



The Squeaky Wheel



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REACHING FOR THE SKIES AGAIN

Tasman Empire Airways flying logo on the front of MOTAT'S Short Solent MkIV flying boat looks ready to head for the skies again, as it heads indoors into the Aviation Display Hall after a lengthy restoration process. See story on Page 3

photo by Evan James

PRINTING

COLOURING-IN BOOK OF MOTAT ARTIFACTS



A new colouring-in book featuring MOTAT artifacts is underway in the Print Shop. The artwork is being produced by artist Lyndon Chow (above), with some of his work shown below. Print Section's Graham O'Keeffe said that the individual pictures will be made into polymer printing "blocks" and the book will be printed on the section's KSD printing machine.

Evan James photos



With printing in their blood, husband and wife Warren and Wendy Weekes have joined the MOTAT Print Section, seen here in discussion with Makyla Curtis (right). Warren is a tradesman compositor, and according to Print Section's Graham O'Keeffe they are welcome additions to the Print Shop team.

STAYING CONNECTED WITH MOTAT

Volunteers past and present are the focus of an Alumni programme established by MOTAT.

Ms Emma de Hoog of the museum's People and Culture division said the programme is designed to reconnect past team members with the museum.

"It provides a platform for past team members to stay connected, and be kept informed about what is happening around the museum," she said.

The programme started off with a morning tea last November, and was followed up with another in February.

CONCERNS OVER DISPOSAL PROCESS

A lack of consultation with sections over the deaccessioning of items by MOTAT is concerning the MOTAT Society committee.

Committee members expressed concern that with little or no input from the section members, there was a chance that valuable sources of spare parts to keep artifacts running, or future restoration projects could be given away.

All we ask is that volunteer sections' expertise be recognised and they be given a chance to cast their eyes over the lists before final decisions are made, said committee member Evan James.

In a recent report to the MOTAT Board, Chief Executive Officer Michael Frawley reported that 128 new deaccessions had been proposed and were going through approval and disposal procedures.

A number of objects had been transferred to the Howick Historical Village, the Wanaka National Toy and Transport Museum and the Paekakariki Station Museum, and offers of transfer had gone out to the Voyager National Maritime Museum. A list of objects had also gone to the Museums of Aotearoa newsletter.

Tram Section's John Wolf said a recent tram deaccessioning proposal had been to donate Wellington Fiducia tram 244 to the Wellington Tramway Museum.

However, the first the Tram Section knew about it was when it was reported in the Wellington Tramway Museum's newsletter, "Tramlines" in August last year, that MOTAT had approached the Wellington Tramway Museum asking whether it would be interested in being donated 244, as MOTAT had decided to make it surplus to requirements. The tram was donated to MOTAT by Shell in 1964, one of three Fiducias at MOTAT, with along with 257 and, 252. However the committee acknowledged that some of the items deaccessioned or proposed to be deaccessioned had been items loaned or leased from other institutions.

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ABOVE: Surrounded by other exhibits suspended from the ceiling, MOTAT's Short Solent S.25 Mark V Solent back indoors in the Aviation Display Hall.

SOLENT BACK UNDER COVER

After an external restoration, MOTAT's Short S45A Solent Mark IV flying boat has moved back into the Aviation Display Hall, to sit alongside sister Short flying boat, the S.25 Mark V Sunderland.

Restored to its original appearance, ZK-AMO, "Aranui" is resplendent in the colours of the Tasman Empire Airways Limited (TEAL), forerunner to Air New Zealand, when it plied the South Pacific.

It was built by Short and Harland in Belfast in 1949 and operated the Tasman and South Pacific services until 1954 when replaced by the DC6s, and then the Coral Route to the Pacific Islands until 1960.

The last of the four Solents operated by TEAL, it was donated to MOTAT and arrived on site in 1966.

The current restoration began in September 2017 when it was moved to a special under-cover outdoor area to enable corroded metal work to be replaced and a complete repaint, work that could not be carried out indoors.

Now back inside the Aviation Display Hall, work will continue on the restoration of the interior.

The move back into the display hall took place over a two week period, and culminated in the actual move taking place on Tuesday March 26 which took nine hours to complete.

A full report of the restoration of the Solent will feature in a future issue of The Squeaky Wheel.



ABOVE: MOTAT's two Short flying boats on display together indoors for the first time.

BELOW: ZK-AMO "Aranui" proudly shows its Tasman Empire Airways Limited (TEAL) heritage.

Evan James photos



MAJOR BOILER AND FIREBOX WORK FOR BERTHA



LEFT: The boiler of Bertha sits on its side on stands to enable a thorough inspection and the replacement of the boiler tubes and firebox.

Evan James photo

RAIL SECTION

F180 NOW IN REGULAR SERVICE

F180, Meg Merrilies, is now in regular service on the Western Springs Railway, after teething problems which had manifested themselves after its restoration were sorted out.

Rail Section's Martyn Radford said it ran on its own for the first time on the February 3rd Sunday live day.

A few lubrication problems had emerged during the running, and DSA223 had to be substituted for a few trips while the problems were sorted out.

Among the work done before it entered regular service were bolting four braces on to the rear cow catcher and two braces on the front cow catchers.

Chains have been installed above the coal bunker doors and oak timber lids installed on the coal bunker tops inside the cab.

Since entering service the Westinghouse pump has been reconditioned, and all new firebars have been installed. The coal bunker doors themselves have been made and the brakes upgraded.

TRACK WORK PAYS DIVIDENDS

A continuing programme to maintain the track on the Western Springs Railway to a high standard is producing dividends when maintaining locomotives and rolling stock.

Rail Section's Martyn Radford said the track maintenance, coupled with more locomotives and rolling stock being restored, would mean that their maintenance would become less of an issue than at present as the wear and tear would be spread wider.

Orenstein and Koppel locomotive "Bertha" is currently receiving a boiler overhaul, its first for 25 years.

To facilitate the work the boiler has been removed from the chassis to enable the fire box to be replaced and the replacement of the boiler tubes.

The tubes were last replaced in 1994.

Rail Section's Martyn Radford said the decision to remove and replace the firebox came after discussions with the boiler inspector.

He said the intention is to do all the work in-house.

"Bad pitting had been found in the lower parts of the barrel, but as there is no access to get a person inside the boiler, it was either a matter of removing the front tube plate, which would not require much work to re-use, or remove the inner firebox, which was

near time expired," he said.

"The inner firebox has had many repairs done to it both before coming to MOTAT and while in service at MOTAT.

"With a new inner firebox, and stays and the boiler pad welded, we should have plenty of trouble free steaming for many years to come.

"After all, the boiler of Bertha is 115 years old and for many years ran at MOTAT with little or no boiler treatment," said Martyn.

He added that all the boilers under the Rail Section's care were now using a very good tannin based boiler treatment programme.

Bertha was built in Germany in 1904 as a two foot gauge locomotive for the Northern Colliery at Waro, north of Whangarei.

Numbered 1411 by its builder, it was sold to the NZ Cement Company for use at its Limestone Island quarry in the Whangarei Harbour, and in 1918 was sold to Wilsons Portland Cement Co for use at its plant at Portland, just south of Whangarei, where it was converted to 3ft 6in gauge, and acquired the name of Bertha, reputedly after the German monster rail mounted gun of WW1, called Big Bertha. However, weighing in at 5 tons, Bertha was one of the smallest steam locomotives to see service in New Zealand.

Upon retirement from Portland in 1957 it was acquired by the Old Time Transport Preservation Society, and came to MOTAT in 1964 as one of its first exhibits.

Originally destined to be a stationary exhibit Bertha was overhauled by volunteers and entered service at MOTAT in 1980.

Since then it has been in regular service and is often used as to train new firemen and drivers as they endeavour to attain their steam tickets.



URGENT WORK ON WOODEN WAGON

One of the key components of train make up on live days, open four wheeled wagon L533, is undergoing urgent major maintenance after extensive issues were found during its annual inspection.

Rail Section's Martyn Radford said that a significant amount of rot and splitting was found in the chassis during the inspection which meant an immediate withdrawal from service.

After the floor had been removed, 2/3rds of the chassis timber was then removed, and the metal components, which were still in good condition, were needle gunned, and made ready for re-installation.

The chassis timbers which need to be replaced, will be replaced with South American purple heart hardwood, and a start has been made on new cross main beams.



The drawgear springs exposed on carriage A1819 after rusty sections had been removed from an end vestibule as part of its restoration by Rail Section volunteers.

Evan James photo

MAINTENANCE WORK ON VALVE GEAR

Regular live day steam locomotive, Y542 has been undergoing some mechanical work lately which has seen it out of action on live days.

This work started with most of the left hand side valve gear being stripped off the locomotive and sent to E G Whiter Ltd of Otahuhu to have bushes replaced, and the shafts metal sprayed and ground.

Once replaced, the same has been done to the right hand side valve gear.

Rail Section's Martyn Radford said that it is worth remembering that the valve gear has had very little work done on it since coming to MOTAT from Portland in 1984. But he said the continuing use of Y542 for the bulk of operations was still the best choice as it is a far more modern locomotive than the L and F.

"There's 50 years of advances in technology between them and at the end of the day the paying public don't really care, they just want to ride behind a steam engine," he said.

The valve gear on L507 also required attention when it developed a bad knock after running every Sunday in January.

This resulted in the right hand end bearing assembly being removed and the bearings machined in the section's workshop to allow some adjustment.

Martin said the left hand big end was adjusted up and the left hand rear rod bearing had some shims added under the bearing.

Both cross heads also had some attention with play being removed, he said.

Last year L507 had a major boiler overhaul, which will be covered in full in a later edition of The Squeaky Wheel.

WORKING STEADILY ON 50 FOOTER STEEL CAR

Work is proceeding steadily on the restoration of 50 foot steel sided carriage A1819.

With the emphasis on getting wagon L533 back into service, work has focused on the tasks that could be done while not interfering with the work on L533, according to Rail Section's Martyn Radford.

This involved cleaning up all the chrome fittings and hand basins and toilet, which had a large amount of grime on them as well as light corrosion in places.

These were now clean and ready to be either installed or re-plated if required, and the toilet doors repainted. Galvanised steel lining in the hand basin wall has had rust patches treated with a first coat of a rust inhibitor.

It is the intention to complete the toilet and handbasin rooms in the centre of the car first.

Elsewhere in the interior all panelling above the windows on the B side of the carriage has been removed. and a template for new ply wall cladding, with seat supports marked, has been made.

With Rick Schreuder leading a team, work has been progressing on the heavy engineering of the floor area of the vestibules, and repairs to the roof.

This has involved dismantling sections of the frame bracing to expose steel brackets that need replacing.

Martyn said this was slow going with many rusted screws. In the vestibule one of the two rusted frame plates has had the rivets cut out and has been removed.

The exposed steel has been needled gunned to remove the remaining rust.

Martyn said that using plans from the section's plan room, a replacement has been drawn up in the Solidworks computer program which can be used to get replacement steel cut and folded.



Looking stunning in its two toned final colour scheme is this end seat back, which was made up as a demonstration for the recent third Sunday live day. This is the same colour scheme for the seats in the rest of the trailer and with final coats of varnish now being applied, it is hoped that final assembly will be started in the near future.

Evan James photos

LONG ARDUOUS HOURS ON ALUMINIUM PANELS

It's been heads down and backsides up as the Wanganui No. 21 trailer team have been busy working on the long and arduous task on polishing the aluminium side/door panels.

This has involved machine buffing out all scratches and imperfections prior to them going to a specialist company for the final anodising.

While this has been carried out, other members of the team have been working on the panels' side stiffeners of spring steel, and top and bottom wooden stiffeners which have been made from Sydney Blue Gum.

Meanwhile attention has also turned to the body pillars, with a start being made on reprofiling them with a spindle moulder (courtesy of the Rail Section) so they match the seat-end castings.

A detailed examination of the remaining tram front has allowed CAD work on the trailer's front frame and apron assembly to be completed.

This involved measuring the various angles on the parts which will then fed into the CAD model, and confirmed with all other rebuilt components.

Once this is done, individual drawings can be produced and the parts produced, many of them by CNC machining.

The front pillars and sills will be made from made from American ash planks previously set aside for the pillars some of which were then laminated for the thicker sills.

Project leader Leyton Chan reported in the Tram Section's "The Controller" magazine that most of the front vestibule framework, which was made from American ash, was borer ridden, with the only reusable pieces being five of the six apron stiffeners which were made from Australian hardwood.

He said that building the front vestibule framework would then allow confirmation of the fit and location of the recently delivered handbrake gear.

ABOVE: *Leyton Chan (left) and Joseph Dixon measure up the various angles on a front vestibule pillar, with the data gained to be fed into a CAD model. One of 21's original aprons, the dull green piece of sheet metal, is in the background behind Leyton. However, despite its coat of garden shed green paint, the original number and coat of arms are still visible on the panel.*

BELOW: *There are just five salvagable items from this pile of wood from the ends of trailer 21. They are the apron stiffeners made from Australian hardwood, one of which is in the centre if the picture, marked with blue masking tape.*





Joseph Dixon working away at an aluminium side/door panel with a buffing wheel as he works out the scratches and other imperfections.

Tony Messenger gives a panel a final hand buff before it is ready for its trip to the anodisers. Once it is back from the anodisers the stiffeners can be attached to predrilled holes.

Evan James photos

BOX LOAD OF HANDBRAKE HARDWARE

The braking system on trailer 21 took another step forward when a box load of castings for the handbrake mechanism arrived

These were manufactured for MOTAT by the Heritage Tramway Trust of Christchurch, and are identical to that used on Boon & Co-built trams that have been restored in that city.

Writing in the Tram Section's "The Controller" magazine, mechanical team leader, Tony Messenger, said a trial measure-up showed that everything would fit into place as per the drawings for 21.

"I have marked out on the floor at both ends where the components have to go and once we have a confirmation from project leader Leyton Chan, we can bore the holes in the floor," wrote Tony.

He said that measuring the trailer end remnants showed that, height-wise, the hand-wheel to work the brakes would be "spot on".

An attachment plate, using a three-stud system originally used would have to be made, as also a ratchet release, also known as a pawl or dog.

Tony said that the latter would probably replicate those on Wellington trams 47 or 301 at MOTAT which used similar parts.

Then all that would be needed to complete the job would be a length of chain already sourced from the spare parts bin.

Once that is finished attention would shift to completing the

vacuum braking system, which would be operated from steam tram 100, and this would be done when 100 was stripped down for its 10-year boiler survey later this year.



PATRONAGE STILL ON WAY UP

The upward trend in tram patronage on the Western Springs Tramway shows no signs of abating.

In the year to date 141,907 passengers have ridden the trams according to the number of tickets issued, compared with 141,005 for the same period last year, and 140,061 for the same period the previous year. The year before that it was 127,356.

The patronage figures are from July to February, inclusive,

A box load of hand brake parts which arrived from the Tramway Heritage Trust of Ferrymead, Christchurch. They include a set of handbrake standards and underfloor chain snail gears, replicas of the originals, which were also manufactured in Christchurch, and the same as parts used on trams that have been restored in Christchurch.

Evan James photo

LIGHTING UP FOR CHRISTMAS CHEER

The Marshall portable steam engine whirs away in this photo by Martyn Radford during the Christmas Lights at MOTAT event in December last year. The event attracted 22,723 visitors, although Museum director Mr Michael Frawley said, in his report to the MOTAT Board, that highly inclement weather had adversely impacted on the growth of the event. New attractions included new lighting for Main Street, additional heritage trams, new tree lighting for the village, plus two new interactive experiences.

Heritage trams, especially decorated for the occasion were one of the features of the MOTAT Christmas Lights last December.

Pictured below are double decker 47 and Auckland 44, rounding the Motions Road curve on the trip to the zoo and back.



Tram conductor Vincent Chan with two of the members of the West City Concert Band on tram 893 during MOTAT Christmas lights last December. The band was one of the features during the event.

Albert Chan photo



Albert Chan photo



James Duncan photo