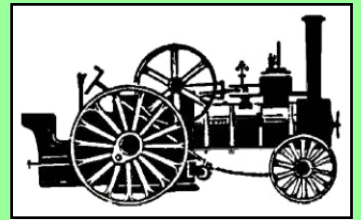


# A Wisp of

# STEAM SUPREME

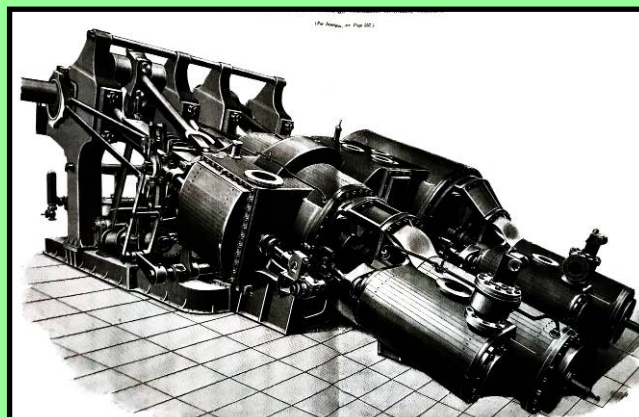


Extracts from the  
Melbourne Steam Traction  
Engine Club's Newsletter



Brass T model Ford  
with acetylene lights  
about 1915 at Flathead  
Ford day

*Flat Head Ford Festival*



Managing Volunteers

Sorento's Steamers

HEBCO Lathe



*Clive Windley of our Vintage Workshop has been at it again bringing back from the brink of oblivion a piece of local engineering history . In this case a little production HebcO Lathe that arrived in a very derelict state after Darryl Killingsworth rescued it in the nick of time .*

*Here is Clive's story on it's restoration and the background of its maker who is just up the road from us and still in business now in the 3 rd generation of the family.*

The lathe was donated to the Club by member Darryl . It had been under a pine tree in a paddock for many years was rusted and locked solid. There was no motor with it . It has now been repaired and restored by the Clubs Vintage Workshop ( read Clive Windley ) . An electric motor has been put on it for display purposes only . It is 1/4 HP and nowhere near strong enough to drive it under working load.

Clive tracked down the old HebcO company in the Melbourne suburb of Vermont and spoke to the 3 rd generation Brehaut family member Rodger who is running the company and he told me they moved from the Mont Albert / Box Hill area about 25 years ago and in the process disgarded much information on the products they used to produce. He had no idea HebcO ever made a lathe but did linishers and grinders. Clive showed him a picture of it unrestored and now restored and was most interested to see something he had no knowledge of.

The lathe has peculiar attributes. The carriage moves only one and a quarter inches and that is by the operator standing at the right hand end and pulling and pushing. There is a cross slide mounted on this that moves in and out via a cog engaging with a very short rack It has front and rear toolposts . The work is held by collets and the collet spindle is driven by vee belts from a countershaft. The range of speeds is extremely limited by pulleys inside the headstock. *obviously not intended to be regularly changed.* Center height over the saddle is only



▲ *The Lathe as delivered by Darryl  
See SS Dec 2022 Pic 2*



◀ *Clive returning the lathe after restoring it at home with the appropriate permission . Pic 3* →

two and a half inches ( 63 mm ) and over the tool post only one and three quarter inches ( 45 mm ) . The capacity of the Headstock Spindle is only small with the largest collet 5/8 inch ( 16 ) mm .

The pneumatic ram on the back of the headstock applies a break to the spindle . ( *obvious in the unrestored pic* )

Clive goes on to wonder what a lathe with such limited capability would be used for as it seems only capable of handling operations such as parting off , facing off , grooving or knurling on small diameter short work .

Adding to the intrigue on the name plate attached to the headstock under Type appear the letters S P L . It is believed this stands for Special Purpose Lathe. If anyone has any information Clive would be happy to hear and will amend his display information board accordingly . He can be contacted on 0409-933-871 or email candgwin2@gmail.com

Clive has done a bit of internet research on HEBCO and visited H.E.Brehaut's current premises at Vermont and advises that in 1934 Herbert Edward Brehaut founded the company . In 1972 his son John took over running the company till 2010 when Rodger took over putting it in the hands of the 3 rd generation . Over the 90 year history the company has been able to adapt to manufacturing challengers and new markets and products. Quite an unusual achievement

During WW 11 they were a key supplier to the Army and Airforce manufacturing goods such as Ammo boxes , bomb tails and detonator caps. After the war they expanded into electric motors becoming a major

supplier as well as integrating their motors into a range of HebcO products including grinders and finishers .



**HEBCO 24 "pedastal grinder from 1960 Mcpherson's cateloge**

**The HEBCO linisher in the Diesel Section . A very handy piece of kit**

In the early 80's they started a close business relationship with Amarillo in Texas supplying a range of their farm irrigation pumps that is still continuing today. Acknowledgements to Clive Windley

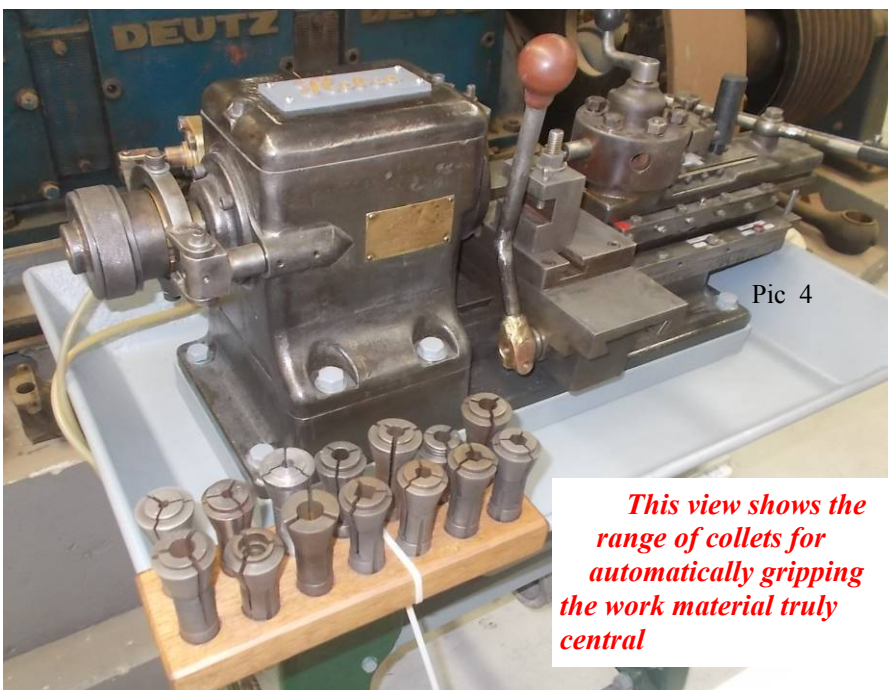
**Some comments from your Editor** Looking at our HEBCO it is obviously a small turret lathes specifically designed for large volume production of a specific simple part as Clive suspects . This is evident from its small work dia which means it does not need a large range of speeds and the very short bed with fixed saddle means no cylindrical turning was required. The pneumatic cylinders are to operate the spindle clutch and brake allowing it to stop and start quickly as each work piece is finished. There should be a mechanism to open and shut the collets automatically to load and unload the work at the end of each cycle. The turret would usually have various tools to shape the end of the work such as centering , chamfering doming and a stop to position the work as it is loaded. Cross slide , with no provision for travel along the bed would only be able to groove , knurl and part off.

Operation would be manual with the red handle Pic 1 moving the cross slide full in and full out against adjustable stops that can be seen Pic 2 . The right hand horizontal handle Pic 1 would move the turret into the work against preset stops . Retracting it would rotate the turret indexing it around for the next operation .

From the rigid construction and stylish castings it is obviously a quality machine of the type used in the automotive or ordnance industry for very high volume. Just spare a thought for the operator manipulating these levers all day long possibly for years ! The next development was automatic operation through various cams and then CNC machines that allow unattended operation right through the night.

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**This view shows the range of collets for automatically gripping the work material truly central**

This little lathe , made all those years ago just up the road , is a statement of our industrial heritage and deserves it's place in our Vintage Workshop display . Thank you Clive and Darryl. Acknowledgement Rodger Brehaut

# Getting the Best out of Our Volunteers

City of Knox is very proud of the support the Community gets from a wide range of volunteer organizations that operate in the municipality . Facilitating this is Officer Sally Dusting – Laird who manages the council’s Volunteer Resource Centre that operates a free referral service to match potential volunteers skills and interests with the various needs of the Not for Profit Organizations in the municipality who rely on volunteers to provide services to the community.

Another core function is providing training for leaders of these volunteers. So far I get the impression that most of the organizations seeking support have been primarily aimed at managing volunteers to help members of the community who are less fortunate such as visiting old peoples homes and distributing meals etc i.e. warm and fuzzy things where our members are mostly dealing with physical things but they are still volunteers and make Knox a better place to live in or visit.

When you stop and think about it the MSTEC probably has one of the highest numbers of active volunteers around and of course we are a Not for Profit Organization so meet that criterion. As for our function while to us it may be wire brushing and painting our ever increasing number of visitor is evidence that our efforts are bringing a lot of pleasure to people while adding amenity to the municipality with our regular visits from public and kindred groups. From the way Knox has been very kind to us with many small grants over the years for picnic table, miniature railway carriages etc I guess they have realized the good we are doing for some time . We have just been too close to see it .

The end result we were invited to take part in a training session on managing volunteers and Neil and Myself were lucky enough to get a place.

## RECRUITING , RETRAINING AND RETAINING Volunteers

Following is my take on the key points of Sally’s presentation that are obviously applicable to our type of volunteering as well.

*My comments will be in italics*

**What is Volunteering** Time willingly giving without financial gain for the common good .

*Thinking about it the majority of our members would be volunteers some of the time . If you are down at the museum grounds and restoring a piece of machinery obviously you are a volunteer but it extends to mowing the grass , stocking the fridge with icecreams and even showing visitors around our museums or enjoying yourself demonstrating a roller on a RunDay. This can even extend to time spent at home doing Committee work running the club or even 25 hours a month writing this newsletter.*

*Almost all we do apart from sitting down talking or working on our own projects fits this definition .*

## Statistics of Knox Volunteers

About half are under the age of 35 and again about half have been to university and about 2/3 are female . *This is in sharp contrast to our members which are much older and mostly male .*

Their reason for volunteering includes to help others, get social interaction , to make a difference and as a step up to getting employment .

*Despite the age difference the reasons for volunteering are very similar to ours apart from a job pathway .*

## Volunteers Function

Have a Meaningful role in contributing to an organizations purpose and objectives *not motivated by pay .*

Recruitment and selection strategy is needed that meets the needs of the organization and potential volunteer

Support and Development The volunteers need to understand their roles and gain the skills and get feedback to be effective and safe.

## Why do People Volunteer ?

Support Person objectives *i.e. drive a steam roller*

Provides a Social network *i.e. a good way to make friends*

Satisfy a sense of purpose and empowerment *i.e. telling other what to do .*

Pathway to paid work ( looks good on resume )

Develop new skills

*Way of keeping fit through outside and exercise.*

## What is in it for Them ?

Make me feel better about myself through

- Satisfaction of helping others

- *Pleasure from reliving the past .*

Continued



**Sally from City of Knox**



**Bill doing volunteer lathe work (worth \$90 / hour)**



**Peter Morris , Bill Dzenko and Dean Stewart socializing at a club BBQ**

- Making a difference for the better of others

## STRATEGIES for RECRUITING VOLUNTEER

Contact City of Knox for support and useful contacts of prospective volunteers.

Need to ask ourselves

- Why do we need volunteers
- Why would people want to volunteer for us ? No one will volunteer without having an idea why them taking part will make a difference

## Get the Message Out There through

Notice in Knox Community Space at Westfield

Social media

Websites

Local media

- Newsletters
- Flyers
- Radio



You need a Catchy Ad ... Not this: .... "We are desperate for volunteers"

- Have an Engaging title
- Describe the task they will be doing and keep it succinct. DON'T: Use the word 'volunteer' in your title, instead
- Try descriptive words like changemaker, specialist, enthusiast, coordinator, guide or lead

Contact Organizations / business that are already supporting you .

Word of Mouth It is generally accept about 2/3 of people get involved because some one they know asked them

## Barriers Potential Volunteers may come up Against

- Candidates do not see how it would use their skills and knowledge
- Regulatory barriers , police checks , insurance , working with children, under 18s now (*Rapidly getting harder* )
- Unable to make long term commitments
- Health problems
- No one ever asked them

*We need to come up with strategies for mitigating these barriers*



## RETENTION

Now we have got them we have to retain them (*biggest problem we have got, people come a few times and if not driving a steam roller in a few weeks loose interest* }

1/ **Induction Program** , this sets the volunteer up for success by

- Greater recognition of the persons skills and interest
- Lets them know where they fit in the organization structure ( i.e. who is in charge of their project )
- Minimises the risk of conflict
- Makes them feel valued by the organization
- Make sure everyone has a meaningful role and is allowed to contribute at a level relative to their skills and interests. (*I see this as most important particularly at working bees as this is the main reason they do not come next time " just go and knock some mortar off those bricks by the crusher ! "* )
- Make them aware of the duty of care *Particularly important in our organization where we are involved with demonstrating antique machinery in action .*
- Go through the members hand book with them



*I feel an Induction program is of paramount importance with our organization and is where we differ from most volunteer groups in that we have a lot of rare and irreplaceable artefacts that need careful treatment to keep them safe and avoid damaging them. This is an area we have great scope for improvement .*

Without induction any volunteer organization run the risk of

- Someone getting hurt
- Working with children breaches
- Poor volunteer satisfaction and retention
- Weakening of our brand name and reputation

Continued



*Volunteer Base at Westfield*

- Getting rare and irreplaceable historical artefacts destroyed
- Conflicts and breaches about our procedures to protect club property

## 2/ Volunteer Recognition

First there are a number of **No Cost Ways** such as

- Say Thank You
- Acknowledge contribution in the *Newsletter* ( I try to do this with pictures and names , could do with a bit more help for *Around the Club* submissions as I do not get to see everything done )
- Volunteer Profiles in News Letter or club web sites ( happy to put them in *Steam Supreme* if someone gives me the info )
- Share positive Comments from members and visitors ( I actually get quite a lot and will keep them in mind for the newsletter, also good material for Prez Cez )

### Low Cost Ways

- Name Badges ( we have got these maybe they should be worn more often and have some tile on it i.e. **Dean Stewart , Grounds man** )
- Nominate members for community awards , honours etc
- Certificates , length of service etc ( we have got *Life Membership* but have been remiss in that 2 have been unallocated for many years . This is now being rectified but not that straight forward as it requires a rule change )

### Ways that Need a Budget

- Provide uniforms or tee shirts
- Functions celebrations high profile speakers ( probably not for us )

Anyway I found this a very interesting and thought provoking session with many ways we can get the most out of our members by recognizing them as Volunteers.

Sally ended the session with the following top tips Read them and think about how we can improve .



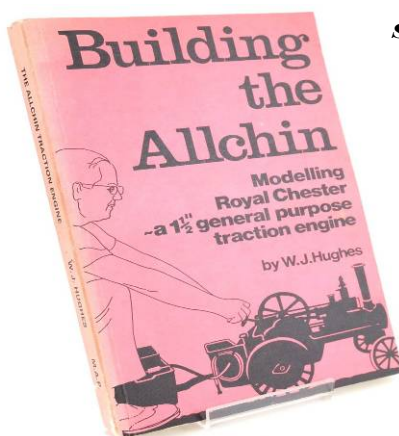
*Loco REG in recognition of Reg's contribution*

## To summarise – top tips

- Think about making your organisation or events family friendly
- Tap into interests and passions in your marketing campaigns
- Make it easy for people to register
- Have procedures for registering volunteers and maintaining accurate records
- Consider how you will carry out induction, training and safety briefings
- Make sure everyone has a meaningful role and contributes at a level that is appropriate to their skills, interests and abilities
- Make sure volunteers know how to contact their supervisor or support person
- Think of ways to acknowledge their contribution
- Ensure that volunteers have an enjoyable and satisfying experience!



*Acknowledgements to City of Knox and Sally Dustings—Laird for such a wonderful and thought provoking seminar.*



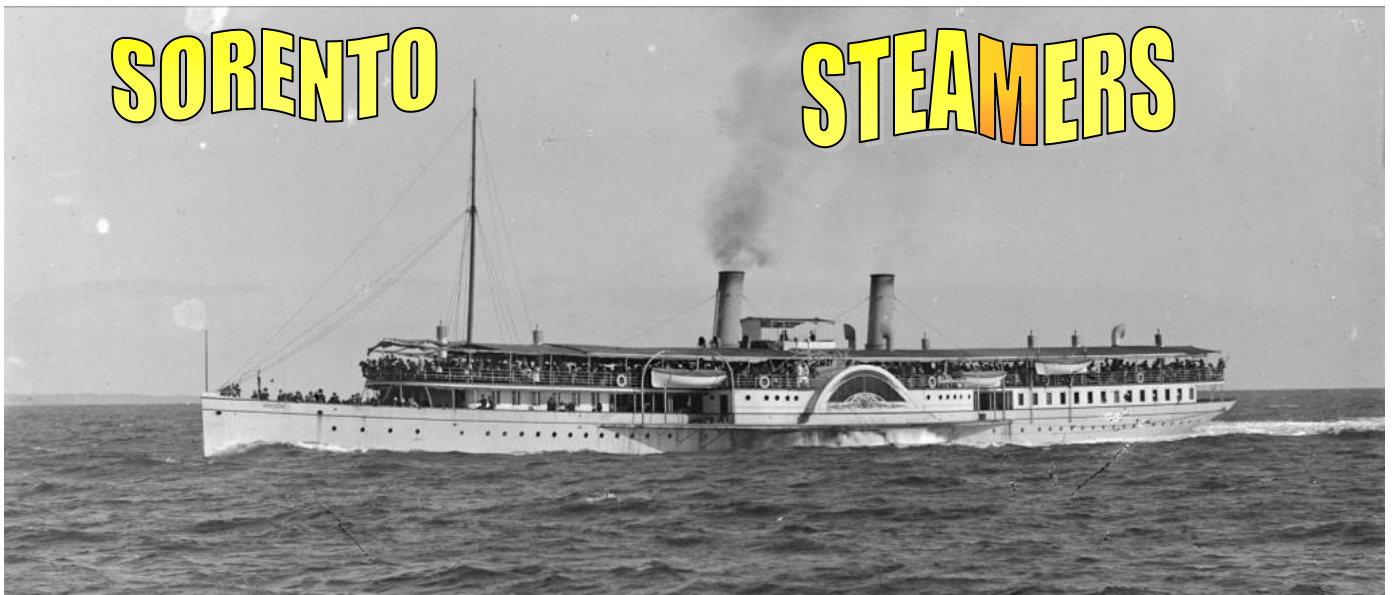
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## Allchin Book Wanted

After seeing last months feature article on the donated model Allchin traction engine and the mention of a book coverings its details and construction Rohan Lamb thought it would be nice to have one for our club's archives . He asks does anyone have a copy they would be prepared to donate to the club .

Its title is "[Building the Allchin](#)" by W. J. Hughes.

If not we will just have to wait in hope that one turns up cheaply somewhere.



*The Paddle steamer Hygeia was built in Scotland in 1890 and steamed to Melbourne where she worked regular trips to Sorrento, Queenscliff and Mornington before being retired and scuttled off Port Phillip Heads in 1931.*

## Sorrento's Steamy Past.

*The historic bayside township of Sorrento built its prosperity on steam power but visitors have to look closely to find signs of this today.*

*By Peter Lynch*

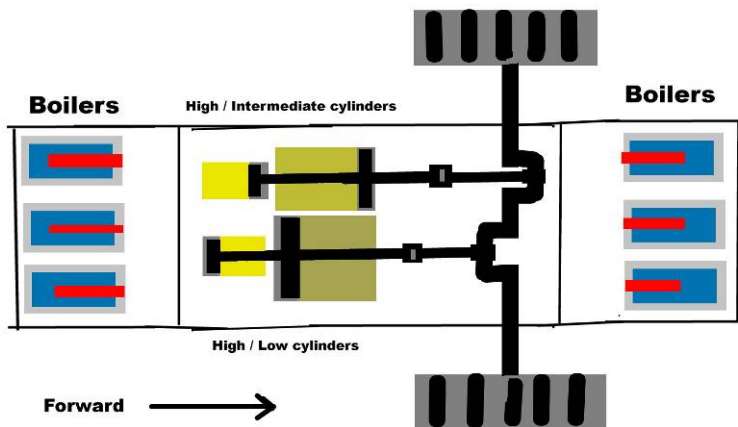
A settlement was briefly established here in 1803 and the area became popular with wealthy Melbournians from 1870 onwards with upmarket holiday homes and fine hotels built from local limestone. Initial access was by sea as there was no rail connection and a limited road network.

Local entrepreneur George Coppin saw the potential of Sorrento as a resort for the working people of Melbourne and new purpose built steamships such as the Ozone, Hygeia and Weerona provided the economical means of transport. These were large, well appointed and fast side paddle wheelers carrying up to 2000 passengers and capable of the 60km trip from Port Melbourne in less than two hours. Passengers were entertained with onboard bands, dancing, a licensed saloon, a ladies hair dresser and electric lighting.

Although propeller driven ships were then commonplace it seems paddle steamers had advantages in shallow waters and were preferred for Port Phillip Bay excursion traffic.

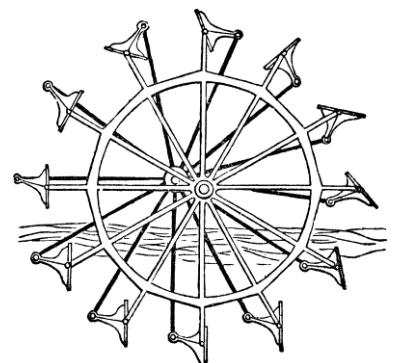


*The Continental Hotel was built in 1875 and still dominates the Sorrento township.*



*Simplified diagram of the Hygeia's four cylinder triple expansion steam engine with a tandem throw crankshaft directly driving the paddle wheels. The two high pressure cylinders were assisted by an intermediate and low pressure cylinder respectively. They were mounted lower than the crankshaft and inclined up to meet it.*

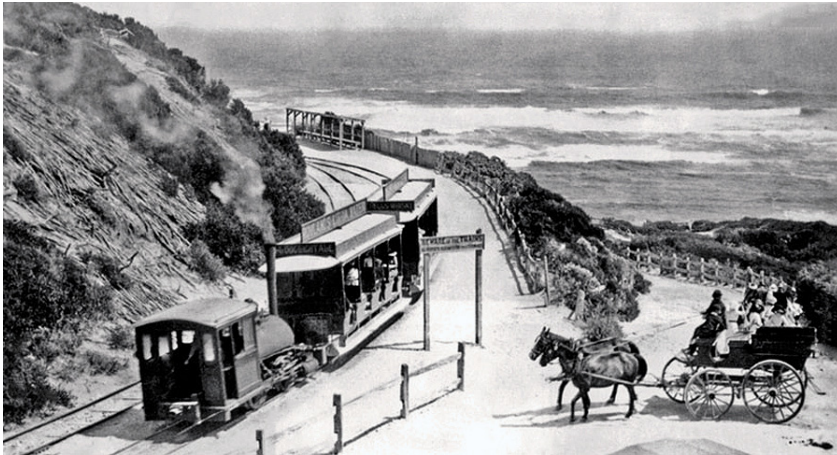
*Feathering paddle blades were also used to improve efficiency. A linkage system kept each blade at right angles to the water surface while it was underwater to reduce lost*



*effort from slapping the water on entry and lifting water out on exit. Particularly importance with heavily loaded ships putting wheels too deep in the water as in pic 1*

*Steam was provided by six Navy type boilers, three forward and three aft, operating at 140 psi with the stokeholds being pressurised for better combustion.*

The Sorrento back beach became popular with day trippers and in 1890 Coppin built a two kilometre long tramway to provide access. A horse tram was used initially with two Baldwin 040 Saddle tank steam locomotives each pulling three passenger carriages



during busy periods. The tramway started just uphill from the Sorrento pier and ran along Ocean Beach Road to a terminus above the back beach. It was double tracked throughout and built to 1067mm gauge. Competition from road vehicles reduced viability after WW I and the tramway closed altogether in 1921.



*One of the Baldwin locomotives and carriages at the Sorrento back beach. Horse drawn cabs as seen, operated in competition with the tramway.*

A steam tram travelled along Ocean Beach Road Sorrento. Upon closure the locomotives were sold to a timber mill near Noojee.



*The original tramway station in Sorrento has been restored and some track laid. An iron pedestrian bridge once connected this with the pier*

Photos by Peter Lynch, State Library Victoria , Roses Postcards , info Engineering Magazine UK

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MSTEC just received the donation of a recently published book published in Japan titled *A Pictorial History of Construction Machinery of the World* by Satoshi Ohkawa. The author approached the club in September 2020 seeking photos of the

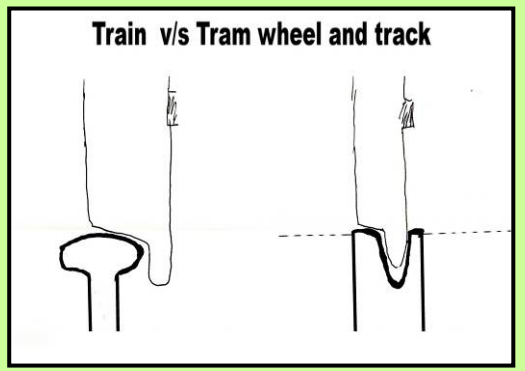
dragline with a brief history and photos supplied by the club historian, Rohan Lamb. The book was published in December 2021. Due to delays due to Covid, it was to be 2023 before we received a copy in thanks for our assistance. The book is written in Japanese, however Satoshi provided an English translation.



### SIDEBAR Tram or Train.

Some contemporary reports refer to this service as a steam railway and that divide between tram and train can be contentious. In technical terms a tramway wheel runs in grooved track whereas a railway wheel runs solely with its flange on the rail head. However engineering logic was sometimes overridden by political waffle where the Railway Authority had sole rights to build railways and the Tramway Authority for tramways.

For example, the Victorian Railways were coerced into building an 'Electric Street Railway' between St Kilda and Brighton in 1906 as the Tramway Board felt the line would not be financially viable. Technically the VR trams were similar to M&MTB units however they ran on broad (1600mm) rather than standard (1435mm) gauge. In outback NSW, the mining boom town of Broken Hill desperately needed a rail connection to port and the obvious way was to connect to the South Australia network at Cockburn. However the NSW rail authorities would not accept another State running railways into NSW. The problem was solved in 1886 by naming the contentious 58km mainline section the 'Silverton Tramway' and having it operated by a private company. DRAWING - Tram v/s Train wheels Both types normally carry their weight on the wheel rim.



However the groove of the outer tramway rail can be made shallower in a tight curve making the wheel run on its flange, increasing the effective diameter and reducing wheel scrub.



# Around the Club



Aaron stirring things up with his MECALAC



Brenton and John Mills lighting up

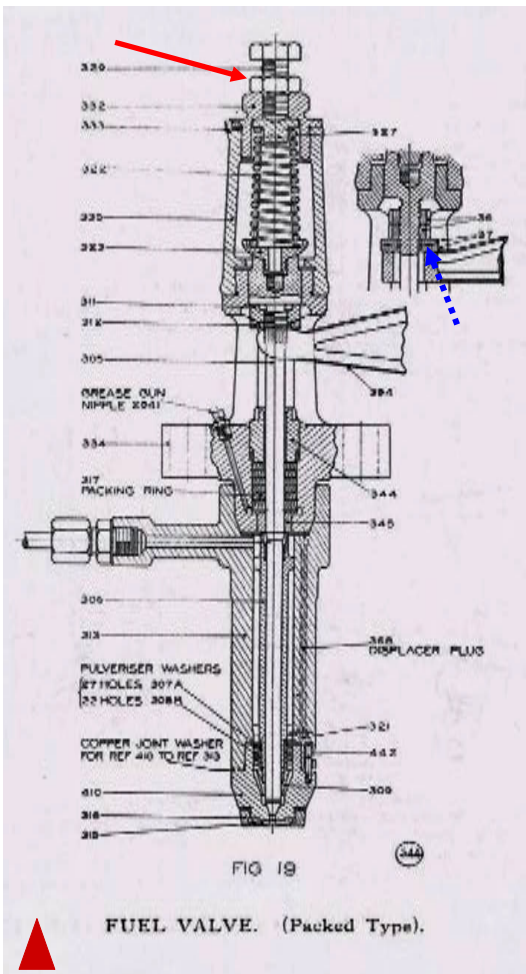


## Burn Pile

A number of members, who normally have to work, took advantage of the Footbrawl Friday holiday to deal with the pile of prunings up the Top Paddock . The timing is important, too early and they are too wet and if left too long the grass is dry and fire restrictions come in . Last year we missed out the burn so there was a considerable accumulation. This year we were lucky as couple of warm sunny weeks had them dried out enough to combust before the next spell of wet weather set in . Those involved included Peter and Aaron Morris , Brenton, John Mills, Craig Jackson and Warwick.

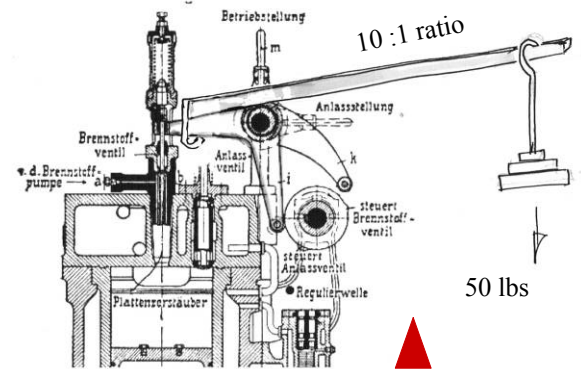
## Willans Tweaking

While it is now mechanically in good order we are finding it challenging to get it to run equally on all 3 cylinders. This is manifesting itself as exhaust smoke and uneven exhaust temperature between cylinders. Suspicion has fallen on the fuel valves ( injectors ) which have always been the stumbling block on Air Blast engines . They are basically a long needle valve held tightly shut by a very strong spring . A small quantity of fuel is delivered behind the needle . At the top of compression the camshaft lifts the needle slightly allowing highly compressed and turbulent air to blast the fuel out of the body and into the cylinder in a highly pulverized state . As it mingles with the air in the cylinder , now hot from being compressed it catches fire . Fuel delivery continues against the pressure of combustion until the quantity of fuel appropriate to the load has been delivered . ie Combustion at Constant Pressure, the crux of the Diesel Cycle. Problem is as load varies fuel quantity and blast pressure ( 520 to 920 psi ) has to be constantly juggled to ensure good combustion .



Fuel valve Cross section . Note adjustable springs Red arrow

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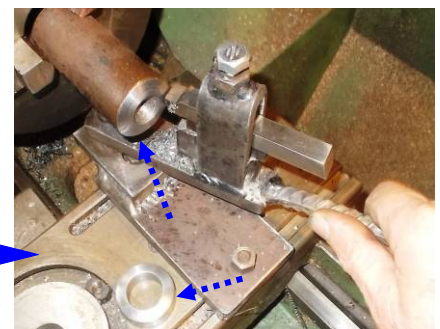


A lever for the fuel valve was made up and load to pop the fuel valve measured . It showed 50 % variation between cylinders and stiction in the packing

I have been in contact with the Burdekin mob with the Walker engine

who have been extremely helpful . They tell me it is especially difficult to get even running at light load because the quantities of fuel being dealt with are so small even to the extent that it is virtually impossible to get these engines to run on all cylinders at no load. Most were converted to solid injection once it was invented .

We have got the good cylinders better but No 3 is still misbehaving , attention is now being turned to compressions .



Turning up spherical washers for the fuel valve rockers to replace those that are missing Blue arrow

**Injector Spring testing** With the large variation between fuel valve opening loads the springs were measured and found OK but installed height was critical. Spacers were made up to get them all the same. All other engines seen have these adjustable.



## A Bridge for the Train

Warwick is making good progress on a fake bridge for our railway. The sides are constructed out of unserviceable pallet racking uprights. Two are joined together and laid on their edges parallel with the track to resemble trusses. The top stringers have been notched and the ends bent down to eliminate sharp edges for anything to catch on. They will sit on 2 cross beams that pass under the rails and covered by ballast to hold the trusses securely in place. The trusses are 3 m apart which is a little out of proportion but makes them well out of reach from the train.



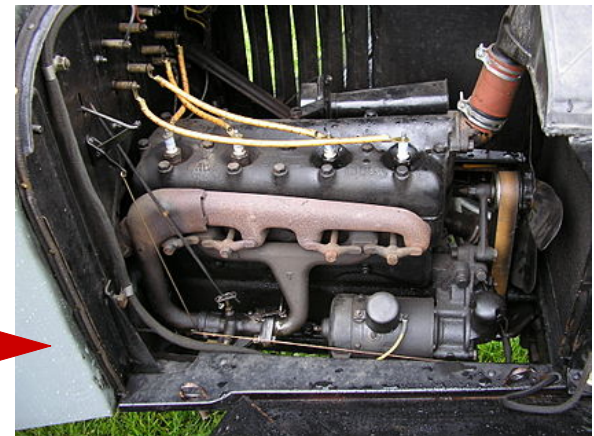
It will be located on the Western boundary embankment about 1/2 way along. It is quite high here so will give train riders the impression of being on a bridge although they are still actually on firm ground. Once a bit more welding is done it will be ready for painting. Lets hear from anyone who can take this on you can pick the colour! Warwick

## Flathead Ford Day at Steam Center

This is always popular because of the diverse range of vehicles that fall into this category. This comes about because flat head is a nick name for a configuration of engine in which the valves are in the block beside the cylinders with the head just a simple cover plate with spark plugs. It is an old fashioned type of engine that is cheap but not much good for power or emissions. Ford used it from the early days right up to the mid 1950's across their range of cars, trucks,

*For comparison Warwick's Chev engine with its rockers and exposed pushrods to actuate it's OverHead Valves. It is 26 hp @ 2000 rpm and goes back to the first Chev in 1913. It is also 2.8 l*

tractors and military vehicles, so this event always has a diverse range of vehicles and owners making for a very interesting day.



*T Model Ford Flat head Side Valve 4 cylinder engine with buzz coil ignition. 20 hp @ 1800 rpm*



*A Rat Rod with its side valve ex Military heavy duty engine was a work in progress. These day it can be a challenge to get new builds on the road.*





*A line up of Ford Coupes from 40's to mid 50's all with side valve V8 engine brought back Hoon memories for Len Brighton.*

**Military Vehicles**

*The Carrier - Machine Gun -Local Pattern 2 was made by Ford Homebush Sydney and uses a Canadian Ford flathead V8 while the Jeep is also Ford with a side valve 4 cylinder engine .*



Note the Gloomy weather but it did not keep the vehicles away but certainly had their owners retreating to our sheds

**S S S S S S S S S S S S S S S S**

**Mr Rosebery**

One of the thrills of the Flathead Ford Festival was getting to meet a gentleman who is none other than the son of Harry Symonds. Harry was a modest man and a real gentleman who took over editing Steam Supreme when it was going through a rough spot and got it back on it's feet. I am sure he was Jo's inspiration to take over when he retired .

Harry's first job after uni was working for Rosebery and is the father of all the vertical engines . He had the full range on display in shed 11 hence the ventilators in the roof to allow them to be run inside .

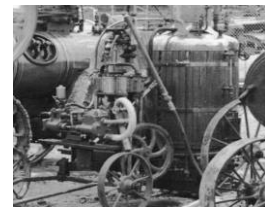
His son still has them all so I took him across to see their old home for old times sake . It made his day !

**S S S S S S S S S S S S S S S S**

**Photo Pheed Back**

It is indeed Stapmanns Merri -Go - Round engine at Echuca in 1990 owned and restored by Sam Marshall . Rohan lamb is putting together a story on it's background so we will look forward to that .

This Rare Ransome wagon is now owned by Sam Marshall's son Phillip who now lives in Melbourne so the wagon resides in the Lockington Heritage Center set up years ago by his father .



Again Suzie Jane at Echuca in 1990 . It came to Scorseby 1n 2003 and was first demonstrated at our 2004 rally .

The recurring name in these photos is the late Sam Marshall . So who is Sam ? A Prominent Steam presevationalist and restorer from Lockington near Echuca and a distant relation to Peter Jackman , not by marriage as some suggested.



So that solves all the mysteries except one !

Who is Suzie Jane ? Perhaps we are better not knowing .

That said It is wonderful what pleasant memories a few old photos can bring back but I suppose that is what they are for .

Thanks to the unknown donator .