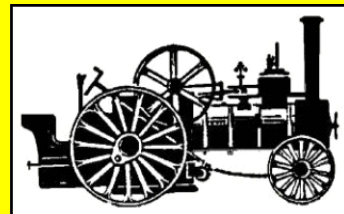


Issue 647 Dec 2024

A Wisp of STEAM SUPREME



Extracts from the Melbourne Steam
Traction Engine Club Newsletter



Goldsmith Rally



FlatHead Ford Festival



Saving Our First Tank



PREZ Cez Hello

Everyone, It's been a busy month down at the club.

We have received our new exhibits from the Navy. Due to ongoing works at Cerberus and the disbandment of their Steam club, they have donated the Garrett portable engine, the Priestman

railway crane, Thompson vertical engine, Weir pump, Tug motor and a lot of tools and sundries (not all of it has arrived yet) We also have a long term loan of the Foden Steam Truck from the Navy, which is partially assembled after getting reconditioned.



The Foden Steam wagon being unloaded into shed 7

Semi load of goodies including work platforms for Garrett portable and components of rail mounted crane



Undercarriage and machinery deck of the rail mounted steam crane. Very deteriorated and dismantled yet an interesting exhibit once assembled. We have the vertical cross tube boiler which mounts on rear counterweight (just in front of the dog man). It is a heavy little lump, what you see is just under 20 tonnes



The boom and winch of the Priestman rail mounted crane.



Contributors

John Belfield, Len Brighton, Aaron Morris

Cover Photo This huge portable Garret steam engine arriving to make its new home at the MSTEC. Len Brighton photo



This highly modified Ford model T Racer was built by the late Kevin Browne , a MSTEC member for some time .

Where: National Steam Centre - 1200 Ferntree Gully Rd. Scoresby

This popular event was recently held at our club grounds providing something special for our regular visitors to see while giving a great opportunity for the Ford owners and families to enjoy our magnificent facilities and Historic Machinery exhibits .

It was open to all flathead Ford powered vehicles from the start in 1903 to the end of the Ford side valve engine era typically the late 1950.s . This spans T models , A models , Early Ford V8 's and special dispensation for later customized classic Fords. .

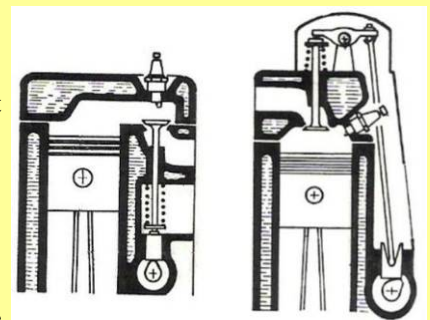
Part of the appeal of this event is the diversity of vehicles present not being limited to just standard restored cars but spanning hot rods , race cars , military vehicles and highly souped up engines that originally started out as a flat heads but morphed into exotic high performance chrome creations

Following is a slice of what was on show but first **What is a Flathead ? .**



↑ This later model customized Ford V8 engine was a show stopper with its aftermarket CNC machined aluminium flat heads prominent , polished aluminium inlet trumpets sporting multi point electronic fuel injection and chrome stub exhausts. A real concoction of old and new technology . Set up on a test stand in a trailer its exhaust crackle had everyone galloping over everytime it was sarterd up including our photographer. Pic Len Brighton

Flathead is the nick name for a particular layout of an engine in which the closing plate that goes over the top of the cylinders to form the combustion chamber is in the form of a flat plate. This necessitates that the valves passages for the inlet and exhaust gases be located in the engine block beside the cylinders .



SIDEVALVE OVERHEAD VALVE

It is more properly known as a **Sidevalve** in contrast to an **Overhead valve** engine where they are on top of the engine greatly adding to the complication and clutter of the device . The compromise is although a flathead is simpler , cheaper and more reliable it trades off performance , fuel economy and emissions so has virtually disappeared from production. This configuration was widely used by Ford for 60 years in contrast to Chev which has been OHV since introduction in 1913



← *Immaculate but not overdone all these Classic Fords on display would have all originally had flathead V8s*

The first a smart looking soft top coupe with its polished chrome bumper, grille and lights not to mention it's white wall tyres.

Next around our arena is an A model hot rod fitted with period SV V8 and obligatory white wall tyres. Behind that is more austere Ford pickup truck with plain tyres. Len Brighton

As an aside during my years at Holden every time we got a new American Managing Direction the first mark he tried to make was get white wall tyres on Holdens Yuk! Warwick



← *A classic dirt track car of the mid 60's with its cut down body.*

It is fitted with a roll cage, flathead V8 with its after market high compression aluminium cylinder heads, and cart front springs instead of single transverse leaf spring.

This brought back memories for Warwick of paddock bombs and the Wangaratta dirt track in the 1960s when, to encourage spectacular driving you would get 5 pounds if you rolled over! Len Brighton photo.



Overhead Valve Conversions

A simple overhead inlet valve conversion for the period was this Riley aftermarket head on an A model Ford engine. The side inlet valves are removed and pushrods fitted to actuate rockers and dual inlet valves per cylinder. The side exhaust valves are retained.

The V8 was not left out

← either with this

monstrous Ardun Overhead Valve Hemi head kit available. I gather, despite their dreamer value they were expensive and unreliable in their day so only made in very limit numbers. These days they are regarded as the ultimate flathead retro conversion and such is the demand they are being made again, this time with the problems sorted out.

Members Displays To for fill the obligation of members to display their on site artefacts to our visitors Warwick had his Chev out but not being a Ford and being Over head valve he was a bit worried it would not meet the show criteria. Never mind though the problem was solved by displaying it carrying a dead Fathead ford V8 engine block.



← *With the heads off the side valves can be clearly seen.*



At least the Bren gun carrier qualified having a military flat head Ford engine .

In fact the whole carrier was built by Ford at Homebush NSW during the war . Actually many Jeeps and Blitz trucks also used flathead Ford engines hopefully we will have a few of these next year .

MSTEC member Borg Sorenson and his helpers got out a couple of their mobile exhibits and steamed them up to the delight of the Ford visitors



they could be arranged for the engines to fire evenly in turn . Brakes and engine cooling were a challenge but eventually ingenious solutions that did the job was arrived at. The original car was remarkably competitive and raced with considerable success in a variety of hill climbs and sprints around South Australia in the early 1950's . Occasionally visiting Victoria in particular Fishermans Bend and even to Western Australia in 1951 for their Australian Grand Prix meeting .

Eldrid eventually moved on to more modern cars and running his business, including making hot up supercharger kits for Holden's, so the Double Eight was sold to a Western Australia n who campaigned it for a while with limited success eventually being scrapped in 1958 .



The Show Stopper was Darren Visser's recreation of Eldrid Norman's grand prix racer the Double Eight .

Built in a era just after the war when there was a great shortage of cars and everything , dealing in army surplus he cobbled up a racing car with what ever he could get . It was based on a Dodge weapons carrier chassis with bodywork on a tubular frame and aluminium panels from scrap aircraft. Power came from two Ford Mercury 239ci flathead V8 engines for a total capacity of 7,800cc. These engines were good for 100-110bhp each so when run in tandem gave Eldred some 200bhp and a top speed approaching 120 MPH . The engines were coupled flywheel-to-crank snout with a four-row chain flexible coupling . Darren used couplings with 16 teeth so



Now we have got Darren Visser to thank for his fantastic reproduction built in the true spirit of Eldrid himself.

Thanks for bringing it along it was literally the Show Stopper with everyone galloping across every time he fired it up .

What a wonderful day at the Steam Centre for Flathead Ford car owners , the visiting public and MSTEC members . Long may this type of event continue.

Warwick Bryce with Acknowledgements to Len Brighton , Darren Visser and reports on the internet .



Saving E1

By John Belfield

**This was the first Australian Cruiser tank ever built and classified as an experimental
Prototype E1 and would be known as a “Sentinel”**

It was WWII and we were at war with the Germans. There was a great feeling of urgency in Australia that we needed to be able to defend our country. The Japanese threat was looming and we needed tanks. All we had was 10 light tanks and 4 mediums, all obsolete and well used. By 1940 plans were underway to build an Australian Cruiser tank in quantity. Weight 25 tons with minimum armament of 40 mm main armament and 2 machine guns.

Australian industry was in its infancy and many problems had to be overcome. One solution was to send Bob Chamberlain (of later tractor fame) to the USA to study tank manufacture. Eventually it was decided to use the best and tried methods of the American M3 Grant tank with suitable modifications to suit Australian conditions and manufacturing capabilities.

Manufacture got underway in 1940 and it was decided to cast the armour, sides, top, turret and axle housing in separate pieces then machine the faces and bolt and rivet them together. This was completed and assembled in late 1941 at the same time as the Japanese treacherously bombed Pearl Harbour on 7th December - so we were at War and our homeland was in danger! This was proven in 9 weeks' time as the Japs bombed Darwin killing thousands of people and later bombing Broome and Townsville.

By mid-1941 the hull of E1 was successfully cast in 6 pieces by Bradford Kendal. However because of the easy success of casting even before E1 was finished, they were able to upgrade their methods and managed a world first to cast all of the hull in one piece. This was an amazing accomplishment for Australia and paved the way for easy manufacture of the AC1 tank program.

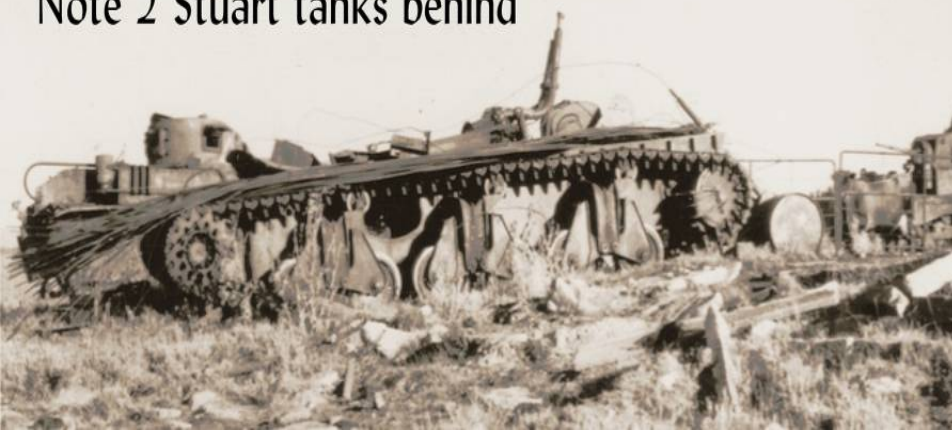
Two more tanks were built as prototypes with a single casting hull and classified as E2 and E3. Manufacturing got into full production and 65 AC1's were built. Later on only 1 AC3 was built mounting an Australian made 25 PDR. Later on experiments to mount an Australian 17 PDR was conducted on E1 (see photos). This tank would then be classified AC4 and would have been as good as the M4 Sherman Firefly mounting the 17 PDR. However as the might of the USA manufacturing ability got underway we started receiving enough M3 grants and M3 Stuarts to defend Australia and so the manufacture of Australian Cruiser tanks was terminated.

So to get back to “Saving E1”. My first military vehicle was a Welbike in 1948 and I have been collecting ever since. The collection was formalised in 1993 when Pat and I opened the Melbourne Tank Museum in Narre Warren, Victoria.

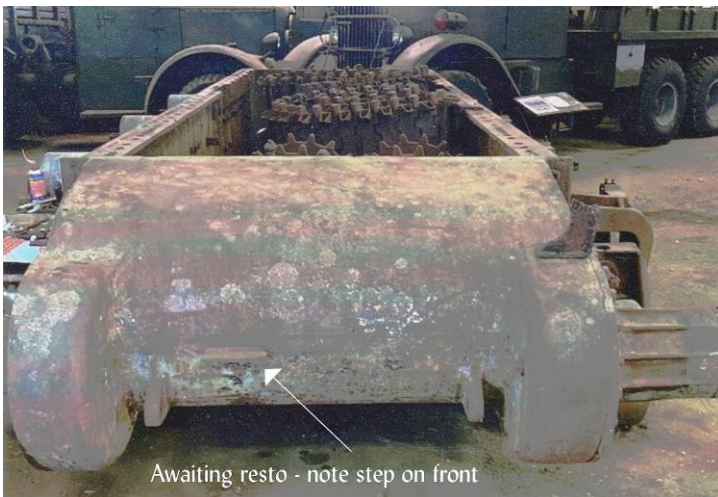
After the war there were a lot of tanks and lots of other military vehicles being sold cheaply at government disposal sales. On a very limited budget we did a lot of searching on farms for tanks that farmers had bought cheaply to make into tractors and bulldozers.

There was a farm south of Drouin where we found a virtual gold mine of tanks and other military treasures just lying around waiting for someone crazy like me to rescue them.

Note 2 Stuart tanks behind



From memory going back to the 70's there were 3 x Matilda's, 2 x M3 Stuarts and lots of other interesting relics including a cut down Australian Cruiser Tank E1. The turret and top armour was missing together with the engines and steel tracks.



It seemed worth saving so a deal was made with the farmer and the remains of E1 came home to Narre Warren. At the time I didn't realise the historic significance of this one off beginning of the Australian Cruiser Tank program.

Over the next few years I was extra busy building the tank museum and restoring all the exhibits so E1 just gathered dust (gum leaves actually) and was put up for auction when we sold the museum in 2006. It was a sad day when we

sold up! It was a lifelong work on a very limited budget. Unfortunately we never received any assistance – financial or otherwise. My observation was, and still is, that museums don't make money they just cost money.

E1 sat outside the museum and didn't receive a bid at auction but luckily it didn't go for scrap.

So what next for the hull, transmission and suspension of E1, the first prototype of the AC1 series? Well we dragged it back into the museum building which mainly houses trucks and wreckers. Grace, my granddaughter cleaned out all the gum leaves and moss that had accumulated over the years.

Recently I received Mike Cecil's new book on the “Australian Cruiser Tank Sentinel - The tank that almost was”.

It is a very good book and a huge amount of research has gone into writing this book – Well done Mike!

It has helped to revitalise my passion and enthusiasm for saving Australian Military History! Covid 19 slowed us all up a bit, but I'm now back into the practical side of restoring and saving Military History. Mind you, it's at a much slower rate than when I created the Melbourne Tank Museum. My main excuse these days is the grey hair and 92 birthdays!

So what did we have left of E1? First of all the bottom half of the hull was complete – that is, the two cast sides and rear hull together with the complete transmission less the right hand final drive housing. All six suspension units were there with 12 road wheels, 1 rear idler and 3 only top return idlers.

In stock in our “grave yard” of old Military Vehicles we had 2 original drive sprockets to suit the 6 rolls of original but very rusty original MK5 steel track. We also had spare transmission including number 8001 which was the first of the 65 production AC1's produced.

The original right hand final drive had been used to restore our AC3 that we rebuilt out of a Range Target from Sydney –

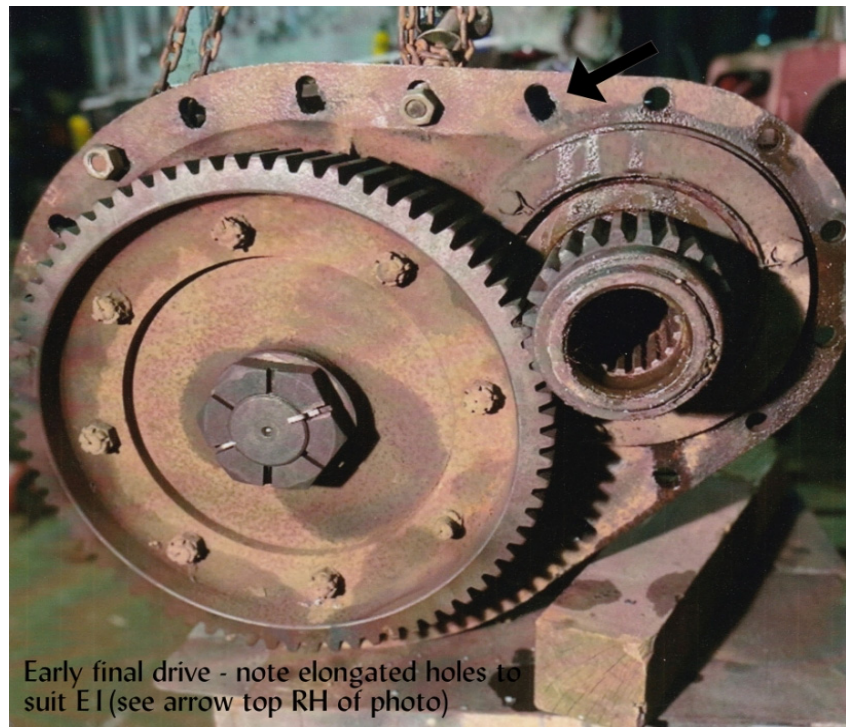
that's another story called “Saving AC3”

This AC3 was on display in our Melbourne Tank Museum standing next to our AC1 8006 “unarmoured”.

The problem of restoring an early final drive took 5 weeks and involved pulling gears and shafts and bearings out of 2 housings and reassembling. Our biggest problem was that the later model housing didn't match the bolt holes in the E1 axle housing. Most holes were about ½ a hole out of alignment and the housing holes had to be elongated to suit. Quite a big job with limited workshop facilities and limited muscle power. The forklift came in handy with a makeshift crane adaption.



Dismantle thicker housing



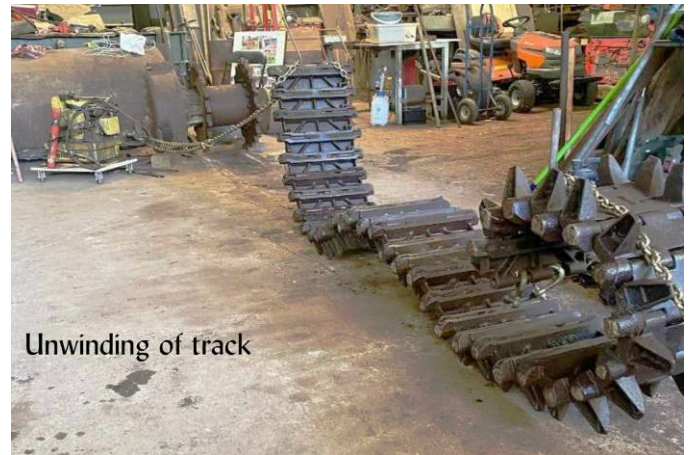
Early final drive - note elongated holes to suit E1 (see arrow top RH of photo)

The biggest challenge (which I love) was to unroll the 14 foot rolls of rusty MK5 track. Presently there are 6 rolls of track – probably rolled up and discarded 50+ years ago. I am soaking the first 3 rolls with diesel and WD40. I have put the original steel track sprocket back onto 8001 transmission which is 3½ tons and chained to my US Marines Autocar U8244T and the 4 post hoist.

Using the 816 Wrecker driven by Dave McCallum to drag the rusty track around the sprocket it is gradually straightening out with the Dodge being the anchor to keep it tight. Also we are using the porta power and chain to get the worst of the stubborn kinks out of it -

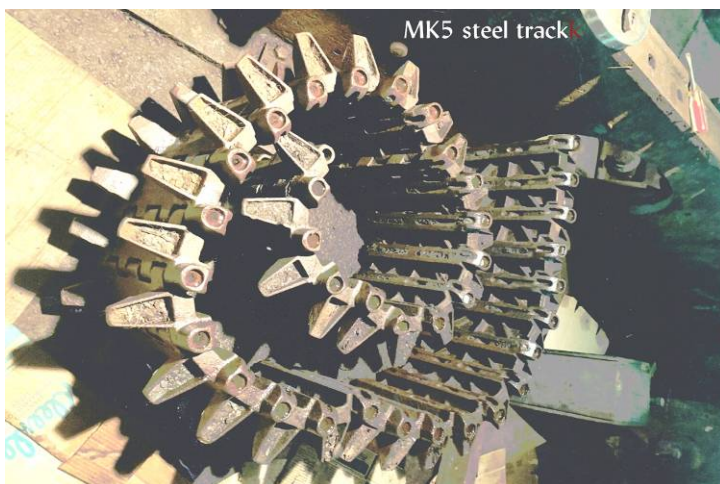
yeah it's a "work in progress"

Eventually the track straightening was completed with 6 straight pieces on the workshop floor ready to be transported to the E1 location in the museum.



Unwinding of track

that the forklift could easily transport it behind the tank road wheels ready to drag it over the sprocket and join up the 3 pieces under the rear idler. Several links had to be removed and a special porta power press was made to press out the track pins which were 7/8" in diameter.



Each section was approximately 14 feet long and now loose and floppy to move so a wooden board was inserted under the track between the guide horns and chained into place so



Track straightened with porta power



Joining heavy steel track really needs a proper pair of track joiners. They probably had them 80 years ago but all that was available here were a couple of short chains and chain dogs and 6 feet of pipe as a “persuader”. Luckily several loose track pins and track links were found and after an awkward job of track joining under the back of the tank the finished job of 2 complete original steel MK5 tracks on E1

looked magnificent and very satisfying after about 5 months of heavy toil.



The 2023 Xmas party for the Victorian Military Vehicle Club coincided with the last track ready to fit so we made it a demo for the 60+ guests and a few photos finished up in our January-February newsletter. So what next for the E1 story?

Mike Cecil's very good book on the “AC1 Sentinel - The tank that almost was” has some marvellous photos of the complete E1 mounting a 25 PDR gun and later a 17 PDR. I am interested to finance and help to make up a replica top in the same way that the Pacific Film Co made up two very authentic Shermans out of two Grant hulls that we sold them in 2008.

I am now making inquiries to find a suitable person or business to convert this rolling E1 Cruiser hull into a complete AC1 prototype E1 Australian tank.

This hull is an important part of Australian Military and Engineering History and needs to be preserved.

E1 was used for all the gunnery upgrade trials. These included firing a single 25 PDR and then later they fired 2 x 25 PDRs to test turret strengths before firing the ultimate which was the best of all the allied anti-tank weapons - the 17 Pounder.

John W Belfield 0400 900 193

Creator of Melbourne Tank Museum



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*Unloading the Cerberus travelling rail
mounded Steam Crane on it's
arrival at Scoreby.*

It is a cute little thing being a curious mixture of our steam shovel and Bigfoot but very much smaller .
It deserves to be loosely reassembled for display but full restoration to working condition is another question .



Trial Fitting the new machinery deck plates to the counterweight which is actually hollow and forms the feed water tank and needs sandblasting internally

STEAM SHOVEL REPORT Nov 2024

Sandblasting After many months of deliberation the job has finally been awarded to a local firm that we expect will start early December. The scope has been considerably expanded from only blasting and priming the critical areas to a full sandblast with painting and top coating of the whole lot. This is inline with the decision to return it to operating condition rather than just assembling it as a static display as was initially intended. This was mostly prompted by the determination of those involved to get it going after discovering it was in far better condition than believed vindicated by the successful freeing up of all mechanisms and operation on compressed air a couple of months ago.

In Preparation for the Sandblaster Laurie Hall has done a wonderful job scrapping off crud from the floor and underside of the machinery deck. The new floor plates have been trial fitted and are ready for the blaster. Still to be done is protecting the machinery from sand by masking with plastic sheet and tape. Any Volunteers? The coal bunker will probably have to be left till later as straightening and patching has been delayed by until just now by acetylene unavailability.



The Next Step after blasting will be fitting of the tracks, Ray Bedford has been busy making a couple of new pins. All the frame work for the cabin has been repaired by Warwick and it is ready to be painted - volunteers wanted. After that it will be fitted to the machinery deck while it is still at ground level.

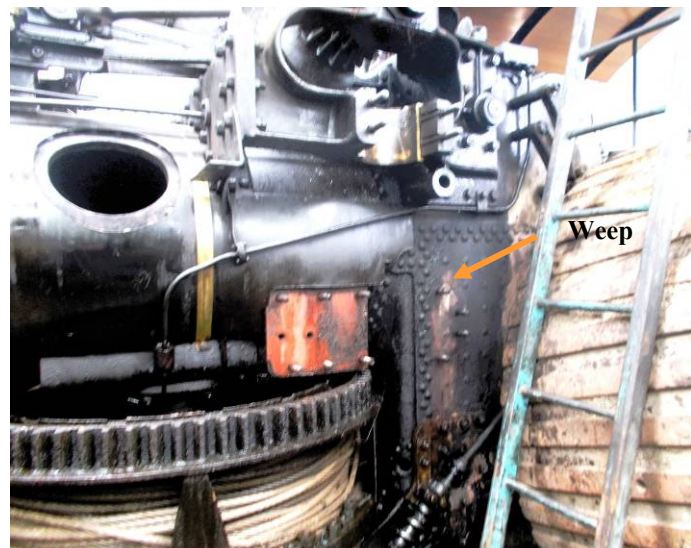
The 2 - do - lists whiteboard has been moved to a conspicuous position in bay 2 for those wanting to help.

At the other end of the scale the boom has been moved from beside shed 12 to the roadway near the loading ramp ready

for sandblasting. It took some highly coordinated manouvering between Membrys 40 t Franna and Aaron on our 10 t Fowler. Warwick Bryce.

Ploughing Engine In Dock The club's Fowler ploughing engine was side lined for the last rally because of a small escape of steam from somewhere behind the winding gear drive mechanism. Despite extensive investigation the exact source could not be identified because that part of the outer firebox is obscured by the bearing housing that supports the vertical shaft running down to the cable drum. After discussion with various people it was obvious the only solution was to remove the flywheel in order to take out the shaft then unbolt it's bearing housing from the side of the boiler. Although sounding rather daunting it was not all that hard with the right heavy lifting gear and spanners.

With the housing off it was obvious the leak was from the tell tale in one of the firebox stays. I understand this and several of it's neighbours will need replacing, obviously not an overnight job!



Lake Goldsmith Rally was a beaut with some of the best weather for a long time .

The only concern was a change Saturday evening with strong wind gusts which lead one trader to remark he thought his motor home was about to blow away. Anyway the storm soon abated but not before one was remarked "well what did you expect after all it is a Windy - by - go" (Winnebago) !

Quite a few MSTEC members took the opportunity to come down, perhaps as a result of word getting around about Brian Smith's sheds monster garage sale .

The late Brian Smith's shed 80 located centrally beside the lake .

Sorting through the Topographical site plans Brian prepared after the flood it has just been discovered that he has named it

"Lesser Lake Goldsmith." Lets hope it stays that way



Still truckloads of bargains that have to go , truck included !

One of the most fascinating is a Mechanical computer that users the punch card system for automatic Verification , Tabulation and Interpolation whatever that is ! .

Made by Powers -Samas Accounting Machines , an old firm that goes back to go at least 1915 . They played a roll in code breaking during WW2 before merging with British Tabulating Machine company .

These machines detect holes punched in cards mechanically unlike IBM who did it electrically. Pins connected to linkages drop through round holes in the card and activate various parts of the machine to initiate the desired calculations.

Included are a number of these card reader network

Apparently setting up a machine involved building a suitable network of linkages requiring soldering up rods in the right order to send the data on the card to the right part of the machine that does the required calculation.

There appears to be individual machines in the collection for Automatic verification , Tabulation , Sorting and Interpolation . A good ute load in fact.



Looking around the grounds it was apparent what a lot of effort has been put in recently making buildings and displays second to none .



The Sunshine Shed 19 with its Fine row of large engines , well presented , permanently mounted and all running got plenty of admirers .



These ← large engines can be viewed close up and safely from outside the shed through fold out shutters . These are designed to hinge out and up so form a skillion veranda when open not only providing an unimpeded view but provide shelter for the viewers should it be drizzly .

Another approach to display sheds , particularly those with lesser space , is to move smaller mobile engines out the front and display them behind suitable fencing
Shed 2 had a McDonald 2 ton footpath roller similar to MSTEC's and an extensive lawn mower collection on display .

Another display in their own right are the living vans , particularly if they have a camp fire and a couple of engines in steam out the front .

A Steam camp with exhibitors in residence can certainly make an interesting display



Well established sheds like Ron and Linda Harris (shed 10) have gone to much trouble to create dioramas inside . Much time can be spent seeing what you can spot particularly in relation to Ronaldson and Tippet products.

Of course another one of Goldsmith secrets is that in addition to displays there are always plenty of interesting activities of all sorts going on .

Something that was attracting plenty of attention was Warren Harris's (TANGYE Shed 12) team of valued helpers beavering away on a large recalcitrant Coulson engine that was refusing to start.

This 10 hp lamp start oil engine up until now had been a very reliable runner for many years . Suspicion eventually turned to something wrong internally . As a last resort the piston was withdrawn and all revealed . Piston and rings all gummed up with deposits resembling Bakelite that refused to be dissolved away . Obviously it was kerosene that had polymerized on contact with hot surfaces which could only be got off by manual scrapping .

Later in the day it was triumphantly announced that once back together it started straight away .



There is no doubt that the diverse range of items on display , the innovative way they are presented and the fact that there is always someone around just busting to tell you all about their pride and joy is what distinguishes Goldsmith from many conventional museums with their static displays . A hard act to follow ! Warwick