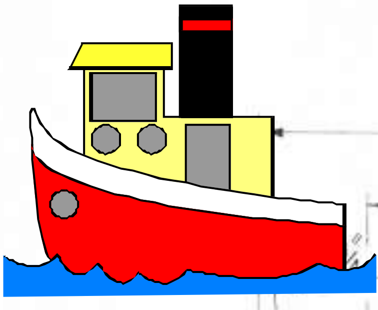
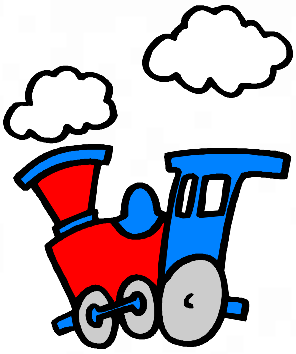




Wheels & Floats

November 2025

Tauranga Model Marine and Engineering Club Inc.

Newsletter November 2025

TAURANGA MODEL MARINE AND ENGINEERING CLUB INC.

The Secretary

PO Box 15589

Tauranga 3112

Palmerville Station Phone 578 7293

Bank Account 03-0435-0461711-000

Miniature Railway Memorial Park

Open to Public, weather permitting

Sundays : 10am to 3pm approximately

Website: www.tmmec.org.nz

Facebook: Memorial Park Railway Tauranga

MEETINGS

General Members Meeting : every first Tuesday of the month, at 7pm.

Committee Meeting : every second Thursday of the month at 7pm.

Maintenance : Tuesday mornings from 9am.

Engineering discussions : Tuesday evenings 7.00pm.

COMMITTEE

President: Warren Karlsson 027 5422863

Vice President: Owen Bennett 027 591 4992

Club Captain Ethan Bramley 022 0972 767

Secretary: Warren Karlsson 027 5422863

Treasurer: Jerry Payne 021 486 013

Committee:

Ian Bain, Ethan Bramley Graeme Hayley, David Ingley, Brian

Marriner, Russell Prout,

CONVENERS

Boiler Committee:

Owen Bennett, Ross Campbell, Bruce McKerras, Ash Thomas.

Safety Committee:

Ethan Bramley, David Ingley, Warren Karlsson, Bruce McKerras.

Workshop: Ethan Bramley

Drivers Licencing :

Warren Karlsson, Bruce Mckerras.

Track: Russell Prout, Ash Thomas.

Librarian: Chris Pattison.

Rolling Stock: Jason Flannery

.Website: Peter Davies.

MEANZ rep Russell Prout.

Editor: Roy Robinson 027 5491182

royrobkk@gmail.com

Cover photo : Pumpkin head????????!!!!!&%^

Presidents Report November 2025

All of a sudden I've realised that we are less than just a few short weeks away from the silly season, with one committee meeting to follow in December before the executive (and the editor!) take a break and to not meet again until February.

Out of the blue I received a telephone call from the TECT Community Trust advising the Club was one of five selected as a finalist for the 2026 Western Bay Community Awards in the Heart of the Community category!

To quote:

"Your work and impact on the wider community have been recognised by both your nominator and our judges".

The awards ceremony will be held on Thursday, 19 March 2026, at Holy Trinity Tauranga, where winners will be announced and all finalists celebrated.

If you're not familiar with the awards, visit our website to see how we celebrate the amazing work of local individuals, volunteers, groups, and organisations across the Western Bay of Plenty.

As a finalist, you'll receive a highlight video showcasing what you do for the community. This is our chance to capture you, your team, and/or your organisation— to highlight what you do, why it matters, and your motivation. It's a celebration video of the do-gooders of the Western Bay of Plenty.

It is that time again to rework the Duty Operating roster and align the names and dates for 2026, sadly with two less Operators that we have had this year.
Personal commitments meant that two have made themselves unavailable for the Sunday roster, but we have had a good year with the current eleven Operators ensuring that the frequency of being "on Duty" was the lowest we have had for some time.
If you can see yourself able to commit to the roster for the New Year please advise myself so I can redraw the list as soon as practicable for next year.
Thank you to you all for your "duty" this year, it all worked seamlessly.

Roy and I are brain storming a different venue for next year's annual (belated) "Christmas Party", which is normally held on the first Saturday in February.
We are looking at the Goldfields Railway at Waihi – taking their train to Waikino and back and utilising part of their yard at Waihi Station for a BBQ and possible look behind the shed doors.
Final details to be worked out, including possibly hiring a bus for transport from our home base. Watch this space!

We had a great Halloween followed by an exceptional Open Weekend with visitors, complete with Locomotives, from the Manukau and New Plymouth Clubs and a large contingent from Keirunga Park, all reciprocating visits by our members over recent times.
By all accounts everyone enjoyed themselves, and the weather certainly played its part for both events.

It was my pleasure to be able to present a small token to those who work in the background:
Roy and Barbra, Heather and David, Diane and Ian and my wife Estelle – thank you all for stepping up (again) and ensuring the three main events over the five months were well catered for – there was plenty of good food to go around, then all followed by dessert!
A big thank you to members like Lance for his hours spent welcoming and letting passengers' board our trains, and in the process giving every Kid a stamp. He also ensures that the Locomotives are all fully fuelled every Tuesday ready for the next weekend.
Beavering away without ceremony Graeme maintains the buildings and grounds and also ensuring our signage is kept up to date through the generosity of his employer.
Young Ethan has progressed to be on all committees, managing our workshop and sharing the role of Club Captain with Joanne.
We are fortunate to have a long standing foundation member active in the Club, Warren Belk remains committed to the Club after nearly 50 years of membership, his knowledge and ethics along with his dedication cannot be underestimated.
Three "Crunchie" bars were handed out and each group of visitors were thanked and received a small token of appreciation for their time and effort to attend and make our Open Weekend a success.
I invited Rex Toms to judge our club members' display of model engineering and the following were the winners:

The Ron Salisbury Junior Trophy went to Ian and Diane Bain's seven year old Grandson, Duxton for his remote controlled "Lego®" locomotive ("Bessie") which took on the raised track circuit with ease. So impressed was Dave Giles that he gave the driver's seat to Duxton on the "Shay", and he further impressed Dave by completely following all his instructions for a successful circuit of the track. I am certain that experience will be with Duxton for the rest of his life.

The Norm Decke Adult Trophy was presented to Jason for his revitalisation of the 3 ½ inch. Britannia 70000 which was originally built back in the late 1970's-early 80's
Jason was a reluctant recipient, but his rebirth of Britannia hopefully gives impetus for other fine scale locomotives to be reborn and live on for a new future, there are at least 3 other small scale locomotives in the Club being given a new lease on life.
An interesting back story here in that Jason contacted the granddaughter of the original builder (Rex Handley-Marlborough), she then enquired about another two locomotives her father and uncle built – surprise both are in possession of two of our club members!

Sweet Pea with Bruce Harvey and an NZRClass F with Owen Bennett.
And being a small world Rex Toms added to the story in that he knew Rex Handley very well.

It was unfortunate that the raised track extension, although workable was not fully complete for the Open Weekend. It was an ambitious target to meet and with many working bees and other “spare” time spent fabricating, welding, digging, cutting, grinding and tightening bolts the result to date is fantastic.
I’m sure a few more hours will see it fully completed and provide another good reason for a grand opening celebration and attract the smaller gauge enthusiasts back to the club.
Thank you to Russell and all the volunteers for their generous time and effort to get this and other projects up and running.

Congratulations and all the best wishes to Owen and Jean Bennett on celebrating their Diamond Wedding Anniversary this week.

Again thank you for your attention and regards to you all,

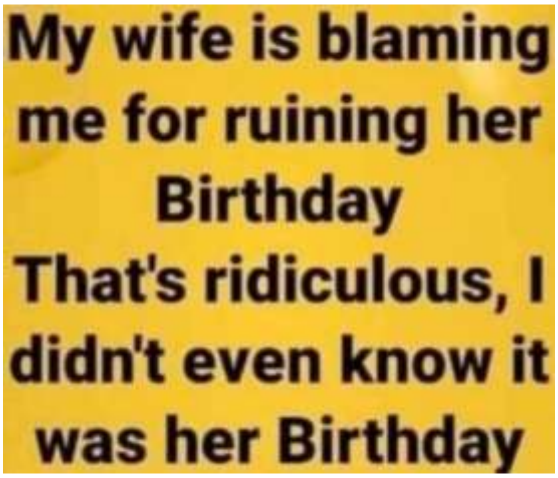
Warren Karlsson.

Timber workers using timber jacks to shift a large Kauri log. Coromandel

Humour :

"How was your first day of school?" I asked my kindergartner.

"Fine," she said. "They want me to come back tomorrow."



A little boy is learning to play the violin. "I'm good aren't I?" he asks his big brother. "You should be on the radio" his brother replies. "Wow, do you think I'm that good?" says the boy. "No, but at least if you were on the radio I could switch you off."

"Now! Let go while he's off balance!" 3

Club Captains Report

It has been a busy month at the club with lots of work going on behind the scenes in preparation for our Halloween run and Open Weekend. There has been a lot of effort and hard work been put in by the teams attending the Working Bees and Tuesday mornings bringing everything together.

This past month also saw Owen B having great success with his Phantom, doing lap after lap of the track. Well, until Bruce M pinched it! (He did return it eventually).

Our Halloween event was a great success and was well supported by club members. It was a great atmosphere down at the track and the public certainly seemed to be enjoying themselves too. It was lovely seeing everyone coming together. We also had some special 'Scarers' join us for the evening in the form of Jack and his friends, all dressed up for the occasion and doing a great job. They were like film stars, heaps of people wanting their photo taken with them. On my part I would like to say a huge thank you to everyone who helped set up before we opened and also those who helped close down at the end, it was much appreciated. This past weekend was our Open Weekend, which was a great day, even the weather played ball with sun all day. Phil A's traction engine, capably looked after by Warren B, was doing laps of the park all day with nearly every club member taking a ride. There was a great display of model engineering and members' projects on display, a great window into the model engineering hobby. Peter Lawn ran his loco on our newly restored raised track, again a popular draw with lots of members taking a ride along with him.

We also had visiting locos running on the track and members from Hawkes Bay, Manukau, Cambridge and Palmerston North in attendance which was great to see. One of our youngest members, Duxton (grandson of Iain B), even scored a drive of Dave G's Shay after impressing him with his self-built Lego loco that ran on our raised track, complete with adjustable congauging, steam and a remote control. Duxton later went on to win the Junior Trophy for his efforts and was very proud.

A big thank you to everyone who came along and was part of the weekend. It was amazing to see everyone enjoying themselves together. Thank you also to Roy and Barb for the catering and to everyone who helped the weekend run successfully.

Our next club events are the General Meeting on Tuesday 2nd December and our final playday of the year on Saturday 6th December, a nice wind down into the holiday period after a very busy month.

Joanne & Ethan

TMMEC Open Weekend 8-9 November 2025

Above :Ethan B on a visiting loco.

Left : Peter L tries out the new high level track.

Above : Warren B models.

Below : View of the steaming bay.

Above :Visitor David Giles Shay loco with a load..

Above :Kerrin G with his electric. Beloow :Jason F Britannia.

Top :Peter D traction engine.

Owen B calliope.

Middle : Ash T log loader and driving bogies for his DG.

Left :Ethan B patrol boat.

Russell P tug and signal lights.

Presentations to Jason F,

Warren B, and Duxton B

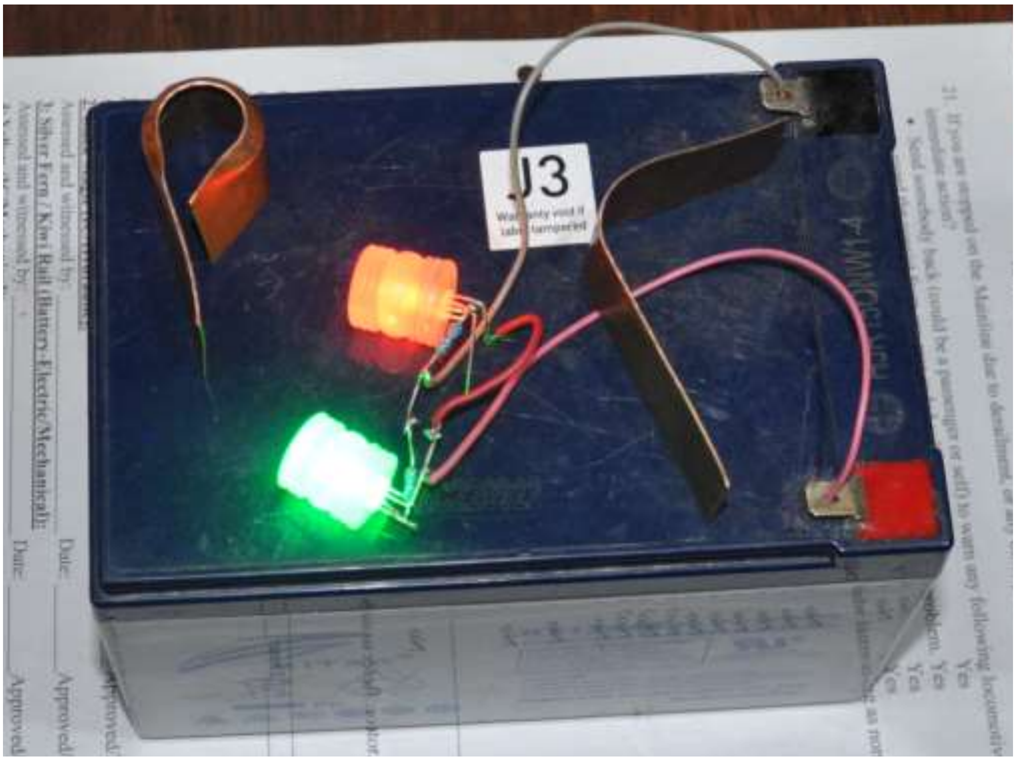
Left : Ash T log loader.

Below left : on the electric

Below : Warren B gets Phil’s traction engine under control.

Show and Tell

Ash T had on of the two rolling traction units from his DG loco. Ash explained the reasons why it was not true to scale and other differences.



Russell P Continues to “finish” his Tug which he started some 40 odd years ago. These are the port and starboard lights and the brackets with witch they will be mounted on the Tug.

The next story following the Nelson theme. I have broken this into 2 parts, this is part one

MIGHTY MIDGETS OF THE NELSON SECTION

BY PELORUS JACK

THE New Zealand Railways' U class 4-6-0 type of 1894 was followed by seventeen larger and more powerful types of locomotive and each received its share of publicity. But the mighty midgets of the NZR, launched without fanfare, were the six piston valve Fa tank locomotives.

It was 1894 when Class U, No. 237, the first 10-wheel type went into service. The U's were style leaders of a quite popular type here and in the United Kingdom, Australia and the other five continents. There were nine of the 61 ton U's, all built at Addington. Even in those early days Walschaerts was standard valve gear on all NZR built engines. In the United States and Britain they clung to Stephenson's valve gear for another 10 or 15 years before changing over to "monkey motion" as it was called at the turn of the century.

About five years after the first U entered service, an order was placed with Sharp Stewart, Glasgow, for six 4-6-0 type tender engines. They were very nearly the same size and weight as the U's but pressure had been increased from 160 to 175lbs; smoke boxes were lengthened and driving wheels were reduced from 54in to 49in. They were the Ua class of 1899, and were piston valve locomotives.

Ten flat valve Ub's had been received from Baldwin during 1898 plus 12 Wb's in the same year and eighteen Wd's in 1901. The Wb's and Wd's were flat valve side-tanks. They were the last flat valves to appear on any new engines in this country. From 1899 all new engines built in NZR shops or received from abroad—except the Wd's—were equipped with outside-admission piston valves until outside-admission type were superseded by the improved inside-admission valves.

During 1901 we received from Baldwin ten 56 ton Piston Valve Ub's; one from the Brooks Works, Dunkirk, NY, (No. 17); one from the American Locomotive Co., (ALCO), Richmond, Va., (No. 371); ten Uc's from Sharp Stewart, and in 1904, two Ud's from Baldwin built for the Wellington and Manawatu Railway Company which brought the total 10-wheel type to 49 units.

At that time two of the larger systems of Australia—NSWGR and VR—were developing larger and more powerful 4-6-0 types. This development continued for more than 35 years in NSW and for 28 years in Victoria. Also the Commonwealth Railways Trans-Australian line from Port Augusta, South Australia, to Kalgoorlie in Western Australia (1,051 miles) made use of large 10-wheelers exclusively right up until operations across the Nullarbor Plains were dieselised.

THE piston valve Fas had their origins in the F class 0-6-0T of 1872, 88 of which were the mainstay of early NZR services. In the early 1890s a number of Fs were rebuilt with larger cylinders with side valves worked by Walschaerts valve gear, and with side tanks in place of the original saddle tanks

Classed Fa these locomotives proved useful machines apart from the still tiny bunker capacity. Accordingly the 12 Fas were equipped with exteended coal bunkers carried on trailing trucks and classified Fb. Eventually all the class were converted and their classification then reverted to Fa.

At this time, between 1902 and 1903, six new locomotives were built following the same design of the converted Fs of 1872 but with certain improvements, the most noticeable being the provision of piston valves in place of side valves.

These locomotives, the subject of this article, were all withdrawn by 1943.

A few Fas survived for some years on private railways, but the longest lived, Fa 250, which was one of the side valve Fas, worked off and on right through to the early 1960s.

In 1899 the first of four Class B (4-8-0) 12-wheel types was outshopped from Addington. They were the first engines built in NZR shops to be equipped with piston valves.

(As the Ua's of 1899 also were piston valve engines I am not sure which one of them should have the honour of being labelled the first piston valve engine in NZR service.)

Like the U's they had Walschaerts valve gear. The NZR had a progressive trend and was adopting new developments earlier than many larger overseas rail systems. Belpaire fireboxes were almost standard around the turn of the century and U's, Ua's and B's had them. At that period most of the fuel was imported, usually from England and Wales and some occasionally from New South Wales. The narrow fireboxes of 10 and 12-wheelers steamed well on the high calorific value of the fuel of those days. Narrow fireboxes and Welsh coal went hand-in-glove in the early days, one being complementary to the other.

In the period 1899-1901 New Zealand Motive Power officials had begun to shelve narrow fireboxes and after the success of the Q's the trend was accelerated and that is how we came to see the wide firebox A, X, Aa, Ab and Wab so early while more conservative designing engineers overseas continued to expand on their narrow firebox types. Here the wide firebox K and J followed as a matter of course.

While NSW and Victoria were thinking along the lines of larger 10-wheel types with Stephenson or Allan valve gear, the NZR was looking ahead to A De Glehn Pacifics; X De Glehn Mountains; Aa and Ab superheated simple Pacifics; a tank version of the successful Ab, the Wab and later the Northern 4-8-4 K's and Mountain 4-8-2 J's.

No engine built by the NZR was equipped with Stephenson valve gear. Everything from the 1889 W's to the Ka's of 1950 were equipped with Walschaerts valve gear except Ka's 958 and 959 and the J's which were equipped with Baker-Pilloid gear. Last engines to use Stephenson would be the 71; 161; 178; and 399—the first four De Glehn compounds, all built 1906, where Stephenson was used to operate the high pressure valves.

Numbers 542-43-44 received from the PWD in 1951 used Stephenson but they were in a different category, being built in England. Otherwise the flat valve Ub of 1898 must have been the last tender engine and the Wd—both from Baldwin—would be the last tank engine with Stephenson valve gear.

The NZR accepted piston valves very early as shown by the 12-wheel Addington B No. 302, of 1899, the piston valve Ub, the Q, the Uc (all of 1901) and the piston valve Fa of 1902. All the above mentioned engines were equipped with outside-admission piston valves. During this era the traditional route from boiler to steamchests was via the saddle. The Wf was the first NZR engine to have inside-admission piston valves and the supply went by way of internal passages via the saddle. A and X De Glehns although having inside-admission valves were fed live steam to the hp steamchests in the saddle area. The Wg and Ba were the first NZ built engines to display steampipes direct from smokebox to the top of the steamchests, to the centre of the valves.

The first application of inside-admission piston valves was made to Addington Wf379, 1904. It is interesting to note that United States motive power officials were quite slow to accept piston valves and Walschaerts valve gear.

The B and Ba were designed during the time when coal having an excellent calorific value was imported and the narrow firebox was acceptable. Wf, Wg and Ww were designed during the time of change to larger engines and wide fireboxes. They were small, conventional tank engines and the fuel of the day was of good quality. In the United Kingdon the narrow firebox produced all the steam needed to drive the 0-6-0 yard engines; their Mogul 2-6-0; Consolidation 2-8-0 and the 10-wheel 4-6-0 types plus all the side-tanks with their narrow fireboxes. Tender engines with a trailing truck to accommodate a wide firebox were not seen until the diesel-electric had shown up on the horizon in the 1920's.

In their day, all over the world the 10-wheelers were quite capable passenger and freight engines but the NZR required still larger locomotives having increased grate areas and larger heating surfaces so as to provide a greater volume of steam. In the search to provide this, a new type was developed.

The Q was a little larger and heavier than the 10-wheelers, it was of a new wheel arrangement and was the first of her kind. She was the first Pacific type (4-6-2). She scaled 69 tons in working order. Her boiler was larger and steam generation was greatly increased. The trend on the NZR was for increasingly large and heavier locomotives. The Q's were introduced during 1901 following the newly arrived piston valve Ub's.

Modified F's redesigned into side-tank type 0-6-2's were to be seen in the North and South Islands. During 1902-03 six piston valve Fa's were built at Addington and went into service in various locations of the South Island. Those small machines were a departure from the general trend towards larger power. They were even smaller than the original W of 1889. Flat-valve Fa's had inclined cylinders but piston-valve Fa's cylinders were horizontal the same as W's, Wa's and Wf's.

Next new engines to appear on the scene were the largest new tank engines of that time, wheel arrangement 2-6-4, class Wf. (The We was a redesigned or modified type, not strictly a new type.) Like the W and Wa they had overslung springs on the pony truck and on the leading and main drivers, showing American influence there. The Walschaerts expansion-link, lifting-arm and radius-rod were located under the front lower portion of the tanks and that portion was covered—access to the expansion-link and die-block being provided by an inspection door.

The Wg of 1910 was provided with $1^3/_8$in hand-rail pipes on top of the tanks. Handholds on tanks of W, Wa, Fa and Wf were formed of raised coamings finished with a $1^1/_4$in T-section along the top of the tanks. Wf's were the last type to feature the T-section handholds. The Fa steamchest cover, cylinder jackets and valve-rod guides resembled that of the Wf only the Fa's were scaled down. The W, Wa, Fa and Wf were equipped with inspection doors to the motion gear. Further tank engine developments were without these doors, full access being provided for maintenance.

Following the Wf was the De Glehn balanced compound Pacific, an 80 ton 4-6-2 of Class A. They were our second Pacific type, built by Addington, 1906. They were not so powerful as the Q but having larger drivers they made good headway over level track. They had the boiler capacity to outrun the U and the smaller-wheeled Ua's, the Ub's and Q whose drivers were 4ft $1^1/_2$in. They were well balanced, ran smoothly at higher speeds and as passenger engines, could run like the wind.

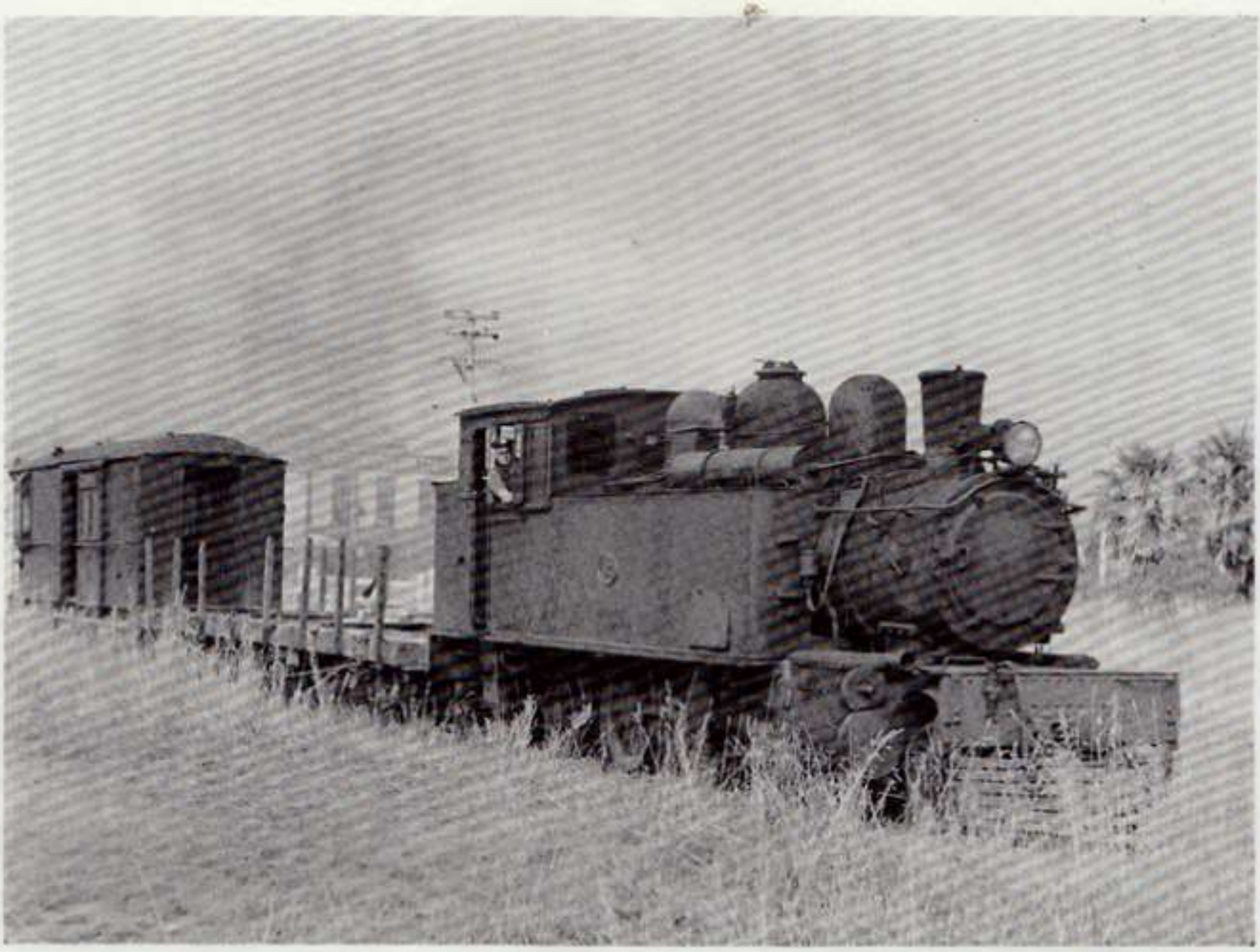
On the drawing boards at about the same time—just prior to the completion of the North Island Main Trunk—were plans for a very large 95-ton 4-8-2, a new type as yet unseen anywhere in the railway world, but which was later to become known as the Mountain type. These large engines (large for their day) became our class X and were De Glehn balanced compounds also.

The De Glehn system placed the hp cylinders between the frames in the saddle location, the hp engine being inside-connected to a very heavy cranked axle between the leading drivers. The lp main rods were coupled to the usually named main drivers—that is, the wheel assembly which had the long crank-pins to accommodate the centre-coupling brasses and for the brasses of the main-rod plus an eccentric crank-arm to operate Walschaerts valve gear.
brasses and for the brasses of the main-rod plus an eccentric crank-arm to operate Walschaerts valve gear.

By rights the leading cranked axle was the main driver as live steam to the hp pistons provided initial movement whereas lp steam operated the lp pistons effectively only after temperature and pressure had been raised and had heated valves, cylinder-walls and pistons of the lp engine to a high enough degree where compounding became effective.

The ponderous low-wheeled X had eight drivers of the same diameter as Wf, Wg and Ww, i.e. 3ft 9in. They were not the well (dynamically) balanced machine that the A's were so they were not suitable for speeds above 30mph (225rpm) or 35mph (262rpm). At those same speeds the A's drivers were turning over at a moderate 187 and 218rpm respectively. At 60mph (375rpm) A's ran smoothly without the sensation of heavy unbalanced rotating and reciprocating parts.

The X's ran passenger trains through the King Country right up until 1935 until



The piston valve Fa locomotives were supplanted by the Wf class in later years. Here Wf 62 heads a work train through Hope in March 1956 during demolition of the line. Photograph D. Cross.

there were sufficient Northern types (4-8-4) to operate all passenger services. Between 1932 and 1935 I fired X's on passenger trains frequently out of Taumarunui. During their later years A's and X's were superheated. The Ba of 1911 was the first NZ designed engine to incorporate superheating. They were a 4-8-0 type. The Ww of 1913 was the second to be so designed.

In 1914, 10 90-ton superheated, simple, general purpose Pacific types were received from Baldwin, Class Aa. Until 1932 they were the most dynamic machines while regular crews ran them. They were good on their feet, steamed well, ran well and braked well. They were altered to very mediocre engines during the Depression after fuel had been changed from hard to soft coal and Waikato or Cyclone spark arrestors had been installed.

In 1915 the first 87-ton superheated, simple Pacific of Class Ab entered freight and passenger operation and in 1917 a rather large tank version—the Wab—of 74 tons was designed for passenger service over difficult inclines between Oamaru and Dunedin and through the King Country between Taihape and Taumarunui.

Throughout the 1920's there were three new Wf's from Price, 1928 (No's 842-43-44) and three monster six cylinder, simple engines with twelve 4ft 9in drivers and having a tractive force of 51,580lbs; a grate area of 58sq ft; and a total weight of approximately 135 tons. They were fired by Simplex mechanical stokers and their fireboxes were equipped with two Nicholson thermic syphons. Those engines were numbered 98, 99 and 100 of Class G. They were articulated Beyer-Garratts by Beyer Peacock of Manchester, England.

Until that date the trend had been for relatively low drivers and a tractive force not exceeding 26,000 or 27,000lbs. Tractive force of the A's was 17,000lbs, the Q 18,340lbs, Ab 20,000lbs, Aa 22,850lbs. The X produced 26,620lbs.

The light drawgear and couplers of the day were no match for a stumbling, big-boilered power-plant like the Garratts. When under slick rail conditions on 1 in 50 inclines and in wet and greasy tunnels (water leaked from the roof of most tunnels) the timber-framed, light weight L's and Lb's were unable to withstand the stresses imposed upon them after a Garratt had lost traction, power shut off momentarily, then after the drivers had secured another firm grip, slack was yanked out and maximum strains imposed upon the head-end vehicles.

Immediately power had been reapplied after wheel-slip had ceased, slack was pulled out fast and the timber-framed vehicles (or the couplers) at the front end of the train could not stand up to the strain of 51,000lbs tractive force, and the weight of the moving 135-ton engine.

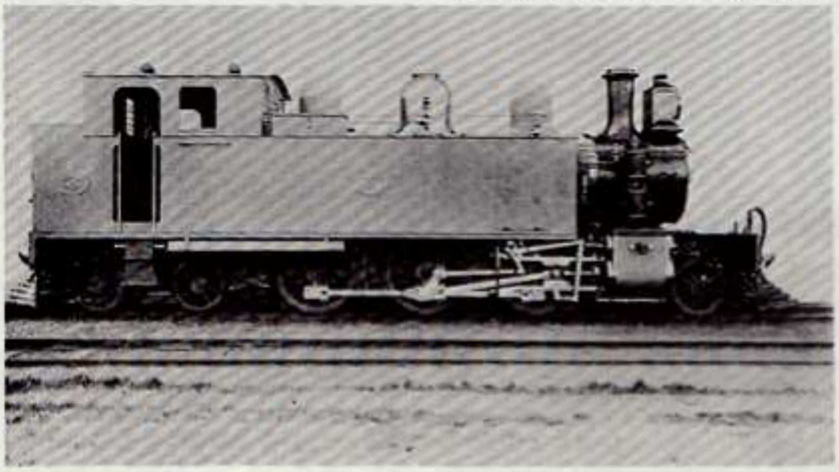
Coupling hooks of the era were often too light to match the strains G's imposed upon them. Many times I turned around quickly upon hearing the rending of timber and the sudden escape of compressed air from broken brake-pipes to see a cloud of dust disturbed from the dirt-laden under-frames of the inadequate vehicles. Brakes went on automatically in emergency and progress halted abruptly. With a large steam-producing fire on the grate and three safety valves unloading excess pressure, pandemonium let loose above Raurimu.

If a coupling-hook broke it was relatively a simple matter to replace the hook, restore air pressure and proceed. Vehicle structure was usually the weakest link.

By 1930 copies of several US 4-8-4 type blueprints were under study and being examined with some interest and in 1932 we saw the first of 71 of those heavy 140-ton general purpose engines. Except for the G's they were as large as NZR steam went. I handled the throttles and fired all of them except the J's. I became thoroughly oriented to their weight, size and capability.

By this stage the economic depression had drawn attention to uneconomic branch lines and isolated sections. The reduction of freight revenue had resulted in a surplus of some categories of small, older types of engine including Wf's which were not too heavy for the light track and structures on isolated sections.

Midgets like piston valve Fa's could be written off the equipment roster at Nelson and Picton, not because they were worn out but because their pay-load was too small, the inclines too heavy and the use of helper engines resulted in additional expense. Surplus Wf's were allocated to Nelson and the era of the minute engine operation had come to an end.



Class Wf 2-6-4 in original condition. A total of 41 of these 43-ton machines were built between 1904 and 1928. NZR Photograph.

Aside from large and small engines of the NZR system, I had my eyes opened on my first visit to North America, after witnessing the battles against 1 in 44 grades with a heavy 3,500 ton (short ton) train from Roseville to Donner Summit on the Southern Pacific Railway, up the western slope of the Sierra Nevada range in California. There was a cab-forward articulated Consolidation (A-C Class) 4,000 series 2-8-8-2 at the head end and a heavy Consolidation (2-8-0) cut in ahead of the caboose. Or the enormous machines and the terrific display of energy to be seen from Bakersfield to Tehachapi Loop using the same or similar steam giants. From San Bernardino to Cajon Pass on the Union Pacific, the battles of the giants were enacted all day long and as the AT and SF (Santa Fe) enjoyed trackage rights with UP, it was a never-ending stage action for the interested spectator.

In those days I became familiar with Mogul (2-6-0); Consolidation (2-8-0); Mikado (2-8-2); Berkshire (2-8-4); Decapod (2-10-0); Santa Fe (2-10-2); Texas (2-10-4), Union Pacific (2-12-4); American (4-4-0); Atlantic (4-4-2); Pacific (4-6-2); Mountain (4-8-2); Hudson (4-6-4); Northern (4-8-4); and Articulated engines like the (Union Pacific) Challenger (4-6-6-4); 2-8-8-2 and 2-8-8-4; Union Pacific 'Big Boy' (4-8-8-4), all simple articulateds and in addition there were Mallets with the same wheel arrangement as the articulateds and then there were the unconventional Southern Pacific cab-in-front 2-8-8-2 and 4-8-8-2.

I rode behind some of those articulated machines over the Sierra Nevada range between Sacramento in California and Reno (Sparks) in Nevada. At Roseville, the western end of Southern Pacific's Mountain Division trains were made up to 3,500 US short tons (the 2,000lb ton) for the 140 mile run to Sparks. This was in the years 1930-31 before the development of the cab-in-front 4-8-8-2's. The engine and train I'm describing was hauled by the 2-8-8-2, the earlier type of cab-forward monster.

The route over the High Sierras followed the original right-of-way of the then Central Pacific RR main line from San Francisco to Ogden, Utah. It was the first transcontinental line which, combined with Union Pacific, made the first rail crossing of the United States. The Central Pacific laid track as far as Promontory Point, Utah. There they were met by Union Pacific construction crews pushing west in May, 1869.

The Sierra Nevada Range averages around 60 to 80 miles wide at the base and the highest point, Mount Whitney is 14,495ft. The Sierras (Sierra-sawtooth; Nevada-snowcovered) are a very large barrier in California and Central Pacific pathfinders sought out the easiest route possible on the way to Reno and Ogden where they anticipated meeting Union Pacific track-laying crews who were heading west. Crest of the incline is at Norden (Donner Pass), 7,018ft, while Roseville, where trains for the mountain crossing were made up was at little more then 100ft above sea-level.

The route to the summit leads through a region having one of the heaviest winter snowpacks in the United States and snow fighting equipment of every kind was provided to try to keep the way open.

Central Pacific, now Southern Pacific, built about 40 miles of snow-sheds. The sheds overcame the snow problem to a large degree but they reduced visibility to nil and engine crews suffered badly and were asphyxiated by spent gasses of combustion in the long sheds. In summer the sheds were converted into menacing five hazards. Freightcar riders—the hoboes—were almost poisoned, smoked and roasted on such a journey.

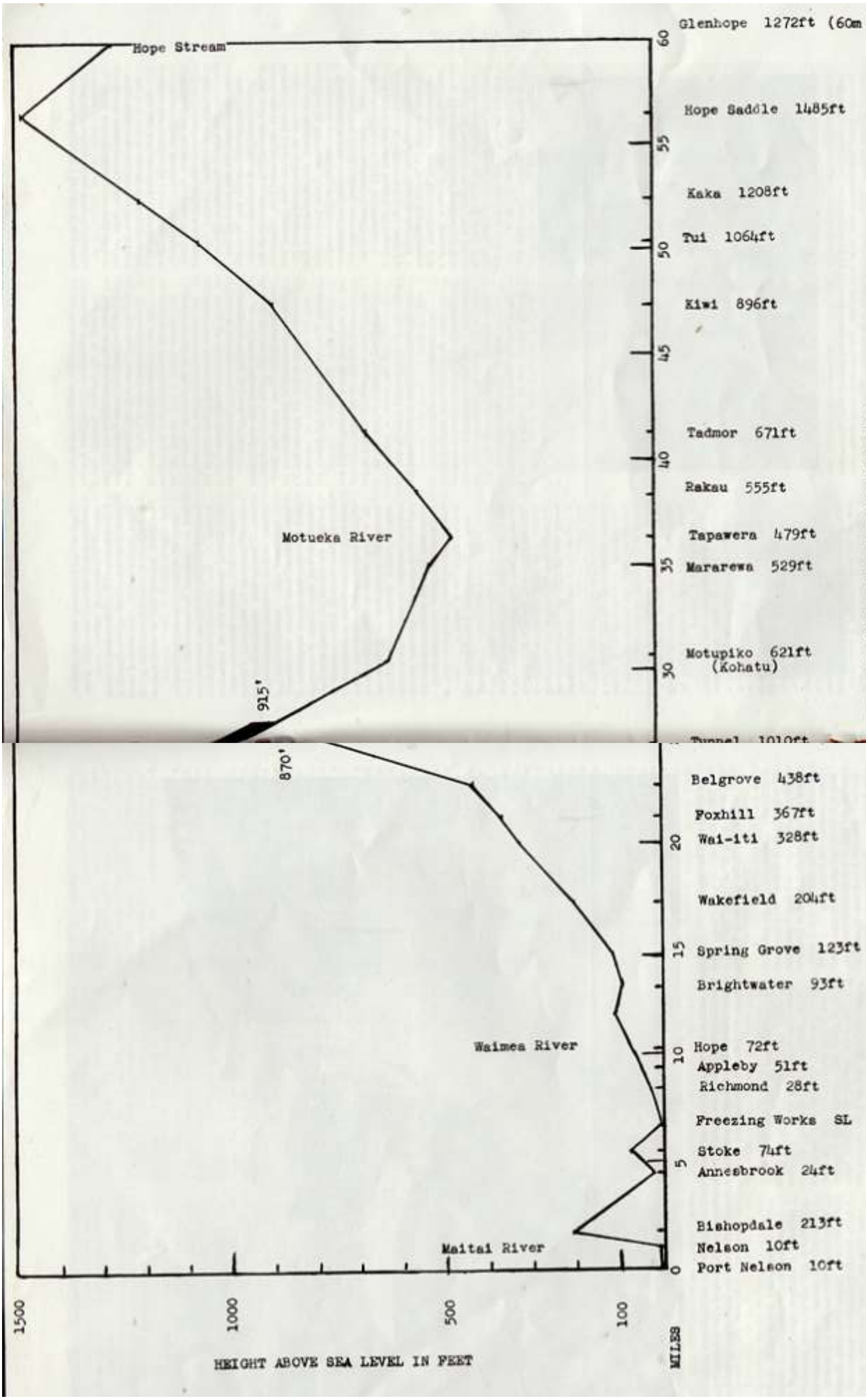
Cab-in-front articulated simple 2-8-8-2's were designed to overcome the smoke and fumes problem and they provided improved vision. Attached to the top rim of the stack they fitted an exhaust-splitter which was designed to deflect the force of the exhaust blast from the roof, to the sides. The device was a double vane—V-shaped—to throw the full force away from the vertical to an angle of about 45 degrees.

The snowpack in the years while I was there was around 250 inches during 1930-31 and 275 inches during 1953-58 if I remember correctly. The snowpack was measured in order to provide a clue to the likely water resources in California during the long dry months from March-April to October-November. As summer advanced the snowpack thawed from the lower levels first and gradually worked to higher elevations so that streams were pretty well assured of a supply for a large part of the dry season.

Northern and Central California were fairly well watered but Southern California did not receive an assured natural supply. Further south streams dried up and the lay of the land diverted streams toward the coast. Without aqueducts and canals the region from Los Angeles to San Diego would revert to semi-desert. Water to the area is diverted from the Colorado and from the Owens Valley and Mono Lake, some hundreds of miles to the north, behind the Sierra Nevada Range.

We left Roseville with a 2-8-8-2 at the head-end and a heavy Consolidation (2-8-0) cut in about 20 cars ahead of the caboose. There would be around 135,000lbs tractive force produced by the two engines The 2-8-8-2 would have developed around 92,000lbs and the 2-8-0 about 43,000lbs. The load was composed of 65 or 70 fifty ton freight-cars which totalled around 3,500 US short tons.

It was 82 miles to top of grade. The average incline for the 82 miles was 1 in 64.



Tunnel at 1010ft and the Hope Saddle at 1485ft.

Except for a few wagons introduced just before the line closed, continuous air brakes were unknown on the Nelson line. The Fa locomotives were fitted with steam brakes, while the Wfs had air brakes. Otherwise Nelson section trains were controlled by handbrakes on wagons and carriages.

The gradient profile reproduced here shows clearly the difficult nature of the old Nelson section line. Southbound trains leaving Nelson faced 43 miles of up-hill track, with an aggregate height gain of 2290ft. Northbound trains met with 16 uphill miles, a total climb of 1028ft.

As can be seen from this gradient profile, two distinct summits were topped, in the Spooners

Final, part 2 will be continued next month.

Work on the High Level track continues

Russell P

Today was the culmination of so many working bees and the results speak for themselves.

Our dedicated team have completed the tie-ins on each end of the deviation and turntable sections. A bonus was the establishment of the lead in rail to a new raised track steaming bay, probably not ready for our open weekend 8th-9th nov but the track will be operational in 5".

The steaming bay also benefitted from the completion of the hoist sub floor (rise and fall) system. This allows 2 people to walk all Arabians the hoist on a surface that is at ground level when the hoist is elevated. This work also includes new latches on the steaming bay rails that link to the modified hoist. Flip up (and down) stops are also now installed at each end of the steaming bay rails.

When time permits (after a well deserved break) we will install the 2-1/2" and 3-1/2" rails.

Again a huge thank you to all who helped.

Duty Roster to end of 2025

Friday	31st October 2025	**Jason Flannery**	**Halloween Friday Night Run.**
	2nd November2025	Bruce McKerras	
Saturday	**8th November 2025**	**Jason Flannery**	**Open Weekend**
Sunday	**9th November2025**	Russell Prout	**Open Weekend**
	16th November2025	Stewart Walker	
	23rd November2025	Ian Bain	
	30th November2025	Bruce Bocock	
Saturday	6th December 2025	**tba**	**PLAY DAY**
	7th December2025	Ethan Bramley	
	14th December2025	Bryan Fitzpatrick	
	21st December2025	Jason Flannery	
	28th December2025	No Run	

Holiday weekends

tba = to be announced

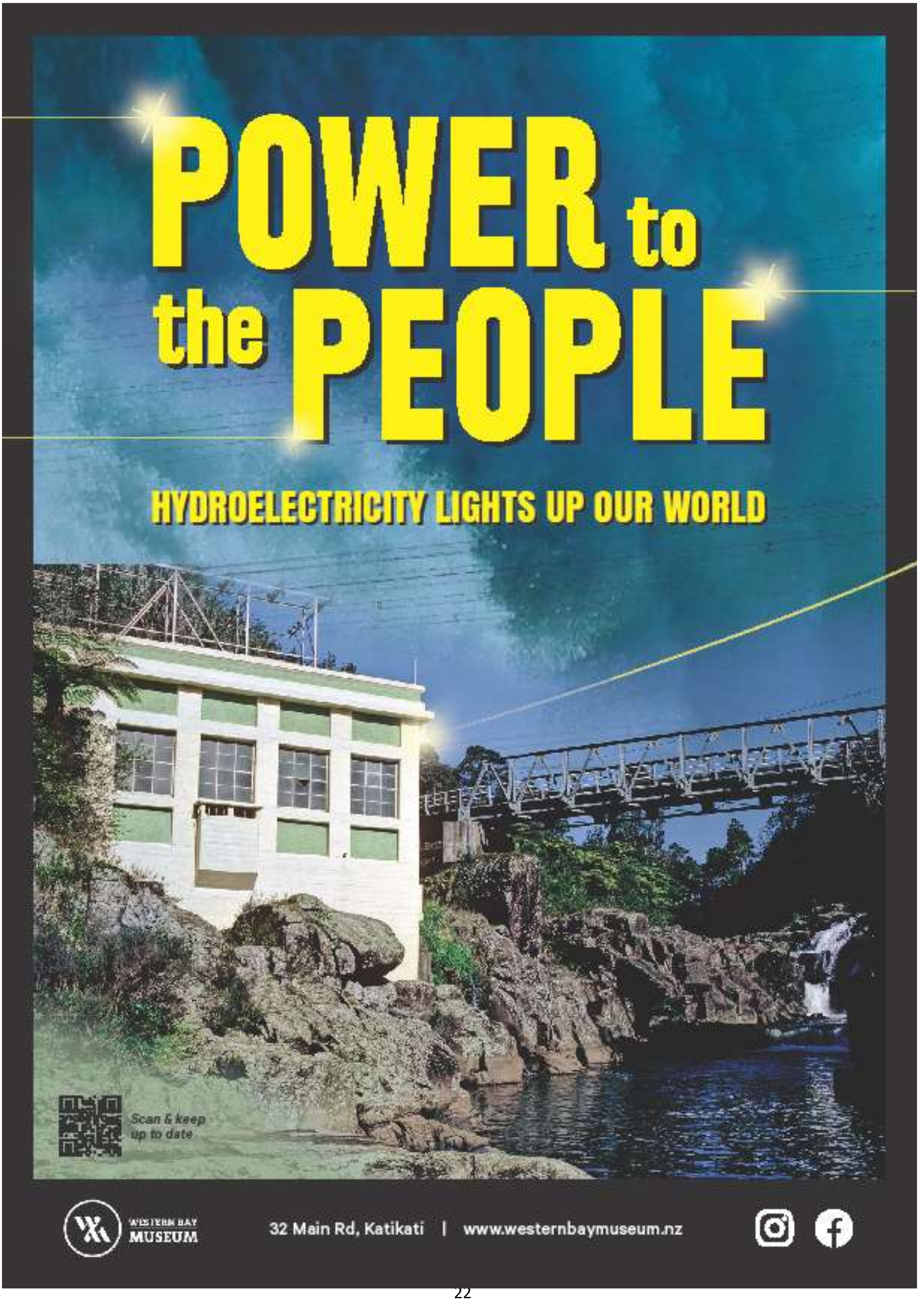
To ensure cover, any changes to the roster are be made directly between affected individual Operators.

Akatarawa. Nattrass logging loco on a bush viaduct.

Disclaimer :

The views and opinions expressed in articles contained in this magazine are those of the author (s) and do not necessarily reflect the policy, position or opinion of the TMMEC or its officials.

The following article which will continue for several months comes from a display at The Western Bay Museum at Katikati. I wish to thanks Paula Gallick for allowing me to use this display. Unfortunately you will be unable to read the captions under individual pics. I strongly recommend that you visit the Katikati Museum and view the actual display it together with the Telephone display, they are excellent.



Power to the People

Electricity was just a curiosity in the late 19th century. In New Zealand it was mainly used for street lighting in the cities; many of the electrically powered things we use today hadn't been thought of. Having electricity significantly changed how people lived, bringing about new conveniences and freedoms. It extended daylight hours, made tasks easier, and offered safer alternatives to traditional methods like wood stoves and candles.

In 1888, Reefton on South Island's West Coast, became the first town in the Southern Hemisphere to have a public supply of electricity. The first sizable power station, completed in 1913, was built on the Waikato River at Horahora to supply the Waihi gold mines.

Tauranga was still lit by gas lamps in 1915. The light was poor, and the lamps weren't lit on the three days before and after a full moon - if the nights were clear. Tauranga Borough Council realised they needed to be replaced with electricity. When the Ōmanawa Power Station opened, power wires were laid down the centre of Cameron Road, covered by an island which runs down the middle of the road to this day.

In the early days of power transmission, direct current (DC)* was used and contributed to a higher risk of fires. According to local legend, electricity was made available to the town because a hotel wanted it for cooking. The hotel burnt down and the cause was blamed on the power supply. As a result, DC was replaced by alternating current (AC).

While there was a major fire, it didn't start in a hotel and there is no evidence it was caused by direct current. Tauranga changed to AC power because it was more efficient, cheaper, and could be transmitted over longer distances, allowing for the expansion of power infrastructure and electrification of the town.

Lloyd Mandeno, Tauranga Borough Engineer, encouraged residents to use electricity. Initially people were afraid and had to be taught how to use it – for the first time they didn't have to strike a match to get light, as they had done with oil lamps. Household electricity was operated by a large switch on the outside of the building and initially was only supplied from dusk to midnight.

In the decades immediately before and after WW1, local authorities and central government began to set up the national grid, the transmission system needed to carry power to homes and workplaces. All cities and many towns in NZ were connected to the grid by 1920. Initially there was a flat-rate charge but meters became standard from 1908; there was no consistency in pricing, which differed significantly from one area to another.

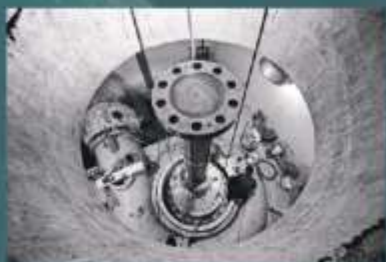
In the early 1920s Lloyd Mandeno wrote a paper on electricity demand in Tauranga, especially that used for cooking. At the time the town was the most advanced consumer of electricity for domestic purposes in New Zealand: there were no electric ranges in service in Auckland, and few in Christchurch or Dunedin, whereas 10% of Tauranga residents were using them.

Industrial and commercial users were attracted to the cheapness, efficiency and cleanliness of electricity and in the 1920s suppliers encouraged domestic use. Showrooms displayed the latest appliances, cooking classes were held, and the cleanliness and convenience of electricity was highlighted. Electricity was the first universally usable energy to be transformed into warmth, light, and energy. Today, it is such a fundamental part of modern existence that it's difficult to imagine life without it.

*DC always flows in one direction, and is used in battery storage and solar energy. AC changes direction, alternating between positive and negative polarity. It's used for household power, industrial machinery and power transmission.

Ruahihi Power Station

The largest and final station in the Kaimai Hydro Scheme is Ruahihi, which generates over three times as much energy from the same water as McLaren Falls Station; as a result, the latter effectively ceased generating in June, 1980. Water is drawn from Lake McLaren into the Ruahihi Canal then enters the station before discharge back into the Wairoa River.



Work on the Ruahihi project started in late 1977. Alterations to the original dam and spillway were made, raising Lake McLaren by 1.2 m. A canal 3500 m in length leads to a concrete forebay. 600 m of twin concrete penstocks and 150 m of steel penstocks 2.3 m in diameter take the water to two 10,000 kW vertical Francis Turbines.

Building the canal involved extensive earthworks with some cuts being up to a maximum depth of 34 m. The penstock reached the power station by an open trench which was later filled in. Traffic on State Highway 29 was diverted twice as the trenching was done in two stages.

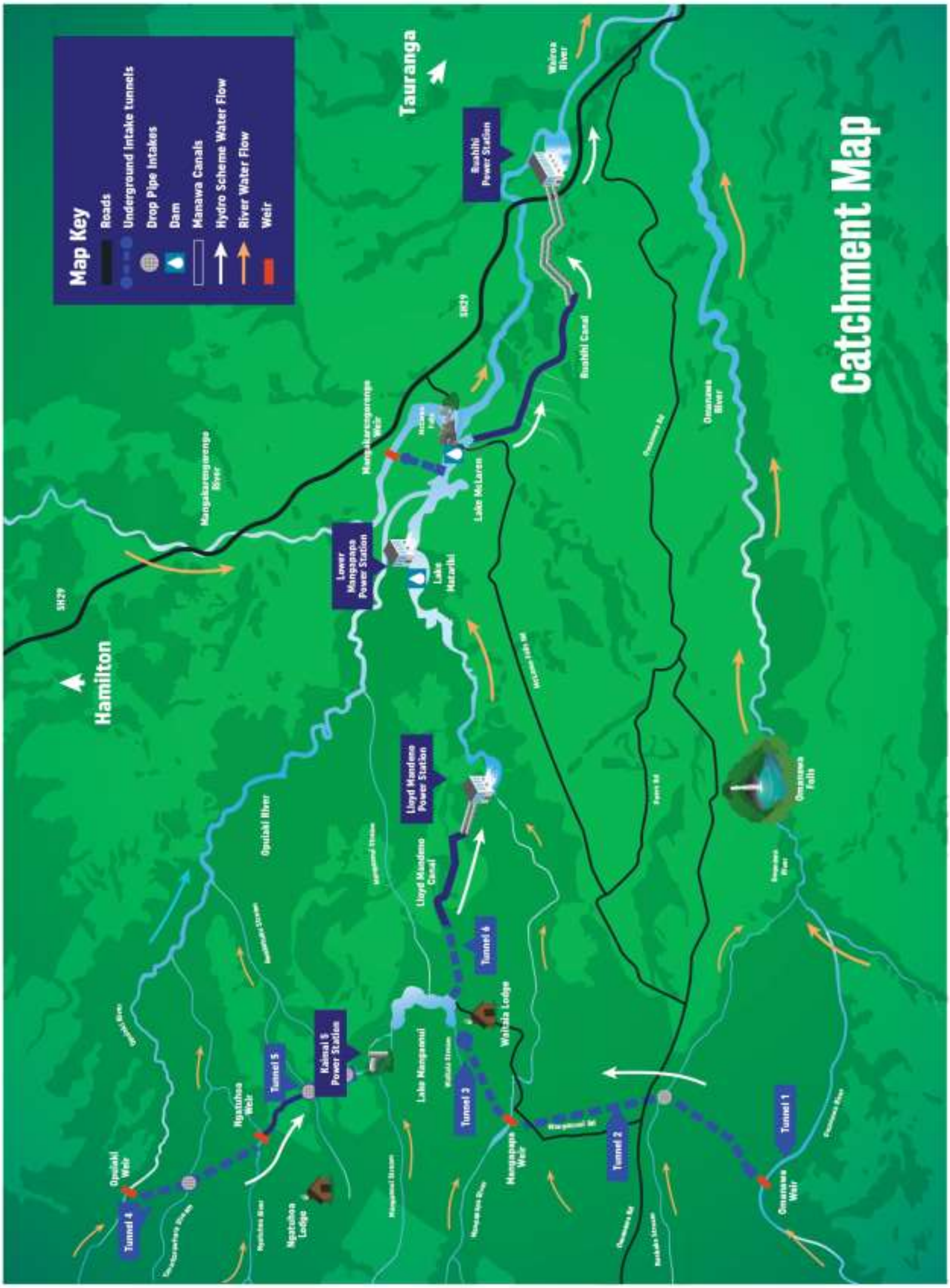
Ruahihi power station was commissioned in May 1981 and was officially opened by Prime Minister Robert Muldoon on 19 September, 1981. It was part of National 3.0 era 'Think Big' programme and had cost $27 million.

At the time, it was rumoured that the canal had been over filled for the opening to look impressive. The following day, 20 September, the eastern bank of the canal supplying water to the station collapsed. Up to one and a half million cubic metres of liquid mud and rubble descended down the valley of Ivy Creek, across State Highway 29, and into the Wairoa River. A 600 m stretch of canal was destroyed, and a section of the highway was washed out. The power station was badly damaged as were surrounding areas. Although costly and destructive, there was no loss of life and no-one was injured.

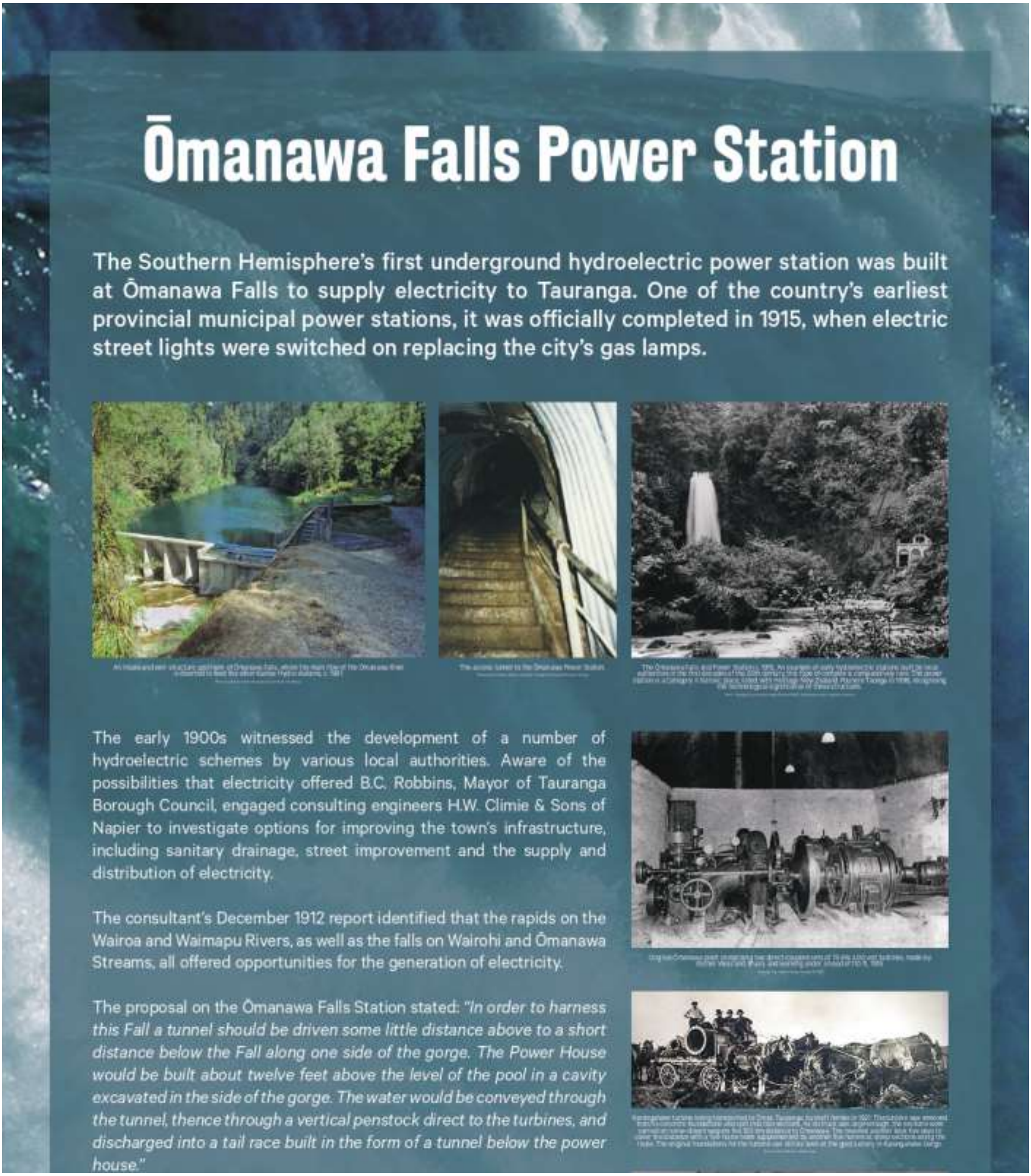
A decision was made in April 1982 to restore the scheme, the remedial works costing $17 m. The canal failure zone was bypassed by a low-pressure concrete penstock line, increasing the penstock length from 750 m to 1850 m. Water hammer pressures had to be reduced, as the original concrete penstocks could only withstand limited overpressure. A new forebay was built and the damaged area landscaped. The scheme was recommissioned, with generation recommencing in June 1983.

Today Ruahihi has a maximum capacity of 20 MW. It generates 77 GWh annually, enough electricity to supply around 11,000 households for a year, assuming an average household electricity consumption of 7100 kWh per year.

Hydroelectricity is a primary source of renewable energy in New Zealand, providing more than half of the country's electricity needs. There are more than 100 power stations across multiple schemes. Part of New Zealand's energy system for more than 100 years, hydroelectricity continues to play a crucial role as a reliable, long-lived energy source.



Catchment Map
Map Key
Roads
Underground Intake tunnels
Drop Pipe Intakes
Dam
Manawa Canals
Hydro Scheme Water Flow
River Water Flow
Weir
Tauranga
Hamilton
SH29
Wairoa River
Ruahihi Power Station
Ruahihi Canal
Mangakarengorengo River
Mangakarengorengo Weir
Lake McLaren
Lower Mangapapa Power Station
Lake Mangapapa
Lloyd Mandeno Power Station
Lloyd Mandeno Canal
Opuiaki River
Omanawa River
Omanawa Falls
Tunnel 6
Tunnel 5
Kaimai 5 Power Station
Lake Mangaonui
Tunnel 3
Tunnel 2
Tunnel 1
Tunnel 4
Opuiaki Weir
Ngatuhoa Weir
Ngatuhoa Lodge
Mangapapa Weir
Omanawa Weir
Waitaia Lodge



Ōmanawa Falls Power Station

The Southern Hemisphere's first underground hydroelectric power station was built at Ōmanawa Falls to supply electricity to Tauranga. One of the country's earliest provincial municipal power stations, it was officially completed in 1915, when electric street lights were switched on replacing the city's gas lamps.

The early 1900s witnessed the development of a number of hydroelectric schemes by various local authorities. Aware of the possibilities that electricity offered B.C. Robbins, Mayor of Tauranga Borough Council, engaged consulting engineers H.W. Climie & Sons of Napier to investigate options for improving the town's infrastructure, including sanitary drainage, street improvement and the supply and distribution of electricity.

The consultant's December 1912 report identified that the rapids on the Wairoa and Waimapu Rivers, as well as the falls on Wairohi and Ōmanawa Streams, all offered opportunities for the generation of electricity.

The proposal on the Ōmanawa Falls Station stated: *"In order to harness this Fall a tunnel should be driven some little distance above to a short distance below the Fall along one side of the gorge. The Power House would be built about twelve feet above the level of the pool in a cavity excavated in the side of the gorge. The water would be conveyed through the tunnel, thence through a vertical penstock direct to the turbines, and discharged into a tail race built in the form of a tunnel below the power house."*

The last time I went down the tunnel (pic center top) there were frogs on the steps sitting in the cool wet environment , they looked great.

house."

The estimated construction cost for the Ōmanawa Falls Station was $21,260 and the annual costs including interest and depreciation were estimated at $3304.

In October, 1914, approval was obtained from the Public Works Department to take water from the Ōmanawa River and in 1915 the borough council hired Lloyd Mandeno as electrical engineer. Ōmanawa Station was completed on 28 August, 1915, and on 2 October, 1915, the Borough was lit up for the first time.

After two years of operation, demand for electricity had increased drastically. In 1921 a turbine from a mine crushing plant in the Karangahake Gorge and a 650 kW generator were installed under the direction of Lloyd Mandeno. To accommodate the new generator the existing units were removed and the powerhouse was enlarged. Capacity was increased from approximately 150 kW to 600 kW.

Ōmanawa Power Station closed in 1998 after 83 years of service and was gifted to Tauranga City Council. The station remained idle until a Te Kuiti hydroelectric entrepreneur Michael Davis negotiated a 35-year lease from the council in 2007. The 108-year-old turbine was restored by Bay Engineer Jim Berryman. However, the generator was unsalvageable and had to be replaced by a more modern unit. The station began generating power again in November, 2008.

In 2016 Bruce Henderson and his son Kane, a power station electrical engineer with Genesis Energy, purchased the business and lease from Michael Davis and have operated the scheme since, undertaking a major upgrade to restore lost water efficiency.

The spring-fed river has a constant flow which allows the station to produce a constant power output, without any seasonal fluctuations. The consent to take water from the river ensures that a minimum flow is maintained over the Ōmanawa Falls.

Halloween Night Run

It was a beautiful evening and "The Team" had all the lights, tombstones, arches, bones, locos ready to go, all in place and ready for a <u>full</u> meal of potato top pie with apple crumble to follow, thanks to Heather, David and a couple of very useful helpers.

Whilst the consists were kept full and rotating the "tail" didn't develop much beyond the steaming bay. Notwithstanding that total rides was just under 1100, so par for the course. The other difference I noted, there wasn't the obvious large number of people who had dressed up, particularly adults.

Enjoy the pics :

TMMEC CLUB CALENDAR 2025

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	v 3
Mon									1			1	Mon
Tue				1			1		2			2	Tue
Wed	1			2			2		3	1		3	Wed
Thur	2			3	1		3		4	2		4	Thur
Fri	3			4	2		4	1	5	3		5	Fri
Sat	4	1	1	5	3		5	2	6	4	1	6	Sat
SUN	5	2	2	6	4	1	6	3	7	5	2	7	SUN
Mon	6	3	3	7	5	2	7	4	8	6	3	8	Mon
Tue	7	4	4	8	6	3	8	5	9	7	4	9	Tue
Wed	8	5	5	9	7	4	9	6	10	8	5	10	Wed
Thur	9	6	6	10	8	5	10	7	11	9	6	11	Thur
Fri	10	7	7	11	9	6	11	8	12	10	7	12	Fri
Sat	11	8	8	12	0	7	12	9	13	11	8	13	Sat
SUN	12	9	9	13	11	8	13	10	14	12	9	14	SUN
Mon	13	10	10	14	12	9	14	11	15	13	10	15	Mon
Tue	14	11	11	15	13	10	15	12	16	14	11	16	Tue
Wed	15	12	12	16	14	11	16	13	17	15	12	17	Wed
Thur	16	13	13	17	15	12	17	14	18	16	13	18	Thur
Fri	17	14	14	18	16	13	18	15	19	17	14	19	Fri
Sat	18	15	15	19	17	14	19	16	20	18	15	20	Sat
SUN	19	16	16	20	18	15	20	17	21	19	16	21	SUN
Mon	20	17	17	21	19	16	21	18	22	20	17	22	Mon
Tue	21	18	18	22	20	17	22	19	23	21	18	23	Tue
Wed	22	19	19	23	21	18	23	20	24	22	19	24	Wed
Thur	23	20	20	24	22	19	24	21	25	23	20	25	Thur
Fri	24	21	21	25	23	20	25	22	26	24	21	26	Fri
Sat	2	22	22	26	24	21	26	23	27	25	22	27	Sat
SUN	26	23	23	27	25	22	27	24	28	26	23	28	SUN
Mon	27	24	24	28	26	23	28	25	29	27	24	29	Mon
Tue	28	25	25	29	27	24	29	26	30	28	25	30	Tue
Wed	29	26	26	30	28	25	30	27		29	26	31	Wed
Thur	30	27	27		29	26	31	28		30	27		Thur
Fri	31	28	28		30	27		29		31	28		Fri
Sat			29		31	28		30			29		Sat
SUN			30			29		31			30		SUN
Mon			31			30							Mon

	Sunday Running 10 - 3pm		Open Weekend		Anniversary Day 27/
	General Meeting		CAD, 3D Printing		Waitangi Day 6/2
	Committee Meeting		Matariki Night Run		Easter 18- 21/4
	Annual General Meeting		Halloween Night Run		Anzac Day 25/4
	Engineering Discussion		Hamilton Convention		Labour Day 27/10
	Club Play Day, Training		Christmas Party		CLOSED

Matariki 20/6 FRIDAY
Kings Birsthday 2/6
Christmas 25/12
New Year 1/1
Halloween 31/10 FRIDAY