



**Newsletter of THE PALMERSTON NORTH MODEL
ENGINEERING CLUB INC**

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**May 2005
No 301**

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TRACK RUNNING

This is held on the FIRST and THIRD Sunday of each month, from 1 pm to 4 pm Summer and 1 pm to 3 pm during the Winter. All club members are welcome to attend and help out with loco coaling, watering and passenger marshalling - none of the tasks being at all onerous.

Visiting club members too, are always welcome at the track, at the monthly meeting, or if just visiting and wishing to make contact with members, please phone one of the above office bearers.

Sender:- PNMEC
22b Haydon St,
Palmerston North

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This Months Featured Model



'Hielan Lassie' built by Ken Neilsen nearly fifty years ago.

ANNUAL GENERAL MEETING REPORT.

There was a good attendance of members braving a cold night. Reports from the President, Auditor, Track Convener and Boiler Committee were all read and confirmed. Election of Officers resulted in the following ;

President	Chris Rogers
Vice President	Cynthia Cooper
Secretary	Murray Bold
Treasurer	Barry Parker
Committee	Stuart Anderson, Richard Lockett, Bruce Geange, Terry Jowett, Chris Morton
Editor	Doug Chambers
Librarian	Doug Chambers
Track Convener	Richard Lockett
Boiler Committee	Doug Chambers, Chris Rogers, Ken Neilsen, Richard Lockett, Brian Wiffin.

After the official part of the evening was over Murray showed us via a projector the photos that he and Barry had taken at the recent Australian Convention at the Warner track near Brisbane. There were also some pictures taken at a nearby Gauge 1 layout and more taken during a tour of the Ipswich Railway Workshops where the Queensland Railway's Heritage collection of locomotives is kept and maintained.

SUBSCRIPTIONS ARE NOW DUE

Subscriptions remain at \$28.00 for members. Juniors and Country members \$14.00.

You can send your sub to:

The Treasurer
PNMEC
C/o 22B Haydon Street,
Palmerston North

or hand it to Barry Parker at the next meeting.

FOR SALE

Myford ML 7 lathe complete with 3 and 4 jaw chucks and steady.

Contact Bruce Manning Phone (06)323-2111

COMING EVENTS

MAY Club Night Meeting

A visit has been arranged at Manawatu Hydraulics Ltd, 827 Tremaine Avenue. We are to meet there at 7.30pm. Members are requested to wear robust shoes and clothing suitable for workshops.

Mid Week Run at Marriner Reserve Railway:

26th April between 10.00 am and 2.00 pm

24th May between 10.00 am and 2.00 pm.

Please contact Doug Chambers beforehand.

Track running at Marriner Reserve Railway:

1st May 1 - 4 pm

15th May 1 - 4 pm

OPEN WEEKENDS

Manakau Live Steamers

June 4 5 6

Hawkes Bay Model Engineers

July 2nd and 3rd

The closing date for the next issue of The Generator is Friday 10 June

LETTER FROM ENGLAND

From Stan Compton

On a recent visit to New Zealand I heard about 'The Best Hardware Store' in the South Island, in the city of Invercargill. While I was browsing in the store my wife wandered off and then returned saying "Come and look at this funny old engine." This turned out to be the strangest thing that I have ever come across!!! What appeared at first to be a classic 'Heath Robinson' effort, with many chains, sprockets, levers and cranks, actually was a stationary petrol engine. I could see signs of recent movement on various items, there was petrol visible in a small glass preserving jar, this being used as the basis for what I believe was a 'surface type' carburettor. Fuel was supplied from an old type pressure cooker, possibly under pressure. The air intake was controlled by an old-type 1/2" BSP brass plug cock.

The silencer was a white enamelled container, well it had been white once when it was put to use for its original purpose. Any man who has been confined to a hospital bed always made sure one of these was on his locker before the lights were put out at night! "This is not a Briggs and Stratton" was on a sign above the strange engine. "Does it go" I asked. "Yes it does and when I am free I will run it for you. It was built by one of the family who own the store, although he is retired now."

The middle - aged man who was so helpful then took me over to the engine, produced a crank handle which he applied to the small flywheel boss and started to crank.

"Just block off the inlet until it fires." I was instructed, indicating the brass plug cock. On doing this I could feel a strong suction on my finger as he cranked again and it fired straight away. Quickly releasing my finger away it went, "Put - Put - Put", settling down to a steady 3 or 4 hundred rpm.

I would have liked to see it run longer but after about twenty seconds he shorted the magneto to stop the engine. He explained, "If I don't all the smoke alarms will go off!" He showed me how the piston in the single open ended, water jacketed cylinder was lubricated. A ratchet driven spindle was cross - drilled and a small nail was slid up and down as the spindle rotated, dipping into an oil pot. The oil was then wiped off the nail into a copper pipe leading to the cylinder wall.

"One wipe every revolution keeps the piston lubricated" he explained.

The cylinder appeared to be a length of galvanised pipe with a water jacket added. Water was being fed from an old stirrup pump, surplus water being by-passed into a holding tank.

How the engine valves were operated I have no idea, possibly automatic inlet and mechanical exhaust. The connecting rod was attached to a wooden beam, maybe 1 1/4" by 2" and 20" long drilled on the centre line for the pivot. The connecting rod then coupled to a fly crank mounted on the opposite end to the 12" diameter flywheel. The flywheel carried a 4" pulley containing the crank dogs. An old magneto, chain driven was mounted high up but I have no idea where the spark plug was located on the cylinder.

The brass plug cock appeared to be half open which would limit the revs of the engine. Age of construction, possibly on 40 or 50 years but it looked older. Bore maybe 2 1/4", stroke 3". Height 1.5 metres, 0.75 metres long and 0.5 metres wide. A pity I did not have more time to examine it more closely.

Various other items were displayed among the stock including a vertical steam engine about 3" bore by 4" stroke out of an oyster boat. A 'Barnes' treadle lathe of 10" swing, and 48" between centres, built in 1895 with an unusual pair of double cranks with cast iron seats mounted. An extra seat was provided for an assistant to help with heavy work. There was a 1918 Indian motorcycle, 1000cc V-twin, unrestored and suspended on wires.

A real surprise was to see the two motorcycles developed for racing and high speed records by the late Bert Munro who lived to a grand old age after a lifetime of racing and achieving high speed records. Both machines had been modified by him and both were only 22" high. One was originally a 600cc Indian Scout, a side valve V-twin bought new in 1920, but now 1000cc and overhead valve.

The other was a 1936 Velocette 500cc, now very much modified for record breaking.

All details of his life and exploits are detailed in a book published locally; copies were for sale in the store "Burt Munro- Indian Legend of Speed" by George Begg, price \$50 NZ. 15 BN 0-473-08906-8. Published by Begg and Allen Box 8283 Christchurch.

I did enjoy meeting old friends at Marriner Reserve and meet club members who were just names previously.

The new Radial tank loco built in just 18 months by Chris Rogers was a pleasure to examine.

To see my 'Maid Marion' belting round in the capable hands of the new owner has got me cutting out the frames for my new Hunslet. The boiler for it is now completed.

'Hielan Lassie'

by Ken Neilsen

I first started getting the 'Model Engineer' magazine in late 1946. It was not until 1952 that when going back through the 1946 issues that I decided to build 'Hielan Lassie' that was serialised by a contributor known as L.B.S.C. In a later issue was an article by Stan Shenton of the Wanganui Model Engineering Club who had built this locomotive. I contacted Stan and he gave me the address of O. Barnaby Bolton in Sydney, Australia from whom he had purchased the castings. I ordered the castings from O. Barnaby Bolton who was a jeweller who dealt in model engineering supplies.

A start was made on the locomotive in September 1955. The first run was on the old elevated track at the Wanganui Club's site in Alma Road, on Anniversary Weekend, January 1956. It performed perfectly and I was thrilled. Over the years the locomotive was run quite a lot at Wanganui, and later at Palmerston North, Nelson and Upper Hutt.

About two years ago during a routine boiler hydraulic test a leak was found on the barrel joint. This was repaired and a further test proved the boiler to be sound. After this it was decided to give the 'old girl' (now approaching its 50th birthday) a complete strip down and refit. During this work further details were added such as a coal rail on the tender, new footplate, brakes, lamps, brake hoses, and smoke deflectors. The locomotive was then repainted and lined and this is now how you see it on the front cover after nearly fifty years.

I have now retired it from further use and it is now only for display purposes although still in working order.

The model is based on the class of A2/3 designed by Thompson CME of the LNER that were built in 1946. The model is 4' 10" (1.470 mm) in overall length, weight 112 lbs (50.9kgs) boiler pressure 85psi.

THOMPSON'S REBUILDS

By Doug Chambers

The model locomotive featured on the front page as 'Model of the Month' is Ken Neilsen's 'Hielan Lassie'. This design was drawn up in 3 1/2" gauge by LBSC. However some details of the full size locomotives before and after rebuilding may be of interest.

In 1930 it was becoming obvious that the train loadings between Edinburgh and Aberdeen were too great for the Pacific class locomotives and Sir Nigel Gresley drew up plans for a new class of locomotive having a 2-8-2 wheel arrangement. In 1934 the first

of the P2 class No 2001 started trials. The locomotive featured a swing link front truck, 6'2" driving wheels and a Cartazzi trailing axle. There were three cylinders each of 21" bore and 26" stroke. No 2001 was originally fitted with Lentz poppet valves and was named 'Cock of the North'.

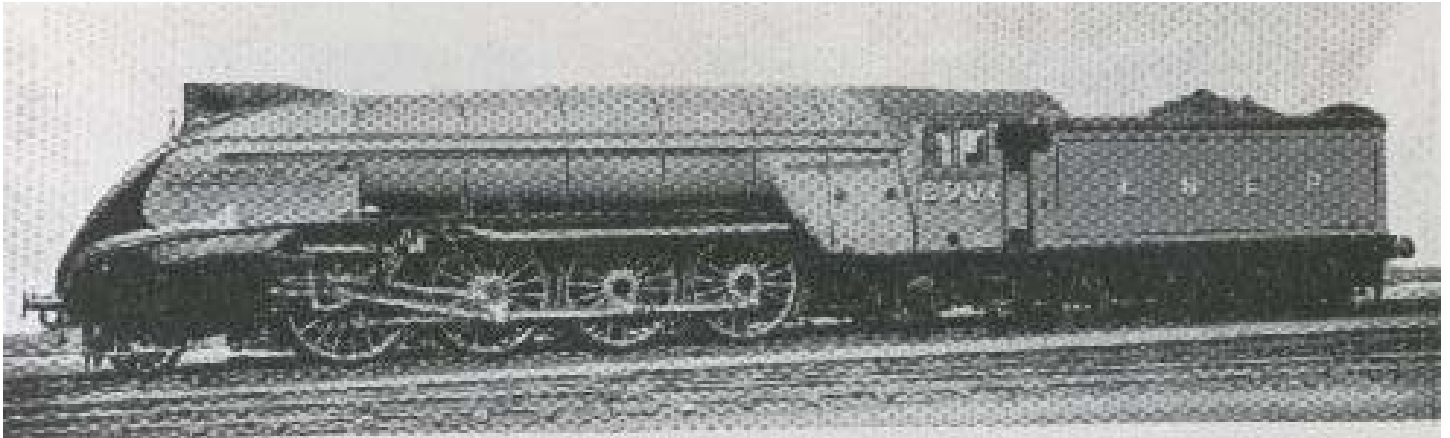
The second of the class was named 'Earl Marischal' and differed from the class leader in having piston valves and conjugated Walschaerts valve gear. Trials were observed in checking the performance of the two locomotives and late in 1936 four more P2 locomotives were built. These all had piston valves and conjugated Walschaerts valve gear. They were all named as follows, No 2003 Lord President, No 2004 Mons Meg, No 2005 Thane of Fife and No 2006 Wolf of Badenoch.

Towards the end of 1937 the class leader received new cylinders, piston valves and conjugated Walschaerts Valve gear. The feed water heater was removed and the engine received a wedge shaped nose making the six locomotives virtually identical. In service the P2s proved very successful. They could handle trains over 600 tons with ease and could probably have handled more. But while the engines were capable the old stations and sidings were not able to handle the long trains. The platforms were too short and the train had to be moved twice causing delays.

The P2s with their long coupled wheelbase had trouble on some of the tighter turnouts in Scotland and they were unable to use certain roads in and out of some of the sheds.

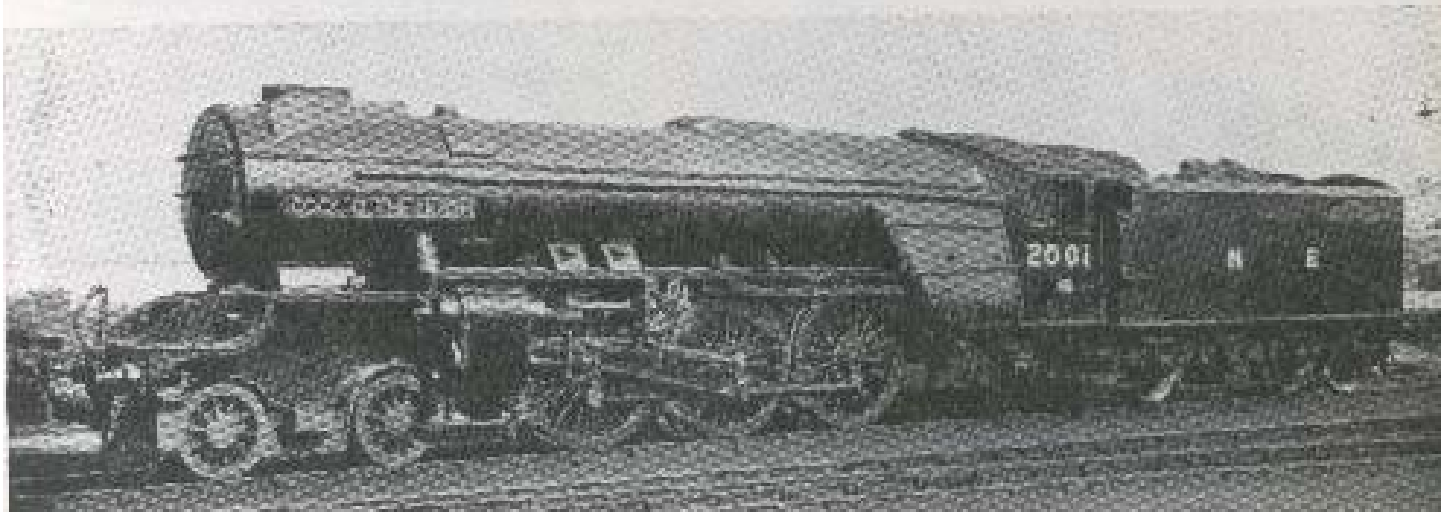
However it was the tightly curving track in Scotland that was to cause their downfall. While the locomotives rode very well, extreme pressures were set up on the tight curves through the wheel flanges and to the axleboxes of the coupled wheels. The overheating axleboxes caused delays and the P2s also were found to be spreading the rails, a fault fatal to the reputation of any locomotive.

Thompson became Chief Mechanical Engineer of the LNER after Sir Nigel Gresley's death. In 1942 Thompson directed that P2 No 2005 'Thane of Fife' be taken into the Doncaster Works for extensive modifications to his design. The locomotive was to be rebuilt as a Pacific type 4-6-2. The first driving axle was removed and the new cylinders were bolted on in their place. The bogie was placed in front of the cylinders. The middle cylinder drove the front-coupled axle and the outside cylinders drove the third, now middle axle. Three independent sets of Walschaerts valve gear replaced the conjugated gear. The remaining P2s were converted to Pacific's and were re-classed as A2/2 No 60501 - 60506.



Above: Cock o' the North as first rebuilt and embodying Gresley's modifications of 1938.

Below: Cock o' the North as finally rebuilt by Thompson in 1944.



Four of Sir Nigel Gresley's V2 class 2-6-2s not yet built in 1943, were converted to Pacific's by Thompson. These were classed as A2/1 No 60507 – 60510.

Finally Thompson modified Sir Nigel Gresley's first Pacific No 4470 and it became known as A1/1.

How successful was the rebuilding? The A2/2 and A2/1 classes all suffered from chronic slipping. They could not hope to equal the performance of the P2s and indeed were unable to equal the earlier Gresley Pacifics. They suffered continual cracking of the frames and were not popular with the footplate crews.

The solitary A1/1 was sent Haymarket Shed, Edinburgh in which were strong supporters of Sir Nigel Gresley, Mr. Thompson's ideas not being liked or supported. The Scottish authorities had it returned south of the border in two days.

The A1/1 also suffered poor steaming as a result of the changes to its front-end layout.

There is no doubt that Mr Thompson was envious of his illustrious predecessor at LNER. Indeed his first act on becoming Chief Mechanical Engineer of the

LNER was to disband the design team that had worked with Sir Nigel Gresley and create his own. However he was already over sixty years old and it was too late for him to start designing locomotives as there was going to be no time to learn from his mistakes and have them corrected.

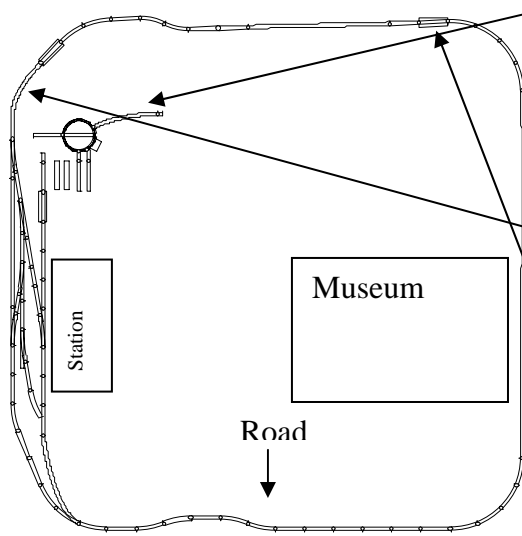
When Thompson retired in 1946 he had a class of new Pacific's being built. These were the A2/3s. It was on an A2/3 that LBSC based his 'Heilan Lassie' design on. Only fifteen of the class were completed before Peppercorn, Thompson's successor halted production until his own modifications could be incorporated. These were known as the Peppercorn 'A2s'. The A2s were a success and the A2/3s were not so highly regarded. Peppercorn went on to design his own class of 'Pacific' locomotive, these were the A1 class. The A1s became well known for their sound design and free running. They covered more miles between overhauls than any other locomotive built in Britain. Unfortunately all were scrapped but a group in England is building a new A1 from scratch. It has been named 'Tornado' and with much of the chassis complete, the boiler is just being started the contract for the boiler going to a German firm.

Rotorua Railway Weekend!!!

Friday 3:30pm I left Palmerston North for Rotorua, I had a good trip up, stopped at The Truck Stop in Turangi for tea and then headed for Rotorua and arrived at Paul Newtons home about 8:30pm.

Saturday 8:30am We headed for the track which is beside Te Amorangi Museum, unloaded my Diesel and head around the track for the first time I hadn't been to Rotorua track before, as this was a bit of a change from the normal tracks I go during the year.

If you haven't been there before, (like me) they have a piece of track for unloading that goes to a turntable then to two low steaming bays. A traverser takes you to the station siding.



After coupling carriages up it was off around the track.

Leaving the station you go straight into a tunnel then straight onto a bridge into the bush with running water and a footbridge, being very natural.

Then across a road crossing, and parallel with the road. On to the bypass around the station and heading back through the tunnel and around the track.

My locomotive pulled quite a few people that day, but with one problem, my train wasn't

going to start again.

The starter motor sprocket was very worn and needed replacing (you know the things you forget to do). Luckily the part was easy to get from a lawnmower shop within half an hour I was going again with no problems.

Dinner was Stew and Potato Bake.



Me driving my DH

Sunday

was a good day with lots of rides behind my Diesel.



Grant Alexander Driving my DH

Morrie and Lee prepared a lovely evening meal lamb on the spit. Thank you for that.

Monday was a bit slower with passenger hauling. I headed home at 12 noon. Snow falling down on the Dessert Road and there was lot's of traffic. I arrived home at 4:30pm.

Thank you all for your hospitality Rotorua Society of Model Engineers. Rotorua track is a worthwhile place to go to, a very enjoyable weekend.

Written By Stuart Anderson.