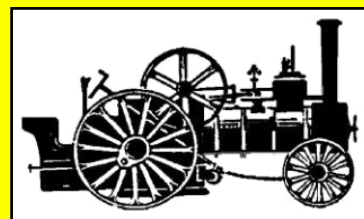


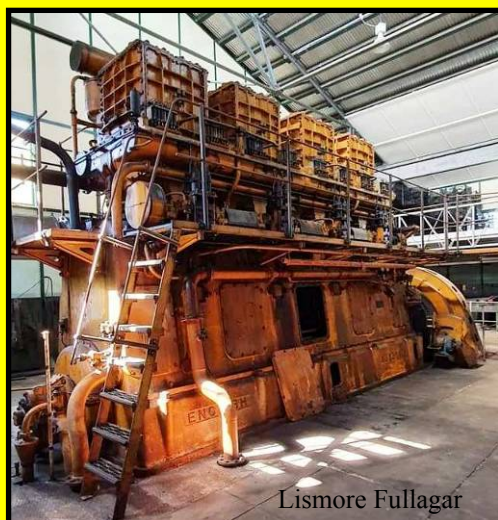
A Wisp of STEAM SUPREME



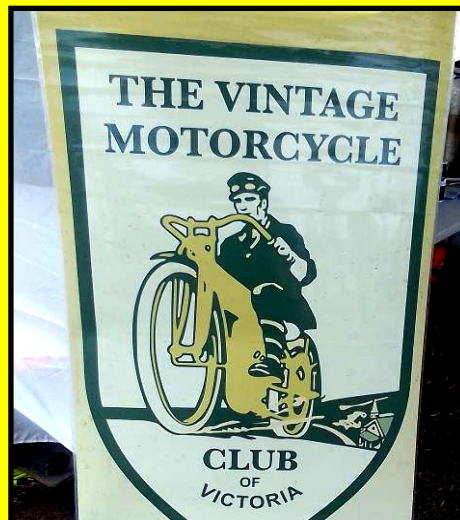
Extracts from the Melbourne Steam Traction Engine Club's News-



Dandenong Valley
Car Show at MSTEC
Photo Len Brighton



Lismore Fullagar



Swap Meet



Brian Smith's Auction

Surviving Fullagars

Online Auctions

We have had this engine for some time now but so far it has defied all efforts to unstick the piston .

The main difficulty was that it has a blind cylinder with only a small opening in the end so there was no real safe way of driving the piston out without the risk of punching a hole in the crown which would render a nice engine just an ornament .

Warwick having had success using hydraulic pressure recently advocated giving it a go but the hurdle was having sturdy closing plates made up to go over the ports and hot bulb aperture to contain the oil as it was pressurized with the aid of the hand pump from the Porta Power .

Fortunately these plates mysteriously turned up over night and before I knew it Ian , Len and Kerri had the piston half way out of the bore where it nipped up big time. With no real way to drive it back in without hammering on the end of the conrod the 50 tonne hydraulic press was pressed into action .



With the protruding end of the piston chocked up on the table of the press gentle pressure on the cylinder from above soon had the piston fully back in the cylinder .

Backing off the press and pumping up the Porta power then had the piston on the way out again easier this time.

The obvious lesson from this is once you get a bit of initial movement of the piston push it back in again . Do this a few times while dousing it in CRC and it is remarkable how quickly it frees up . I guess what happens if you try to push it out in one go the dislodged rust gets wedged between the piston and bore and the further you push the tighter it gets which could end in tears !

Ian and Len demonstrating to Don how the Gardner's congregated linkage works now it turns so freely .

BRIAN SMITH'S CLEARING SALE .

I had never been involved in the setting up of an online auction before and it was quite an experience. What really struck me was the amount of preparation required and how a bit of planning before hand can make it much less of a burden for those lumbered with the task when the time comes to dispose of an estate.

The traditional clearing sale is a thing of the past . It is all on line now and the bidding , once you have registered your details , is done over the internet with a tap on the keyboard without any need to leave your lounge room . What is not seen is the work behind the scenes setting it all up.

Over the years Brian Smith had collected tonnes of treasures , mostly derelict but interesting machinery, and deposited much of it in the open in a paddock near Geelong . On his passing the onus then fell on his friends and the farmer to get rid of it .

This is where online auction specialist *meauctions* of Kyneton came in . *The first step in the process was for us to sort the items into lots and lay them out in a lightly stocked sheep paddock .* →



The auction people after attaching a number to each lot then photograph the item from various directions and write a description for the catalogue . This is a challenge in itself as they did not know what some things actually were or what they belonged to . We spent several days sorting and identifying things as best we could for them.

Actually I had a win , there was a very derelict International Scout , a take off of a Landrover . They came standard with an inline slant 4 cylinder engine which is one side of a V8 . As an option you could get a full V8 .

Anyway the bonnet would not open but crawling underneath it looked to me like an inline 6 and so it was described in the catalogue as such . Well did I cop it ? everyone wanted to tell me they never had a 6 . Hanging around after the sale I spotted the buyer prizing the bonnet open . You should have seen the look on his face when here was an early 6 cylinder Falcon engine looking back at him !

Well in advance of the sale the catalogue goes up on the web site and a day is nominated where a limited inspection is possible . In this case we had over 1400 items so there was no way anyone could inspect it all .

The auction , spread over Sunday afternoon and Monday & Tuesday evenings, then goes online. A prescribed starting bid , often \$20 automatically advancing in \$20 steps as the registered bidder press enter . It is very quick and efficient as there is none of the preamble from the auctioneer and time lost as prospective buyers shuffle from lot to lot .

The winners are notified straight away and pickup is restricted to just a couple of days . A tent office is set up and no one is allowed in till everything is up and running Auctioneers staff , armed with print outs showing lot numbers and items , escort buyers to their lots and tick off each item as possession is taken.

Their vehicle is then allowed in and loading up can start . In this case the vendor provided forklifts and helpers to load This is where I came in .

I doubted how so many lots could be handled in just 2 days but so skilled and obliging was the me team that pretty much everything was gone by the end with just a few things set aside for later pick up by special arrangements.

Of all the lots only 2 people did the wrong thing , one was caught in the act and banned for life and the other is still under investigation .



Two other lots provided a bit of excitement when loading up it was discovered 2 sheets of tin had resident Brown snakes .

Club member John Mills

had a win He often relates how he worked for ANCHOR ENGINEERING in Richmond and was the expert at cutting the 6 tooth drive pinion for one of their line of hand winches . Well I mentioned to him that one was in the sale . Nothing more was said but on the second pickup day here arrives John to collect his prize winch . In all probability one he had a hand , or should I say finger in making . He can still show you the scars .ps a specially distorted tooth form is required when making pinions with a small number of teeth to avoid excessive undercutting .

Steam Shovel Report Now the rally season is nearly over attention is turning back to the Ruston face shovel . Laurie Hall has been busy finishing off the bolting on of the wall sheets and the Blacksmiths have put the final touches to refurbishing the coal Bunker.

Stephen and Ron hand riveted on a new lower edge on to the coal bunker divider in the traditional way .

It is hoped to have the curved roof sheets on as soon as the hook bolts turn up as it wont be long before the weather turns .

Attention needs to turn to the boiler especially since we will be getting the boiler inspector in soon. The first step for this to happen is to form a small team of members who are boiler savvy or would like to become involved to take this on . The person previously involved has moved on and not everyone realizes this was never my part of the shovel deal . Warwick **Stop Press** Timber for the floor has been procured thanks to Lloyds and Goldsmith Sawmill . Weir Feed pump working thanks to Lytteltons





The Lloyds brought their Waterous portable engine to the 2026 rally to show progress on its restoration.

Even though the restoration has some way to go it was an opportunity to show how the Waterous differs in interesting ways from the more traditional portables at the club.

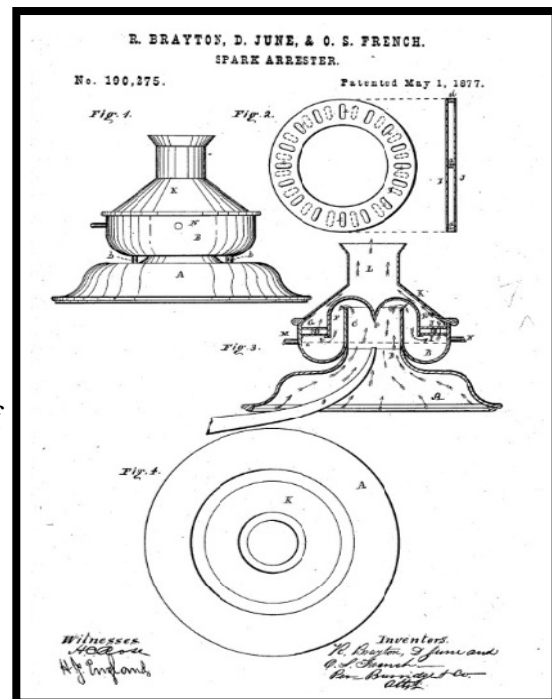
It was made by Waterous in Brantford, Canada, and has several unique features. Most noticeable are the vertical boiler and a distinctive spark arrester.

THE SPARK ARRESTER patent dated 1877 shows how with assistance from the draught pipe the products of combustion are accelerated around a toroidal shaped S bend that throws any sparks into a doughnut shaped trough of water instantly extinguishing them .

The Lloyd's Waterous dates from 1883. These engines were made under license from American engineer D .June who patented the designs in 1877. It is 30 or more years older than the British portables at the club.

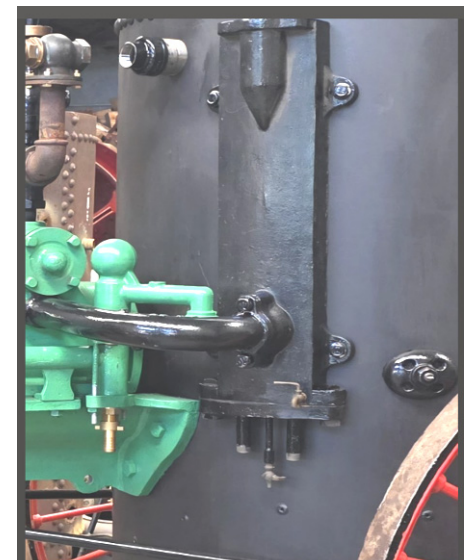
Back in the 1870's when these engines were first produced, the use of steam horsepower, to replace flesh and blood horses, met with resistance because of the fear of sparks causing fires. This was addressed by emphasizing their patented spark arrester.

They were named "Waterous Fireproof Champion" and the spark arrester was heavily promoted.



← The engine's valve gear is unconventional as well being mounted across the top of the engine's cylinder and of a rotary type where the bobbin is rocked back and forth by a rod directly from the eccentric on the crankshaft. The inlet and exhaust cut outs that are covered and uncovered in turn can be seen in the photo .

Feedwater heater on side of boiler
Jo Lloyd →







Ron King

← There are always a few restored bikes on display out near our front gate. Included this time was a 1930 Douglas. Not quite the first series but now with drum brakes and no longer a flat fuel tank but still running the long suffering north south horizontally opposed 350 twin cylinder engine.

As a result our very rare Douglas Military Generating Set that, was still outside from our rally, got a lot of attention from Douglas enthusiasts.



It uses virtually the same engine as the motor bike but with the oil tank built into the sump rather than part of the petrol tank as on the bike. Added to the exposed flywheel are a few blades to assist in cooling the cylinders. It has a Vee belt driven car type generator and regulator mounted to the carry frame which appears to be original. All in a rare and interesting machine in virtually unused condition showing how the motor bike manufacturer could switch over to War production in times of crisis.

Being outside since the rally let's see if we can get irreplaceable artefacts like this under cover a bit sooner next time →

BSA Bantam 2 stroke an entry level bike.

Coming out in 1948 with plunger front forks and an over sprung seat to make up for a rigid frame. The 123 cc 4 bhp engine struggled to pull 45 MPH. By 1957 a 175 cc engine gave an eye watering 57 MPH.

Probably the first bike many people rode. Ron K pic



RAILWAY REPORT thanks to Rob Worland

Steamfest Update on the March report. Now that the figures are all in we see the railway takings contributed about 25% of the Steamfest profit. This is a significant increase on the percentage contribution of about 10 years ago.

Train Shed Tracks No.3 & No.4 The intention of installing the roller doors was to provide for the installation of an extra 2 full lengths of track inside for stabling carriages.

As a temporary measure a turnout had been located in the doorway to connect the short version of Shed Track No.3. This turnout has been reconditioned and on 26-Mar-2026 was installed at the south end of the railway yard to provide a long siding leading into the full length of Shed Track No.3.

Steam Locomotive No.1200 Franklyn Flyer

After receiving clarification from the Committee on the desired nature of these reports Noel Warden has kindly provided a progress report on the work surrounding the installing of the replacement boiler on the chassis and related steam plumbing.

A condensed version of this report appears on the back page

Rob's additional comments:

Regarding proposed funding needs, the costs so far have been relatively small. In the initial discussions with Rohan Lamb it was proposed to purchase all new boiler fittings. Rohan, Andrew Fairweather, and Roy suggested suppliers for these fittings. Contact was made with all these suppliers, and others including in the UK and USA, and it was learnt that our equipment has a size range that is smaller than is used in industry and is larger than used for model engineering. The nature of support for Australian industry has changed. This has resulted in much time being taken in finding fittings suitable for our steam locomotives.

This difficulty means:

A timeframe cannot be easily estimated.

Proposed costing cannot be easily estimated, however no huge cost is envisaged. Rob Worland

SURVIVING Fullagar Engines

We will now take a look at Fullagar engines that have survived or at least until relatively recent times .

Napier, New Zealand, Type 4-0 600 HP 200 rpm

The lone engine that started this little story thanks to MSTEC member Richard Keir after his visit to their Faraday Museum .(see Steam Supreme 661 Feb 2026)

It spent its entire working life from 1925 to 1970 in their Napier power house which has subsequently been developed as their Faraday museum, no doubt in recognition of Michael Faraday's contribution to the science of electricity and magnetism in the 1850's .

The complete and in it's original position the engine is set up so it can be motored over by an electric motor for demonstration purposes. This has lead to some visitors over enthusiastically describing it as a running engine.

Type 4-0 600 HP 200 rpm ackn. Richard Keir



Lismore , Australia 2 off complete English Electric Fullagar 8Q, 8-cylinder engines , believed to date from the early 1940s, reside in their original power station along with their associated equipment.

. Lismore a New South Wales rural city located in the Northern Rivers region (read prone to flooding) is about 200 km below the Queensland border and 80 km inland . The power station was established in 1932 to supply the region and was progressively expanded until decommissioning in the 1990's by which time it contained 8 large engines and a long line a of



associated antique control equipment along the south wall . By 2017 it was in the hands of the local preservation group who were putting a lot of effort into setting it up as a museum . Unfortunately, in March 2022 disastrous floods hit the region with 2. 8 m of silt laden water entering the building . Being low mounted due to their excessive height , the Fullagars were especially affected by water in their cylinders along with sand in their oil sumps. All engines have been pumped out and sprayed with oil but the Fullagars are well down the list as far as getting some engines running.

Actually a V 16 GM locomotive engine is at the top of the list which is also a 2 stroke with piston controlled inlet ports somewhat along the lines of the Fullagars
Ackn John Guy via the internet

↑ *The pair of the Lismore 8Q – 8 Fullagars still in their original position* John Guy Facebook

Rock Of Gibraltar 3 off 8Q – 8 Fullagar Diesel Engines have been recently "discovered" inside the abandoned underground Calpe Hole power station in the Rock Of Gibraltar.

They are in quite a state as the warm damp salt laden atmosphere is very corrosive.

There are also 3 other small WW2 Power Station in the underground defences according to the internet .



The Rock is a 6 square km , 420 m high limestone outcrop forming a narrow passage between Spain and Africa . Being only 14 km wide and the entrance to the Mediterranean Sea it has been in the hands of the British for the last 300 years and has always been a hotly contested strategic position even more so with the opening of the Suez canal and the associated increase in shipping



With the return of the evacuated civilian population to Gibraltar after WW 11 it quickly became apparent that a considerable increase in generating capacity would be necessary so it was decided to utilize the large Calpe Hole chamber , excavated during the war as a store house and install three 1941 Fullagar English Electric sets dismantled from the

ex-Burtonwood airfield in the U.K. These had been moved to Shahibar in 1947 and brought to Gibraltar in 1951 ackn Fullagar Register.

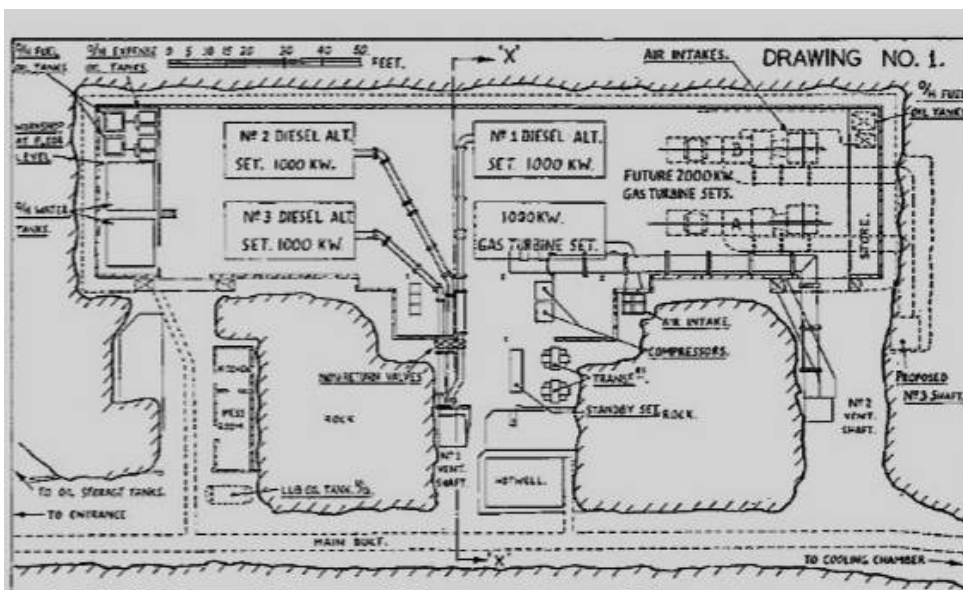
Early Stages of construction of the Calpe hole Gibraltar
H M Government of Gibraltar Ministry for Heritage.

Note the Diesel powered Face shovel and austerity Bedford tippers to get an idea of the perspective.

Despite the size the cavern needed to be further enlarged and lined with concrete along with a bigger ventilation plant chamber and excavation of 2 exhaust shafts so was not ready until 1951 . By 1955 it was having trouble meeting demand so 2 years later 2 Ruston gas turbines took over with the Fullagars being decommissioned in 1974 .

Their fate is unclear today from the internet.

The 3 Fullagar engines and gas turbine were arranged in a square in the Rock of Gibraltar Generating Station



Drawing No. 1 Calpe Hole Generating Station.

Mac's Machines , Ackn Stephen Williams YouTube , Mark Mallbone , Stationary Engine Magazine June 2023

One of the Gibraltar Fullagars



Malta 6 off 6Q existing at Kordin or Corradino 'C' some were still operational up to 1983, having been pressed back into service when demand picked up after the oil shock. They also doubled as 'black start' and some remained operational for some more years possibly as late as 1992.

3 engines in a row in one of the two underground chambers gives a total of 6 engines . →

Pasted on the internet Jason Livesey photo 2024 6 Q engine .

Some references claim there are only 2 existing engines . Perhaps they think there is only 1 per chamber .



According to some references there were 11 Fullagar engines supplied to Malta , and another forwarded on from Guernsey . The first five had blast injection but it gets a little uncertain as some of these early ones were later up dated with mechanical injection and then renumbered. Acknowledgement to Rohan Lamb . Perhaps there really might have only been 6 Ackn John Hilli , Malta , March 2023 Stationary Engine Magazine .

As for Malta it is an island with a very old civilization in the central Mediterranean Sea between Sicily and North Africa that "sided " with the British in 1800. Being in a strategic position it became very important to the Allies being a way station on the British trade route between Egypt and the Suez canal . To protect against the rising threat against Nazi and Fascist Italian attacks the underground power station containing 6 Fullagar engines was built by the British in anticipation of WW11 and the attacks to follow.

Some that did not make it

Guernsey Power Station , the last page of the order book shows a The Fullagar 8Q was installed 1936.

Nauru Island In the 1980's a pair in the power house was reported to be kept in running order for emergency use in case the Rustons broke down . They also had 2 Willans . The story goes that despite being sabotaged by the retreating allies in WW 11 the conquering Japs managed to put some of these engines back in service. The area was redeveloped a few years ago as the town expanded and the engines were scrapped . Bruce McGeehan .

Willans Factory Rugby

. There used to be an unsold one displayed in the open at the front of the Willans Works, in Rugby but I was told it got too rotten so was scrapped a few years ago .

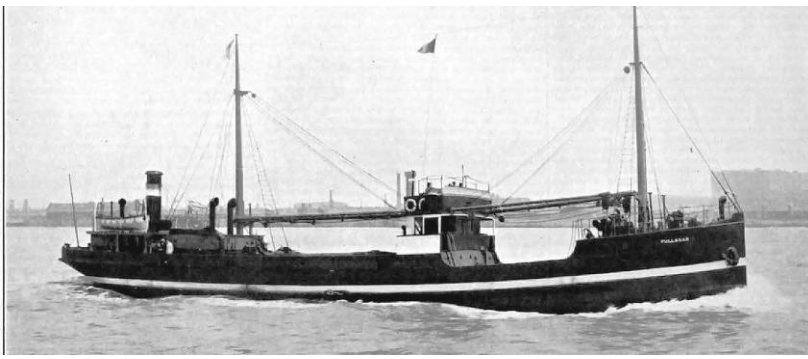
Khartoum Saudi Arabia 8 engines supplied . After our last months issue of Steam Supreme Jack Jordan , our UK member excitedly got in touch give with a bit of background information but cannot confirm they still exist . He writes Hi Warwick

All this talk about Fullagar engines reminded me that some years ago we at Doxford engines were party to building a small power station in Khartoum. Our engines of course were not Doxford, but medium speed Werkspoor built by NEM at Newcastle.

Well, our station was called the Burri 3 station, but an older none functional station was close by and it housed English Electric Fullagar engines, which were rated at 3500 bhp at 214rpm. I'm not at all sure why they were still there or were they stand by machines? They must surely be antiques by now. We installed our engines on Burri 3 about late 1970s, early 80s Jack

A bit of googling showed Khartoum is the Capital of Sudan ½ way up Africa on the right towards the Red Sea which feeds into Suez canal . At one stage occupied by the British the Anglo / Egyptian Sudan is a hot semi arid desert, where the Nile river systems join up, that receives only 5 inches of rain a year.

Marine Engines Apparently these had a lighter frame and only a small number were built despite being billed as powerful , light and only requiring a small floor space while the extra height would not matter in a ship . The first one was installed in the ship Fullagar only to be replaced by a competitors' engine in a few years with the excuse it was too powerful .



They obviously had some sort of short coming as they did not catch on and those that were installed were all out of service by the mid 1930's ackn Graces Guide.

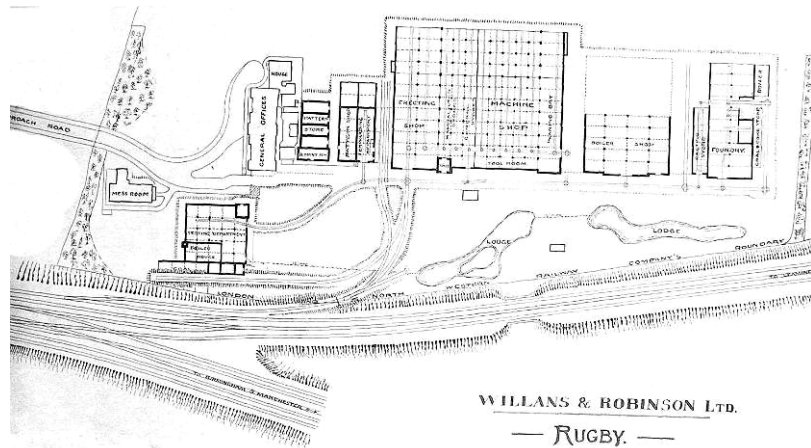
← **The Fullagar 1920 50 m 400 tonne , first all welded ship Ackn The Engineer**

Summing Up

So this little investigation has identified 12 Fullagars that made it at least to modern times another 12 still in living memories . Not bad as Rohan Lamb's Fullagar List

shows there were 72 built but it gets a little uncertain as some of the later air blast ones were renumbered and sold with mechanical injection so get counted twice . The Lismore engines have mechanical injection.

Comments Being able to sell 70 large quirky engines in those early days is not a bad effort so they must have had something going for them or else some other competitive advantage . One that comes to mind is at that time Rugby in the West Midlands of the UK , 130 km north of London and near Coventry and Birmingham became a substantial industrial city with the advent of the industrial revolution and the coming of the railways. Ackn. Wiki . Willans and Robertson specializing in steam engine driven generators was the first to arrive and set up at the junction of the railways .



Views of the Willans & Robinson Ltd Rugby Factory set up showing the railway lines going right into buildings.



They were followed by British Thomson—Houston with their electric motors, generators and associated electrical equipment complimenting each other .Both firms soon started making steam turbines with Frank Whittle running the worlds first gas turbine at the BTH works in 1937 . It seems to me if you wanted a large power station Rugby was the place to go . Particularly if you needed it in a hurry because a war was on, why look any further?

Rugby products in our Museum collection include our large Airblast Diesel Engine , made in the same factory as the Fullagars while BigFoot has BHT electrical gear .

A certain type of football game was invented there as well in

1837 ! It's main innovation seemed to be running with the ball rather than repeatedly bouncing it off your head which today is considered not a good idea ! Warwick Bryce

Spiros New

Toy Spiros keeping an eye on the chimney and blower during lighting up his 1/3 full size Clayton Steam wagon at our April Run day under the eye of his dad Greg and Andrew McCoy .

While not a fine scale model it is fully functional in all respects and is easy to handle and is reliable and certainly looks the part . The barrel on the back is real and serves as an auxiliary water tank . The 4 wheel drag carries tools and can take a couple of passenger. Large scale models are currently all the go in the UK so things out here will probably go the same way.



1200 Franklin Flyer Progress Report - April 2026

Noel Warden and team have been steadily working away on fitting the new boiler we got from the UK about 18 months ago but it has turned out to be a bigger job than expected.

While the new boiler is basically the same size as the one that failed it has quite a few detailed differences with regard to fittings and plumbing's that have presented a few challenges.

Also as new mountings required fabricating anyway, the opportunity was taken to raise the boiler 40 mm so a properly functioning ash pan could be fabricated that substantially reduced the risk of sparks escaping.

Of course, raising the boiler makes more work but it will be worth it. As it brings other advantages as well. The external regulator, added a few years ago was functional but, to a degree, spoiled the appearance of the loco so a regulator has been designed to be inside the boiler and will be operated through the backplate. This will add a more realistic control and appearance to the loco but of course comes with its own set of challenges.

So, to summarise the current status of the boiler fit up:

The boiler position and mounts to support it 40 mm higher have been completed.

The new internal regulator has been trial fitted and associated cylinder plumbing in the smoke box completed.

The ash pan has been designed and is being fabricated but not yet finished.

Final cabin position is yet to be done after the plumbing is complete.

A new steam manifold has been fabricated for the control valves and is ready to fit up.

An extended footplate has been fitted to allow for a new cabin position (moved a bit rearward to better balance the cabin position)



Next Steps

The boiler will be lifted clear of the chassis to allow us to clean the threads on all boiler sockets etc which will allow us to fit all plugs and plumbing to prepare for a hydraulic test.

Ash pan to be fitted when received.

Plumbing to be completed.

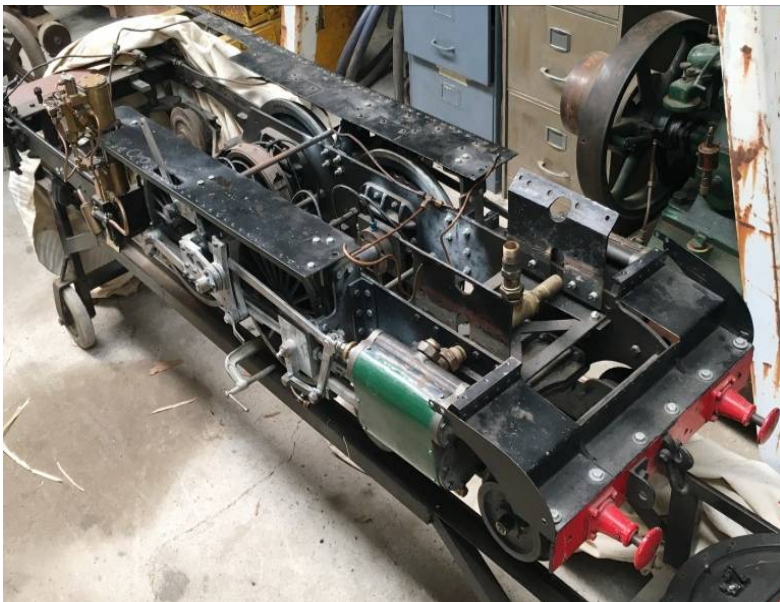
Hydraulic test.

Cabin and boiler cladding fit up.

And of course dealing with all the unintended consequences of the changes made to complete the project.

At present we are using as many components that we can from the old fit out but we will still require some new fittings and possibly new safety valves.

Noel Warden



COMING EVENTS

Social Meeting 6 May Wednesday

Regular Events :-

MSTEC Social meetings, 8 pm Scoresby. First Wednesday of each month.

Museum open every **Thursday, Saturday and Sunday**.

Miniature Train running every Sunday 11 am to 4 pm

Museum Machinery in action. Last Sunday of each month **Except end of year December.**

2026 COMING EVENTS

May

8 Geelong swap

16 & 17 Heyfield Vintage Machinery rally

30 & 31 Historic Winton Vintage racing

31 Triumph Car MSTEC

31 MSTEC RunDay

June