

North Birmingham News

NEWSLETTER

Continuation of my joining the VMCC and my first restoration of a motorcycle "A 1921 ABC"

My eldest son Martyn has the ABC now and has used it for about 14 years. When I got it home from Freddie's, it took me just six weeks to put it together (at night - 10 pm - 1.30 am).

Meanwhile, Arthur Patstone, who had been a keen motorcyclist since the middle 20s', and knew everybody connected with the sport, went to see Geoff Davidson at 106 Bristol Road, Birmingham, who told him to go and see Eric Ouver at 78 Margaret Grove, Harbourne, Birmingham who was the Secretary for the Midland section. However, Arthur asked me to see Eric and Arthur, Charlie and I joined the V.M.C.C. in October 1955.

The restoration of my first vintage motorcycle was in August 1955. It was a 1921 ABC which was completely dismantled. I started at 10 p.m. and worked through until 1.30 a.m. each night for six weeks. The engine needed hours of work to get it together and running. I got new piston rings from Associated Engineering Ltd on Bristol Street, Birmingham; opposite the Cinephone Cinema. There were two compressions and a scraper at the top and one scraper at the bottom of the skirt. The pistons are very short and relatively big in diameter, also very light, as is everything on the engine and the frame. This is because it was designed by an aircraft engine designer - Granville Bradshaw, also the use of 1/4" B.S.F. thread (26-1 1/4" cycle thread is also 26 T.P.I., but the thread form and angle are different, so they don't mix). Nuts and bolts were used on the engine and cycle parts to an excessive degree. All the steel parts were nickel-plated, even the cylinders (turned from billets with very fine fins) and the rockers, stanchions, pushrods, carburettor and brake drums. (It had conventional internal expanding brakes). It had swinging arm suspension at the rear with two multi-leaf springs (I don't think they were nickel plated; this would have weakened them).

The general layout of the bike was said to be 40 years ahead of its time. It was designed in 1919 (there had been an ABC Madeini) but this was an in-line design with the two cylinders lying fore and aft - it was 500 cc but I think it was side valve with cast iron cylinders but it was not a lightweight and the engine car type gearbox and final bevel drive were all in one unit. The final drive unit had a housing in the casting - (all the castings were aluminium) which held a dynamo driven off the output shaft of the gearbox. It had electric lights and the cut out and mains switch were housed in a steel box bolted to the top of the gearbox under the petrol tank, which sat under the top rail of the frame and also contained the oil tank, oil pump (hand operated) sight glass, and needle valve control.

There was a priming tap on the underside and the priming cocks were situated above the cylinders on the induction mani-

fold which was heated using an envelope of steel sheet round the carburettor mounting flange - to stop icing of the carburettor. The engine was 398 cc horizontal twin-cylinder lying transverse across the bike. The bore was 68mm and stroke 54mm - well over square. The pistons were dished and the cylinder heads (held on by 6 1/4" BSF bolts) were hemi-spherical with two large valves and 18mm plughole. The valves had very short stems and were operated by light-weight rocker arms on forced steel stanchions.



John



From the Archives

The Norton Story up to 1957

Mr. Norton had started with the motorcycle industry, and had contrived to survive in the industry with no great reserves such as would accrue to a firm with many years of successful cycle manufacturer behind it, but he always had an entry in the Island each year, and in 1910 he went over to tide himself, the only Norton entry. Jimmy Norton was a very good type of rider, with a string of short distance successes, even coming down to the South-east to beat other London rider-manufacturers in the Streatham Club's hillclimbs on occasion, but he was always personally unlucky in the Island.

Herabouts the future of the little company looked black and the big twin he had designed was eventually produced by Blumfields. Half humorously he asked Rem Fowler where he could get a job, preferably designing motorcycles. Fortunately Mr. Norton's association with Mr. R.T. Shelley Ltd, founder of R.T. Shelley, a well known neighbouring engineering firm who had been doing machining work for him, enabled him to continue, and concentrate on models with his own engines. He moved to Sampson Road, Birmingham, the firm being reconstructed as Norton Motors Ltd. Incidentally the firm of R.T. Shelley Ltd, was itself associated in earlier days with Mr. C.A. Vandervell whose company originated the C.A.V. electrical gear, an association which was to lead in later years to Mr. Vandervell becoming chairman of Norton Motors Ltd.

It is difficult to pinpoint the exact date at which the name acquired a new significance among us. In 1911 Dan Bradbury, secretary of the Sheffield Club and a great Norton enthusiast had done 70m.p.h for the first time in a sprint (and had decided to enter the trade as a Norton Agent, notwithstanding considerable scientific attainments). Even more impressive was the effort of Jack Emerson in 1912, when he rode his standard "31/2" T.T. model from Hull to Brooklands and, in his very first race there, proceeded to "clean up" the 150 mile Brooklands T.T., breaking three world long distance records at around 65 m.p.h. A Brooklands Special ("B.S.") was marketed for 1914 with a guaranteed 65 m.p.h., and "Wizard" O'Donovan, a brother-in-law of R.T. Shelley was breaking records with it in the 80's, this actual machine was later owned by Graham Walker. All this added up to the fact that in the few years before World War 1, Norton Motorcycles, with Norton engines, blossomed into very desirable machinery indeed. There were more reasons for this than the lure of a name famous in the speed world. These are best summed up as "riders points", such matters as a spring up rear stand, integral sidecar lugs, a tank top toolbox, celluloid covered handlebars and so on.

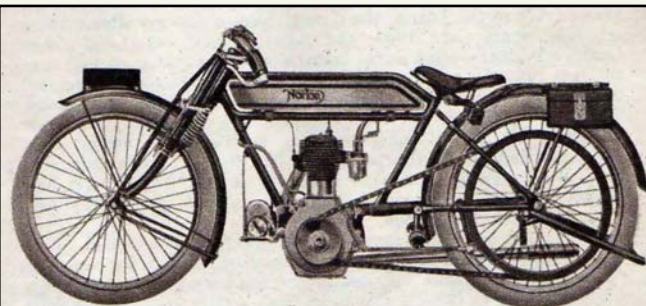
The two basic models, the "Big Four" and the "3 1/2" proved so popular that other models which were introduced did not reach the production stage. Among these was a little two stroke, in 1911, to be called the Nortonette with a 55mm bore x 65mm

stroke and weighing about 60lbs, and a "350" in 1913 to be called the "2 1/2" and a very much smaller edition of the "3 1/2" with a long stroke 70mm bore x 90mm stroke engine.

A Two-stroke...!

Belt drive was still fitted in 1914, and the "3 1/2" TT and "BS" jobs having single speeds, and the touring model the three speed, Sturmey-Archer hub-gear, the designer of which Mr J. Cohen was not only the possessor of a fine technical brain but was a great Norton enthusiast. There was a countershaft geared model on the stocks and the small two-stroke Nortonette was again scheduled for production, it was said. It was at this time that Mr. Norton started thinking in terms of overhead valves too. For the following year, 1915, the frame was treated to a "new look" with a dropped top tube lowering the saddle position, and a new three speed countershaft gear box by Sturmey-Archer's Mr. Cohen, with final drive either by belt or enclosed chain on the touring models. The track racers still had single speed belt drive, the "B.S." now being guaranteed for a 70m.p.h. lap at Brooklands. The T.T. model with single speed became the model 9, and for 1916 the models 16 with a countershaft three speed. The two-stroke did not go into production.

It was in 1916 that the company moved to the factory built in Phillips Street, which was backed onto that of R.T. Shelley Ltd in Aston Brook Street. Subsequently the Bracebridge Street site acquired, to bring the whole organisation between three streets. In the same year Mr Norton took on a young man in the drawing office, straight from Technical College named Gilbert Smith.



The machine which the connoisseur of 1915 rode. It is the 490 c.c. s.v. T.T. model with a fixed gear. A variable Phillipson pulley was an extra. A feature was an "adjustable" silencer!

Part four to be continued next month

The pushrods sat in tappets, which were enclosed in the timing chest at the front of the engine. The tappets had integral collars which were lifted by slender steel pivoted spring loaded rockers which were operated by a Bowden cable connected by a trigger on the handle bars, which was the valve lifter. The other end of the tappet ran onto the middle of a steel lever which was a cam follower, pivoting on a pin at one end and the other end was fastened to a twin pear drop that had been flattened. There were two each side of the cam on the front of the engine. The camshaft was very short – 2 ½ inches long with a spur gear on the front, which drove a similar gear that was taper board to sit on the magnet shaft. So there were two cams one for the two inlet valves, one that was steep-sided for the exhaust; to get the exhaust valve open and shut fast. The two cylinders were offset, the left or nearside lying behind the right or offside. It was a 4 speed gearbox with a longish steel forged handle and a steel gate in its own box bolted to the right hand side of the gearbox. In the bell housing was the car type single plate clutch. The steel flywheel was machined to take a small thrust bearing, consisting of two discs hardened with a radiused groove in one side to take a set of ball bearings mounted on a brass carrier. Then its mating disc sat the other side. These sat in a housing in the centre of the inside of the pressure plate. A flat section coil spring sat in the flywheel held on a boss machined in the flywheel. Then the pressure plate, with its release thrust bearing. The pressure plate had a ring of Ferodo friction material riveted to it facing towards the back of the engine and had four ears of steel turned through 90 degrees to engage in deep grooves machined inside the rim of the flywheel. Then the plain steel driven plate that had a steel centre boss with splines that engaged with the splines machined internally on the constant mesh gear that ran loose on the main shaft in the gearbox. After the plain steel driven plate was the last steel plate with a ring of ferodo and this plate had eight bolts to hold it to the back of the flywheel. A long pushrod then went up the middle and this was operated by a fork arrangement on the lever in the bell-housing and an external lever operated by a Boden cable to the reverse clutch lever on the handlebars. The front brake had a reverse lever. The brake drums – 5” front and 6” rear were thin steel fabricated and bolted onto the hubs with six ¼” BSF nuts and bolts. The frame was a very strong all round cradle that protected the engine (particularly the heads and rocker assemblies that stuck out either side) and a pressed steel under tray apron with steel-sided shutters to keep the cylinders warm in the winter and to stop the mud and salt getting between the fine fins, and pressed knee shields so the rider was well protected from the weather and it had aluminium foot boards with a pressed diamond pattern grip. The rear chain sprocket had a cush drive with eight rubber inserts which seemed strange on a high revving twin. The engine revved at anything up to 6500 rpm and the acceleration was phenomenal.

The rockers on my engine had to be built up with stellite and re-machined and the pins on the stanchions were worn – these had the same treatment. The cylinders didn't appear to be worn or oval, but they were rusty inside, so I put them in the lathe and cleaned them up, the pistons wee worn but I thought the new rings would put that right. The little end bushes were worn so I turned new ones out of phosphor bronze bar. The gudgeon pins were also worn but I couldn't do much about that. The brass pads in the ends of the gudgeon pins were ok. I had to straighten a lot of the fins which were bent through lying around for 30 years. The bearings that the crankshaft ran on were of the crowded race type; the balls sat in grooves and they all touched or rubbed against each other. There was no cage, each of the inner and outer hardened rings had a very small curved slot machined in, so the balls had to be fed in one at a time and pushed around and the ball to go in was a read tight fit and had to be tapped in with a small punch and there was a complete ball race that didn't fly apart.

Small Ads Section

For Sale: Honda 250N Superdream, electric start, 1979, Blue, MOT and Tax, Good Condition £575
Tel 01384-873263 Peter

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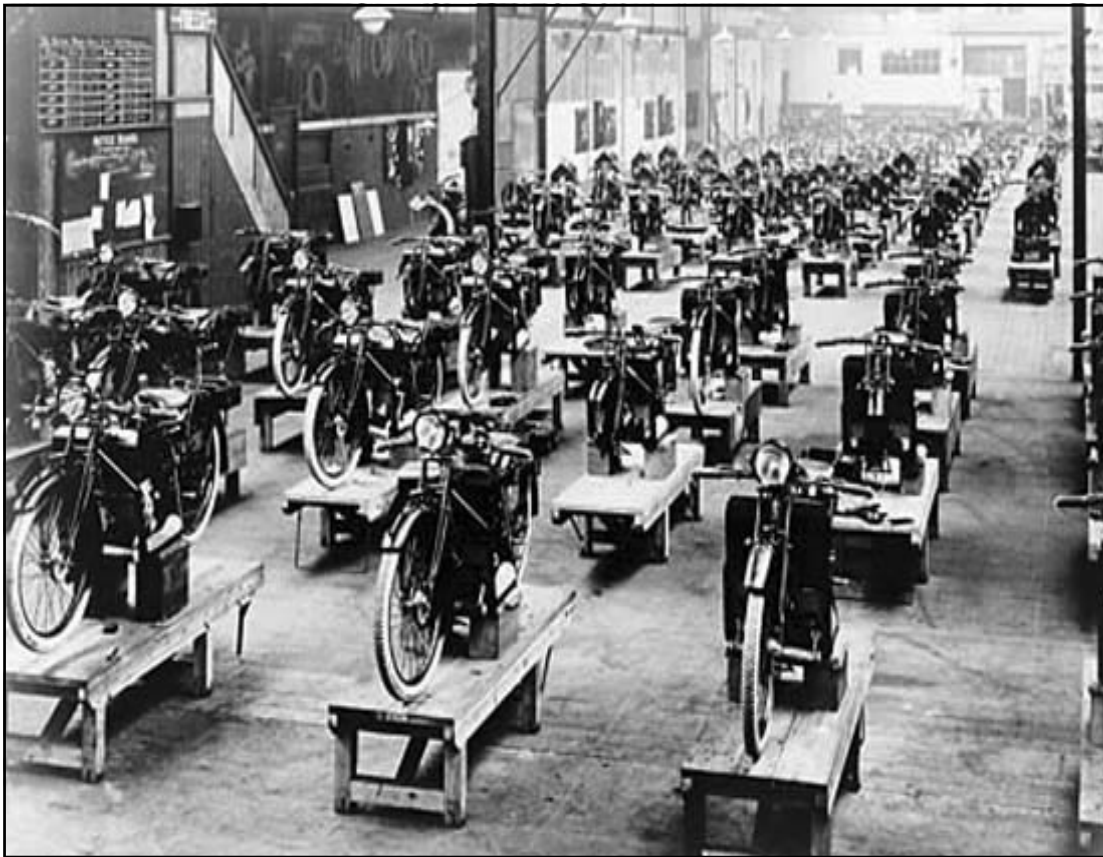
CHANGE OF CLUB NIGHT SPEAKER

Geoff Brazendale will now be giving his talk on the 29th October.

John Fox will be giving a talk on his exploits as a tester for Ariel, BSA, and Triumph on the 28th May

These I took apart as they were full of old grease and dirt, washed them, and put them together. None of them were like a new ball race, but some were quiet and some noisy. (I replaced them all 3 or 4 years later with new modern ball races). The crank pins were worn 2 or 3 thou and the big end eyes of the two con rods were worn on the inside tracks where the steel rollers run. The rods are fed over the crankshaft from either end and the rollers are put in (like a crowded ballrace) and then a plate in two parts slides down the outer web of the crank and the two halves are bolted together with two 3 BA hard steel pins and the ends riveted over. I bought new rollers. They are 5/16ths long and 5/16ths diameter, so I bought standard size and ran it for many years and it rattled but went ok - 65 mph top speed. Years later I found out you could have rollers, 1, 2, 3, 4, 5, thou oversize on the diameter and also the length. I fitted some 2 thou up on diameter and these did a few years work. I cut lumps of rubber for the cush drive and they ran out in 30 miles so I found some other material from the Globe in Smethwick. I cut them to size and they lasted years. I had to do a lot of work on the front fork links and spindles in 1962 when MOT's came in, but before that I used to put brass shim in and take the play out. I realigned the brakes and ground the ridges out of the hardened steel caps on the brake shoes that the cams had made and fitted thin stainless caps on the ends of the shoes to get the operating arm in the correct position. The magneto caused a lot of trouble and I even made new pickups on the lathe out of plastic for the carbon brushes that pick up the H.T. of the slip ring. But the magneto was alright on Bob Curries 1956 Spring Trial from the pub in Hartlebury (not the White Hart), and it was alright on the Banbury run, but when I got home with it in the trailer it was ceased solid and the shellac had melted then set so I washed it out with meths. Two weeks later was the Levis cup trial and I knew it would set solid. At the lunch stop at the Charlton Arms in Ludford (not Ludlow) I asked Jack Harper if I could put my scarf around the magneto to keep it warm and he said I would have to consult the officials running the event. They were Eric Thompson, Phil Ross, Bob Currie, Percy Wheeler and they decided it would be ok and I wouldn't be disqualified in the dinner hour. (In those days you couldn't stop once you had started, you couldn't blow your tyres up, and you could only buy petrol from Yarringtons Garage at Fardiston in the morning. You couldn't buy petrol from the garage by the bridge by the Charlton Arms and you could only buy petrol or oil in Ditton Priors. I scraped the frame, mudguards; wheels, petrol tank, and then wire brushed them and treated them all to a coat of jenolite rust inhibitor containing phosphoric acid. Then underneath it with zinc rich paint from Woolworths then painted it with black cellulose paint, got some new Dunlop 26 - 2 1/2 tyres and tubes from the local garage (Fred Cox) - (Halfords still stocked beaded edged tyres till 1965).

When the bikes were manufactured they were finished in a peculiar gun-metal grey and had a type of lacquer that was hard-wearing, I have never seen one exactly correct. I put 9 together and had to get an engineers report before I could get it insured at Harris Insurance in Ladypool Road, Birmingham (it cost £7 for a year).



The Factory in 1921

FORTHCOMING ATTRACTIONS FOR 2008

	CLUB NIGHTS
MARCH 26th	Reg Eyre's Tour of New Zealand
APRIL 30th	History of the Air Ambulance & presentation of cheque
MAY 28th	Talk by John Fox on his experiences as a tester for Ariel, BSA and Triumph
JUNE 30th	Ride a Bike Night— no meeting
JULY 25th	Fish and Chip Supper
AUGUST 29th	Arrive on Your Bike Night
SEPTEMBER 24th	Talk by Johnny Brittain on life as a trials rider
OCTOBER 29th	Talk by Geoff Brazendale on early vehicle lighting
NOVEMBER 28th	Bring and Buy evening
DECEMBER 26th	No Meeting

CLUB RUNS

DATE	RUN	ORGANISER	Tel No
April 13th	Spring Run	John Aston	01543-452695
May 4th	Relay Rally	Josie Stanley	01902-607293
May 18th	Girder Fork Run	Martyn Round	0121-550-1547
May 30th - June 1st	The Welsh Weekend	Josie Stanley	01902-607293
June 8th	Josie's Jaunt	Josie Stanley	01902-607293
June 18th	Wrinkly Signpost Hunt	Ian Harris	01952-299118
June 25th	Ride A Bike Night	Frank Ashton	01902-372719
June 29th	Roger's Run	Roger Greening	01562-730464
July 6th	Long Mynd Run	Colin Lloyd	01384-371385
July 9th	Wrinkly Run		
July 20th	Trent Valley Run	Brian Empsall	01543-264968
August 3rd	Breakfast Run	Rob Pell	0121-624-7674
August 17th	Picnic / Concours Run	Peter Ashen	01562-882854
September 7th	Flight of Fantasy Run	Trevor Bull	01905-778917
September 14th	Levis Cup Road Trial	Paul Harris	01952-299118
September 28th	Severn Valley Run	Bill Danks	01562-67103
October 12th	Autumn Run	Andy Briggs	0121-544-5938