CRANKING

The Wessex Stationary Engine Club's Monthly Newsletter

May 2012
Thirty fifth year of publication
www.wessex-sec.co.uk

From the Sump

I was surprised not to receive an entry form for the 1000 engine rally this year. I suspect that it is a means of saving money for the organisers, as they must send out Quite A Lot to people who don't come. I say this in my editorial as the official entry date was the 1st May and if you haven't got yours in yet, you really shouldn't leave it much longer!

Speaking of events, I feel I should alert our members to the fact that the Somerset Steam Spectacular are charging engine exhibitors £10 per head for this year. They have had two bad years financially and hope to recoup their losses to some extent. What action you take is of course entirely up to you, but I think people should be forewarned of these things. The Engine Steward is Paul Matthews **paul892@btinternet.com**

I need half a dozen small "finger tight" knurled nuts made up in aluminium. They are small and easy to make but they have a central thread which is apparently 5/16" (although as the thing they fit is Swiss, I bet they are Metric) and a 26TPI Cycle thread is too coarse. Can anyone help please – I'm happy to pay for them.

A while ago, David Griffith gave me a cross referenced size sheet. It is included here so you can laminate it for workshop use. Thanks David!

Obituary

By Robin Lambert

Club members will have read my report in last month's newsletter where I mentioned how nice it was to see Dennis Hudd back on the rally field after a forced absence due to ill health. So it was a shock to learn that only a few days after the show, Dennis passed away. Most of his working life was spent driving lorries and one of his younger day hobbies was grass track racing with motorcycle and sidecar. He also had a passion for collecting Stationary Engines and exhibiting them at many events including the old Tatton Park Rally and Astle Park. With his wife Dianne, he would make the long journey to Holland and Belgium where they had many friends. Dennis' funeral took place on Wednesday 9th May at Semington and amongst the many mourners were several club members, Our condolences go out to Dianne and her family.

Moving the Metal

For sale

Lister 'D' on good trolley. Fair runner. £80 ono
PetterA1 on good trolley, partial restoration. All complete with good Magneto £60 **(prices reduced!)**
Petter A1 parts. Block/Crankcase/ Flywheel/ Casings & Brass plate /Fuel tank £30
Pulley 12" Dia 4" Wide 1.425" (36 mm) Bore. £15
g/box & change gears for screwcutting. £550
Boxford CUD Lathe with 3& 4 jaw chucks, faceplate, steady, tailstock chuck centres and some tooling. S/phase motor. £695 ONO.
All above Phone John Light 07885 466464 Farmborough
Fairbanks Morse centrifugal water pump. £90. Phone John Emery 01761 451665
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

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 R2Ycylinder 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 0r 1710 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!
Audio reel to reel tapes. 7" preferred, any size considered – WHY?
Above, phone Kim Siddorn 0117 964 6818

This column works, four engines and a lathe sold since the last newsletter!
Let's have your engine and similar stuff that you have for sale up here for a month before putting it in SEM – you might see it at rallies if sold locally!

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. 65

Bits and Pieces - Carburettors

By J.Kim Siddorn (mostly!)

In the years following the development of the industrial gas engine in the mid 1860's, there were steady and continuing efforts to produce an internal combustion engine (ICE) which could be made portable. A self propelled vehicle was obviously on the cards, but it proved a great deal more difficult to achieve than might be expected with hindsight, One of the principal requirements was a means of mixing petrol with air in a combustable mixture. This wasn't too hard to achieve with a constant speed engine and early atrtempts can be visualised as a boot polish tin full of petrol over which air was drawn by the depression in the cylinder caused by the retreating piston. This was just about feasible as long as the thing didn't vibrate, but of course ICE's do quite a lot of that and fires were common.

In 1882, Enrico Bernardi built a single cylinder ICE of 1,225cc which he called "Motrice Pia" and he developed his own carb for it. Karl Benz submitted an early carburettor design for patent as did Siegfried Marcus and the Hungarians János Csonka and Donát Bánki in 1893. Three years later Fred Lanchester, working in his Birmingham workshop, experimented with wick carburetors and, with his brother, built a single cylinder 5 hp car – the first recorded in England. It was not a success and the next year the Lanchesters had rebuilt the car with a flat twin engine utilising a wick carburettor of their own design. These early carbs were not very good and control of the mixture was very hit and miss.

Wilhelm Maybach and Gottlieb Daimler developed a float carburetor for their engine based on an atomizer nozzle in 1885. Such carburetors work on Bernoulli's Principle: the faster the air moves, the lower its static pressure, and the higher its dynamic pressure. A typical throttle linkage does not directly control the flow of liquid fuel. Instead, it actuates mechanisms which meter the flow of air being pulled into the engine. The speed of this flow, and therefore its pressure, determines the amount of fuel drawn into the airstream.

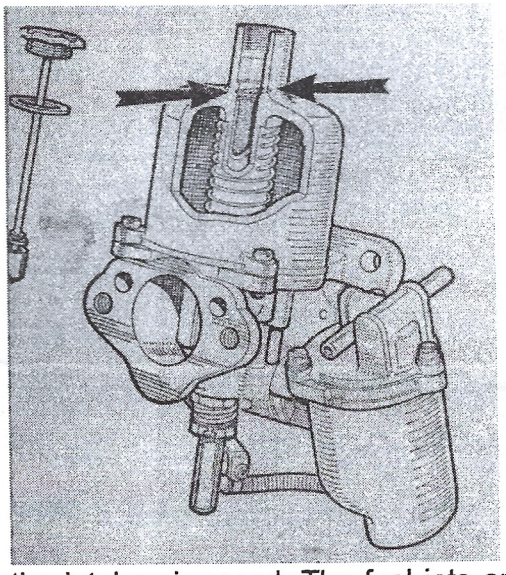
This type of carb ushered in the float and needle valve as a means of controlling fuel flow and the First World War saw very rapid developments in this field. The result was the single barrel, multijet carburettor with which we are all familier. There are obviously exceptions and the abilitty of such a carb to run upside down remained a problem in aircraft until the development of fuel injection. In small engines, the diaphragm carb is used extensively today in things like chain saws etc.

There are two principle means of controlling air flow in the main choke chamber, the slide (which can be round, flat or square) or the "butterfly" valve, basically a flat disc wich fits across the induction tract and is centrally pivoted. The butterfly has the disadvantage that – unlike the slide – it cannot be withdrawn from the airflow and therefore restricts the speed and capacity of that flow.

Older engines used updraft carburetors, where the air enters from below the carburetor and exits through the top. This had the advantage of never "flooding" the engine, as any liquid fuel droplets would fall out of the carburetor instead of into the intake manifold; it also lent itself to use of an oil bath air cleaner, where a pool of oil below a mesh element below the carburetor is sucked up into the mesh and the air is drawn through the oil-covered mesh; this was an effective system in a time when paper air filters did not exist.

Beginning in the late 1930s, downdraft carburetors became popular, gravity accellerating the gas charge upon its way.

Outboard motor carburetors are typically sidedraft, because they must be stacked one on top of the other in order to feed the cylinders in a vertically oriented cylinder block.



The main disadvantage of basing a carburetor's operation on Bernoulli's principle is that, being a fluid dynamic device, the pressure reduction in a venturi tends to be proportional to the square of the intake air speed. The fuel jets are much smaller and limited mainly by viscosity, so that the fuel flow tends to be proportional to the pressure difference. So jets sized for full power tend to starve the engine at lower speed and part throttle. Most commonly this has been corrected by using multiple jets. In SU and other movable jet carbs, it was corrected by varying the jet size. For cold starting, a different principle was used in multi-jet carburettors. A flow resisting valve called a choke, similar to the throttle valve, was placed upstream of the main jet to reduce the intake pressure and suck additional fuel out of the jets.

Calendar of Events

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

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.
Aug 20th. CN. *Early due to holiday.* In house quiz.
Sept 24th CN "Engines at the 1000 Engine Rally" by Kim Siddorn
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 .
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

Chairman's Monthly Report

by Brian Baker *(printed as received)*

The meeting at the Court Hotel on Monday April 30th had Chris Witts from Gloucester giving a talk entitled "My life on the River Severn". I won't elaborate on this because I think Eric may be doing a full write up for the news letter. The preparations for the club rally is now well in hand, Eric informs me that he has a lot more attractions than last year and may have to use the adjoining field to accommodate them all. This year there will not be a Mini Rally at Haynes Motor Museum due to an extensive building and alteration programme at the museum which will not be completed in time for other organisations to use the field. We have organised an alternative event the details are at the end of this report. Since the AGM the committee meetings with the new committee members on board are going well, and Jackie the new club secretary is doing a splendid job handling the club correspondence and taking the minutes of the meetings. The committee are always open to member's ideas for improvements for anything to do with the club, we never seem to get any feedback from the members, and I'm sure we can't be getting everything right all of the time. So if you have any comments or anything you wish the committee to discus give me a ring and I will put it on the agenda.

NEW EVENT - ENGINES WANTED

Due to the rally at Haines Motor Museum being cancelled this year we have found another venue to replace it. Bristol Water has given us permission to exhibit engines at the Blagdon Pumping Station in the Chew Valley on Sunday 29th July. The Pumping Station opens at 1pm until 5pm. We cannot set up until 1 o'clock and we must clear the site by 5pm. We will run a raffle for which prizes would be appreciated. So come along and make this event a success either as an exhibitor or as a visitor. Any queries ring me on 01749 342671.

The McLean Mill – A Canadian Historic Site

By Rob Armstrong

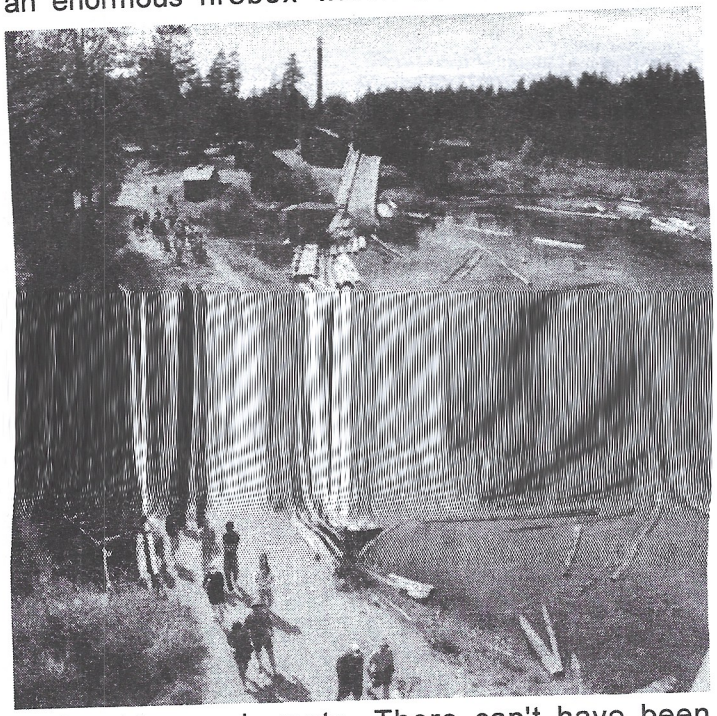
Yes, I know Canada is a long way away - but if you ever have the chance to visit the Alberni Valley on Vancouver Island, don't miss it! When Frances and I were discussing a three-week holiday in Canada this year, the Mill seemed one of the possible attractions. A steam-driven lumber mill which had worked in the middle of a forest from 1926 to 1965 and was now being actively preserved and restored would be interesting - but the really good booklet from the British Columbia Tourist people clearly said that the Summer working days of the Mill machinery and the Steam Train rides would be over by the time we could get there. So we almost didn't go, and what a mistake that would have been!

We followed the yellow circular saw signs to the site, thinking just to stroll around the area. But we were delighted to see a large tour-bus in the car park, and to see what was obviously a guided tour in progress. We tacked ourselves onto the tail of this group, they were all quiet, well dressed and beautifully behaved but oh! so old! Behind the group trailed the bus driver, like a Muse proclaiming tragedy in an old Greek play, muttering "We're already an hour and a half late, I dunno how we c'n make up the time, we'll miss the ferry" and so on. Neill, the curator of the Mill Site, got the message and finished off the tour in double time. Once the driver could herd his charges back onto their bus, I was able to ask a question or two. I suppose I must have been the first person that morning who was really interested in the mill and the machinery - anyway, Neill *was* kind enough to give me my own personal tour of the site.

The McLean family started logging and set up the R.B. McLean Lumber company in 1926. Trees were felled by hand, hauled by a steam donkey winch to a log pond

Two big circular saws, 50" & 54" diameter, driven by an overhead shaft from the main steam engine (dated 1890) slab the logs into timbers. Transfer chains take these to the edger to convert them into boards. Further down is the trim saw to cut timber to length, and at the far end is the planer. The cut lumber was stacked by type to dry, to be dipped in a chemical bath to prevent mould growth, and to be shipped out on rail cars or road vehicles. There is a lovely small locomotive on site, powered by a small gasoline engine, for pulling the rail cars out to the main line.

Steam was raised in a single boiler with an enormous firebox which burnt the sawdust,



bark, chips and waste. There can't have been quite enough power, because a steam tractor had been parked in front of the mill to power the planer on the floor above. It all changed in 1951 when "the hydro" came to the area, the public electricity supply generated by the Stave Falls power house, a beautiful 1912 hydroelectric power station. (This too is a fine place to visit, but that's another story.) The boiler was damaged beyond easy repair by being carelessly closed down and abandoned. Electric motors then powered the mill until closure.

The machinery is being reordered and restored. Several large second hand three-phase motors have lately been acquired, and the next major fundraising exercise will be to get

enough electric cable to allow all of these to be fitted around the site, to run the woodworking machinery individually as may be needed. Everything is present to produce sawn and planed wood in whatever size is required, and the sale of this would be a useful extra income.

There are competing demands by wildlife to affect the area. When we were there, a beaver had moved into the log pond and was busy building his dam, which would have stopped the mill's work. Salmon need to climb up the river to spawn, and so a fish ladder is built by the side of the main stream. And, for the ecologists amongst us, there is the important question of renewal of the felled trees. Originally, trees were felled and the forest allowed to regenerate naturally. But you don't get the original mainly single growth of Douglas Fir, a whole assortment of trees appears as secondary growth. A National campaign to repair this damage all over the country had been set up, and at the McLean Mill you can see the 100 millionth Douglas Fir which has been planted to replace the damage done by past logging.

It is near the front of the site, a lovely healthy tree about six feet high now, looking just like a top-quality Christmas tree from Sainsbury's. But Neill tells me that this monument isn't quite what it appears to be. When the hundred-millionth baby seedling was planted, they organised a celebration, a party for the local great and the good. It must have been a lively occasion; as he left, one of the guests managed to reverse his car over the baby tree and crushed it. It seemed better not to make a fuss about this accident, so the damaged tree was dug up early the next day and replaced with the hundred-million and one'th seedling. But that night, the hungry rabbits came and stripped every one of the young, tender needles from the branches of that tree. On Day 2, this tree (which would have died, of course) was removed and replaced by the hundred million and two'th seedling, surrounded and protected by three feet of plastic sheet guard. The tree is still, of course, labelled "Hundred millionth"!