



The Squeaky Wheel



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Egil(left) and Einar battle it out in a display by the Auckland Norsemen group at the annual MOTAT military day. The group replicates fighting in Europe in the period 700AD to 1066. See more on page 6.

Evan James photo

VIGILANCE ESSENTIAL DURING CHANGING TIMES

The last MOTAT Society communication to members in February circulated the submission on the Draft Annual Plan to the MOTAT Board. As with the presentations in previous years this resulted in no visible outcomes or changes to the final plan.

Presentations were also made by the tramways and the Auckland Fire Brigade Heritage and Historical Society. Subsequently the Auckland City Council approved the levy for the 2017/18 year.

In place of any levy increase, a one off grant was approved for costs associated with an asbestos problem which is impacting the collection storage.

It would be fair to say that the impact of the Society's presentations on draft Annual Plans over the past few years and including this year has been ZERO.

The balance between the collection and the "lightbulb" concepts therefore continues to be an issue for the Society. More recently the Board advised that it no longer supported the Driving Wheel.

As Society members and volunteers to the museum you can each draw your own conclusions as to the long term effect of these matters on achieving the objectives laid out in the MOTAT Act; also regarding the longevity of the traditional volunteer role now represented largely by Society members.

The spirit of TEAM MOTAT, a key objective in 2003 and inclusive of the Society, is now history.

The May Board papers state that volunteer numbers are growing (by 38% over 2 years) and now number 240 and that Society member volunteers represent approximately 50% of the active volunteers.

This will be a difficult statistic for longer standing Society volunteers to reconcile with a noticeable decline from the substantial contribution in both numbers of volunteers and their restoration work levels in the era preceding 2012.

The key issue for MOTAT in 2017 is the recent announcement by the Auckland City Council of a review of the Auckland museum sector to be completed by year end.

Essentially this review is to look at the possibility of placing the sector under a single bureaucracy. This would require termination of the Acts of Parliament for both the Auckland War Memorial Museum and MOTAT.

This raise's a number of potential issues for MOTAT.

Firstly the funding mechanisms for MOTAT would end and in future would be decided solely by Council whim.

Secondly, it has obvious and serious outcomes for the independence and culture of the various entities. It also comes at a time that funding of the Athfield Plan is raising challenges as the Auckland Council struggles to fund infrastructure across the city.

It is quite apparent the Athfield Plan continues to be a long term vision with little detail yet available for its impact on the collection and its stories.

The Society will be making submissions to the Auckland Museum review process and will keep you informed.

The other key issue presently in process is the management review of the collection.

Although volunteers have been involved through workshops on the process of the review, it appears at this stage they

will only be involved at the final stage of the process.

The Society is supporting the review but is concerned that the knowledge and judgement of volunteers is involved so late in the process when decisions, particularly of deaccession, already may have been made.

The Society has stated its role at MOTAT as a Kaitiaki of the collection.

It essential as volunteers, that you personally maintain your vigilance in the collection review in your area of interest.

John Syme

STEAM IN FOCUS

A steam focused day is planned for MOTAT for July 16.

Rail section's Peter Cairncross said that the plan is to get everything that can be steamed up and running for the event including the beam engine which will be celebrating its 140th birthday.

At MOTAT 1 it is planned to have the pumphouse, beam engine, a Marshall portable engine and steam tram 100 running.

At MOTAT 2, the Rail Section is planning to have its three steam locomotives running, with the Y542 running the mainline, L507 doing shuttles with the L wagon and Bertha giving cab rides from the side of the workshop.

In addition, it is planned to have the Wallis and Stevens roller and Fowler traction engine in steam, as well as three visiting traction engines, and 4 visiting miniature traction engines, said Mr Cairncross.

FIVE YEAR EXTENSION FOR CEO

A five year extension in the contract of MOTAT chief executive Michael Frawley has been announced by MOTAT Board chair Dr Lesley McTurk, to extend from February next year.

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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

MODEL RAILWAY

MODEL RAILWAY GOES DIGITAL

The MOTAT model railway situated under the Band Rotunda between the pump house and Cropper House is currently getting a complete makeover to bring it into the 21st century.

The work is being carried out by experienced modellers Sean Heenan and Rob Hunter and includes re-wiring the layout and installing a digital command control operating system, and building a new village.

RIGHT: Sean Heenan (left) and Rob Hunter who are renovating the MOTAT model railway, including bringing it into the digital age with a digital command control system.

Evan James photo



MODEL RAILWAYS ROLL INTO THE 21ST CENTURY

by Evan James

Digital Command Control (DCC) of model railways is a relatively recent development being invented in the 1980s by Lenz Elektronik of Germany.

It came of age in 1993 when the American National Model Railroad Association (NMRA) published a set of standards.

These specified electrical and communications standards, but left other protocols up to each manufacturer so that, in general, a system from one manufacturer is not compatible with a system from another.

Under the more common analogue control system, a transformer and controller feeds a direct current (usually 12 volts) to the track which controlled the speed of the model on that section of track.

To control more than one train on a layout, the layout had to be divided into several isolated "sections", each with its own feed, with the power going through an elaborate board of switches to control each train individually as they moved between the sections.

Under DCC, a constant 18 volts (usually) of modulated pulse wave is fed to the tracks, and through this is fed the electronic signals to a decoder on each locomotive.

Each decoder is given a unique address by the owner S- usually based on the number on the side of the model - and that locomotive will only react once that number is dialled up on the controller

The decoder does a large number of functions ranging from supplying 12 volts DC to the motor to controlling many other functions on the locomotive including a whistle and bell etc where fitted.

In the basic systems just two wires from the controller can be fed to the tracks, and this will control the whole layout, including setting the speed on one locomotive and controlling the speed on another

More advanced systems allow control of sound systems on the locomotives as well as trackside accessories such as turnouts, uncouplers, etc.

For that to happen each accessory will need to have its own decoder.

Some controllers have the ability for certain functions to be

RIGHT: A decoder, which is the heart of the Digital Command Control system. This particular unit, shown at about twice full size, has been designed to fit into tiny N scale locomotives.



Digitrax photo

able to be reprogrammed on a computer.

Recent developments have taken digital control to a new level whereby whole layouts can be controlled from a laptop computer, with the emphasis being placed on models running themselves to a pre-determined pattern. One such system is the Hornby RailMaster which is a software package designed for touch screen PCs and connecting to the layout through an eLink controller, whichS gets regular automatic software updates from Hornby This has been designed to open up the hobby to a new market of computer savvy youngsters who seek to game in 3D.

The Digitrax slogan of "Complete train control, run your trains not your track", is taking railway modelling well into the 21st century.



The Digitrax decoder at the heart of the MOTAT model railway display. It can be controlled either remotely, by radio control or infrared control through special sensors, or by direct control through tethered walkaround throttles. The switch on the right enables the layout to be controlled by conventional throttles in the traditional analogue manner.

Sean Heenan photo

MANY MORE HANDS NEEDED TO PUT 21 IN SERVICE

Concern at slow progress on the restoration of trailer 21 has been expressed by project leader Leyton Chan. He told a meeting of Tram Section members that while the project provided an insight into the standards required for such a restoration, he was concerned at the slow progress of the work.

He said, that in his opinion, this could be improved with either more volunteers or subcontracting some of the work.

At present work was underway on the wooden slats for the seats, which would be assembled in an alternate ash and red cedar pattern.

Work on the ash slats was nearing completion after nine coats of varnish, sanding between each coat, had been applied to give a smooth finish with no grain marks showing in the varnish.

Once this was finished, work would then start on the red cedar slats, which which had been cut to size but needed to be stained to the correct shade, as per the wood on an original seat, before varnishing could start.

Working was also nearing completion on ash for the roof bows which are also being finished to the same standard as the seats.

Next major project would be cutting the mortices in the roof cant rail. This had already by cut to size and shape and had been marked out ready for the morticing to start.

Leyton said this would have to be done to hand as no machine was available for the job, and accuracy was essential to ensure the side pillars holding up the roof were square.

Once this was done work could start on assembling the basic roof structure on the tram floor, which would then be lifted up, and held in place by the side pillars, and



Milton Sarsons sands down the ash seat slats for trailer 21 prior to the application of the ninth and final coat of varnish.
both photos by Evan James

bulkheads which were still to be made, although the timber was on hand.

Once that was done, the seats could be installed.

TRAM NEWS

10 YEARS SINCE TRAMWAY LINK OPENED

Almost 2 million passengers have been carried on the Western Springs Tramway in the 10 years since the extension from the zoo to MOTAT 2 was opened on April 26 2007.

The section was officially opened by the Prime Minister and Member of Parliament for Mt Albert the Rt Hon Helen Clark, (*pictured right*) with the then MOTAT director, Mr Jeremy Hubbard, with the unveiling of a special plaque on the MOTAT 2 tramstop platform, with steam tram 100 in the background.

Tram Section's David Cawood said that as at the end of March this year 1,776,636 passengers had been carried. Work on the 620 metre extension from the zoo to MOTAT 2 started on August 1 2006, with Ms Clark marking the official start of the work at a ground breaking ceremony on August 11.



CELEBRATING 50 YEARS OF TRAMS AT MOTAT

A 50th birthday celebration for the Western Springs Tramway is planned for December this year.

The tramway was officially opened on Saturday December 16 1967 by the Minister of Transport, Hon J. B. Gordon.

This was followed by a parade of the available trams on the 321 metres of track within the museum grounds.

Tram section's Tony Messenger said that a fortunate coincidence is that December 16 this year will also be a Saturday and it is planned to follow the sequence of events at the opening ceremony as closely as possible.

An exception would be the absence of Auckland tram 253,

which is in storage awaiting restoration.

Plans at present include a cutting of the ribbon at the original location opposite the Logan Campbell Building by historian and MOTAT founder Graham Stewart, using trams 248 (substituting for 253), and 257, to be followed by a parade of vintage trams on the original route to the lower tram barn.

The vintage trams would then parade to MOTAT 2 and back to be followed by an event in the Cropper House including a video made from a film taken on the opening day.

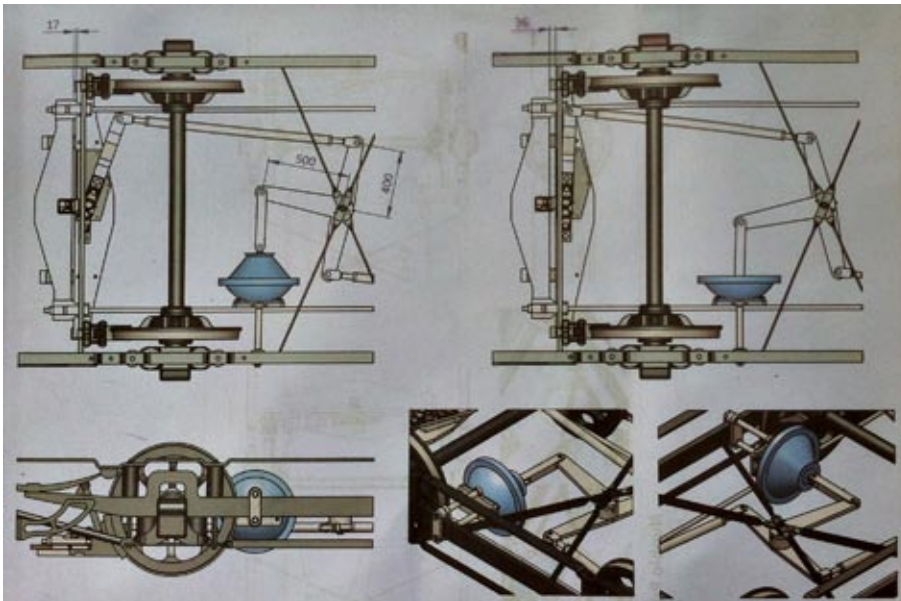
It is planned to invite as many of the original members as possible, and prepare special tickets to mark the event.

It is also planned to hold a formal evening function, but Tony said this would have to be held at a venue off site so as not to clash MOTAT's Christmas Lights event.

A special tram themed day is also planned by MOTAT for third Sunday live day on November 19.

On the opening day the speeches were given by the Mayor of Auckland, Dr E. G. McElroy the chairman of the Auckland Regional Authority, Mr H. D. Lambie, as well as Mr Gordon.

Mr McElroy then drove Auckland tram 253, followed by Mr Gordon driving Wellington tram 257. Wellington trams 301 and 135 were available but not used.



UNIQUE BRAKE SYSTEM FOR 21

A unique brake system is being installed in trailer 21.

It will be a three way system with a hand brake, vacuum brake to connect with steam tram 100, and a magnetic brake, as per original, so it can be towed behind Wanganui tram No. 10 at some stage in the future which was how it ran during its lifetime at Wanganui.

The system is being designed and built by Tony Messenger, who is having to design the vacuum system from scratch, borrowing from practices in the United Kingdom and South Africa where vacuum brakes were used on the railways.

It is believed that 21 will be the only vacuum braked vehicle to run on rail in New Zealand which used compressed air for both its railway and tramway systems.

The components are being fabricated at MOTAT with some components coming from Bendigo in Australia. The heart of the system, the diaphragm cylinder, came originally from 100, which received a new and larger one during its restoration.

The cylinder for 21 was overhauled at MOTAT by Tram Section's Dave Leonard.

RIGHT: Tony Messenger working on linkage from the restored vacuum brake cylinder on trailer 21.

photo by Evan James

TOP: A working diagram prepared by Tony for the vacuum brake system on 21.



MILITARY DAY STILL A CROWD FAVOURITE

The annual MOTAT Military Day still proved to be a crowd favourite when held earlier this year.

This year featured displays by medaeval re-enactment clubs, in addition to World War 2 re-enactment groups.

The medaeval groups which included the Auckland Swords and Shields Club and Auckland Norsemen Group, proved popular with the public who were able to don the armour and handle the broad swords.

In addition there were displays by re-enactment groups representing both allied and axis World War 2 soldiers, and mock battles between the forces. These were complimented by flyovers by World War 2 aircraft flown by members of the Warbirds, from Ardmore Airfield.

LEFT: "How's this Mum" - Kristopher Johansen shows off his prowess with a sword to mum Yvonne at the Auckland Sword and Shields Club's display at MOTAT's annual military day.

all photos by Evan James



Trish Linn takes a cellphone photo of her son Daemon posing with medaeval armour and sword at the Auckland Sword and Shield display at the MOTAT military day.



Andy Anderson explains the finer points of the M1A1 Thompson sub machine gun to MOTAT patron Chris Wong. The 46 calibre weapon was invented by John T. Thompson in 1918, and as the Tommy Gun became popular with gangsters and law enforcement officers. They are still in production. The M1A1 version in the picture was the standard weapon of the United States military from October 1942 and remained in service until 1971. During World War 2 mass production had reduced the price from \$209 in 1939 to \$45 each in 1944.

FOLDER NOW EARNING ITS KEEP

A folding machine at the MOTAT Printing Section is now up and running after a restoration by section members. Print Section head Graham O’Keeffe said the Shaws Homley folder had been donated by Laingholm printer Mr Keith Towl.

Since then it had been completely stripped down, and re-painted and the woodwork re-varnished.

Graham said that one of the problems encountered was that some parts of the machine had been hand-made, which meant that it had to be re-assembled with specific parts (especially brackets and screws) going in specific places, which hadn’t been taken into account when the machine was stripped.

Since its re-assembly it has seen regular service folding jobs which had been printed by the section, something which previously had either been contracted out or done by hand.

PRINTING

REPRINTING BOOKLETS

Reprinting information booklets from MOTAT’s early years is now being undertaken by the Printing Section.

Section head Graham O’Keeffe said the booklets printed so far have been on Richard Pearce, which was first printed in 1973, and the Lancaster, which was first printed in the 1960s.

The latest print runs have involved scanning the originals and having polymer blocks made which are then mounted on a honeycomb base for printing on the section’s Heidelberg KSD printing machine.

He said that every attempt had been made to retain the original look of the booklets, and no attempt had been made to enhance the appearance of the publications during the digital processes.

The booklets are printed on A3 sized sheets which are then folded down to A4 size on the section’s recently restored Shaws Homley folder.

COLOURING-IN BOOKS A HIT WITH PATRONS

Colouring-in books being produced in a combined effort by the Print Section and bookbinders are proving popular with MOTAT patrons.

Print Section leader Graham O’Keeffe said that so far 800 books have been printed and hand bound, which have all been snapped up by patrons, and another run of 1500 is being planned.

Graham said the books comprised printing blocks in the section’s collection, many of which had been donated by other print companies after clean outs.

“These books have virtually cost us nothing,” said Graham.

One small change from previous print runs will be replacing coloured pictures on the covers with line drawings of items in the MOTAT collection, which can also be coloured in.



Print Section head Graham O’Keeffe hand feeding printed sheets of the Richard Pearce booklet into the recently restored Shaws Homley folder.



Long standing Print Section member Graham Judd helps Bhavini Mereii print her name held by her mother Bina. This activity is very popular with patrons, which according to section head Graham O’Keeffe, gives patrons a souvenir of their MOTAT visit.

both photos by Evan James

TOP AWARD FOR RAIL WAGON RESTORATION TEAM



These were replaced with South American Purple Heart hardwood timber which was profiled in-house by the restoration team.

STEEL CHASSIS

After removal of all air brake components the steel chassis was sent out for sand blasting. This revealed that the chassis was not in as good a condition as originally anticipated with significant wastage of one end head stock and multiple holes appearing in the chassis rails, as well as the frame bracing plates not being fit for re-use.

The holes in the chassis rails were built up with weld and ground back to give an appropriate finish.

The head stock at one end was partially replaced with steel of the correct profile salvaged from a previously scrapped

wagon. This was welded to the remaining piece of the headstock and then riveted to the chassis rails.

In total 18 three quarter inch diameter rivets were replaced, all being fitted using traditional hot riveting methods.

The frame bracing plates that were not able to be salvaged were replaced with new material and were refitted with 72 half inch hot rivets.

The Westinghouse brake cylinder was serviced and all brake pipes were replaced with new tube.

All pins in the brake rodding were replaced and a number of holes were filled and rebored to remove the slack from worn items.

The decking was replaced with used demolition timber that was machined to the correct size, as were the end bulkheads, with the load stanchions being original material.

The wagon has been painted with an in-house colour mix to match samples taken from the wagon prior to restoration.

Lettering is based on information gained from the wagon prior to the start of the restoration and from appropriate period pictures of similar wagons.

The wagon was completed in April of 2017.



TOP: Wagon Ea3271 after its restoration by Rail Section volunteers.

ABOVE: The wagon before it entered the workshops.

both photos by Pete Cairncross

RAIL SECTION

by Peter Cairncross

Wagon restoration skills of MOTAT Rail Section members has been recognised for the second time in three years at the annual FRONZ conference held in Christchurch over Queens Birthday weekend.

In 2015 the section received the top award in the wagon category for the restoration of crane 285, and this year wagon Ea3271, which will serve as a runner wagon for that crane, has been awarded top prize in the Good/Service Wagons awards category.

Restoration of the wagon was a volunteer project managed by Peter Cairncross to represent the period from 1959 through to 1978 when the wagon was classified by New Zealand Railways as Ea3271.

This wagon was built at Petone workshops as bogie horse box Ug43 to drawing BP X.3921 entering service on May 1 1915.

In 1950 it was reclassified at Napier workshops as UGA 56. In October 1959 it was transferred to the Ways and Works service as Ea3271 and converted into a flat deck non revenue wagon with end bulkheads, then further reclassified to EA687 in 1978.

It was written off on June 22 1985 at The Strand, Auckland, being obtained by MOTAT later in that year.

At the time of restoration the wooden decking was considerably rotted, there were a number of places in the chassis where rust had created holes and the bogies required complete overhaul.

THE BOGIES

The bogies were high pressure water blasted prior to complete disassembly with all smaller component parts either wire brushed or sand blasted to clean them back to original metal.

On reassembly all bolts and brake linkage pins were replaced.

The wooden bogie bolsters had some significant cracks and some wastage due to rot.