



# The Squeaky Wheel



The MOTAT Society Newsletter  
ISSN 2350-2940 (Print)  
ISSN 2350-2959 (Online)

Issue 30 - 2017



**REAL  
HEAVY  
METAL**

*MOTAT's Fowler traction engine dwarfs a miniature replica at the MOTAT Steam Festival held on July 16. At the controls of the Fowler are Ian Wiley (left) and Martin Radford. The miniature, called "Sir Shrek", is a 4" scale model of a Foster engine owned by Peter George of New Plymouth, who is talking to Lucy George (left) and Angela Jensen. See pages 4, 5 and 6 for more photographs from the steam festival.*

*Evan James photo*

## LUSH AWARD FOR PRINT SECTION HEAD

Nine years work in building up the MOTAT Print Section to the level of excellence that it shows today had been recognised with the Lush Award for the section head Graham O'Keeffe.

The Lush Award, for excellence by a volunteer, was announced at the MOTAT Society's recent annual general meeting by chairman John Syme.

He said that because of Graham's work, the printing shop had become a must see experience by museum patrons, and a volunteer who had been trained under his leadership had been named the top printer in his field in New Zealand at the printing industry's annual awards.

Graham came to the section after many years in the industry, which he joined in 1953 as an apprentice letterpress machinist with the Taranaki Herald, New Plymouth.

This was followed by his promotion to foreman of the machine room and bindery in 1966, a position he held until 1970 when he joined the iconic German printing machine manufacturer, Heidelberg, as printing instructor covering New Zealand and the Pacific Islands, a position he held until 1999, when he set up his own business doing the same thing.

In 2009 he received an invitation to join the MOTAT Printing Section by member Graham Judd.

Graham O'Keeffe said that at the time he was considering setting up his own print shop in his garage, with the car being banished outside, but the invitation to join the Printing Section appealed to him - and the car, which could stay in the garage.

"The print room needed a little tidying, something that several other printers felt the same way, and The Print Shop has progressed from there," he said.

"I have always been of the mind that any printing that is done needs to be of some value, as you are only as good as your last job, hence the production of post cards, note pads, bookmarks, posters, colouring-in books and the Māori book.

"I want us to be interactive with the public and to produce something worthwhile so the patrons can take away something they can remember MOTAT by," he said.

In the process Graham has built up what he described as a "vibrant and expanding team", with five volunteers currently learning letterpress printing, all of whom had printing machines at home, and he described that as very encouraging.

Places such as MOTAT are now the only places teaching letterpress printing, which is still being used in the printing industry for die cutting packaging boxes.

Two of the machines in The Print Shop had been used for die cutting before coming to MOTAT, and had been converted back to letterpress printing.

He said that while die cutting was not among the skills being taught at MOTAT, those competent on the machines could go on to a career in the industry as die cutters.

Graham said he considered the ultimate accolade for the section was the awarding of two gold medals at the Pride in Print 2016 awards to one of its members, Willy Coenradi for a book printed by Willy and section members at The Print Shop.

The book, entitled "Little Wing Book" was produced by



*Print Section's Graham O'Keeffe (right) is congratulated by MOTAT Society chairman John Syme on being announced the recipient of the Lush Award at the Society's recent annual general meeting.*

*Evan James photo*

Willy's partner Claire Delaney and won a gold medal in the Specialty Products section of the Limited Edition and Fine Art Prints category for letterpress printing, and then was awarded the gold medal for the best letterpress printed entry at the awards.

Graham said that he is pleased with where the section is at present, with examples of most of the type of machines that were used in smaller commercial letterpress print shops.

He said that one of the machines high on his wish list is a stitcher to staple books.

### In this issue

Page 3 - Tram news

Pages 4, 5, 6 - Steam day in pictures

Page 7 - Printing news

Page 8 - Sunderland moves indoors

### MOTAT Society Contacts

**Postal:**

PO Box 44430  
Pt Chevalier, Auckland 1246

**Administrator:**

admin@motatsociety.org.nz

**Squeaky Wheel editor:**

Evan James  
evanjames100@gmail.com  
phone (09) 846 5851  
mob 021 894 616

**Website:** www.motatsociety.org.nz

**Facebook:**

www.facebook.com/MOTATSociety



# VOLUNTEERS STILL KEY TO FUTURE OF MUSEUM

The future involvement of volunteers would be essential to MOTAT as it moved into the future.

The four MOTAT Society board appointees, told members at the Society's recent annual general meeting, that the passing on the the expertise and knowledge of the volunteers to new volunteers would be essential to the museum in the future, and no-one could predict what that future would be.

The four members of the MOTAT board appointed by the MOTAT Society, Ms Helen Atkins, Dr Bruce Hucker, Mr Bill Rayner, and the Rt Hon Judith Tizard, were guest speakers at the meeting.

They told the meeting that the current emphasis of the board was on the implementation of the Dame Cheryl Sotheran report on the future direction and look of the museum.

Two vacancies have arisen on the MOTAT Society committee following the resignation of two sitting members.

Sitting members Andre Pointon and Nick Taylor had previously announced their intentions of not to stand again, and there were no nominations to fill their positions.

Society chairman John Syme, said the society would be looking at filling the positions in the near future.

Other members of the committee were re-elected to the committee at the meeting. They were chairman John Syme, deputy chair Henry Swann, section representatives Keith Hannay (aviation), Evan James (printing), Richard Croker

(rail), Bruce Johnson (steam), and John Wolf (trams), as well as Greg Pittams (independent).

The Society is also seeking an administrator after the previous administrator, Sonia Bechus, announced a move out of Auckland to Katikati, with her family.

---

## MILESTONES REACHED ON TRAILER 21



*Leyton Chan using a box chisel morticer to cut mortices in the cant rail of trailer 21 for the side pillars to eventually slot into. He is helped by Stephen Curham, holding a vacuum hose, and Charles Richards.*

*Evan James photo*

---

## TRAM NEWS

### TWO TRAMS DEEMED SURPLUS TO MUSEUM

Two former Sydney trams have been deemed by MOTAT to be surplus to requirements, and have been returned to their owner, the Sydney Tramway Museum from which they were leased.

They are R class tram 1808, and rail grinder No. 3., with 1808 going on to Christchurch and the rail grinder going back to Sydney.

Tram 1808 arrived on December 23, 2010 and was pressed into service almost immediately, and had been in regular service since.

It is now being prepared for regular service on the Christchurch City tramway, work which includes a repaint into Christchurch tramway colours.

The rail grinder arrived from the Sydney on June 15, 2011, with Tramway Section manager Colin Zeff saying at the time that the section had been looking at obtaining a rail grinder for some time because the track was not as smooth as it should be, and the rail head was not the right angle.

He said there had been plans for the section to build its own rail grinder, so it took the opportunity to bring number 3 to New Zealand when it was offered.

However since then it has spend most of its time in the workshops being worked on by MOTAT staff members and volunteers, but had only done a little grinding work on the tracks in front of the zoo car park..

Work on trailer 21 has reached several milestones recently, with the truck being semi-permanently fitted to the chassis enabling work to start on fitting brake and towing gear.

The truck will need to be removed again in order to install the tie-down bolts for the side pillars.

Meanwhile work on the body has concentrated on the roof and seats.

The roof bows were fitted to the cant rails, which involved a lot of hand chiselling to get the them fitted correctly.

After that everything was dismantled so the cant rails could be turned upside down so the mortices into which the side pillars are to be fitted into, could be cut. This was done with the aid of a box chisel morticer (a drill which can cut square holes).

In the meantime the final coats of varnish are being applied to the roof bows and seat slats, helped by the fact that tram 89, which was formerly the "I Am The Last Tram" exhibit, has been moved into the workshop and converted into a dust free paint shop, simply by closing the windows and doors.

Work has also started on the doors, with two new sliding doors, made by Papakura Joinery, arriving, featuring mottled kauri panels.

Work had now started restoring the door hardware, which was salvaged from the original remains of 21, and preparing for the final varnishing and glazing of the doors.





*A grand finale lineup for the day with all the traction engines and roller paraded in front of Baldwin steam tram 100. From left they are MOTAT's Fowler traction engine, MOTAT's Wallis and Stevens roller, Alan Smith's 4" scale Clayton and Shuttleworth traction engine, Andrew Richard's 4" scale Burrell, Greg Burrow's 4 1/2" scale Foden steam lorry, Peter George's 4" scale Foster traction engine, Kaikohe Pioneer Village's Burrell, and Roy Sharman's Fowler, and Marshall traction engines.*

*David Pitt photo*



## **BIRTHDAY BASH FOR GRAND OLD LADY BY THE LAKE**

Steam engines came from far and wide to help celebrate the 140th birthday of MOTAT's Grand Old Lady By The Lake, the beam engine.

The beam engine entered service in 1877 to pump water from Western Springs Lake to a reservoir in Ponsonby to fulfill the water supply needs of a growing Auckland city.

Fed by four 30ft boilers in the adjacent boiler house, it fulfilled this role until superseded by water from the Waitakere dams in 1910. After that the springs water was used during emergencies but by 1936 it was recommended that the machinery be scrapped and the boilers were removed the following year.

However, the beam engine itself escaped the scrapper's torch and eventually become

the centre point for the museum which was built up around it.

To help celebrate the birthday, steam traction engines, both full sized and miniature, travelled from as far afield as Kaikohe and Napier, as well as MOTAT's own traction engine and steam roller, the Rail Section steam locomotives, and steam tram 100.

The day culminated with a grande finale line-up with steam tram 100 at the MOTAT 2 tram stop, and a whistle chorus which included the railway locomotives.

**ABOVE:** Part of the large crowd of MOTAT patrons which crammed every vantage point to watch Graham Anderson operating the pumphouse beam engine.

**LEFT:** Simon Patton stokes the boiler in the Western Springs pumphouse which fed steam to the beam engine. The boiler was built by Daniel Adamson and Co of Dukinfield, Scotland, in 1957, for a Tauranga sawmill and replaced the four original boilers which were removed in 1937.

*all photos by Evan James unless otherwise acknowledged*





*The second oldest steamer (by a year), running was the Rail Section's L.507, seen here at Keith Park station. L.507 was built in 1877 by Avonside of Britain and entered service on August 17 1878. F.180, Meg Merilees, will take the honour of the oldest steam engine at MOTAT when its restoration is finished, entering service in June 1875.*

*David Pitt photo*



*Andrew Holeyby fills the coal bunker on the MOTAT Wallis and Stevens steam roller.*



*Fascinated by a 1/8th scale model steam traction engine are, from left, Kahlo May, and Omar and Asha Spensley. The model was built by Graham Lebourne of Napier, and was on display with model agricultural equipment displayed by Murray Lower.*



*Ollie and Louisa Openshaw in the cab of Baldwin steam tram 100 which was used to take patrons on a unique 1½ kilometre cab ride in a working steam locomotive.*





The Woolf double beam compound engine which celebrated its 140th birthday this year was designed by William Errington and manufactured by John Key & Sons in Kirkcaldy, Scotland.

It was commissioned on July 10 1877 and provided Auckland with clean water for the next 50 years.

Four coal fired boilers operated the beam engine driving a 16.3 tonne, 6.25m diameter flywheel. This worked a 7.3m beam which operated twin pumps raising up to 13,600m<sup>3</sup> water a day to the Ponsonby reservoir.

In 2008 it was restored to working order by MOTAT volunteers led by Ken Pointon, work which has since been recognised with three awards.

In 2009 it was awarded the Unesco Asia Pacific Heritage Award of Merit; and the Engineers Australia Colin Crisp Award for excellence of an engineering heritage project.

In 2015 the Institution of Mechanical Engineers, UK, presented its 101st Engineering Award to the beam engine.



*The 16.3 tonne, 6.25m diameter flywheel, which provides the momentum to keep the engine pumping. This arrived from the makers in sections and assembled on site, all parts still retaining their original numbers. The closest rods connect the crank to the beam, and the second set of rods work the pumps.*



*The seldom seen the two 7.3 metre beams, as seen from above.*



*ABOVE: Looking like the exposed heart of any modern car motor, the beam engines pistons were worked by poppet valves actuated by roller bearing pushrods running on a camshaft, one set for the upwards stroke of the pistons and one set for the downwards stroke.*



*LEFT: The crank on the right side, connected to the fly wheel by an axle. The cranks on the left side are at 45 degrees, so the engine cannot stall.*



*The only remaining one of the two pumps, which has been restored by MOTAT volunteers. The second pump had been scrapped during a World War 2 scrap drive.*



*Two of the four cylinders hidden behind wooden cladding for insulation and decoration. Steam first works in the furthest high pressure cylinder before working in the larger low pressure cylinder, hence the compound designation.*



# TE REO BOOK MARKS MĀORI LANGUAGE WEEK

A special book to mark Māori Language Week has been produced by the MOTAT Printing Section.

Called Kia Ora Te Reo, it is an 8-paged plus cover publication which has been designed and printed by section members and hand bound by Bindery Section members.

The print run was 500, with each copy being individually numbered.

Print Section head, Graham O’Keeffe, said the original concept of the book was to showcase the section’s recently acquired Māori typecases which were used to hand set the type used in the book.

With Māori language student Makyla Curtis doing much of the design work, the book comprises a Whakataukī proverb, colours (ngā tae), and numbers in Māori, accompanied by Māori themed pictures which the section had on hand.

*RIGHT: Designer Makyla Curtis and Print Section head Graham O’Keeffe working on the Kia Ora Te Reo booklet which the section produced to commemorate Māori Language week.*

*photos by Evan James*



## PRINTING

### GOOD THINGS TAKE TIME

After a gestation period of many years, a booklet of poems has finally been produced by the Print Section.

The 16-paged booklet entitled “Ballad of David John Gunn and Other Poems”, was authored by Brian Swete, and work started on it by the then head, Graham Judd, as an exercise for section members with a print run of 200.

Current section head, Graham O’Keeffe, said that he felt the time was right for the project to be finished with the final printing, collating and binding.



*ABOVE: Print Section’s Elise Friedman collates sections of a book of poems which has been in production in the Print Section for many years.*

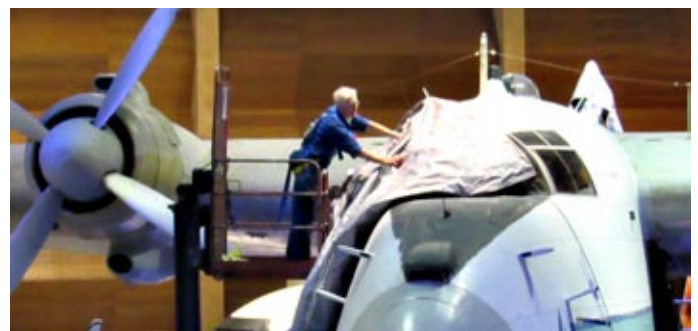
### SUBTLE TYPE CHANGE

The adoption of the macron for Māori language printing by MOTAT has resulted in a subtle change of typefaces for Squeaky Wheel magazine.

The text type is Arial, which features macrons in its digital form, but the Century Schoolbook typeface used for the headings and captions did not.

So a change was made to a similar typeface, Constantia, which does feature macrons.

### SOLENT READIED FOR TIME OUTDOORS



*Aviation Section’s Peter Kelly spreads a water proof covering over the cockpit window of the Short Solent flying boat “Aranui”, prior to its move outside of the Aviation Display Hall, to enable restoration to continue on the aircraft.*

Short Solent flying boat ZK-AMO “Aranui” is now resting outside the MOTAT Aviation Display Hall so restoration work, not possible inside the building, can continue on the aircraft.

This mainly involves work on the keel and painting in TEAL (Tasman Empire Airways Limited, a predecessor of Air New Zealand) colours.

It has been estimated that the work could take up to five years.



## AVIATION

### INSIDE FOR THE VERY FIRST TIME

After a lifetime in the open, MOTAT's Short Sunderland flying boat NZ4115 "Q for Quebec" is finally out of the weather, residing in the MOTAT Aviation Display Hall. With its tailplane removed so it could fit through the giant museum building doors, the Sunderland has been readied for its final restoration which includes refitting, the restored tailplane, reinstalling elevators, which have also been restored, tidying up the cockpit, and installing dummy guns.

The move was a three day undertaking by museum staff and volunteers, and involved making the Solent flying boat "Aranui" weathertight so it could be moved outside for its final restoration, and moving other aeroplanes around in the building.

The Short S.25 Mark V Sunderland, was one of the last of that aircraft in regular service in the world, operated by RNZAF No. 5 Squadron from its home base at Hobsonville, and from Lauthala Bay in Fiji.

It was retired by the RNZAF on December 22 1966 and gifted to MOTAT, and on February 25 the following year was towed across the Waitemata Harbour to Meola Reef where it was dragged to the future MOTAT 2 site on its beaching gear, which it still sits on.

The Sunderland was developed before World War 2, as a long range maritime surveillance and attack aircraft and first flown on October 16 1937.

A total of 749 Sunderlands were built of which 155 were Mark Vs.

These were ideal for the RNZAF with its vast Pacific Ocean area to patrol with few runways to land on, and they flew with three squadrons, No. 5, No. 6 and No. 490.

One of its sister aircraft, NZ4108, is resident at the

*Like a scene from the Disney movie "Planes", "Dusty" the Cessna A188 Agwagon, "flies" over Sunderland NZ4115 "Q for Quebec" after its move inside the MOTAT Aviation Display Hall.*

*Evan James photos*



*With former Auckland airport baggage tugs at each end, the 15 tonne Sunderland is moved sideways into position inside the MOTAT 2 Aviation Display Hall. Peter Kelly is driving tug No. 7115.*

Fantasy of Flight Museum in Florida, USA, after being converted to a Sandringham flying boat and flown by Qantas.

It gained fame by taking part in the Olympic Torch relay to the Atlanta Games, flying the torch from Sarasota to Miami on July 4 1996.

Other Sunderlands are on display at the RAF Museum, Hendon, and Imperial War Museum in Duxford and the Oakland Aviation Museum, California.

In military service the Sunderland had a range of 1780 miles, and a cruising speed of 178 mph.

It carried a crew of between nine and 11, two pilots, a radio operator, navigator, engineer, bomb aimer and three to five gunners