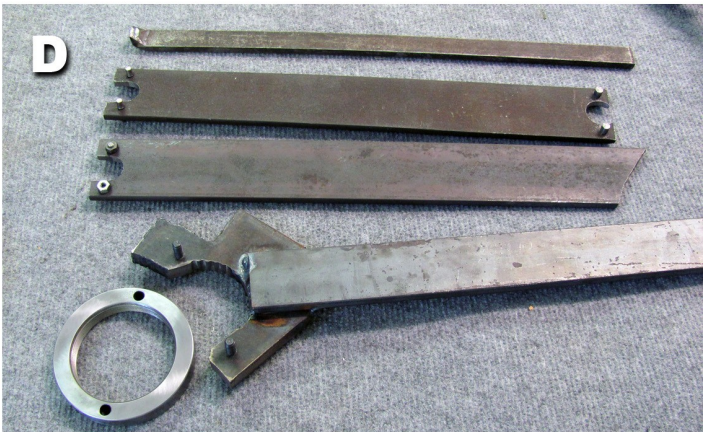
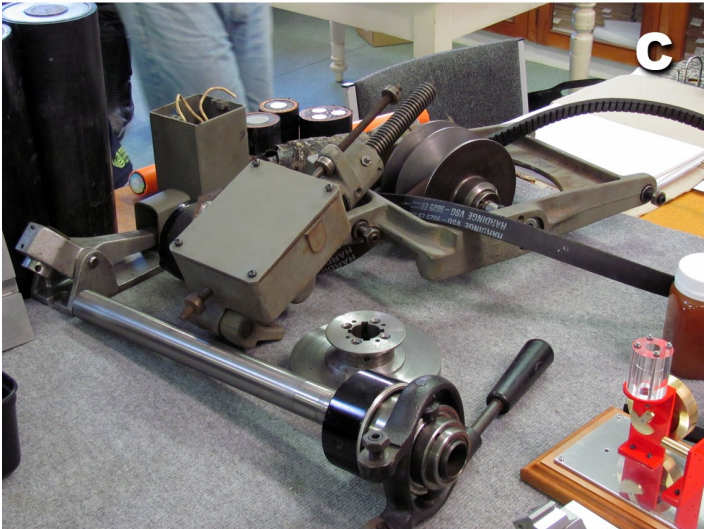
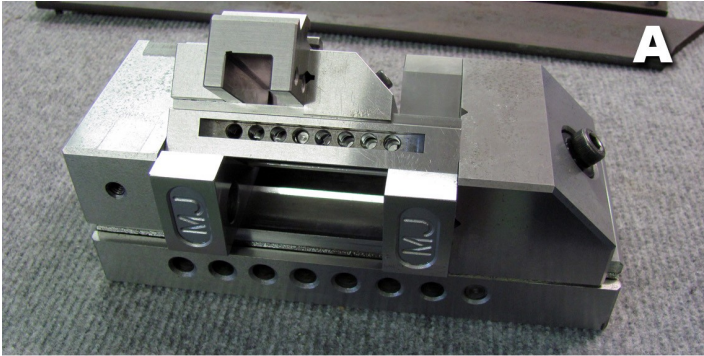
Graeme Murray brought in some attachments to be used with the air-bearing he is making for his cutter grinder set-up. **Photo T**

Graeme finished the night with an interesting talk, putting a pungent point home about too many horses in cities at the turn of the 19th century and presenting a futuristic solution we may yet see in the form of the personalised "Sky Train".

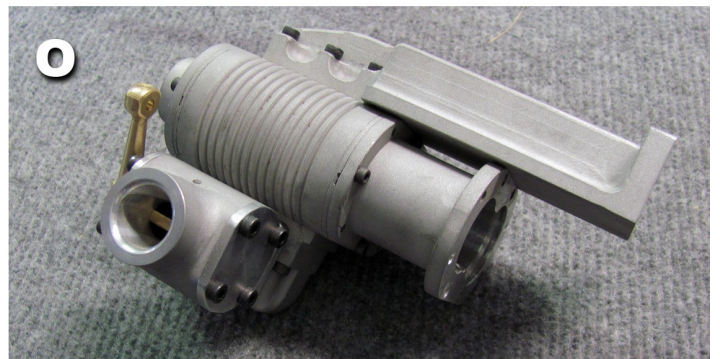
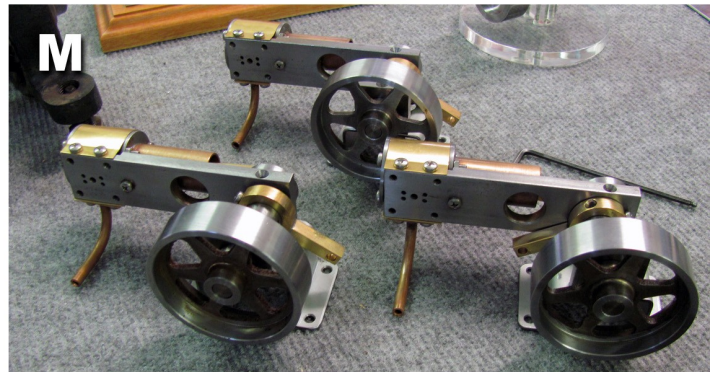
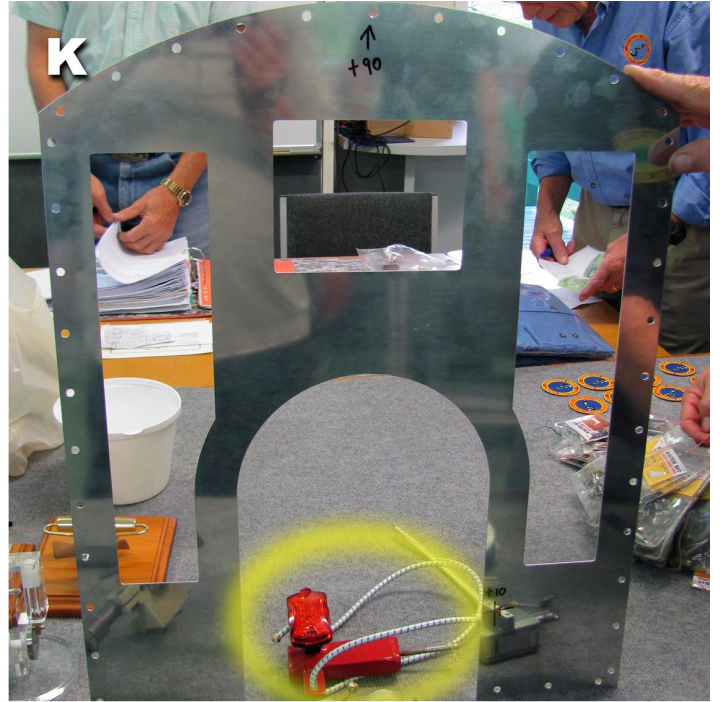
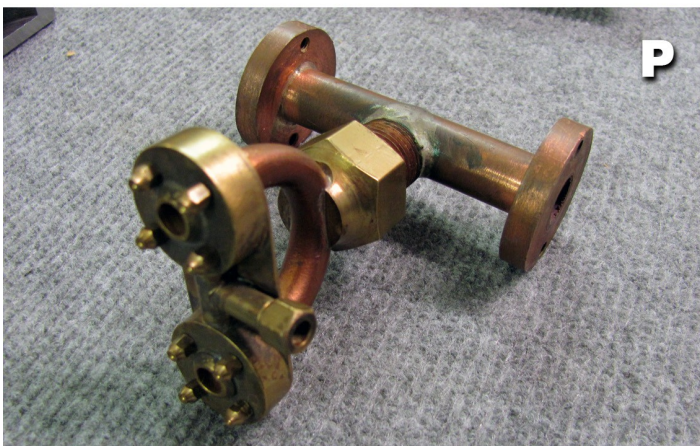
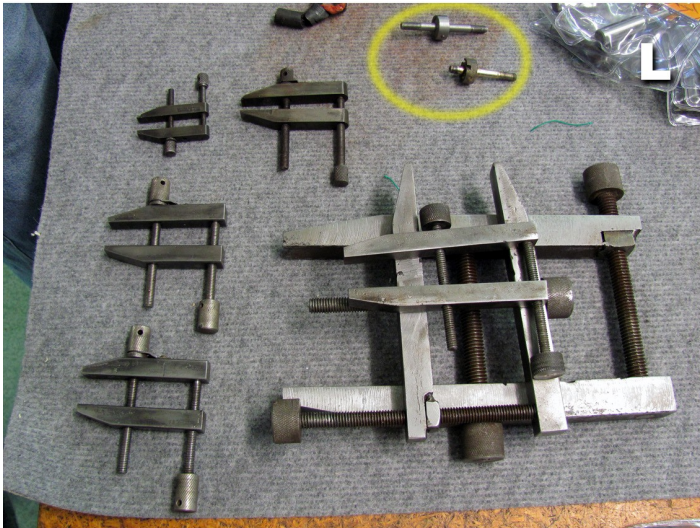
Father Alan "Christmas" Pritchard cheered us towards a Merry Christmas with fruit tarts for all at tea time! May your Christmas period and New year be a happy and productive one.

*Rag.*

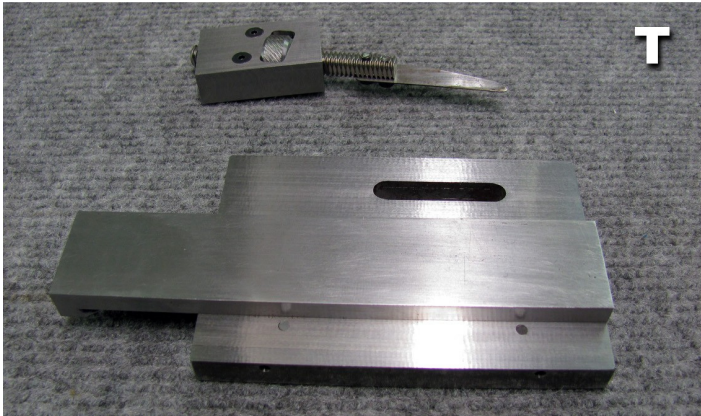
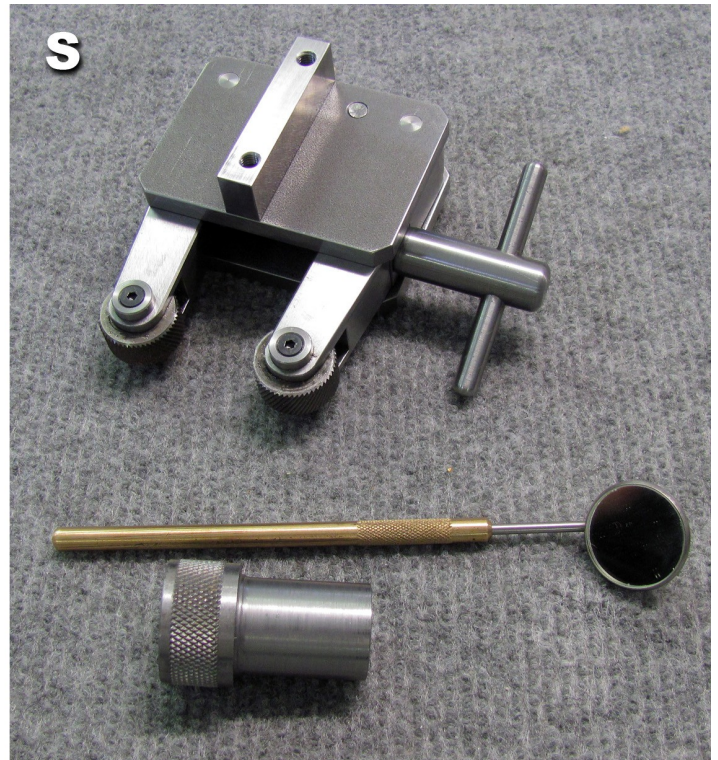
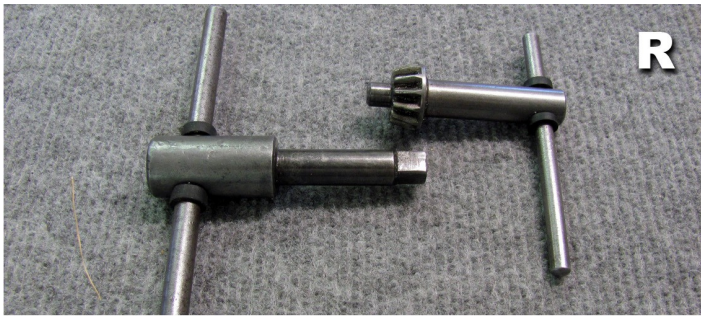












## The Latest in Engineering

*Extracts from The Model Engineer and Electrician of February 2, 1911.*

### Elongating a Crankshaft

One of our students met with a difficulty recently, which is so likely to occur to any of our readers that we propose advising them how to avoid the same, and then to describe how the difficulty was overcome.

The job in question was the turning of a crankshaft, with two double-webbed cranks, for a 1½ in. by 2¼ in. by 1½ in. Stuart vertical compound, which is ultimately to be fitted with link reversing motion.

Our student set to work and turned out a very good job, in fact finished it, with the exception of fitting the balance weights, before he realised that something was wrong with the length.

What had apparently taken place was that the vendors had supplied a drop forging for the same size engine without reversing motion, so that, when referring to the drawing, and making allowance for the two eccentrics at either end, there was found nothing like sufficient left for a flywheel or pulley. This although he had taken next to nothing off either end.

We would advise readers, who from our experience we think are likely to meet with similar troubles, to thoroughly master the drawings supplied with the castings and forgings of any sets they may procure, and then assure themselves that the set is complete and all in order, so far as allowance being made for machining up to the drawings. This will save loss of time and money in making good any deficiency for which the makers may not think themselves liable.

Several suggestions were made as to saving the work done by adding a piece by machine methods, most of which were voted likely to look "botched" however neatly done. And it was thought unlikely that any blacksmith would undertake to weld on a piece without deforming the finished portions.



The crankshaft was ultimately made good by electric welding, the work being carried out by Messrs. J. W. and T. Connolly, Ltd., of Wharfedale Road, King's Cross, who employ the process in tyre welding. A piece of steel was prepared rather larger in diameter than the finished shaft, to allow for machining, and slightly tapered down to the same diameter as shaft at the weld end.

The crankshaft was then clipped between a pair of copper water-cooled and insulated clamps, and arranged on the apparatus opposite to, and in alignment with, the prepared piece, which was similarly clipped and mounted, touching the end of shaft.

The current taken from the main was about 5,200 watts, transformed by means of a Thompson transformer down to 4 volts, giving, therefore, about 1,250 amps. through the joint. This was sufficient to raise the metal between the water cooled clamps to a weld temperature, the actual joint being effected by a system of screws forcing the two pieces together; a few light taps with a hammer to the hot joint completed the job.

Fig. 1 (lower photo) shows the appearance the joint at *a*, and the upper photo the same after the shaft has been completed to finished size.

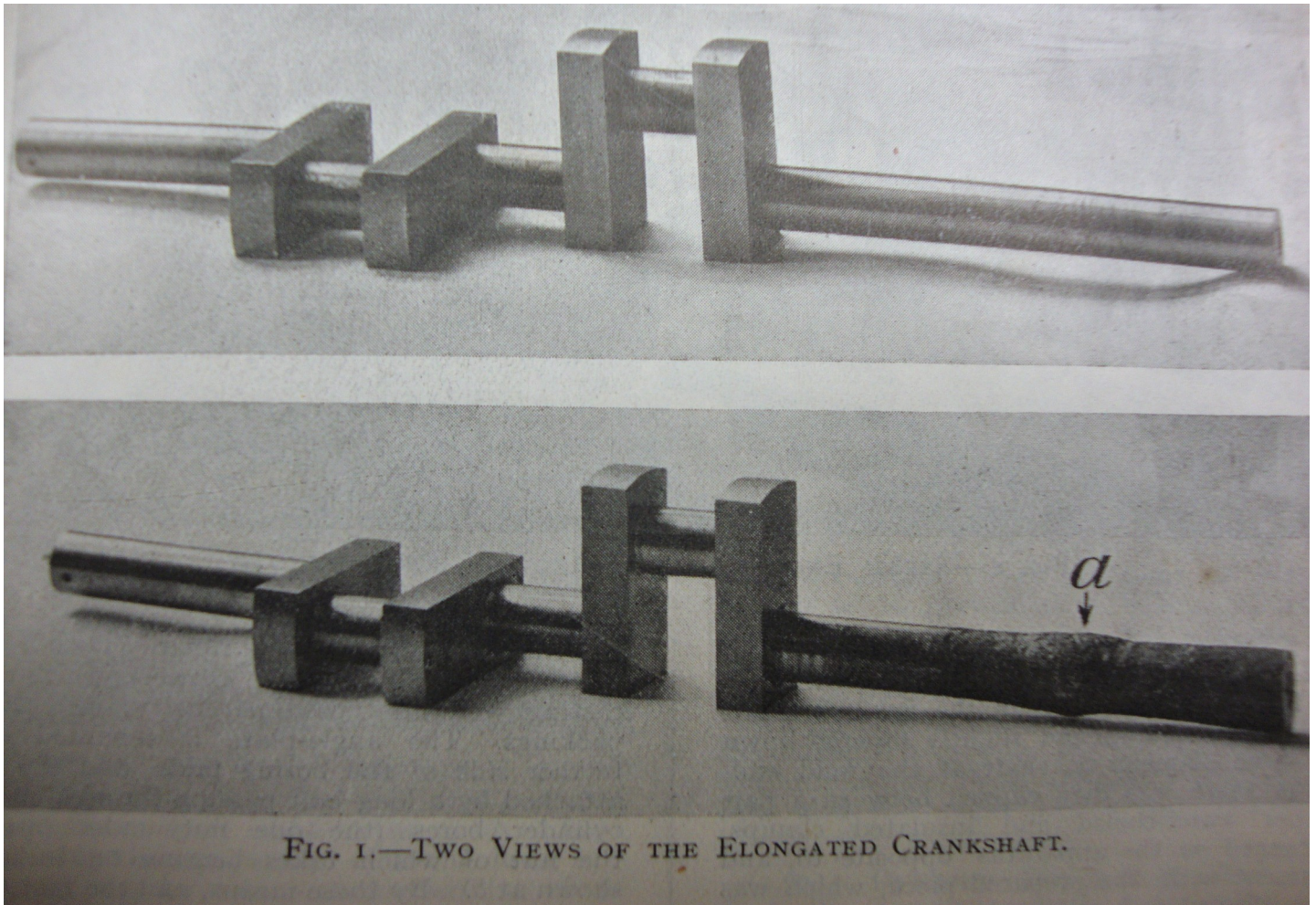


FIG. 1.—TWO VIEWS OF THE ELONGATED CRANKSHAFT.

*Brian Cotton*



# Around the Clubs

## **The Narrow Gauge from the Adelaide Miniature Steam Railway Society.**

Great cover photo of Peter Cooper on his new GWR Manor. Good pictures too of the Inter Club run showing the locos and some of the track which appears to be ground level and single gauge [5"?] .Also photos of the track gang at work. John Lyas did great tour of Europe which included visits to some of the restored railways in England and Wales, Another member, Peter Manning also did a tour and tells of his visit to Helsinki. Seems the gauge there is 5' to match the rails into Russia. Well worth a read.

## **Model Torque , Hawkes Bay Model Eng Soc, Sept 2010.**

Much preparation for the 24 hour run to be held on the 25<sup>th</sup> & 26<sup>th</sup> Sept. Photo of the float entered in the Hastings Blossom Festival featuring the traction engine with the matching threshing machine, the water cart, the stinky and all the other associated bits. Article on the Gisborne City Vintage Railway, not sure where it will run to but they have a website to refer to. Also an article on Fowler traction engines.

## **Southern Rails and Sails , Invercargill, Oct/Nov 2010.**

Articles cover the boat, model train, aeroplane and engineering groups. Photos of Gerrit in his workshop and the start of a series on making miniature piston rings.

## **Big Wheel News , Victoria , Sept/Oct 2010.**

Interesting history of some of the dignitaries responsible for the Australian railways. Helpful hints on milling, suggest making a set of extension bars to fit the chuck to realign the head if you have to move it up or down. Also all the gen on co-ordinates.

## **Conrod , September and October 2010.**

News from the boat, scale model and engineering groups. Details of their new unloader and points system. Planning for the forthcoming Convention in 2014. Part one of the Signal Hill railway covers the planning stage, building the station and some rolling stock Part two on the building of the Signal Hill railway covers the earthworks etc. The 71/4" track is 25X10mm steel while the 5" gauge uses 25X6mm. The sleepers are 50 X50 X 400 pine spaced at 21 sleepers for each 6 metres. Also described are some very cunning points that work well as long as the wheels are machined to the correct standard. A massive undertaking. The Secretary's report covers the changes to the rules needed to join the Charities Commission.

## **Blast Pipe , Hutt Valley and Maidstone ME Societies , October 2010**

Photos of several very successful night runs, the Napier one raising some \$4000. Photos too of large IC and electric locos under construction for their ground level 5" and 71/4" track, Write up on a very useful talk on battery care. Great photo of dining cars on a 71/4" track in Winnipeg.

## **Steamers and Dreamers , Manukau Live Steamers , August and September 2010.**

Cover photo of Dave Giles Rail Cruiser due to run at Manukau soon, should be fun. Lynne Giles has been riding the Tilt Trains in Australia and has sent back some good reading material. Lots of tips on the making, are and testing of boilers. Details of the Mana Ariki run and a useful list of suppliers.

**Piston and Prop ,Blenheim , October 2010.**

The steam section reports one member building a steam turbine to power a Sweet Pea, sounds interesting, while another is trying to sort out the quartering on a three cylinder Flying Scotsman. The boating section are to clean out the pond again while the flying group write about converting four stroke engines from glow plug to petrol. A lot of info regarding suppliers of ignition equipment. A list of websites where all the rules and regulation can be viewed, also some equipment for sale.

**The Keirunga Park Platform , Havelock North , Spring 2010.**

Cover photo of a miniature Bridgeport Mill, if it were not for the hand you would take it for full size. A lot of good reading, John and Robyn Harman have adventures in Albuquerque, Spen Giffin goes to Scotland and rides The Jacobite train. He also writes about Hays's shop in Invercargill and their association with Burt Monroe. The same writer then has an article on the Catlins and the logging activities there in the past, there is inevitably a loco made from a Fordson tractor!

**Northern Views , Whangarei . October 2010.**

A good read on American railways. Picture and article on Australia's sugarcane railways. Progress by the Wednesday Gang on the trackwork. The restoration of the double decker tram by MOTAT.

**Expansion Link , Hamilton , October 2010.**

Great coloured photos and articles on the night run. Recommendation to use LED lights on locos for night running.

**Blowdown , Kapiti , Spring 2010.**

Visit to the track by Minister Kate Wilkinson who rode then drove one of the trains. Very good PR. Total rebuild of the 125 loco and hints on sharpening drills.

**Engine Booster , Los Angeles , Sept 2010.**

Pictures and preparations for the Halloween event. Seems they have an advisory committee of senior members that the elected committee can go to for advice if needed.

**Durban Society Of Model Engineers , Jan 2011**

Very good write up on the Isle of Man attractions. There are good photos of the various trains, trams and the Loxey water wheel. They seem to have used a great variety of gauges and traction systems. Seems some of the miners there became unemployed before the war and moved to South Africa. A number of South African railways have closed recently, perhaps an opportunity to attract tourists has been lost.

*Alan E*

# LNER Class A4 4468 Mallard

Number 4468 Mallard is a London and North Eastern Railway Class A4 4-6-2 Pacific steam locomotive built at Doncaster, England in 1938. While in other respects a relatively typical member of its class, it is historically significant for being the holder of the official world speed record for steam locomotives.

Mallard was designed by Sir Nigel Gresley as an express locomotive to power high-speed streamlined trains. Its wind-tunnel-tested, aerodynamic body allowed it to reach speeds of over 100 mph (160 km/h). Mallard was in service until 1963, when it was retired, having covered almost one and a half million miles (2.4 million km).

It was restored to working order in the 1980s, but has not operated since, apart from hauling some specials between York and Scarborough in July 1986 and a couple of runs between York and Harrogate/Leeds around Easter 1987. Mallard is now part of the National Collection at the United Kingdom's National Railway Museum in York. On the weekend of 5 July 2008, Mallard was taken outside for the first time in years and displayed alongside her A4 sisters, thus reuniting all four A4s extant in the UK for the first time since preservation. She departed the museum for Locomotion, the NRM's outbase at Shildon on the 23 June 2010, where she will be a static exhibit for two years.

The locomotive is 70 ft (21 m) long and weighs 165 tons, including the tender. It is painted LNER garter blue with red wheels and steel rims.

Mallard was released into traffic for the first time on 3 March 1938. She was the first A4 to be fitted with a Kylchap double blast pipe from new. This was one of the factors that led to her selection for the attempt on the world rail speed record in the following July.

Mallard wore a variety of liveries throughout her career, these were: garter blue as 4468, LNER wartime black from 13 June 1942, later wartime black with the tender marked as "NE" from 21 October 1943 as 22 with yellow small stencilled numbers, post-war garter blue with white and red lining from 5 March 1948 with stainless steel cabside number 22, British railways dark blue as 60022 from 16 September 1949, brunswick green from 4 July 1952 and regaining her original LNER garter blue for preservation in 1963.

As with all 35 of the Gresley A4 pacific steam locomotives, Mallard was fitted with streamlined valances, or side skirting, when she was built. This was removed to ease maintenance in wartime, as it was on her sister engines. 4468 lost her valances during a works visit 13 June 1942, regaining them in preservation in 1963.

Mallard was fitted with twelve boilers during her 25 year career. These boilers were: 9024 (from construction), 8959 (from 4496 Golden Shuttle, 13 June 1942), 8907 (from 2511 Silver King, 1 August 1946), 8948 (from 31 Golden Plover, 5 March 1948), 8957 (from 60009 Union of South Africa, 16 September 1949), 29282 (from 60028 Walter K Whigham, 10 January 1951), 29301 (from 60019 Bittern, 4 July 1952), 29315 (from 60014 Silver Link, 23 April 1954), 29328 (new-build boiler, 7 June 1957), 29308 (from 60008 Dwight D. Eisenhower, 27 August 1958), 29310 (from 60009 Union of South Africa, 9 March 1960) and 27965 (from 60009 Union of South Africa, 10 August 1961).

Mallard has had seven tenders throughout her career. She started off with a non-corridor tender in 1938, had corridor design tenders during her British Railways days and was fitted with a non-corridor tender in 1963 to recreate her original appearance. The tenders she has been fitted with are: 5642 (3 March 1938 - 14 March 1939), 5639 (5 May 1939 - 16 January 1948), 5323 (5 March 1948 - 12 March 1953), 5648 (12 March 1953 - 21 July 1958), 5330 (27 August 1958 - 30 May 1962), 5651 (30 May 1962 - 25 April 1963)



and 5670 (current tender, masquerading as original tender 5642).

Mallard was allocated to three sheds during her career: Doncaster, Grantham (transferring 21 October 1943) and Kings Cross ('Top Shed'), transferring on 11 April 1948.

Mallard is the holder of the official world speed record for steam locomotives at 125.88 mph (202.58 km/h). The record was achieved on 3 July 1938 on the slight downward grade of Stoke Bank south of Grantham on the East Coast Main Line, and the highest speed was recorded at milepost 90¼, between Little Bytham and Essendine. It broke the German (DRG Class 05) 002's 1936 record of 124 mph (200.4 km/h).

Mallard was the perfect vehicle for such an endeavour; one of the A4 class of streamlined locomotives designed for sustained 100+ mph (160 km/h) running, it was one of a small number built with a double chimney and double Kylchap blastpipe, which made for improved draughting and better exhaust flow at speed; the remainder of the class were retro-fitted in the late 1950s. The A4's three-cylinder design made for stability at speed, and the large 6 ft 8 in (2.032 m) driving wheels meant that the maximum revolutions per minute was within the capabilities of the technology of the day. Mallard was five months old, meaning that it was sufficiently broken-in to run freely, but not overly worn. Selected to crew the locomotive on its record attempt were driver Joseph Duddington (a man renowned within the LNER for taking calculated risks) and fireman Thomas Bray<sup>[2]</sup>.

The locomotive had had problems with the middle big end previously, so a "stink bomb" of aniseed oil was placed inside the big end, that would be released if it overheated. Shortly after the attainment of this record speed, Mallard suffered an overheated inside big end bearing and had to limp back to Peterborough after setting the record, it then travelled to Doncaster for repair. This had been foreseen by the publicity department, who had many pictures taken for the press, in case Mallard did not make it back to Kings Cross. The Ivatt Atlantic that replaced Mallard at Peterborough was only just in sight when the head of publicity started handing out the pictures. Inaccuracies in the machining and setup of the Gresley-Holcroft derived motion (which derived the valve motion of the inside cylinder from those of the other two, avoiding a hard-to-maintain valve gear linkage between the frames) meant that the inside cylinder of the A4 did more work at high speed than the two outside cylinders; this overloading was mostly responsible for the failure.

Stoke Bank had a descending gradient of between 1:178 and 1:200. Mallard, with six coaches plus a dynamometer car in tow, topped Stoke Summit at 75 mph (121 km/h) and began to accelerate downhill. The speeds at the end of each mile (1.6 km) from the summit were recorded at: 87½, 96½, 104, 107, 111½, 116 and 119 mph (141, 155, 167, 172, 179, 187 and 192 km/h); half-mile (800 m) readings after that gave 120¼, 122½, 123, 124¼ and finally 125 mph (194, 197, 198, 200 and 201 km/h). The speed recorded by instruments in the dynamometer car reached a momentary maximum of 126 mph (203 km/h).



# Notes from the Editor's Desk

A happy New Year to all! There are several things I would like to bring your attention this month;

## ***Social Coordinator***

As previously mentioned, we are once again searching for a Club "Social Coordinator", due to the departure of John Reavley. The duties include; being responsible for the social aspects of the club, making a short announcement at the general meetings of upcoming social events, exhibitions, guest speakers. Also significant birthdays of older members and any health conditions effecting members.

## ***Club Newsletter***

Any members willing to receive 'The Micrometer ' by email please send me an email requesting so to [editor.asme@gmail.com](mailto:editor.asme@gmail.com), with the subject "Email Newsletter". Thank-you to all the members who have made the switch for this month.

The newsletter will be sent in PDF format, and includes full colour. The version sent in the email will be of a lower resolution to ensure a faster download. A high resolution version can be found on the club's website - which is suitable for printing at home. If no request is made, the hardcopy will continue to be delivered to your door.

## ***2010/2011 Subscriptions***

A big thank you to all members who have paid their subs so promptly this year, and a special thank you to all of you who used the internet banking facility. With nearly 50% of subs being paid this way it dramatically reduced the work load in the Murray household during the pre-Christmas rush. To those who are still to pay... a gentle reminder that your subs are now overdue.

*Graeme & Jocelyn Murray*

## ***Magazine Articles***

A big thank you to all of the regular contributors of the magazine, and to those who submit articles, links or photos that they think might be appropriate. I encourage more members to do so - as this is *your* magazine, so if you're building, or have built something in the workshop and think it may be of interest to other members—send in a typed article with a photo, by the second-to-last Tuesday of the month.

Cheers;

*Ed'*