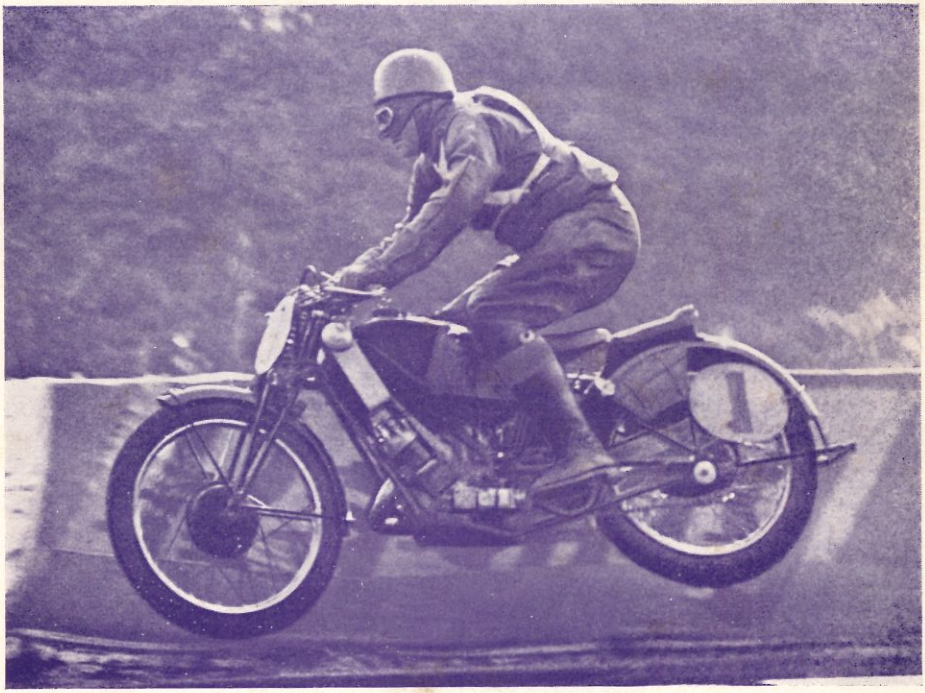
TOURIST TROPHY

TWO - STROKES

by George Stevens

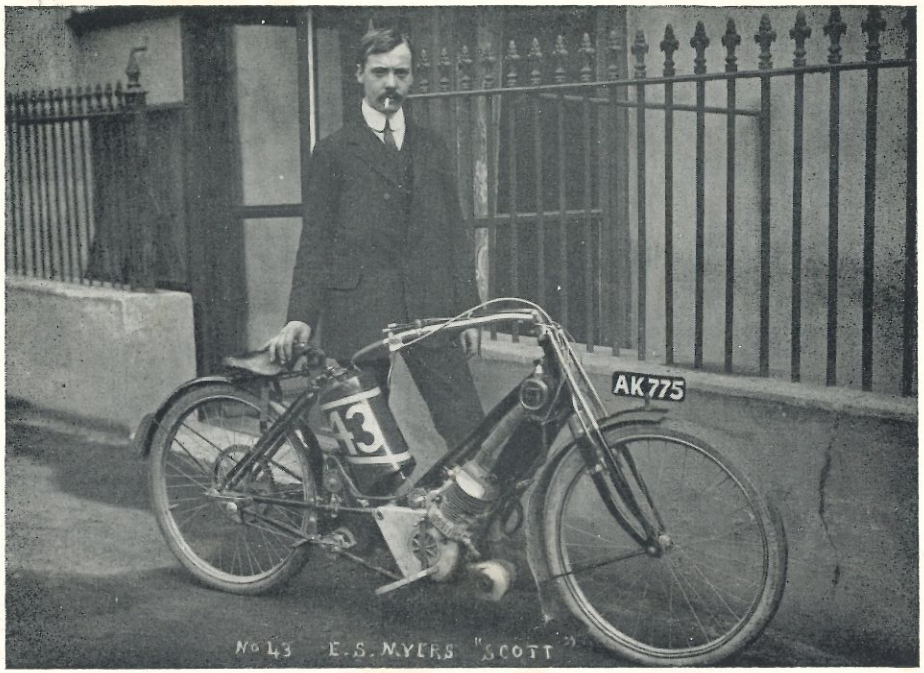
JUNE, 1965 PRICE 2/-



courtesy of 'Motor Cycle'

WITH A PICTORIAL HISTORY OF THE VINTAGE RACING SCOTTS

Published by the author at 'Pen-y-Graig', Coed-y-Parc, Bethesda, Caerns.



Eric Myers with the first two-stroke machine to complete in a T.T.—in 1909. Although the Scott Engineering Co. had not started production, they rushed this machine through in time for the race...hence the solidly braced 'bicycle' forks!
All-chain drive, two-speed foot-change gear, kickstarter and a unique twin-cylinder engine which ran smoothly with a continuous hum—these were the features which put the Scott "years ahead" in its heyday.
Photo: Midwood.

TOURIST TROPHY TWO-STROKES

with a pictorial history of the vintage racing Scotts

by George Stevens.

Only five years ago, racing men—and followers of the sport—were convinced that motorcycle racing superiority was exclusively held by multi-cylinder o.h.c. fourstrokes. And they were right. It is only in the past few years that the racing two-stroke has come into its own, after a long, long period of mediocriy. Even now, it is by no means certain that four-stroke performance has been matched, or that Japanese and Italian engineers cannot coax yet more waft from their o.h.c. motors. (We might even see a reliable rotary-valve fourstroke before the decade is out...but the chances of its being British seem remote.)

Historically, the racing twostroke is of great interest. Despite the obvious handicaps, engineers have striven to make them faster—usually at the expense of reliability. The T.T. has always been the supreme test of a machine's raceworthiness...but let us begin at the beginning.

In 1908 the T.T. entry was exclusively four-stroke, but in the same year the rapidly growing motorcycle fraternity was startled by the appearance of a revolutionary new design. This "elaborate freak"—as one critic dubbed it—was the prototype two-stroke Scott, a neat little bicycle with telescopic spring forks, all-chain drive, a foot-operated two-speed gear and a compact twin-cylinder motor of only 333 c.c. capacity. It was the result of nearly ten years' painstaking development by its Bradford designer, Alfred Scott, and was planned in its final form while he was laid flat on his back with a broken leg—the result of an accident on an experimental model. ("Enforced leisure", he called it!)

Six of these 1908 Scotts were built (by the Jowett brothers, later of car fame) and one of them, ridden by Alfred Scott himself, scored heavily at a Midlands hill climb, winning several awards on formula. There were numerous protests on the grounds that the two-stroke engine, firing twice as often as its four-stroke counterpart, would naturally develop more power and should therefore be handicapped in some way. There was little or no truth in this claim of "extra power", but nevertheless the early A.C.U. authorities agreed to impose such a handicap; and late in 1908 it was announced that a special "equalising Factor" would be applied to all two-stroke machines entered in open competition. The capacity was to be multiplied by 1.25 in the case of air-cooled engines, and 1.32 if they were water-cooled. This formula was enforced for the first-ever two-stroke entries in the 1909 T.T.: a Scott, a Premo, and a Rex. The last named were air-cooled singles with a capacity of about 470 c.c. so that when the formula was applied their effective capacity came well over the limit for *single-cylinder* machines. The Rex Company withdrew their machine and substituted a four-stroke model; and the Premier Motor Co., who made the Premo, undertook to fit a smaller barrel and piston in order to comply with the regulations. The watercooled Scott, although liable to a greater handicap, escaped such severe treatment because it was a twin-cylinder machine, and these—being considered inefficient at that time—were given an upper limit of 750 c.c.! The cubic capacity of the Scott when handicapped was only 584 c.c., so that it was eligible without any modification. The 1909 T.T. was held in September, over the "old" course from St. John's to Kirkmichael and Peel, and then back to the start—a distance of nearly sixteen miles, which had to be covered nine times. The Premo and the Scott both turned out for practice, ridden by J. Leno and E. S. Myers respectively. Leno, restarting and riding the *wrong* way round the course, collided with another competitor and was disqualified for his dangerous antics (although many others did the same thing at that period!) and the Premo entry never reached the starting line. Eric Myers, on the first two-stroke machine to contest a T.T., got a rousing cheer when he kick-started and got away smoothly and quietly. (The Scott featured the first kickstarter.) The machine was not particularly fast, but it ran steadily for seven of the nine laps before Myers crashed, loosening footrests and magneto and causing retirement. Although he did not finish the race, Myers repaired his Scott in time for a hill climb held in two parts, on the Friday following the T.T. In the morning riders attacked Crogga, near Port Soderick; and in the afternoon they climbed Snaefell. Myers finished third on his overall performance.

In 1910 two Scotts were entered—and this time they were specially built racers, rather than "off-the-line", as had been the 1909 entry. The forks on the 1909 machine were solid bicycle forks whereas the 1910 racers had spring "telescopic" forks; the engine was larger and featured deeper-than-usual fins. The T.T. regulations once again assumed that twin-cylinder machines were slower than singles—but that they had improved slightly! While the limit for singles remained 500 c.c., that for twins was reduced to 670 c.c. The new Scott engines, after handicap formula had been applied, had a capacity of 640 c.c. Both finished the ten laps of the old course—Frank Philipp in 9th place at an average speed around 40 m.p.h.; and Eric Myers, after punctures and constant plug trouble, in 24th position. Philipp did not compete in the Snaefell hill climb, but went along to watch Myers ride his T.T. Scott in company with J. Hoffman, on a standard 4 h.p. machine. The latter made a particularly good climb—"one of the very best and neatest performances" as *Motor Cycling* put it.

In 1911 one of the most important-ever changes in the T.T. was made the course was altered and the famous "Mountain circuit" adopted. Once again, Alfred Scott prepared special machines for the race—three of them. In an attempt to increase the power output of his engines, chain-driven rotary valves were incorporated in the form of horizontal rotors at the rear of each cylinder block. (These undoubtedly improved the "breathing" by lengthening the induction and transfer periods.) The three Scott riders were Frank Philipp, Frank Applebee and Eric Myers. Myers retired during the race, and so did Frank Philipp—but not before he had set the record lap for the new course at 50.11 m.p.h. In doing so, however, Philipp extended the Scott somewhat; and the chain drive to the rotory valve began to break up. Eventually the sprocket slipped on its taper, and he joined the list of retirements. Frank Applebee, on the only remaining Scott, ran into similar trouble with his vavle-chain; but by stopping regularly and re-adjusting, he struggled on to finish—the last man home! He was certainly unlucky in 1911, but the T.T. gremlins relented the following year, when he became the first two-stroke mounted T.T. winner. In April, 1912, the 1908 A.C.U. two-stroke formula (which required a 32 per cent increase in the stated capacity of Scott machines) was abandoned; and by the end of May the little Bradford works had prepared two new racers—reduced in capacity to 486 c.c. and with a higher compression ratio. The rotary valve chain drive, which had given so much trouble the previous year, was replaced by a chain of gearwheels; two plugs per cylinder were fitted, and the fuel tank sported a huge 4 inch filler cap. (This was to assist in a remarkably well-organised pit routine, whereby only 15 second stops were necessary for oil and petrol refills.) In practice, the Scotts showed excellent form and were obviously strong favourites. Frank Philipp was again unlucky: in practice he "collected" a large bird in his front wheel while at speed, and when lying second place on the last lap of the race, his rear tyre blew off at Ballaugh Bridge. His colleague, Applebee, led the race from start to finish, fractionally increasing his lead on every lap despite trouble from a trailing rear stand. He made fastest lap at 49.44 m.p.h., with an overall average of 48.69—speeds which were down on those of 1911. Orders for Scott machines rocketed and the firm opened a new factory at Shipley in order to increase production, as well as to continue two-stroke development. Scott "tidied up" his racing machines for 1913,

but in the main details they were very similar to the successful 1912 models. Four Scotts were entered for the 1913 Senior, ridden by Frank Applebee, Percy Butler, "Fluffy" Longfield and a youngster by the name of "Tim" Wood—who distinguished himself on the first race day (the 1913 race was held over two days) by coming from 74th to 1st place and putting up an absolute record for the course on his last lap, at 52.12 m.p.h. On the second day he ran into various troubles—mainly a leak in the water cooling system—but just managed to maintain his lead, winning the race by a mere 5 seconds at an average speed of 50.87 m.p.h.

But what of smaller machines? In the immediate pre-Kaiser-War days, something of a lightweight boom took place in Britian, as more and more manufacturers began to produce inexpensive two-stroke touring machines. Among those of note were the single-cylinder Levis motorcycles, made by the Butterfield brothers; and the Ivy. Both were entered in Junior T.T. races—a Levis coming home 13th in 1913 and repeating this result exactly in 1914, while in the latter year the Ivy "midget" (a 70 x 70 m.m. single), the smallest machine in the race, finished just a few minutes inside maximum time. The single-cylinder air-cooled lightweights were not yet fast enough to challenge the winning four-strokes, at that time represented by N.U.T. and A.J.S. machines.

In 1914 Alfred Scott announced his intention of building a machine that would "really go round corners", and designed a most unusual engine to go with it. (Still a 180° twin-cylinder motor of "conventional" Scott layout, it incorporated a "twisting" valve rotor actuated by a link from a point halfway up the connecting rod—rather like the Corliss steam valve, on which it was based.) "Tim" Wood justified Scott's claim by putting up the fastest 1914 (and record) lap at 53.23 m.p.h., and led the race until magneto failure put him out during the fifth lap. His colleagues met various troubles, the first to finish being Roy Lovegrove in 18th position. It was generally agreed that most of the Scott performance came from superior roadholding, the four-strokes being slightly faster on long straight sections.

Only a few weeks after the 1914 T.T. came the European crisis which disorganised nearly all forms of motorcycle racing until 1920, in which year the T.T. races were once again held. Levis celebrated their return to the Island with a 1-2-3 win in the Junior (250 c.c.) class, and it is worth recording that their first-place man (R. O. Clark) was at one point in the race second in the 350 c.c. class, run concurrently; and might even have won it but for a last-lap crash just above Keppel Gate. He managed to sort out the wreckage and ride to the finish to take 4th place in the Junior. The Senior race was once again a four-stroke benefit, Scotts not having recovered from the War effort and not entering any machines. In 1921, however, they returned with an advanced new model designed by the 1913 T.T. winner, Tim Wood. The new Scott featured 4 speeds and a linered aluminium engine—quite an advanced specification for 1921. It was not satisfactory, however, and made a poor showing—although the exhaust notes as the rider changed through four gears was likened to a well-known hymn! (One of the riders, Harry Langman, making his first Island appearance, was lying 7th when an overheated chain snapped. Langman was to become the best-known two-stroke racer of the 'twenties, and remained loyal to Scott machines throughout his career.)

Geoff Davison and the 250 c.c. Levis he brought into 1st place in 1922. The following year Levis produced an experimental supercharged 250 with normal cylinder dimensions of 62.5mm x 82mm, but with an additional pumping cylinder of 55mm x 50mm on the crankcase. This hush-hush racer was known as "Little Roger" and was intended for the 1923 T.T., but "vibration...like the Biblical peace...passed all understanding." Geoff rode a more conventional Levis in 1923 and finished 10th.

In the 1921 250 c.c. class, four-stroke versus two-stroke competition was extremely hot, New Imperial favouring the former, and Levis and Velocette the latter. That also represented the order of makes at the finish, Geoff Davison and W. Harrison bringing home the "buzz-boxes" in 2nd and 3rd places. In 1922 Geoff Davison—who should be around the Island somewhere this week!—won the Lightweight on his Levis at an average speed fractionally under 50 m.p.h., and S. J. Jones brought a Velocette into 3rd place. In the lightweight class, that was the end of two-stroke superiority (or even equality) for over a decade, and the knowalls began to refute all possibility of a successful small racing two-stroke. From time to time various manufacturers contested the large-capacity classes with two-stroke machines (e.g. the Italian Garelli with a 350 c.c. split-single in 1926), but the only firm continuing successfully to race two-strokes in the T.T., during the 'twenties was probably the most famous of all—that West Riding factory which had already provided two T.T. winners. After the 1921 debacle, they reverted to a really "hot" version of the classic open-frame two-speeder, forerunner of the famous "Super Squirrel". In the hands of capable riders like Harry Langman and his brother-in-law Clarry Wood,

these machines often came on the leader board, the best finishing result being Langman's 2nd place at 61.23 m.p.h. in 1924, just 87 seconds behind the winner. Certainly the most spectacular two-stroke performance of the period was Harry Langman's scorching ride in the first sidecar T.T., held in 1923. He led from start, put up the fastest lap at 54.69 m.p.h., and then crashed at Braddan on the last lap. Thereafter, Scott fortunes began to decline steadily as the four-stroke developed more rapidly; and the 2-speeder was not raced in the T.T. after 1925. It lived on in older enthusiasts' memories, however, as is shown by the following words by the late Ven. Stenning, from his article in the T.T. Programme for 1960: "Who of those who know it will ever forget the racing Scott? Its lovely note approaching Ballacraine, its change down, then, streaking away towards Ballig (and the loss of Ballig Bridge is also pathetic!), its fading away in the distance, towards Glen Helen; its superb balance, its low centre of gravity, its water cooling and early chain drive—a machine that haunts one's dreams. Why did it disappear?" The answer to that one is fairly straightforward: it was outclassed.

In many ways, the 2-speed Scott was superior to those which followed it: it weighed only about 240 lb., fully equipped, and it steered well. Acceleration was good, and the maximum speed of the last racing models was well into the eighties.

The heavyweight Scotts which were raced from 1926 to 1930, with massive frames and hand-change 3-speed boxes, were not a great deal better, and were considered by many to have inferior steering qualities. The best place obtained on such a Scott was by Tommy Hatch, who rode superbly in the rain-lashed 1928 Senior and came 3rd at 60.89 m.p.h. —slower than the lightweight winner's speed of the same year, and well down on the 1925-6-7 Senior speeds. In 1930 the Yorkshire firm produced a new racing machine with a massive crankshaft fully supported in Elektron castings, but it was rushed to completion, found unsatisfactory, and never raced. Scotts went into voluntary liquidation the same year, and although a new company was formed to manufacture touring machines, the racing Scott was dead. Or was it? In 1933 the T.T. organisers planned the reintroduction of the sidecar event, after a long lapse; and entries were invited. The Scott Company designed a racing machine bearing some resemblance to the standard Scott, but fitted with strengthened forks, frame and 4-speed close ratio box; and a mainly Elektron 596 c.c. engine developing around 33 b.h.p. Two outfits were to be entered —one ridden by former ace Harry Langman, the other by Tommy Hatch. Regrettably, the sidecar race was cancelled owing to inadequate entries; but enthusiast-dealer Albert Reynolds of Liverpool persuaded the Scott Co. to complete a 498 c.c. version, and allow him to sponsor a "high speed reliability demonstration" by entering it in the 1933 Senior, with Tommy Hatch aboard. This was done, and Hatch managed to force the relatively slow machine into 15th place—the swansong of the *marque*, for it was the last time a Scott entered or finished a T.T. race. The racing two-stroke, Press pundits assured us, was impracticable; and with o.h.c. four-strokes dominating the racing scene, it certainly looked like it.

Continental engineers thought otherwise, and soon Manx eardrums were shattered by an exhaust note of unprecedented amplitude—that of the racing D.K.W. These machines, like the Scott many years before, were the result of considerable development; and they appeared at pre-war International race meetings with mechanics and riders of Teutonic superefficiency, in the charge of Herr Prussing. They followed the engine design sometimes referred to as "twingles" (i.e. twin pistons in twin bores, but with a single common combustion head...rather like the earlier Puch or Trojan motors), and featured an extra pumping piston, in a "non-working" cylinder, whose purpose was to increase the charge during induction and transfer phases. This arrangement was generally referred to as a supercharger, although this is not strictly correct. In any event, there was no ban on supercharging in the immediate pre-war years, and the D.K.Ws were not handicapped. They first appeared in the Island, in 250 c.c. form, in 1935; and kicked off with a 7th place by Authin Geiss, his two team-mates retiring with that greatest of all two-stroke bogies—plug trouble. In 1936 Geiss returned and took 3rd place, but once again his colleagues faded out during the race. One of them was Stanley Woods, who put up a new lightweight record lap at 76.2 m.p.h., but retired when only eight miles from the finish. In 1937 the "Deek" team manager, Herr Prussing, signed up Ernie Thomas, who justified his inclusion by coming home 3rd at 73.17 m.p.h. Siegfried Wunsche finished 5th, but the third D.K.W. rider, Ewalde Kluge, retired.

The water-cooled, highly specialised D.K.W. racing engine was abviously a potent device, and in 1938 the Saxony factory announced *three* entirely new versions! There was a new 350 c.c. model, which won its first race at Eilenreide early in the year; an experimental 500, and an improved 250 with even greater potential. The fuel consumption of the 500 must have been prodigious, for even the 250 consumed about 15 m.p.g. under racing conditions! Notwithstanding the need for huge petrol tanks, these were the fastest—and certainly the noiseiest—two-strokes seen in the T.T. up to that time, and no other manufacturer attempted to copy D.K.W. type of engine for racing purposes. A lone British enthusiast produced a supercharged 250 c.c. two-stroke for the 1938 Lightweight—C. B. Taylor with his "C.B.T."—but it failed to reach the starting line.

Kluge made history in the Lightweight T.T. of 1938. He won the race at 78.48 m.p.h.—a record—and also made fastest lap at 80.35 m.p.h., the first time an 80 m.p.h. lap had been made in the 250 class. Kluge was the first two-stroke rider to win a T.T. since Geoff Davison in 1922, and if any doubt still existed about the "impracticably" of racing two-strokes, this dispelled it: Stanley Woods was the second man home, on an Excelsior, over *eleven minutes* after the Deek! But if the four-strokes were tempararily outclassed in the lightweight class, no such situation existed in the Junior and Senior classes, where Norton and Velocette machines seemed invincible, and capable of lapping at around the ninety mark with a skilled jockey. One machine which did not, unfortunately, ever appear in racing trim in the Island was the 500 c.c. V-8 blown two-stroke which the

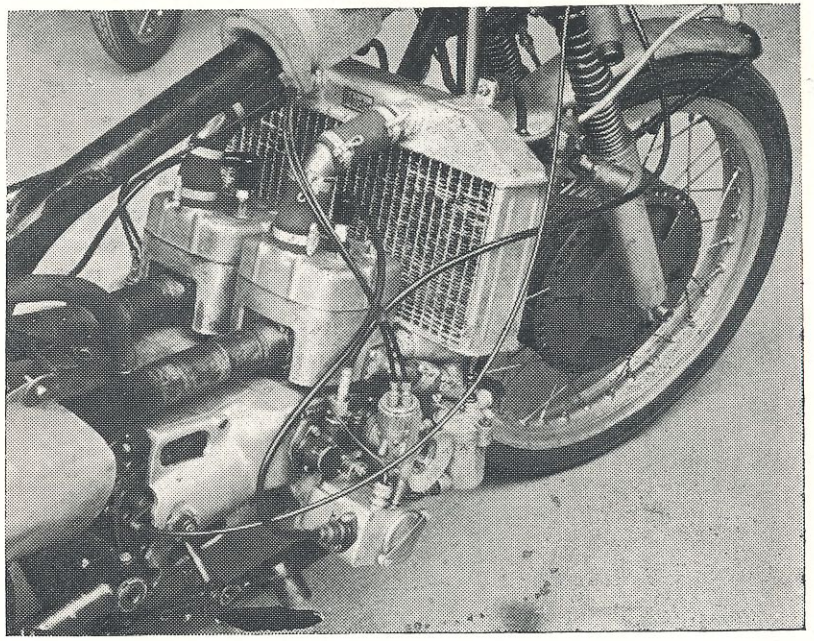
Italian Galbusera concern produced in 1938—that *would* have caused a sensation! The 500 c.c. racing D.K.W. never appeared in the T.T.—it proved much too temperamental—but in 1939 the 350 made its Island debut; and the late Fergus Anderson entered one in both the Junior and Senior races. He retired in the Junior, but finished 28th in the Senior—missing a bronze replica by only 10 seconds, because he made a pit stop to refix a loosened exhaust pipe. H. Fleischmann brought his Junior D.K.W. into 3rd place at 82.51 m.p.h., seconds behind Stanley Woods (Velocette) and Harold Daniells (Norton).

In the Lightweight race, run in the wet, Kluge could not quite catch Ted Mellors on a Benelli, but finished 2nd at 72.97 m.p.h., followed by S. Wunsche in 5th place and Ernie Thomas in 8th; and this 2-5-8 finishing sequence marked the last T.T. performances of the 250 D.K.Ws. Both the 350 and 250 models used rotary blowers instead of pumping pistons in 1939, and obviously a very great deal of money was being spent in the search for racing supremacy at any cost. Had the D.K.W. development continued, and forced induction remained acceptable, it is fascinating to conjecture on the machine which might have evolved. There is a noticeable parallel between the immediate pre-Kaiser War days and the pre-Hitler War days, as far as racing two-strokes are concerned, in that during those periods there were machines of this type fast enough, and reliable enough, to give serious competition to the best four-stroke machines; and that after a few years' International upheaval the whole picture changed. When the T.T was resumed, in 1947, supercharging was banned; and once again the experts could be heard saying that now unfair advantages had been removed, *obviously* no normally-aspirated two-stroke could be expected to develop enough power to win races: the racing two-stroke had "had it". And for several years they seemed to be right. When the first 125 c.c. T.T. was held in 1951, it was treated indulgently by many followers of the sport—in much the same way as the more recently introduced 50 c.c. class. There was much scoffing at the noisy but unimpressive performances of privately-modified B.S.A. Bantams, Villiers-engined machines, Anelay Specials, and the like, in the early 'fifties; but a certain amount of admiration for the quiet, diminutive Spanish Montesas which finished 5th and 6th behind the all-conquering o.h.c. Mondials. The first British machine to finish was E. Hardy's D.O.T. in 7th place—in fact this make took 11th and 12th positions as well and won the manufacturers' team prize.

In the early years of the 125 c.c. T.T., two-strokes were badly outclassed by such speedy machines as M.V. and N.S.U., and two-stroke racing prestige was as much in the doldrums as it had been around 1930. Enthusiastic engineers like Joe Ehrlich continued to produce 125 c.c. machines that were very good, but not quite good enough; and generally speaking the Italian o.h.c. motors were regarded as unbeatable. Two-stroke competition in the larger classes was non-existent.

The ban on pressure-assisted induction forced the D.K.W. firm to turn their attention to the simple three-port two-stroke, and as a direct result they produced three entirely new racing air-cooled engines—three-cylinder, twin-cylinder and single-cylinder versions of 350 c.c., 250 c.c. and 125 c.c. respectively. The biggest model was mounted in an ultra-light frame and showed fantastic acceleration, but although fast it was not notably reliable.

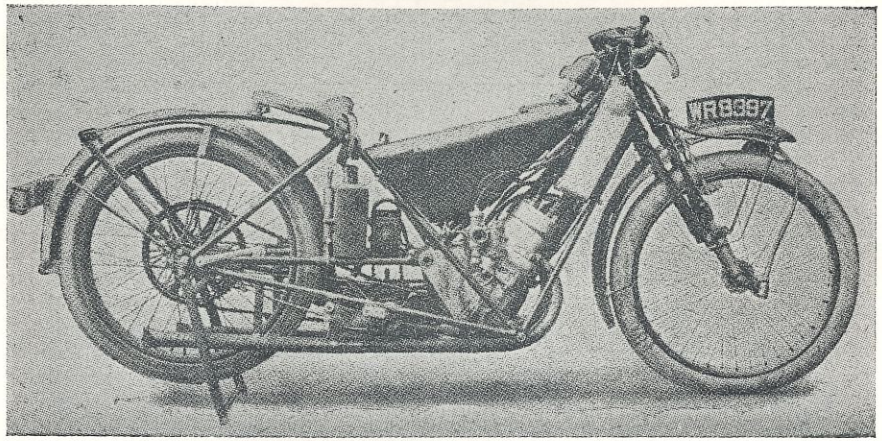
Siegfried Wunsche, before finally retiring, brought one of the lightweight D.K.W.s into 3rd place in the 1953 250 c.c. race, at an average speed of 81.34 m.p.h.; and versatile Cecil Sandford brought one of the three-cylinder 350s into 4th place in the 1956 Junior. The D.K.W. concern, after abandoning their pre-war racing design and starting again from scratch, had shown that simple two-strokes *could* be made fast and reliable—at a price. Shortly afterwards, the Zschopau firm underwent reorganisation, the old "D.K.W." designation being used exclusively for three-cylinder cars whose engines owed much to the motorcycle racing programme. Motorcycles continued to be made at the East German factory...and a new name came into the T.T. programme in 1958—M.Z. (Motorrad Zschopau). The M.Z. development engineer, Walter Kaaden, evolved a new type of racing unit which has been adopted by several other firms—and since then racing two-strokes have developed in a quite unprecedented way.



The 1962 version of the 250c.c. racing MZ, which at that time enjoyed the reputation of being the World's fastest twostroke. MZ's development engineer, Walter Kaaden, set the fashion for this type of power unit and pioneered the rotary disc valve so widely used on factory racers today. Yamaha and Suzuki carried this engine design to an almost incredible pitch of performance—around 200 b.h.p. per litre—while the originators are reputedly perfecting a 3-cylinder version.

THE VINTAGE RACING SCOTTS 1921-30.

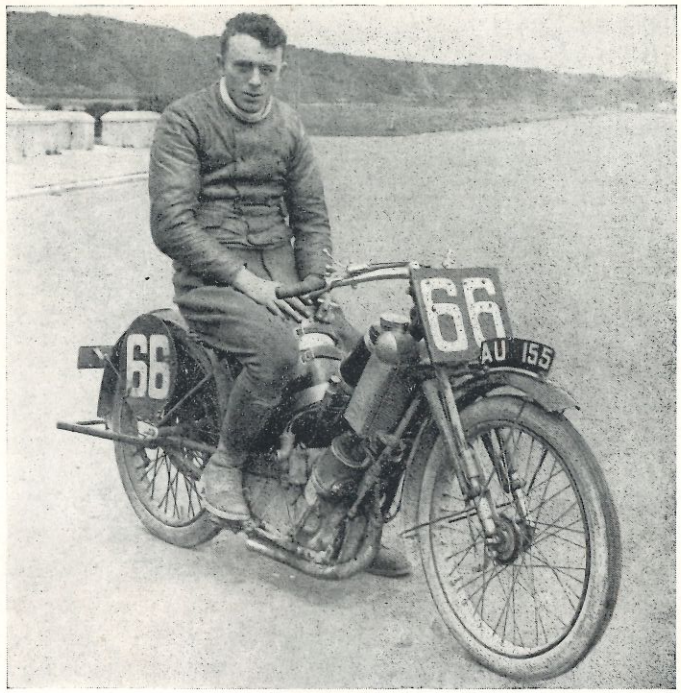
In the veteran years before the Kaiser war, Scotts did extremely well in the Island—racing successes which in no small way helped to establish the *marque*. When the first post-war T.T. was held, in 1920, the Shipley works was in no position to compete; but from 1921-30 they contested the Senior race every year—with varying results. Harry Langman yowled his way to the leader board on several occasions with the racing 2-speeder, but the heavyweight machines fielded after 1925 were no match for the fast-developing fourstrokes. By 1930, speeds had reached a level quite unattainable by even the best Scotts, and they no longer stood an earthly chance in open competition. The small Yorkshire factory's endeavours, however, resulted in the production of the Scott T.T. replica (in 1929); and this model—in various guises—has remained in production for over 30 years...a tribute to sentiment quite without parallel in the motorcycling world.

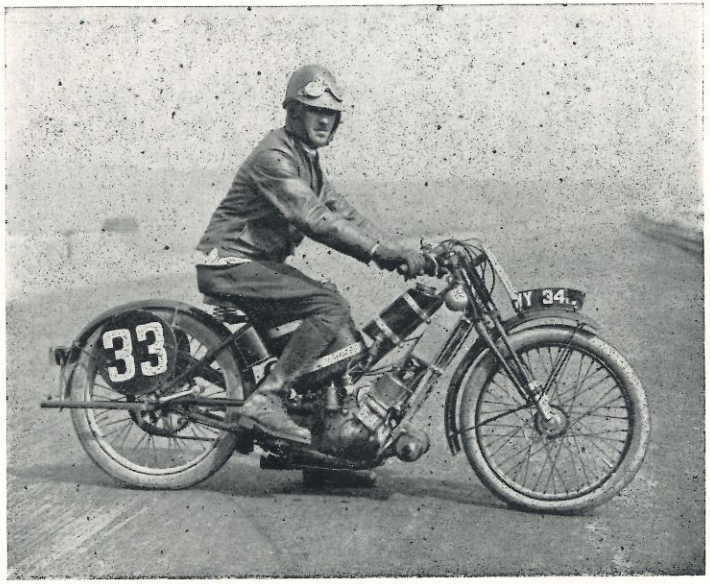


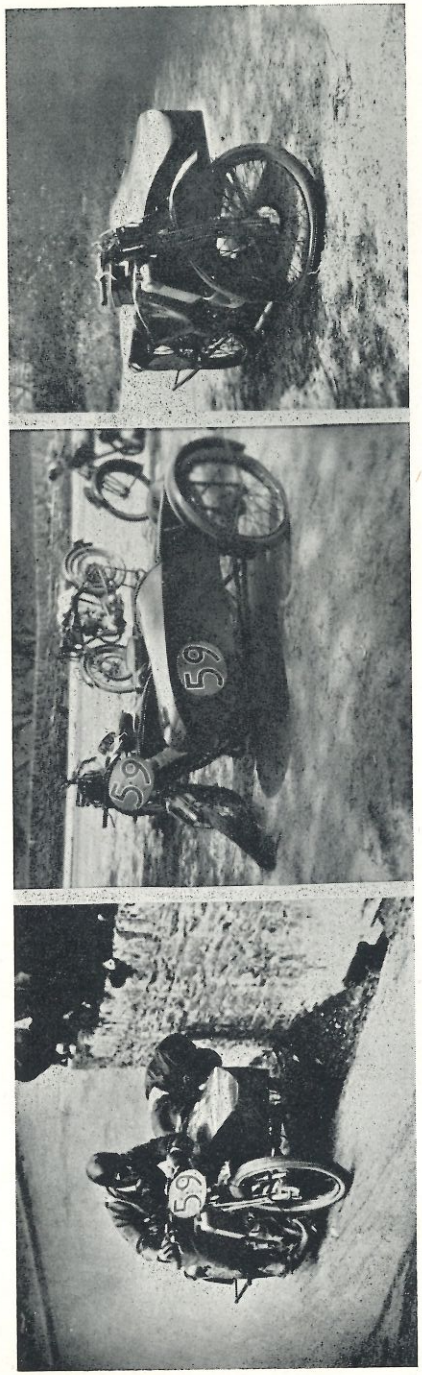
Above: Designed by H.O. ('Tim') Wood, the 1913 T.T. winner, Scotts' 1921 racer showed many entirely new features. The engine (73mm x 62.5 mm x 2) broke away from Scott's orginal specification in having cast iron liners in an aluminium alloy barrel, and a single aluminium casting served as a head for each cylinder and the necessary water jacket. An Amac carburettor and a Lucas two-spark magneto were fitted, and the normal two-speed gear was coupled to the layshaft of a two-speed gearbox, so that ratios of 3.3, 4.75, 4.95 and 6.4 to 1 could be obtained. A three-gallon tank sat above the engine in a triangulated but entirely re-vamped frame, and a half-gallon oil tank was bolted just behind the magneto. Quarter-elliptic leaf springs supported the saddle—a feature copied from the 1914 T.T. Scott. R.W. Stanfield finished 17th in the race, but Harry Langman, Clarrie Wood and Geoff. Clapham suffered various troubles and retired. J.W. Moffat came 22nd on a standard two-speeder.

Photo: 'Motor Cycle.'

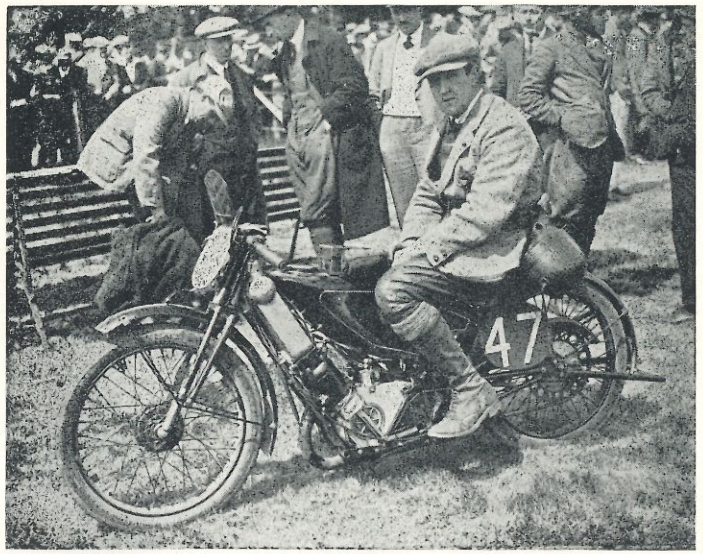
Harry Langman (above) and Jimmy Simpson (below) on works' Scotts of the 'Squirrel' type entered in the 1922 T.T. Abandoning light alloy and four speeds, the Shipley engineers stuck to their 'conventional' iron-barrel-and-two-speeds design...and even reverted to the pre-Kaiser-war type of frame. For the first time, an internal-expanding brake was fitted to the front hub. It was microscopic and virtually useless...but a step in the right direction. Lubricaion was manually controlled by sight feeds on each side of the oil tank—something else for the rider to worry about during the race! Harry Langman came 3rd at 56.09 m.p.h., closely followed by Clarrie Wood in 4th place. Geoff. Clapham came 9th; Jimmy Simpson and Ivor Thomas, the other Scott riders, retired.





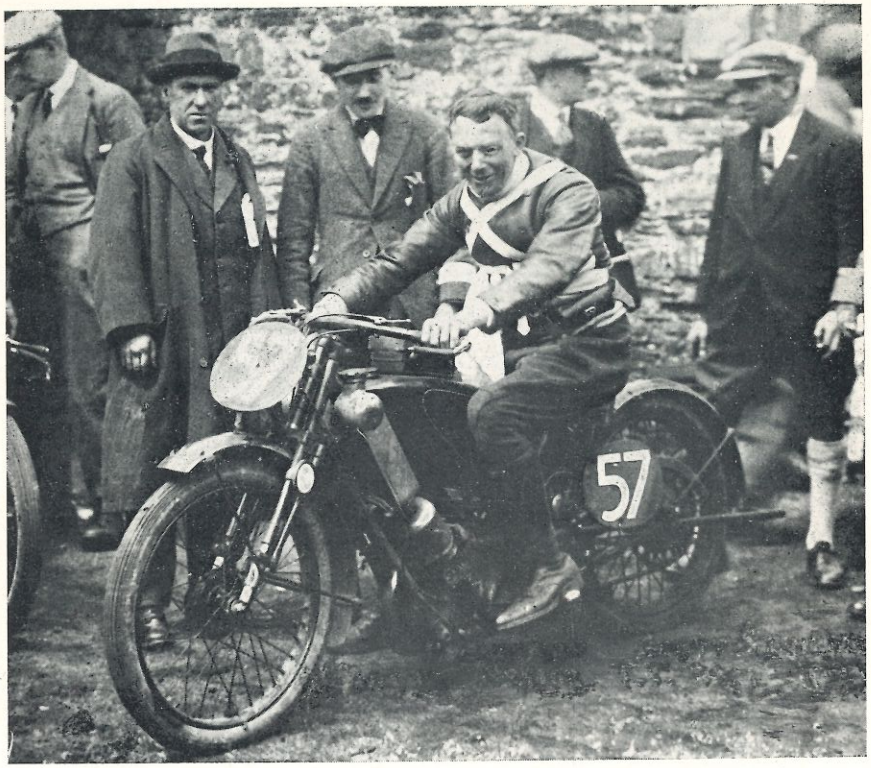


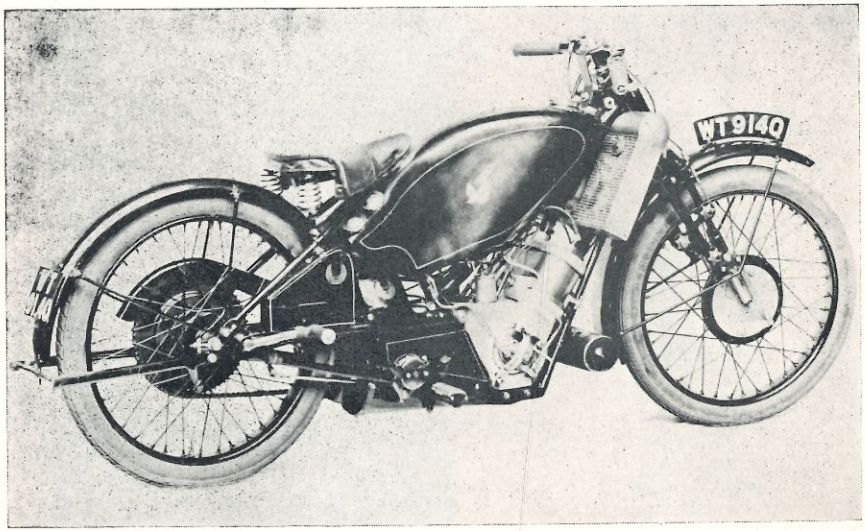
Left—A picture taken from an amateur photographer's cine film of the 1923 sidcar race. Harry Langman and passenger Ernie Mainwaring demonstrate the closest possible cornering! (What at first sight appears to be Mainwaring's head is really his shoulder; his head is squashed down even further, scraping the wall!) After making the fastest lap at 54.69 m.p.h. and leading the race much of the way, the Scott charioteers crashed at Braddan Bridge, allowing Freddie Dixon into the lead. The rather poor pictures at the centre and right are snapshots of the bent Scott outfit resting near Braddan. Cuts and bruises kept Langman and Mainwaring out of the Senior T.T., and their Scotts were offered to other riders. A second Scott outfit was entered in the 1923 race, most confusingly ridden by one S. E. Longman; but he, too, retired.



J. A. Watson-Bourne with one of the experimental longstroke two-speeders introduced for 1923. He was offered the 'vacant' machine at very short notice, and despite his lack of experience in "playing the organ" (as he put it!) he managed to finish 11th. H. Riddell finished 18th on a privately-entered Scott 'Special', but all other Scott riders retired. (Stanley Woods, no less; Geoff. Clapham; H. Mylchreest and S. Dale.)

Plate: courtesy of 'Veteran & Vintage'





Opposite Page: Top—A cheerful Harry Langman on the 1924 T.T. Scott which he forced to 2nd place at 61.23 m.p.h.—just 87 seconds behind Alec Bennett's winning Norton. Clarrie Wood — Harry's brother-in-law—came 13th on a similar machine. Although a sidcar T.T. was run in 1924, there were no Scott entries.

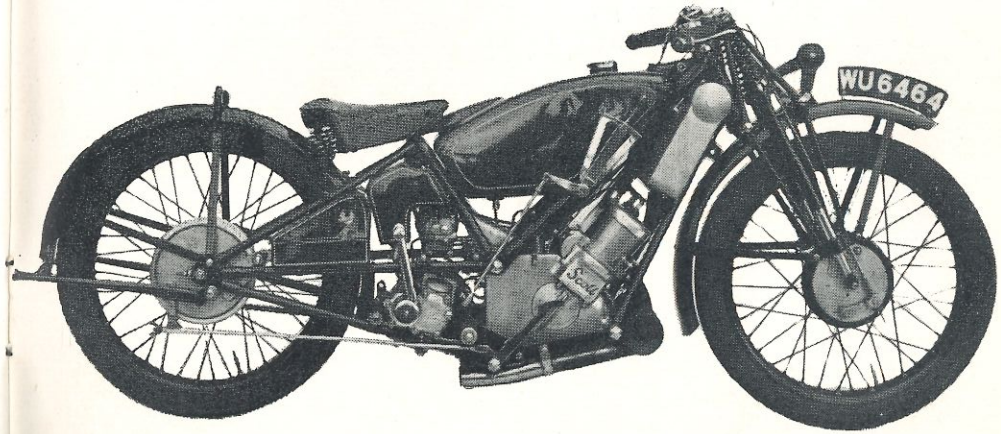
Photo: Keig.

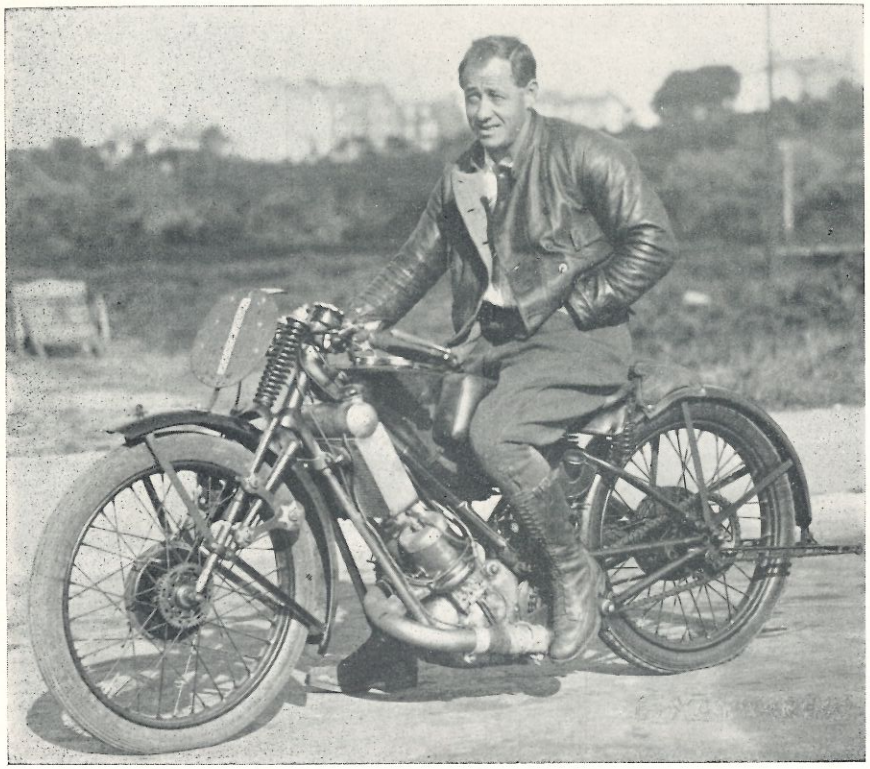
Bottom—One of the 1925 T.T. Scotts, with a larger tank, bigger brakes and stabilizing dampers on the plunger forks. This was the last year that racing two-speeders appeared in the T.T. Harry Langman came 5th, but the other riders—Ernie Mainwaring, J. Welsby and Harrison Town—all retired. A lone Scott outfit was entered in the sidecar event and ridden by Harry Langman, but the two-speed gear seized solid early in the race.

Photo: courtesy of Harold Scott.

Below—A massively heavy triangulated frame and braced-plunger forks, three-speed (handchange) gearbox and direct chain drive from crankshaft to magneto and oilpump—these were features of the completely redesigned 1926 T.T. Scott, which was largely the work of H. Shackleton, the man responsible for most Scott alterations in the 'twenties. This new model attracted much attention and roused many false hopes, for despite its 'development' during the late vintage period, it never equalled the fourstrokes. In the 1926 Senior, Langman wrecked his engine early in the race; Mainwaring retired soon afterwards, and only Welsby finished, in 18th place, with a very sick gearbox.

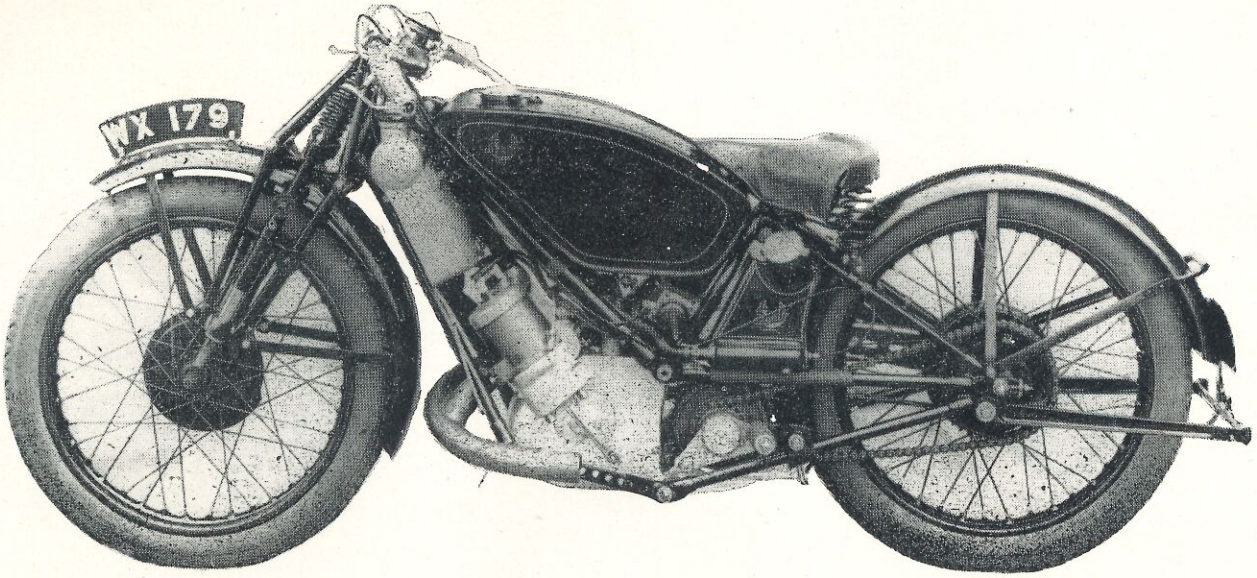
Plate: courtesy of 'Motorcycle Sport'.





For 1927, several detail alterations were made. Somewhat lighter forks—reminiscent of the 'Super' type but stronger, and with an open spring—were fitted, with dampers. For the first time, Scotts used a 'two-in-one' exhaust pipe—a novelty which appeared on certain of the 1928 roadsters shown later in the year. In order to obtain better weight distribution, the engine was 'pushed back' by the simple expedient of shortening the crankcase flanges...thus making the 1927 T.T. engines quite different in appearance. Ernie Mainwaring is pictured above at Ramsey, where he stayed with his fellow riders Eric Langton and Harry Langman. None of them finished.

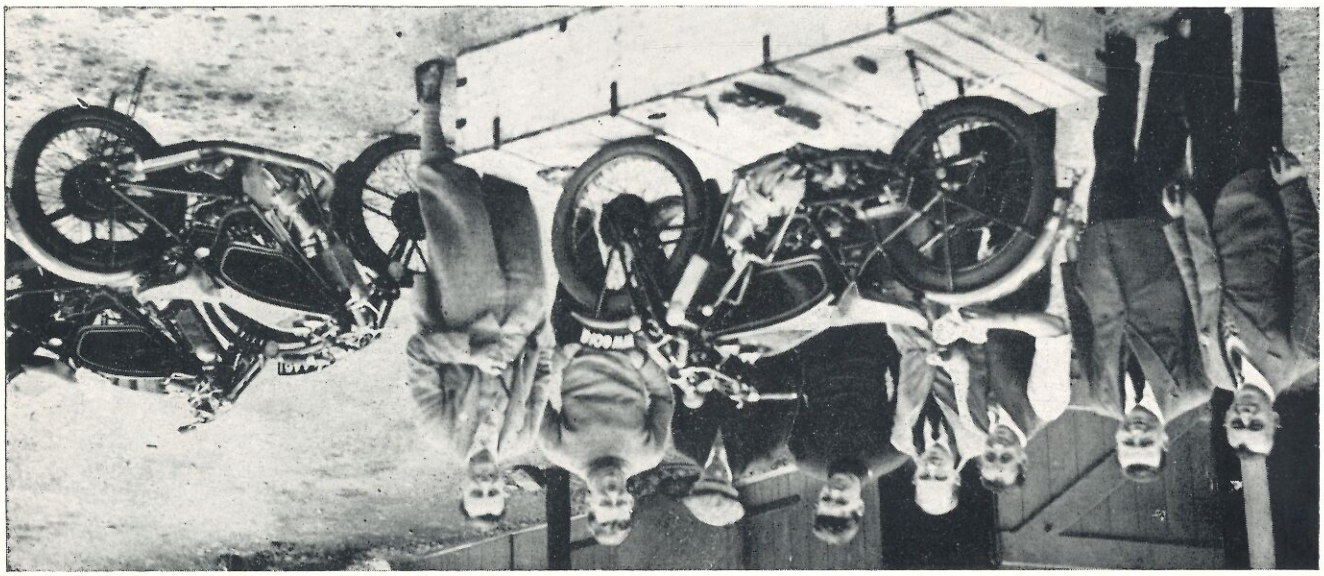
Photo: Midwood.

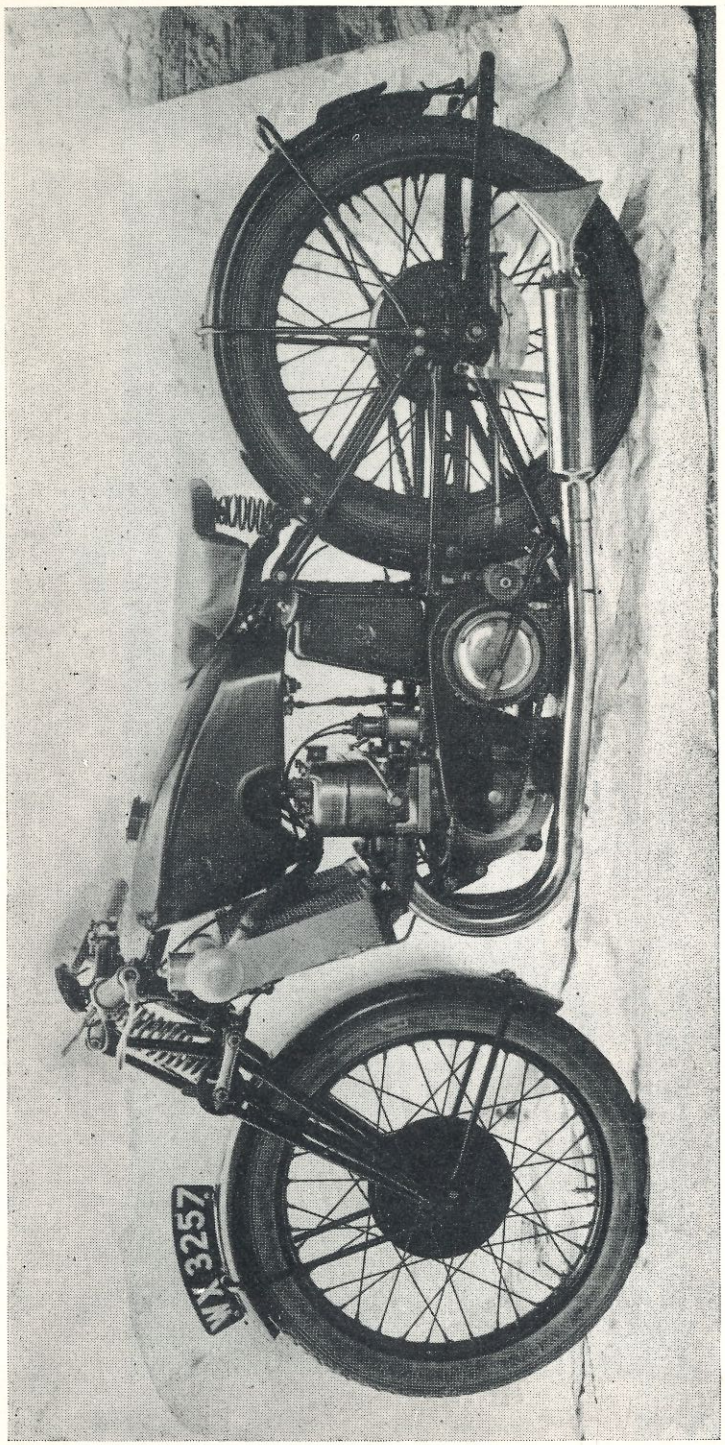


No radical changes were made for 1929, but to cope with the very heavy racing consumption of fuel and oil the frame was modified and vast tanks fitted. The magneto was paced much nearer the crankshaft, enabling a short chain to be used; all filler caps were on the left, to facilitate pitwork; but as far as performance went there was very little improvement over the 1928 models. Six machines were entered, ridden by Tommy Hatch, A. Franklyn, Syd Gleave, Oliver Langton, Ernie Mainwaring and Phil Vare. Only Hatch finished, in 13th place; and this was the last time a Scott completed the course. (Excluding, of course, the "Reynolds Special" which was ridden—again by Tommy Hatch—to 15th place in the 1933 Senior.) Obviously the Scott design needed extensive improvement in order to remain competitive; and since most of the failures were burnt pistons or wrecked big ends, Shackleton and his colleagues turned their attention to making more robust alternatives. The ill-fated 1930 racer (see next page) might have been developed over several seasons, but Scotts ran out of money and Shackleton moved away to Wolverhampton. The 1929 machines were used again in 1930—three of them, ridden by Bill Kitchen, Ernie Mainwaring and Phil Vare—and once again they all retired.

Plate: courtesy of 'Motorcycle Sport'.

The 1928 Scott works' contingent, looking optimistic about their chances with the new longstroke (66.6mm x 71.4mm = 498 c.c.) T.T. machines. From left to right are Harry Langman; Matthew Roley, the sales manager; Ernie Mainwaring; Jim Capstick, one of Scotts' best engineers; Eric Langton; Oliver Langton; Tommy Hatch and Bert Wheeldon. Eric Langton's Scott (the centre one) was fitted with Webb forks instead of the heavily-braced Scott plunger type; otherwise the machines were identical — even to the extensively drilled rear stands. These 1928 bikes were the first to be fitted with the classic 'flared' Scott tank, which was continued (on certain models) right up to 1950. The '28 Senior was held in pouring rain and this nullified, to some extent, the higher speed of the fourstrokes. Tommy Hatch finished 3rd at 60.89 m.p.h., and Harry Langman—riding without goggles—came in a gallant 12th in his last T.T. The Langton brothers both retired during the race.

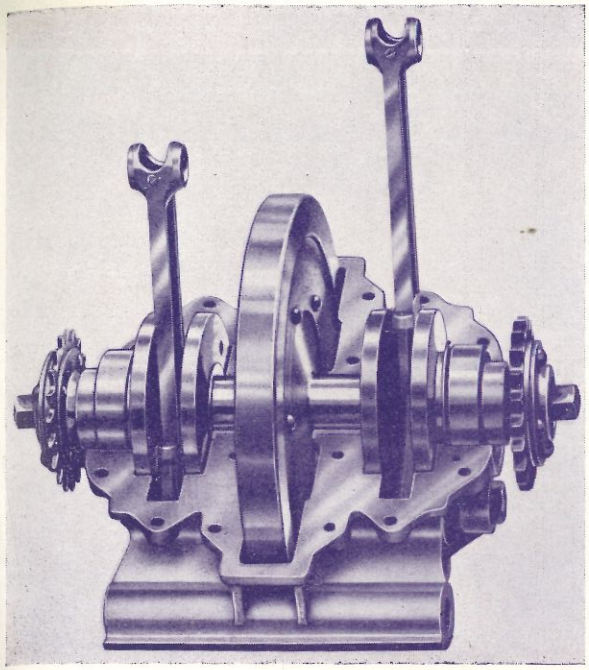




Designer Shackleton, in collaboration with the Shipley competition department, drew up this completely new racing Scott in the latter part of 1929 and early 1930. Two models were hurriedly built and taken to the Island for the 1930 races, but severe and ineradicable vibration led to their withdrawal; modified 1929 works Scotts were used instead. The new engine featured a four-bearing crankshaft (a one-piece forging to which the central flywheel was rivetted), and drive was taken from a nearside sprocket to the 'cross-over' 4-speed gearbox. Magneto and oilpump were mounted on the offside of the crankcase, bevel driven directly from the crankshaft. Note the fuel tank 'pockets' for easy access to the plugs!

Although the racing version was a failure, a modified 650 c.c. model for road use was built in prototype form late in 1930 (see opposite page for engine details) but it was never put into production. The 1930 slump very nearly put Scotts out of business, and they never again sponsored T.T. entries.

Plate: courtesy of 'Veteran and Vintage'



Left: A view of the lower half of the partially-dismantled 1930 "vertical" engine. For the first time in Scott history, the famous but outmoded overhung crankpins were abandoned, and crankcase construction followed more conventional practice. Light magnesium alloys were used for the crankcase castings and cylinder head, and a normal drive-sprocket fitted to the crankshaft extremity. The large central flywheel was retained, but this was the only recognisable "orthodox" Scott feature.