WESSEX STATIONARY ENGINE CLUB. NEWSLETTER. SEPTEMBER 1978.

CLUB RALLY-CRANMORE-SEPT.30th/OCT Ist.

With our rally being the next event on the Clubs calendar, we are looking forward to a grand weekend with a field full of engines of all shapes and sizes.

We have a very nice plaque, prepared by Adrian Stride, and each entrant will get one, even if he or she can only come for one day.

This year, instead of calling upon the services of an independent judge we are going to try an idea that other clubs have used successfully to select engines for Club Awards. On the Sunday of the rally, each entrant will be given a simple voting slip on which to mark his or her choice of best engine in each of three basic classes, namely vertical, horizontal and Junior entry. No-one will be allowed to vote for their own engine of course! These slips will be collected at a fixed time, so everyone must make a selection. Hopefully, when the selections are tallied up, a clear winner in each class will emerge who will be presented with the Club Award for that class which they may keep for a year. The Awards are as follows:-

Vertical Class - The 'Stationary Engine Magazine' Cup.
Horizontal Class - The W.S.E.C. 'Cranmore' Cup.
Junior Class - The W.S.E.C. Shield.

At the end of the 'year' each winner will receive a small plaque to commemorate their win, which they can keep permanently.

As always, we hope to raise some funds at Cranmore again this year, so here is my monthly plug for sales contributions for the club stall. Bric-a-brac, tools, craft items, fruit, veg., home-made cakes, jam, etc. Those are some suggestions, you can think of more I'm sure, but please, No Jumble! Any consumable items left will be sold off on the field and other things will go into the Autumn Jumble Sale. We expect to be subsidising the forthcoming Dinner-Dance by about £I per head, so all this money goes straight back to you.

This is your rally - only you can make it a success! See you Saturday!

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CLUB EVENTS.

OCTOBER. Mon.30th. TONY HARCOMBE of the Westcott Stationary Engine Museum will be talking about, and showing slides of his engines, where and how they were found, and how they led him to build a museum in his garden!

NOVEMBER. Mon.27th. BILL FOSTER is going to give us about an hour of 'One Man's Opinion.' Rest of programme to be arranged.

DECEMBER. Watch out for the alternative date for the meeting, since the last Monday in December is Christmas Day!

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FOR SALE.

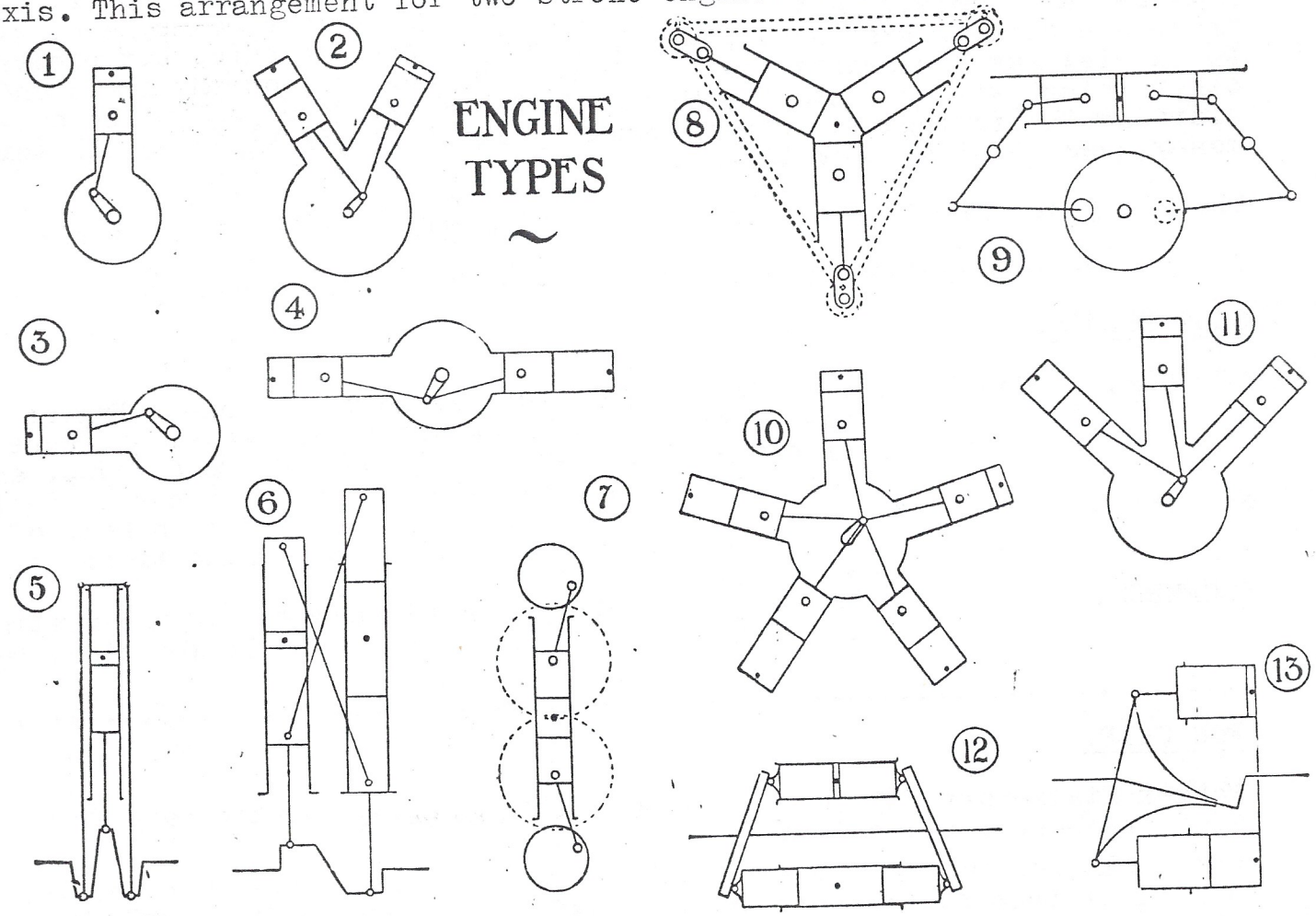
Wessex Stationary Engine Club Members Plaques......25pence each from Club Treasurer, Stuart Ashman.

Lister Engine Dating Plaques.....75pence each from Adrian Stride. These will be on sale at Cranmore and each sale puts IOpence into Club Funds.

SPECIAL ENGINE TYPES.

If you thought, like I used to, that engines only came two ways, vertical & horizontal, then you will be amazed at some of the remarkable arrangements that have been developed over the years. Whilst browsing through a recent book-stall purchase,(The Oil Engine Manual.1943.) I was intrigued to find a short section on special engines, which I thought it might be interesting to summarise for our readers.

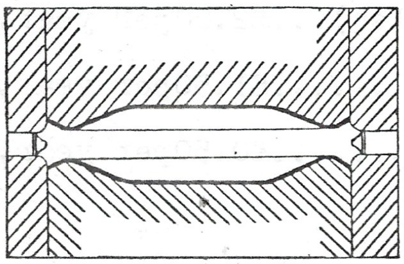
Apart from the vertical and horizontal forms, the 'V' type (2) is an arrangement which gives high power from a small bulk, such advantages being appreciated for road & rail transport and portable plant.The 'V' was sometimes inverted, but this was principally for use in aircraft. Variations on the inclined cylinder principal included the three-bank, broad arrow (11) with one common crankshaft, and the two-stroke, star form (8) having three pistons per combustion chamber and three interconnected crankshafts. Another type was the cruciform or 'X' type (not shown) which found little favour. The more familiar radial arrangement of cylinders around a central crank-pin was primarily for aircraft use, but was introduced into American fighting vehicles in World War 2. Opposed-piston arrangements were subject to many variations, (4,5,6,7 & 9). One type has a crankshaft top and bottom, the two being interconnected(7).Another, popular for larger units, has one crankshaft with one throw per cylinder, the upper piston of one cylinder being connected by inclined rods to the lower piston of the next cylinder(6). The Fullagar, two-stroke engines, built by English Electric were of this type and were built from 980bhp to 3500bhp. This is in effect a double acting two-stroke without cylinder covers. The forces acting on each pair of cranks are at all times equal, therefore the main bearings are relieved of load and the frame is free from major stresses. Another stress-free, vertical opposed type has three crank throws per cylinder(5), the two outer ones being connected to the upper piston and the central one to the lower piston. A further variation on the horizontal opposed type involved the use of bell-crank levers coupling the opposed pistons to connecting rods which in turn rotate a crankshaft below and at right-angles to the cylinder axis. This arrangement for two-stroke engines received much attention, and



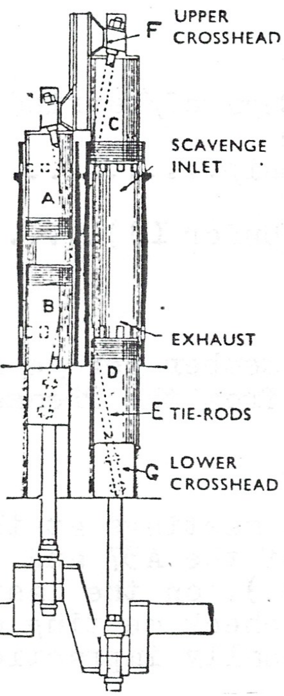
(1) Vertical. (2) V-type. (3) Horizontal. (4) Vis-a-vis. (5) Opposed piston, single crankshaft, three cranks per cylinder. (6) Opposed piston (cross connected), one crank per cylinder. (8) Star form, three crankshafts. crankshaft with lever connections. (9) Opposed piston, single (10) Radial. (11) Broad arrow. (12) Swashplate. (13) Wobbleplate.

Special Engine Types.(Contd.)

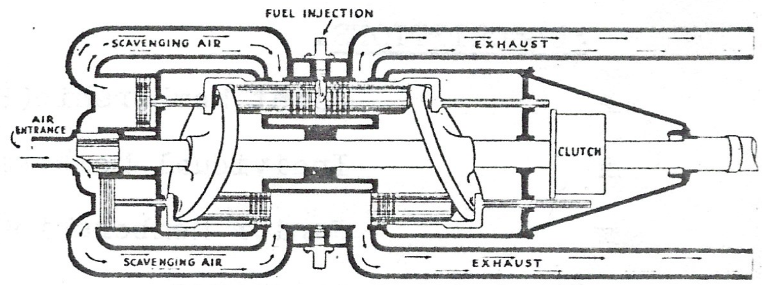
an engine developed on these lines by Sulzer produced 30bhp per cylinder at I500rpm, and was built in Switzerland by the Buchi Company.
James Watt was probably the first engineer to grapple with a system alternative to the simple crank to change reciprocating into rotary motion. For although he invented the crank, he was, for legal reasons, unable to use it and was forced to develop other means. He came up with the 'sun and planet' gear system which, until the immediate pre-war years, was really the only viable altenative to the crank. A certain A.G.M.Michell produced an axial engine layout in which the crank was displaced by an inclined disc, or swash-plate, attached to the shaft.The American designed Sterling engine utilized Michell's 'slipper pad' arrangement to transfer the piston thrusts to the swash-plate.(I2) Another type of axial engine has a Z crank on a shaft and a wobbling disc that does not revolve (I3). The cylinders are arranged around the shaftand as piston after piston thrusts the plate away from succeeding cylinders, the Z shaft is forced to revolve. Several experimental engines were built on this design, one by the Bristol Tramway Co. no less!
J.T.



Combustion chamber of Fullagar engine.



Diagrammatic section (right) showing two adjacent cylinders of a Fullagar engine as built by English Electric Co. The working is explained in the text.



(Above) Section showing operation of the Sterling swash-plate oil engine. of 35 b.h.p. per cylinder at 1,800 r.p.m.

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FOR SALE.

x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x

CLUB DINNER DANCE. FRIDAY I7th. NOVEMBER.

Dinner dance - Traditional Christmas Dinner - free glass of sherry - £3.50. Final details like starting time(Which will not be before 7.30p.m.) still to

WESSEX STATIONARY ENGINE CLUB - INFORMATION SHEET. 1978.

COMMITTEE.

Tom Randall.....Chairman.
Rod Dring.....Vice Chairman.
Ailene Cannon.....Secretary.
John Spear.....Assistant Secretary.
Stuart Ashman.....Treasurer(Membership, Insurance etc.).
Eric Brain.

Bill Appleby.
Herb Gane.
Rob Lambert.

Secretary:- I9,Eagle Road,
Northend, Batheaston,
Bath, Avon.

Treasurer:-Moorledge Farm Cottag
Knowle Hill,
Chew Magna, Bristol.
Tel:Chew Magna 2655.

SUBSCRIPTIONS.

Joint Membership(Engaged/Married Couples)...£2.00per year.

Individual Membership.....£I.50per year.

Junior Membership(Under I8).....£0.50per year.

THIRD PARTY INSURANCE.

£I.00 per paid-up member per year.(Not available to Junior Members under I6)
Details available from the Treasurer.

MEETINGS.

The Club holds its meetings at the Old Down Inn, Emborough, (at the junction of the A37 and the B3I39, 5 miles North of Shepton Mallet.), on the last Monday in every month. It is as well to check meeting dates since the last Monday is occasionally impractical. Meetings start at 8pm.

HONORARY LIFE MEMBERS.

David Edgington.(Club President and Editor of 'The Stationary Engine' magazine.)

Bill Foster.