



MOTAT
SOCIETY

The Squeaky Wheel



The MOTAT Society Newsletter
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MOTAT VOLUNTEERS' AUSSIE ADVENTURE

In October 2019, with financial assistance from the MOTAT Society and MOTAT, five active Rail/Steam volunteers headed to Melbourne, Australia on a trip to gain ideas and information to assist in making the MOTAT Collection a better experience for Visitors and Volunteers alike. Over the next three Squeaky Wheels these intrepid venturers share the account of their activities.

DAY ONE

Most of us were up around 3am to catch our 6:30 am flight to Melbourne where we picked up our rental van and headed straight to our first stop, Echuca, once known as Australia's largest inland port, about three hours north of Melbourne on the Murray River.

We arrived just in time to enjoy a ride on the *Alexander Arbuthnot*, a paddle steamer employing an undertype portable steam engine, with cylinders mounted beneath the boiler barrel, driving the shafts via a gear train to the paddles. The regulator was directly controlled from the wheelhouse above via a linkage, with reversing controlled by the stoker below using bell commands.

After a cruise up river we turned back to dock to check out other Echuca sites such as the replica sawmill, other riverboats and the historic wharf area. We met up with Neil who operates the river boat *Canberra*, a larger and much

more comfortable vessel than the *Alexander Arbuthnot*, powered by a Marshall steam portable, and they kindly took us for another short cruise to show it off. The boilers on both boats fed water straight from the river. Apparently silt isn't really a problem if regular blowdowns are done to clear it out.

Our primary reason for visiting Echuca was to view a small Ruston Hornsby steam roller, identical to one in pieces in MOTAT's collection and we were not disappointed. We all took lots of photos and notes to assist in the restoration of MOTAT's sister engine and after viewing several other privately owned steam engines in the area we jumped in the van for the three and a half hour drive to Geelong to meet up with Tony Brens.

Tony is an NZ expat now living in Melbourne and flies home twice a year to help crew MOTAT's Live days. After dumping our bags at his house we headed out to The Bellarine Railway for a

behind the scenes tour. The Bellarine is a 3'6" railway converted from broad gauge. It houses a variety of refugees from around the country and also operates the popular Blues Trains and Q Train restaurant in the evenings, for unique musical and dining experiences. Something, in our opinion, that MOTAT might be interested in.

DAY TWO

We started the day with a visit to the National Steam Centre, a large site dedicated to the preservation of steam power and other heritage construction and industrial equipment. Most of the buildings are off-the-shelf commercial buildings which work well to shelter the equipment, a similar idea to plans for Motat's M2 site to replace shed alley.

Amidst the highlights of walking the Rapier dragline, showman's miniature railway, a large display hall, and many steam rollers and traction engines, we visited the engine room from the steam tug Lyttleton II.

The story of the Lyttleton II was fascinating! Saved from scrapping, it was steamed from NZ to Australia in the late 80s, making it to Sydney with 5 hours coal in reserve. Sadly, once in Australia its preservation society couldn't keep up with its maintenance and the tug ended up at a Melbourne dock, rusting away to the point that it was in danger of sinking at its moorings. The decision was made to salvage the engines, fittings and sections of the hull, but scrap the rest. These engines are now on display in the main hall with steam coming from a stationary boiler.

Next up, we went to Puffing Billy Railway where we met up with their chief draftsman, who gave us a tour of the workshops. Inside we saw the nearly complete reguaged Garret NGG15, an

Below: Riding on Puffing Billy railway behind an Na Class locomotive



Continued on Page Two...

MOTAT Volunteers' Aussie Adventure - continued from page one...

NA under heavy maintenance/overhaul, the diesel fired NA (undergoing light maintenance) and their new carriage fleet under construction. The new carriages are replicas of the old designs, with all structural timber replaced with steel framing. New locomotives may be on the cards next as part of a modernisation programme to build a larger fleet to help cope with increasing passenger numbers.

They have three locomotives in steam, seven-days a week, with four return trips a day, all crewed by volunteers. The diesel conversion of the NA was not about cost savings in fuel (as it actually costs more than coal to operate) but fire prevention and also means they don't need another fuel type on site

After our workshop tour we rode the railway from Belgrave to Lakeside and were impressed by the performance of the NA with the 10 car train, especially factoring the tight curves and grades of up to 1:30. The quality of the line, rolling stock, stations and infrastructure is a testament to the professionalism of the organisation. All five NA locomotives in service now have welded steel boilers with flanged back heads and throat plates. Though they have used butt welding they are quite different from the Boilers recently installed at Glenbrook

Vintage Railway in NZ. They are all over 10 years old and have given little trouble except some teething issues around the stay installation.

Next we headed to Puffing Billy's Museum for a tour, which we were lucky to get as at the time it was not yet open to public. This is a fantastic and cost-effective display hall which cost about \$750,000 in total, about \$200k in the building and slightly less in the foundation/floor slab, along with other site prep, services, flooring finishes etc. The building has been heavily future-proofed with conduits cast into the floor and allows for the creation of a function area at one end with great views of the engines. The track is mostly dual gauge 2' and 2'6" allowing all exhibits to be demonstrated outside. A stationary steam house has also been set up in one corner allowing steam equipment to be demonstrated in steam. This area is used as a training area for volunteers new to steam power, rather than starting out straight on the locomotives, and is surrounded by a channel drain on all sides to catch any leaks. The rest of the display area is also well waterproofed, allowing the floor to even be hosed down, with the water soaking away.

The exhibits are varied and interesting, ranging from internal combustion

locomotives - like a Malcom Moore, Climax locomotive 1624, a Shay, NGG Garret, Orenstein and Koppel, Hudswell Clarke - and Cane locomotives including a Decaux. Also featured is the last un-restored NA locomotive displayed on its broad gauge carrier wagon formerly used for transport to the VR workshops. This will be a fantastic museum when it opens to the public.

- by Alex Smith and Martyn Radford

To read more about the next leg of our three part MOTAT Volunteers' Aussie Adventure look out for Squeaky Wheel Issue #37 due out in May 2020.



ABOVE: Demonstration area for steam equipment inside the Puffing Billy Museum

MAKYLA CURTIS (PRINT SECTION) MOTAT...FERRYMEAD...HONG KONG

The December 2019 issue of the Ferrymead Printing Society's newsletter *The Scoop* featured our very own Society members Alan and Makyla Curtis, recognised for their visit to Ferrymead in November last year.

"On Sunday 17th November, we had the pleasure of guests from Auckland, Hamilton, Melbourne and Taiwan.

Makyla Curtis arrived from Auckland where she is very involved with the MOTAT Print Shop. Makyla is a very skilled typographer and designer and has typeset and had printed a number of poems and reproduced items of national significance (including He Whakaputanga). She donated several examples of her work which we have in the Library."

The Scoop then went on to say...

"Also visiting was Mr Chang, the director of the R-Xin Type Foundry in Taipei. Mr Chang was invited to New Zealand by Wai-te-ata Press in Wellington where he took part in a



Makyla Curtis with samples of her typography & letterpress printing.

Photo credit: The Scoop, The Ferrymead Printing Society

conference. Mr Chang's company is the last type foundry casting full-form Chinese characters in the world."

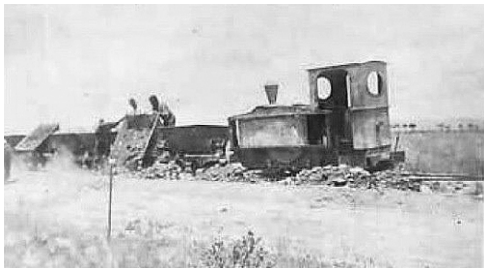
Later in the week Mr Chang also visited the Print Shop at MOTAT."

Makyla is one of the new, younger generation that the MOTAT Society are starting to attract with our revitalised approach. She has recently been accepted by the IMPACT 11 International Printmaking Conference to present an illustrated talk on the printing of He Whakaputanga and Te Tiriti at MOTAT. The event takes place in Hong Kong on 26 September 2020. At time of press a decision was yet to be made by the Committee regarding financial assistance - for Makyla's travel and accommodation at this event however Society Chairman, John Tutchten noted that the society was favourably disposed toward assisting members with heritage

involvement where there was a direct benefit to MOTAT as a result of any grant being made.

THE OBERURSEL RESTORATION

New Zealand's oldest internal combustion powered locomotive, made in what is now claimed to be the world's oldest surviving aircraft engine factory, is a current restoration project of the Rail Section's locomotive team. It is the Oberursel locomotive, produced in 1912 by Motorenfabrik Oberursel, a German manufacturer of locomotive, automotive and aircraft engines, which had its factory near Frankfurt.



BELOW: The Oberursel locomotive at work on the road near Ngatea.



Oberursel was famous for WW1 Gnome rotary engines which were used in fighter planes such as the Fokker Eindecker and E1. Today the same factory, as part of Rolls-Royce Deutschland, is producing the engines used in passenger airliners.

The Oberursel locomotive was originally 2 foot gauge and was purchased by the Thames Valley Drainage Board to work on drainage schemes on the Hauraki Plains.

In 1940, after conversion to 3ft6in gauge, the locomotive and its accompanying wagons were sold to NZ Mercury Mines, which used them at its Puhipuhi mine located between Whangarei and Russell. The mine was closed in 1945 and the locomotive lay derelict until being donated to MOTAT in 1968, along with two side-tipping wagons. The locomotive was partly restored some years ago and was used mainly as a stationary exhibit.



ABOVE: Jim Savage working on the axle boxes on the upturned chassis of the Oberursel. Its sister German locomotive, Bertha, watches on from behind. *Photo credit: Richard Croker.*

Since then the motor has been restored by MOTAT and has been displayed in the vintage internal combustion display alongside vintage tractors, and a start had been made on dismantling the rest of the locomotive, but work stopped because of other more pressing commitments.

The current restoration began in 2019 and is being run in tandem with MOTAT's other small vintage German loco, Bertha. Rail Section's Martyn Radford reports that work was started on the Oberursel as there wasn't enough work to keep everyone busy with Bertha's boiler rebuild. Current work has concentrated on the chassis, with all work so far being done in-house.

First up was making a new axle box keeper to replace a missing one. Then remaining bits of the axles were removed from the wheels which entailed gas cutting the retainer bits as flush to the wheels as possible, then boring a hole through what was left of the axle. After that a slot was gas cut from the hole to the edge of the



ABOVE: A pallet load of wheels and gears awaiting restoration. *Photo credit: Evan James.*

wheel and the remaining piece of axle was simply knocked off.

Next it was the turn of the axle boxes which, after the white metal bearings had been removed, were found to be in a very poor state. Martyn has said that the decision was made to build up the axle box housing with weld and to machine them all true again before making new bronze bearings.

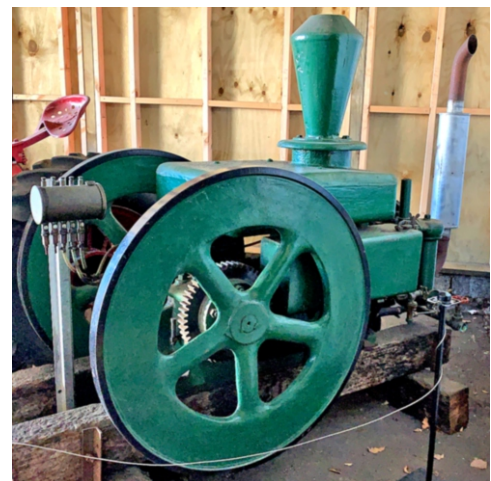
The thrust faces were then tidied up and the opposite sides machined true.

Although the locomotive is not likely to get used in regular service Martyn believes it would be a valuable starting point for MOTAT's extensive collection of internal combustion engine locomotives.

The MOTAT internal combustion rail locomotives include a Planet construction loco from 1926, Hudswell Clarke shunter from 1936, Drewry Tr.21 shunter from 1939, EB.25 battery electric shunter from 1925 (converted to diesel electric in 1953), Dsa.223 diesel shunter from 1953, Tr.730 diesel shunter from 1960, and Da.1400 diesel electric mainline locomotive from 1955.

- by Evan James

Historical information from "MOTAT Locomotives" a book published by Richard Croker, Philip Wirgley and Sean Miller, and from Wikipedia. A pallet load of wheels and gears awaiting restoration.



ABOVE: the single cylinder 12hp Oberursel motor on display in the vintage internal combustion display at MOTAT. The funnel-like casting on top of the motor is part of the engine's cooling system. *Photo credit: Evan James.*

THE MOTAT SOCIETY

KAIPARA HARBOUR SIGHTSEEING CRUISE

Sat 21 March, leaving MOTAT 2 8.30am, returning approx 4.30

Cruise the Kaipara Harbour on the Kewpie Too with a lunch stop at the Shelly Beach Cafe.

Free bus and boat for Society Members (non-members \$35)

Lunch at the cafe is your only expense on the day.

Contact the Administrator on admin@motatsociety.org.nz to book your place for this fantastic excursion



WELCOME TO OUR NEW MEMBERS

Richard Brown (Volunteer: Rail)

Cornelis (Tonni) Janmaat (Volunteer: Rail)

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MOTAT SOCIETY EXCURSION TO THE HAMILTON CLASSICS MUSEUM

The day dawned bright and warm as the MOTAT Society members gathered in the car-park at MOTAT-2 on Saturday 7 December.

Our Coach was large enough to spread out and small enough for the group of 15 to be able to mingle and converse comfortably. An ideal combination.



The tour begins.

A leisurely cruise to Hamilton enabled us to arrive in good time where we met up with ex-Steam Section member John Olsen and Mrs Olsen, and were greeted by the Proprietors of the Hamilton Classics Museum after the obligatory photo opportunity.

Touring the museum was an ad-hoc, organic, free-range affair as it is well laid-out and the exhibits are all annotated as necessary. Most of the Petrolania is self explanatory and we all had fun reminiscing over various items.

Lunch was taken in the retro-themed cafe/diner. Great food, good prices and excellent company.

Further examination of the exhibits (Did you see...? What did you think of...? etc) and then it was time to depart for our return journey. Back to MOTAT by 5:30 pm where we bade farewell to old and new friends.

It was a pleasure to have a variety of members on our excursion including Senior ADH Host, David Kannu, Board member Dr. Brian Young, and MET staff member Alex Day was in her element being a trained automotive mechanic. She learnt her trade on many of the vehicles in the display.

This was the first of our renewed Excursion Programme. MOTAT Society Members enjoyed free travel and free admission to the Hamilton Classics Museum.

Join us for the next day out – a trip around the Kaipara Harbour aboard the historic Fuller Cream Service Boat – Kewpie Two.

Book your tickets asap (see advert on page 3).

- by John Tutchen



Above: Lunch at the retro-themed diner.

Below: David Kannu dreams he's Bruce McLaren!

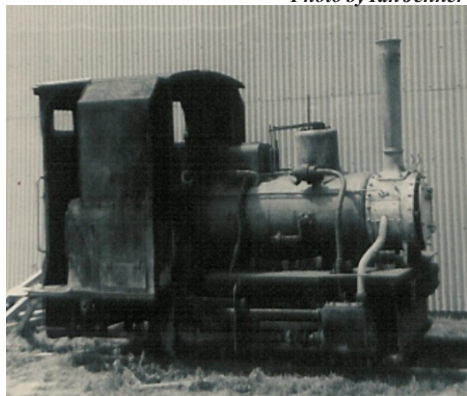
All photos courtesy of David Kannu



A LOCAL BERTHA CONNECTION

Back in the mid-1980s, in the era of the so-called "Think Big" projects, I was General Manager of the heavy engineering company IST Engineering Ltd who, at that time, had a number of major steel construction projects with New Zealand Steel (NZS), mainly involving the newly expanded hot-mill section. One of the prospective suppliers of materials handling equipment for steel mills was Orenstein & Koppel AG (O&K), a major German engineering company who had exited the railway business by the early 80s and was keen to expand its machinery operations. During an O&K visit to NZS, IST were asked if we would be interested in tendering for the installation of an O&K machine, should they choose it. Of course we said yes and a meeting

Photo by Ian Jenner



with two O&K engineers was quickly arranged. Being friendly Kiwis, we laid out a nice morning tea in the Board Room and welcomed O&K to the company.

As soon as the two visitors had settled, they produced some of their O&K publicity material and were somewhat surprised when they were told that I and a number of IST staff were very familiar with O&K, particularly their locomotives.

"How do you know O&K?" one engineer asked. I responded by telling them that I was a volunteer at the local Museum of Transport & Technology (MOTAT) and although my main interest was the heritage tramcars, I was very familiar with the O&K 0-4-0 locomotive which has been operating at the Museum's Rail Section since 1980.

The O&K people's jaws dropped and they both exclaimed at once...

"You have an O&K loco and it still operates?"

"Yes," I replied, "would you like to see it?"

Morning tea was instantly abandoned as we piled into my car and set out for MOTAT. One of the IST staff phoned ahead and found that the Rail Section workshops were open and as there were two volunteers working there, we were allowed to view the locomotive.

Bertha, as the loco was called, had been given a full rebuild by the MOTAT Rail Section, only a few years previously, and subsequently was in first-class condition. The two O&K engineers were very impressed with the restoration

standards.

Naturally, at such short notice, Bertha could not be fired up but there were lots and lots of photos to take back to Germany.

From memory, O&K were unsuccessful with their machinery tender to New Zealand Steel, so IST had no further contact with them. But the story of a shared passion connecting two hemispheres is one I shall never forget.

- by Chris Cameron



Photo by David Maciulaitis