

CRANKING

The Wessex Stationary Engine Club's Monthly Newsletter

February
2012

Thirty fifth year
of publication

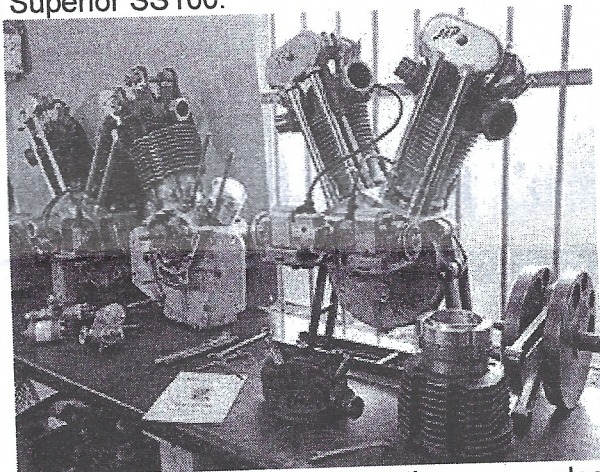
www.wessex-sec.co.uk

From the Sump

I am slowly selling stuff that I'm never going to get around to and some months ago, I sold a JAP 680 vee twin to a friend of mine. It needed work and after making a few bit for himself, he came to the conclusion that it would make more sense to get a specialist to look at it. Much in the news had been Cameron Engineering in Malvern as they had just started making JAP engines to order. So, shoving the heavy lump of a thing in the back of the long suffering BMW, off we went to Malvern, about 70 miles from Bristol. It was an easy run - M5 and one junction above the M50 turn off.

Cameron Engineering are in three industrial units on a small trading estate by the railway. It is crowded with machine tools of many kinds, quite a few are CNC machines. From this cheerfully untidy workshop, they are making spares for JAP engines and, indeed, building new engines from scratch. If you would like a brand spanking new KTOR racing engine, if you have £16,000 then you can have one. All the heads and barrels are machined from solid cast iron billets and crankcases etc from new castings.

There were various engines being either restored or built, one if them being installed in a Brough Superior SS100.



Aside from the engines, they are also building complete Morgan three wheelers! The facility and air of easy expertise exuded by the industrious men working there is very heartening and I was most impressed. If you need a JAP engine looking at, spares made from scratch etc, I suggest that you go and talk to them.

<http://cameronracinaengines.com>

Moving the Metal For sale

Dennis, 640cc Type 75, 1947, restored and on a trolley. As seen at many local events. £200.

Moulding planes. 40 of them in a range of shapes and sizes. **Will not split**. £35.

Both above, phone Tony Davis on 01373 464982

Petter, 1926 1.5hp patent safety petrol engine. Restored and on hardwood trolley. Full history - ready to rally. £600 ONO.

AND I have various mags - give me a ring.

Lister 'A', 1934, 2.5hp, tank cooled. Restored & on hardwood trolley. Full history - ready to rally. £450

no offers. All the above - Eric Gay 01225 754374

Flat bed braked trailer with headboard. Low load bed 4ft 6ins wide by 8ft long. With ramps, winch & rear steadies. Nearly new 165x13 8 ply tyres & spare. Sufficient for Lister L type on a proper trolley! £200. More details, phone Graham. 07843 583855.

International, M type, LT, 3HP, 1920, £450.

Tel John: 01225 340432 or email
wjohnfire@virginmedia.com.

Slate switching board by Nevill, 38" by 28". 6" brass cased instruments. In totally unmolested and unrestored condition. Photos available by e-mail. £350 ONO. (Note price reduction!)

above. phone Kim Siddorn 0117 964 6818

WANTED

No. 52 Steel Detachable Chain as used on conveyors. Looking for 10 yards, but any quantity will do. Phone Gerald Atherton - 01934 852670
Stuart Turner R2Y cylinder side plate with "STUART" cast into it. Phone R. Champion 01275 892944
Tilley lamps - WHY?

Phone John Ivens 07812 385536

Vincent industrial engine powered compressor.

Pultra lathe or parts. 1510 Or 1710 considered.

ABC engine. Particularly 1915 250cc Firefly but anything considered.

B T-H Competition magneto. For my cammy Norton. Anticlockwise from the points end. Thick base preferred although not essential. Good price paid for the right magneto!

Above, phone Kim Siddorn 0117 964 6818

Articles, cartoons, photos etc are always very welcome - this is not a one-man band, but an expression of all our thoughts and experience. Submissions should be preferably typed or word-processed or even handwritten, (if brief), - it is the content we're after, not the grammar or spelling, so please don't feel your efforts will be ignored. The editor reserves the right to change, edit, augment or lessen your Deathless Prose and asks all to note that opinions expressed in this newsletter may or may not represent club policy

Phone - 0117 964 6818

J. Kim Siddorn, 9, Durleigh Close, Bristol. BS13 7NQ or by e-mail to kim.siddorn@blueyonder.co.uk.

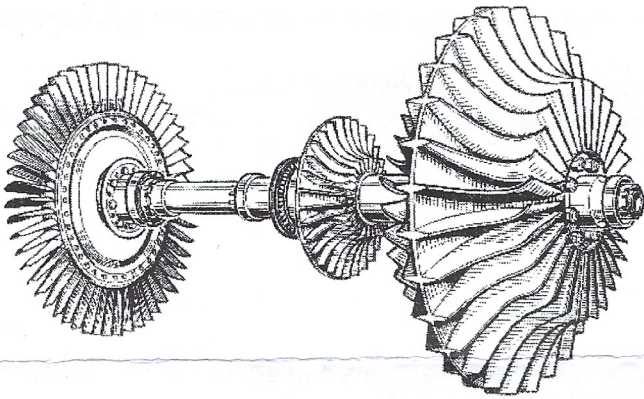
Featured Engine No. 62

By Kim Siddorn **Early Gas Turbines**

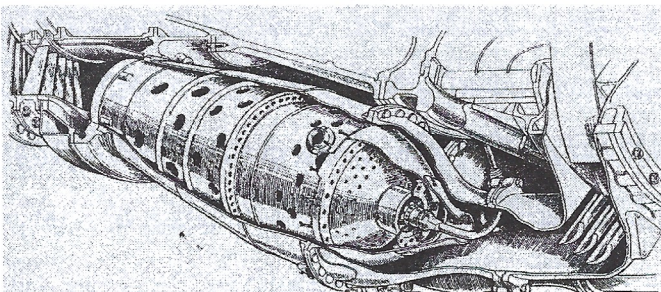
Part One - Centrifugal compressor engines

It is fair to say that gas turbine development since WW2 has quite literally changed the world. Development has been steady and unremitting, and, as an instance, turbine blade technology is quite breathtaking in its elegant complexity as the blades operate in an environment far exceeding the melting point of the alloys from which they are made. Commercially, the aircraft that they power can fly further, faster and on less fuel every year. This everyday miracle sees millions of people flying at the edge of space without giving it a moment's thought. Gas turbines have truly shrunk the world in a generation, yet the average person has only the vaguest idea of how they work.

Hero of Alexandria (AD20-62) appreciated the fundamentals of jet reaction and that his aeolipile and Brancas' steam jet-operated turbine of 1629 inspired later experimenters to endeavour to use the products of combustion as a substitute for steam. In 1791, John Barber of Nuneaton was granted a patent covering what is generally regarded as the first gas turbine. However, the lack of materials that would stand the operating temperatures required were centuries in his future and things proceeded no further.

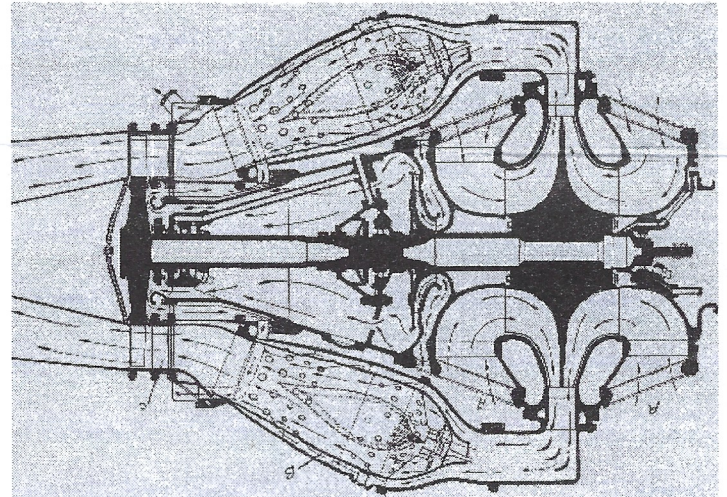


The centrifugal compressor engine with which Frank Whittle (later Sir) experimented in the pre-war years eventually resulted in a workable power plant. It took advantage of then current aircraft piston engine technology and literally utilised the supercharger of a Rolls-Royce piston engine as a compressor section. In the line drawing above, the compressor section is on the right and the turbine on the left. The compressed air mass



proceeds through internal passageways to the ring of combustion chambers (called "cans" & made by Joe Lucas!) where it is mixed with fuel (refined paraffin) & ignited with something that looks remarkably like a spark plug!

The cutaway of the combustion chamber (below, left) shows the fuel pipe running into the nose of the chamber, the igniter fitting into the boss on the outside diameter. A great deal of air is used to not only supply combustion but also to cool the chamber, a situation that continues today as temperatures and pressures chase the ability of our technology to stay ahead in an ever tightening spiral.



The compressor/turbine assembly is in black.

The hot gas (typical temperatures at the jet pipe are between 600 and 900°C) is guided by static vanes to impinge upon a ring of blades set at an angle to the diameter of a rotor disk. This causes the rotor and shaft to rotate, thus rotating the compressor section at the other end of the shaft. Frank Whittle, speaking to Earnest Hives the MD of Rolls-Royce during a test bed visit said rather apologetically that it was a very simple device. He replied that he was not to worry as they would soon develop the simplicity out of it! Prophetic words ...

The centrifugal compressor gas turbine was very much a child of its time. It utilised math, techniques and materials that only existed due to the cutting edge development of piston engines in wartime. Nimonic steels developed for exhaust valves became blade material, high-grade stainless alloys used for exhaust manifolding became combustion chambers and aluminium alloys developed for connecting rods became the compressor casing. But the drag caused by turning the compressed air through 180° through the compressor and then again through 90° as it entered the combustion chambers had its own limitations and from the beginning it was clear that the axial flow engine would be the winner.

Next time, we'll look at the development of axial flow gas turbines

Calendar of Events

Key. CN = Club Night. CU = Crankup E = Event

March 3rd. E. (Sat) Wessex Spring Sortout at Cranmore Station Yard.

March 26th. CN. WW2 in banknotes - invasion, occupation, liberation by Jonathon Hockedy

March 31st. (Sat) E. Tractor & Engine Jumble. Langley Farm, Bampton, Oxfordshire, OX18 2RZ.

Sellers £20 Buyers £4 Per Person

April 3rd. (Sun) Sammy Miller's Motorcycle Museum. Spring Trip. Drive yourself, Bashley Cross Roads New Milton BH25 5SZ.

April 9th. E. Easter Monday at Mells.

Contact Robin Lambert 01373 463526 if you want to attend as space is always limited

April 21st. (Sat). Spring Enstone Sale.

info: Anne Harris 01367 810415

April 22nd. (Sun) Crank up at Nunney Catch transport café

April 28/29th. E. Westbury Transport Gathering, Bratton. Details from Keith Miller, Avalon, 87, Warminster Road, Westbury, Wiltshire. BA13 3PJ

April 30th. CN. "My life on the River Severn" by Chris Witts

May 26/27th. Selwood Rally. Southwick, Nr Trowbridge BA14 9RH. Forms from Mrs Pearl Francis, 45, Stonebridge Drive, Frome, BA11 2TW.

<http://www.selwoodvintage.co.uk/page6.html>

May 28th. CN. "The Longleat Rallies" by Stuart Ashman

June 9/10th. West Bay Rally.

June 16/17th. E. Wessex Midsummer Vintage Gathering. Our club rally at Semington.

June 23/24th. Event: 28th 1000 Engine Rally, Astle Park.

June 25th. CN. "Mary Rose". Talk on the Tudor warship by Bill Moore

July 21/22nd. E. West Oxen Steam & Vintage Show.

Ducklington, Whitney, OX29 7TY (*junction A40/A415*)

Info: Anne Harris 01367 810415

July 29th. (Sun) E. Haynes Motor Museum. Mini rally at Sparkbrook. BA22 7LH. (*Subject to building work being completed. Details later*)

July 30th. CN. Crank Up at the Court Hotel.

August 20th. CN. Early because of bank holiday. In house quiz.

Sept 24th CN "Engines at the 1000 Engine Rally" by Kim Siddom

Oct 6th. (Sat) Skittle Match at South Parade club, Frome.

Oct 13th. E. Wessex Autumn sortout at Cranmore Station Yard.

Oct 29th. CN. Other Hobbies evening.

Bring stuff along to illustrate a table display or talk about it!

Nov 12th. (Sat) Autumn Enstone Sale.

info: Anne Harris 01367 810415

Nov 26th. CN. Photo presentation by the members. Bring along ten photo's or slides. Prize for best effort.

Dec 2th (Sun). CU. Antifreeze Crank Up at Nunney Catch.

December - No meeting this Month.

Dec 27th. CU. Mince Pie Crankup 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

Earwig has woken up. We all know about metal thefts, but it now seems things have escalated to a non metallic dimension. The Police rang a robbery victim to tell him that his own private portaloo had been found on the side of a motorway. No doubt it fell

off the back of a lorry, so let's hope no one was inside at the time! On a more serious note, some events are being cancelled owing to a shortage of portable toilets as many have been pre booked for a national sporting event.

Many haven't noticed that the Whitsun Bank Holiday has been moved by a week to cover the Queen's Diamond Jubilee celebrations. This is why the Selwood club have a two day event instead of the usual three.

The West Bay club are still on the second weekend in June, 9/10th, an event frequented by many Wessex members.

Chairman's Report

by Brian Baker (*printed as received*)

The first meeting of the year at the Court Hotel on Monday January 30th was well attended by members who turned up to be entertained by Robin Lambert putting on one of his excellent slide shows. Robin started the slide show with photos he had taken on his travels with Jackie all around Europe and the British Isles, including some of the brilliant scenery to be found in Scotland. No words can do justice to the places and landscapes that he had captured on film, they were magnificent. He went on to show photos of rallies and people in the club from way back in time, a real blast from the past. This was a superb presentation by Robin which I'm sure was much appreciated by the members present. It is always much more interesting when we are entertained by one of our own members. Robins talk was followed by the usual raffle which once again featured one of the superb little teddy bears made by Francis Armstrong. By the time you read this report the AGM will be upon us where I hope we have some willing volunteers for the vacant posts on the committee, namely, secretary, subscription secretary, and committee members, or is this just another one of my pipe dreams.

Working Practice

I hope that this will become a regular feature and that many more club members will put forward their abilities for hire.

I am willing to help other members with the following:- Drilling. Boring long holes with a boring bar on a lathe. I can make small end bushes & valve guides. Turn trolley axles to size and do other turning work like internal and external threading in many sizes. I can do welding, grinding & sharpening. Trolleys made from scratch and engines restored including painting to a high standard. I also have a very large puller - got a flywheel that won't come off? Well, give this a try!

Got an engine that won't go? Why not bring it over to Trowbridge? I am always willing to help any club member in difficulties.

For any of the above give Eric Gay a ring on 01225 754374.

The American "Overland" Traction Engine

Edit supplied by Robin Lambert

This Article was given to me by some 25 years ago by my old friend, the late Albert Crittall and was just one of many Albert wrote, what a nice legacy to leave for future generations to read - Robin.

Of all the many hundreds of traction engines that have been built throughout the early years some were quite ingenious, some were weird and wonderful and some were quite impossible! Surely the most unusual one was the American "Overland". Before the Union Pacific Railway was built, the only way to transport people and merchandise across the American continent from East to West was by wagon

trains pulled by teams of horses or oxen. In 1865 a company was formed to transport goods etc across America, this was called the Overland Traction Engine Company. The main idea behind the company was the rapid east/west transit of merchandise.

The driving force behind the company was a man called Jesse Fry, he was a man of very original and extreme ideas of what a traction engine should look like. Most people have some idea of how a traction engines looks, but the one designed and built by Jesse Fry was ten times larger and a hundred times more powerful than any existing engine.

The first working engine was built at Paterson, New Jersey and it weighed fifty- four tons when fully loaded with fuel. The boiler was different than the normal type of boiler used on traction engines, although the lower half of the boiler was much like the rest. The main difference was in the upper part and the way the smoke and steam was exhausted. On top and parallel with the lower part was a long steel drum which was connected to the lower part by cone shaped tubes, the smaller being connected to the drum. The drum was partly filled with tubes and the lower part was completely filled with tubes. The smoke and other by products of combustion could pass directly out of a chimney at the front end of the engine, just the same as an ordinary traction engine, but they could be deflected by baffles so that they passed backwards through the tubes and exhausted out of another chimney at the rear of the engine. There were three separated water compartments, each with it's own water connections, gauges and cocks. Owing to poor circulation this idea was eventually discarded.

There were two large U-shaped water tanks either side of the boiler – these extended the length of the engine which was about twenty feet long. There were four main driving wheels each one independent of the others, These main driving wheels were nine feet in diameter, had a tread width of 36" and were located at the rear. The axle was 10" square, with a 2" hole bored in for 4 feet at either end, these holes were plugged on the outside. On top of the axle were a series of ½" holes which directed oil to reach the bearings. The front wheels were 6 feet in diameter with a tread of 30". The wheels were made of ½" iron boiler plate, backed by 3" of wooden planking. Steel spikes protruded through the tread for about 2 inches, the idea being to give the wheels maximum grip.

The front wheels also steered the engine. An unusual feature of the engine was that each of the four driving wheels had their own four cylinder steam engine, "two twin cylinder high pressure engines" and there was a separate engine to steer the front wheels, making a total of nine engines in all. In addition to these nine engines were two large steam pumps , one supplied water to the boiler and the other was used for pumping water from rivers etc, to keep all water tanks full. The driving engines were very powerful having 10" bore cylinders and a 12" stroke.

The power to the rear wheels was by steel linked chain and that to the front by bevel gears. It took several men to operate the machine and its many engines. Mr Fry the designer was obsessed by the fear that his engine would be attacked by Indians on their way across America so he built an armour plated housing on the front of the engine which contained several cannon that could be trained in any direction and it looked like a small fortress. When the Traction Engine was finished it was decided to try it out in the street in front of the work shop . As the street was only 30 feet wide and the machine was 14 feet in width there wasn't much space to spare if things were to go wrong, and they did so in a big way. Owing to the

fact it needed so many men to control the machine and there was a lack of coordination between them the machine went out of control, knocking down lines of telegraph poles also badly damaging the road surface and causing no end of damage to anything in its path , it ended up embedded in a large house!!

One of the main reasons for the succession of accidents was that the spikes in the front wheels dug so deeply into the ground was that the steering engine was unable to turn the wheels and so steer the vehicle. After making many more working tests and repeated changes in design it was found the machine could not be made to operate successfully ,so the \$40,000 monster was finally abandoned and sold as scrap.

Old Deadly Goes Scrambling

By Eric Gay

Eric gave me this for publication ages ago and it had vanished under a pile of stuff in my untidy office. Better late than never!- Ed.

The racing bug got Old Deadly good and proper, so what did he do but go and buy a all ali engined 250 Velo scrambler. I've never seen one before or since, but Old Deadly soon had it running like a very expensive watch, and did it go. First scramble he entered was at Farleigh Castle but it ended in disaster as he blew the gear box to bits.

Another gearbox was soon found from Mr Hooper's place on Jacobs Wells Road in Bristol, "along by the river then turn right up a hill". Old Deadly became a good customer there as he wrecked another two gear boxes in the Velo before he saw sense and sold off the engine and other bits.

His next move was to buy a 500cc AJS scrambler, one brute of a bike but he had a bit of success on it (well if you can call finishing a few races on it a success). Now it was at Nash Hill scramble when Old Deadly's pride was really hurt, like he said to us lads I were trying me best He was shouted at by another rider and told to "get out the Blxxxy way". That upset Old Deadly but a bigger upset was waiting around the corner. It was a few weeks later that the gremlins struck. It was at Leighton between Frome and Shepton Mallet when they struck. It was on the hill near the end of the lap and Old Deadly was doing well when the engine of the AJS locked up solid. Well, he sat on the bike out of the way of the other riders until he thought that it might start. He gave it a kick the motor turned over, so a bump start was tried "bang splutter BANG and the AJS started.

Now, as Old Deadly turned the bike at the bottom of the hill to ride up and return to the pits he looked down and there were FLAMES all around the carb, Old Deadly tore off his riding gloves and rammed them into the bell mouth of the carb but to no avail, it was too late as the fuel feed pipes were on fire and with about a gallon of high octane in the tank it was time to bale out.

Well, that was the end of AJS it was a total loss. But it was not all doom and gloom, a spectator in the crowd started a collection and at the end of the day this was given to Old Deadly. He still says that that was the nicest thing ever to happen to him and he will never forget the kindness shown to him on that day. Now Old Deadly ain't a bad old sod and some of that money was given to another rider that broke his leg at the same meeting. Of course, Big Sister came to most of the races and when disaster struck she just had to make Old Deadly's life more miserable by not being able to keep her great gob shut every living soul had to be told of any misfortune that befell her only brother and oh boy did the truth get stretched.

The rest of the money went towards buying a proper Greeves scrambler.