

# WESSEX STATIONARY ENGINE CLUB



## NEWSLETTER

OCTOBER 1986

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THANK YOU to all those who responded to my plea for reports etc.; also my apologies for having to hold over some until this issue due to various people's holidays. Who knows, perhaps by Christmas it will all even itself out again! Special thanks to new members Brian and Shirley Sharples of Bournemouth for this month's 'front page special'.

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### PURBECK PRESERVATION SOCIETY RALLY AND AUTOJUMBLE 1986

Some days before any rally, exhibitors and that all important band of enthusiastic spectators keep eyes and ears peeled for the weather forecast. I suspect some even invoke strange and mystic powers to encourage the sun for the big event. Such was the case during the week preceeding the Purbeck Preservation Society Rally at Wareham, Dorset on 15/16 August.

Awakened on Saturday by sunshine and clear blue skies, the day held great promise and so, fired with enthusiasm, our relatively short journey from Bournemouth to Wareham became an adventure.

Just outside Wareham on the Swanage side, nestling between the backdrop of the Purbeck Hills and the upper reaches of Poole Harbour, we found a small but attractive show-site, almost totally sheltered by trees; this natural sun-trap was alive with activity.

After paying the princely sum of just £1, we were directed to the car park by local scouts and from the car it was evident that there were lots of goodies to satisfy the curious and those seeking a bargain. Our first port-of-call was the auction sale where one could bid for anything from a box of assorted bric-a-brac (including an engine-widow's rolling-pin!) to an old David Brown agricultural tractor. There were the usual assortment of tools and electrical appliances and 2 Lister D 1½ hp's which sold for £16 and £18 respectively. Mounted on a trailer, a huge Ruston Diesel generator failed to meet the reserve of £300 and was withdrawn.

Passing along the rows of autojumble stalls, I felt somewhat bewildered and amazed at the items on sale, to the point where I almost forgot what I was looking for, one of the valves for my Lister J-type 4½ hp. The exhaust valve is beyond redemption and I rummaged through boxes of countless valves in search of a replacement. One stall-holder was able to show me an old supplier's list which at least gave me a clue as to the material spec. generally used in valve manufacture. If anyone is interested it is En59- a Ni-Cr-Si heat resistant stainless steel; at least if all else fails, I may be able to get one produced where I work.

By now the taste buds were in a state of decay and the Purbeck Arms seemed to be the best place to be at a time like that. Quick friendly service and good ale to wash down that beefburger was all that was needed to restore the energy crisis before returning to the small but beautiful line-up of stationary engines. The sounds and smells were just as I had anticipated - purring and whirring, chuffing and banging. Old Otto's cycle was sucking, squeezing banging and blowing - what a joy to behold! It took ages to view the dozen or so engines and chat to their owners, but there was one Ruston Hornsby open-crank which was immaculately restored and to watch the mechanical working parts was totally absorbing, the gear train driving the magneto, the rhythm of the valves and the stroboscopic effect of the light passing through the spoked flywheels held our gaze for ages.

All around the arena were scores of vintage cars, motor-cycles, military vehicles and tractors. Too many, in fact, to look at in detail, but enough to marvel at the enterprise; the day was simply flying by. In the arena itself, a local father and son team were setting up their logging demonstration. Did you know that the finest steel for axes actually comes from Australia not Sheffield? Reg and Terry Adams are International Axemen and their demonstration left the spectators spellbound. Vertical logs 36" in circumference were cut through with an axe in 17 seconds! Using a 70 year old two handed drag saw, slicing through an 18 inch diameter log in just 10 seconds. I and another

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spectator volunteered to have a go; the time-keeper had gone home by the time we had finished. It was fun though.

By now, as in all good Western films, the sun was setting in the West and it was time to hit the trail, but what a great day we had and we will be there next year. Perhaps if any of our Club members are on holiday in our area next year, they too will enjoy a day at the Purbeck Rally.

Brian and Shirley Sharples

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#### NETLEY MARSH STEAM ENGINE RALLY - July 25/26/27, 1986

This very well supported and popular South Coast Rally took place on its usual site, Meadow Farm, on the edge of the beautiful New Forest, and what must have been a near record amount of stationary engines filled two large areas. 179 were actually entered in the programme, although the last number read Tommasso from Palmers Green (strange I thought, this is a new one) and upon further investigation found it to be a street piano operated and cranked by our own Vice-Chairman, Brian Munt. A large number of Wessex members brought engines to this show and Brian Lovell took his now famous 'Henry' Fordson Standard Tractor. A nice selection of small engines very worthy of a mention were Don Baker's 1½-2 hp Blackstone Vertical and two open-crank Gardners of 1 hp and ¾ hp, also Mike & Mark Tilley's 1½ hp Bentall Pioneer. More unusual breeds were National Gas, Witte, Detroit and Onan.

The autojumble I thought was down on its usual number of stalls and some of the prices were so ridiculous you would burn your fingers if you attempted to pick anything up. Not so many other stalls either but plenty of food stalls, certainly no fear of anyone going hungry.

Lots of ring events going all day long for the three days, included Sheepdog Display team, Band of the 1st Battalion, Duke of Wellington Regiment, they were first class, and Ben Lester the Clown, plus all the various steam engine and tractor, etc. parades. Saturday saw Motor-Cycles Madmen and Heavy Horses, and a combination of all these again on Sunday. Friday evening saw a nice firework display and a Barbeque, plus The Yetties and a Country & Western Group 'Lansdown Country'. Saturday entertainment was The Excelsior Jazz Band and Dozy, Beaky, Mick & Titch. The general opinion of putting the two evening's entertainment in the Beer Tent was that it was a big mistake as only a very small number of the crowd could see or hear the bands; the old way of putting them on a trailer was much better, then everyone could enjoy the music. But apart from this, it was a very good rally as always and thanks to Chalkie White for looking after us in the engine section and to Roger Vokes in the camping area.

Robin Lambert

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#### GILLINGHAM & SHAFTESBURY AGRICULTURAL SOCIETY SHOW, Wednesday, August 20

For the second year running, vintage machinery and tractors have taken part in this very well supported show. Last year held at Shaftesbury and this year at Gillingham, one wonders why this is not a 2-day event. With acres of green fields covered with stalls, displays, huge marquees and two event rings, the paying public really had good value for their entrance fees and would almost certainly have had tired feet at the end of the day if they saw everything which was there to view.!

It was nice to see a stationary engine section because, after all, they were a very important part of our rural heritage although a lot of farmers to whom I spoke did admit that they were glad to see the back of them and most would admit to swinging their 'guts' out on a cold wet winter's night trying to get the thing started so they could commence milking. But all that aside, they do appreciate the work carried out by the engine enthusiast so that all is not lost for ever.

Many thanks to Bill Foster for ordering blue skies, organising the vintage section and for the contribution towards the exhibitor's running costs.....! A really super day out.

Frome Rambler

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#### AUGUST BANK HOLIDAY WEEKEND - 1986

After a glorious Saturday and Sunday what a wash-out Bank Holiday Monday turned out to be. No doubt, like me, many of you spent the weekend at your favourite show, but with the driving rain on Monday it must have sent exhibitors and viewing public scattering off home as there was no sign of it letting up.

Our Monday was spent at Corsley Show, between Frome and Warminster, and we did manage to set up the engines before the storm, but the engine Bill Appleby took, wasn't too fussy about running on paraffin as the icy rain kept the engine too cool, (this was a 8 hp Ruston, by the way), also the wet got in the dynamo drive belt causing slip, giving a wide range of volts, anywhere between zero and 110.... Gerry Hodinott's Lister got the gremlins in its mag which eventually seized up and John Forward's Witte Drag Saw also had running problems, when turned over to paraffin, although his main problem appeared to be a fault with the throttle and governor linkage. John also brought a 6-1 Lister Diesel which ran very smoothly as did Dave Bell's Wolseley, my own 2½ hp Ruston ran well with the aid of a plastic bag over the mag.



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For the first time a Vintage car and Military Vehicle section took part in the show, also a dog show, goat show, and horse events braved the rain. Fairground and stalls all struggled to gain the public's attention on this foul day.

Jackie Lambert

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#### WESSEX ENGINES. 4. 'The Wedmore TK'

The origins of the founders of this company can be traced back to Alfred, King of Wessex and the Treaty of Wedmore in 879 AD. Even to this day, the show model engines bear an elaborate coat of arms bearing two bezants or black stones on Brunswick Green quartered with a moorcock gules rampant over azure wavy or water, Authorities say that the bezants represent Alfred's burnt buns, reputedly by blow-lamp; the bird depicting the Manor of Cocklade on the fringes of the town. The two Latin mottoes around roughly translate as 'If you can get one, get a biggun' and 'We do it in the open', however, the exact context of these is unclear. The model seen regularly on our rallyfields has survived well in spite of its use on a winch used for practice by local tug-o-war teams. It assisted in the recover of a Blackstone engine on a couple of occasions, not least that seen on video at the July Club meeting. It has seen good continuing service in the Highways Department of the County Council where it now functions in an inspection capacity. A quiet operating engine unlike it companion model, the 'Little Audrey' which powers a tea-maker of the highest quality....! Both have plenty of useful life left.

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#### THE WEST OF ENGLAND STEAM ENGINE SOCIETY, 31st Rally at St. Agnes, Cornwall.

##### The Friendly Rally with Something in the Air

We have been attending this rally for some years now and every year we receive a warm welcome from the stationary engine secretary, Chris Leverton, his wife and family. We had travelled to Cornwall on the Wednesday before the rally in order to do some sightseeing. As always happens when Reg steps onto Cornish soil, it rains. True to form, it happened again this year and by the time we reached the rally field, it was thick misty rain. After finding the gate to the field Reg and Stephen dressed in the usual rally/holiday gear of waterproofs and wellingtons had disappeared from my sight into the thick mist to enquire which was the exhibitors entrance, as they all seemed to have been blocked for some reason. After a few minutes two dark objects could be seen trudging towards me, trouser legs covered in muddy spots. Reg had been told the other gateways had been closed in the hope they would dry out. It was quite soft in the gateway, a bit like sponge cake (chocolate flavour!). Reg was told by someone to 'Come on in my boy, you are more than welcome'. Completely taken aback by being called 'my boy' he replied 'I think perhaps we shall go to a caravan site until the weekend. We drove along the road and stopped at the first site we came to, went in and booked in and then set up camp, happy to know we should be able to come and go as we pleased, without any fear of getting stuck.

By Friday, conditions had improved and we moved camp to the rally site. Dot and Derrick Watts had arrived the previous day, Carol and Roy Cox and Shirley and Dave (Beano) Clack arrived late on Friday.

Saturday saw the start of all the usual activities a rally has to offer the public. Savages Steam Gallopers were there, an attraction for all age groups. There were 33 steam engines on the field, including a Skene Spindle Seat Dog Cart Steam car. One group of people who attracted a lot of attention were some travellers with traditional carts pulled by horses. They made wooden clothes pegs and the most beautiful flowers out of wooden sticks, just by using a very sharp knife. It was fascinating to watch them at work. There was a good selection of stationary engines on show. Derrick with his Stuart Turner, Roy with his Ruston Hornsby, which unfortunately broke a magneto spring, Dave and a Lister 'A' type driving a Lion pump, Ivor Yeo was there with a Petter, and who should be seen in Cornwall but Sue and Barrie Thomas with an Amanco. Stephen had his newly restored Lister 'D' 1 hp, his Dad was also present with a Wolseley.

A rather funny story was heard in the Beer Tent about a couple in a caravanette who had forgotten to put on the handbrake. 'Oh we could have gone through the toilet-tent, over the hedge, across the field, down the road, along the cliff path and then, and then.....and then over the cliff, On!----- what a new experience, why has it never been like that before. It must be the Cornish air. (It's a Ford Transit caravanette).

After a reasonable weekend weather wise, Sunday evening came and it was decided by a crowd of us, to move camp to a very kind man's field a couple of miles away. This is the second year we have stayed in his field, he turns on the water for us. We had not been there more than a hour and the milk lady arrived to take orders for any produce we might need. You can't beat that for hospitality, can you. Reg and Stephen were talking to a couple who said they had a Lister which would not go. They gave us their name and phone number and invited us to camp in their garden and have a go at getting the engine running. There are a lot of camp sites in the county, and we were also finding many people willing to let you camp free on their land. It really is a friendly and pleasant place to rally and spend a holiday. See you again Cornwall, next year.

Mary, Reg and Stephen Butler

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TROWBRIDGE CARNIVAL AND COUNTRY FAYRE - Trowbridge Park, Aug.30 1986

I feel that this small rally, staged annually by Wessex members, deserves a few lines in the Newsletter. The big question is:- Did we have good weather because Tony Jones was in attendance or was it that Mr. Jones appeared because the weather was fine?

The rally was held under the trees in the corner of Trowbridge Park as part of the Carnival week; the corner next to the Police Station, I must add! We had very good support this year from our Junior Section consisting of Stephen Butler, Trevor Payne and Graham Raymond, who all displayed very well turned out Lister 'D' types. Thank you lads. The ever popular and most interesting engine, the Amanco, was on display with two examples owned by Eric Gay and Tony Jones, while Reg Butler brought along his Wolseley WD1. My exhibit was the ex-Tony Jones, ex Rob Woolford, ex Eric Brain, ex David Edgington, etc.etc. 3 hp, 1926, E/C Crossley 1040 - a model known to the trade at the time as 'the Bedford Engine'. Andy Gale, David Clack and Mr. Humphries displayed a selection of very nice Lister Juniors and last, but by no means least, that veteran Wessex rallyist, Wilf Crouch, had his Lister D and generator.

Due to the very fine weather, the public turned out in their hundreds+ a lot more at this small 'do' than at many larger rallies.

Bob Hallam

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CAMFLOT MEDIEVAL FAIR, Battersea Park. 14/15 Sept.

Having been given an invitation to enter our engines at the above, we decided to have a go, so off we set.

We left Weston on Friday afternoon and arrived at Battersea Park soon after 7.30 p.m. Thank goodness we do not have too many journeys like that. However, at the site we tried to find the Stationary Engine Marshall in order to get our instructions about where to go but he appeared to be non-existent. Nobody seemed to be bothered about our arrival, so on looking around for someone of authority but to no avail, we enquired from a steamer owner who pointed us in the right direction and told us to 'organise yourselves', which, on arrival at our enclosure, others had done just that. According to the programme 22 engines should have been there but only 17 arrived and 7 of them didn't run properly. Among these engines was a very rare Brown & May, 3½ hp (Gas) with hot bulb and open crank dated 1900.

We imagined that this was going to be a huge show the venue being Battersea Park, but this was not so. It was a piece of the park fenced off, but in spite of this there was plenty of stalls and arena events, i.e. Falconry, Motorcycle Displays, Army Dog Training, Parachute Free Falls, Axe Racing and Jousting Tournaments.

As this was celebrating the 900th year of the Domesday, members of the organisation were dressed the part which made the atmosphere. They had a marquee where one could read books and other literature on the subject. There was even an entry in the book about Dummer where Sarah Ferguson lived.

The Show opened on Saturday, but what does the weather do - rain. This was disappointing especially after the nice week beforehand. Most events took place, but of course they lacked spectators. Needless to say, the show closed early, while we had no option but to sit in our vans and watch the rain. Even the Beer Tent was closed! Sunday comes - more rain. However, the weather forecast was right, the rain cleared and we had a lovely day after all.

It was an incredible thing, but it surprised us to find out how few people had heard of Stationary Engine Clubs. (We proudly sported the Wessex Board). In general the people were very interested in the engines and spent some time talking to the owners. There was a good turn out of commercial vehicles, vintage vehicles and motorcycles. The Steam Section was quite well represented and included 5 rollers, 2 heavy haulers, 4 showmans, 5 road/agricultural engines, 2 steam lorries and, finally, well worth a special mention, a 1919 Garratt Steam Ploughing Tractor, 4 NPH Type Suffolk Punch belived to be to only one to survive out of only 4 ever built. Some of the steamers did a run from the Park to Sloane Square to publicise the show and also add to the chaos of London's traffic!

The time came for us to pack up and make tracks for home. Although it was not what we expected, we enjoyed it very much. if the opportunity came again we would not hesitate to accept and go.

THE WESSEX WANDERERS Mary & Brian Verrall  
Dot & Derrick Watts

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SEPTEMBER MONTHLY MEETING - Terry Sanger, a talk on his life and some of the interesting people in it.

I suddenly woke at 3.30 a.m. remembering that I had not completed the report of the Club Meeting for our Newsletter Editor's deadline; here I am at 6.15 a.m. writing feverishly! (I was getting a bit anxious....Ed).

Back at the May Crank-Up, my old mate Phil Harris told me that as it was his first year as a committee member, he would like to report on the Crank-Up; being a fool I agreed. An anyone please tell me how it is possible to write a **short** report on all that our friend Mr. Sanger has to tell us? He



has so many anecdotes that one would need a tape recorder or a course on shorthand/typing. He certainly has enjoyed a full and interesting life. Before he raced Ford cars for the works team, he was employed by an ex-patriate White Russian as a racing driver but in between events he drove his variety of luxury motor boats; this led to many, many 'hairy' exploits. His boss was a manufacturer of ball-point pen inks with licences all over the world. One of the tales involved his boss wanting to re-enact a television commercial he had seen, so he sent Terry out to purchase three Range Rovers. The idea was to see how high they could be made to jump over a large depression in the ground. Faster, faster they went with Terry at the wheel until one of the vehicles hit the ground so hard that the four bump-stops came right through the floor bending the chassis in four places.

No wonder there was such a big crowd of members at this meeting; most of the people remembered Terry from last time when he had us spellbound with his exploits. Herb held the raffle at the interval. Hazel (Atherton) won a cruet; Andy Gale won some chocolates for Shirley and Marion Camp won a tool-box.

During the second part of the evening, Terry regaled us with more tales of his travels with Villiers Industrial Engines Ltd for whom he was Sales Director. These travels took him into many third world countries and gave him a good and oft-times frightening insight into what they were really like. He volunteered to come back some other time and tell us more, so next time those who have never heard him, come along and hear him 'live'; it can't possibly go into a short report!

Mr. & Mrs. Sharples from Bournemouth visited us yet again and thoroughly enjoyed the meeting, let's hope the fog wasn't too bad on the return journey.

Well, it's now 6.45 a.m. and I suppose I must get a cup of tea up to the old Queen and prepare to go to work - wonder what speed I can get the old van up to over that bump on the Wells Road.....!?

Brian Munt

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FULL QUART RALLY, HEWISH, Near Weston-Super-Mare, Sept.28

This is a small and very popular rally held on the lawns and car-park of the Full Quart Inn near Weston-Super-Mare. Roy and Ivor Cox and families are the organisers and all proceeds go to CLIC, our Club charity. We were all keeping our fingers crossed for some fine weather and although it was misty in the morning we were surprised to hear from Sunday morning arrivals that they had braved mist and drizzle. The weather soon cleared and it stayed fine but slightly cloudy.

There were lots of things to see in such a limited space and 63 engines were present of all sizes. Rob Lambert brought his newly acquired 5 hp Victoria on an original Bristol Wagon and Carriage Works trolley which he had had at home for a long time 'just waiting for an engine'. The burning and highly controversial question of the day was 'to paint or not to paint'(-\*!!?;\*!\*&\*\*\*...F.d.) and it was the first and only rally of the year for the Skuse Ingeco.

Chugging in and out of the many visitors were three small model traction engines and also on view was a huge Fowler ploughing engine. Lots of tractors, motor bikes, cars, lawn mowers, a large fair organ and a 1950 Crosville coach, gave everyone something to look at. Punch & Judy brought Brian Munt, several stalls and displays made it a very busy and enjoyable gathering - even the pub itself had an old tractor in the play area with an appropriate sign saying 'I'm Knackered' - it was too!! Highlight of the day was a giant raffle with over 50 prizes - all donated, and overall everyone had a most enjoyable day. I'm sure CLIC will well benefit from the very hard work of the organisers, Roy and Ivor Cox.

Marian (Mrs. Sid) Wilson

It was reported at the Club Meeting on the day after Hewish that the Crank-Up made £564 which included £53 from the Pike Family Stall. Well done all the Pike Tribe, and also Ivor, Roy, Carol and Ev Cox for putting on a super show once again. Thanks too to all the others who helped

Brian Munt

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FOR SALE

The Club has a limited number of sweatshirts for sale in grey with the Club Wyvern logo on the front. They are of good quality and reasonably priced at £6.50 each plus 50 postage and packaging. We also hope to have tee shirts before Christmas. Please send your size and remittance (cheques payable to Wessex Stationary Engine Club) to Hon.Sec. Shirley Gale, 18 Church Lane, North Bradley, Trowbridge, Wilts or to Jackie Lambert, 15 Beechwood Ave., Frome., Somerset.

**For that difficult to obtain sparking plug, 14, 18, 20, 22 or 1/2" NPT try Tim Green, The Green Spark Plug Company, 340 Washway Road, Sale, Cheshire, M33 4HA or Tel.061 973 6755.**

**Lister Diesel 5-1 in good running order. Offers to Fred Cousins, P.H. Coate & Sons, Willow Craft Centre, Stoke St.Gregory, Somerset.**

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**Stuart Turner** two-stroke, P-type, ex-GPO exchange 50 volt generator set on original base. Would make nice interesting exhibit. Also **Villiers WX11** complete but missing fuel tank. Offers for each to **Stuart Ashman**, Moorledge Farm Cottage, Knowle Hill, Chew Magna, Somerset. Tel. Chew Magna 332655.

**Silencer** for **Petter 3 hp M-type** in very good condition. These are much sought after and difficult to obtain. £25 (no offers). **Eric Brain**, Tel. Temple Cloud (0761) 52633.

**Box of Rootes/Commer car and van gaskets** free to good home; does anyone have a **Douglas flat-twin stationary engine for disposal**? Any condition considered. **Brian Reakes**, Tel. Keynsham 68549.

**Ruston Hornsby 4 BPR** starting handle - £5; **Petter 5 hp** brass governor to throttle lever - £5; **Lister A-type** fuel pump - £8; **Lister N-type** carb. - £10; **Cooling tank** galvanised c/w 3-way cock and outlets, in good condition, approx 15" x 48" - £10; **Gauges**, 2 each 0-240v, 0-130 amp. approx. 6" dia. and old £5 pr. **Eric Brain**, 5 Greenridge, Clutton, Near Bristol. (0761) 52633.

**1940 Avon Drag-Saw**, Bradford 3 hp used for cutting Bath Stone in a local quarry. Now cuts wood and seen at many local rallies. Original condition. (Needs restoring....! Ed (oops...!)). £175. **Brian Munt**, Tel. Whitchurch (Bristol) 836214.

### WANTED

By serious collector enthusiast. **Cast Iron** bottle openers, all manufacturers except Sch.....you know who! Crown Cork and Corona. **Tom Randall**. Tel Midsomer Norton 418926 or at any Club Meeting.

**Inverted intake carburettor** No.3550c, to breathe life into **Lister J-type**. **Brian Sharples**, Tel Bournemouth (0202) 524836.

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### FORTHCOMING EVENTS

**Nov.1** Wessex Social Evening at the New Chilcompton Village Hall, which is just down the road from the Old Down Inn. Entertainment by Al Fresco. Menu as last month's Newsletter. Tickets are £3 from Shirley or Jackie - it may not be too late (depending on the speed of the post - or lack of it....!).

**Nov.24** An Illustrated talk on Hot Air Ballooning by Christopher Davey, who is the holder of the world altitude record for this sport.

**Dec. 7** This will be the first ever December meeting, the slot is normally filled by the Dinner/Dance, so this will make a change before the annual madness takes over! A mini-rally at the Old Down Inn car park - a rally for Stationary engines that is, not BL Minis....! Don't forget to wear your winter woolies, and make sure the engine you bring is a good cold starter.

**Jan.26** An engine slide show. We are indeed fortunate to secure one of the Stationary Engine Magazine's regular contributors, Philip Thornton-Evison, who is giving us a slide show of engines from outside our area. However, he did have his camera busy at the Full Quart Crank-Up, so you may see someone you recognise.

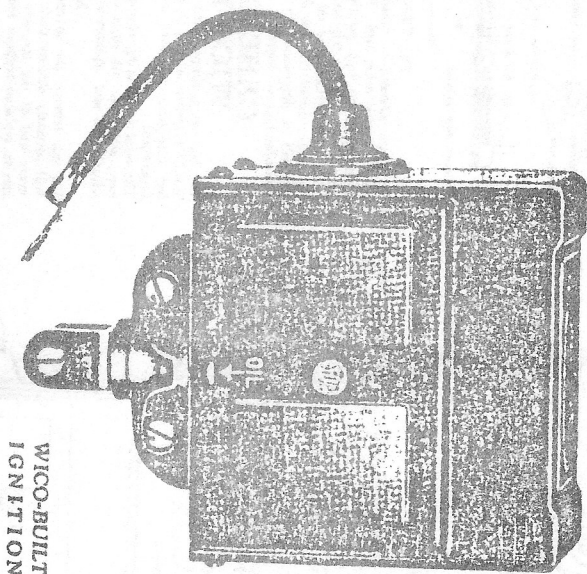
**Feb.26** Annual General Meeting, come along and help elect a committee for our tenth anniversary year.



Complete Instructions and Parts List for Care and Operation of

# TYPE EK WICO MAGNETO

BRITISH MADE



**WICO-PACY SALES CORPORATION LIMITED**  
PERIVALE, ENGLAND

WICO-PACY SALES CORPORATION LTD., PERIVALE, ENGLAND.

## Service Instructions for Type EK WICO Magneto

This book contains complete instructions for caring for the Type EK WICO Magnetos and also explains how they operate, so that the man who uses them can thoroughly understand them. The Type EK WICO Magneto is a very simple device that every engine runner can keep in order as easily as he can any part of his engine. This book is written for the express purpose of making this fact clear to every user of WICO Magnetos.

It sometimes happens that trouble arising from defective spark plugs, poor fuel mixture, and other causes, for which the magneto is not to blame, is attributed to the magneto. If these instructions are followed when trouble occurs, the responsibility can be definitely placed and time saved.

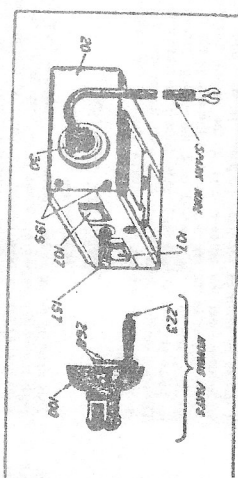


Fig. 1—Magnetos, Moving Parts Removed

The distance between spark plug points should be from .015 inches to .025 inches (the thickness of five or six sheets of paper). The insulator (Porcelain or Mica) inside base of spark plug must be kept clean (free from carbon), because the electricity from the magneto leaks through the carbon on the insulator instead of jumping across the points, and makes it hard or impossible to start the engine or makes it fire irregularly. Excessive oiling of engine and too rich a fuel mixture may deposit carbon on the insulator. Use a thin knife blade, a rag, and gasoline for cleaning. A plug will sometimes show a spark when tested outside of the cylinder and yet fail to fire the engine when replaced in the cylinder. This shows that the plug is "leaky" because of carbon or because the porcelain insulator is cracked. A "leaky" plug will spark outside the cylinder and not inside because the spark can jump through the air easier than it can jump through the compressed charge inside the cylinder, especially when the engine is cold.

Clouds of black smoke from exhaust indicate too rich a mixture. Screw needle valve in a rifle until smoke disappears. If engine misfires or fires back through carburetor or mixing valve, mixture is too lean. Screw needle valve out a trifle. If engine does not fire regularly mixture is probably too rich. Too rich a mixture will waste gasoline and carbonate engine and spark plug.

### HOW TO START

(See Figures II, IV, V and VIII)

Put advance lever (403) in the starting position. (See Figure II for Type No. 1 drive, Figure IV for Type No. 2 drive, and Figure VII for Type No. 3 drive). Be sure the spark wire (Figure 1), priming cup, prime engine by pouring a small amount of gasoline into the cup and letting it flow into the cylinder. If there is no priming cup, instructions accompanying engine will show how to choke air intake for same purpose. Turn flywheel in the

direction in which it will run. If engine does not start after turning a few times, prime with a little more gasoline. If the engine then fails to start remove spark wire from spark plug, release compression by holding intake valve open also open priming cup, and spin the flywheel rapidly a few times to blow out excess gasoline, due to priming charge being too heavy. (Remove 1 of spark wire is to prevent ignition blowing back when intake valve is open and starting outside fire). Then prime engine again, using less gasoline than at first, and again turn flywheel in direction in which it will run. In extremely cold weather, a much heavier priming charge can be used safely. Engines failing to start in hot weather, especially when they are warm, are usually primed too heavily and require blowing out as described above. After engine comes up to speed, move the advance lever (403) to the running position. (See Figure II for Type No. 1 drive, Figure IV for Type No. 2 drive and Figure VII for Type No. 3 drive).

## THE TYPE EK WICO MAGNETO

### METHODS OF DRIVING

There are three general types of drive for the Type EK WICO Magneto:—

- Type No. 1, Eccentric and Strap Drive (See Figures II and III).
- Type No. 2, Push Rod Drive (See Figures V and VI).
- Type No. 3, Combination Drive (See Figure VII).

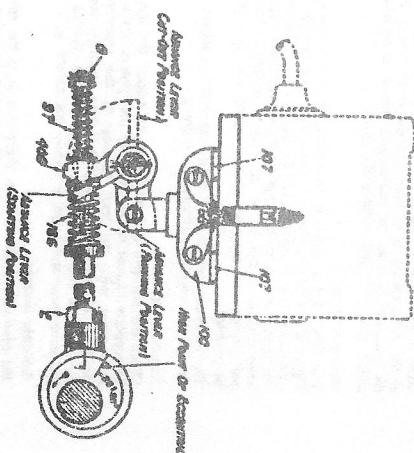


Fig. II—Type No. 1 Drive; Advance Ready to Run.

### TYPE NO. 1 DRIVE

(Figures II and III)

In the Type No. 1 Drive the Magneto is operated by an eccentric and strap from the crank shaft or half-time shaft of the engine. There are several forms of this drive, but they are all the same in principle. The armature (109) is held against the cores (107) by the return spring (97) and by the magnetic attraction of the cores. The spark is produced by pulling the armature about 1/16" to 3/32" away from the cores (This is called "tripping").

## TYPE NO. 3 DRIVE

(See Plume VII)

The Type No. 3 drive is a combination drive, possessing some of the features of each of the No. 1 and No. 2 drives. This drive is operated from the valve push as in the Type No. 2 drive, except that there is no "latching-off" of the trip mechanism, and the drive spring (186), return spring (97), rocker arm (408) and type shoulder (E) operate in exactly the same manner as in the Type No. 1 drive. The lock nut (E) is provided for locking the trip rod in position when timing the magneto as in the Type No. 1 drive.

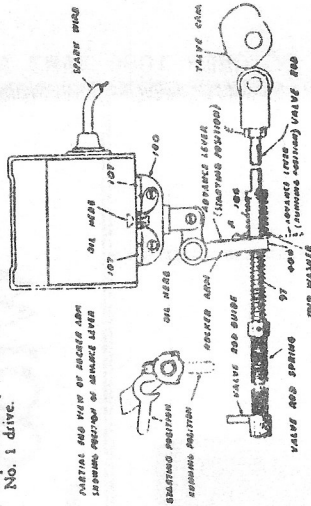


Fig. VII—Type No. 3 Drive

The spark advance is obtained by means of an advance lever attached to the rocker arm. To advance the spark the advance lever is pushed down into position between the rocker arm and the trip washer, thus the trip shoulder bottoms against the rocker arm earlier in the rotation of the cam.

The proper dimensions for the rocker arm and ignition rise on the cam will be determined by the Wico Electric Company for each particular type of engine.

**CARE OF TYPE EK  
WICO MAGNETOS**

The following simple instructions for the care of the Type EK WICO Magneto tell all that you need to know to keep it in perfect condition. Follow these instructions exactly and do not experiment.

## MAGNETS

Do not remove the magnets (141) (See Figure VIII). You will instantly destroy their magnetism and gain nothing, because every part of the magnets that may conceivably require renewal can be replaced without removing the magnets and without weakening them.

## MOVING PARTS

**MOVING PARTS**

All moving parts (See Figure 1) can be withdrawn from the magnet by lifting the armature (100) from its magnetic contact with the cores (107). This operation does not wetten the magnets. When replacing the armature make sure that the oil (see page 137) flows over the guide rod (137).

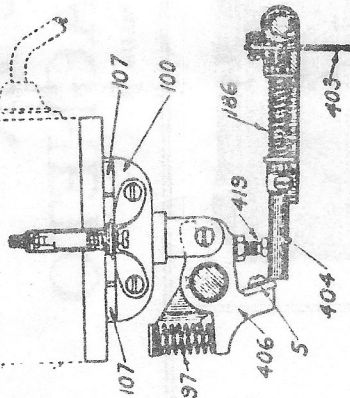
## REMOVAL OF COVERS

The covers of the magneto are held in place by the band (20) which is fastened by four screws (19), two at each end of the magneto. The removal of these screws allows the band to be removed. The covers to be removed.

ON THE

### OILING

The Type EK Wico magnetos will last for years if properly oiled. The Type EK Wico magnetos will last for years if properly oiled, but if allowed to run dry its life will be very much shortened. The drive mechanism should be oiled each day the engine is used. When the engine is being used every day, oil the magnetos at the marked oil-hole (See Figures III, VI and VII) once a week with the regular engine oil. If engine is not used every day oil the magnetos less often.

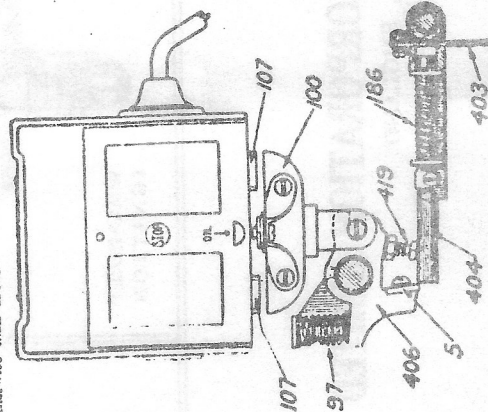


Fla. V-Two No. 2 Drive; Armature Ready to ship

**Timing Control:** The time of the spark is controlled entirely by the advance lever (403) which can be set in either of two positions. When the handle points straight out from the engine (See Figure IV) the spark is retarded for starting. When the handle points downward (See Figure V) the spark is advanced for running.

**Timing adjustment**  
When the magneto is installed on the engine, the proper timing is secured by locating the bracket which supports the trip finger, shown in Figure IV, at such a position on the push rod that the magneto trips at the end of the compression stroke when the magnet is in the resting position.

Engine users should not tamper with the setting of this bracket unless it is found that something has occurred to make the magnet advance lever (405) is in the starting position.



**Up - A Tack: Making Aun Ready to Latch Off**

If this setting of the eccentric is used, the necessary movement of the advance lever to provide the proper advance can be accomplished without giving the armature so great a throw that it will leave the poles more than  $\frac{1}{4}$ ".

**Timing Adjustment**  
The lock nut (E) is for the use of the engine builder after assembly. It is used to lock the timing when it is installed on the engine.

**CAUTION:** Engine users should not tamper with this nut unless it becomes necessary to adjust the time of spark, and then the trip rod should be moved only enough to insure that the magneto trips at the end of the compression stroke when the advance lever is in the advancing position. Tighten lock nut after this adjustment.

**Return Spring Adjustment**  
The adjusting nut (G) on the end of the eccentric rod is for the use of the engine builder for properly setting the return spring (97).

**CAUTION:** Engine users should not tamper with this nut unless it has to be removed for some purpose. In such cases replace it as it has to be removed for some purpose. In such cases replace it as follows:—Set the advance lever in the cut-out position (See Figure 11), or in the retard position, if the engine has no cut-out position, and turn the flywheel until the driving eccentric is at its point of greatest backward throw from the rocker arm (406). Then set up the adjusting nut (C) until the return spring (97) is completely closed up, then unscrew the nut one turn and lock it in place.

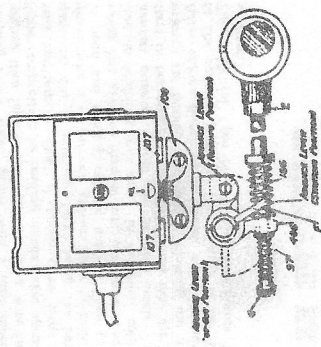


Figure III--Type No. 1 Drive; Ammunition Just Tripped,  
2. Ammunition Lever Rotated

(the armature). This is done by the drive spring (196) which bears against the end of the rocker arm (406) and in compressed position the drive spring (196) forces the tip of the rocker arm (406) against the tip of the tip shrouder (9) inside the spring bottom against the end of the rocker arm and instantly breaks the magnetic contact between the cores and the armature which is then snapped away from the cores by the compressed drive spring. The eccentric continues to revolve, the pressure of the drive spring is relieved and the return spring (97) draws the armature back to the cores again where it remains until the eccentric has again made the start.

**Timing Controls**

The time of the spark is controlled by the advance lever (See Figure II) which adjusts the rocker arm back and forth with relation to the trip shoulder (See F, Figure III). The advance lever can always be set in two positions (advance and retard) and on some engines it can be set in a third position (cut-out) which will prevent the armature from tripping and thus no spark will be produced.

The advance lever should be in the retard position for starting and in the advance position for running.

### Members Constitute

**Armature Openings**  
When the magnet is installed on an engine the eccentric should be properly located on its shaft, so that proper spark control may be secured with the least opening of the armature when the engine is at full speed. Large armature openings are undesirable because they put unnecessary strains on the wearing parts. The eccentric should not exceed  $\frac{1}{4}$ "

Jamesville Station

**Eccentric Settings**  
For reversible engines, when the piston is at the end of its compression stroke, the eccentric should be at its point of maximum advance towards the end of the crank arm.

throw towards the end of the rocker arm.

For non-reversible engines (both 2-cycle and 4-cycle), when the piston is at the end of its compression stroke, the eccentric should be 23° to 30° before its greatest throw towards the rocker arm (see Figure 11). In other words, when the eccentric is properly set on 2-cycle non-reversible engines, the flywheel will have to be rotated 23° to 30° beyond compression center before the eccentric reaches its greatest throw towards the rocker arm, and in 4-cycle engines the flywheel will have to be rotated 50° to 60° beyond compression center before the eccentric reaches its greatest throw towards the rocker arm, because in 4-cycle engines the flywheel rotates 2 degrees to the eccentric's 1 degree; while in 2-cycle engines the flywheel rotates 1 degree for every degree that the eccentric rotates.

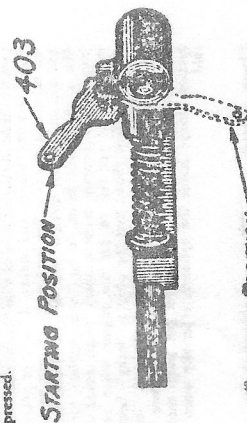


Fig. 14—Trip Flange used in Type No. 2 Drive Only. Showing

In Figure VI the armature is shown away from the cores and the trip finger about to "latch-off", and release the armature for its return to the cores.

The armature is tripped (pulled down) by the rocker arm 4408 when it is engaged by the trip finger on the push rod. After the armature has moved down the "latch-off" spring 419 disengages (See Figures VI and IX), the "latch-off" spring 419 disengages the rocker arm from the trip finger latch 4404 and the return spring 419 returns the armature on the cores. The trip finger latch bearing replaces the armature on the cores. When the trip finger latch spring 419 is sprung (1863) and when the latch engages the rocker arm against the spring is compressed until the end of the latch rod arm against the advance lever 4403 (See Figure V), and by bottoming out the advance lever 4403 (See Figure V), the latch trips the armature. Then the compressed spring drives the latch forward and thereby gives a very rapid movement to the armature.