

Featured Engine No. 56

The Murray River Pump at the Cobdogla Irrigation Museum

by David Franklin

Amongst a wide variety of pumps and machinery used in the Riverland area is a pair of Humphrey pumps installed in 1925. One of these is in working order and is believed to be the only one operating in the world although some ten or so others were originally installed in Germany, USA & England.

The other is partially dismantled for inspection by visitors. The Humphrey pump was invented by Herbert Alfred Humphrey a chemist and gas engineer born in London in 1868. He was a strong advocate of the use of gas engines and invented his pump in the early 1900's. It is best described as an engine where water replaces the piston within the cylinder.

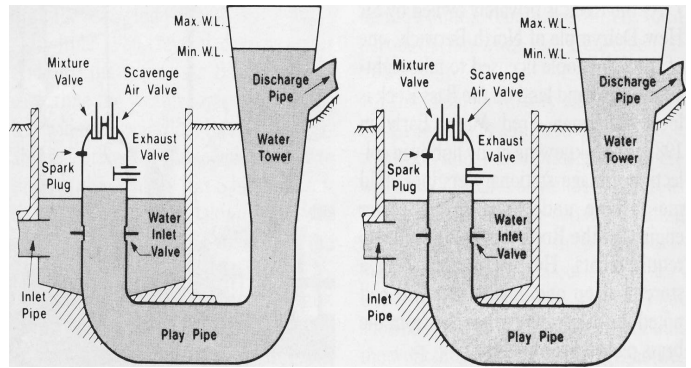
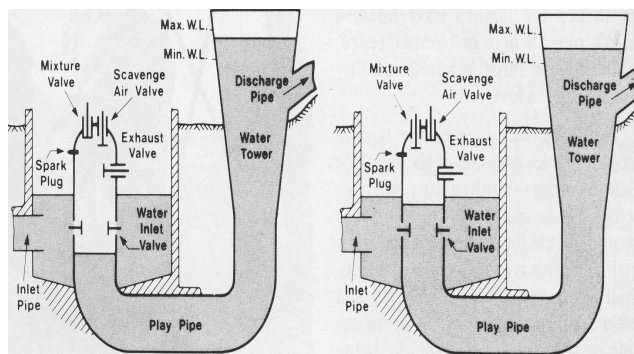
It is a four-stroke engine and the diagrams describe the operation better than words alone. A producer plant with a gasometer outside the building provides the gas which was originally from wood but now uses coke. The gas is introduced into the cylinder where it is fired by Model T Ford Trembler coils and numerous sparking plugs. Water is forced by the explosion down a huge U tube and up the other side into a large funnel open to the air at the top but with a side overflow into the irrigation system.

The water enters the cylinder from below, by an inlet pipe from the Murray River, through a mass of small brass flap valves several hundred in number. Each is closed by a small spring, and when these broke a loud clacking noise could be heard. Some of the water then falls back down the tube and with all the valves closed the column of water bounces back on the compression down the tube; gas and air is introduced into the combustion chamber by the partial vacuum caused by the moving column of water. This water then falls back and the mixture is fired forcing the column of water out again into the irrigation system.

Pumps such as these could deliver in excess of 30 million gallons of water in 24 hours and some large ones as much as 40 million a day. Each outward stroke (2 per cycle) of the pump dumps some 6 tons of water into the delivery channel for a total of 1.25 million gallons (5,682,500 litres) per hour

We were shown these pumps by one of the original operators who kindly opened the Museum for us at a time when it was usually closed.

The restoration of the pumps has been undertaken by the Engineering & Water Supply



Department of South Australia, as one of its contributions to the celebration of the 150th anniversary^y of the settlement in South Australia.

Australia's 'Big Thumper' is Situated on Park Terrace in Cobdogla, the Museum is well sign posted from the Stuart Highway. It is the world's only working Humphrey Pump. It has been restored and is demonstrated along with steam & diesel locomotives, steam traction or ploughing engines, oil engines, tractors and machinery from the early development era of the Irrigation Areas. Well worth a visit if you are in the area! Humphrey Pump & Steam Days 2nd Oct 2011, 8th April 10th June, 8th July, 30th Sept 2012

How it works

First Outward Stroke

The first outward stroke acts like a water cannon. Water is forced up the tower and out of the discharge pipe. Towards the end of the stroke the water inlet, scavenge air and exhaust valves all open. The inertia of the moving column of water has now created a partial vacuum, and water and air enter the combustion chamber.

Second Outward Stroke

This compressed air now forces the water outward again. The inertia of the water column takes it past the point where pressure in the combustion chamber is equal to air pressure; the mixture valves open and a new charge of air and gas is drawn into the partial vacuum so created.

First Return Stroke

The column of water starts to fall back because of the force of gravity. The inlet and air valves close. Most of the spent gases are forced out; the moving column of water compresses the air above the exhaust valve level and comes to rest on the cushion of compressed air so formed.

Second Return Stroke

The water falls back in the tower again. All valves close, the explosive mixture in the combustion chamber is compressed, ignited by the spark plugs and the cycle starts again. There are nine complete cycles per minute.

Calendar of Events

Key. CN = Club Night. CU = Crankup

Oct 8th. Sat. **Skittle match.** South Parade Club, Frome.

Oct 15th. Sat. **Autumn sortout** at Cranmore Station Yard.

Oct 16th. Sun. Robert's Open Day. See editorial on front page

Oct 31st **CN.** Selwood preservation club. **Inter club quiz.**

Nov 12th Saturday. **Autumn Enstone Sale.**

Nov 28th. **CN** Guest speaker Patrick Hassell. "Bristol Before Rolls-Royce"

Dec 4th Sunday. Antifreeze **CU** at Nunney Catch.

December **no club night.**

Dec 27th. Mince Pie **CU** at The Court Hotel

All events are listed in good faith. You should always ascertain if an event is taking place before you go. If in doubt, ring Brian Baker on 01749 342671

Social news

By Earwig

Happy birthday to Alan Vickery on 20th September, also Kevin Phillips on 3rd October. Congratulations to Kevin and Carol for the 10th October, their 30th wedding anniversary. Arthur Smith will celebrate his seventh decade on 19th October, it's a big one Arthur will you be taking the club out to celebrate?

A warm welcome to new member Mr G. Whitcombe-Smith from Hinton Blewett.

Spotted on TV! club member Ken Rendall of Mere was amongst other British Legion standard bearers at Wooton Bassett paying their respect to our fallen heroes. Well done Ken.

Spotted climbing a steep hill out of Frome Town centre club member Brian White of Southampton driving a vintage ERF Artic Tractor unit with a heavy haulage low loader trailer while on the Bournemouth to Bath Vintage Commercial road run. Brian made some nice gear changes ascending the hill with no cogs left in the road ;o)) Nice one Brian. (Footnote a visitor to Frome commented to me what a nice quaint town Frome was but would not live here as too many lorries pass through the town centre !!)

Chairman's report *(printed as received)*

By Brian Baker

This month I have some good news for a change. At a recent committee meeting the committee decided to keep the subscriptions for 2012 the same as this year, this is mainly due to the profit from the rally boosting club funds making any rise unnecessary. The monthly meeting at the Court Hotel on August 29th had quite a few members absent due to holidays. However the members who did attend were entertained with photos and slides brought along by the members present. These were shown on the clubs epidiastope and Brian's projector. There was a prize for the best effort of the evening and that was won by Brian Munt, well done Brian. (I think he won it last year as well). I am currently compiling the programme for 2012, If any member can give a talk,(it can be any subject under the sun,) or if you know anyone else that could oblige, please let me know as it is getting harder each year as the list of

speakers in this area gets smaller and smaller. I would like to remind members of the skittle match at South Parade Club Frome on Saturday October 8th at 7-30. If you intend coming give Diane a ring on Frome 01373 464982 to book your supper, fish and chips or chicken and chips. A chance to turn your unwanted goods into cash if you come along to the club "Sortout" at Cranmore Railway Station on October 15th, only £5 for a pitch and £1 for buyers, I hope to see you there.

Open Letter

I don't get many letters, but I thought this one was worth printing – Ed.

Dear Kim Siddorn

I was looking for some information about Lt Cdr George Bodley Kingdon RN when I hit your newsletter archive and found the article by Connie Rushton about the crash which, I knew, killed him. What I still don't know is where the aircraft actually crashed. Most accounts just say "Near Crewkerne" - which covers a significant acreage of beautiful countryside. Would it be possible to ask Ms Rushton where it came down as it's clear she knows exactly where it was.

The reason for my enquiry is that I am writing the book to go with Dan Snow's forthcoming TV series on the archaeology of the Second World War. I was down at Crewkerne last week watching a dig take place, this time for the remains of a Spitfire that crashed in 1942, also due to lack of fuel. This time the pilot was luckier, and baled out safely. While 'majoring' on that dig, I also want to mention Kingdon's crash because it occurred for the same reason, involved a Spitfire, and occurred in a similar location. Or so I am led to believe!

Ms Rushton may like to know that Kingdon had gained his Aviation Certificate in 1931 and subsequently held a pre-war temporary commission in the RAF as a Flying Officer. He returned to naval duties in September 1937, and, as she says, it was doubtless the damage to his ship that gave him the chance to get behind the controls of an aircraft again. Any help would be gratefully received
Kind regards, Jean hood Trafalgarhistory@aol.com

Carnival Country Fayre Trowbridge

By Eric Gay

It is with regret that although for the past two years I have tried to add this event to the programme of events and it has been publicised each year in the newsletter, in all that time I have only had one member take the trouble to enquire - and I had to tell him no other members were interested.

This would have been quite a prestigious event for the club as it would have brought us to notice of the Trowbridge Town Council. Each year I try to obtain Council grants for the club, and no doubt if we had put on a good display for them as we did in years past, this could have been a great help. Sadly, there will be no more invitations to attend this event.

On a brighter note, Eric gave the Editor a letter from the Children's Hospice South West thanking us for our £500 donation. Although too long for publication, they wanted to thank all our members and others for their hard work that enabled the Wessex SEC to make such a generous contribution.

Out and About

By Robin Lambert

Bridgwater Classic Car Show on 13&14th

August This was to be our first time exhibiting here and we were very impressed with the location. Held on a rugby sports ground complete with modern club house, the field surface was almost too nice to drive on. Well supported by WSEC members who mingled amongst members from other clubs, a fine display of engines and machinery was set up around the field's perimeter, This event is mainly a vintage car rally with a large amount parked on the playing field. A nice selection of stalls including all the bits and pieces we like to browse over were dotted around and one little piece found its way to me. A gas burner - just the thing to power up a hot air engine, my thanks to Hawkeye Graham for this. Dot and Alan had their little Stuart charging set up & running. They soon rectified the teething problems with missing volts & they once more had light.

Friday and Saturday evenings saw music laid on in the club house, and the drink prices were very reasonable at club prices. For the Exhibitors camping shower facilities were available if you asked. On Sunday a car boot sale took place just out side the ground which for a while left the show looking rather short of public and exhibitors! To sum up a nice event that i would like to attend next year.

We stayed over here until Monday morning as did quite a few more, our intentions was to head on down to Cornwall for the **St Agnes** Rally 19-20-21st August for the following weekend, This event had moved its location last year to **Stithians** which is midway between Redruth and Truro, The site is a bit like a mini Bath and West show ground ,with permanent buildings and hard roads going in all directions which is a big help to exhibitors if the weather turns bad. The new Stationary Engine Steward had planned out our area so we could all park behind our engines and even keep a space for your mates if required, a big improvement on past events. This event is spread out over several fields and arenas and takes a bit of getting used to after the one gigantic field that used to hold this show in total.

A lot of full size steam locos were in attendance along with many scale models, a large fairground plus a huge beer and entertainment tent that could offer a freshly cooked roast dinner for £6, once again a lot of club members exhibited here bringing a range of machines including a Hot air fan, 4hp Domestic, 6hp Ruston & Hornsby, 5hp Victoria, Lister D and Water pump, & a small charging unit that was problematic owing to rust in its fuel tank. A nice three days was had with many hanging on for another week's holiday of surf & sand.

I did get an invite to take an engine along to the **Berkley Castle** show on Bank Holiday Monday. This is mainly a large scale gymkhana event, set in grounds below the Castle walls and always has lots to see. Animals of all descriptions, many stalls, vintage tractors with a few of the latest models on trade stands, and I did bump into a club member from the past, Vic Walton from Bristol who is looking well and sent his regards to all who knew him. The stationary engine line was organised by Shane from the Sodbury Vale Club with some help from Kevin.

Yesterday's Farming. Nr Bruton, Sat 20th Aug

By Eric Gay

Off I went with the 1 1/2 hp Petter to Yesterdays Farming at Bruton. Having exhibited at this rally over the years, I thought I was in for a good weekend – but I'm afraid not. It is easy to criticise, but I have to be critical about this event, I arrived at the site around 8.45am and with no road signs pointing to the entrance, myself and others drove straight by and had to turn round and drive back.

The entrance to the rally site was through the farm yard, that was alright until you met the farm track leading into the show field. Rough? Well, that's an understatement - it was diabolical. When I got into the field, I could not find the engine line. I had to ask three officials before anyone could tell me were I had to set up. "Down the bottom of the hill, mate". Now, it had been raining off and on for several days before the event, so who's clever idea was it to put engines at the bottom of a slope? I did manage to get the van into position with a lot of luck and then became stuck. Poor chap behind me with a motor home just could not move and this was before we had any rain on Saturday. One well known engine man with a large engine could not even unload his exhibit. Now with a little thought, tractors could have stood were we were put, they can pull themselves out of most wet and muddy sites. There was plenty of room over on the flat right hand side of the site flat.

One toilet block on a large site is not very good for we poor old souls that have difficulty in walking. It was placed about 3 to 400 yards from the engine line, I will admit they were high class loos, but one or two more would not have gone amiss.

Well, it was about 10.30 when the old boy upstairs decided we needed some more rain and rain it did up until 1 o'clock, I did run the engine all morning with a few more hardy souls, and on into the afternoon ("must be mad" her in doors do keep telling I – and she might be right! – but I had to run the engine for summut to do!

Now time passed and around 4 o'clock a few of us decided it was time to go, so now the fun started. I helped a couple of lads to load their engines and it was a case of lots of willing hands and backs pushing to get the first two cars and trailers away. My turn came and would the Nissan come out? Oh no. It took a lot of help to get moving but it would have been a help if we'd had a tractor, Mr Organiser.

At last I made it to the top of the site and the tank track that lead into the field but a tractor pulling a trader's car out drove straight in front of me. If he'd stopped , I could have driven through the deep mud on the track as I had grip and the tractor would have had no difficulty moving off again. Now I was well and truly bogged down with no offers of help from the officials or the towing team. Help came from five lads with the steam exhibits who got me moving again. I did not return on the Sunday.

In all my years of rallying, I have tried not to let the organisers down by not honouring my commitment to appear, but in this case I could not face another day of struggle. As I've said, it is easy to criticize and none knows better than I the hard work required to organise a rally. Being placed at the bottom of an already muddy hill was not a good idea. I just hope that next year they have better weather.