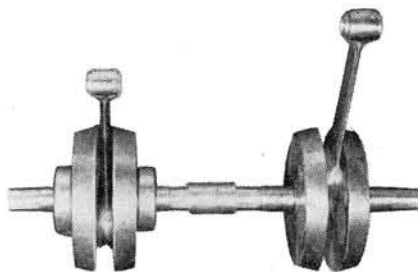


This is the twin-cylinder Greeves built by John Dunn and fitted with Marcelle high-performance cylinder heads . . . "Under test the 500 c.c. Greeves twin proved quite outstanding"



Two crankshafts joined: note the coupling

IF ONE TWO-STROKE IS GOOD, WHAT ABOUT TWO TOGETHER... OR FOUR?

The ingenious ideas of John Dunn

STRANGE, isn't it, how the most surprising things seem to turn up in the least likely places. Take R and W Motor Cycles of Bridport . . . Any make supplied, says the sign over the single-fronted shop window. Half-a-dozen secondhand machines stand inside. The usual sort of spares and accessories are displayed behind the small counter. A typical provincial town small motor-cycle dealer, you would say.

You would be wrong. Go down the long passage to the workshop: you'd soon know what I mean.

I was on the trail of another special. I had heard about it several months before and eventually my enquiries led me to John Dunn who is now manager of R and W Motor Cycles. The machine? A Greeves Moto Cross Special powered by two 34A engine units — yes, two put side by side to form a 500 c.c. vertical twin. I found it at Bridport . . . and all sorts of other interesting things as well.

White-overalled, ginger-haired John Dunn was at work when I arrived.

He was building yet another special — a Triumph Speed Twin-engined Greeves. John is manager of the business and somehow — as well as being one of the busiest special builders I have met — he manages to cope with nearly all the workshop work, and look after spares and machine sales.

With him was his boss, 28-year-old Michael Wood, the W part of R and W Motor Cycles, and just as keen an enthusiast as Dunn.

As the Villiers multis were what I was most interested in, I shall deal with those first.

The idea was originally Michael Wood's. He had a 1,000 c.c. J.A.P.-powered Cooper hill-climb racing car but wanted even more power. Though at the time — two years ago — not much of a motor-cycle expert, he knew *enough* to know that the alloy-

barrelled Greeves version of the 34A produced almost 25 b.h.p. Why not, he thought, put four such engines into a Cooper chassis?

After all John Bolster had put four J.A.P.s into his famous pre-war special Bloody Mary — installing four light Villiers engines should not be anything like such a problem.

Helping Michael with his tuning at the time was John Dunn — then working at the same job but as manager for Grays who then owned the business. Good idea, thought Dunn, but it would probably be best to experiment with just two engines before building a four. And . . . the best way to test two engines would be in a motor cycle — his Greeves scrambler.

So in his spare time John Dunn set to work.

The result can be seen in the photographs. To say that I was most impressed is an understatement. Workmanship is absolutely first-class. A lot of thought has gone into doing the job in the best way possible.

First and biggest problem was to join the two crankshafts. Alpha Bearings were consulted and agreed to make up two pairs of full flywheels with specially splined shafts. The cost? Only 25s more than the price of a normal set of Alpha full flywheels (which, as you may know, is £16 retail).

A 2in-long internally splined coupling sleeve was then made up by a local engineering firm and the next step was to press this into an energy-transfer ignition rotor specially produced for the job by Wico Pacy. Dunn thought it would be very convenient to house the generator in what would otherwise be the more or less vacant space between the two crankcases.

The Wico coils were housed inside a two-piece light-alloy sleeve, so machined

that it could be bolted between the two crankcases. In addition a light-alloy plate was bolted across the crankcase gear-box mounting flanges.

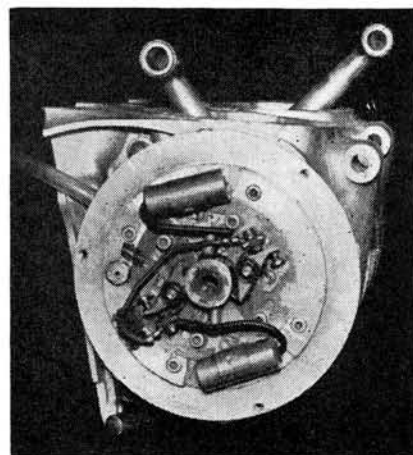
Gear box and primary chaincase were from an A group B.S.A. The cylinder barrels and heads were Greeves (incidentally in experiments, Dunn has found the Greeves barrel to be *by far* the best of all the various light alloy barrels he has tried).

Under test the 500 c.c. Greeves twin proved quite outstanding.

There was power all the way through the rev range. With the weight of the complete machine only 265 lb (about 80 lb lighter than a Gold Star), getaway from a standing start was amazingly good.

Unhappily, though, just when they were getting the various odds and ends of bothers sorted out trouble struck . . . the crankshaft broke alongside the coupling sleeve. Since then R and W have been

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Timing cover off the five-hundred twin — the twin ignition coils will be noted

THE INGENIOUS IDEAS OF JOHN DUNN

Continued from page 234

so busy that the twin has had to be shelved. Eventually they hope to have a go at it again although they might, I suspect, be persuaded to sell the engine. Must admit I'm very tempted myself . . .

Development of the four was started almost as soon as the twin was finished and found to perform well. In fact the four—or what has been made of it so far—consists of two twins with the drive to a gear box taken from the centre. As with the twin, all the engines are bolted by their gear-box flanges to a light-alloy plate—in this case an angle member—but there is an important difference in the way the crankcases are coupled. It was thought that normal coil ignition would be better than energy transfer and accordingly there was no need for any generator coil or rotor.

So it was possible to use spacers of far deeper section between the crankcases. These spacers—of light alloy and one between each pair of engines—are pressed into the space outside the magneto-side main bearing where the stator plate normally fits on the one side, and into a similar recess machined on the driving side of the adjoining crankcase.

It was thought unnecessary to have two bearings on the drive side of each engine unit, and each crank assembly is now supported by a single RLS 8 at each side. Dispensing with the outer drive-side bearings enabled Dunn to bore the drive-side cases to take the spigots of the spacers.

Oil seals are pressed into the spacers and each crankcase half/spacer assembly—that is, one drive-side half crankcase, one spacer and one timing-side crankcase is held together by 2 B.A. Allen Cap screws, screwed in from inside the crankcase into tapped holes in the spacer. There are four of these screws on each side.

Compression ratio of the four-cylinder unit—intended to run on "dope"—is 14.5 to 1. To obtain this the standard Marcelle petrol cylinder heads were skimmed down 0.090in. Though, as already mentioned, Dunn is a staunch believer in the use of Greeves cylinder barrels, he was unable to obtain four of these when work started on the car unit—hence the Marcelles. They were obtained in unplated state so that they could be "fettled" before chroming.

Unfortunately, the four-cylinder unit is now in much the same state as the twin—partially dismantled and shelved, owing to pressure of other work.

Only way it will ever be finished is, I suspect, if someone comes along to buy it. Certainly with a power output of close on 100 h.p., exceptional lightness and—most important—being made from inexpensive standard components, it should be a good proposition.

What, you ask, are the other things that Dunn and Wood have been so busy with?

For a start, there is a special Greeves 24 MDS frame that has been remodelled to take a Starmaker engine.

As you may know, on the Starmaker

the exhaust comes out from the front of the cylinder. Although it is possible to bring the pipe out at quite an angle this still means that the engine has to go farther back in the frame than does the 34A type unit. This, felt Dunn and Wood, was undesirable—the Greeves scrambler was light enough at the front as it was.

Accordingly they looked for a remedy. Some Greeves enthusiasts may not approve but to my mind their solution to the problem is first class. By sawing and filing they have done away with the famous Greeves light-alloy front down member and instead fitted two $\frac{3}{4}$ in by 16 gauge seamless down tubes which join the steering head in a similar manner to the down tubes on the B.S.A. Gold Star frame.

To steady the head (and prevent the down tubes fracturing) a horizontal tube runs between the lower end of the steering head and a point near the seat nose on the main-frame member.

As can be seen in one of the photographs, the two down tubes are curved round at the bottom and join up with normal Greeves engine plates. Now the Starmaker exhaust can come straight out and there is no need to move the engine back at all.

NO STARMAKER

Unfortunately when this frame was finished there was no Starmaker to put in it. The engine unit on order had not arrived and did not seem likely to arrive for some considerable time. Not to be deterred by such a trifling problem, Dunn soon settled on an alternative unit. He would, he decided, fit a modern Triumph Speed Twin unit construction assembly. When I called he had just removed one of these engines from a crashed machine and was busy putting it into good order.

Also in the R and W workshop was a scrambles sidecar outfit: or—to be strictly accurate—it was *more or less* a scrambles outfit. When he built it, John had in mind to make a general-purpose competition sidecar with the idea of trying one or two pet ideas. In its present form the sidecar *could* be scrambled but it needs modifying so far as the seat and handholds are concerned.

Most interesting feature of this sidecar is the springing. John has used what amounts to the complete front suspension from a Greeves 25DB. A Greeves wheel with finned hub is carried in the standard roadster pattern wheel loop and the rubber bushes are supported by plates at each side. As on the Greeves motor cycle, two hydraulic dampers are employed and the loop is mounted so that the wheel spindle moves in a forward-facing arc—that is, the suspension is leading and not trailing.

Accompanied by a local enthusiast on his Greeves trials model, we took the outfit to some nearby roughery. Though, despite its short-stroke centre plug engine, the Matchless five-hundred forming the machine part of the assembly was "flat" in the extreme, the sidecar struck me as first class. Or, to be strictly truth-



John Dunn is holding one of the crankcase centres from the four-cylinder two-stroke

ful, the sidecar's suspension and handling struck me as first class.

Wheel movement was long and easy, yet not so easy as to cause undue roll, and no matter how rough the going the wheel never appeared to bottom.

Further, though the movement was so easy the whole outfit had a delightfully taut feel about it. There was never any need for the steering damper and the machine could always—to quote the old road-test phrase—be placed on any chosen line.

I am just a bit doubtful though about the strength of the sidecar connecting tubes. They are very light and might, I feel, bend or break under the rigours of real scrambling.

One thing still puzzled me when eventually I managed to tear myself away from the R and W establishment. How on earth does Dunn manage to find time for it all? One thing, at least, was clear. When he has made up his mind what he is going to do, he must work like lightning. The sidecar, for example, took only one week to build. R.T.M.