



# The Squeaky Wheel



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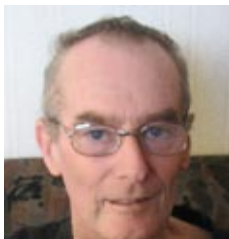
*Blake Pitchford (aged 8) of Hamilton prints his name on a small hand operated platten press in the Printing Section's workshop on July 19, supervised by section member Richard Kearney, with Kellie Pruden in the background hand setting the name of the next youngster to try their hand at the ancient craft of printing. See page 6 for more Printing Section news.*

*Evan James photo*

## Editorial

One thing I have noticed on my rounds of the various sections is that some are doing a lot better job of attracting more members than others.

Some have workshops full of eager volunteers, some young and some not so young, some new, and some who have been with the museum a long time, while others are struggling along with a static membership which gradually drifts lower as members retire or pass away. Take the Printing Section, for instance. This issue's cover picture shows eager young volunteers showing a young member of the public how to use a printing machine that has been around for about 100 years, probably more. So what attracts people to want to join one section that teaches people the skills to work the old machinery, yet another section in the museum is virtually moribund because no-one is interested in learning the old skills. I don't know the answer, but for the sake of the future of the museum we need to find out pretty quickly.



### MEMBERSHIP RENEWALS

For quite a few of you, this will be your last copy of Squeaky Wheel magazine, and you will have received your last copy of The Driving Wheel. This is simply because you have not got around to renewing your subscriptions. If you are registered as a volunteer and have received an e.mail from me, there is no excuse for not getting around to sending it back with your renewal affirmation. If you are a general member and have lost your renewal form, then send me an e.mail and I will send another form out to you.

**EVAN JAMES**  
*administrator,  
Squeaky Wheel editor*

### JIWI'S MACHINES WORKSHOPS

New Zealand born kinetic artist Joseph Herscher will be teaching his skills in two workshops at MOTAT on September 5 and 12.

Entitled Jiwi's Machines, Herscher will be showing how to build "Rube Goldberg" machines, named after an American cartoonist who drew complex gadgets which performed simple tasks in convoluted ways. They are also known as Heath Robinson machines. Herscher, who now lives in New York, has gained world-wide recognition after his machines have appeared on film and television and at art festivals.

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## FROM THE MAILBAG

Sir

Having just received my copy of Issue 20 I would like to welcome you as editor and congratulate you on a great newsletter.

The concept of background information on projects is really interesting.

I look forward to more of the same in future editions.

The article on the Dambusters medals brought back thoughts of an idea I had some years ago.

In the UK, at the Severn Valley Railway, the Battle of Britain class locomotive "Sir Keith Park" has entered regular service after a major rebuild from a scrap yard wreck.

With the connection of MOTAT with Sir Keith Park it would be quite a feather in MOTAT's cap to send a spare NZR chime whistle to the UK to be fitted to the loco that celebrates a famous NZ'er.

**Dave Martin**  
**Australia**  
**Life Member**

Sir,

Many thanks for the copy of Squeaky Wheel which I enjoy every issue.

This latest one was of interest to me as the Sunderland which you people are restoring is the one I flew home from Espiritu Santos in at the war's end.

We arrived home about 12 days after the second atomic bomb was dropped.

There were about 20 or so of us, and stopped at New Caledonia for a couple of hours to refuel, but were not allowed off the aircraft.

From memory the whole trip took about 11 hours, and if I remember correctly, we were issued with blue greatcoats for warmth as we had been in the Pacific for 12 months. However the greatcoats had yellow stripes painted on them so we would not keep them.

**Bill Groves**  
**Rotorua**  
**RNZAF No. NZ4313657**  
**Instrument Repairer 1943 to 1945**  
**served in Bouganville and Los Negros**



## MILITARY

### SEEKING GENERATOR SET'S HISTORY

The background history of one of the Military Section's exhibits is being sought by the section. It is a British made BTH generator set which originally was used to supply power to the Meola Road site before electricity was connected.

It features a Gardner 4 cylinder diesel engine and a BTH generator and electrical gear.

Section spokesman John Tutchen said the set, which has an underlying paint coat of military green, probably has a military history, and as such is being returned to working condition.

He said it would give the section three military generator sets, a United States-made WW2 searchlight generator made by General Electrical with a Hercules petrol engine, and a smaller US made Onan portable set, both of which are in operating condition.

He said that the BTH set is quite a noisy machine, unlike the very quiet GE set, and would eventually be a focal point on live days.

John said the set was essentially "all there". The motor runs but the electrical side needed work, with the World War 2 wiring being very perished and quite a few parts



*The distinctive radiator on the British-made BTH generator set which is under restoration by the Military Section.*  
Evan James photo

that had been removed over the years would need to be sourced and replaced.

Major work at present is building a new fuel tank, because the old one was "full of holes".

He said that one of the features of the Gardner diesel motor was that it contained a lot of parts that were common to other MOTAT exhibits in both the Military and Rail sections and as such parts may not be that hard to find.

In the meantime, work on restorations in the section has had to take a back seat as members carried out urgent maintenance work on the section's star live day performer, the armoured personnel carrier (APC), which suffered fuel system problems during a previous live day.

However, this has not stopped work on the Indian military motorcycle, which is having its motor overhauled by the MOTAT Road Transport section.

## TELECOMMUNICATIONS



*How it was done in the old days: Telecommunications Section member Maurie Challinor shows Mele Lelenoa of Rise Up Academy of Mangere how to use a manual telephone in the section's display hall. Mele was at MOTAT during a school visit, and was visiting one of MOTAT's more popular displays, with its noisy hands on exhibits. The wear and tear on the exhibits caused by the continual use keeps members of the section busy.*

Evan James photo



*Military Section member Michael Beck has the unenviable task of cleaning one of the section's Land-Rovers after it was pressed into service on a recent live day after the section's star performer, the armoured personnel carrier, was sidelined with fuel supply problems.*

Evan James photo





## RAIL



# RESTORATION OF RAIL CRANE 283

by Roger Curl, Richard Croker, and David Maciulaitis

## History

Crane 283 was one of a number of 6-wheel cranes built in England in 1874 by Ransomes & Rapier Ltd for the NZR. Based on existing research, the crane was used for all of its life in the South Island. It was used in its final days at Otira, on the South Island's West Coast for use in the Otira Tunnel.

It was during this time its jib was modified from being adjustable to fixed. This was so it couldn't inadvertently be left raised and foul the tunnel, and more importantly the 1500v DC overhead traction wires.

The crane has a lifting capacity of 5 tons.

All operation is manual, requiring the operator(s) to swing on large handles.

It has 2 gear positions that enable it lift heavy loads at slow speed, or lighter loads at a higher speed and a 3rd position so the boom can be slewed using the handles.

It has outrigger platforms that can be raised for the operator to stand on

In 1980 the crane was noted as being in a derelict state at Otira.

Shortly after, it was acquired by a member of the MOTAT

*ABOVE LEFT: 283 was photographed by Richard Croker at Otira before it left for MOTAT.*

*ABOVE: Crane 283, with an unrestored N.76 runner wagon, after 283's overhaul this year. Roger Curl photo*

Rail Section team, who purchased the crane on behalf of MOTAT and it was railed on a well wagon, from the South Island to Auckland along with its runner wagon E 4195 (N 76).

Crane 283 arrived at MOTAT 1 on 11 October 1980.

After some tidy up work in March 1981 the crane was transported to Henderson and displayed there alongside NZR rail cranes, a 10 tonne steam, a 40 tonne diesel and a 60 tonne diesel hydraulic rail crane, locomotives, rolling stock and equipment as part of Henderson's Railway Centenary celebration.

Later the same year, in July, the crane featured in MOTAT's 21<sup>st</sup> birthday parade in Queen Street, Auckland, loaded on a road vehicle.

## Restoration

In the 1990s, the decking and the damaged headstock was replaced.

Also, Auckland Cranes Ltd undertook some restoration work, making new guards for the large gears and replacing the lifting cable in time for a Live Day at MOTAT 2 where Auckland Cranes' new 100 tonne crane was also displayed and demonstrated as a comparison.

However, a lack of undercover storage resulted in 283's further deterioration.

The latest restoration of Crane 283 started around 2006, but was abandoned in 2010 when the original restoration team left the Rail Section.

Work undertaken at that stage consisted of dismantling the crane, rust removal and priming of the under frame and some parts, removal and tidying up of the axles and bearings and the fitting of 6 new sets of leaf springs.

The final stage was started in the latter part of 2013. It first involved locating all the parts and trying to figure where they were fitted and what their function was, as there was little in the way of detailed photos and none of the parts had been labelled.

First, the axles were refitted and the crane was shunted into the carpentry shop.

First task was to make 2 new headstocks and the 4 short backing beams.

These were made from purple heart hardwood timber and required a lot of measuring, checking, chiselling and drilling.

Because the headstocks were larger than the available timber sizes, they had to be made from 2 pieces joined



*Pete Cairncross supervises the removal of the axles from crane 283. Evan James photo*



together.

In the meantime, keen helpers did a lot of de-rusting and priming of the myriad of small parts and fittings.

The section was conscious at all times that this was a historic rail vehicle (it is MOTAT's oldest rail exhibit) and a lot of research was undertaken to ensure that the crane was rebuilt as close to its original form as possible.

Some of the team had the unenviable task of removing the many heavy cast iron ingots that were in the counterweight so that the interior of the casing could be cleaned and rust protected.

After they proudly announced one night that they had refitted them all, they weren't very impressed when Roger Curl asked them to remove the ingots again so that he could get access to the nuts inside so the counterweight wheels and axles could be removed for refurbishment!

Once the headstocks and beams were fitted, the next step was to sort out the steel stabiliser beams. The beams are supported under the frame and during operation, are pulled out and packed with blocks to stabilise the crane.

One had been damaged beyond repair and the original material size is no longer available.

This meant obtaining a larger sized piece of steel beam and cutting it down to match the originals. Many hours were spent fitting these beams to make sure they could be slid in and out and safely retained.

Once that was accomplished, work started to move a bit quicker, especially when more volunteers became available after completing other projects.

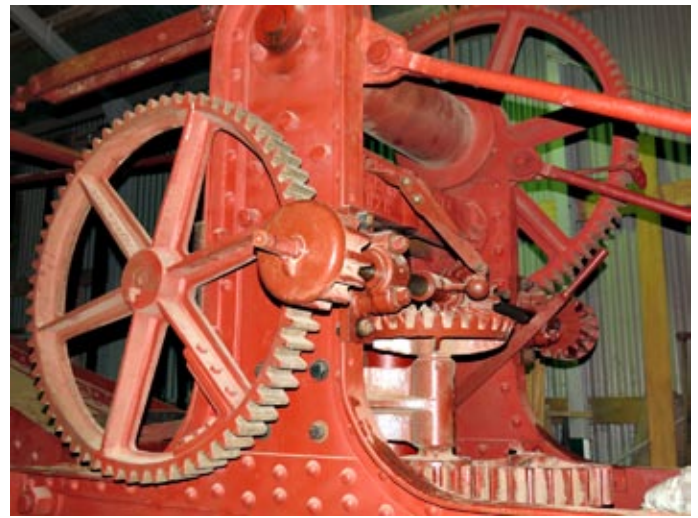
A complete new brake pipe was fitted and the brake valves restored, all pipe joints being made using the traditional greasy hemp rope method.

The decking timbers and hinged outriggers were added, then new brackets were made for the guards as the originals were missing.

A lot of time was spent adjusting the brackets so the guards fitted neatly around the gears.

The last part of the project involved making a new rail clamp assembly.

Old photos show that the clamp had been missing before the crane's arrival at MOTAT. The rail clamps are used to secure the crane to the track during operation to prevent



*The gear cluster on crane 283 which enables all operations to be done with one crank handle, which slots onto the square shaft in the centre of the picture, or an identical one on the other side. The large gear is a high speed gear for light work, while the larger gear on the other side is for low geared heavier work, operated by sliding the central gear shaft between the two. The gears in the middle are for slewing the crane, and are worked by a sliding gear on the central gear shaft*

*Roger Curl photo*

tipping.

The clamp was originally to be made by a blacksmith, but after waiting for more than a year for it to be made, it was decided to make it in house.

Most of the pins used to secure the counterweight, stabiliser beams and rail clamps were missing so these had to be made as well.

A final coat of paint followed by stencilling completed the crane and it was proudly displayed to the public on the next running day.

Section members were very proud to have received the FRONZ (Federation of Rail Organisations NZ) wagon award for 2015 for the project.



## RIVETTING WORK ON MEG'S CAB

Advantage was taken of a special Demo Day promotion by MOTAT to hot rivet the cab roof onto F.180's cab.

A small team comprising Rail Section's Jim Savage and Paul Spearpoint, assisted by Road Transport's Murray Wilson and MOTAT collections projects manager Peter Fisk, showed how steel was joined before welding became widespread.

Earmuffs were provided to the public to protect their hearing during the very noisy operation.



*ABOVE LEFT: Jim Savage removing white hot rivets from a special gas oven.*

*ABOVE: Paul Spearpoint (left) and Murray Wilson moulding the rivets into shape with special air operated rivetting guns.*

*both photos by Evan James*



## REPEAT ORDERS FOR PRINT SECTION

Repeat orders are featuring among the jobs printed in the Printing Section's workshop.

Section leader Graham 'Keefe said that the popularity of a series of booklets on the various MOTAT sections meant that the section was looking at second print runs, despite just one run being planned initially.

The first booklet to be reprinted will be "Our Tram Story" with the initial print run of 500 having sold out in the MOTAT shop.

These booklets are being complemented by a series of postcards using illustrations from the booklets.

Graham explained that this would involve using the printing blocks from the original print runs so there would be very little extra costs involved other than ink and paper.

As with all jobs printed by the Printing Section, they will be printed by the letterpress method, a type of printing that has been largely superseded by the more recent offset and digital printing methods.

## PRINTING



*Denis Wadsworth (left) and Ted Higgins check the printing on a job for the MOTAT Aviation Section at the Printing Section's workshop.*

*all photos by Evan James*



*Trainee printer Brendan Lang checks the printing on postcards of the MOTAT Short Solent S45 Mk IV flying boat. These are being printed on the Printing Section's Heidelberg platten printing press, using printing blocks originally made for a booklet on the museum's aviation collection.*

## LIBRARY HELPERS SOUGHT

Volunteers to assist with the digitisation and cataloguing of the collections in the MOTAT library are being sought by the museum.

This follows the re-opening of the Pioneers of Aviation building after a prolonged shutdown for refurbishment and building strengthening work.

The building, which houses the library on the lower floor, reopened on July 20 featuring an exhibition entitled "Get Smart" which covers the history of electronic communications.

The library was moved off site while the building work was being carried out. The aviation exhibits are now part of the Aviation Hall exhibits at MOTAT 2.



*Putting the squeeze on the floor boards of steam tram trailer 21, Paul Warner drills holes through pre-drilled holes in the floor boards to fix them to the underframe. The boards are being squeezed by three car jacks, one at each end and one in the middle, pressing against the end rails of the underframe. Once all the boards are affixed, the holes will be filled with "bog", and the boards will be sanded, sealed and painted.*



## ROAD TRANSPORT



Host Catherine Horide (left) chats with Road Transport's Terry Farrell in front of the recently refurbished Bedford bus at a recent Demo Day. The bus is painted in New Zealand Railways Road Services suburban colours.

both photos by Evan James

## BUSES TAKE CENTRE STAGE

Two buses which have been receiving attention from the Road Transport Section recently, were on display at a recent Demo Day promotion.

They were the NZR Road Services suburban Bedford and Auckland pioneer trolley bus, Farmers Free Bus No. 3.

Road Transport's Murray Wilson said the Bedford had been panel beated and painted some time ago, but the job was never finished.

Work recently carried out included refitting the grill and



One of Auckland's original trolley buses, Farmers Free Bus No. 3, basks in the sun on a recent Demo Day after a spruce up. The Farmers Free trolley buses were Auckland's first trolley buses. They featured Leyland chassis with locally built bodies, and this year will celebrate their 77th birthday. The Farmers Free trolley bus service operated on a loop, starting at the intersection of Queen and Wyndam Street, up the hill to Farmers store in Hobson Street, and then around the block back to Queen and Wyndam Streets. The service started on December 19 1938, and all four buses are still in existence. No 1 and 3 are at MOTAT, No. 2 at the Wellington Tramway Museum and No. 4 at the Tramway Historical Museum, Christchurch

bumpers, installing the correct seats, and cleaning it inside and out.

The Farmers trolley bus had recently been repainted, and all it needed to bring it up to display condition was a clean with ArmourAll heavy duty wash.

However, Murray emphasised that both projects were still "works in progress".

## LIFE MEMBER ERIK HOLST

by Bruce Pullar

June 9 saw the passing of MOTAT Society Life Member Erik Holst of Pukekohe.

Erik, Garth Holst aged 76, joined the MOTAT Tram Section in May 1993 as a volunteer in the mechanical workshop, and in 1994 joined the tram roster with motorman licence number 108.

He became editor of the Section's newsletter The Controller from 1994 to 2006, producing 39 editions, and this work was recognised in 2002 with the receipt of the Lush Award.

In 1994 Erik joined the maintenance staff at MOTAT as a general hand and painter, a position he held until 1999.

Erik became a keen researcher of tram history and collaborated with Bruce Pullar on the New Zealand tram destination sign project for Graham Stewart's book "Always A Tram In Sight", and also the editing of the Chief Inspector Gil Elliot collection now held in the Walsh Memorial Library at MOTAT.

In recognition for his work at MOTAT Erik was awarded a Life Membership of the MOTAT Society in 2005.

Members of the Tram Section formed a guard of honour at Erik's funeral.

## OBITUARY



Bruce Pullar photo



# MOTAT ON SHOW

The first Sunday of the month has been designated Demo Day when designated sections demonstrate various aspects of their operations.

First up was the Aviation Section which opened its workshop and provided helicopter flights, supported by the Road Transport Section which fired up its machinery including the Aveling Porter road roller and Caterpillar 30 tracked tractor. Then it was turn of the Rail Section which demonstrated hot rivetting.

**RIGHT:**

*Joanne Henare about to board the Bell 47G helicopter with daughter Eller at the Aviation Section's Demo Day on June 7. The helicopter, courtesy of Warbirds, gave 10 minute rides over MOTAT and the surrounding area.*



## AVIATION



*all photos by Evan James*



## TACKLING THE TAILPLANE

The Short Sunderland flying boat is resembling a rhinoceros without a horn as the tailplane has been removed to the workshop for care and attention.

This involves sandblasting inside and out to remove corrosion before any rotted metal is replaced and the tailplane is painted and replaced back on the aircraft.

This is all part of a major effort by the Aviation Section to finish refurbishment of the aircraft by Christmas when it is hoped to move the aircraft into the Aviation Hall

**ABOVE LEFT:** *The stump of the Sunderland's tailplane is draped in a cover to protect it from the weather*

**LEFT:** *Albert Parrington sandblasting the inside of the tailplane.*

**ABOVE:** *Bob Deacon (left) and Owen Reeve attaching fabric to an elevator which was being refurbished.*

