

The MICROMETER

THE AUCKLAND SOCIETY OF MODEL ENGINEERS INCORPORATED

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REGISTERED NEW ZEALAND PUBLICATION



RETURN ADDRESS
ASME
PO BOX 14570
PANMURE

In this edition...

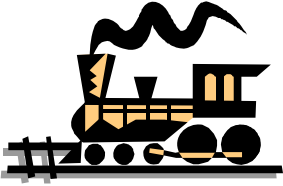
A tribute to Dave Watts

**St Pancras back on track:
An idea above its station.**

**Nelson Convention 2010:
Les Moore Challenge details**



Small Horizontal Mill built by Dave Watts



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>
3-Aug-08	J W-Buys	P Woodford	L Farquhar	<u>A Gasteen</u>	R Stratton	R Street*	T Taylor	
10-Aug-08	J Yearn	<u>D Black</u>	J Gladwin	M Jack	A Watson	E Anderson	I Ashley*	A Whillans
17-Aug-08	D Booth	T Boyd	M Orange	<u>B Piggott</u>	P Boyes	R Brown	J Burnett*	
24-Aug-08	B Cotton	R Craig	A Pritchard	<u>D Russell</u>	R Crook*	P Cunningham	B Currie	J Cunningham
31-Aug-08	T Crake	<u>P Eaton</u>	R VanRyn	G Wills	G Dickey	G Farquhar*	A Foster	P Dowdeswell
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 -----							

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: Attendance, It has been mentioned that some rostered people forget to turn up on their designated day, could the Train Controller for each Sunday (underlined name) please phone around the day prior to running to remind rostered people of their rostered day duty.

Important Notice: Burglar Alarm, The burglar alarm at the club is now being monitored. It is important that we avoid false alarms as any activation will instigate firstly a phone call from the monitoring company and if not answered with the correct password a security guard will be dispatched. Needless to say this will incur a fee for the call out. It is important to deactivate the alarm on opening the basement, clubroom or the engine shed, also the alarm should be deactivated in the engine shed before opening the electric loco "dog box". In the event of an accidental activation, when the security company calls the phone must be answered. A phone will be installed in the engine shed.

Club Calendar August 2008

August 5th	Monthly General Club Meeting, 7.30pm
August 9 th	Working Bee at Clubrooms
August 12 th	Committee meeting
August 19 th	Beginners night
Every Tuesday	Tuesday Club

Presidents Report

I'm glad to see that there is a good deal of enthusiasm towards making our jubilee celebrations a success. Considering the support for the event to be held at Waipuna Lodge, arrangements have started to secure a date for that venue. We will need much help from members to make this a really great event. Some of you have already pledged your help in areas where your expertise can be utilised.

I know there are a few using the event as a time by which their models are to be finished- mine might be one of those and if not then it'll have to be the convention at Nelson.

The committee also had a visitor from MIT to talk about ways we can encourage some younger members to take up model engineering as a hobby. It may be possible that once a year we'll be able to address a class of apprentices just to make them aware that we exist. This is an almost captive market since they are already keen at machining and fitting. When they realise that those skills can be linked to the fascination of things in miniature I'm sure we'll get a percentage of enthusiastic younger members.

Because of the issues we have (and always have had) with the roster, it has been agreed that the person in charge of the day's running (whom is usually a committee member or someone else thought capable or experienced enough to do it) should ring the members rostered on that day in advance to remind others of there upcoming duty. It is then that they find out if you've changed for someone else but he is not providing a service to arrange swaps for you- that is still up to you.

Just an early warning that our annual exhibition is to be held on the weekend of the 27th and 28th of September. We'll have the dinner as usual on the Saturday evening so put that in your diary to get your models ready and to set aside some time to help at the station or in the exhibition. Feel free to run you locos all day. Visitors are very welcome and we all look forward to those lovely lunches!

Has anyone found a design for 5" raised track bogies that we can use to make some new ones? Let me know if you do- this is one job we really need to get done.

Happy Modeling
Mike Jack

Bits and Pieces Table August 2008

Reviewed on the night by John Ohlsen.

Tonight's first item was the backhead of **Mike Jack's** "Black 5" boiler with some very nice "lost wax" cast details attached. It is unusual to fit details so early at this stage of assembly, but in this instance, it is to ensure alignment of the water gauge fitments. **Photo A**

Richard Street had brought along a circular spoked machine handwheel, which he offered free to a good home.

The next item was a brand new looking Jacobs chuck with an attached 2 M.Taper spindle, which looked very ordinary until one picked it up and found that the taper shank rotated independently of the chuck body, rather like a live centre but having a chuck instead of the centre portion. **Dave Housley** informed us that it is used when armature turning. **Photo B**

John Ohlsen is making a "Norton Box" for his Myford lathe and has just about got this up and running. To prove the point, John had an example of screwcutting in the form of a nut and bolt. "a bit scratchy, but it works!" (John's Words!) **Photo C**

Trevor Taylor is pressing on with the overhaul of his "Ajax" loco; this time it was the cylinder drain cocks. **Photo D**

Alan Pritchard showed us a jig he had made for making packing rings from Teflon cord.

Paul Eaton showed us a boiler water level control system for his large (not model) steamboat which works using a wax thermostat from a car. The basic system consists of a feed pipe from the top of the boiler carrying steam and another pipe from the bottom of the boiler carrying cooler water, these two being joined together, outside, but alongside the boiler, with the joint at the desired water level. At this pipe junction is fitted the wax thermostat which when the water level gets below the desired level, operates a bypass valve to allow water to be pumped into the boiler. Hope you can follow this. If you wish to read more about it, read the latest issue of STEAM TORQUE put out by the Steam Society, in which Paul reviews this topic. **Photo E**

Derek Simons had a small machine which can only be described as a cut off device, this time for cutting small pieces of carbide from redundant tips. It looked like a miniature version of the swing down cut off saw so popular with carpenters. It consisted of an angle grinder mounted so that it swung down to give the cut off action. The tip being cut was gripped on a moveable table and the cut off medium was a diamond impregnated disk wheel. Derek says it cuts very well but I missed the reason for cutting these bits, I believe it is to tip woodworking tools, saws, etc. **Photo F**

Derek had some small items for a Unimat which were given free to a good home.

The last items were two "Crescent" type adjustable spanners, at a glance, looking identical, the owner of which described them as left hand and right hand. "What's he talking about" was the general comment. He explained that the small worm which adjusts the jaw on one was left handed, the other right handed, so that it was very annoying to pick up one and when adjusting, find that it does the opposite thing to what you anticipate. Be aware, there is no standard! says **Alan Emerson**.

J.G. Yearn.



ASME 50th Jubilee 2009

Thanks again to Hugh Martin, Gary Farquhar and Grant Anderson for the effort they put into investigating possible options for the ASME jubilee celebrations. At the last club meeting Hugh presented the various options to the club. Included in this presentation was a very good and most interesting brief on the history of New Zealand and the influences that have led to the Kiwi "can do" philosophy and indeed mentality that we as Model Engineers share. After some discussion on the merits, risks and likely cost of the three options presented, a vote was held and it was decided that we should proceed with the middle of the road option. This involves a large display of work produced by members past and present at a venue (probably the Waipuna Lodge) with supportive model and train running at the adjacent club track and clubrooms. There was a very positive response from members on the night indicating that they were willing to help with the required organising and running of such an event. This event can only be a true success if there is a concerted effort by a reasonable number of members. Please contact Mike Jack or any of the committee to be involved in this milestone in our / your clubs history.

Committee Meeting Notes 8th July 2008

The minutes of the previous meeting were read and confirmed as a true record.

Matters Arising: Mike is still trying to obtain the services of a gardener. The lawnmower is now working. Alarm monitoring is now up and running and there have been two call-outs so far.

Correspondence: IN – Sport Aircraft Association, Icon Security
OUT – Hugh Martin

Sub Committees:

Boilers: One tested.

Works: The batteries on the electric locos need replacing.

Some trolley maintenance carried out.

Library: Nil.

Stores: Nil.

Safety: The report from the internal audit has been passed to the safety committee.

New members: Nil

Finance: Statement of accounts, plus payments for approval read and approved.

General Business:

The Sport Aircraft Association have requested some space to erect a cabinet to house their library.

Alarm monitoring: When the alarm goes off, the security company will phone the clubhouse.

A note will be put in the next newsletter, and a letter sent to all clubs who use the clubrooms, advising that the phone should be answered in such an instance. A password will be sought to ensure that a bonafide person is in the clubrooms.

A phone will soon be installed in the engine shed.

Mike and Hugh have liaised with the Waipuna. Dates and bookings will be finalised this week.

The design for the new badges is being finalised, and the ASME pamphlet is to be updated.

The lease expires on 30 October 2009. This to be discussed at the October 2008 committee meeting.

It was suggested that the rostered Train Controller each Sunday could phone the relevant members late in the week and remind them that they are allocated for station duty on the weekend. A note to this end will be put into the next newsletter.

The next Panmure Basin fun day is on 15 February 2009.

Members who still have outstanding subscriptions will be taken off the newsletter mailing list.

Catering arrangements for this year's expo dinner and the Christmas dinner were discussed.

Brian Cotton

St Pancras back on track: An idea above its station



The neglect of St Pancras has been little short of a national disgrace. But yesterday, as a Eurostar train pulled in for the first time, its revival as a national treasure was complete. Cahal Milmo reports

When Sir John Betjeman began his battle to save St Pancras station from demolition in 1962 he replied to the bureaucrats that it would be a criminal folly to destroy a building whose name conjured up wondrous images of architecture and light in the mind of every Londoner. The railway-loving poet laureate insisted that the neo-Gothic splendour of the hotel forming the station's frontage and the giant span of the arch designed by the Victorian

railway engineer William Barlow as the terminus for the steam trains of the Midland Railway had a place in the heart of anyone who lived in the capital city.

Betjeman, who was battling plans to redevelop the central London station as an office block, wrote: "What he sees in his mind's eye is that cluster of towers and pinnacles seen from Pentonville Hill and outlined against a foggy sunset, and the great arc of Barlow's train shed gaping to devour incoming engines, and the sudden burst of exuberant Gothic of the hotel seen from gloomy Judd Street."

The poet's campaign saved one of London's grandest structures from the wrecking ball and led to it being listed as a Grade-I monument with the same level of protection as Canterbury Cathedral and Windsor Castle.

But the victory did little to reverse the station's inexorable decline from one of Victorian Britain's most glamorous and awe-inspiring destinations to a sad relic of imperial grandeur inhabited by drug dealers and prostitutes. The nadir of this descent into dilapidation came in 1978 when a cash-strapped British Rail sold the huge station clock hanging above the platforms to an American collector for £250,000. Even this attempt to liquidate the treasures of St Pancras, first opened in 1868, was doomed – the clock fell the last few metres and smashed into thousands of pieces on a floor where daylight from Barlow's glass roof was blocked by decades of paint and patched repairs. The pieces of the clock were sold for £25 to a retiring train driver.

But Betjeman's faith in the desire of a silent majority to hold on to its landmark terminus was not misplaced. At 11.47am yesterday a gleaming Eurostar train from Paris pulled in to the no-less pristine platform seven of the newly re-christened St Pancras International, bathed in light from the station roof painstakingly re-glazed as part of a three-year renovation.

Some 60 million bricks, 18,000 panes of self-cleaning glass, 300,000 new Welsh slate tiles and £800m later, St Pancras has been reborn as a temple to the efficiency, majesty and eye-watering expense of state-of-the art railways. The new station, which will finally open to the public in November, will cater for 50 million passengers a year, making it one of the busiest in Europe, as well as boasting such accoutrements as the world's longest champagne bar, a farmers' market and 9m bronze statue of a couple in thoughtful embrace.

As the terminus for Eurostar services to the Continent, it will be the jewel in the crown of London and Continental Railways (LCR), the company set up to run the cross-Channel rail link which yesterday celebrated its newly acquired high-speed prowess by setting a new record for the journey from Paris to London.

The feat was just one of myriad echoes that link the resurrection of the 21st-century St Pancras with its 19th-century original, from the engineering challenges of creating a building intended to be as symbolic as it was practical, to the desire to fill it with the best technology and facilities of the age.

Just as the completion of the high-speed line between London and Paris was marked with a record-breaking journey yesterday, so the opening of new terminus of the Midland Railway Company on 1 October 1868 was not allowed to pass without the making of some history. The first train to leave St Pancras that day, an express bound for Manchester, ran non-stop from Kentish Town to Leicester – at 97 miles then the longest uninterrupted run for a train in the world.

The journey was the culmination of a long-standing desire by the managers of the Midland Railway, who had been making vast sums since the early 1850s by freighting the people and produce of the industrial cities, to make their mark on the capital. The company, which had been forced to share the adjoining Euston and King's Cross stations owned by rival operators, quietly began buying large portions of the parish of St Pancras in 1861. With brutal efficiency, the owners of slum developments such as Agar Town were paid £19,500 for their land on the triangle chosen for the new station. A further £200 was handed over to expel the tenants without compensation. Among those who were brought in to oversee the removal of bodies from a church and graveyard that stood in the way of the development was a young apprentice architect called Thomas Hardy, who quickly gave up his job and returned to Dorset to write novels.

In 1865, managers eschewed the services of the likes of Brunel and turned to their own chief engineer, William Henry Barlow, to produce the design for the station itself. A gifted technician and architect of genius, Barlow overcame the problem of trains arriving into the new terminus down a slope created by a bridge over the Regent's Canal – and thus unable to stop in emergencies – by raising the level of the platforms 18ft above street level. In order to achieve this, Barlow ordered 850 iron columns, apparently hardened by being immersed in horse urine and capable of bearing 55 tons, to be driven into the foundations to create an subterranean "undercroft" and a lasting source of income for his employees. The result is that St Pancras was built on beer.

The master engineer ordered the gap between each column to correspond exactly with the width of three barrels of ale from Burton-upon-Trent to allow the storage of the hundreds of gallons of bitter brought daily to London on the Midland Railway's trains. The cellar space below the tracks was rented to brewers seeking to slake the thirst of Londoners.

Above ground, Barlow designed a single-span roof measuring 243ft to be bolted into his iron columns. The result was the largest indoor space in the world and what remains to this day the largest single span station in Britain, achieving a cathedral-like tribute to the industrial age which one newspaper at the time declared "miraculous". The result was also as strong as it was impressive – the detonation of two Doodlebug flying bombs in the station during the Second World War created only minor damage. The building for which St Pancras is best known – the neo-Gothic wedding cake of the Midland Grand Hotel that forms the station's facade – did not begin construction work until the year the trains started running and was not finished until 1873.

But the consensus at the time was that it was worth the wait. A competition to design the hotel was won by one of the most prolific architects of the high Victorian era, George Gilbert Scott, a devotee of the gothic splendour of medieval cathedrals who saw ornament as a nod towards Godliness and thus adorned his buildings with as many tributes to the 16th-century cloth halls of Flanders and the great churches of France as he could.

His design fulfilled the ambition of the directors of the Midland Railway to announce their arrival in the capital with a building that overshadowed and dwarfed the stations of its rivals. In the words of its architect, the hotel was to be "on so vast a scale as to rule its neighbourhood, instead of being governed by it".

The ambition for the interior of the 300-room hotel was no less lavish. The fittings were of the highest standard while the building boasted a range of cutting-edge innovations such as a lift, revolving doors, an iron central staircase and a network of chutes for everything from ash to dirty laundry. It rapidly became one of the most sought-after billets in London.

Sadly, the supremacy of the terminus as a meeting and departure point for the great and the good was short-lived. The hotel rapidly fell foul of the decision to trim budgets by not installing sanitary plumbing for bathrooms and a lack of central heating. By 1935 it had closed, being considered too outmoded and expensive to run.

Unsurprisingly, those behind the new St Pancras International insist it will not fall foul of any such shortcomings in vision or execution. As the inheritors of Betjeman's hard-won campaign to preserve the building, LCR has had to go to considerable measures to comply with renovation standards enforced by English Heritage. And just as Barlow and Gilbert Scott's paymasters were seeking to maximise the economic return from their investments, so too are LCR. When the first Eurostar passengers depart for Brussels, Paris and further afield in November, they will have no fewer than 67 places to shop, eat and drink. The contribution of Betjeman to the station's survival is recognised in the shape of a pub which will bear his name.

ASME Club Stores

ASME Stores update:

Find enclosed with this newsletter is the latest ASME stores pricelist. Included is the two additional books that we now carry, Model Engineers Handbook - Tubal Cain, @ \$ 28.00 each and Model Marine Steam - Stan Bray at \$ 41.00 ea. The 45% CAD silver solder is also back in stock and included.

Please note that Gary Farquhar the Stores person, has changed his email address from the last price list.

A Tribute to Dave Watts 1915 – 2008

Dave Watts was one of the founding members of the Auckland Society of Model Engineers, and over the years has given help and advice to individual members on machining problems. He produced more models and workshop equipment than any other member of the club, all to museum standards. Many of his models won top awards at the Easter weekend exhibitions, with his workshop equipment receiving awards for related work.

In October 2000 a special exhibition of his work was set up in the club rooms for the members and visitors from other clubs, to examine and admire. The club supplied a lunch for those attending, and a large number of members and wives, including many of Dave's family were present.

Dave was born in 1915 in the UK and immigrated with his family to New Zealand in 1927 when he was twelve. They settled in Auckland. He served his time with WS Miller in Kyber Pass as a motor mechanic and during the war years he worked as a maintenance engineer at a Mercury mine at Puhipuhi in Northland. In 1945 he joined Charles Palmer engineering merchants, who were the N Z agents for Stuart Turner. Here he met the late Basil Wilson who renewed his interest in modeling. He started work on a Stuart Turner Gas Engine in 1932 at night at a Technical College and completed it in 1952. This was followed by a Stuart Turner Triple Expansion Engine, although it would be hard to recognize it as such. He continued working for Charles Palmer until his retirement, and then worked part time as a technician at the Auckland University in the Zoology department for a few more years, before fully retiring.

In the mid seventies the family moved from Campbell Bay, where it was very difficult to move around in the workshop under the house due to the number of machines in the cramped space, to Northcote. Here over a period of several years he built a large carport as an extension of the house, and a new workshop which included the garaging for his old Vanguard and Fiat Bambina cars. Any parts needed for these vehicles were made by Dave, and included half shafts and pistons for the Bambina.

A 3 1/2" Britannia was finished by 1959, and was used to earn finance for the club in the early days, on a portable track, followed by a Speedy with these engines continuing to earn revenue when the original track was completed in the early sixties. The output of models and workshop equipment continued to pore out of his workshop on a regular basis, and he continued to work with the Tuesday club each week for many years. He was on the ASME committee for a number of years, as well as the boiler committee. He also made many of the major parts, of the three club locomotives which were built over the past twenty years.

He was made the first life member of the ASME in 1963 in recognition for the work done for the club.

List of items displayed at the club on the 28/10/00

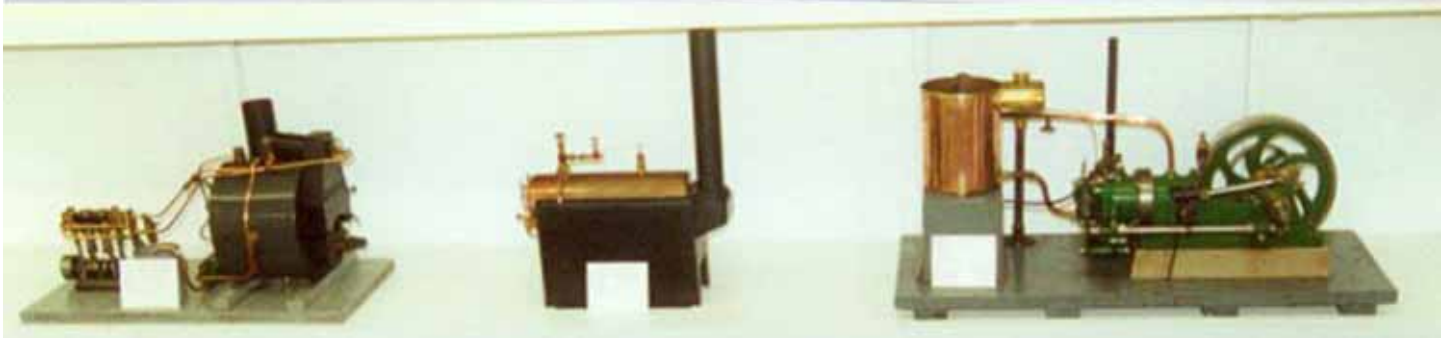
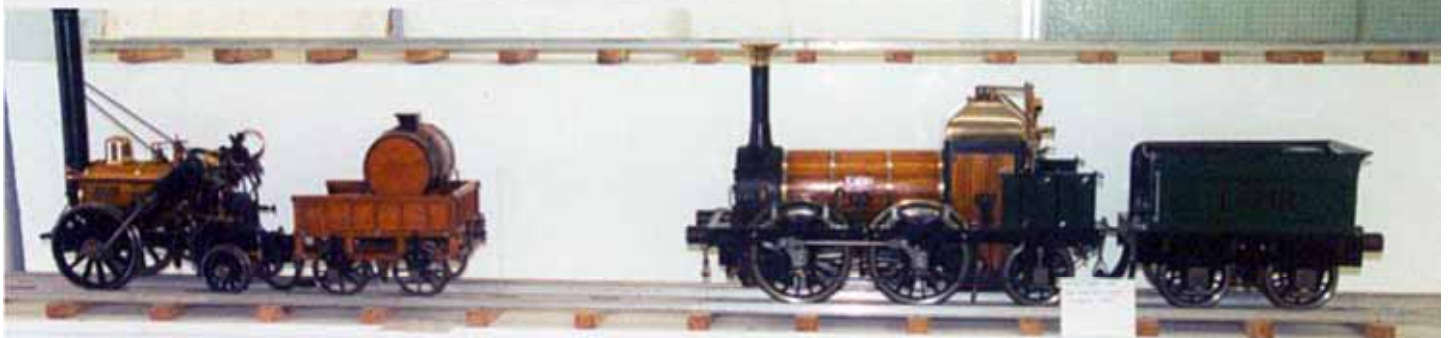
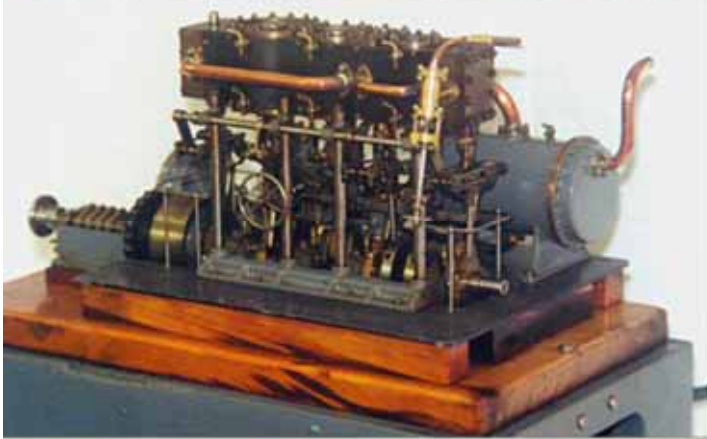
Models

- 1949 Copy of a Stuart Turner water tube boiler.
- 1952 Stuart Turner Gas Engine modified to run on petrol.
- 1957 Stuart Turner Triple Expansion Engine set up as a ships engine.
- 1959 3 1/2' Britannia
- 1968 5" Speedy
- 1986 5" Stirling Single started by the late GIB Gane.
- 1989 3 1/2' Tich, 5" Lion no castings used.
- 1990 5" Evening Star
- 1993 3" Allchin Traction Engine
- 1996 5" Rocket no castings used
- 2000 5" Shay to Kozo Hiraoka design.
- 1997 1 1/2" Clayton under type steam wagon no castings used. 30c Wallaby IC engine

Workshop equipment

- Large machine vice
- Dividing head with tailstock.
- Four jaw chuck based on a Burnerd design
- Small three jaw chuck copy of a Burnerd design
- Gear hobs, five on display
- Height gauge made from a 300 mm Mitutoyo vernier calliper.
- Light eight inch four chuck for use on a seven inch Wilson lathe
- Small machine vice made from solid steel.
- Boring head
- Low pressure spray gun
- Set of outside jaws for 6 inch chuck, made from unhardened nickel steel
- ACME taps RH and LH and multi start, nine on display
- Turret tool holder for a shaper

Continued on page 10 ...



Many of the items constructed could not be included in the display as they are much too heavy to move. The refurbished machines have been brought back to as new condition and in many cases better than new.

Rebuilt a 7" Wilson lathe and fitted a clutch of his own design

Modified a Denbeigh brass finishing milling machine, to cut gears with a hobbing attachment that he made.

Modified a Pools lathe by increasing the bore of the mandrel to 7/8" diameter and replacing the original bronze bearings with white metal units

Surface grinder made from castings

Small horizontal milling machine made from castings

Vertical milling machine made based on the same castings

Refurbished a 10" Alba shaper

Refurbished an 18" shaper

Rebuilt an old Jones Burton 4' shaper, which played a major part in the building and restoration of the other machines

Rebuilt an 18" bandsaw.

Murray Lane

Upcoming Model Engineering Events

20-21 Sep 2008	Nelson M.E., 50th Anniversary
27-28 Sep 2008	A.S.M.E. Open weekend, Peterson Rd Reserve, Panmure
4-5 Oct 2008	Melbourne Society of Model Engineers, Model Engineering Exhibition
22 Nov 2008	Glenbrook Vintage Railway, Open day for enthusiast clubs. Be there by 1.00pm. Train rides and workshop visit by donation.
Sept 2009	A.S.M.E. 50TH Jubilee
5-11 Jan 2010	Nelson M.E., Steam and Cinders 2010 International Live Steam Convention

Rumour has it that the "Les Moore Challenge" for the next convention to be held in Nelson Jan 2010 has the challenge and rules as shown below...

The Challenge for the 2010 convention is to build a Gauge 1 Steam loco. This is to encourage the building and running of garden railways in this country.

The basic track gauge is 1 3/4" which equates to 44.5 mm, generally referred to as 45mm. More technical info and standards can be found at <http://www.gaugeone.org/>

The rules for the Challenge are:

Loco to be equipped with a safety valve and a boiler pressure gauge.

Max boiler pressure shall be 50psi.

May be fired by any fuel.

Must have a boiler certificate from your home club. No boiler testing will be undertaken at the Convention.

Loco may be to any prototype or free lance.

Loco must be hand built by the entrant.

Entries will be accepted from clubs or individuals.

Judging will be on a points system comprising the following: -

20% Appearance

20% Time from firing to movement from cold.

20% Time to travel 20 feet from cold. These two items will be measured during the same heating up event.

20% Time to travel 20 feet from hot, yes this is the flat out speed from a standing start.

20% Maximum drawbar pull @ maximum pressure. No ballast weights allowed.

Around The Clubs

Blowdown – Kapiti – Winter 08

The track is open again, good news in that department! Details of their Bereavement Assistance Scheme, similar to the one mooted by our Club but never acted on. Visit to the Cobden Convention with some good photos, particularly liked the loco powered by an electric drill.

Expansion Link - Hamilton - June 08

Some details on the Les Moore Challenge in 2010. This is based around a garden gauge loco. The club has a supply of bike computers to put onto their locos to record speed and mileage. These are Echowell Mach 3 units available from Torpedo7.com.nz

Big Wheels-Victoria – May / June 08

Gale blows down trees and damages the track, chainsaws to the rescue. Photos of a school run and some models.

Model Torque - Hawkes's Bay - June 08

Thoughts on why fewer out of town visitors attend open weekends. Restoration of a Fowler loco ex Napier Harbour Board.

Wheels and Floats – Tauranga - June 08

Article on the double Fairlie being built by Geoff Hallam. And a visit to Lake Hakanoa and Pukemiro

The Generator - Palmerston North - May and June 08

Another Letter from England from Stan Compton, always interesting. Hints on injectors and life in the boiler room. Building a model of W192.

Northern Views – Whangarei – June 08

Photos of progress on the track and one of a strange loco.

Mailship – June 08.

New boat pond being built at Cambridge. Successful time at the boat show.

Piston and Prop – Marlborough - June 08

New Maid of Kent steamed, general maintenance under way.

The Keirunga Park Platform - Havelock North - Winter 08

Article on the Snowdon Railway. Easter weekend very successful. The story of the Zig-Zag railway.

Thames Small Gauge Railway - May 08

Pictures from the Open Weekend.

Melsa Marlborough - June 08

The steam restoration project, locomotive B15, moved to a more vandal proof site. Club to vacate present Club House due to building work. Good article on Tasmanian Rail and another one on building your own track.

Conrod – Otago - June 08

News and pictures from the Little Train Show held in Dunedin recently. A lot of handy hints for the workshop.

Boilers – Rotorua – June 08

The trials and tribulations that go with a new engine. A tender for Tagus.

Engine Booster – Los Angeles – June 08

Nice coloured photos of their successful Spring Meet.

Alan Emerson

Ramblings of a Beginner

Rustless steel and other odd material specs

I was relieved by the question at Club night about "rustless steel". I had come across it myself, plus some other material specs that I found odd, and had begun to feel distinctly ignorant. A man called Rollason taught us about engineering materials, and I still have his textbook. His principal characteristic was an exceptionally mild manner; really, he was too refined for students. He was in the habit of passing round specimens in his lectures, and one day passed round a 2ft diameter disk of GRP, spherical like a smoke box door, saying that it was almost unbreakable – inevitably, by the time it returned from the back row it was in two pieces.

Googling "rustless steel" produced a Wikipedia entry which explains that Harry Brearley (1871 – 1948), the son of a Sheffield steel worker, left school at the age of 12 and followed in his father's footsteps. He was interested in chemistry and went to night school. The British heavy armaments industry at that time was booming; it was the period of Armstrong and Whitworth, disappearing guns and monster battleships for the build-up to the 1905 Russo-Japanese war. Those people really took courage in both hands with what they produced, no gradual progression but straight into the full sized job. Gun manufacturers were concerned that the barrel linings were being eroded by the high temperatures produced by the shell, and to tackle this problem Brearley played about with adding chromium to steel and varying the carbon content. He examined his alloys by etching polished sections to show the crystal structure under a microscope, but he found it difficult to etch some of his samples – they were very acid resistant. He found the same with food acids, and obviously an astute chap, realised that he was onto a winner. Sheffield had been the home of cutlery manufacture since the 16th century. Mild steel cutlery was difficult to keep rust free, and silver or EPNS, the only alternatives, were expensive. He called his new alloy "Rustless steel". However a Sheffield cutlery firm, R. F. Moseley, later coined the word "stainless steel", which stuck. Beasley apparently produced the first true sample of stainless steel in August 1913, but work was held up until after the war, and his company produced the first 18/8 stainless steel (18% Chromium, 8% Nickel) in 1924.

In the same vein, I have been working on my Reeves "Jack" (something familiar about that name), a Don Young model said to be for beginners, and also reading old ME's to find out how to build it. I was surprised to find the material marked for the motion works as "chrome-vanadium steel". Where on earth would I get that - old spanners? I discovered from Rollason's very down-to-earth metallurgy book that chrome-vanadium steel was used for automobile axles and torsion bars, coil springs, dies for hot working other steels and, yes, locomotive forgings. Don Young worked for LNER. OK for con-rods for the A classes or V2's, but for my 5" gauge saddle tank engine at 15km/hr? I doubt it.

Up to this point I had been reading old ME's and taking them as gospel. In one, Martin Evans advised to make very sure that 1/8" frame steel was used not 3mm. In another K.N. Harris laid down the law about the inertial loading on the gear when the piston is near full stroke, and the necessity for arranging valve closure to provide some steam compressive spring to reduce stresses. I now suspect they had no grounds for such very firm opinions; they knew what would leave more strength in hand, but not what was absolutely necessary.

AW (Arnold Watson)

Some of the good stuff from the Internet

My wife got this magazine from the library, it's American and called 'Live Steam and Outdoor Railroading'. It has articles ranging from the most incredible models to the simple ones. The simple one has a complete description on how to build an engine, describing techniques the beginner can use (not just referring them to an article in an unnamed issue of the past 50years!) Also an article on 'The Nickel Plate Berkshire' and what a model! Yeesh!

It has an advert by a bloke who's website is called www.mikebrownsolutions.com, and what a character! Worth a visit. Some interesting preconceptions about Aluminium cylinders are dismissed. I recently visited the <http://www.forthbridges.org.uk/railbridgemain.htm> website which has an interesting breakdown of the causes of the fatalities (51) while working on the bridge. Falling from the bridge and having things dropped on them were the two main causes.

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