AUCKLAND SOCIETY OF MODEL ENGINEERS INCORPORATED

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March 2011
Number 555

REGISTERED NEW ZEALAND PUBLICATION

ASME INC.

The MICROMETER

In This Issue:

Workers at the working bee on Sat 12th Feb

Train Roster

Date	Electric	Electric	Steam	Steam	Station	Station	Station	Person #
				Voluntary				
6-Mar-11	D Booth	B Cotton	**A Gasteen**		G Murray	**J Olsen***	B Parker	
13-Mar-11	T Crake	P Eaton	**M Jack**		**G Quayle***	R Reichardt	M Richardson	
20-Mar-11	M Granger	J Harrison	**T Lawrence**		**K Ryan***	B Sanford	A Shirley	R Smith
27-Mar-11	M Hollis	D Housley	**M Orange**		R Stratton	**R Street***	T Taylor	
3-Apr-11	J McManus	P Moy	**B Piggot**		P Tomkies	S Weston	**D Addis***	
10-Apr-11	A Murley	T Robinson	**A Pritchard**		I Ashley	P Boyes	**R Brown***	
17-Apr-11	R Purdy	H Purdy	**D Russell**		J Burnett	R Copeland	**R Crook***	D Gulliver
24-Apr-11	J W-Buys	P Woodford	**G Wills**		B Currie	G Dickey	**A Foster***	P Dowdeswell

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	
1st March	General Meeting, Michael Cryns will present a talk and slides on his visit to Europe (featuring clocks)
8th March	Committee meeting
12th March	Club get together, basic BBQ and twilight loco running. 3.00pm till we have had enough
15th March	Workshop night at the clubrooms.
General Events	
5th – 9th Jan 2012	International Convention, Whangarei

Presidents Report

March 2011

I am pleased to report that Gary Farquhar has volunteered to fill the vacancy on the Committee as a result of John Reavley's resignation; in accordance with the rules, the committee approved Gary's appointment at its February meeting. We are still short of someone (who does not necessary need to be on the committee) to take on the Social Co-coordinator role, so please give it some thought and if you would like to help the Club out by filling that role, please let me know as soon as possible.

Thanks to Bruce Piggott for acting as our internal auditor and undertaking an audit of our miniature railway operation. Bruce has raised a couple of matters which are to be looked at by the safety committee and remedial action taken as required, ahead of another MEANZ audit which we would like to have undertaken soon.

A small group of volunteers (see photo elsewhere in this issue) turned out for the February working bee and prepared the area at the station under the new safety fence for concreting. By the time you read this, Tony Lawrence and a contractor will have completed the boxing and concreted the area – thanks Tony for your extra effort to get this job completed on time. With this additional safety fence installed at the station, we can now turn our attention to the safety barriers planned for the smokebox curve and ski club straight as per the civil engineers design done last year.

A couple of members have looked at the photos and sketches of the coal crusher I mentioned last month. I am hoping that this will result in a list of the materials required and this can then be advertised in case any members have any suitable "bits" lying under their bench that they can provide. The largest of these items will be some sort of electric motor and drive gearbox and suitable sized sprockets – watch this space!

The Committee has approved the quotation from a master painter for painting the exterior of the Clubrooms. This will cover all the upper floor areas which can't be easily reached by members – these will be the subject of a later working bee to complete the job. So expect to see the painter in action over the next month or two and please take special care when you are around the Clubrooms if painting is in progress.

The committee also approved the appointment of a chartered accountant to undertake a review of last year's accounts. While this will not be a formal audit as such, it will give our members involved and the wider membership some comfort that all is in order with our books of account.

Thanks to Stan Locke who offered his late model, low mileage lawnmower to the Club. The Committee approved the purchase, so we now have the old Masport mower available for sale – anyone interested???

At the last general meeting, Martin Sams a visitor from UK who has been providing some extra help on Sunday running roster, presented a short DVD of our Peterson Reserve activities made during his visit several years ago. While we didn't have time to include it in the February program, we will work it into the

entertainment slot for a future meeting.

Also at that meeting a suggestion was made for a regular running time on the track for club members without the hassle and pressure of giving public rides. Some members have locos that they want to run (just for fun, as it were) so a date of Saturday 12th March has been set down for the first occasion. Come along and support this request, even if you don't have a something to run – you might get the chance of a drive of another member's locomotive!

On the membership front, we have received two resignations this calendar year to date. Gary Briggs and Earle North both resigned in writing and these have been accepted. The committee has also approved two new membership applications and these will be announced once the paperwork has been completed.

Hoping you are getting some time in your workshop notwithstanding these hot muggy days.

Happy modeling,

Grant Anderson

14 February 2011

Auckland Society of Model Engineers

Annual General Meeting 2nd November 2010

Meeting commenced at 7.40pm.

Grant Anderson in the chair.

A sheet was passed around to record the names of the 43 members present.
Apologies: Mark Richardson, Ross & Hayden Purdy, Roger van Ryn, Reg Reichardt, Graeme Healy, Tony Lawrence, Mike Jack and Dave Lawson
The minutes of the previous AGM were read out by the secretary. Moved they be approved as a true and correct record by Murray Lane, Seconded by David Black, Carried.

Matters Arising: Nil.

President's Report: Read out by Grant Anderson. Hugh Martin Moved that it be accepted. Seconded by Lex Farquhar, Carried.

Treasurer's Report: Presented by Greville Wills.
Doug Leybourne asked why we had returned some grants, Greville advised that as the grants were not used for the purpose applied for or were in excess of what was spent, we were obliged to return them.

The higher than usual club auction result for Oct 2010 was due to having more than usual donations to

the club to sell.

Hugh Martin asked what the current bank balance was, answer around $40,000, Hugh then asked if the club had a budget for repairs and maintenance. Grant advised that the club had deferred some quite major maintenance while awaiting completion of the new licenses (e.g. building repainting) and that major works projects coming up in the future (e.g. trolley replacements) if approved would likely eat up the $40k in no time. The committee will consider whether a formal budget is required.

Hugh asked if we could read out the expenditure and balance at every monthly general club meeting. Grant replied that as the committee is elected to manage the club there should be no need to do that (we already report on track running receipts each month), however there is nothing to stop any member asking about the financial status of the club at anytime.

Gary Farquhar asked if the treasurer's report had been audited, the answer was that due to the appointed auditor being in hospital recently, the audit for 2009 had still not been received but the auditor had indicated there were no issues. Greville advised that as the auditor has been very slow to complete audits, he has in effect disqualified himself for future engagement, especially with new timetable requirements.

Greville Moved and David Black Seconded that the report be accepted, Carried.

Subscriptions: Greville Moved that the subscription rates be increased by $2 for all classes the same. Seconded by Trevor Taylor, Carried.

Grant thanked Greville, Graeme & Jocelyn Murray for their work on looking after the club accounts.

Grant also advised that the outgoing committee was investigating an internet banking facility for the club, this would make some tasks much easier and also provide another level of security.

A mention of thanks also to Alan Gasteen and Murray lane for their ongoing assistance (in an ex-offico capacity) with the library.

Election of Officers: Nominations were received and closed.

President:	*Grant Anderson*	Vice President:	*Greville Wills*
Secretary:	*Dave Russell*	Treasurer:	*Graeme Murray*
Editor:	*Hayden Purdy*	Librarian:	*Tony Lawrence*

Committee: Tim Robinson, John Reavley, Pete Woodford, Mike Jack, David Black

No auditor was nominated.

General Business: There had been no notification of any official General Business but a couple of items were raised.

Bill Parker asked when is the Boiler Sub-Committee appointed? Grant advised that the new committee would be actioning all club appointments at their first meeting on Tuesday 9th Nov.
Hugh Martin asked about boiler records as Jim Yearn might not be up to looking after them since his recent stroke, Hugh was advised that the outgoing committee was aware of that and had already sought and received a summary of the records and that the newly appointed Boiler Sub-Committee would be tasked with record keeping as a high priority function.

Murray Hollis raised the possibility of sponsoring another guide dog and this will be for the new committee to consider.

Ron Copeland pointed out that the move to internet banking would be a positive thing.

Although not present at the meeting due to illness Graeme Healey had asked if the club could consider the possibility of installing a lift, again this will be a matter for the incoming committee to consider.

Meeting closed at 8.25pm.

Bits & Pieces

General Meeting, 7th of December 2010

Hosted by Dave Housley reported by Roger van Ryn

A lovely hot air engine by Ross Purdy was a colourful centre-piece for this evening's collection. Ross was "re-enthused" to finish the engine, as the editor of "The Shed" has been interested in running an article on an engine for a while. Ross says it runs well at about 650rpm until the whole thing heats up. Look out for the article! Photo A

Greg Burrows brought in his slide and ball-screw for the CNC lathe he is constructing. Having sourced an imperial lead-screw at a good price, the postage came out to be more than the screw! Having had this problem myself before, can anyone pass on any tips about getting goods at a good postage price from the 'States? Greg had been helping me with CNC know-how as well. Photo B

Peter Woodford had an example from his workplace of the impossible things "beginners" do, in the form of a straightened Masonry drill bit..... very neatly done. (I admit to unwinding a ¾ inch drill in the lathe once as a kid, drilling plastic! Couldn't believe my eyes! Nor could my Dad!) Photo C

Alan "P" brought in a tool he made for polishing the seat on steam non-return valves. One sixth of a turn gives 4 thou feed. Photo D

Murray Lanes re-furbishment of a Hardinge lathe is a big project. Murray made a form tool from a file, which was in the quick change holder to turn a steel shape Photo E in Photo F lathe. This he then cut in ¼ to weld into place on the drip tray, forming the corner.

Have a look at http://www.lathes.co.uk/hardinge/ to see what these lathes look like. Murray also had new name plates made and a Hand Wheel, which he made from Cast Iron. He plans to replace the original (odd voltage) lamp with new-fangled LEDs. Photo F

Chris Ratcliffes 9F (2-8-0) frames from "Winston" look awesome, with heaps of detail. The laser-cut motion work plates look very good, very little work to clean up and mount? So far the model has parts from many sources, all well finished and fitted by Chris. Photo G & H

The reversing lever quadrant for an "undisclosed customer" made by Mike Jack is as close to scale as possible. The cone-headed bolts that hold the plates together are pulled up by tailor-made nuts with built in washers. The pivot is cast iron with built in oil-well, to complement the P20 steel used throughout. Photo I

After a few horrific price quotes for commercial items, Dave Russell made his own chuck mounting plate for his rotary table. Designed around what's in the scrap-box, Dave built in locating pins which assure repeatable mounting with less than one 'thou run-out when the chuck is in place. Photo J

The Commer engine being made by Alan Foster now gets a one-way roller clutch for its starter motor. Another tailor-made part for an amazing project, built from Alan's recall! Photo K

Our president made a special cutter with some advice from Graeme Murray, instead of the somewhat costly option from the suppliers. Grant Anderson used a small jig to hold the HSS blade in place as he silver soldered it onto the shaft. When sharpened, it did the slitting job for the carburettor butterfly shaft admirably. (Who cares if it may have only cut on one blade!? Appropriate technology!) Photo L

If you ever wanted to measure the temperature in the trachea of a lamb, Graeme Murray is your man! With thermocouples inserted through 0.4mm dia. I.d. hypodermic needles, this amazing martingale adjustable 5D device will get the job done! Photo N

To complement the above device what you need is the amazing microscope-camera holder Graeme made. This also has slides and pivots with silk-smooth operation to zoom in on those microchondrii. Photo O

Bill Parker offered oil for humans, in the form of honey from his own bees, and for your engine, Morris Steam Oil, with tallow for that irritating roughness. Contact Bill.

The evening talk was by Peter Woodford, who ably assisted by Karen, afforded us an appreciation of the contribution made to steam by Sir Nigel Greasley. In a very well researched talk Peter invoked an era in the history of steam, and an insight to the life of another major design Engineer. The only English engineer to have a loco named after him, Sir Nigel has left a legacy of interesting locos. Including one with a Yarrow type boiler!?! Peter used at least half-dozen books for his research and corroboration of facts, but he suggests the book "Mallard" as a good start. Using a very neat model Peter explained the different classes of locos, and enlightened a fair few of us present. Thanks Peter! Photo P

Rog.


A


B


C


D


E


F
HARDINGE
ELMIRA, N.Y.
HARDINGE
HARDINGE
HARDINGE
HARDINGE
START
STOP
POWER ON
REVERSE
FORWARD
REVERSE
FORWARD


G


H

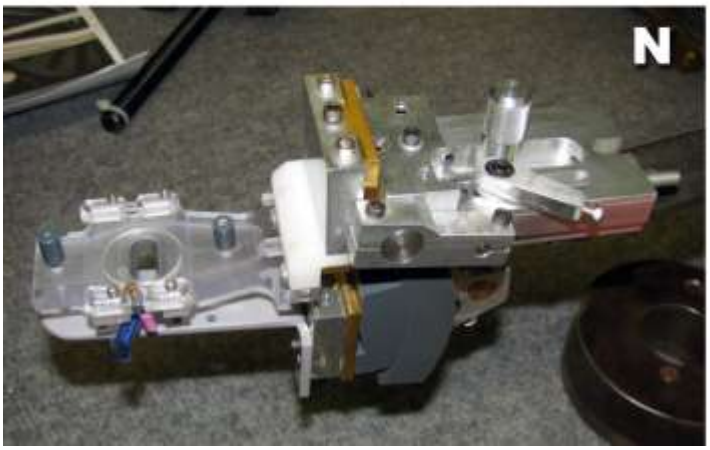

I


J


K


L


M


N


O


P

New Station Fence

The clubs station "Waipuna Junction" was built by the club members during the winter of 2003 and opened by the then mayor of Auckland John Banks QSM in December of that year...

To complete this project a new 28M length of fencing has now been built and erected by the members of "The Tuesday Club" to give a fully enclosed and secure area for the stations operations. The new layout will have its first test at the forth coming Panmure Basin Festival on Sunday 20th February 2011.

Members of the Tuesday Club admire their work as the final stage of pouring the concrete mowing strip is taking place by a contractor.

L to R : Graham Bell; Stan Locke; Alan Gasteen; Bob Fosberry; Bill Parker; Bruce Piggott;
Absent, Peter Swager; Lex Farquhar; Hugh Martin (he's taking the picture).

The completed job which will now ensure passengers use the foot bridge to access the station.

Tuesday club members remove another section from the assembly and welding jig ready for dispatch to the galvanizers.

Around the Clubs

March 2011

There are no news letters to review but there is one correction from last month. We said that Dave Giles Rail Cruiser was to run at Manukau, when if fact it will run at Mamaku. Our apologies to Dave, hope his project goes well

Alan E

The Latest in Engineering

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

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

According to the *Electrical Review*, electrical working on the Mont Cenis line, as also upon the Giovi line, will shortly be undertaken. The current will be drawn for the former from the Chiomonte generating station belonging to the City of Turin, and for the latter from the Government station near Genoa. The Dinamo Company will supply the current for the working of the Varesini railways, when the steam power station at Tarnavento will cease operations. The electrification of the 90 kilom. track from Naples to Avellino, as well as that of various South Italian local lines, will follow in due course.

For the Bookshelf

The Practical Electrician's Pocket Book And Diary, 1911.
London: S. Rentell and Co., Ltd., price 1s. cloth; 1s. 6d. leather; postage 2d.

This annual production should not need any introduction by us to all practical workers in the electrical field of industry. It has been, in more than several respects, improved, in so far as improvement could possibly be effected. Obsolete matter has given place to new, amongst which latter may be mentioned a special section on armature winding and repairs. Dynamo and motor attendants would find this of particular service to them at all times. Some other sections have undergone special revision, and accurate information may be had relating to Siemens Prepayment Meters, telephones, current measurement, time switches, metal filament lamps, boilers, etc.

From the Editor's Page

A correspondent sends us the following newspaper extract which applies especially well to the hobby of model engineering:- "The young man who adopts a hobby is never a 'ne'er-do-well,' for it is the man of intelligence who runs a hobby; he needs an outlet for his pent-up energies – the energies that seem so entrammelled by the prosaic labours of his daily routine – and the fact that he is sufficiently energetic to cultivate his hobby successfully is often, says the *Young Man*, the only recommendation that is required

when a promotion comes along."

We have known quite a number of cases where a reader's skill and enthusiasm in model engineering have resulted in promotion or improvement in his position; and although the hobby may not be taken up with this particular purpose in view, its occasional practical service is none the less gratifying.

Brian Cotton

Stephenson's Rocket

Stephenson's Rocket was an early steam locomotive of 0-2-2 wheel arrangement, built in Newcastle Upon Tyne at the Forth Street Works of Robert Stephenson and Company in 1829.

The Rocket was the most advanced steam engine of its day. It was built for the Rainhill Trials held by the Liverpool & Manchester Railway in 1829 to choose the best and most competent design. It set the standard for a hundred and fifty years of steam locomotive power. Though the Rocket was not the first steam locomotive, Rocket's claim to fame is that it was the first steam locomotive to bring together several innovations to produce the most advanced locomotive of its day, and the template for most steam locomotives since. In fact, the standard steam locomotive design is often called the "Stephensonian" locomotive.

Rocket used a multi-tubular boiler, which made for much more efficient and effective heat transfer between the exhaust gases and the water. Previous locomotive boilers consisted of a single pipe surrounded by water. Rocket had 25 copper tubes running the length of the boiler to carry the hot exhaust gases from the firebox. This was a significant development, as it greatly increased the amount of steam produced, and subsequent designs used increased numbers of boiler tubes. Rocket also used a blastpipe, feeding the exhaust steam from the cylinders into the base of the chimney so as to induce a partial vacuum and pull air through the fire. Credit for the invention of the blastpipe is disputed between Sir Goldsworthy Gurney and Timothy Hackworth. The blastpipe worked well on the multi-tube boiler of Rocket but on earlier designs with a single pipe through the boiler it created so much suction that it tended to rip the top off the fire and throw burning cinders out of the chimney, vastly increasing the fuel consumption.[1]

Rocket had two cylinders set at 35 degrees from the horizontal, with the pistons driving a pair of 4 ft 8 in (1.42 m) diameter wheels. Most previous designs had the cylinders positioned vertically, which gave the engines an uneven swaying motion as they progressed along the track. Subsequently Rocket was modified so that the cylinders were set horizontally, a layout used on nearly all designs that followed. The second pair of wheels was 2 ft 6 in (0.76 m) in diameter, and uncoupled from the driving wheels, giving an 0-2-2 wheel arrangement. The firebox was separate from the boiler and was double thickness, being surrounded with water. Copper pipes led the heated water into the boiler.[1]

Replica 'Rocket'

There have been differences in opinion on who should be given the credit for designing Rocket. George Stephenson had designed several locomotives before but none as advanced as Rocket. At the time that Rocket was being designed and built at the Forth Banks Works, he was living in Liverpool overseeing the building of the Liverpool and Manchester Railway. His son Robert had recently returned from a stint working in South America and

resumed as managing director of Robert Stephenson and Company. He was in daily charge of designing and constructing the new locomotive. Although he was in frequent contact with his father in Liverpool and probably received advice from him, it is difficult not to give the majority of the credit for the design to Robert. A third person who deserves a significant amount of credit is Henry Booth, the treasurer of the Liverpool and Manchester Railway. He is believed to have suggested to Robert Stephenson that a multi-tube boiler should be used.

The opening ceremony of the L&MR, on 15 September 1830, was a considerable event, drawing luminaries from the government and industry, including the Prime Minister, the Duke of Wellington. The day started with a procession of eight trains setting out from Liverpool. The parade was led by Northumbrian driven by George Stephenson, and included Phoenix driven by his son Robert, North Star driven by his brother Robert Sr. and Rocket driven by assistant engineer Joseph Locke. The day was marred by the death of William Huskisson, the Member of Parliament for Liverpool, who was struck and killed by Rocket at Parkside.

In 1834, the engine was selected for modifications to test a newly-developed rotary steam engine designed by Lord Dundonald. At a cost of nearly £80, Rocket's cylinders and driving rods were removed and two of the engines were installed directly on its driving axle with a feedwater pump in between. On October 22, of that year, an operational trial was held with disappointing results; one witness observing, that "the engine could not be made to draw a train of empty carriages". Due to inherent design flaws and engineering difficulties associated with their design, Dundonald's engines were simply too feeble for the task.

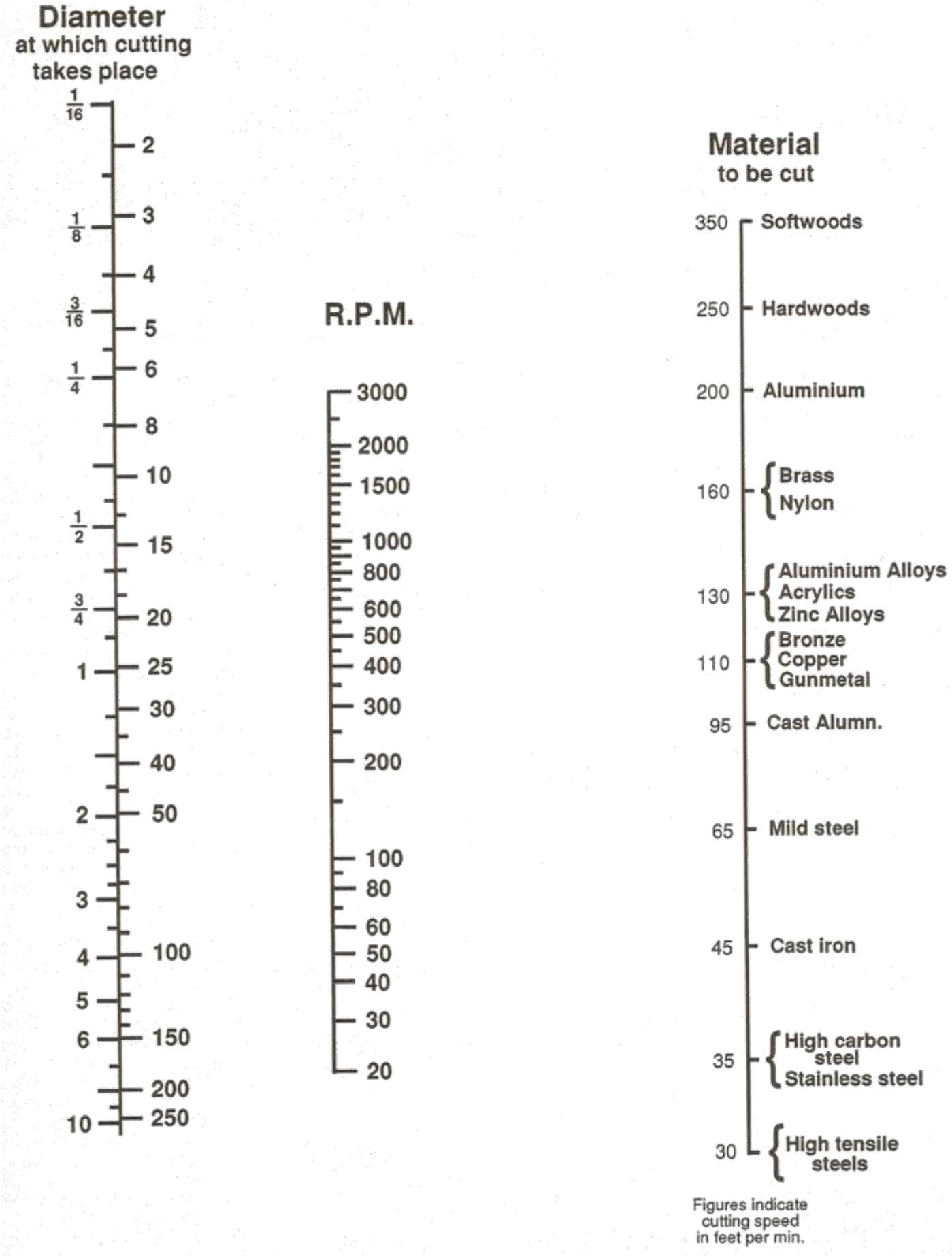
After service on the Liverpool and Manchester Railway, Rocket was used until 1840 on Lord Carlisle's Railway around the villages of Tindale and Kirkhouse, east of Brampton in Cumberland (now Cumbria), England.

In 1862 Rocket was donated to the Patent Office Museum in London by the Thompsons of Milton Hall, near Brampton.

The locomotive still exists, in the Science Museum (London), in much modified form compared to its state at the Rainhill Trials. The cylinders were altered to the horizontal position, compared to the angled arrangement as new, and the locomotive was given a proper smokebox. Such are the changes in the engine from 1829 that The Engineer magazine, circa 1884, concluded that "it seems to us indisputable that the Rocket of 1829 and 1830 were totally different engines".

Original ‘Rocket’ at Science Museum (London)

Machine Tool Speed Calculator



MACHINING NOTES relating to the Machine Tool Speed Calculator:

When using High Speed Steel tools, the correct machine speed is read on the centre RPM scale when a straight line joins the points on the other two scales.

When **DRILLING**, take the DIAMETER OF THE DRILL.

When **TURNING**, take the DIAMETER OF THE TURNED SPIGOT.

When **MILLING**, take the DIAMETER OF THE MILLING CUTTER.

When **SHAPING**, use the CUTTING SPEED figures.

HIGH CARBON STEEL cutting tools require a much lower speed to prevent over-tempering.

CARBIDE TIPPED cutting tools only cut efficiently at HIGH SPEEDS. Increase the machine speed by **5 OR MORE TIMES** depending on the grade of tip and the machining conditions.

REDUCE THE SPEED of machining by a **HALF** when:

a) the depth of cut is large;
b) the work set up on the machine lacks rigidity;
c) the machine or cutting tool lacks rigidity;
d) chatter occurs.

COUNTERSINKING should be done at a LOW SPEED to achieve good results.

REAMING should be done at a LOW SPEED. Reduce the speed to a quarter of the recommended speed and use a cutting fluid.

KNURLING is a deforming operation rather than a cutting operation. A speed of 100 rpm should be found satisfactory. Cutting fluid is essential as a lubricant.

Extracts from 'Engineering in Miniature ' 1996

Classifieds

For Sale

Castings, frame and buffer angle steel and drawings for 3 1/2" scale Jubilee locomotive by Reeves.

Book "Building the Allchin" W J Hughes.

For further details please contact Ian Davis.
Phone 09 2389796
Mobile 0274 839008
E-mail: ian.hazel.davis@xtra.co.nz

Notes from the Editor's Desk

Details Update

The club is in the process of updating the member contact information, so we kindly ask you to inform the Secretary of any change of address, email or phone number. Once this is completed a new contact sheet will be sent along with a newsletter to keep you up to date.

Subs Payment

Thank you to all of those that have payed their subs, and a quick reminder that if you haven't yet done this. Regrettably failure to pay will result in this newsletter being your last.

Be Identified with Club Apparel

ASME dress shirts one available size large, long sleeve for $59.00. Others available by order only.
Club embroidered 60mm dia. sew on badges. Ideal for your driving overalls at $10.00 .

AGM Minutes

If you haven't already, we would like all members to read over the AGM minutes included in this magazine, while the AGM is still fresh in their minds.

Social Coordinator

As previously mentioned, we are once again searching for a Club "Social Coordinator". 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.

Ed'