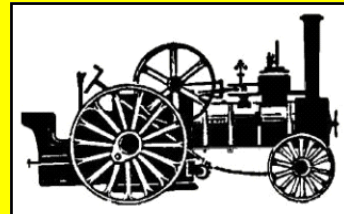


A Wisp of STEAM SUPREME

Extracts from the Melbourne Steam
Traction Engine Club's Newsletter



Ashy Dasher



K 190 Steam Loco pulling
into Ashburton Station on 13
Sept for a day of giving rides



Finishing Off
our
Pacific's Boiler

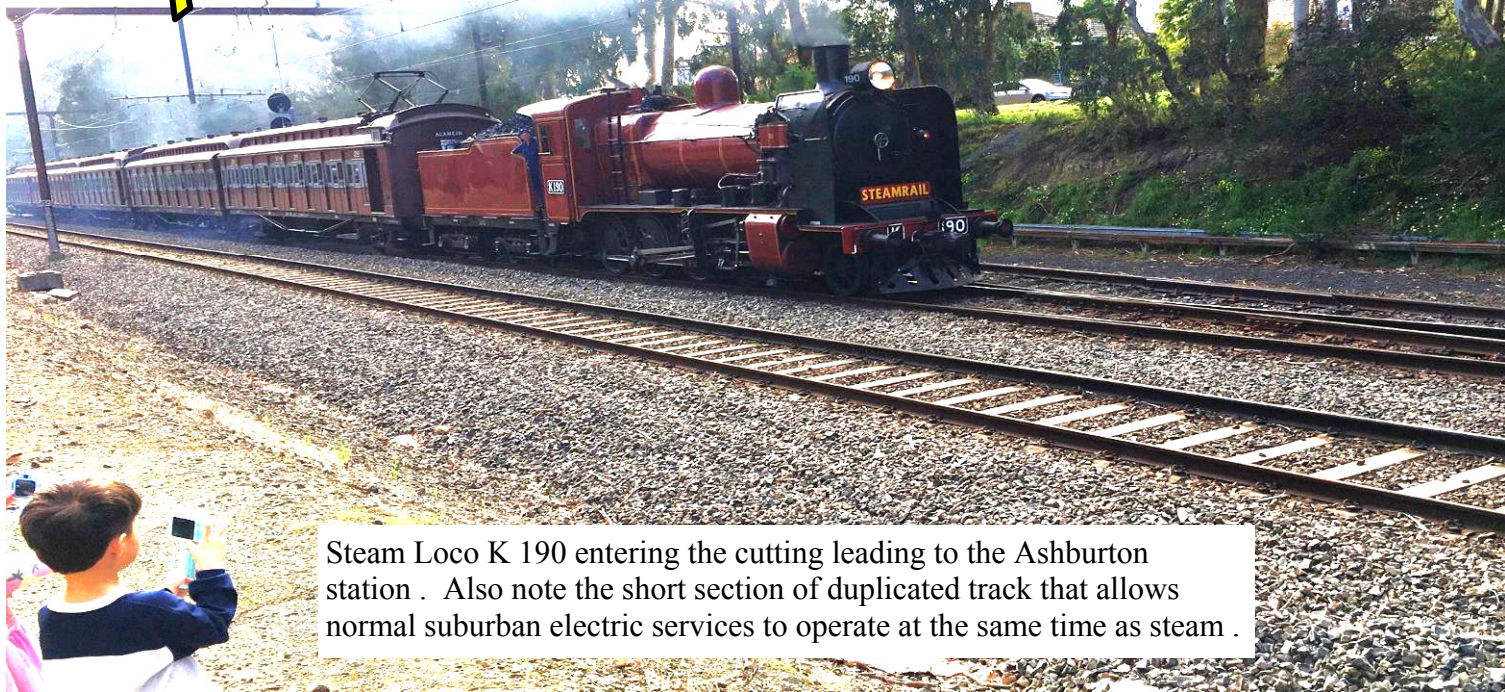


Unused Hay Barn Find
Commodore surfaces after
38Years



Geelong Ice
Machine
Foundations

All Aboard the Ashy Dasher



Steam Loco K 190 entering the cutting leading to the Ashburton station . Also note the short section of duplicated track that allows normal suburban electric services to operate at the same time as steam .

Steam returned to Ashburton for the first time for many years .

By any standards it was an overwhelming success being fully booked out weeks beforehand . This left your editor , who lives locally , without a chance for a ride. Never mind it was certainly an opportunity to see steam in action from a different perspective to actually riding the train so it was certainly not a disappointment.

Those familiar with Ashburton will know "The Village " is on a rise as High Street Road climbs from Gardner's Creek valley up to Warrigal Road resulting in the train and station being in a deep cutting as it passes through Ashburton . The result is an ideal setting with many elevated vantage points , including the High Street Road bridge , to watch and photograph the steam in action .

Rail fans , mostly young families , pack the platform waiting for the first ride of the day scheduled for 10 o'clock



Those not riding could get a good close up view of the loco from the Rail Trail down in the cutting

Trains ran on the hour all day travelling into Flinders street and return however to keep things moving passengers were not allowed to break their journey

Ashburton station was opened in 1890 and was part of the Outer Circle line between Oakleigh and Deepdene and soon became known as the Deepdene Dasher . After a shaky start it became the Southern terminus for the Outer Circle line when the Oakleigh section across Gardner's creek valley was closed making it the Ashy Dasher . In 1948 a couple km of this section was reinstated to what is now Alamein the Housing Commission estate established for people displaced due to the war , hence the curious street names such as Victory Blvd , Liberator St etc . Today the line's earthworks have been revegetated and is now an attractive paved railtrail.



Not quite the same interest was shown in the normal suburban electric trains .

At the start of the Rail trail leading down to the Ashburton Station I was taken by this stunning Corten artwork of a steam locomotive and it's red rattler carriages cleverly orientated and in the same perspective of K190 at this very minute simmering at the real station .
How clever I thought



A few steps down to the right is the real thing . →

You can see how much trouble they have gone to capture the effect



A Plaque advised the artwork depicts the Ashy Dasher a nick name derived from the trains that first served this line . The panels have been recently Commissioned by the Ashburton Shopping centre Traders Association and made possible by support from the State Government , local Council and prominent local Traders . It was produced by Entanglements who specialize in Corten Garden Art.

Now Corten was the trade mark of a specially developed steel alloy rich in copper designed to form a heavy rusted surface when left outside . The unique feature is that once this surface has formed it actually protects the steel beneath from further corrosion so it retains it's rusty patina without any further eating away .

Having a bit of time till the real train left I took a closer look at the artwork and began to think something was not right !

Then it dawned on me a number of auxiliary panels had been screwed on to the original with shiny self tapping screws somewhat spoiling the effect since the screws remained bright .

That was when things got puzzling , amongst items added was 9 cogs randomly attached to the wheels in positions they could not serve any function . No Victorian locomotives especially the Ashy Dasher every had anything like this at all !

The only thing I can think was someone , involved in the project, knowledge of steam locomotives must not extend past the cog and rack railways of the type found in places like the Swiss Alps or Tasmania . Certainly Ashburton never had anything like this .

It spoiled the whole effect for me .

Randomly placed cogs have no place on the Ashy Dasher wheels →



HAY BARN FINDS

American Car Restoration TV shows love stories about discovering a car that has spent many years languishing in a old shed , or hay barn .

Eventually it is discovered , sometimes still in the condition it was last used all that time ago. At last the owner is persuaded to part with it but the dilemma is then what to do with it . The options are many but all need heaps of cash . Here is a true story (my bit anyway)

A recent photo of a Barn Find road version of the a 1988 VL Group A Commodore , still just as it left the factory with only 20 km on the clock

internet pic I suspect from Richmond cars Adelaide



Once acquired it is up to the new owner to decide what to do . This might be just get it going or restore it to like new . Others might want to Improve it by putting in a modern powertrain . Worse turn it into a street car with fancy alloy wheels and even Low Rider suspension so it can bounce up and down . On the other hand just put it back into storage under controlled condition for another 50 years . Actually we face the same dilemma with the restoration of our old steam machinery but Museums usually have strict guidelines to follow.

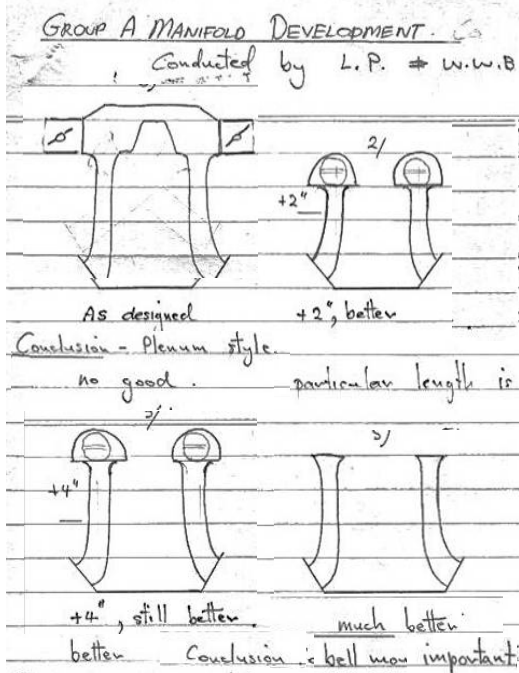
Anyway I have just come across a story that might well be the ultimate barn find example but to appreciate it I must first set the scene. A few of you might have gathered I played a pivotal role in developing the Fuel Injected Holden V8 engine for road and racing use in the mid 1980's .

A page from my log book of the manifold development work we did to get the best out of the Fuel Injection system for racing

One of the new requirements for Touring Car Racing in Australia was adopting the European Group A racing rules .

Of course we wanted to use the new fuel injection system , being developed for the next model , as soon as possible because the old carby engine had become uncompetitive but under their rules that made it a new car which required 500 road vehicles to be production built first. The solution , if we were to continue racing , was to build a special batch of the current Commodore but fitted with a special pre-production run of the not yet released Group A EFI engine .

Close up of the production Group A fuel injection engine with Twin Throttle bodies and ram tunned inlet manifold we developed for racing



These special

builds were usually handled by Brock through his Holden Dealer Team but the falling out with Brock just at this time greatly complicated things.

To this end Holden went into partnership with UK racing driver and business man Tom Walkinshaw in the guise of Holden Special Vehicles to dress up these cars with fancy wheels , aero body kit , dual exhaust etc although the EFI engine was fitted by the Holden factory

Being only available through selected dealers and highly distinctive it soon got the name of The Bat Mobile in the eyes of the envious. Anyway the 500 were eventually built and went on to win Bathurst a number of times which was satisfying . Unfortunately it came to be known as "the Walky " in deference to "the Brock " which was a bit disappointing because in reality it was the product of

Holden's Motor Sport and Engine departments .

Larry's Group A in race trim



Back to Barn Finds Well somehow the internet must have worked out I had something to do with all this as just recently I began to get plastered with ads seeking expressions of interest for just such a car that could be worth up to \$ 1/2 million . A bit far fetched I thought but it went on to describe how the car was just as it had been delivered to the Dealer with the spoiler and airdam bubble wrapped in the back so they did not get damaged driving off the transporter at the dealer . **The car currently for sale along with it's kit Seven News internet pic Richmonds**

This all added up but the clincher to it all was the odometer reading of only 20 km , so it had obviously never been driven on the road . Actually a car cannot be sold as new if it has over 150 km on the odometer so to all intents and purposes this is 38 year old barn find is still a new car after all these years . Beat that !

Then the penny dropped ! In those days we used to go up to Hay in the Riverina to hot test cars on the long straight level roads across the Hay plains .

Warwick's first fuel injected V8 auto test car on the Hay plain . We used to fit our new experimental engines in a non descript current model car to escape detection Warwick pic

While based in Hay we stayed in a local motel and prevailed on the local Holden Dealer, Royce Curtis Motors .for use of his workshop and equipment to change test parts such as radiators , fans and airconditioning etc.

After we got to know them a bit some one must have blabbed about my involvement in the Group A project so I was taken aside for a private viewing of the Principles pride and joy a brand new VL Group A Commodore without number plates and only 20 km on the clock and the loose trim parts still in bubble wrap . On questioning him he had no intention of ever driving it but I never got a convincing answer of what he was going to do with it . So I think I now know ! It has to be the same car surfacing at last How Good is that ?

As for buying it what do you do with it ? It can only be new once and if you drive it I imagine you instantly devalue it by about 1/2. Warwick Bryce acknowledgements' internet pics Drive , 7news , Richmonds



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Australian Ingenuity and Engineering skills were put to the test during WW1, when short term storage facilities were urgently required for bumper wheat crops in the Wimmera . Up to this time surplus grain had been stored in concrete silos built during the 1930s but a shortage of materials and difficulties in shipping to Europe meant a series of short term storage facilities were urgently needed

cont

The now famous 'Stick Shed' at Murtoa is the best remaining example of how they made do .

Photos do not convey well the scale and simplicity of this vast building, nicknamed the 'Cathedral of the Wimmera'. It is 265 metres long, 60 metres wide and 19 metres tall with a metal roof supported by 560 mountain ash poles. See opening photograph but it is hard to grasp its perspective but is the area of about 10 suburban house blocks

Some of the longer poles have rigging, similar to a sailing ship mast, to add strength. These unseasoned poles were raised by a truck mounted derrick and concreted into place. Light gauge steel rods brace the structure laterally and longways bracing is provided by the elevator tower at the Western end. Hardwood rafters rest on corbels on each pole and the joints are secured with hoop iron, allowing some movement.

The height can only be appreciated when compared to the visitors in the center aisle. →

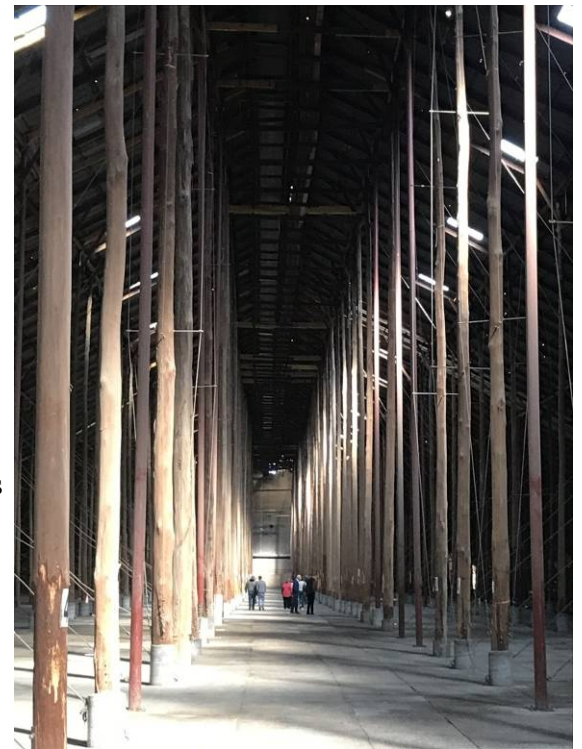
There are over 150 tonnes of galvanized iron in the roof, which is sloped at the same angle that a pile of wheat naturally forms to maximise capacity. The general construction appears lightweight but the shed accommodates up to 92,500 tonnes of wheat and has done so for over 80 years.

Despite wartime shortages of labour, construction equipment and materials the whole project was completed in around four months from Sept 1941 to January 1942. Contemporary photos show deep footings for the elevator pit being dug by hand with soil being loaded into horse drawn drays.

Government projects seem to take much longer these days despite an abundance of modern machinery.

A system of conveyor belts transferred wheat in and out of the shed to rail or road transport. Incoming bulk grain was dumped into below ground pits and raised to a horizontal conveyor running along the apex of the roof and diverted off as required to fill the space underneath. The machinery was steam driven using an old locomotive boiler and winding gear from the Melbourne cable tram system. In later years the system was converted to diesel power. The stick shed was last used for grain storage in 1990 and listed on the Victorian Heritage Register that year. It is now open for visitors seven days a week with a modest entry fee.

There are more of the construction via this link. <https://www.thestickshed.com.au/galleries/photos/>
Building there in summer would have been tough.



A short drive from the stick shed is the historic Murtoa water tower, built in 1886 to supply the township and nearby railway station. The lower four floors of this building now house an interesting local museum.

Peter Lynch added to the adventure by exploring the district and tracking down examples of Silo Art in these quirky French cars. →

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Geelong Linde Compressor Foundations

An update has just come in from Graham Hobbs of the Geelong Showgrounds Museum which of course includes the James Harrison Refrigeration Display. Their major project is the erection of the giant 1909 Linde Ammonia compressor from Jacksons meat freezing works in Geelong. It will as a tribute to James's contribution in the invention and commercialization of refrigeration, particularly in the preservation of food by deep freezing.

The 20 tonne base and cylinder of the machine has been sandblasted and painted with support from local suppliers and museum volunteers Geelong Showgrounds Museum pic →
continued →





The idea is to mount this giant machine with its 5.5 m dia flywheel on a concrete plinths in a prominent position just inside the main entrance to their Showgrounds . The last 3 years have been spent obtaining permission , designing foundations , excavating and pouring the slab .

It is now in its final stages of restoration with sanding and painting the major components of their dismantled machine prior to its transport to the showgrounds This project should be of great interest to our members because we have a couple of slightly smaller compressors and of course the sugar mill steam engine which are all similar reciprocating machines that we would like to display

← *The concrete base has been completed except for some minor drainage work .*

Our members will notice it is considerably higher than foundations we are used to . Being outside this is to raise the machine so most of it's gigantic 5.5 m flywheel will be above ground level to attract the attention of passers to their refrigeration display.

← *A bit hard to appreciate the size of the flywheel with nothing in the pic from which to gauge its perspective but have a lo9ok at the one we have got by the loading ramp .*



The vintage machinery group are getting very excited now the project is nearing completion and are looking forward to the day when the parts will be transported to the grounds which will be

shortly after their Royal Show which is from 16 to 18 of October this year .

Thanks Lex Chalmers and Graham Hobbs for the information and photos

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Around the Club

Loco PHIL's Boiler

There has been more progress since last month's report and now the boiler is virtually finished as Rodney Martin has had another session fitting the tubes and they are now all in at last

View of the finished front tube plate . Note the 3 threaded bosses very neatly welded on . According to Rodney these days TIG is the only way to go as the molten metal is shielded from oxidation by the inert gas Argon allowing you to see where the metal is going on rather than it being out of sight underneath what amounts to a layer of molten lava which just loves to be trapped in the joint

With ace tube expander Spiros away on holidays Warwick was recruited to give Rodney a hand up at his Engineerium to finish off the job . Rodney's works are a place to behold not too unlike the legendary Fred Dibnah's set up in the UK . Adding to the atmosphere ,at random intervals through the day., blasts of Puffing Billy's whistle could be heard which spurred things along.





← **Rodney expanding some tubes a bit more for a perfect seal .**

Conditions in a the fire box of a small boiler are by necessity a bit cramped and Rodney went to a lot of trouble finding a 3/4 inch tube expander compact enough to fit in the fire box . Eventually one was found , at a not very keen price, This could be run in with a right anlge drive air nut runner . All the same the expander had to be cut away to do the corner tubes which makes it pretty useless for any other job .



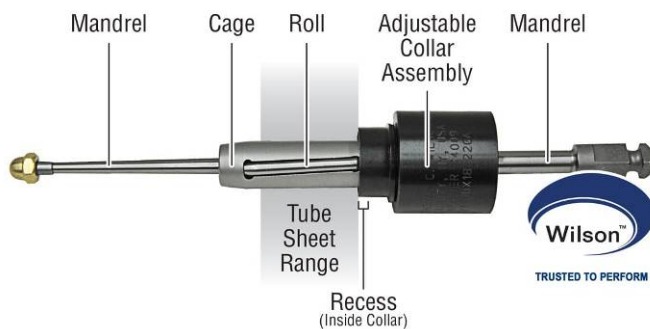
← **By the end of the day we had all the tubes in and had it up to 100 psi pressure with water from the main .**

All looked encouraging although a few blanking off plates needed tightening down a bit more.



A bit about Tubes and Expanders

In this type of boiler all the hot gases from the fire run from one end of the boiler to the other through a nest of around 40 relatively small tubes surrounded by the water you want to turn into steam . Being high in number and small in diameter the tubes present a large surface area and their relatively thin walls , compared to the boilers barrel , makes for relatively efficient heat transfer from the fire to the water . Being subject to corrosion from the water and fire and with thin walls they need to be periodically replaced so have to be easy to change. On the other hand they do not need to withstand any great forces , which is mainly compression anyway and being



round in cross-section are very strong . This leaves the main challenge just to get them to seal .

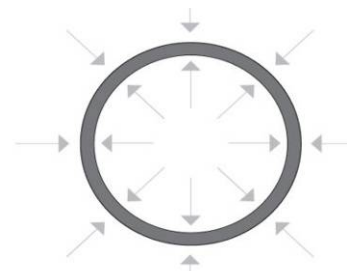
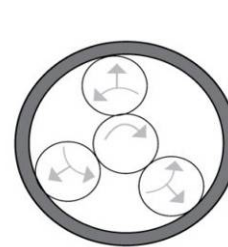
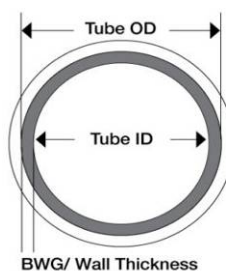
The elegant solution is expand the short section of each end where it passes through the plate by winding in a tapered roller. Obviously an expander needs to be selected that is the right size to suit the tube and the hole in the tube plate. Which must be smooth and round and of sufficient size to allow the tube to be inserted by hand . The expander has 3 slightly tapered and inclined rollers in a collar running on a mandrel . This is inserted in the end of the tube and the slightly tapered mandrel drives the 3 rollers around expanding them as it advances progressively stretching the tube wall as it pushes the rollers out .until it is in full contact with the hole in the tube plate. With a bit of practice you get the feel as going too far risks cracking the ligaments between the tube holes.

Diagram illustrating the process.

1/ showing how the tube is a clear fit in the hole in the tube plate

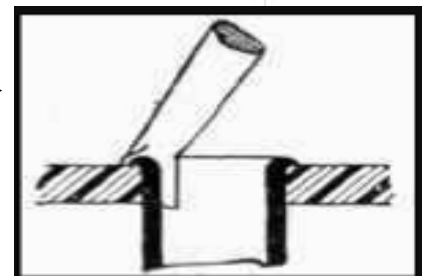
2/ Central mandrel rotates the 3 rollers that run around inside the tube

3/ Thinning action of the rollers stretch the tube out till it is in full contact with the tube plate



Sometimes the end of the tube is flared over to avoid the protruding bit getting too hot and burning away.

No need to restrain the ends of the tube as there is no end force on the tube being open at each end . Usually there are rods running from end to end to of the boiler to stop the tube plate bulging. Ackn Wilson trusted to perform , Rodney Martin .



Collection of Blowlamps now at MSTEC



This amazing collection of unusual and rare Blowlamps is now at the MSTEC Museum and on display in a cabinet in Pavilion 6 . It is expected to ultimately become part of MSTEC's collection .Garnet Fanning and his wife Gwen where early members of MSTEC harking back to the Wantirna days . Before my time so I cannot add much details but they were highly respected .



Just a heads up for later members. Blow lamps are not lights at all but powerful portable burners specially designed for heating purposes such as soldering , heating up the hot builds of an oil engine prior to starting , burning off old paint and loosening rusted up parts . Infact most things you would use propane or butane contained in pressurized cylinders today.

The main difference is the fuel they use , petrol or kero is not pressurized being a liquid at normal pressure so it must be converted to a gas before delivery to the burner as only gas burns not liquids or solids.

This is usually done by pressurizing the tank with a hand operated plunger pump which delivers a fine stream of fuel through an adjustable needle valve to a coil in the vicinity of the main flame .

Before you are able to start the lamp this coil is pre heated externally by a cup of metho , kero will do if you do not mind a bit of black smoke . After a couple of minutes the vaporizer will be issuing as a stream of vapour which then burns as in a propane or butane torch without the need for anymore auxiliary heat.

Once going they are highly effective but you can see from the crossection they are overly complicated , prone to fuel blockages , external leaks as well as pump leather failures . Next time you reach for your Benzomatic MAPP torch , squeeze the trigger and as it bursts into life spare a thought for the “ Good old Days “ of the blow lamp .

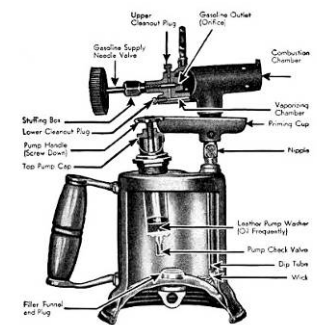


FIG. 4.62. Cross-sectional view of a blow torch.

STEAM Shovel Report

Finally the last wall sheet of the cabin has gone on after quite some time in procuring and getting it folded .

Laurie and Warwick admiring their handy work with a great sense of satisfaction which is part of motivating volunteers.

The next step is to get the roof on , we have got everything ready to go but there is a bit of painting to do on the top of the A frame that was missed by the sandblaster . Ron King has put his hand up to do this.

Andrew and helpers have been getting stuck into the boiler with the priority on getting a hydro test but there is still the question of documenting the thickness testing done some time ago and then deciding what needs to be done . Meanwhile the mud ring hand hole covers have turned out to be a motley lot with the best solution replacing them . An attractive option being considered is having a new set cast in steel using Rohan's contacts. Boiler Flanges have been cleaner up and threads tapped , fortunately a good supply of new studs has come to hand.

Of concern at the moment is freeing up several seized track pins . Brute force and heat seems the next option .

I think a time line needs to be available that shows the order

activities need doing as distinct from a Priority list . This then helps ensure we have simple and often mundane things ready to allow the next step to be done like getting the scaffolding out so we can fitment check the coal bunker that the Blacksmith repaired for us earlier this year

Laurie has been working on refurbishing the back door and found more of it is salvageable than we originally thought.

Peter Jackman pic



Ruston Back in Action

It is 2 years now since our Ruston 4VXC engine last ran due to difficulties with its worn out injector's inability to deliver small quantities of properly atomised fuel at light load. Some alternative, including more modern injectors, were tried without satisfactory result. The breakthrough came when the people from BSP Injectors pty ltd said they would see what they could do. It turned out 3 needed cleaning and reseating but the fourth had a cracked tip. It is not clear how they fixed this but as soon as they turned up Ian, Mick and Len eagerly refitted them and were mightily impressed when it started right up and immediately run smoothly on all cylinders for the first time since we have had it.

Ian Malcolm and Mick Decru refitting the repaired injectors.

Mick has recently joined the Diesel team and has a background in the trucking industry.

This is a great achievement because the engine is a bit special being built in 1929 and is one of the first to use solid injection which soon became the standard on large Diesels rapidly superseding airblast.



Ian and Mick admiring their handywork back in action. 132 bhp at 330 rpm



It is a 4 cylinder of 10 " bore and 15 "stroke. The individual cylinders are free standing and mounted on a fully enclosed, automatically lubricated, crankcase. Pushrods operate the horizontal valves which are fully exposed which gives plenty of motion to entrance our visitors. It's

combination of exposed mechanicals but pressure injection it makes it a transition engine between old and new technologies. This makes it quite special as far as our collection is concerned as it gives us the full spectrum of oil engine technology over the last 140 years

It is directly coupled to a 460 volt DC generator and drives via multi vee belts a 100 KVA alternator. Used as a standby generator for the AMP society building in Melbourne Business District. Obtained by MSTEC for restoration in 1991 and is a fine example of an early British Oil Engine. Some Poms cannot bring themselves to use the German D name.

BSP Injector Repair Business has me intrigued. Founded in 1937 I am told the name is the initials of the founders nothing to do with plumbing. That is not all though they are in Scammell Street, an industrial park bounded by Sydney and Somerton Roads.

What I cannot get my head around though is that all the streets in that area are named after classic, mostly English Diesel road transport. E.g. Foden, Thorneycroft, Dennis, Scammell plus Reo, Leader etc. I do not know what come first the mostly troublesome pommy trucks or the BSP Diesel service wizards. Anyway they certainly saved our day and at the right place. Why look any further?

Railway Report

The news for this month is the installation of a compressed air distribution network in shed 11. The 1/2 " galvanized pipe work was taken to Rob Jones's workshop where they were cut to the planned length, threaded and reamed ready for installation.

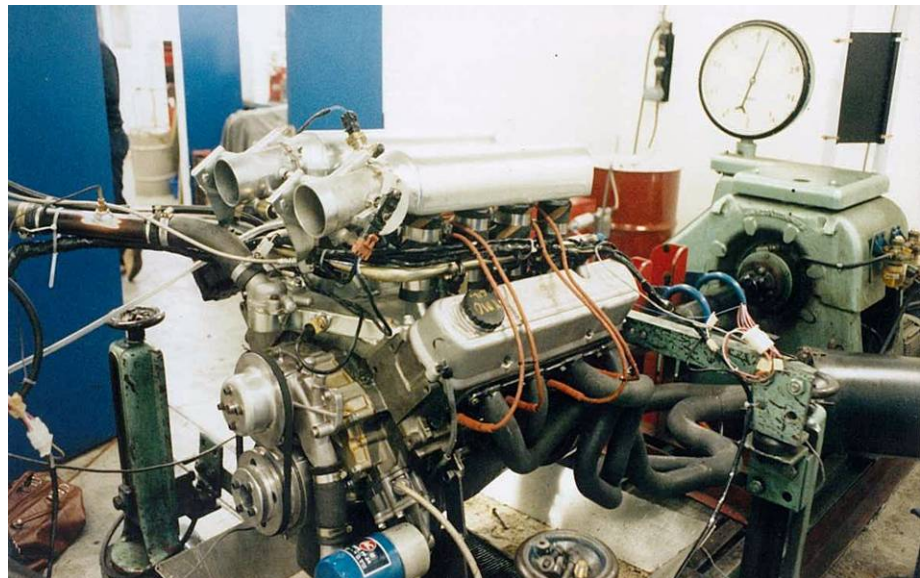
Photo Album Find

This picture, highly secret in its day, just happened to fall out of the photo album. It is the first Experimentally built VL Group A Holden Racing engine on the Dynamometer at Brock's Bertie street HDT works.

Note the fabricated inlet manifold along the lines of the concepts shown in the Barn find story.

This iteration did not work very well making only around 440 HP

Further development by Larry Perkins got it up to around 565 HP at 7500 rpm for the ultimate Holden Group A Engine Bathurst win in 1993. Warwick Photo



Scum Pans

Last months Steam Supreme issue 668 mentioned the mysterious item found in the Steam Shovels boiler resembling a Chinamans hat.

A view inside the steam shovel's vertical boiler revealed a scum pan resembling an upside down chinamans hat.



→
Anyway Roy Odgers would like to contribute the following information about it as it has now been restored and is ready to go back in and Wiki seemed to

think a scum pan might be some sort of cooking utensil found in a bachelors sink which is not quite the same thing ,

Scum Pan

Internet pic of a scum Pan

Roy writes This following extract is taken from "STEAM" by Reid & Renshaw first published 1971 (for most of us this is the "Steam Bible")

"The Scum Pan or the surface blow-off equipment is for

blowing scum from the surface of the water of the boiler. The scum is formed by the impurities in the water which rise to the surface.

The apparatus consists of a scum pan situated about the centre of the boiler just above the working water level. Connecting pipes should be to the front end of the boiler and so on down to the bottom blow-off pipe (often conveniently plumbed into the blow-down exit piping). **The scum valve** controls the operation and is situated just outside the boiler proper. To operate the surface blow-off apparatus, increase the water level 1 or 2 ins. above the normal working level, slightly more than is sufficient to cover the scum pan. After making sure that all is clear, open the scum valve and blow the boiler down to normal working level."

As can be seen by this account any oil or fat that enters into the boiler via contaminated water (and which floats on the surface of the boiler water) is thus able to be removed by a surface "blow down" and the process is continued until steam rather than water issues from the blow off pipe; usually visible via the tun dish.

Vertical boilers such as fitted to the steam shovel were also common on early tramp steamers etc. as they were compact (space wise) and provided steam for derricks and steam winches used to unload the goods carried by the steamer – also to raise and lower the anchor. Similarly to the steam shovel the exhaust steam was reclaimed and as this steam "picked up" steam/lubricating oil used on these winches, hence the need for a scum pan. Failure to remove these contaminants caused "foaming" which can be quite a headache in an operating boiler!

View of the gauge glass , the scum pan is at mid water level
Pic Goldsmith Steam Shovel



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COMING EVENTS

Social Meeting

Wednesday 7 October

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.**