October 2003
No 284

THE GENERATOR

Newsletter of THE PALMERSTON NORTH MODEL ENGINEERING CLUB INC
Managers of the **"MARRINER RESERVE RAILWAY"**
Please address all correspondence to **:- 22b Haydon St, Palmerston North.**

PRESIDENT	SECRETARY	TRACK CONVENOR	EDITOR
Bruce Geange	Murray Bold	Richard Lockett	Doug Chambers
(06) 357-0566	(06) 355-7000	(06) 323-0948	(06) 354-9379

PNMEC Home Page www.pnmec.org.nz
Email:- pnmec@clear.net.nz

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,

Place stamp here

Coming Events

Coming Events; October Monthly Meeting; This will be a visit to the **"TOOLROOM"** Brian Wiffin's workshop at 8 Princess Street, Dannevirke.
It will be on **Saturday 18th October** at 11 am. See page 2 for further details and directions.

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

Track running at Marriner Reserve Railway

19th	October	1- 3 pm
2nd	November	1– 4 pm
16th	November	1– 4 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 14th November

REPORT of the SEPTEMBER MEETING

Richard Lockett continued with his 'Workshop Practice' series. This time on marking out. Basic tools for this were a square, dividers, calipers, sharp scriber and a small sharp dot punch.

Maurice Brownell told of his experiences with bulldozers over a period of fifty years. Starting when he left school driving a Caterpillar 22 and moving on through Caterpillar D 8s, D 7s, D 6s and D 4s.
Allis Chalmers HD 7 and finally to his favourite a Case 1150 that he owned for many years. Maurice recalled the advantages and disadvantages of the different models of tracked machines; the early models being a far cry to today's machines with their air-conditioned and heated cabs.
Maurice recalled Le Tourneaus early motor scrapers and how they earned their reputation as 'widow-makers'.

On the table were the following.

- Bruce Geange's nearly completed tracked crane.
- Fred Kent had the Club's challenge crane running on compressed air.
- Ian McLellan showed the bogie for "Maisie" and some clamps for holding things under the drill press.
- Murray Bold had the completed NZR 'D' that he and Bruce Geange built in 'G' gauge.
  Very nice in black with gold lining.
- Merv George displayed a metal bender that he had made.
- Doug Chambers had his "Rob Roy" now with the boiler in place.

OCTOBER MEETING

PLEASE NOTE THE DATE. On Saturday 18th October we are invited to the "Toolroom", Brian Wiffin,s workshop in Dannevirke. Brian will demonstrate his new gear hobbing machine.
Members are to meet at Brian's at 11 am and there will be a BBQ lunch available. Tea and coffee will be available otherwise it is BYO.

DIRECTIONS; Approaching Dannevirke from the southern end. Take the first turn left over the railway line after entering the 50-kph-speed restriction. (by the BP petrol station)
After crossing the railway line turn right onto the road running parallel to the railway.
Prenter's Concrete batching plant will be on your left.
Princess Street is the third on the left and Brian and Margaret live in No 8.
There is a sign at the gate "The Toolroom". Park on the street and come up the drive.

LETTER FROM ENGLAND

By Stan Compton

Recently I was asked to certify the boiler on a 5 inch gauge 4 –6 –4 tank locomotive; designed by Henry Greenly in the thirties as a project for the apprentices at the Royal Air Force College at Halton. Since then it has become known as the 'Halton Tank'. It was designed as a workhorse utilising just wheel and cylinder castings with everything else fabricated.
A 'freelance' project with plenty of weight, large side tanks and easy access to the footplate, good looks were secondary. When I asked who had built this locomotive I was told that it had been made by the Common Brothers and it had been displayed at a model railway exhibition in London when new in 1954.
It had been bought by the father of one of our new members a RAF officer, and was taken to South Africa, but the locomotive had never done much work.

The mention of Common Brothers brought back a memory of reading somewhere that they were professional model builders and one of their projects was a model of "Locomotion" that was on display on a main-line station in London in a glass case. It was designed so that an electric motor would revolve the motion when a small coin was inserted.
The boiler of the "Halton Tank" was made of copper, riveted, and caulked with soft solder, something we never see these days. It was a first class piece of work, no sign of any weeps or bulging anywhere and taking to 200-psi test easily.
The workmanship on the locomotive was first-class, everything designed for ease of use, large hand wheels etc. and the owner told me that the "Model Engineer" staff had reported it's ability to haul a couple of ton load.
The steam test was passed without problems and I am waiting to see it in steam on our ground level track.

By coincidence recently I looked into our local salerooms before the auction started to view a 4 –8 –4 tank in 5 inch gauge that I had been told about. It was a very handsome freelance model of modern appearance, very well built, that had not run for some years. It fetched 4000 pounds and when cleaned up would be worth a lot more. I have no idea where it came from or where it went.

An item in our local paper showed a photograph of some of the children taking part in a tug –of –war with a traction engine at a local rally. You can see by their faces that they are beating the engine !!!
I witnessed such an event years ago, also a hot dry summer with bone dry grass, but with several hundred children pulling on the fan of ropes, led by one man calling out, they pulled a heavy engine backwards with his drive wheels going forwards!!!!
What the public at the recent event would be unaware of was the fact that the Gibbons and Robinson traction engine is the only one of it's make left in the world. Richard Hesbrook acquired just half of the engine, the rear half and dragged it home with the front end resting on the tray of a truck. Then came many years of hard work to restore what was a sadly worn-out engine. He even found a firm who let him, not an engineer by the way, utilise a very sophisticated boring machine one weekend to bore out the hubs of the hind wheels that had worn oval. The final result is a credit to him and the traction engine is seen regularly at the local rallies.

Recently I was asked to restore some commercially made bogies for a 5-inch gauge, ground level passenger car. It is hard to believe how a big firm could produce such a poor product. Made to resemble a British Rail Mark 1 coach bogie with leaf springs that were too long, two main leaves 10mm wide by 0.5mm brass strip, plus tufnol strip below. They were so weak and only suitable to carry a dummy coach body. It required three top leaves of 10mm by 1.6mm spring steel from 'Reeves' to allow one bogie to carry the weight of the driver without bottoming out on the frame slot.
What was worse was the folly of mounting each wheel on a narrow ball-race, which soon became sloppy with poor guiding ability. You can guess the rest. Constant de-railing. !! Rebuilding to a solid wheel –set affected a cure.

On a recent visit to an old town called Monmouth on the Welsh Border I was able to examine a model of the "Victory" in the Nelson Museum. It was about twice the size of the "Endeavour" hull that I have acquired and it gave me a good idea of what I have to tackle to rig the hull. Model boat building is new to me and it seems

to take ages to make simple items that could be bought.
Monmouth has a statue in the main square of Charles Rolls, who was the partner in the firm Rolls Royce. He lived nearby but was killed in 1910 trying to fly a Wright biplane.

Nearby is an antique shop, the sort that is piled high with all sorts of goods, the dust on the floor adds to the atmosphere!! Out the back was old ironwork etc and a pair of new cast-iron barrels for cannons. They were about seven feet long with a three-inch bore. They were strapped onto a pallet ready for shipping to the Channel Islands, price delivered was 1200 pounds. I was told that they weighed one and a half tons. Only the Far-East could produce such an item at that price.
At the bottom of the town is a 13th century bridge over the River Monnow, a real bottleneck for traffic being only one lane, but will never be demolished. Nearby a new bridge is under construction to carry modern traffic. It is hard to believe that this was once the main route into Wales.

FOR SALE

A small Air compressor. It has a one/third hp single phase electric motor.
Suitable for model engineers requirements.
Price $100. Ono. Apply to David Neilsen Phone 06 355 1520

INTERESTING RAILWAY FACTS

By Doug Chambers

1. The first locomotive to haul a useful load was demonstrated by Richard Trevithick in 1804 over the Penydarren plateway. It had a single cylinder and had no flanges on the wheels.
2. The first successful steam line in the USA was the South Carolina Railroad. Their first locomotive was "The Best Friend of Charleston". It hauled the inaugural train on Christmas Day 1830. Five months later the boiler exploded due it is said to the fireman holding the safety valve closed!
3. The largest and heaviest steam locomotives were the "Big Boys". But they were not the most powerful. They were exceeded in power ratings by the Yellowstone 'Y' class and the most powerful of all. An experimental articulated six cylinder 2 –8 –8 –8 –4 Mallet compound tank engine built in 1916 for the Virginian Railroad. It is said that the locomotive departed on it's first run amid a fanfare of speeches and band music. The engine ground to a halt about two miles from the station. The boiler was not capable of producing enough steam. After two years it was rebuilt into two separate engines.
4. The most numerous class in the British Commonwealth was the 2,450 WG class 2 –8 –2 introduced in 1950.
5. The most numerous class in the USA was the Pennsylvania Railroad's H6 2- 8 –0 at 2,226.
6. The most numerous class in the world was the Russian 'E' class 0 –10 –0 of 1912 at about 14,000 units.
7. Longest electrified line is from Moscow to Irkutsk 5,213 km.
8. Heaviest train was one assembled in 1967 of 500 coal wagons of 43,000 tonnes. It ran from Virginia to Ohio. The heaviest regular trains are those operated between Mt Newman and Port Hedland by the Hamersley Iron Railway in Western Australia.
9. The longest tunnel is the second of the two Simplon bores under the Alps linking Italy and Switzerland. 19.82 kms.

THE BLUE RIBAND

By Doug Chambers

In these days of almost universal air travel, the fabulous liners that held the coveted trophy for the fastest crossing of the Atlantic Ocean have been almost forgotten.
The title Blue Riband originates from the blue insignia of the British Order of the Garter, the most exclusive decoration in the world.
It is not known exactly when the term was first used to describe the record for the passage between Europe and America, but it was certainly in use by the mid 1880s. Although all the shipping companies took a great interest in the record there was no formal competition. There were no timekeepers, controlling committees, course or even entry forms !!!
Most of the larger companies realised the prestige that went with the Blue Riband and knew that the holder would have little trouble filling the cabins on their ship. The public's interest never waned during the 155 years from the first voyage of the 'Great Western' to the 'United States' the last holder of the Atlantic Crown.
Nearly all the twentieth century holders of the Blue Riband required large sums of assistance from the national governments and thus there became a large amount of national pride at stake and acute embarrassment if the new vessel failed to win the record.

Cunard's 'Britannia' began crossing the Atlantic in 1840. She was only 207 feet long and of 1,156 tons. Fitted with two single-cylinder side lever engines 'Britannia' could manage 10 knots in exchange for 38 tons of coal per day. 'Britannia' was powered by paddlewheels.
The route was between Liverpool and Halifax, Nova Scotia, but laterNew York became the main passenger destination and the western terminal point became Sandy Hook and later on the Ambrose Light Vessel became the western end point.
At the eastern end the start line was Queenstown in Ireland, but as the German ship 'Kaiser Wihelm der Grosse' took the record in 1897 she gave her starting point as 'The Needles' off the Isle of Wight.
Later on Cherbourg Breakwater, Daunt' Rock, Eddystone and the Bishop Rock Lighthouse all served as marking points. The Italians used Tarifa Point fifteen miles west of Gibralter. Because the distance between these points varied the record has always been claimed by the ship with the highest average speed for the crossing in either direction.
The ship's officers were responsible for the figures presented and unlike Americas Cup racing there were never a ship's claim challenged.
In August 1840 the 'Britannia' crossed in ten days exactly. In 1842 the 'Arcadia' had the fastest crossings in both directions but in 1847 Cunard's new ship the 'Hibernia' took the eastbound record at an average of 11.67 knots.
The Americans were embarrassed by Cunards success and E. K. Collins was given Congressional approval and financial aid to turn the record in America's favour. In 1851 the record fell to first E.K. Collins 'Pacific' and later his 'Baltic'.
In 1862 Cunard's final paddlewheeler 'Scotia' regained the Blue Riband at a speed of 14.06 knots. Although by now many ships were screw powered they lacked efficiency from their two –bladed propellors.
In 1869 a new company won the Blue Riband. This was the Inman Line and their ship 'City of Brussels' of 3,747 tons easily took the record.
In 1872 White Star Line went to Harland and Wolff of Belfast and the first two ships built by them were the 'Adriatic' and the 'Baltic', both of whom took the record in succession in 1872 and 1875.
'Baltic' averaged over 15 knots and both these ships were known for the increase in passenger comfort. One could summon a steward with an electric bell!!!
Inman Line retook the record in 1875 with their 'City of Berlin'.
White Star took back the record with their two sister ships, 'Germanic' and 'Britannic' and between these two ships the record stayed until 1879. Although steam powered they retained all four masts and if they suffered an engine failure they could continue on under sail. Fortunately this was a rare occurrence, although Inman's 'City of Brussels' lost her rudder and rudderpost and was towed into Queenstown by "City of Paris' after being found drifting in mid-ocean.
The Americans stepped up to the challenge again through the American owned Guion Line, based in Liverpool. In 1879 they produced the 'Arizona' and in 1882 the 6,400 to 'Alaska' which was the first vessel to cross in under seven days. However so much space had been taken up with their machinery that there was little room left for passengers making them very unprofitable. Also they vibrated very badly at speed. Their third ship the 'Oregan' took the record in 1884 but lost it to the National Line's 'America'.
Guion Line had lost so much money with their ships that they had to sell their best and Cunard regained the record with 'Oregan' now sailing under Cunard's flag.

In 1885 Cunard built their last single screw ships. The ‘Umbria’ and the ‘Etruria’ both taking the record to just under 20 knots.
Inman Line now produced two ships ‘City of Paris’ and ‘City of New York’. These were the first to exceed 20 knots and 10,000 tons. They both held the record but ‘City of Paris’ broke a crankshaft while trying to increase the margin over Cunard Line and suffered severe engine room damage.
White Star’s ‘Teutonic’ took the record in 1891 but lost it the following year to Inman’s ‘City of Paris’.
In 1892 Cunard regained the record and Inman Line declined to challenge further. Also White Star decided to build ships with greater comfort and cheaper tickets.
In 1893 two new Cunard liners ‘Campania’ and ‘Lucunia’ took the record up to 22 knots. People felt that this was the maximum limit. To go faster meant more space taken up by engines and less available for the fare paying passengers.
In Germany two ships were being built. The first ‘Kaiser Friedrich’ was a failure but the ‘Kaiser Wilhelm der Grosse’ took the record in September 1897. In 1900 another German ship Hapag Lines ‘Deutchland’ took the record to 23.51 knots although she vibrated badly at anything over 18 knots. Two further German ships ‘Kronprinz Wilhelm’ and ‘Kaiser Wilhelm 11 kept the record firmly in German control.
The British Government responded with a hefty subsidy to Cunard resulting in the ‘Lusitania’ and the ‘Mauretania’ of 1907. The ‘Lusitania’ was the first launched. At 31,500 tons she was easily the largest ship afloat and her accommodation was the best available. She crossed westwards at an average of 25.58 knots.
Sadly she was torpedoed in 1915 with tragic loss of life.
The ‘Mauritania’ became a famous and well-loved ship. Reliable and still turning in remarkable performances even when twenty years old. At the end of 1908 she was fitted with new four bladed propellers to reduce a vibration. In 1909 she set an average time of 25.94 knots and in 1914 increased this to 26.06 knots. After being converted to oil firing in 1924 ‘Mauritania’ upped the average speed to 26.25
She was the longest holder of the record, retaining the title for over twenty years.
North German Lloyd Line built to fine 52,000-ton superliners. ‘Europa’ and ‘Bremen’. ‘Bremen’ took the record in 1929 with an average speed of 27.83 knots. The twenty-year-old ‘Mauritania’ had one last crack at regaining the record and although she made her fastest crossing ever she was just 0.6 of a knot slower than the new German ship. ‘Bremen’ and ‘Europa’ held the records between them until 1933 when the Italian Liner ‘Rex’ took the record with an average speed of 28.92 knots.
The Depression years saw the beginning of the end of the super liners. There were to be only three more holders of the Blue Riband. Medium sized ships of less power were being built as they could be run at a profit without the need for a subsidy.
French Line’s ‘Normandie’ a ship created from national pride and Government money, was perhaps the crowning achievement of the super liner design. A streamlined hull, uncluttered deck spaces and turbine electric engines. On her maiden voyage in 1935 she regained the Blue Riband.
Exactly a year later Cunard White Star Line celebrated their alliance when their new ship ‘Queen Mary’ proved a couple of knots faster. Although the ‘Queen Mary’ had none of the French liner’s style or grace and her layout was not convenient for the passengers, she was to remain a firm favourite with crew and public alike and was always known as a ‘happy ship’. Food was better on the ‘Normandie’, the yet to come ‘United States’ was faster but people were happy with the service from the best crew on the ‘Queen Mary’.
The ‘Normandie’ regained the record in 1937 with an average speed of 31.20 knots. In 1938 the ‘Queen Mary’ regained the record cutting just one and a quarter hours from ‘Normandie’s’ time.
At the end of the Second World War, ‘Bremen’, ‘Rex’, and ‘Normandie’ were no more and ‘Europa’ was wrecked in Le Harve. ‘Queen Mary’ now joined by ‘Queen Elizabeth’ were running weekly services earning the weakened British economy millions of American dollars at least 50 million annually.
Congress voted $48 million towards their new vessel, which was to cost a total of $75 million. The ship was built under strict security. The above deck structures were of aluminium saving 30,000 gross tons.
To keep her safe from fire no wood was used except for the balsa filling her bilges. Nor were oil paintings allowed.
The ‘United States’ as she was named had eight boilers supplying steam at 1,000 psi to four Westinghouse turbines, the actual power of which has never been disclosed but is estimated at about 240,000 shp at maximum rpm.
On her maiden voyage, sailing in a 60 mph gale she regained the record cutting ten hours from the ‘Queen Mary’s’ best time. The average speed was 35. 59 knots. The Atlantic had a new champion but the end was in sight for the superliners. A planned sister ship was cancelled. After seventeen years of being heavily subsidised the American taxpayer finally overcame his pride and the ‘United States’ was withdrawn from service unable to compete with air.