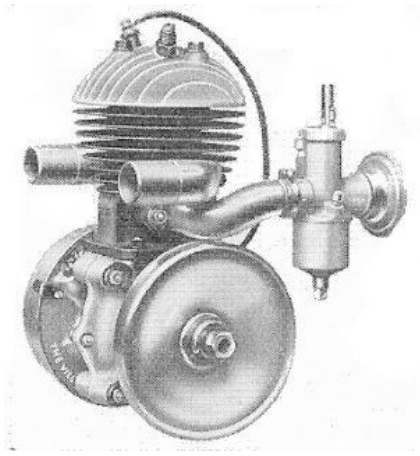
2 History

I wanted to say something about the immediate post-WW2 engines, typified by the 6E, 7E, and 8E engines in VSIH3, as well as how they might be modified especially for trials. For completeness, I will summarise the pre-WW2 engines, but I do not want to discuss their modification.



Pre-WW2 Engines

A few engines were produced prior to WW1, but significant production really started in 1922. The 150cc Mark VI-c with iron piston and fixed head (head and barrel were one casting), followed by the VII-c and VIII-c. The 172cc engines also had one piece barrel/head castings and iron pistons.

Two 172cc engines of note were the Super Sport TT, with detachable cylinder head and aluminium piston, and the Brooklands TT which had a high compression head, padded crankcases and larger carburettor.

The pictures here show a Brooklands engine in renovation. This was a sprint engine and had a nice 'home made' full circle crank. The porting and polishing inside was exceptional.

Figure 1 Brooklands sprint

The 196cc engines were introduced in 1928, namely the 1E (1928-38) 2E (1930-40) and Super Sport (1925-34). In 1938 a new 197cc engine using 59x72mm configuration was introduced, the 3E with flat topped piston and three speed gearbox. This became the prototype for the E series engines after WW2. Sundry 250cc engines were available, Mark VI-a of 1922 through to the 1940 Mark XVI-a at 67x70mm, in addition at 63x80 were the Mark XIV-a Mark XVII-a and Mark XVIII-a models. Finally, came the 350cc engines of Mark VI-b through Mark X-b and Mark XIV-b, and the 98cc engines of the Junior and Junior Deluxe (JDL).

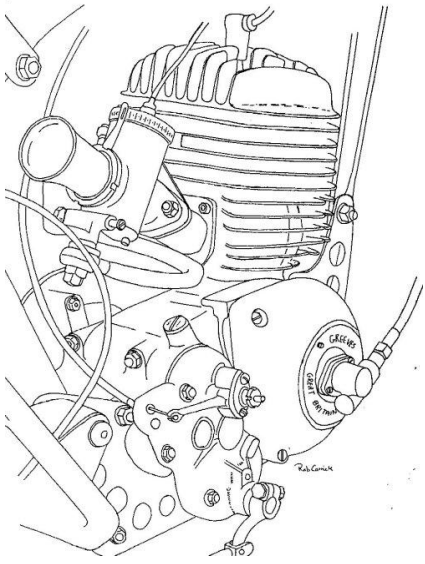
Figure 2 Brooklands full crank

Most of these engines were denoted with a mark on the crankcase, such as XY denoted the 2E, Y for Brooklands, and XX for Junior Deluxe. For further details see the accompanying PDF "Engines" for a list of all the pre-WW2 engine letters. Such drawings and diagrams that are available, are reproduced on my 'Villiers Info' website.

Post-WW2 Engines

50cc borexstroke=40x39.7	3K
98cc borexstroke=47x57	1F 2F 4F
122cc borexstroke = 50 x 62	9D 10D 11D 12D
147cc borexstroke = 55 x 62	29C 30C 31C (over-bored 12D)
173cc borexstroke=59x63.5	2L 3L (short stroke 9E)
197cc borexstroke=59x72	7E 8E 9E
223cc borexstroke=63x72	1H 2H
250cc borexstroke=66x72	31A=short rod for road, 9E cases
	32A=long rod trials, 9E cases
	33A=short rod scrambles, 9E cases
	34A=long rod scrambles, 9E cases
	35A=long rod, 11E cases
	36A=long rod scrambles, 11E cases
	37A=long rod trials, 11E cases

The discussion in this book is about British (and possibly European) older two-strokes, as opposed to later Japanese designs, so while I refer to 9E or 32A, the discussion will refer to all older two-strokes where the small transfer passages require significant crankcase pumping.



RAS Silverstone 36A based motor

In looking back over the years of the 9E and all its derivatives, many will remember it as a stodgy gutless lump, this is true if only the roadster and trials units are considered, but they were ideally suited for their role. Back in the scrambling scene of the early sixties, it was Villiers who blitzed the 250 class. The vast majority of runners in this class used the 9E motor or a derivative of it. It must be conceded that there was not much else around at the time, but those 9E engine machines flew, for certainly in the Eastern Centre ACU events they ran on methanol.

During the same period big time 250 cc Grand Prix road racing was being dominated by foreign multi-cylinder machines capable of fantastic speeds, with much glamour being attached to the International set. Vast amounts of money was poured into the development of race winning machinery, in the hope of a world championship win, which would bring in lots of free advertising for the winning factory. If we now delve behind the International scene and look at ordinary clubman racing, we find that the impoverished owner-riders of lesser ability were having a lot of success, and