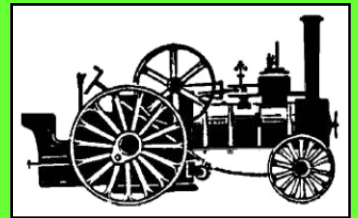


STEAM SUPREME

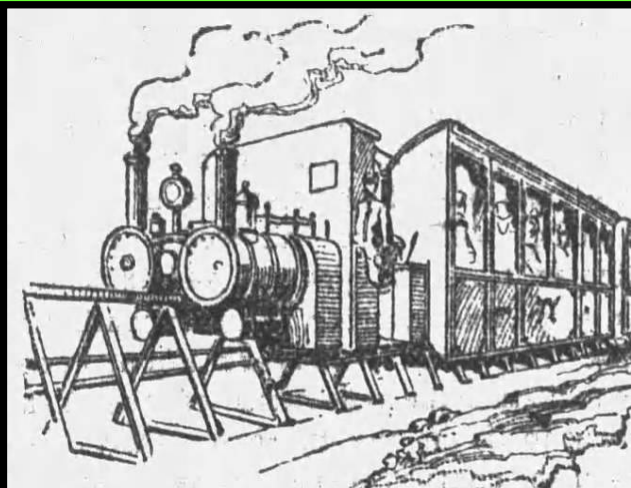
Extracts from the Melbourne Steam Traction Engine Club's Newsletter



Phillip Hayes 12 'in gauge gear driven logging loco on display at Goldsmith.



Roy's Steam Injector



Quirky Monorail Steam Railway



Starting Kero Engines

During a recent holiday in Ireland Peter Lynch paid a visit to the restored Listowel monorail in County Kerry.

Unusual Engineering – *the Lartigue Monorail System.*



On the Turn -Table

Peter Lynch Writes

A small section of this extraordinary railway has been restored by a dedicated team of volunteers who operate it most days during summer. It operates on a system known as the Lartigue Monorail, developed by French Engineer Charles Lartigue around 1880. The idea of monorail systems has been around for a long time but has never been as widely adopted as twin rail tracks.

Lartigue felt the idea would work well in desert situations where drifting sand could easily bury conventional rail tracks and his first line was opened in Algeria in 1875.

How the system ended up in Ireland is still unclear but a 15km line was built between Ballybunion and Listowel in 1888. According to reports of the time construction used pre fabricated components and the capital cost was less than a conventional railway.

Three specially built steam locos, passenger and freight wagons were built by UK suppliers, presumably after much head scratching. For example the locos were of the O-3-0 type with three driving wheels and two more on the tender powered by spur gears.

To keep the engine balanced two boilers, two fireboxes and two chimneys were needed. Most weight was carried on a single rail but smaller wheels ran on guide rails each side to keep things upright, meaning it is not technically a monorail. Although the Listowel and Ballybunion Railway was in service for 36 years there were major operational challenges.

Passenger carriages were divided down the centre with loading taking place from both sides.

Freight was a bigger problem with tipping wagons built which tipped both sides and 'ballast' sometimes needed for heavy items. For example if a farmer was sending a cow to market two calves had to be carried opposite on the outbound journey to offset the weight. On the return trip the two calves were separated to balance the wagon.



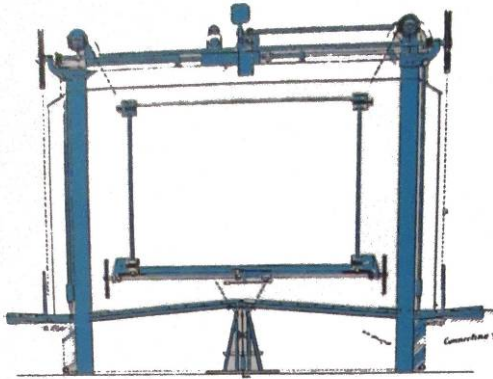
Points were more complex than a conventional railway.

A slightly curved section of track, about 6 metres long and mounted on a turntable, connected the arrival track to the desired departure one. When the other departure track was needed the curved section had to be rotated nearly 360 degrees so that the curve was reversed.



Flying Gates

Road crossings were another problem. Either a swiveling section of track similar to the points turntable could be used or an elevated double sided drawbridge (known as flying gates) lowered to allow a road vehicle to cross the line. In both cases these had to be manually operated by the road user which activated a railway signal warning the train crew that the line was blocked.



Despite these complications the Irish system served the local area until damaged in the civil war of 1921. By this stage road transport had become more effective and took over the task.

Many locals and railway enthusiasts were proud of this unique part of Irish railway history and keen to see it preserved in some form. The Lartigue Restoration Committee was set up in the 1990s and after major fundraising efforts started work on rebuilding a section of line near Listowel station in 2000.

A new diesel powered replica locomotive, two passenger carriages, turntables and trackwork components were built by Railway Engineers Alan Keef Ltd in England. This is an impressive achievement given that they were working largely from old photographs, drawings and salvaged components.

On site work was carried out by a team of FAS (Government sponsored training) members and operations on the demonstration line commenced in 2003. It consists of around 1km of track, platforms and turntables with train services operated by volunteers. The former Listowel goods shed now houses a well presented museum and refreshment facilities.

Monorail systems are now being reintroduced in some countries; mostly for urban passenger use and we are fortunate that this unusual Irish example has been preserved. Pictures and Test Peter Lynch
The Germans have theirs upside down but I didn't get there. <https://schwebbahn.de/en>

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Nothing stays the same .

Members have been noticing much redevelopment going on in the former industrial areas around Clayton / Springvale . Here is a few pics members have snapped

IVECO factory snapped on a 2012 truck club visit . →
Internationals were still being made at the time . Peter Lynch



← **Photo from the same place 2025 . Just a couple more trusses to come down and there will not be a trace. Peter Lynch**



Also if you go under the motor way and into the Caribbean Estate, behind our grounds , what was once farm land is now being taken over by industrial development . You had better take your GPS as it is now a myriad of courts and factory units and can take quite a bit of finding your way out. Ed .

Nothing Stays
the Same cont.

Local Automotive Landmark Demolished

Rohan Lamb noticed the same thing happening at the former VW factory at Clayton in early Nov 2025

Another piece of Victoria's past automotive industry is no more with the demolition of the former Volkswagen factory in Clayton Road, Clayton. Demolition started in July and clearing the site is still underway at the time of writing. The landmark large round logo sign atop the tallest building was felled during October. The site is being renewed by Goodman Australia as the next stage of development of the Clayton Business Park.



The Volkswagen building with the VW logo and a yard full of completed Datsun cars in 1969 (SLV)

The first Volkswagen Beetle left the assembly line on 7 June 1954 with the plant established by Martin & King. Originally the cars were shipped as completely knocked down kits (CKD) from Germany and assembled locally. A new company, Volkswagen Australia was formed in 1959 to manufacture cars from a combination of locally made and imported parts, and the Martin & King plant was purchased. Later, due to declining sales, and adjustments in the industry a new company Motor Producers Ltd was formed in 1968 with production reverting to CKD assembly of Beetles, and expansion to include Datsun and Volvo car production. The plant was sold to Nissan in 1975 reflecting the increase in Datsun production and decline in Beetle sales. At this time Beetle production ceased. A further decline in production was experienced by Nissan after many productive years, to the point where local production ceased and the plant was sold around 1992.¹¹ <https://>



Later Nissan logo, c.1970s

<https://pocketoz.com.au/drive/motoring-manuf-vw.html>

The buildings have been used in recent years for various purposes including warehousing, and an ongoing association with the automotive industry with Holden Special Vehicles and Walkinshaw group occupying some of the buildings.

Originally, the blank white sign on top of the tallest building was the VW logo. Later this was

covered over and changed to the Nissan logo, and finally it was just left as a white disk as the only clue to the earlier use of the building

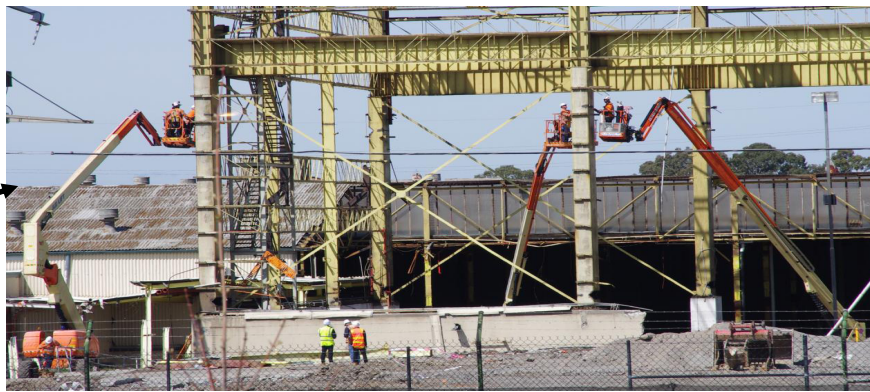


Most of the saw tooth roofed buildings were low enough to be demolished by excavators with cutting jaws attached.



The tallest building was out of reach of the machines, so the plan was to pull the building over. The columns were partially cut through at the base and close to the top with the plan to use two cables attached above the top cuts each being pulled by an excavator at the west end

Making the cuts to the box columns, Half way up a V piece was cut out of one side and a straight cut made on the other side leaving a small section intact in the middle



Preparations for demolishing the building were completed on Saturday 4th October 2025 with the last of the columns cut following delays during the week because of the weather. Just before the pull the cross braces were cut and everything was ready.

Having stopped by that morning to photograph the site and upon learning the demolition was soon to occur, it was going to be worth waiting the extra hour or two to witness the demolition. With anticipation building as the slack on the cables was taken up, the first attempt failed after the straps at the top broke as soon as tension was applied. After regrouping, the next couple of hours were spent re-rigging the cables for a second attempt. Anticipation built once more, only to be dashed a second time as one cable failed as soon as tension was applied and the demolition was called off for the day. Alas the chance to see the

building come down was not to be. For the final attempt the cross braces were cut at each end. This time it was successful with the columns failing 1/2 way up and the lower building sections collapsing to the right while the top came down holus bolus.

← This brought the upper building section in reach of the steel jaws of the excavators and destined to be recycled. 16 October 2025 (Lamb).

<https://pocketoz.com.au/drive/motoring-manuf-vw.html>

Editors Comment This scenario is all to familiar to your editor who saw GMH die a death of a 1000 cuts over 35 years of working there. As for Fishermans Bend much of the promised redevelopment still has to materialize. How Sad? Ed.



more of Nothing Stays the Same

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Thompsons & Company Castlemaine 150 years

Derek Moore writes :-

On the 18th October, Flowserve TKL celebrated 150 years since the founding of the original company by the 2 brothers David & James Thompson.

At the Open Day at the works, there was the opportunity to learn about some of the history of the firm.

Guest speaker on the day as George Milford, who worked at Thompsons from 1963 to 2008, initially as an accounts clerk, then accountant and ultimately the Finance Controller. This year he has had his book "The Foundry – 150 Years of Thompsons of Castlemaine" published by the Harcourt Heritage & Tourist Centre.

The Thompson brothers had come to Australia from Northern Ireland, where they had learnt foundry work, because of the discovery of gold in Victoria.

After taking over a gold lease, they were fortunate in extracting 5063 ounces of gold from one vein. In 1857 they returned to their homeland to pay off debts and buy steam driven crushing machinery which they brought back with them.

On their return, they set up an engineering works which grew over time, with work often coming to them. The firm built machinery such as steam portables which were used for hydraulic pump sluicing and machinery for bucket dredging.

Centrifugal pumps became a major product. One product was a gravel pump that allowed the pump to operate without the gravel damaging the pump.

In 1899 the Works Manager, E.P.Lewis, left Thompsons to partner with G.W.Kelly to establish the engineering firm of Kelly & Lewis.

In 1913, the first railway locomotive contract was signed and the factory doubled in size, including the building of an electric power station at the works. Two of the rail locos still exist in South Australia.

In 1915, 3 triple Expansion engines were built and transported to Campbell's Creek in Queensland to pump water for the local water supply.



Pic engineersaustralia

During World War One, steel tyres began to be built for railway rolling stock
 In 1924, Thompson's invented electric steel welding – a world first, which led to the replacement of riveting.
 In World War Two the priority was war production, including munitions. Over 800 staff were employed, making the firm the largest in Castlemaine. Machinery such as the triple expansion main engines for some of the 60 corvettes built in Australia were built by Thompson's. 1,000 HP examples of these engines can be seen on board the preserved corvette "Castlemaine" at Williamstown.

The Thompsons diving chamber used to recover the gold bullion from the ocean liner S.S.Niagara, sunk by a German mine in New Zealand waters in June 1940, is on display at the Visitor Information Centre in the former Castlemaine Market Building. Following the war, production of centrifugal pumps continued and was augmented by the building of railway points and crossings. Manufacture of such rail infrastructure ceased when Flowserve took over in 2004 and sold the Rail Shop. The archives of the company are held by the Maldon Vintage Machinery Museum at Maldon, which also has several Thompsons steam engines and pumps on display.

There is a considerable amount of information about Thompsons, including an interesting selection of photographs of various products, included in the following website:

www.heritage.engineersaustralia.org/wiki/Place:Thompsons-of-Castlemaine

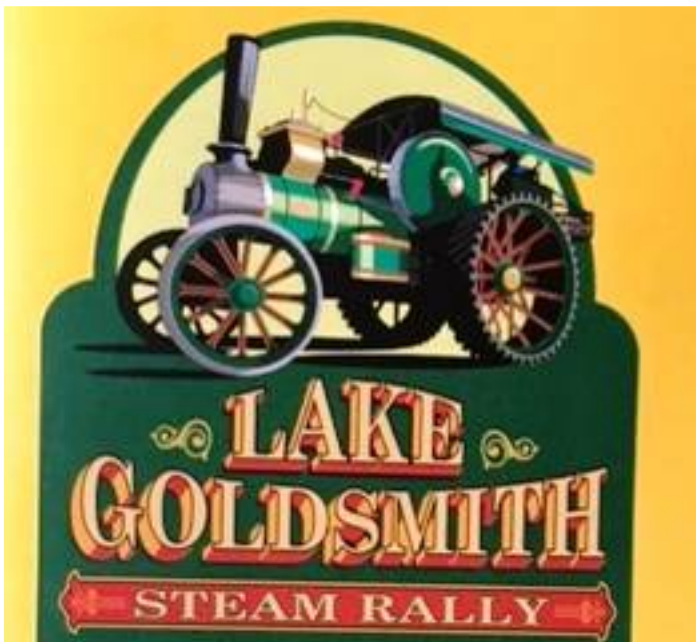
Go to: "Nomination Document" for the text and images.

Derek Moore

Thompsons of Castlemaine Foundry in Castlemaine, 2015 Source: Owen Peake

Editors comment So the building is still much the same but the capability to do some of the best heavy engineering in the world has long been lost.

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While all the usual wonderful things were there this was their big "100 years of Caterpillar" Rally so let's take a look at this aspect plus a couple of things that have changed a bit since last rally



As for the Cats they had come from far and wide with virtually the full range of all types of machinery from the very first tracked tractors to a current very impressive giant D10 dozer .

Now with such a line up and owners wanting to demonstrate their skills and the public wanting to see close up just what earth moving machinery can do special arrangements were made to take over the farmer's paddock on the Ballarat side of the Rally Grounds.

← *A hospitality and information tent was set with a couple of immaculately restored feature machines on display .*

Behind it was a range of their newest and biggest current machines on display that you could get close up to.

To the left of the tent was the play pen where I watched a scraper being put through its paces .

It was a towed 50 yard machine and put to its limit being pulled by a dozer in the front and pushed by another from behind . They hung in there until the bowl was so full it was overflowing with earth . They then went around

and dumped on a mound ready for another bite. I was impressed by the Western district soil quality and depth. At the end of the day it was all filled and levelled and soon no one will know what had been going on .

Over the back was parking for the floats that brought all this machinery in . With over 50 , many over dimensional and with dollies this was quite a display in its own right for trucking and heavy hauling enthusiasts.

Cats were, also featured in the quadrangle in front of the Founders shed . Quite unexpected was a couple of new machines painted in grey . It appears Highway Yellow was adopted a couple of years after CAT was formed with the amalgamation of Holt and Best to make them instantly recognizable . As a tribute to 100 years of production another batch of 100 are coming out in original grey to make them instantly recognizable as Centennial machines.

They must have a wonderful Marketing Department ! Ed



Around the Sheds There are always changes and developments going on with sheds at Goldsmith . Hardly anyone could fail to notice all the “treasures “ have gone from outside shed 80 . This is Brian Smith’s former shed , which fronts on to “ Lesser Lake Goldsmith according to his building plans . The changes are because the shed is now in the hands of Stephen Larcombe and Warwick Bryce . After 12 months of work all Brian's stuff has gone and Stephen and Warwick have just moved a few things in until the floor can be concreted.



← *Brian’s iconic Bedford was last to go just a couple of weeks back*



← *Stephen’s woolpress’s have particular conections with Geelong .*

Warwick starts to set up a Bush Mechanics Vintage workshop with compressor , lighting plant vintage lathe ,Tangye endless chain and a stock of “ fast moving “Holden Spares



← *Interior view of the shed at a past rally gives a good idea of the size . No books are kept on site . The only thing still to go is the POWER SONA*

mechanical tabulating machine which is at last getting some interest

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Steam Shovel Cabin Most of the sheets are now on the right hand wall of the steam shovel cabin thanks to a terrific effort by Aaron Morris , Laurie Hall and Adrian Anderson , photo Warwick Bryce 22 / 11/ 20235

Hayden’s Boiler back in action after nearly 2 years and working perfectly with no leaks . Len Brighton Photo



A New Loco at G. S.

I had heard Phillip Hayes had something special in the making but was not prepared for what I saw. A 12 inch gauge gear driven steam logging locomotive.

It was on a short section of track on the East side of the Sawmill which it compliments perfectly .

The loco is a freelance but incorporates many features from American lumber locomotives of the early 1900 's such as Shays , Climax and Heisler . In these all wheels are on pivoting bogeys and driven through various arrangements of shafts, universal joints and bevel gears from a central engine . In this way maximum tractive effort is achieved while at the same time the ability to handle uneven track and sharp curves is exceptional .

These geared locos had a great variety of engine locations and cylinder configurations but in no case are they connected directly to the driving wheels by rods as in conventional locomotive .

The engine on a short section of track beside the Smith's Emu Creek Sawmill . The riding car behind is a substantial log dogged to a pair of bogeys .



The driver sits 1/2 way along the loco behind a conventional horizontal water tube boiler as you might find in a portable or traction engine . He is high enough to get a good view over it

Phillip's engine is a 2 cylinder vertical double acting unit , somewhat like you might find in a steam launch . Located in the cabin behind the driver it is a show piece in it's own right and very accessible for lubrication as well .



Outside on the deck behind the cabin is the feed water tank . A perfectly scale copy of a Furphy water tank complete with correct 1920 lettering . Behind this is a yet to be machined aluminium casting of a locomotive headlight . Someone is certainly doing some nice aluminium castings these days not to mention the Joinery work.



I was intrigued to see how the drive was got from the engine to the wheels as nothing was obvious from a distance . During a quiet moment I got down and had a look underneath .

The secret was a hefty tail shaft, complete with universal joints and center bearing , some what like you might find on a truck , It ran down the center of the chassis to the bogies . The 2 different sized sprocket underneath showed the drive was by chain from the engine above and arranged to give high and low ratios. Very neat and much better than the shaft system were the engine hangs on the side as on the Shay locomotives .

Queensland's Nambour Sugar Mill had a small Shay locomotive



Still that does not answer the question how does the shaft drive the axles .

Peering underneath shows more amazing engineering . A Tee drive gearbox between the bogie frames with short chains driving each axle. →

Judging by the massive size of the shafts and bearings it will never give any trouble.

The amount of work Richard has put into the design and construction is incredible and what a sight it will be to see in action .



Ronaldson Tippett Kerosene Engines at Goldsmith

With all the attention being paid to our 25 hp example, back at MSTEC it was thought there might be a chance to pick up a few pointers on these engines while at Goldsmith so a bit of scouting around was done .

Well it was not long before I realized they were everywhere with some sheds having 3 or even 4 mostly set up to run . There was 2 main versions . Those permanently mounted on a plinth and plumbed in to a water supply, as our big 25 hp one , or portable engines that can be moved from job to job.

These smaller ones are mounted on a 4 wheel trolley with cooling tank and tower, like the MSTEC one we use to drive Peter Godden's hay bailer at rallies . ←



There is a sub set of these with magneto ignition that could be started on petrol and spark and once warmed up could be switched over to kerosene so did not need a lamp at all .

There seems to be 2 classes of owners , those who loved them and those who thought they were the concoction of the devil . It was the first type that interested me . These all emphasise if they were set up right and you knew the secret procedure starting could not be simpler.

After having a chat with a number of these they all emphasised the first trick involved getting the **vaporizer hot enough** . When the correct blow lamp for the engine is used , in conjunction with the corresponding stove , this shields the lower part of the hot bulb from cold draughts , 10 min heating should be

enough . A simple test is to spit on the exposed vapour valve housing and if it does not sizzle it is not ready.

Every successful operator I talked to used the correct shield around the burner in conjunction with the original multi head kerosene blow lamp or a better class LPG burner. We have not been using a shield at all and an unsuitable legacy LPG burner .

There was some divided opinion on **LPG burners** it is suggested that the original kerosene , multi head , **blow lamp** is better because the kerosene flame, being richer in carbon is gentler on cast iron . On the other hand , LPG if running lean can be hard on the vaporizer eventually burning it out There could well be some truth in this . We have subsequently found the original parts, discarded by Frank , and Ian Malcolm is now putting them in order. It will be interesting how it helps .

Starting . Smaller engines should start easily by putting on 1/2 compression then winding backwards until compression is encountered **then forward** . In this way building up enough speed, to draw in vapour and air then get over compression which is the next stroke. At the **top** of compression the timing valve will open allowing air to enter the hot bulb which will produce firing . The problem with bigger engines they are too hard to get over compression so a different approach is needed that allows them to be easily started by 2 people. One manipulates the valves manually in the correct sequence while the other pulls the flywheel over slowly **backwards**. When turning in this direction the timing valve opens when the piston gets 1/2 way up the stroke . This **initiates** combustion which stops the piston and sends it back down the bore there by spinning the engine in the right direction , this time vigorously enough to carry it over compression and with a couple of chuffs it is off and running . The choke is then opened and the exhaust cam moved to full compression and you are in business.

Everyman and his dog has a theory on the best way to start these engines but only one is right . →



Key parts of the Engine

I have seen the big ones started easily by 2 people . To do this successfully it is first important to understand the surface ignition stratified charge principle these unique engines operate on . Next identify the key parts and the role they play in making it all happen. Then it will all start to make sense how to do it.

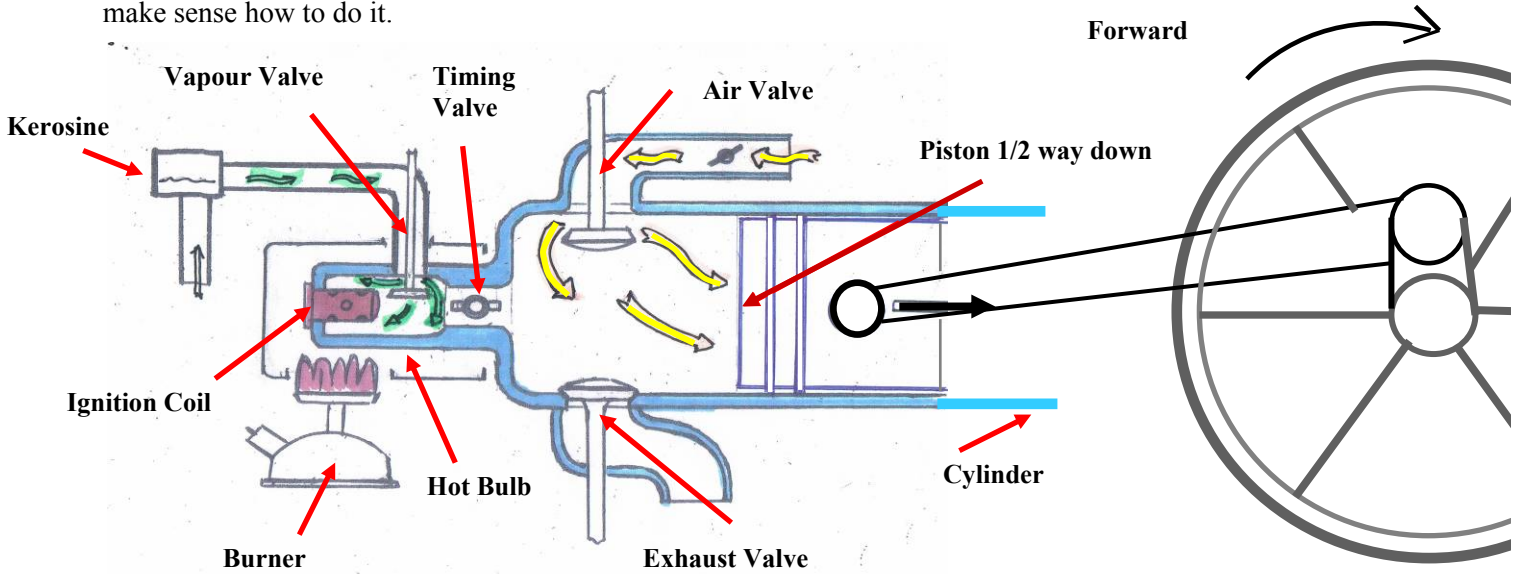


Figure 1 Kero being drawn into Hot Bulb and just plain air into Cylinder giving s stratified charge

It all hinges on the principle that when kerosine impinges on a hot surface it flashes into a combustible vapour at about 60 deg C but will only ignite if there is air present in the correct proportion . (roughly 14 Kg of air for each 1 Kg of kero) and the internal metal temperature exceeds 220 dg C .

To this effect the cylinder head volume is divided into 2 chambers separated by a butterfly **timing** valve that is controlled by the camshaft timing. . This smaller chamber or **hot bulb** is initially heated by a **blow lamp** playing on it's out side surface.

In this way kerosine that is drawn in through it's small intake valve immediately becomes hot enough to form a white vapour but does not burn due to lack of oxygen .

At the same time the descending piston draws just plain air into the main combustion chamber through its much larger inlet valve that has just opened.

So you have got kero vapour in the small chamber and lots of air in the main chamber but no combustion can occurs because the small interconnecting timing valve has now closed so the two cannot mix.

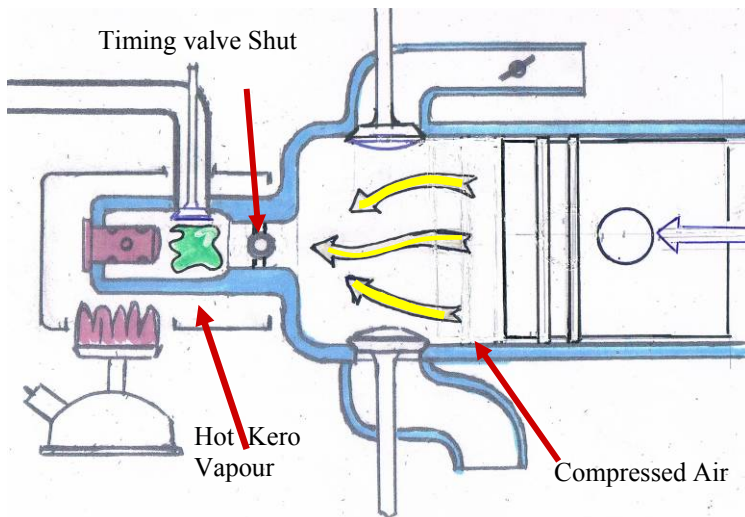
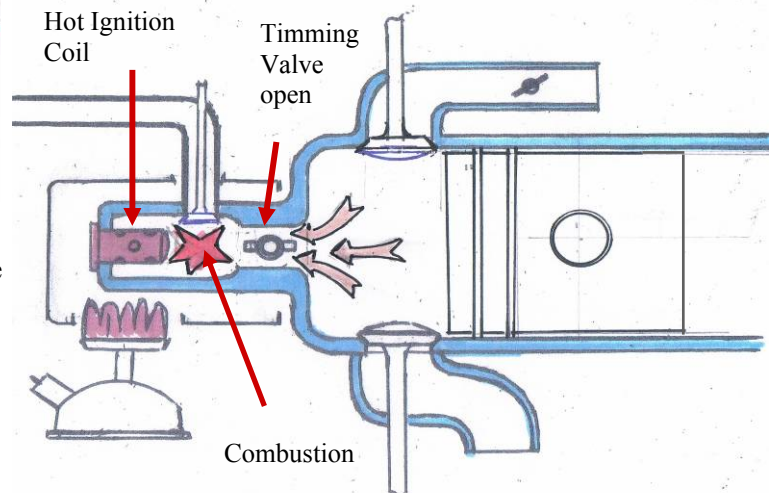


Figure 2 No combustion Timing valve shut

The piston then returns compressing the air in the main chamber and just before top dead center the interconnecting timing valve opens and the air squirts into the hot bulb .

Figure 3 Air squirts into hot bulb full of kero vapour .The hot surface of the ignition coil is above the spontaneous ignition temp of kero (about 220 deg C) so it ignites.



A nice soft ignition occurs and the piston descends down the bore. On the return stroke with the exhaust valve now open the spent products of combustion are now expelled in the usual fashion .

Under all but the lightest load enough heat is generated to keep the hot bulb and ignition tube hot enough without the lamp . Govenoring on theses engines is hit and miss achieved by holding the vapour valve shut once the required speed is reached so no fuel goes to waste. Brilliant for it's day WB

Occasional Reflections

By Roy Odgers

Members may know of my “Steam trailer” that I show at our Annual Rally and at other Rallies which I attend. It has as its steam generating source a fully rebuilt and tested “Crown Dahlia” dairy boiler; (history unknown – infuriating!) anyway, I digress –

It has two systems to get water into the boiler, firstly a hand pump; slow but steady, and, secondly initially one injector, which operates very successfully; but recently I decided to install a separate smaller injector line using a model size injector hoping to use this to admit a lesser amount of water but maybe able to run it more continuously. I subsequently purchased a new 60oz. model injector from a supplier. This size was chosen as it “coupled” up to the ¼ in. copper lines I had used; and it seemed the right size for my application.



As all steam enthusiasts know injectors are a “dark art” to many of them, however when installed and used correctly they are a wonderful asset to any steam boiler. My new injector was turned on when the steam pressure was 60 psi – picked up immediately and was ‘singing’ beautifully, injecting water down to just under 35psi. Again a little later it was tried and again was similarly efficiently injecting water into the boiler. I tried it at 40psi but it didn’t really like that; although it did work. So, for a new apparatus unpacked and installed it could not be faulted – not that I expected it to be!

The new injector installed in parallel to the original bigger one.

Later in the day when again using it I had to cool it prior to its use, courtesy of a steam leak caused by a slightly “wire drawn” seat on the steam supply globe valve – since reconditioned.

So the end result is that any injector (providing it is not worn) will happily supply your boiler successfully – always with the proviso that it is installed with the right sized plumbing - to and fro - and the system is air tight (water and air don’t mix!)



Happy injecting!!

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First of the new cladding going on the cabin of MSTEC’s Ruston Steam Shovel .

Aaron pic

