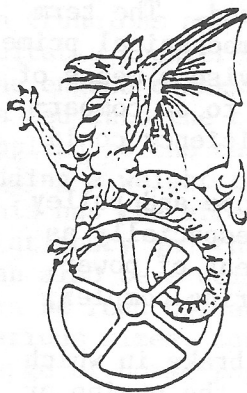


# WESSEX STATIONARY ENGINE CLUB



## NEWSLETTER

OCTOBER 1993

Please send newsletter material to:-

Robin Lambert,  
15 Beechwood Avenue,  
FROME,  
Somerset.  
BA11 2AX.

Tel: 0373 463526

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### HOW IT ALL BEGAN.

Way back in 1988 I went to a rally at West Coker, near Yeovil, mainly because they had a car boot sale advertised. There for the first time I saw a display of stationary engines, as I walked along the line of engines I realised some of them reminded me of the motor cycle engines I had spent a long time of my working life working on. There and then I decided I wanted one, I was hooked. My interest in motor cycles started at a very early age. I had a Francis Barnett long before I was old enough for a licence, much later I spent over ten years as service manager for Jim Alves of Street, probably the best known motor cycle dealer in the South West at the time. I was also at that time one of the founder members of the Somerset section of the Vintage Motor Cycle Club, so when Bill Coombes rang me up to ask if I could go over to his brothers at Wellow to sort out the timing on a bike he had just spent two years restoring, what could I say, but yes. Well I looked in Jack's workshop, what a beautiful sight, sight, there in all its glory stood a 1955 500cc Fieldmaster twin ariel in better condition than when it left the factory at Selly Oak. Jack had done a superb restoration that anyone would have been proud of.

He had a problem with the ignition timing, every time he kicked it over it nearly put him through the workshop roof. I set the timing as per the book, it now started first kick each time without kicking back. I then adjusted the carburation because it was set too weak. "There you are Jack" I said, "It is now perfect". Then Jack said the magic words, "Take it up the road", I didn't need telling twice, the bike hadn't been out on the road for over 30 years so I thought Jack was rather trusting (or daft) to let me take it on its maiden flight. Out of the yard I went and up over the hill out of Wellow, at the top I turned round and rode back into the village, instead of turning back into the yard I rode down past the pub where I had seen a gathering of the local go fast XR2 set, it certainly turned their heads as I roared up through the village, the bike went and sounded beautiful. Back to the yard and into the workshop.

Thank you Jack you must be really proud of that bike. By the way I didn't tell him I hadn't ridden a bike on the road for about 20 years. Well after that very nostalgic trip it reminded me that it was my previous interest in motor cycles and their engines that introduced me to the very interesting hobby of stationary engines. Hope I haven't bored you.

BRIAN J. BAKER.

### ANDREWS' BIG DAY.

Baby Andrew Bartlett will not forget his unusual christening when he's old enough to read the family photograph album. For Mum and Dad, Wessex S.E.C. members Dian and Stephen arranged for Andrews' christening to take place at Wincanton Classis Car Show. A nice photograph in the local paper showed baby Andrew sat on Mums lap while Dad looked on, standing by his Lister engine. Certainly a different way of doing things, perhaps it will catch on. Maybe we ought to think about putting Andrews name down as our youngest junior member.

### CLUB SKITTLE EVENING - SATURDAY 13TH NOVEMBER.

Once again we are holding this popular and well attended evening at Pilton Working Mens Club, this years venue will be the same as last years, with everyone joining in and having a bash at throwing a skittle ball. A supper will be laid on and our Wessex raffle will take place and any prize donations would be most welcome.

NOVEMBER MEETING - Monday 29th - An illustrated talk by Tom Randall.

(2)  
"HORSES FOR COURSES"

Measurement of engine power.

Enginemmen these days define the sizes of their precious finds, exhibits, or makes and models as, for example Petter 'M' 3hp; Lister 'H' type 2hp; Lion 4hp or even Robey 350hp, but how many really know how the term 'horse power' was derived or even measured. The term horse power has fallen into popular use since the Industrial Revolution when mechanical prime movers, or engines, first did man's work for him. It became imperative to devise a means of measuring the amount of work done in order to state the size of engine needed to do comparative jobs. Measurement of work capacity of an engine meant too that its efficiency could be assessed and its design developed along the most useful lines.

The earliest measurements of power were made by raising weights with a rope and pulley system. These methods could not be easily applied to measuring engine power especially as the engines grew in size and therefore performance. This led to the development of power measuring machines called Dynamometers. Even the modern ones, although appearing complex, are quite simple and straightforward.

The term 'Brake Horse Power' derives from a device known as a friction brake in which a rope, usually fitted with wooden 'shoes', was passed around the flywheel of the engine or a special pulley mounted on the crankshaft. One end of the rope was attached to a large spring balance and a suitable weight hung on the other end. See fig. 1.

The amount of work done by the engine was quickly analysed and defined in terms of Horse Power. The original Horse Power was defined by James Watt as the rate at which work was performed; work being the force required multiplied by the distance moved. By using a horse of average ability, a known weight was pulled up a distance vertically - up a mineshaft, and the definition standardised for all time as 33,000 ft lbs per minute being one Horse Power. The rope was introduced at the start of the nineteenth century and can be still used to measure fractional hp. at low speeds. Later on it was superseded by a device known as the Prony Brake. See fig. 2.

In this machine the weight is attached to the end of a horizontal balance arm. Friction is applied by tightening the bolts holding the friction shoes until the arm is in the horizontal position. Calculation of the BHP is the same as before except that the length of the arm is read instead of the pulley diameter and the weight is read direct. The calculation gives the turning power or 'torque' of the engine crankshaft.

The hydraulic dynamometer Fig. 3 was introduced in 1877 by William Froude and carries the Prony brake one stage further. Its basic concept was so good that many remain in use even today; although the electric dynamometer has superseded it due to the ease of direct reading by computer datalogging.

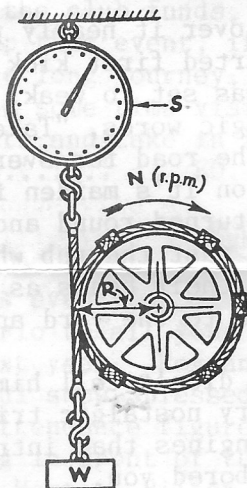


Fig 1.  
 B.H.P. = 
$$\frac{2 \pi R N (W-S)}{33,000}$$

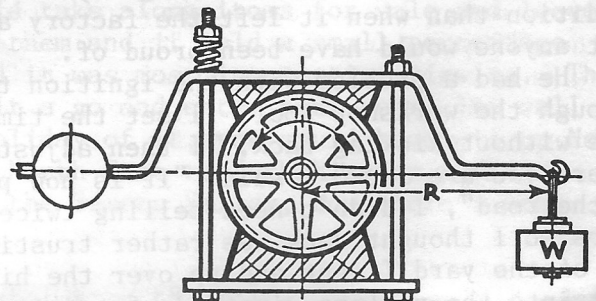


Fig. 2

Prony brake measures engine torque (W X R)

B.H.P. = 
$$\frac{2 \pi R N W}{33,000}$$

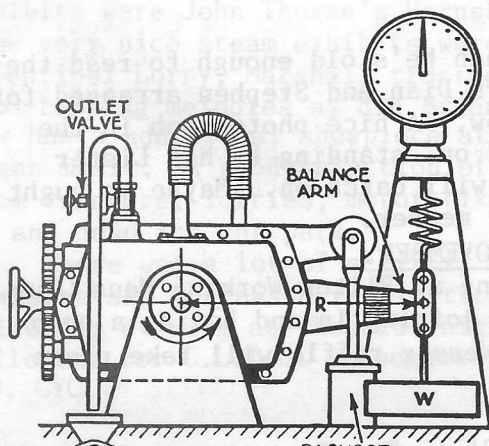


Fig. 3

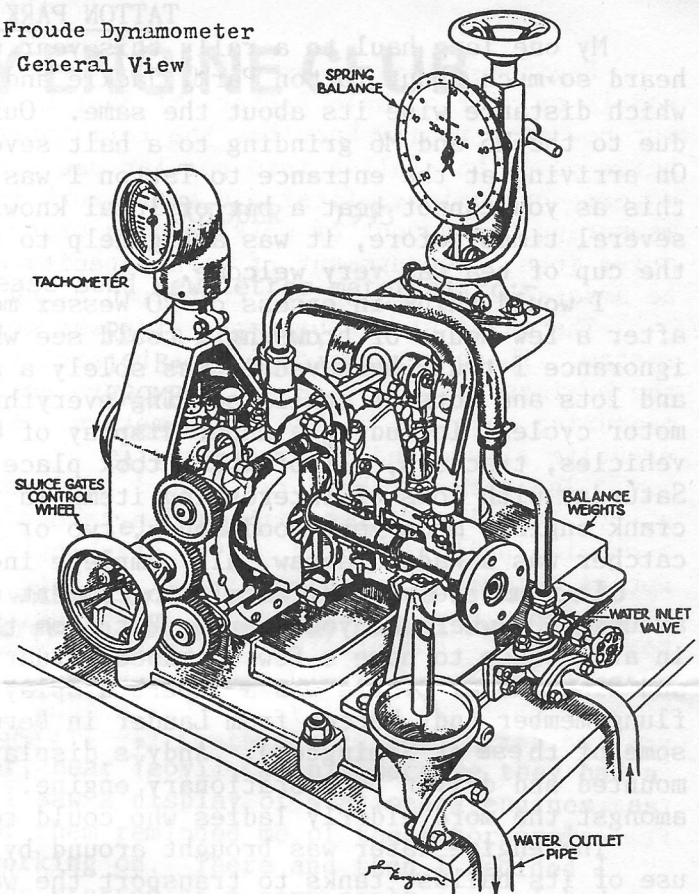
Hydraulic dynamometer. Fluid friction between rotor and casing tends to turn the case.



The hydraulic dynamometer gives greater flexibility as regards control. It consists of a fan like rotor with cup-shape blades running inside a watertight casing. The casing is freely pivotted on trunnions and is fitted with a weighing arm suitably counterbalanced. The rotor is driven by the engine crankshaft and at the same time water is fed into the casing. Full torque is thus applied to the casing which can be measured by adding a weight to overcome the torque reaction. This has the effect of making the casing remain stationary and the weight is noted. The weight can also be a weighing system so that the weight can be read off automatically. These machines, in various sizes, can accurately measure over a wide range of horse-powers; from 50BHP at 6-10.000 rpm to special purpose ones capable of absorbing 60.000BHP at 150 to 350 rpm. Most manufacturers of the engines which our hobby embraces would have tested their products with a machine of this type to achieve its stated rate of horse-power. Something to think about when filling HP... on your rally entry forms!

ED.

Froude Dynamometer  
General View



#### STANTON DREW STEAM-UP.

Full of anticipation of this new rally, we arrived on site Friday evening. The field was already fast filling up. We were shown to our engine area and found plenty of engines already in place. The camping area was very spacious and behind our engines. We awoke Saturday to a bright and breezy morning. Activity was in full swing by 9 a.m. and the commentary started the ring events at 10 a.m. which continued right through until 6 p.m. Parades of traction engines, motor bikes, cars, army vehicles but to name a few. You were invited to drive an engine, if you dare, for charity. Other attractions were of course, stationary engines, ploughing, woodsawing, steam fair including a big wheel, gypsy camp, go carts, army display, many side shows, craft shed!., cream teas, food stalls, and of course all the trade stands, selling everything. One new attraction was a 3D stall, these pictures have to be studied, to be seen. Roger and I having 'seen' and purchased the week before knew what to look for. There were a few frustrated onlookers, but once you saw the pictures, the oohs and ahhs carried across the field. A must to observe if you ever get the chance. Evelyn Cox thought I was mad all day Saturday (nothing new) but when she finally saw the 3D on Sunday (its only supposed to take 5 mins., not 24 hours) she was so excited she bought three. No doubt they will be shown on many a rally.

The day was brought to a close at 6 p.m. by the take off of two hot air balloons from the arena, the evening got into full swing around 7.30 pm in one of the big sheds. Music was supplied by the local group 'Absolute Mayhem' brilliant is my interpretation. Food was available all night, the bar was busy and outside the shed entrance, steam engines puffed away with all their lights aglow. The Ferris wheel was going along with the chairoplanes all lit up, it looked like a mini Stourpaine. We finally went back to the vans at midnight after a very busy and enjoyable day.

Sunday dawned wet but by 9.30am the sun came out and a great day, repeat of Saturday took place. The engines were still running with us all enjoying the late afternoon sunshine at 5.30pm, a rare occurence these days you must agree. Another hot air balloon took to the skies at 6.00pm to mark the end of a superb rally.

Mr. Alan Sparks, the organiser, came round and asked everyone if they enjoyed the rally, the answer of course was YES very much. A definite date for next years calendar.

LINDA PIKE.

FOR SALE - Lister Lighting Plant on cast iron base plus switchboard. Believed to be old startomatic or radiator cooled 'D' type owner not sure on the phone. This plant has been in situ. for many years and provided power for house.

Tel: Ray Chandler 0684 72777 (Tetbury area).

FOR SALE - 12" Diaphragm Pump by Wickham Eng. Co. on trolley and driven by Villiers MK2 engine complete with hoses £60. Tel: 0249 652922 (Mr. Pearce) Chippenham area.

TATTON PARK 26/27th June 1993.

My one long haul to a rally this year was to head North instead of South West as having heard so much about Tatton Park, Jackie and I decided to enter this rally instead of St. Agnes, which distance wise its about the same. Our journey should have taken approx. 4 hours but due to the M5 and M6 grinding to a halt several times an extra 1½ hours was put on the journey. On arriving at the entrance to Tatton I was met by our club Chairman Brian, most helpful was this as you cannot beat a bit of local knowledge as Brian and Mary have attended this show several times before, it was a big help to us regarding the campsite and show layout. Also the cup of tea was very welcome.

I would think in excess of 20 Wessex members and their families attended this event and after a few hours of browsing I could see why, something for everyone was here. In my ignorance I truly believed it was solely a stationary engine event, but no a small fairground and lots and lots of stalls selling everything from plants to magnetos (Bill please take note), motor cycles, including a super display of Gold Wings, vintage cars, commercials, military vehicles, tractors, all of which took place in the ring events. An auction took place on the Saturday with lots of interesting items in the sale, some bargains were to be had and some open crank engines made very good money, two or three hundred lots went under the hammer. One eye catcher was a Wade dragsaw, all complete including the original transfers on the wooden frame.

It would be very difficult to comment on the stationary engines on display as there were around 700, where do you start? But from the Wessex club a good cross section of engines were in attendance to name a few - Amanco, Stuart, Eagle, Fairbanks Morse, Lister, Detroit, Fowler and Blackstone. There was a superb display of very old machines by probably our furthest flung member Andy Mercer from Lauder in Berwickshire (Many members will no doubt remember seeing some of these at Semington). Andy's display was situated next to a larger one that was trailer mounted and driven by a stationary engine. Both exhibits caused a lot of interest in particular amongst the more elderly ladies who could remember many of the machines in everyday use.

The engine water was brought around by an ex Pickfords Scammell tractor unit which made use of its ballast tanks to transport the water.

Amongst the camping area I spotted what must be the ideal and ultimate in rally vehicles, it was a Ford Transit crew cab truck with a lorry body complete with small crane to lift a stationary engine on board, it was finished immaculately and I said to Jackie, if someone can make and restore a vehicle to such a high standard like that what must his engine be like. The following day I met the owner only to find it was someone I have known for many years, he told me he actually used three Transits to make the vehicle and fitted a six cylinder engine to it owing to it being a bit on the heavy side.

What I thought was a good idea was exhibitors could take along items for sale and leave them by the club tent with your asking price marked on them and if sold a small percentage went to the club funds, hundreds of items were left and it was most interesting viewing. Then to sum up this event, if you haven't been before give it a go and enter next year, its well worth the long journey, in fact why not make a weeks holiday of it, you could head off up North and spend some time visiting the Lake District or head North East to Yorkshire or perhaps head South and take in The Ironbridge Gorge and follow the Severn Valley, now there's some thoughts!!!!!!! ED.

#### FULL QUART CRANK-UP HEWISH, NR. WESTON-SUPER- MARE.

Sunday 26th September.

This event for me is always the last in our rally year and its a nice way to wind down and say cheerio to all your engine friends, wish them well and look forward to seeing them all again next year. Roy and Ivors' do as many of us have come to know it was once again another successful show, blessed with fine weather, although a bit on the chilly side. I would imagine public attendance figures were a little down, probably due to the major road works going on slap bang in front of the pub. There was quite a lot of unusual makes in the engine line which included Hartop, Pilter, Domestic, Stover, Brownwall, Powell and Wallace. Some outstanding exhibits were John Thorne's Hornsby and Brian Reed's 7hp Bristol Wagon & Carriage Works Victoria. Some very nice steam exhibits were parked by the pub which included a Burrell Showmans engine, a Sentinel Lorry, Marshall traction engine and a Road Roller. Two large organs 'boomed' out foot tapping melodies as did Brian and Claz Munt with their hand turned barrel organ, which now has a additional showpiece attached to it in the form of marionettes that danced to this organ music. A good selection of vehicles parked around the field and car park and ranged from tractors, lorries, motor bikes, cars and a model steam railway gave small children rides up and down the car park.

There was a lot of activity all day long around the various stalls as people found their bargains and purchased raffle tickets for the draw which took place later in the day. The following evening at the club night it was revealed that, at the first count, £1,389 had been collected for C.L.I.C. throughout the year by the Cox's families and friends.  
M.O. CYC.