



## Newsletter of THE PALMERSTON NORTH MODEL ENGINEERING CLUB INC

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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  
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### Coming Events

**Monthly Meeting;** This will be held in the Hearing Association Rooms, Church Street, Palmerston North on the 25<sup>th</sup> September 2003 at 7 . 30 pm.  
Guest Speakers are Maurice Brownell and Richard Lockett.

**Mid Week Run at Marriner Reserve Railway :**  
28 October, between 10 am and 2 pm. Please contact Doug Chambers beforehand.

**Track running at Marriner Reserve Railway:**

7 <sup>th</sup> September	1- 3 pm
21 <sup>st</sup> September	1- 3 pm

#### Open Weekends :

New Plymouth	Labour Weekend
Havelock North	Labour Weekend 71/4" gauge.

The closing date for the next issue of The Generator is Friday 10<sup>th</sup> October

## **REPORT of the AUGUST MEETING**

I believe that all the members who were shown through ProFab Ltd 's boat building facility came away very impressed. Through photos and articles in the "Evening Standard" most of us were aware that they built large aluminium boats, but not in the numbers that they are busy turning out at the moment. Tim, one of the staff, told us about 'ProFab's entry into boat building. He explained that the customer gets a design drawn up by a professional boat designer. The design is then given to a firm in Auckland who cut all the aluminium plate to shape with a computer programmed laser-cutting machine. There were three boats under construction, all around the 13 – 15 metre length. One was of a more unusual design. It had a catamaran type hull. There was a 450 hp Cummins engine driving a Hamilton Jet unit in each hull. It is to be used for crayfishing at Castlepoint. The other two boats had more of a conventional hull, but although they were similar in length and beam there was a considerable difference in the chine. Both these two boats were to be driven by a conventional propeller; both are to be powered by a turbo-charged Scania diesel engine fitted with V-drive gearboxes. One is for the Royal New Zealand Yacht Club and the other is for a Charter Fishing Company. Members of ProFab's staff were on hand to explain the method of design, construction and final fitting out. The warping of the aluminium during welding processes causes a lot of grief and a lot of care must be taken to ensure all the dimensions remain accurate. My lasting impression was of the smooth compound curves in the bow. The standard of finish in this very tricky area was very impressive. Tim also had some components of a small jet engine he is making on display.



## **SEPTEMBER MEETING**

Richard Lockett will give the third of his 'Workshop Practice' talks. This one will cover 'Marking Out'. Maurice Brownell will speak of his experiences with crawler tractors.

## **Palmerston North Model Engineer's Exhibition**

The date for our next exhibition at the 'Leisure Centre' is the 8th and 9<sup>th</sup> of May 2004. Bruce Geange or Chris Rogers will contact you to find out what models you have.

## LITTLE GIANTS IN STEAM

By Bren Campbell

This is a record of a boyhood acquaintance and in some cases hands-on contact with little giants in steam. While over the course of time the Public Works Department owned many locomotives. The six plus the Egmont Collieries locomotive described below were part of my daily scene for three years.

In 1928 at age ten I met my first little locomotives. My Dad was driving one of the four steam 'navvies' engaged in excavating the site for the Milson Deviation at Palmerston North. These machines were built by the well-known makers of the times, namely "Thew", "Osgood", and "Marion". Depending on the makers preferences they travelled on rails or crawler tracks or wide steel wheels that rolled on massive timber pallets that the machines themselves picked up from behind and placed on the ground in front as they advanced. The vertical fire-tube boilers were mounted at the rear of the swivelling structures to counterbalance the jibs and scoop buckets. Each of these grunty machines had three duplex engines: one to drive the bucket hoisting winch, one to feed the bucket into the cut and the other to rotate the bucket over the spoil trucks. The machinery was semi enclosed with side panels and curved iron roofs. When an excavator was being repositioned one of the engines was clutched to provide traction to the carrying wheels and on the machines not on rails one axle was steered by link and screw mechanism operated from the ground by hand wheel.

Temporary ever extending rail tracks followed the excavation work and two small steam locomotives served the four 'navvies' by removing the trucks of spoil and placing empties up to them. These two energetic 'puffers' were of classes depicted in "Steam Locomotives of the Public Works department". One was a 7.5 ton, 0-4-0, Barclay bearing the PWD No 522. Its mate PWD No 547 was an 0-4-0 side tank machine of 8 tons built by John Fowlers of Leeds. The tracks over which they worked were always hastily laid and very kinky, but by virtue of their very short wheelbase the little engines kept to the rails. The loads were hauled to a marshalling yard of more substantial track where a larger locomotive hauled assembled trains out to formations on the line of railway between Milson and Longburn. This locomotive PWD No 551 was a 24.5 ton 0-6-0 Barclay with sloping top side tanks.

At the beginning of 1929 the Milson Deviation project was curtailed and my Dad was sent to Gowan Bridge on the extension of the Nelson-Glenhope railway where work was in progress building the link from Glenhope to Inangahua. It was rugged country following the course of the Buller River. The scene of operations that concerned us as a family was located 2.4 km south of the Gowan Bridge and 2 km north of the junction of the Buller and Owen Rivers. The PWD married workers camp was located 400 metres south of the present highway bridge over the Granity Creek near its junction with the Buller River.

Heavy earthworks were the order and one "Thew" steam navy and one Barclay 0-4-0 side tank loco and several spoil trucks were on the job. The navy excavated a cutting in the north bank of the Granity Creek gully and the small loco hauled the spoil across a temporary bridge on the site now occupied by the present State Highway bridge to earth fills on the terrace above the Buller River. These fill were 4-6 metres high and teams of specialists constructed timber trestles along the line of the workings. The loco with its side dumping trucks cautiously rolled out onto these trestles that creaked and groaned under their weights. When the fills were up to rail level the trestlework was extended. The timbers for these were cut from the local Beech forest and the footings, piers, beams, cross ties and braces were skilfully hand-sawn, adzed, bored and bolted together.

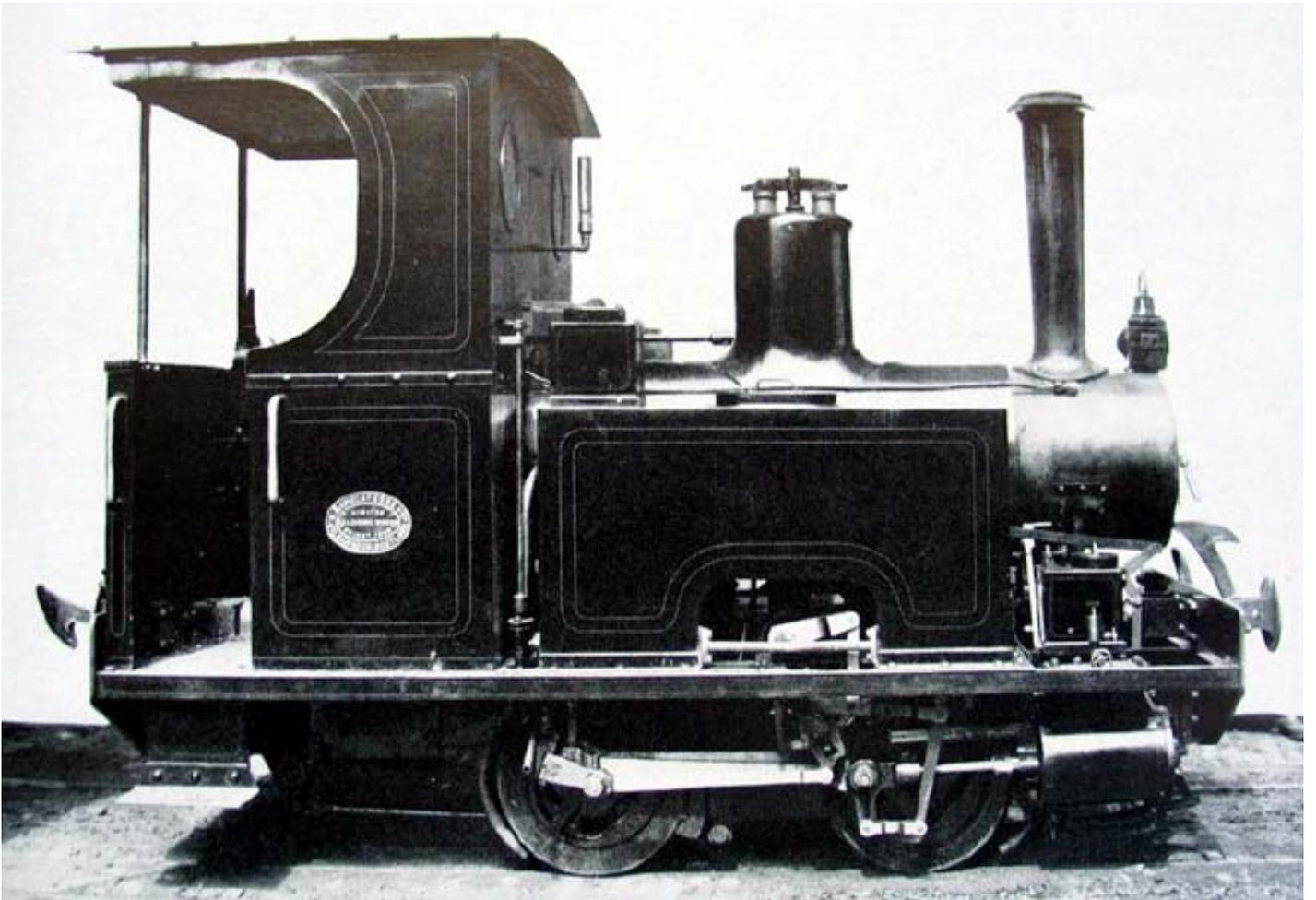
At the end of 1929 the whole project was axed and the workers and plant dispersed. My Dad became a shift operator in the PWD powerhouse at Tangarakau midway between Stratford and Taumaranui where the locomotive scene was a small boy's dream. For the first six months of our two-year sojourn in the area the family lived at Tahora, the then railhead of the NZR line from Stratford. There I met up with a 7.5 ton 0-4-0 well tank Fowler PWD No 534 and another 7.5 ton 0-4-0 side tank Barclay PWD No 531. These two engines worked trains of spoil, construction materials and the two car passenger trains that met the NZR trains at Tahora and ran the Saturday night picture trains that returned patrons from Tangarakau to Tahora and camp sites between. These small-wheeled locomotives gave the impression of being up to speed from start-off.

Early in the construction of that section the PWD rails were laid directly on the country clay road that ran roughly parallel with the surveyed line of railway. The former was a tortuous track that became even more so as sections of finished railway were laid. Until tunnels and bridges were completed the PWD trains had to cautiously proceed around the workings. When the earthworks on this section were completed, trainload's of ballast were brought in and to provide power to haul the ballast train plough van a very handsome 21.5 ton 0-6-0 Barclay saddle tank No 514 was engaged. This engine gave me my first cab ride on a 3' 6" gauge locomotive.

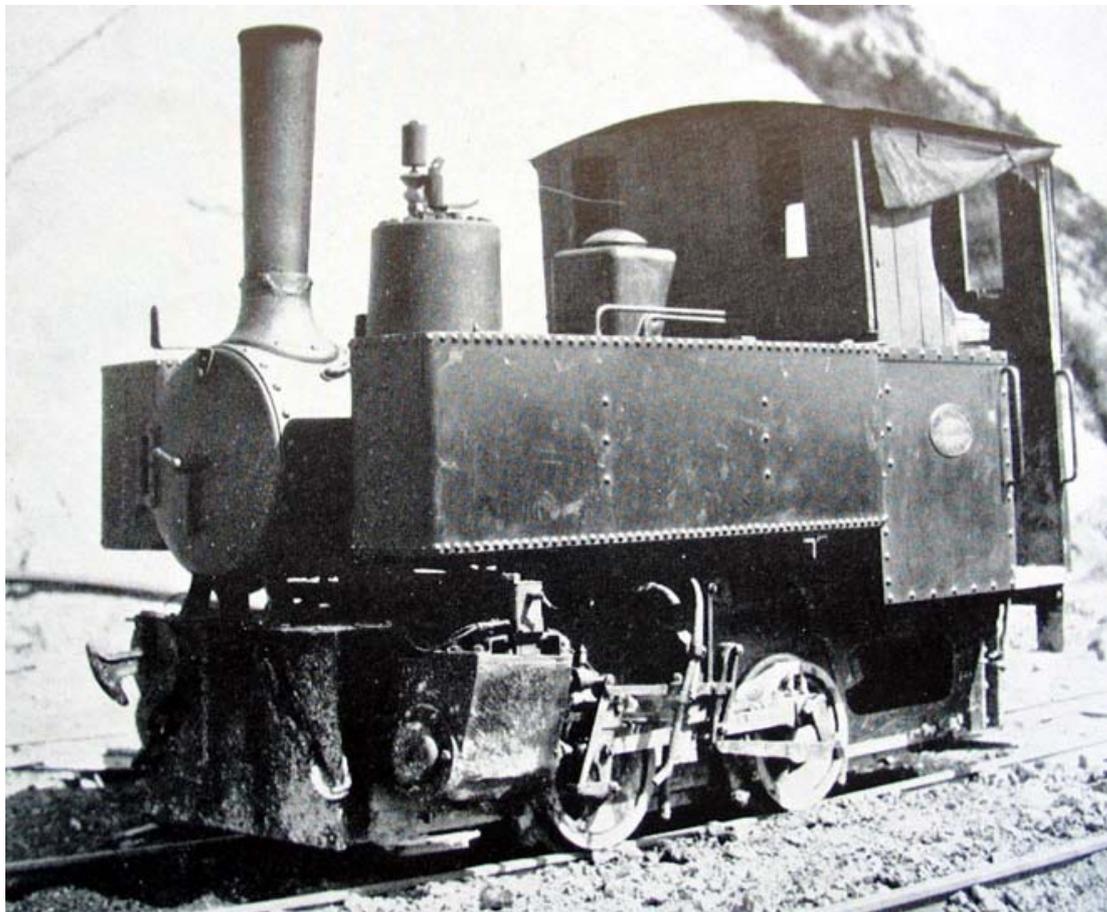
The first 10 km of formation work north of Tangarakau towards Ohura was heavy going and the PWD used 2' 6" gauge track to serve the tunnel construction works. Electric locos worked this line and drew their current from an overhead wire energized from the powerhouse at Tangarakau. These locomotives worked from a narrow gauge/ standard gauge transfer yard that was wired. The yard was shunted by a narrow gauge 0-4-2 Kerr Stuart saddle tank PWD No 525 that weighed 8.65 tons. As the tunnels were completed but still carrying the overhead wire a third rail gauged to 3' 6" was laid. The Kerr Stuart was fitted with an off-set NZR type buffer and coupling to enable it to haul NZR wagons to advanced working towards Ohura. The electric locos were not fitted for this.

The Egmont collieries operated a mine located in the Tangarakau River gorge 6.4 km upstream from Tangarakau. This was served by a delightful river bank 2' 0" gauge tramline. The sole locomotive was purchased new being a Barclay 0-4-0 well tank weighing 6.9 tons. The coal trains consisted of rakes of twenty-four  $\frac{3}{4}$  ton skips. Four return trips a day were made. One rake would be filling at the mine, one rake emptying at the screening plant at Tangarakau and the third rake in transit. There were several spare trucks or skips and three or four low sided and flat deck wagons.

The local coal despite a promising start turned out to be of low grade containing much shale and stone. It was burned by all the area locomotives as well as the PWD and mine powerhouses and the steam powered screening plant at Tangarakau. Frequent fire cleaning and ash dumping characterized the operation of all the local steam machinery. NZR conducted trials with this coal but found the excess of ash and clinker too much of a problem to make its use viable. Following completion of the rail link between Stratford and Taumaranui the mine closed.



PWD Barclay No 511 of 1920



PWD No 340 Fowler & Co 1925

**The Generator**

## W. G. BAGNALL Ltd.

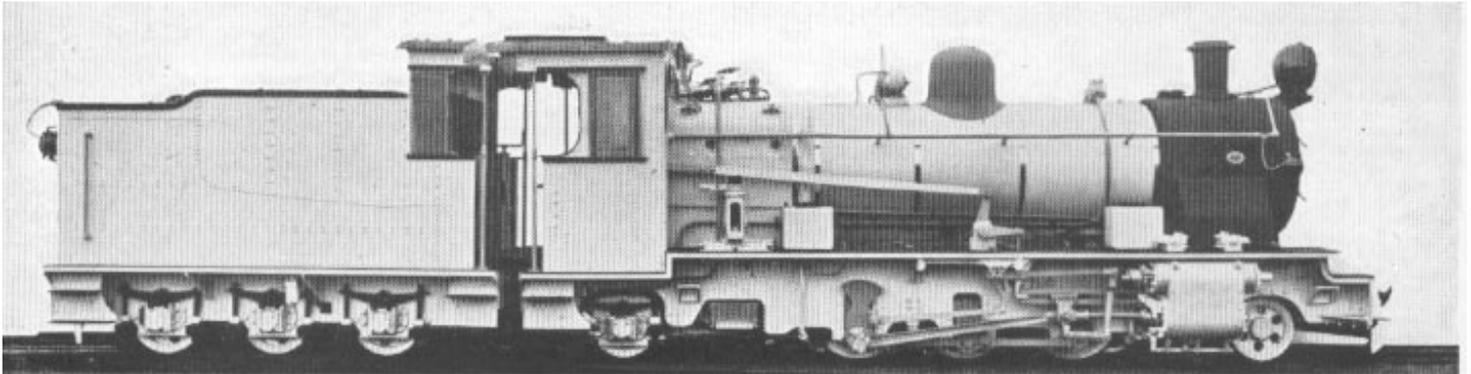
By Doug Chambers

This is another 'Works' history taken from article published in 1954.

The company was founded in 1874 and has been actively engaged in building steam, fireless and diesel locomotives. Originally the Company specialised in, industrial, plantation and narrow gauge locomotives but in the early fifties they started building a large number of mainline engines.

W.G. Bagnall supply the mechanical parts for diesel-electric locomotives built by Brush Bagnall Traction Ltd and have built complete units at their Castle Hill Works, in Stafford.

Recent deliveries (1954) have seen steam locomotives go to India, South Africa, West Africa and industrial lines in Great Britain. Diesel-mechanical engines for New Zealand and in conjunction with Brush Bagnall Traction Ltd they have supplied diesel-electrics for the Steel Company of Wales and the National Coal Board.



2-6-2 ZB Class 2' 6" Gauge

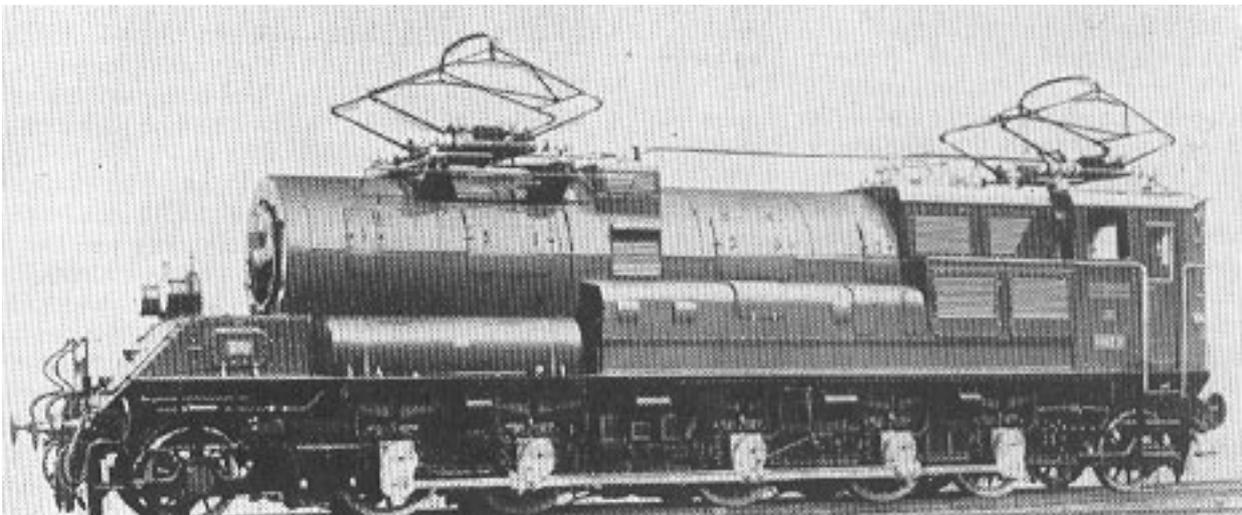
### AN UNUSUAL LOCOMOTIVE

At first glance this appears to be a steam locomotive converted to electric. But no, it was designed this way. Built in Austria in 1931 it featured an 1 -E -1 layout. Only one was built and it had some unusual features. The high tension single-phase A.C. was reduced in tension in a transformer and then changed to 3 -phase A.C. in a rotary converter. The converters were coupled with the phase transformers thus producing D.C. current. The D. C. current could be easily controlled and was supplied to the three traction motors which could be arranged in series or parallel.

The locomotive underwent exhaustive testing and was in service for ten years, being scrapped by Germany during the Second World War.

As can be seen only one driver's cab was fitted and the rotating machinery was fitted in the boiler-like structure in the front.

There is a pony truck at each end and the leading, central and trailing axles are driven by electric motors. Because of the long rigid wheelbase the centre wheels were reduced by 14 mm and the leading and trailing axles had extra side play.



The Generator