CRANKING

The Wessex Stationary Engine Club's monthly newsletter

January 2009
Thirty second year of publication
www.wessex-sec.co.uk

From the Sump

New for 2009, a new look and a Hints and Tips column & I've started this off with my perennial advice for the reluctant engine – clean the points! I shall rapidly run out of ideas, so this feature really does depend upon YOU.

Albert Crittell died recently. He was a long time contributor to this newsletter and by way of remembering him, Robin Lambert suggested that we should run some of his stuff again. You will find the first article in this edition.

I was in an interesting – if somewhat worrying - conversation the other day. In the commercial world, in order to operate a machine one must have been trained to use it & be on record as having displayed a level of competence commensurate with Health & Safety. Common sense really – you wouldn't want fork lifts at B&Q to be driven by someone who didn't know what they were about. However, some museums are already in the position of there being no-one "competent" to operate an antique machine they display. Now, competent is a very ambiguous word & is difficult to pin down. A parallel might be learning to drive an automatic car & then being faced with having to drive a manual. I'm sure you can see where I'm going with this.

Am I competent to operate a stationary engine? I think so, but my interests lie in the more modern engines & if asked to start & maintain an 1898 gas engine, it would take me a while to figure it out. I've had oily hands since I was a kid, so probably within an hour I'd get it sussed & have it chuffing away – but during that time I could not reasonably be said to be competent. However, there is nothing whatsoever to stop me – or indeed someone far less experienced - buying such a device at a rally & "learning by doing" for the rest of the day. I might seek the advice of those about me (it would be hard to stop them! ;o)) but I bet you my last brass farthing that I'd receive conflicting advice and who is to say who is competent?

Where would we go to be trained to a competent standard? The bloke that sold it to you? Internal Fire? The Anson? And who trains their people in the myriad different Little Ways of our engines? Lots of questions & precious few answers.

Moving the Metal

For sale

Party Tent, strong and robust, 6m x 3m in PVC. Used only a few times from new £195

Victorian Cast Iron Lamp Post by Wm Cockey of Frome. Buyer to dismantle & remove from my garden. £395.

All above contact Robin on 01373 - 463526

Wico A series magneto. V good condition with impulse unit. £35

Vauxhall Vectra. 120K, top of the range, excellent order. Sold with new MOT at time of sale. £890 ono

All above, phone Eric Gay - 01225 754374

Wanted – Barnard W110 piston. A piston from a Austin/Morris "A" series 848cc SV engine or very early Mini would do the job.

Phone Tony 01373 464982

WANTED - Starting Handle for Bamford 9hp crank 2 5/8" Please ring Ron on 01749 870756

WANTED Triumph twin WW2 genny or parts.

"Old Glory". Stack a foot high 80's & 90's – tenner.

"Vapourising" small stack of old 'uns - £1 each.

WANTED "Stationary Engine " Magazine. Now only need16,17,18, 24-34,36. Have early copies to swap!

All above, phone Kim Siddorn 0117 964 6818

This column works - another engine sold here last month!

A Wrinkle & A Nod

After perhaps seventy odd years, it is quite likely that the HT coil has become lossy as the insulation fails & a winter in a brown paper bag (not plastic!!) in the airing cupboard might be just what it needs. The condenser might be in a similar fix or the magnet exerting less pull than the maker intended.

However, I'd go for the points first by removing them completely & facing them off on a bit of 1000 grit wet & dry stuck with oil to a piece of glass. Oxide is almost invisible along with pitting across the face until you get them off & look at them properly in a good light. This done, clean & refit them looking carefully at the logical sequence of insulating washers, gap them a couple of thou under the manufacturer's recommendation & you might find the starting absolutely transformed.

Might not be, too - but it costs nothing.

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

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

Featured Engine No. 24

The TS3 opposed piston six

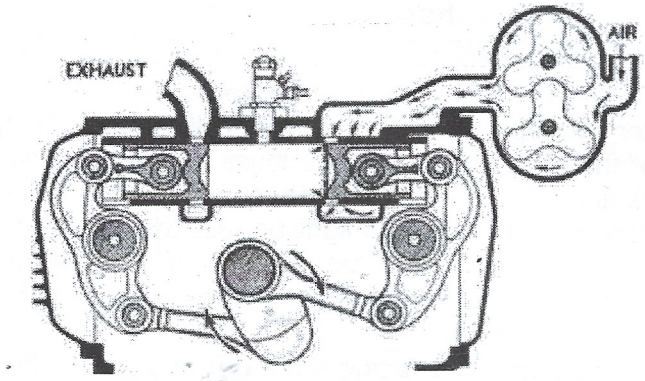
By Peter Forbes & Kim Siddorn

Rootes Motor Group built an engine for their trucks which was a design loosely based around an original Sulzer Brothers concept, also copied/licenced by Hills Diesel in the USA. The horizontally opposed engine used a system of rockers to transmit crankshaft motion to the pistons.

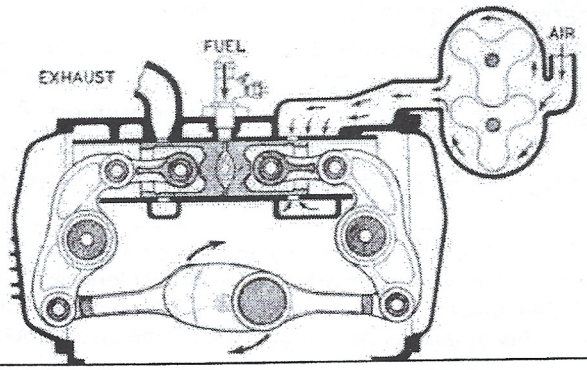
The engine was a Uniflow two-stroke direct injection Diesel with a Roots blower (note that Rootes and Roots were different companies) for scavenging. The engine made its name in the Commer trucks by its screaming engine note, particularly when pulling hard up hills in low gear.

The engine was also developed by Rootes and Lister into an industrial power unit, and a joint company, Rootes-Lister Ltd was set up to market the unit. The sales were not up to expectations and the joint venture was dissolved in the period when Rootes' influence in the car industry was waning rapidly. I've included a full set of cycle drawings so you can follow its unusual operation.

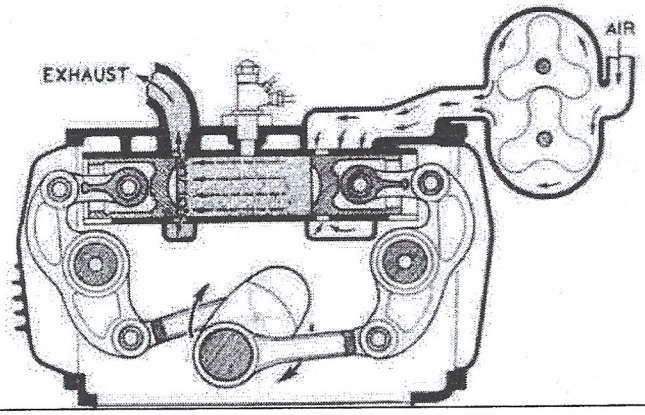
I've seen a cutaway version – obviously a show stand engine – at an event a few years ago, but although I believe that there are a few about, I've never seen a running example. In the photo, you can see the Roots blower on the right hand side, the pump and injectors on top, the dynamo, belt, the oil cooler and filter. The starter is underneath the engine. Access on the Commer truck was not especially good, but they were quite reliable as long as they were serviced regularly.



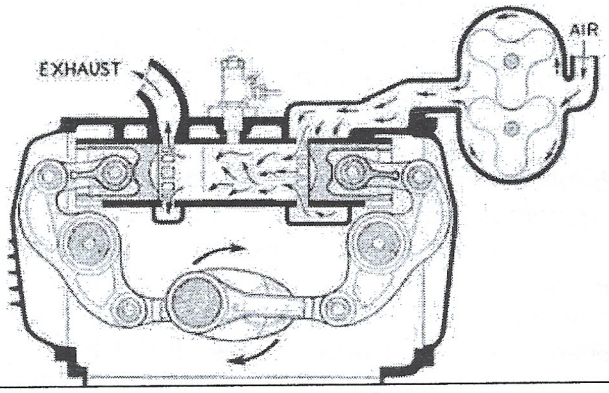
Just past BDC. The exhaust cycle has ended & the pistons are beginning to compress the charge



The moment of injection around TDC



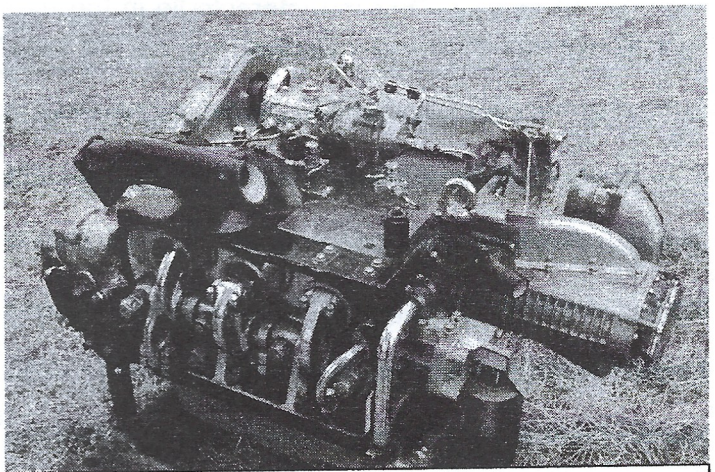
Near BDC at the end of the power stroke. Gasses rush out of the exhaust as the pre-compressed charge awaits entry



BDC. The inlet ports are exposed & pressurised air enters, positively clearing the combustion products out of the other end.

http://uk.youtube.com/watch?v=mfKmkitnqQY

There was a Reliant 3 wheeler fitted with a TS3 - "Throbbin' Robin" - taking part in a tractor pull at Tallington in the early 90's. Incredibly noisy and surprisingly effective!



A cutaway unit seen at the Wellend Rally in 2002

Bore 3:1" (82.55 mm.).
Stroke 4" x 2 (101.6 min. x 2).
Compression Ratio 16 : 1.
Cylinder Capacity 199 cu. ins. (3,261 c.c.)
Brake Horse Power 90 at 2400 r.p.m.
Weight with ancillary equipment – 997 lbs (452 k)
Oil Capacity 29 pints (16 litres)

Calendar of Events for 2009

Feb 23rd **31st ANNUAL GENERAL MEETING.**
March 7th . **Event.** Spring Sort Out at Cranmore Railway Station Yard.
March 21st **Club Visit**:- Oakham Treasures Retail & Farming Museum, Portbury Bristol. meet up at the museum 09.45am.
March 29th . **Event.** Spring Crank Up, Nunney Catch.
March 30th . Club night. Guest Speakers:- Ginger & Margaret – AUDEY PAWDEY & FRIENDS
April 13th.**Event.** Easter Monday, Mells Daffodil Rally
April 18th **Event.** Engine Sort Out, Enstone, Oxon.
April 27th .Club night. Guest Speaker:- Richard Harris BBC OUTSIDE BROADCAST PT 2 THE COLOURFUL YEARS
May 18th .Club night. **Members Evening**:- Bring along ten photo's or slides on any subject. There will be a prize for the best effort.
June 3rd .**Event**. D-Day Crank Up on Wednesday evening at the Old Down Inn
June 20/21st. **Event** Wessex SEC Rally at Semington
June 27/28th **Event.** 1000 Engine Rally, Astle Park.
June 29th .Club night. Guest Speaker:- Kim Siddorn OCEAN STRIDING BISON illustrated talk about Viking ships & their uses.
July 27th . **Event** at club night. Evening Crank Up at the Court Hotel Chilcompton.
August 24th . Club night. Evening Crank Up at The Old Down Inn. *(Please note that club night is a week early to avoid August Bank Holiday Monday)*
Sept 28th Club night. Guest Speaker:- Dennis Chedgey illustrated talk on 1930's RADSTOCK
Oct10th .**Event**. Skittles and supper evening at The Royal Oak Corsley
Oct17th **Event.** Winter Sort out at Cranmore Railway Station Yard.
Oct 26th. Club night. Guest Speakers:- Bob Burgess, Colin Dipper TRADITIONAL ENGLISH FOLK MUSIC
Nov 14th . **Event.** Engine Sort Out, Enstone, Oxon.
Nov 30th Club night. Guest Speaker:- Keith Shephard, illustrated talk titled A Look at the ENGINE MAKERS OF WESSEX
Dec 6th **Event**. Winter Crank Up at Nunney Catch.
Dec 27th **Event**. Mince Pie Crank Up, Old Down Inn

ALL DATES ARE SUBJECT TO ALTERATION

Some news

Linda Moor phoned me the other day. You may remember that just after her husband died in 2002, a number of engines were stolen from storage. Nothing surfaced in the months that followed and they seemed to have vanished into thin air! Linda has just had news that some engines & parts have turned up in Australia and that someone will go and look at them to verify the serial numbers etc in the spring.

A Bit More News

I understand some members have asked how I'm getting on — thank you — so here is a quick update on what I'm up to. I'm now back in Exeter after my year in Syria, and just about getting used to being back in UK classrooms. When the rain is pounding on the windows and I have another four hours of Arabic grammar ahead of me, I really wish I could be back in the Middle East!

I'm keeping myself very busy: I'm Publicity Officer for the Arabic Society which means producing posters for our events and classes, maintaining the website and sending out emails. I'm also teaching a course in Beginners Arabic & mentoring two first-year students.

One of the advantages of being back in the UK is that I can get out hiking again, and I'm planning several trips this year, including a sponsored hike in the summer along the South-West Coastal Path to raise money for the RNLI. Thanks to everyone who's asked after me: I'm well, enjoying myself & keeping out of trouble. – J.P. *(Once our Junior Reporter- Ed.)*

Tools Explained

By Anon

DRILL PRESS: A tall upright machine useful for suddenly snatching flat metal bar stock out of your hands so that it smacks you in the chest and flings your beer across the room, denting the freshly-painted project which you had carefully set in the corner where nothing could get to it.
WIRE WHEEL: Cleans paint off bolts and then throws them somewhere under the workbench with the speed of light. Also removes fingerprints and hard-earned calluses from fingers in about the time it takes you to say, 'Oh SH-- '. Also good for producing those invisible pieces of hardened steel wire that get into your shoes.
ELECTRIC HAND DRILL: Normally used for spinning pop rivets in their holes until you die of old age.
HACKSAW: One of a family of cutting tools built on the Ouija board principle. It transforms human energy into a crooked, unpredictable motion, and the more you attempt to influence its course, the more dismal your future becomes.
POWER HACKSAW: Free standing workshop machine that converts barstock into offcuts.
BAND SAW: A large, stationary power saw primarily used to cut sheet aluminium into small pieces that more easily fit into the offcuts box after you cut on the inside of the line instead of the outside edge.
TABLE SAW: A large stationary power tool commonly used for testing wall integrity by launching wooden projectiles.
SKILL SAW: A portable cutting tool used to make studs too short.
PLIERS: Used to round off bolt heads. Sometimes used in the creation of blood-blisters.
SIDE CUTTERS: A specialist tool for cutting through electrical wire that you were trying to de-insulate.
VISE-GRIPS: Colloquially – "Molies". Generally used after pliers to finish rounding off bolt heads. If nothing else is available, they can also be used to transfer intense welding heat to the palm of your hand.
BELT SANDER: An electric sanding tool commonly used to convert minor touch-up jobs into major refinishing jobs.

OXYACETYLENE TORCH: Used almost entirely for lighting various flammable objects in your shop on fire. Also handy for igniting the grease inside wheel hubs whilst removing a bearing race.
HYDRAULIC FLOOR JACK: Used for trapping its handle under the edge of any vehicle. In old age can be used to imperceptibly lower a vehicle onto its owner.
ENGINE HOIST: A tool for testing the tensile strength of everything you forgot to disconnect.
PHILLIPS SCREWDRIVER: Normally used to stab the vacuum seals under lids or for opening old-style paper-and-tin oil cans and splashing oil on your shirt; but can also be used, as the name implies, to strip out Phillips screw heads.
FLAT-BLADE SCREWDRIVER: A tool for opening paint cans. Sometimes used to convert common slotted screws into non-removable screws and butchering your palms.
CROWBAR: A tool used to crumple the metal surrounding that clip or bracket you needed to remove in order to replace a tuppenny part.
PIPE CUTTER: A tool used in teaching soldering techniques as it is used to reduce the length of pipes into shorter pieces that then need re-uniting.
HAMMER: Originally employed as a weapon of war, the hammer nowadays is used as a kind of divining rod to locate the most expensive parts adjacent the object one is trying to hit
UTILITY KNIFE: Used to open and slice through the contents of cardboard boxes. Works particularly well on seats, rubber or plastic parts, vinyl records, liquids in plastic bottles, collector magazines & refund cheques. Useful for slicing clothes whilst being worn.
DAMN-IT TOOL: Any handy tool that you grab and throw across the workshop while yelling 'DAMN-IT' at the top of your voice. This will invariably be the next tool you need.

BB's to the Rescue of P.L.U.T.O.

By Albert Crittell

Of the many thousands of visitors to look at and admire the Fowler Ploughing Locomotives on view, I wonder how many realise the vital part they played in the Allied invasion of Europe In 1944. If it wasn't far the efforts of about half a dozen of these engines, the whole scheme called "PLUTO" could well have come to grief.

Perhaps a few words here for the younger readers would not be out of place. When the Allies invaded Normandy in 1944, they realised that their biggest problem was going to be supplying the invading Armies with petrol & as soon as the foothold on the French side of the Channel was secure, the Pipe Line Under The Ocean whereby they were kept supplied for the first few weeks of the invasion. The cross Channel lengths of pipe were laid by two methods. The first was from 10,000 ton Liberty type cargo ships and the second was huge 40 ft. diameter drums, called Conundrums which were towed across the Channel, laying the pipes as they went.

The problem was how to get the ends of the pipes ashore, as neither of the craft could get closer than the five fathom mark (about 30 ft) and, in some cases five fathoms was ¾ of a mile offshore. To get the pipes ashore meant a very long pull. Whatever type of winching machinery was used, it had to be capable of hauling the pipe ashore and it had to be mobile so that its position could be adjusted from time to time. Capstans or fixed winches wouldn't do and all available types of motor tractor were tried but none was sufficiently powerful. So. everything seemed hopeless, until the Officer in Charge remembered about some Ploughing Engines he had seen working years before & realised that they could well be the answer to the problem. The Ministry of Agriculture was_contacted & in a very short time, six Fowler BBI. Ploughing Engines were allocated to Force PLUTO.

The first thing to be done was to convert the cable drums from "Winding Up" to the "Surge" type to deal with the increased length of cable to be pulled in. In Surge winding, the cable is passed a few times round the winding drum, then it is hauled off and coiled down. Much the same as a Capstan on board ships. After the engines were modified they were distributed to the various Pluto sites.

Two were sent to the Isle of Wight, to Sandown Bay and Thorness Bay, another went to Lepe, near the mouth of the Beaulieu River, where the pipelines were being laid across the Solent to link Sandown Bay with Fawley. Another was sent to Hengistbury Head, near Christchurch and the sixth was taken by landing craft across the Channel to Cherbourg, where PLUTO had its first Continental terminal.

Two kinds of pull were used. The first method was a. direct pull from a moored ship ant this method was used at Narquieville Bay on the French coast. The other required the "pull around" of a pipe laid parallel to the shore. Similar types of pull were used at Hengistbury Head and both sides of the Solent. In all cases, the 2.5" wire cable from the winding engine was taken out by boat and shackled to the pipe end and the pull was commenced. It was at this stage of the action that the engines showed that when long, hard pulling is required, the Fowler 16hp BBI ploughing engine has no equal when a sustained 14 ton pull was required to get the ends ashore.

So, to round off this short history, here are a few facts about PLUTO which otherwise might remain just another of the thousands of funny code words used in the Second World War. Two types of pipe were used. Steel pipe from the huge drums and electric cable type pipes from the Liberty Ships. The 4.5" cable-carrying pipe weighed 63 tons per mile. Seventeen pipe lines were laid in the Solent and about 700 miles of pipe were laid across the English Channel. 750,000 tons of petrol were supplied to the Allied Armies during the operation. In the first three weeks during our advance, a million gallons of petrol was pumped through the pipes every day.