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THE JOURNAL OF THE
SCOTT OWNERS' CLUB



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EDITORIAL

Elsewhere in this issue of *Yowl* is announced the date and location of the Scott Owners' Club A.G.M. I have notified the Secretary of my intention to resign the Editorial chair, whilst remaining responsible for the June issue. Any member who was present at the meeting in 1966 will be aware of my qualifications, or rather lack of them, for the job and my apprehension at following on from the two "semi-professionals" Val Ward and George Stevens. In fact I've had no previous experience of this type of job at all, merely an enthusiasm for Scotts and other thoroughbred motorcycles, an engineering background and 10 years or so riding experience on 3/speed pre and post-war Shipley-built machines. It's usual for people in these "retiring" positions to take the "never again" line, complaining about grey hairs, half the night letter writing and divorces pending; subtle reminders to the ordinary members of their value to that particular organisation. For my part, yes, I should like a break, a little extra time for my rebuild and other hobbies but I can truthfully state that *Yowl* production has never been arduous and with Mr. Parry's assistance at N.W.C. it's perfectly straightforward. It is not a difficult job but, I found, an immensely absorbing and enjoyable one. After a few reminders in print in the early issues and the occasional "chasing up" letter, "copy" flow increased quite alarmingly and I shall be able to furnish the new Editor with a list of likely sources, all of whom have semi-promised *Yowl* material. In fact shortly after this April issue's production I shall be moving house with all the extra priorities that involves. Anne is expecting another baby in September so there is no question of my changing my mind and in any case I do feel that a new editorial view is an invigorating and essential "shot" for a live club such as this one. That is, providing of course that the quality and size (I've been fortunate in being able to ensure 24 full pages in each issue) is not affected. I hope all members, particularly those who've not ever made the extra effort to produce something or feel they haven't got that "special flair" as one Midland's member recently excused himself, will make a special point of getting the new Ed. off to a good start with his August '67 issue. For it's a point regularly made at committee meetings; we have a large proportion of members in name only and if *Yowl* dies or degenerates to Roneo level the S.O.C. will surely follow. So, out with those scrapbooks you "old timers"; think back over that rebuild you new enthusiasts; and just remember how you've learned the hard way you "dyed-in-the-wool" Barbour-clad regulars and WRITE IT DOWN!

Geoff.

ANNUAL GENERAL MEETING

The date for the A.G.M. of the Scott Owners' Club has been fixed for Sat. June 3rd. It will be held at the "Red Lion," Whitehall, London, commencing 7.30 p.m., sharp.

SECRETARY'S NOTES

Banbury Rally, June 25.

It is hoped that all members who are also members of V.M.C.C. will take part in the Banbury. This year it is possible that the greatest number of one make entries will be Scotts if just a few more of our members take part.

Woburn Rally, July 2.

We expect to have a stand there again this year. The Secretary wants some nicely prepared exhibits for the stand and some goodlooking Scotts for the display area. Please start working now.

Next London Meeting, May 13th.

"Red Lion," Whitehall,

A letter to "The Motor"—April 8th, 1963.

THE ADVANTAGES OF TWO-CYCLE ENGINES

Sir,—Your correspondent Mr. Cooper, in referring to two-stroke engines, states the following disadvantages against this type:—1st, uneconomical working; 2nd, excessive heating, too great for ordinary watercooling; 3rd, extra friction.

As Mr. Cooper remarks, the idea of two-cycle engines is very old. In fact, one could almost say that every possible type of cycle had already been invented before Dr. Otto's four-cycle engine became universal but your correspondent is evidently not in touch with the latest detail improvements, which are gradually bringing this type of engine to the front and which, in my opinion, will soon produce an engine likely to entirely supersede the Otto type at present in use.

Two-cycle engines can be conveniently divided into two classes:—1st, engines of one cylinder only; and 2nd, engines having a secondary pump or displacer cylinder.

The "Day" is the best known and most important of class one. Here the crank chamber is used as a displacer pump. The piston descending uncovers exhaust ports in the cylinder wall and further on in its stroke uncovers other ports, through which the mixture, which has been compressed in the crank case, enters and blows over a deflector ledge fitted on the piston and thus fills the cylinder with a fresh charge, ready for compression on the return stroke of the piston.

The charge is drawn into the crank case through an automatic valve or through ports in the cylinder wall, which are uncovered by the piston at the end of its inward stroke. In other varieties of the "Day" cycle the charge is blown through an automatic valve placed at the top of the cylinder, doing away with deflector ledges and ensuring a more complete sweep-out of the burnt gasses. The "Ixon" motor works on the "Day" cycle but the charge is drawn into the crank case through the hollow crank shaft, which is arranged to work as a rotary valve—a neat idea but seriously affecting the strength of the shaft.

In other two-cycle engines the front end of the cylinder is closed and serves as a compressor, the same distribution in the cylinder taking place.

In the "Loyal" motor a totally different system obtains. Here suction, compression, expansion, and exhaust are all performed in the one cylinder, as in the Otto type and yet an impulse every revolution is obtained.

In the second class of two-cycle engines—those employing a second cylinder for compressing or displacing the charge—we have the "Clerk" engine of 1878, in which compression was effected in a separate cylinder, the compressed charge being admitted to the motor cylinder at the beginning of the expansion stroke; and the second "Clerk" engine of 1880, where the distribution is somewhat similar to the "Day" cycle but a separate displacer cylinder being used. Engines working on this, the well-known "Clerk" cycle, were used most extensively in this country before the lapse of the Otto patents.

The latest improvements in two-cycle engines working on the "Day" and "Clerk" cycles have been in the direction of introducing air before the gaseous mixture into the cylinder, to prevent possible back explosions, due to late ignition and to avoid any loss of the mixture through the exhaust ports. An engine working on the "Day" cycle, with "air scavenge" and all the latest improvements, gives nearly $1\frac{1}{2}$ the power, weight for weight, of an engine of the ordinary type. About 1-6th of the stroke is ineffective on both expansion and compression strokes during the process of exhaust and inlet of the charge. For example, an engine having cylinder 3 in. bore by $3\frac{1}{2}$ in. stroke would develop double the power of an "Otto" engine with cylinder 3 in. bore by 3 in. stroke; assuming that the back pressure in crank case is set off against the frictional loss of the idle strokes in the Otto engine.

As to overheating, I have never, in my experience with this type of engine, had the slightest trouble with either water or air-cooled motors.

The particular advantage of the "Day" engine to which I wish to draw attention is the system of constant thrust on which the engine works. This is a matter of the greatest importance, leading, as it does, to silence of running and durability. Anyone who has seen a "Willans" central valve engine at work—without any sound or indication that the engine is actually revolving—will understand what constant thrust means.

On the other hand, everyone who has had to pay for the periodical overhaul of his engine, comprising the adjustment of bearing brasses, replacement of worn-out rod bushes, etc., will appreciate the advantage of an engine which does not require overhauling and which will still work well and silently, however slack the bearings may be.

Comparing the two types, we have:—

TWO-CYCLE TYPE

- (1) Simplicity.—Distribution effected entirely by movement of piston. No valves, gear-wheels or cams.
- (2) Constant Thrust.—Piston, rod and crank pin always pressed firmly together, so that, however much wear takes place, there will be no knocking. A light rod, with simple bushes at each end, no adjustment necessary.
- (3) Constant Turning Effort.—A three-cylinder engine would give constant turning effort to the shaft, while a 2-cylinder engine is equal in this respect to a four-cylinder Otto engine.

FOUR-CYCLE TYPE

- (1) Complication.—Intricate cylinder head casting; two valves, one at least mechanically operated from cam driven from "two to one" gear; gear wheels. Valves constantly require attention and exhaust valve rapidly deteriorates on air-cooled motors.
- (2) Knocking is caused by the wear of rod bushes and main bearings. The crank pin end of rod requires means of adjustment; extra weight of rod; rod subjected to reverse strains.
- (3) Inconstant Turning Effort.—A heavy flywheel is required, owing to infrequent impulse; severe strains on shaft.

The motorcyclist naturally wants as much power as he can get from his engine. Makers are constantly fitting mechanically operated inlet valves, pressure feed from carburetter and other pretty additions. And it is, I think, this increasing complication which will eventually lead to the general adoption of the simpler and more powerful two-cycle motor.

Yours faithfully,
ALFRED A. SCOTT.

There is news of an interesting "hybrid" via Val Ward—something of an expert on this type of machine.

This particular machine was envisaged and built by a good friend of Val's—Phil Lester, 52, Beulah Road, Kirby-in-Ashfield, Notts., and in Val's own words is a "rare opportunity for someone who wants a beautifully built 'bitza'."

It started life, apparently, as a road-racing Manx Norton. Phil removed the Manx engine and gearbox, substituting a Clubman Scott engine, breathing through a massive T.T. Amal on a ram pipe and a Velocette close ratio 4/speed box.

A special radiator was fitted, also an alternator, using components from a Humber Super Snipe. The water connections were re-routed so that the water now enters at the centre fixing of the conventional Scott exhaust pipe. Val says "Phil spared no effort building the bike and it's an eye-catcher, make no mistake."

Would all interested parties contact Phil direct—no figure has been quoted. If the machine is purchased perhaps the new owner would supply some further information and a photograph?

"SWIFT" BY NAME AND SWIFT BY NATURE

by John Hartshorne

And then some! When Brian and I, with Scott's blessing, put a "tuned" Swift engine into my 1930 Sprint Special, little did I know what power and revs. we should get. Brian knew, his calculations had told him what to expect and as usual he was supremely confident and dead right. Do this, this and this he said, peak power will be at 6,000 r.p.m. and it should rev to 7,000, which it did. There was, of course, one glorious moment at Esholt Park when I missed a gear change and the rev. counter needle went to almost 8,000 (then the magneto chain broke) but perhaps we ought not to count that. It was a hell of a mess to sort out the remains of the chain, anyway.

The most interesting thing that emerged from the whole experiment of course was how tough and reliable these Swift engines are.

Just dwell for a moment, Scott owners, on these facts. In approximately six sprint meetings the engine was caned unmercifully and never once:—

- (1) Seized,
- (2) Boiled,
- (3) Failed to start first bounce,
- (4) Oiled or fouled a plug in any way,

and what about those cranks!

The engine was running sweeter the day I took it out, than when I started—If only Scotts would make some.

Of course I had troubles, a lot of them in fact but nothing wrong with the engine. One big problem was, to my complete surprise, the *handling*! In vintage trim, the bike has been used for all sorts of events, sprints, road racing, hill climbs etc. and it's always steered to a hair. With the Swift in it was a camel, due I think to the greater weight. On one never-to-be-forgotten run at R.A.F. Driffild I got in a tank slapper at well over 90. George Silk thought I had seen a ghost when I returned to the paddock! We never did really cure it, in spite of tightening the dampening until the forks would barely turn, it still twitched a bit. This was especially so in second gear after changing up from first, as the front wheel always came off the ground. This was because, due to the 3/speed box, it was *vital* not to shut off or use the clutch when changing gear—as soon as the needle was on 6,000, push the pedal down. Otherwise due to the small flywheel effect, the revs. would fall away like lightning.

It's a bit hard on the old vintage clutch and gearbox though but they stood up to it very well once on the move.

Due to the aforementioned power characteristics and the "Achilles Heel" of a 3/speed box, the initial get-away required some study as well. Revs. at about 5,000, drop the clutch and *full* throttle *straightaway*, otherwise the revs. would die—it looked hairy but felt terrific!

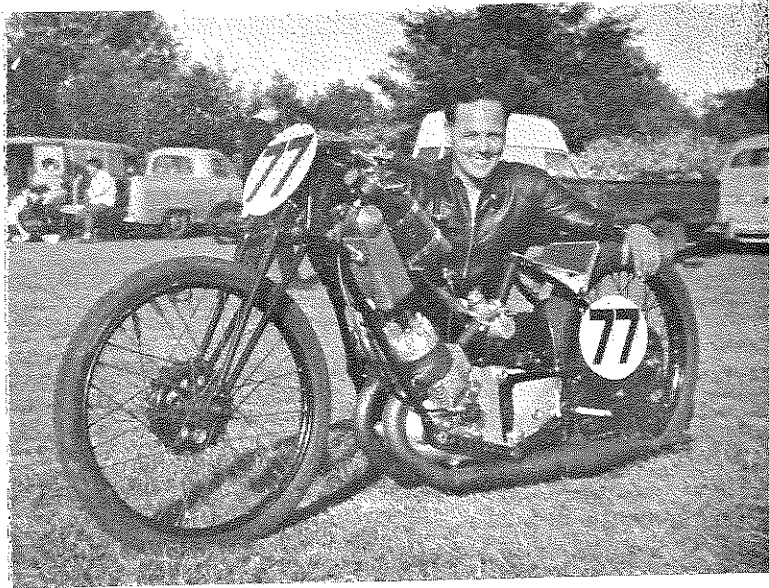
It was whilst performing one of these circus-act starts that our biggest disaster fell, this was at Duxford. I pulled in the clutch, revved her up, there was a terrific bang and the plot stopped. Several of the clutch cage rollers had fallen in the plates. Result? A bent gearbox mainshaft, broken chain sprocket and spindle. Anyway we soon sorted out that little lot and had it running in an event the following week-end.

I should like to say that we beat a lot of people, took home loads of awards and really brought home the bacon for Scotts; but we didn't. In fact we didn't win a blessed thing, we didn't really expect to, but we certainly proved two things!

- (1) That the "Swift" engine is a soundly engineered product with great potential.
- (2) That Brian Wooley is a 2/stroke tuner of the highest order.

Given a 4 or 5 speed box and put into a lightweight frame with all the modern sprinter's trimmings *this motor could be a winner.*

Thank you Brian, thank you Matt, for a long-remembered experience.



John & the 1930 Swift/Sprint at Esholt Park.

Dear Ed.

Referring to my article in the Dec. *You!* there is one misleading mistake, the exhaust pipe was $1\frac{1}{8}$ ins. dia. (i.e. $1\frac{1}{4}$ in. bore) I am sure the normal Scott just will not go properly with a pipe any smaller.

I enjoyed the Tech. Correspondent's notes on the clutch but, whilst being correct, I wonder if the following points, found in my experience to be of importance, would be of interest.

Check particularly the condition of the plates which get worn in their key engagement dogs, both on the sprocket and the boss. These keyways too have been known to burr up due to the restricted movement of the plates in use. The clutch plates can be touched up with weld and re-filed to fit the keyways but unless this is done by extremely skilled hands the plates will have distorted irretrievably. The Aerco post-war clutch plates are thinner and lighter and when I fitted some of these I found my clutch noise was negligible, however, the way it is used has some bearing on this point, even with a worn clutch.

It is also important to have not too much cable drag. I use the heaviest outer cable but for the inner, a size smaller. I have selected the straightest possible route for the cable and I have re-made the adjuster (out of stainless of course) incorporating a Tecalet oil nipple. If anyone can get a smoother action than mine I would be most interested—it can be used with one finger. The old bronze on bronze worms were a dead loss but I do not suppose there are any about now. I do not like the adjustable thrust pins. I have always made my own from toughened silver steel if the standard ones were too short taking care the three pins were identical in length to $\pm .002$ ins.

GERRY CLIFFORD.

THE SCOTT THREE-SPEED GEARBOX

A partial explanation of the alternative combinations of ratios available, including some originally unintended notes on the various boxes installed in the 3/speed Supers.

by Geoff Lee

Initially it should be made clear that this survey was confined right from its inception to a study of the gear sets, i.e. internal "cluster" arrangements fitted to what can best be termed the usual Scott gearbox. This is used to the present day and was introduced in 1926 with the new 3/speed "Flyer" duplex-frame machine. Various internal and external modifications have been made since that date, some of which will be commented upon but few are of profound significance.

I've had little experience of the 2/speed machine but understand that both "close" and "wide" alternative ratios were available as well as a selection of driving sprockets (19-22 teeth) the recommended system being merely to change to a 75 tooth rear-wheel sprocket (in place of a 66) when using the machine for sidecar work.

The "nigger in the woodpile" however, for want of a better term, is undoubtedly the notorious 3/speed Super in concurrent production in the late vintage period with the "Flyer" type non-open-frame machine. This is not a Scott I've ever had any ambition to own although it has been described as combining the better features of the 2/speeder—lightweight and handling and the duplex-frame models—the extra "speed" provided by the newly introduced gearbox. The model certainly has its devotees. The fact is, during its short production run 1923-28 no less than three different gearboxes were fitted. The first arrangement offered was, I'm told, designed by a man named Shackleton and was not all satisfactory. So much so, that a revised design was offered in 1926 after a lapse in production. This alternative arrangement had a larger clutch necessitating a new undertray also (which of course tied the front and rear sections of the frame together and provided the engine mountings also. It differed radically from the earlier box, the low and second gear pairs now being in the usual position and the clutch no longer being operated through the main-shaft. Even a new design outrigger bracket was required. The magneto was now carried on a separate platform instead of as before being bolted directly to a machined surface on the "roof" of the box.

As I said, these boxes were not intended to be included in this summary but in order to avoid confusion I can perhaps add that on the '25 and earlier gearbox each pair of gears should sum to 56 teeth and on the later model to 52 teeth. These gear-sets are of course readily identified by their much finer pitch teeth. So unsatisfactory was the first example that Scotts, I've heard, offered the conversion assembly free of charge (exchange) to owners of the machines thus equipped and they are now, of course, an extremely rare bird. (Cyril Wright has or *had* one—he's recently agreed to let us know, as soon as he is able just the full extent of his Scott collection and, I hope, the brief history of some of the machines). The rear chain of these 3/speed Supers was of a lighter pattern ($5/16$ ins. x $\frac{1}{2}$ ins.) i.e. the same as the conventional primary chain and similarly, of course, the alternative outrigger sprockets, which were incidentally offered in 23-27 teeth forms. Both these boxes are readily identifiable and were originally fitted with the long "walking stick" non-positive stop handchange control.

In 1928 the overlap period was reached and for one year only, the last 3/speed Super production year, the machine was again re-designed mildly to accept the conventional gearbox shell and (presumably) internals, mated to the existing clutch. I say "presumably" here, as it's a fact that the internals from the "intermediate" Super box were interchangeable with those of the conventional box—to this point I shall return. The gearchange arrangement incorporated for '28 was a "Flyer" type gate and linkage hung from the centre single down-

tube, a scheme perpetuated with the Sprint Special for the subsequent two years. Machines of this type are owned by Reg. Summers and Arthur King of Luton. There may be some positive identification to distinguish these boxes from those fitted to the "Flyers" but I'm not aware of it. Perhaps either could tell us and confirm about the internals also.

To get back to our standard gearbox then, I must refer you to the chart showing the four conventional basic variations and identified A, B, C & D for convenience. At first sight this appears perfectly straightforward but I believe it is worth taking each combination in turn and probing a little deeper. I should explain, having referred to the chart, that I have calculated all ratios (in order that a direct comparison can be made) considering a 19T final drive rear sprocket (minor discrepancies with B. of the S. figures are of no consequence). The other factors, outside the box, are, I'm pretty sure, standard for all machines, certainly those for clutch and engine sprockets are and any variation in rear wheel sprocket size is usually confined to hybrids with "converted" Enfield type components. With Scotts, though, you can never be 100% sure and I should welcome clarification on this point.

TYPE A.

This is generally referred to as the "Vintage" or early wide set. The teeth on the lay and mainshafts are as shown and this type were fitted, according to the Book of the Scott up till gearbox No. 3194. The year 1934 is inferred and Tom Ward informs July of that year. There's certainly no mention of the later wide set alternative mentioned in my 1932 edition which is the nearest I've got. Throughout this period the early close set (B) was offered as an option but taking 1929 as an example (Scotts best production year) two of the 3/speed machines included the "wide" set in their specification, only the Replica being quoted with the close box. There is little doubt that the vast majority of gear sets to this early wide pattern had the "solid" (machined from one billet) lay shaft. However I'm told that some assemblies were produced at a later date as spares for the earlier machines comprising the original wide ratios (i.e. the lower 2nd gear) fitted to the, by then, standard layshaft unit and supplied in "built up" form. This may have applied to the early close set also. I should be interested to hear if anyone has internals to these patterns. For identification purposes I should add that with the wide gears originally fitted the box was, of course, stamped W and usually at least one of the gears was also, often the high gear meshing wheel on the layshaft.

TYPE B.

This is the "Vintage" or early close box, often rather confusingly referred to as the Ultra-Close box, naturally inferring at least two other degrees of closeness! This may have evolved to distinguish it from the later close set, although this is generally referred to as the Medium Close box. I suspect it was a bit of crafty advertising, "Ultra Close" sounds so much more exciting—rather like the Flyer rear chain guard which has always been "extra deep." As shown in the chart, none of the gears used in the close box were utilised in the wide version and this undoubtedly made for expensive production. This was one of the major factors which influenced the change over to the re-designed sets, both of which employed a 25T High Gear wheel (as in the early wide set). These close gears were used in all the racing Scotts and T.T. machines although in these instances they were machined from K.E. 24D. (85 ton steel) enabling them to be undercut behind the teeth and for the shafts to be made hollow. Although the later close box was available in 1932 (possibly earlier) certain models were still fitted with the Ultra Close gears, particularly the more sporting and not too heavy machinery. These gears can be easily identified firstly by their relative diameters; at least one gear, often more, is marked "C" as was the box end-plate and again, of course, they are invariably solid layshaft produced.

TYPE C.

The Medium Close or Modern Close set is something of an enigma. For

a start, this combination was in fact available well before the discontinuation of the early wide set. A quantity of these Medium Close ratios were produced in solid layshaft form and even as early as 1932 they were listed as the "Close" alternative. Later on production was standardised on the built-up type of layshaft. Various theories have been advanced as to why, one being that a special and valuable machine was used for the solid shaft hobbing (an examination of the early wide shaft with adjacent 19 and 14 tooth wheels will make this point clear). This, it is said, was sold during a period of financial embarrassment. The more likely explanation is, I think however, that the change allowed a standard bare layshaft to be utilised and in the event of gear trouble, only the offending component, not the complete shaft, required replacement.

I get the impression and have a private theory that the Scott Works were aware of some dissatisfaction by owners of Ultra Close equipped machines, probably having difficulty pulling away from rest with the very high 1st gear and/or clutch trouble, especially when such a bike might be using a 20 or 21 sprocket to ensure a high cruising, but not "screaming," speed! In spite of the fact that four new wheels were fitted the designer ensured that 2nd remained constant (almost) at 6.12 or so. Bottom gear also could have been maintained at 8.13 (even with the change in high gear wheel and its mate) simply by using similar 19 and 24 wheels on layshaft and mainshaft respectively, as employed in the original Wide box, but for 2nd gear! If the supply of these Ultra Close gears dries up it might be worth remembering this "fiddle" at some future date. Another point worthy of mention with regard to the "C.M." box, is that at some stage in the production of the actual shells to be later fitted with these gear sets, one of the internal boring operations was omitted. This consisted of a light skim out on the R/H "open" side of the casing sufficiently deep to accommodate the large 29T low gear wheel of the wide set. Thus it is necessary when making a conversion to either of the wide gear sets for this extra material (not a great deal admittedly) to be removed, as far as I remember from the forward and bottom faces of the box by filing, scraping etc. (Boxes affected in this way could be just the foot change variety, I'm not sure).

TYPE D.

This combination is, of course, the final one of the four basic alternatives. It differs as the chart shows, from the vintage or earlier version in respect of the quite appreciably higher 2nd (middle) gear ratio, which matter has already been covered. I can find no evidence to suggest that gear sets of this type have ever been supplied with other than the built-up layshaft. It is perhaps relevant here to emphasise a point Harry Langman made, and has probably occurred to the reader. On early gearboxes change of ratios was quite a big job necessitating the removal of the clutch and a complete strip out of the box. By standardising with the new arrangement on a high gear wheel of 18teeth the operation was simplified enormously, particularly as the gears themselves could be demounted from the layshaft in-situ. It was necessary then merely to remove the gearbox end cover, slide off the 1st and 2nd gear pair from the mainshaft and their companions from the layshaft splines, removing the lock nut, of course.

But to my mind it was the cost factor which was the primary consideration and the most appealing which led to the new scheme's adoption. There can be little doubt that a substantial economy was achieved.

Back now to the consideration of the "rogue" combinations which can be achieved. The first comes via Clive Wayne (who incidentally reports that overall they consider type C, the Medium/Modern Close, the most suitable for vintage road racing, unlike most of the other racers who seem to favour the ultra-close set on their light-weight machines, pulling generally an exceptionally high gear). In his road bike Clive uses the internals from a '26 3/speed Super (gearbox No. 2 as referred to earlier). These are of finer pitch, of course, 25, 17 & 30T on layshaft, 27, 35 & 22 on main) giving 13.0 & 6.83 1st and 2nd ratios i.e. similar to the modern wide, but naturally a little weaker in construction I suppose.

A favourite amongst sprinters Derek Shire and John Hartshorne and possibly others is the combination of Medium-Close 1st and Modern-Wide 2nd (i.e. with 19T sprocket 9.84, 6.74 and 4.63 top). This modification is apparently perfectly straightforward, 21 driving 22 instead of vice-versa. It must be emphasised, however, particularly as the teeth numbers are identical, that the new pair must be obtained from the wide set. There can be no question of exchange from one shaft to t'other—this becomes obvious upon dismantling. I have an acquaintance who is of the opinion that Scotts were prepared to offer this particular combination on road-going machines and he has it fitted to his Flying Squirrel. He calls it the Close/Wide box, which figures. Finally Derek suggests I stress the point that box "bursting" can occur and in his experience is most likely to occur with this Close/Wide combination. He admits he can provide no explanation and it's my opinion that it's more likely a function of the power output the fast boys wring from the engine and who, of course, favour this arrangement.

I was in two minds whether to publicise this freak conversion particularly from the point of view of the up-and-coming Scott enthusiast of tomorrow. He's the one who's going to be fobbed off with the left-overs so to speak. A machine with the very low 1st gear then a tremendous jump to a close 2nd and top. I wonder, has any member any experience of riding with these ratios, with a chair perhaps?

Whilst on this note of D.I.Y. combinations. If any of the early wide sets are available in B.U. form these could enable an additional but again rather pointless, assembly to be created. And to finish, on a discordant note, during my investigations for this article I came across a 1936 machine fitted with a conventional C.M. box *except* that for 2nd gear two 21T wheels were meshed (loosely!) to produce 6.43. It would appear that this was an error at manufacture (a 21 from a Close and another from a Wide set) as the machine had not been used a great deal. However, the end cover was missing, apparently appropriated by a well-known 2/stroke tuner and enthusiast, some of his other experiments still being in evidence. You never know with Scotts.

As I've hinted throughout this little report I consider it very much of "Interim" nature and I should like to know other member's experiences and queries regarding gearboxes and particularly their ratios. Perhaps I can then produce a sequel!

To our Dear Friends in the Midlands,

My husband and I wish to convey our overwhelming delight in the wonderful gift of the engraved Silver Candelabra sent to us on our departure from England.

We would have liked to have seen you all again but in view of our hasty departure it was just not possible.

We hope to gather together a few members over in Canada and America from time to time and we feel sure we shall make many friends. It seems difficult for us, however, to imagine anything approaching the riot of friendly fun that our post-Rally parties and Tramp Suppers turned out to be, or where we would find such a bunch of enthusiasts as to rebuild a bike by the side of the Avon!

For us, at least, such halcyon days will become a legend; but one which we hope to keep alive by correspondence and perhaps an interchange of tapes with the Vicar of St. Mackesons. (Ginger Tom Formby to you.)

Our new address will be published as soon as we are settled in and we shall be thrilled to hear from any of you, whether you have technical problems or not. (Don is still to act as Technical Correspondent).

Thanking you once again for your splendid gift and the many happy hours of your company.

"LOFTY" AND JOAN.

THE SCOTT THREE-SPEED GEARBOX—GEARS 10 D.P.

Summary Identification	Layshaft Teeth Nos.		Usual Layshaft Construction	Main Cluster and High Gear Wheel Teeth Nos.		Gear Ratios with 19T Final Drive Sprocket				General Reference	Comments
	2nd	1st		H.G.	1st	2nd	Top	44 40	20 19		
TYPE "A"	19	14	SOLID	24	29	18	13.32	8.13	4.63	"VINTAGE" or EARLY WIDE	Page 57, Book of the Scott ('30 and '31 Wide Ratio).
TYPE "B"	20	17	SOLID	23	26	20	8.14	6.12	"	"VINTAGE" CLOSE or ULTRA CLOSE	Page 57, Book of the Scott ('30 and '31 Close Ratio)
TYPE "C"	22	17	BUILT-UP	21	26	18	9.84	6.15	"	MEDIUM CLOSE	Page 58, Book of the Scott 1934 onwards?
TYPE "D"	21	14	BUILT-UP	22	29	18	13.32	6.74	"	MODERN (post '34) WIDE	Page 58, Book of the Scott (1934 onwards) after box No. 3194).

THE TECHNICAL CORRESPONDENT'S POSTBAG

Dear Lofty,

I have sorted out many problems on my 1929 Scott Squirrel with every sign of success, in fact I'm feeling quite proud of myself. There is one thing which still bothers me and I find the advice I receive from various sources rather tends to be contradictory so I am turning to you in the hope that you can explain the difficulties and suggest a cure.

For some while I was troubled with the rear chain adjustment varying as the wheel revolved and I observed that the rear sprocket had a bit of a wobble. I tightened up the bolts that pass through the hub; this cured the wobble but only partially cured the chain trouble. The other week, to my horror, I discovered that a piece of the steel ring retaining the sprocket had completely vanished, along with one of the nuts!

I have been told:

- (a) That the bolts must not be fully tightened;
- (b) They must be dead tight (how do you hold the heads anyway?)
- (c) The trouble is prevalent on this hub design and a new ring every few months is the expected order;
- (d) Fit cap-head screws and lock the whole thing absolutely solid.

Since there is some back-lash on the sprocket which is annoying when driving in traffic, I have been disposed to try solution (d) but hope that you can suggest something more satisfactory.

Yours sincerely,

E.B.G.

Dear Eddie,

Its nice to hear of someone having success come his way with one of the vintage models which can pose serious problems with the wear, tear and neglect of years having had a real "go" at their substance. We will do all we can to help on any problem that crops up.

Your particular difficulty is not insoluble but may prove troublesome on spares; I'm afraid I cannot help here but you could try the usual Scott agents or Nick Sloan our Club Spares Registrar.

The machine you are riding has an Enfield cush-drive hub unit; the sprocket can rotate a few degrees each way on the hub against the restraining force of six rubber blocks that are interposed between three vanes in the hub and three formed on the back of the sprocket. In good condition the blocks will only allow "half a tooth" of rotation using the full force of both hands, upon the sprocket. The ring retaining the sprocket is secured by three special bolts which have the part below the head of oval form and it is the fit in the oval holes in the ring which prevents them rotating when tightening-up.

This oval shouldered section terminates with a "countersink" taper which matches a seating in the hub. The bolt then continues with a plain section and has a cycle thread only the last $\frac{3}{8}$ of an inch.

In practice the nut pulls the countersunk surfaces together and is tightened down hard. (A spring washer may be used here). The shouldered section does not clamp the ring but gives a small clearance to allow the sprocket to move around the hub.

What usually happens, is that the hardened sprocket gets yanked around the hub when the rubbers perish and, lacking lubricant wears away the hub. The sprocket being off-set now pulls against the ring which eventually gets worn through at the weak spots at the holes, with the consequence you already know. Somewhere along the line, the bolts come loose and wear badly so that they will never be secure again. They are replaced with all manner of substitutes which have little hope of permanence.

Rings are sometimes made of heavier gauge material in an effort to ensure their survival but this removes the working clearance and resort is then made to "lock-nutting" to keep the bolts in place. The round holes invariably drilled in the rings obviously reduced the width of metal left at the weak spots.

For a quick cure, the "cap-head plus ring-spanner" system has merits if you can persuade the sprocket to sit co-axially with the hub. Of course, there will be no cush drive and chain snatch will become quite noticeable. The only other way is the "ard way"; and, like the sergeant said, "its ruddy 'ard" but not impossible.

Take the wheel right out, remove the bolts and attempt to get the sprocket off. If the hub is badly chewed or the rubbers have gone all doughy with age, oil and grease, there may be problems here. You'll have to play this bit by ear. If it appears impossible, try getting another wheel from Nick Sloan; but its not likely you'll find a perfect specimen after all these years. You could try Tom Ward for rubbers, a ring and the bolts. If you can get these (if they are necessary, that is) you are halfway there. If the sprocket teeth are badly worn, try for a better one before proceeding.

Inspect the hub for damage. It is likely that the hub where the sprocket fits is still round but has been worn down so that the sprocket is loose. The cut-away portion in the sprocket bore leaves an unworn portion around the hub and it is usually this which makes it difficult to pull off the sprocket. The best thing here is to have the hub set up in a lathe and machined back to a cylindrical form. A thin sleeve is then made up to take up the excess clearance to the sprocket. Few people will tackle this without the wheel being dismantled, so unless you want to do it the really hard way, you could try the following solution which has given satisfaction on several machines.

The hub usually remains substantially round and parallel and this makes the removal of the ridge a proposition by "hand" methods. A file and quite a few hours sweat can get that ridge down level with the rest, so this is the first fatigue. A touch of Alfred Scott's doggedness should see you through this bit!

Now drop on the sprocket and have a look at the clearance. Try feeler gauges and see what it measures. The exercise now is to make up a sleeve from sheet metal that will leave a reasonable working clearance. When it comes to it, however, the best approach is to get the thing on as tight as you can since the components are not dead true surfaces and clearance for the necessary few degrees of rotation will soon appear.

Sheet steel seems best for the job and material from food cans has proved successful on several occasions. Cut a strip about an inch wider than the width of the sprocket and form it into a cylinder by initially wrapping it around a U2 battery and then gradually bringing to the correct diameter by the fingers. Trim down the length so that it just slides into the sprocket, the ends of the strip butting neatly together. Leave the sleeve projecting each side and offer-up to the hub.

By pushing, wriggling and filing down any obvious high spots on the hub it should be possible to get the thing on. "Trefolex" paste and a good pair of leather gloves help a lot on this stretch. A slight chamfer filed on the edge of the hub, will often help the operation considerably.

Snip into the end of the sleeve projecting from the inner side of the sprocket every $\frac{1}{8}$ of an inch for a depth of about $\frac{1}{4}$ of an inch. Bend a couple of the "fronds" outward and pull sleeve as far through as they will allow. Fold out the remainder. Trim sleeve on the outside to within $\frac{3}{32}$ ins. of sprocket, fit to hub andpeen the projecting portion out with a light hammer, proceeding round and round until a neat flange results.

Now try the bolts and clamping ring and check clearance when bolts are pulled up tight. If insufficient it may be due to the "fronds"; if so they will have to come off and the sleeve punched internally into the groove in the sprocket bore to retain it in service. (It is a good idea to test the bolts before fitting the sleeve, if they are to hand at that time). The countersink seatings in the hub may need trueing up and metal may need to be removed from behind the bolt heads to restore clearance.

In theory, the sleeve should be peened all round into the grease groove in the sprocket but this has never been done because none of the hubs previously given attention has had a hole for the grease to emerge from the inside. Perhaps George Stevens has an ancient drawing that will show us how lubrication was effected.

Having got all the parts to fit, we come to the bitter bit! Getting it to go together with all the rubbers in place. The best (and maybe, least expected) approach seems to be to put the wheel onto the sprocket. Lay the sprocket, vanes uppermost, on top of a wooden box, with a hole cut below to clear spindle. Lay the rubbers in position on the sprocket and place the wheel on top with the vanes in the correct position. Wiggle the wheel around whilst levering rubbers if necessary, to persuade them into the hub. By rocking and rolling the wheel on the sprocket the whole lot should go together. The use of soap or rubber lubricant has never been necessary but could be used in stubborn cases.

The sleeve could be greased on assembly but obviously the supply will not last for long. The writer's answer was to lay the machine, once a month, on its side on the lawn and run a few drops of gear oil between the sleeve and the hub, also behind the ring. After 60,000 miles of this treatment the sleeve shows only moderate wear and the ring is far from dropping apart.

In spite of the previous tests for clearances, with a new set of rubbers a sprocket will often appear to bolt up solid. Fit the wheel to the machine, attach chain and slip into first gear. By pulling hard on the tyre it should be possible to make the sprocket move. If not, slacken the nuts until it will, then, proceed to pull the wheel forward and backward, whilst taking the nuts up a bit at a time. If you are not happy, take it all down again, since occasionally the rubbers get bits "skinned" off them which jam up the system. On no account leave the nuts loose. Fit stiff-nuts if you like, but they must be tightened right up!

My apologies here for suggesting something which smacks of a "botch-up." If you are replating or fitting new rims you can easily do it the tool-room way, but the "tin-can" sleeve trick really works and there is nothing to show since the flange is covered by the cap.

All the best in your Scotting.

EDITOR'S NOTE

Far be it from me, a comparative "new boy" with a mere 10 years or so of Scotting behind me, to criticise the omniscience of our Technical Correspondent. However, so impressed and fascinated was I by the contents of this, his latest, epistle, that I immediately made an inspection of my own wheels of this pattern. Most of my previous Scotts have been fitted with the Enfield "Cush-Hub" rear wheel but I'd got a nagging suspicion that they were not identical in design to those described here by Lofty. My '29 T.T. bike has the conventional Enfield wheel fitted—fortunately in good condition—and the first point which drew my attention as the assembly was taken apart was that the central bearing was, in fact, nice and greasy. Upon inspection it became apparent that it was fed by a small hole some 3/32 in. dia., drilled through from the spindle cage about 1/4 in. from the base of the vane housing. The only other wheel I had available of similar pattern was provided also with this hole, although, in fact, in this case it was blocked with I think, a delightful combination of congealed grease and rubber dust. It occurs to me that if this feed hole was discontinued on later models as Lofty suggests, the reason could be that of the danger of excessive grease affecting the rubber "cushes" by creeping around the rear of the sprocket bearing. However, it might be worth introducing this grease hole at the same time as the other modifications are made. The remaining problem is then, of course, that of pre-packing the hub bearings to such an extent and with suitable viscosity grease to supply just sufficient lubricant to the sprocket whilst avoiding starving the races themselves. I personally am against upwards of 1/2 pint of grease rolling about in the hub, in what appears rather pointless fashion. Perhaps Lofty will eventually encompass this subject in a later episode of his valuable maintenance series.

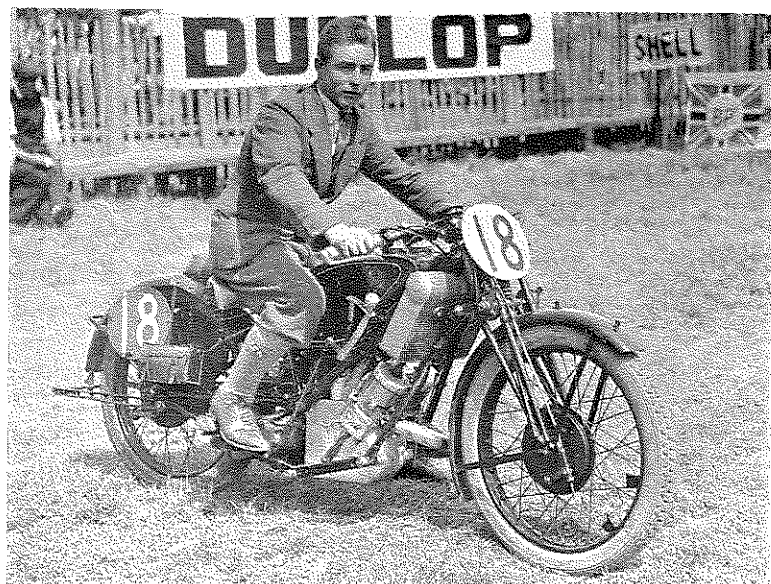
I will now return if I may to the question of the construction of the sprocket retaining ring and bolt assembly. Without exception all the assemblies of this type that I've ever inspected have been basically similar to that described here, with the exception that the bolts have in all cases been screw-driver slotted (for constraining the bolts when tightening—"Eddies" point *b*) not exhibited the shank ovality mentioned by Lofty and instead of the "countersink" have been equipped with approximately 3/8 in. of similarly dimensioned, shouldered portion.

In practice the design works in precisely the same way, the bolts when installed being pulled up hard against an abutment face provided at the bottom of a counterbored "mouth" of the hub drillings. My experience has been much the same as is detailed here, one or two extra comments not being, I think, entirely out of place. Lofty is, of course, quite correct, the nuts must be really tight and in fact the original equipment was a 5/16 in. nut, but made from 3/8 in. section material—thus the extra spanner torque. "Grover" washers were utilised under the nuts. It is particularly important that the wearing face of the sprocket is flat; if the whole arrangement has been "locked-up" at some time and subsequently started moving again it will be quite impossible to maintain correct chain alignment for any length of time, even with the repairs described and a new or tried-up sprocket or at least one in good condition should be procured.

New cush rubbers are still available and are naturally an automatic purchase. It is as well to remember though that the three fitted rearward of the sprocket vanes come into action only under over-run conditions and can, therefore, be conveniently exchanged for those in front after a good mileage when perhaps inspecting the assembly for wear etc. Another point—on the post-vintage model the bolts and ring were no longer separate, the heads being brazed around their edges. It may be that the excessive movement of the assembly has resulted in a fracture here, explaining E.B.G.'s "holding" query. Until a short while ago the Enfield parts were still available at E. S. Motors, Chiswick W.4., London's main R.E. parts stockists (and incidentally the last suppliers that I know of those splendid "T" type Lucas batteries, which came complete with connexions, cover and clips).

I am indebted to Peter Cutler for the loan of the *Daily Mail* Motorcycling Guide for 1954 which contains some more Cyc-Auto "gen." This illustrates both the auticycle (called the Superior) and the pukka lightweight as mentioned in Eric Cliffe's letter. It really is a good looking little machine and I would have thought that at £78 (£20 cheaper than the Bantam Major) 150 m.p.g. and the shaft drive, it would have sold well. I suspect, though, it was the top speed (only 40 m.p.h.) that was its drawback. The conventional auticycle cost £58 4s. 0d. also with the 98 c.c. engine and I see the carrier is listed, but not shown, at £63. One other interesting point the lightweight was—yes, you've guessed—a 2/speeder!

Peter Garnier is well-known as the Sports Editor of *Autocar*, associate journal of *The Motor Cycle*. He has raced in the Mille Miglia and Le Mans but in a recent letter Dennis Howard, a close friend, tells us that in his earlier days he was a great Scott enthusiast. He entered a Scott in the 1938 Land's End Trial, which was later purchased by Dennis and has now re-approached him hoping to return to Scotting, after all the "swell living," as Dennis terms it. What is required is a good vintage or pre '39 Flyer, although some work is not objected to. Dennis adds, "It would be pleasant to obtain a Scott for Peter—really, you see, a true enthusiast through all"! Would anyone who can help contact Dennis direct at Old Conduit House, Lyndhurst Terrace, Hampstead, London N.W. 3.



Bill Kitchen 1930 T.T. is the original caption to this photograph and I was particularly interested to see that it is clearly one of the '28 machines, not the heavier '29 model that he is using. Eric Langton's bike was fitted with Webbs in '28 (according to G. Stevens' book who is, or was, under the impression that the '29 machines were used again) so it could be this bike, though I see it is fitted with the 8 ins. diameter front brake, which I think was introduced with some of the '29 models only. Other points of interest are the studs for the crankcase mounted pump—possibly one of the later “knife-edge” engines and the complete $\frac{1}{2}$ compression assembly. Note also the extra fork bracing as per K.T.T. Velo. The cylinder wall oiling pipe appears detached.

THIRTY-TWO HUSTLER STREET

by Philip H. Smith

To Scott riders all over the world, the name of Tom Ward, Expert-in-Chief, must be better known than any other. A lifetime's devotion to Scotts has merited this unique position and knowing a little part of this, let's begin the story.

As week followed week, around 1922, there it appeared, in the same place—that small ad. in “The Motor Cycle”—“Ward Motors Ltd., Scott Specialists. 32, Hustler Street, Bradford.” In those far-off days, we three lads were Scott enthusiasts to a man; we hadn't a Scott between us, though we *did* have a 2/stroke and a very good one—a Velocette with overhung crank and mechanical pump lubrication. On occasion we contrived transport on this for three, such things being possible in moorland Yorkshire. We thought we knew our Bradford too but tentative enquiry failed to locate any Hustler Street. Finally, one dark Saturday night, we decided to explore and find.

Bradford is built like a pudding basin, with the Establishment at the bottom and the environs climbing up the sides. We took a tram to the depths and accosted a copper. He looked at us tolerantly. “Hustler Street?—You want Hustlergate lad”; and pointed.

We did not want Hustlergate; we could have gone there blindfold. No—Hustler Street or nothing we said, as firmly as 17-year-olds dare address the Law at that time in history. Sceptically, he pulled out his “little book.” Then he took a deep breath and did some rapid mental exercises. His arm swept round in the direction of the Parish Church (it had not then been elevated to Cathedral status) and rose to an angle of about 45 degrees. That meant a climb, obviously. “Go up Church Bank” said he, “Turn left at Garnett Street and it's at the top somewhere. You go across a gantry—don't suppose there'll be anyone there at this time o' night though.”

We boarded a Church Bank tram and ground our way upwards. We found Garnett Street, cobbled, with rudimentary lighting and a gradient of about 1 in 2. Up we went; and we found Hustler Street at the very top, near another tram route which would have saved a lot of legpower. A two-storey building stood there, with two large boards. On the bottom “Sunnybank Laundry” and on the top one “Ward Motors Ltd., Scott Specialists.” You went down a drive to the laundry and across a bridge—presumably the “gantry”—to our Mecca. We got safely over the bridge and peered through the double doors with their murky windows. None of the items advertised—watercooled heads, improved brakes and kickstarters—were in sight. Only the blackness of the Pit. But we'd found it and so we went home content.

It was some time later that I again climbed Church Bank, this time on my own 2/speeder on the way to “learn a trade” at English Electric. Not until I was well initiated at the factory did I realise that 32, Hustler Street was within walking distance. The technological revolution was still forty years off and nobody seemed to mind if AC and DC motors and other devices of Faraday, received attention alongside odd pieces of Scott's creation. One and all, the boys knew Tom Ward. “Oh him—aye lad, he'll fix you up.” And fix you up he did.

Scott enthusiasts will never know what they owe to Tom Ward's lifetime with the make. Many times, after evening overtime, I used to go round and yarn for an hour before going home, about the old(!) days of the Scott machine-gun outfits, when Tom's small works were turning out petrol can carriers and long bolts and washers for plugging holed radiator tubes, once taking them to Shipley in a handcart for dispatch to France! After that, it was the Royal Engineers for Tom and the first “tanks” in action.

He had ideas for an ideal 2/stroke which he would like to build. During the late 20's depression, life was difficult for Ward Motors. His older innovations, such as the contracting handbrake for the 486 and 532 was no longer selling, nor were the water-cooled head conversions. But owners could still save pounds in new parts, by taking even the most seriously broken component to Ward's. Strap-held transfer port covers were substituted for fractured bolt-anchorage, so you kept your crankcase. Steel lugs were built onto the back end, when you had ham-fistedly knocked one off. Frames bent past redemption were unbrazed, straightened out and built up again. The catalogue is unending. And all the time, the fund of Ward know-how was assuming proportions that would fill the Encyclopaedia Britannica. When war came in 1939, he moved to Derby—and to Rolls-Royce for the duration; but Tom still managed to deal expertly with such Scotts as were in dire straits and take part in discussion groups of the kind enthusiasts will remember.

Practical know-how, yes. But some of the expertise comes from a profound knowledge of what makes things go round and why. Tom B. Ward graduated with the Institution of Automobile Engineers in 1912 and became an Associate Member in 1921. In 1947 he was elected A.M.I.Mech.E. So if you think you have evolved some marvellous scavenging system to beat all comers, it'll probably be in T.W. archives. And he's still at it—at 78!

Tom Ward adds:—

I have just been allowed to read Phil Smith's far too kind remarks and I have enjoyed being reminded of those happy days at 32, Hustler Street. It was a real stroke of luck for us when Phil started his career only half a mile away, for he was an enthusiastic experimenter and—that boon to struggling repair blokes like us—a cheerful spender!

About that time in Scott history the 3/speed Super had shed its early faults and had become quite an attractive model. My own affection has always been reserved for the 2/speed model (with its unique touch of Alfred Scott's genius interwoven into every part) but Phil hankered for that extra ratio and pointed out that the *front ends of the two models were exactly alike*, so that it would be "dead easy" to convert! So we set to work.

Even that conversion, however, was capped about two years later when Phil decided that it was now time that the 3/speed Super was made into a 3/speed Flyer, an entirely different model! And of course he did not forget to point out that we *already had the gearbox* so it should be . . . ! I do not remember whether we did the job or whether Phil did it himself but it was certainly "did" and the mass of unused parts came in very useful to us. To give credit where due I should mention Mick Cervi of honoured memory, one of the most gifted mechanics that has ever been my good fortune to work with. Italian (not Irish) probably it was he who did most of the rebuild and what he did was not only *right* but always *looked right*.

The premises at 32, Hustler Street, as Phil reminds us, were not without special interest for the Scott rider, as the hilly surroundings were real Yorkshire. The workshop was in the stable block of the derelict Garnet Hall Estate and the approach to the outside world which we mostly used was just a gap in the wall from that "1 in 2" cobbled street which Phil poetically describes. Going out into this street on our old 2/speed Scott was always quite a thrill. One could only go through the gap at a walking pace and then had to accelerate up the steep incline. There were no clutches or twist grips and the lowest gear even with a sidecar (always the Scott triangular) was 8 to 1. The method was to go through the gap with plenty of throttle but *with the brakes hard on*. With the close fitting cast-iron pistons and the early cylinder porting for slow pulling, the pick-up was marvellous the instant the brakes were released.

A remarkable thing happened on that steep incline one day. A Raleigh combination had been parked against the kerb whilst the rider came into the shop, when the cry went up that the machine was on the move—fast. We ran to the gap but could see nothing of the machine. It had, in fact, not broken through into the allotments or into one of the passages on the other side, it had gone down that long street quite straight and charged across the street of houses at the bottom. And there it was in one of the gardens, having taken the wall and the garden gate with it!

On another occasion when there happened to be 3 ins. of snow on the hill, a gentleman called to see us in a sports car, at least that was what was intended. He set off gingerly from the top but found all four wheels were sliding and he shot past the gap at speed. However, he found that if he kept the front wheels pointing down the hill it did not matter what the back end was doing, and it was quite enjoyable. He therefore, made a detour and came back to the top of the hill again and shouted "I'm going down again but a bit faster this time"!

The part of our work which was most fun was going into the country to retrieve Scotts which had broken down, usually their fork steering columns, the longer the journey the better. One journey I remember was to the Lake District on a lovely day. But I must stop.

Brent Scholes reports he has located a supply of saddle springs. These are available at 3/6d. per pair. They are suitable for late vintage Scotts and all later models with frame-sprung saddles.

ORIGINAL, I SWEAR IT

by Bob Cordon-Champ

Since I have been engaged on the restoration of a well-known make of 2/stroke and have joined the S.O.C., it has occurred to me more clearly than before, that the members, by and large, concern themselves with mutilation rather than preservation of the results of Scott's genius.

A glance at the machinery gathered at, say, a National Rally, creates the impression that the acquisition of a Scott confers *carte blanche* on the owner to commit acts of butchery and dismemberment that would have disgraced the late Dr. Knox! Apart from the well-known and beautiful machines that are always present, (and what is more beautiful than a fine Scott?), machines with bastardized frames, wheels, lighting systems, saddles and colour schemes are thick upon the ground. Why? Do we not care enough for these fine articles, to the preservation of which the Club is dedicated to ensure that a good percentage at least are capable of showing to the world just what a Scott is?

In this respect, the standards of the V.M.C.C., an organisation catering for bad, as well as good, motorcycles is far ahead of the S.O.C. and improving constantly.

Heaven forbid that we should become a sect of hair-splitting, inflexible fanatics, forever spluttering nonsense about whether gold lining should be $\frac{1}{8}$ in. or $\frac{17}{32}$ in. from a mudguard edge but let us at least "improve" our machines along the correct lines, to the benefit of the Club as a whole.

For anyone whom the above has stirred to even mild interest or annoyance a few ideas follow which I have found helpful.

The restoration of a machine to substantially the condition in which it made its first appearance is not difficult, patience and perseverance are necessary but surprisingly little else.

Firstly, remove from your machine, in your mind's eye at least, all the components which are not of the same type (even Scotts wear out) fitted to the machine when it emerged from Bradford, Shipley or Birmingham. You will be amazed!

Careful perusal of period catalogues, (useful, but these can contain a surprising amount of wishful thinking) photographs and magazines (beware of pre-show editions and manufacturer's advertisements) will help in determining the accuracy of your findings.

List all the parts required with details and set out to locate missing parts. It is highly likely that some have lain unheeded in your junk-box since they were discarded. If so, out with them! Search high and low amongst friends, you won't lose many, for components that they have. This, of course, entails a certain amount of philanthropy on the part of hoarders of bits. If nothing is forthcoming a few pins strategically placed in a wax model of the hoarder-friend often helps!

Reproduce, properly, all the brackets and fittings that should be on your frame, there is no lack of information on this. Perfection only must be aimed for, a Jubilee clip and nuts etc., will *not* do to retain an exhaust system.

Where a component, not essential to the running of the machine, is not immediately available, LEAVE IT OFF. If it can be seen to be missing some kind soul will probably offer the correct item. Believe it or not, this works! In my opinion, it is far preferable to have an original machine with the odd absent part than a mock-up of a machine looking as it might have done had it been designed twenty years later.

In the case of severe modifications to frames and forks, accidental included, there are a number of well-known practitioners who will return items to sound condition at moderate cost. As an illustration of what can be done, a friend of mine recently had a rear-frame, top-tube and forks made, almost from scratch for a much battered ex-W.D. Sunbeam. The machine now has a beautiful "period" appearance that will pull the crowds.

Following work of the nature described above, a good coating, in several stages of warm Teckaloid works wonders and, together with the correct transfers, makes a superb base for "light" restoration on tanks and mudguards.

Unfortunately restorations of this type can give rise to indulgence in excessive "bull." The most common symptom of this is the polishing of all alloy components to a mirror finish. Unless a component has been damaged or corroded, very little metal need be polished away. Cleanliness, not tawdriness, is the aim here.

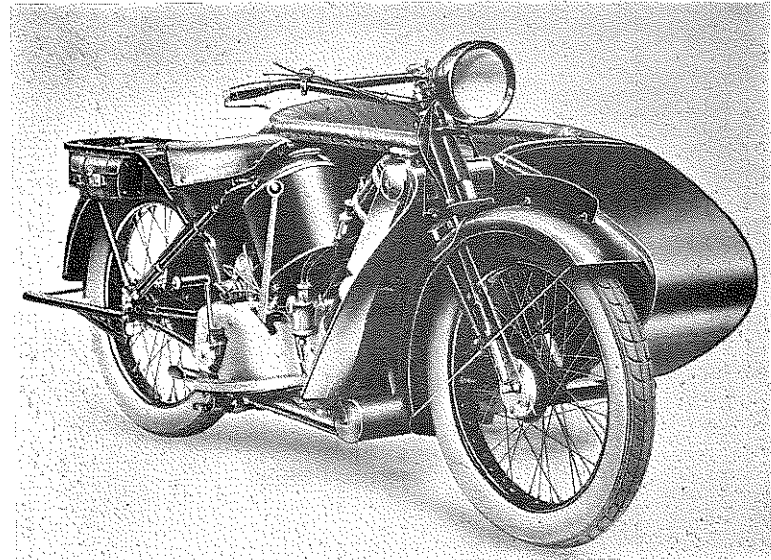
If the foregoing has prompted any one into action or into putting pen to paper to answer back, I shall be well pleased. Needless to say I am keeping the Reg. No. of my Flyer a closely guarded secret!

I am pleased to be able to promise for the June issue an article by Dennis Howard on the aesthetical side of Scott rebuilds—much needed I'm sure all will agree and in Dennis's own words "A crude science—but stimulating."

He has also located a firm, Messrs. Davies Foundries (Shampton) Ltd. 14, Vanbrugh Rd., Bedford Park, London, W.4. (write to Mr. Brian Sefton) who are prepared to undertake any casting that is within the bounds of possibility to either pattern or working drawing. Dennis suggests bronze undertrays for 3/speed Supers, to which I would add, side shields for the various types of single down-tube machines e.g., '31 Tourer, front "Hemmings type" exhaust pieces for all "Flyer based" models and another item becoming scarce these days, the L/H outrigger shield as fitted to all post '30 but pre speedo/drive machines. Nick Sloan was lucky enough to pick up one of these latter recently with the "improvements" ready marked out in pencil on the back! It must have escaped this ignominious fate by a matter of minutes almost, at some period.

Another point I should like to stress whilst on the subject—it's a remarkably simple job having a casting made using a borrowed original as a pattern. Providing it is complete for the most part any extra holes can be "filled" with cardboard and Sellotape, any machined surfaces are given an extra layer to allow for remachining and shrinkage and the final product is a perfect replica of the original if a shade thinner in section. However, the most important point to remember is that a significant proportion of the production cost is taken up with the mould preparation; the point being, of course, that price per unit is drastically reduced if a small batch can be produced. In the past, to my knowledge at least three well-known S.O.C. members have done all the necessary "spade work" and satisfactorily negotiated the production of various "elusive" items but in no case was any publicity given to the project. There may have been good reasons for this secrecy of course, particularly if the job was done "on the side" but I'd like to suggest that in future such schemes be organised on a grander scale. If the Scott Club had financed the production of say 12 pairs of side-shields for 3/speed Supers five years ago, I feel sure I could have obtained committee approval, they would all be disposed of by now, probably at a good profit. Nick Sloan, the Spares Registrar, is prepared to handle this type of enquiry and already would like to hear from parties interested in Scott (veteran) carburettor castings (supplied with machining drawings).

An enthusiastic letter was recently received from Australian Jim Heaven. He's been motorcycling for seventeen years now he says and the number of other Scotts he has seen could still be counted on the fingers of one hand and *never* a 2/speeder. Jim runs a '29 De Luxe Flyer and would like to exchange correspondence and particularly photographs with other members. Regarding his own bike Jim says that after 3 years of steady restoration and improvements it is now pretty well spot-on and that all the legends and stories he has heard since a small boy about the fantastic roadholding and handling are, for the most part, true. He regrets that "out there" they are so out of touch and never get a chance to see some of the innovations of the "real clubmen." Jim's address is 53, Forest Avenue, Newton, Adelaide, South Australia.



An interesting picture of a 3/speed Standard 1924 or '25 I suppose. In the original, kindly loaned from Beaulieu via Duggie Dunford, much artist's work is evident but even so the presence of "A" bars, separate oil-tank, footboards, "outside" front guard and electric headlamp (but no dynamo) are of interest.

The Technical Correspondent "Lofty" Avis's new address is 7732, Rue Mont Brun, Cité de St. Leonard, Port Maurice, Montreal 36, Canada. Lofty says—"No Scott has arrived yet so life is without much "savour." Joan Avis has now appointed herself "Overseas Co-ordinator" and looks forward to hearing from other "far flung" members.

Lofty's dismantled '28 Flyer is now on the market. He couldn't run to taking two machines and spares as well to Canada. The Spares Registrar and I recently examined the bike, which is at present at Tilbury, Essex. It's fair to say that the machine would not appeal to a "back to original" enthusiast but for all that, it does have a charm and character all of its own. As any of Lofty's acquaintances will confirm he's primarily a *rider* and always has been. The '28 Scott was used during and for several years after, the war, when all manner of "dodges" were required just to keep a machine on the road. Lofty will tell of running the bike on a 50-50 mixture of T.V.O. and paraffin and chains that were literally only available on the "Black Market." The machine now represents, to my mind, a sort of live memorial to those clubmen of the era whose very ingenuity and resourcefulness kept their machines going till spares were generally available again. Lofty recently commenced a rebuild of the machine and has finished the engine and wheels. The bike, which is nearly complete, but dismantled, is valued at £25 with a few spares and, of course, some work still to be done. More information can be obtained from Lofty himself.

Dear Ed.

I was interested in the references to the Scott Cyc-Auto in December's issue of *Yowl*. It should be remembered that these were one of the pioneer autocycles in Gt. Britain and as far as I remember, sold in 1936 for about £16.

The enclosed photograph shows one which I owned, and it served me very well. You were correct in saying that Messrs. Winsmith of Finchley finally took over complete manufacture on the demise of the old Scott Company. One of the last things Winsmith's did before they in turn gave up the Cyc-Auto was to put the engine into a motor-cycle type frame and add shaft drive. This, together with plunger rear suspension and teles made a very presentable little lightweight, looking like a cross between the B.S.A. Bantam and the Sunbeam S8. The 98 c.c. engine developed 2.5 b.h.p. at 4,000 r.p.m., and the machine was displayed at the 1953 Earl's Court Show priced at £78.

Now for a trio of different subjects.

(a) I, like other members, have just received my sub. reminder and with it a form requiring details of machines owned. Do you think it a good idea if in the future Registration Numbers could also be asked for on these forms? The Registrar would then be in a position of being able to answer any inquiries as to the whereabouts of any particular Scott and this would benefit idiots like myself who hanker after machines they once owned. It could benefit the Club also if a fee were charged for every inquiry.

(b) What about starting up a "Letters to the Editor" section in *Yowl*? This would give chaps a chance to have a little say without having to write an article.

(c) A. W. Judge (December issue of *Yowl*, page 10) did not make such a bloomer after all, he just jumped the gun! Shipley designer Shackleton did design a vertical cylinder 650 c.c. 4 bearing touring engine round about 1930 with outside driving sprocket and cross-over drive to a 4/speed gear box, but it was only made in prototype form and did not reach production stage. A year earlier two racing versions were made but were not a success.

ERIC CLIFFE.

Hugh Harrison would like to hear from members interested in quantities of not less than $\frac{1}{2}$ pt. of Scott cylinder enamel (actually it's a colouring added to a varnish base). If sufficient enquiries are received it can be arranged for a small quantity to be produced by the original manufacturers and to the authentic Scott recipe. It was in fact a little darker than the Alizarin Crimson tint recommended previously. Write to Hugh at 7, Moorfield Ave., Ealing, London W.5.

Who saw one of Derek Shire's "Egg Boilers" featured in "Blanding's Castle" the new P. G. Wodehouse series on March 10th? Complete with Brookland's "can" it produced plenty of oil-smoke down the impressive drive. It was apparently being used for touring England in the play! I'm told, though, this was not the machine's debut, having previously been seen, stationary, at Piccadilly Circus.

In a recent letter to the Spares Registrar, Peter Godwin supplies some useful information for 2/speeder rebuilders. He has a 1926 machine but has been unable to obtain steering head races. After investigation he reports that they are the same as used for certain tradesman's bicycles and can be obtained from Brown Bros. via one's local cycle dealer. A new batch has been made so they are readily available. Peter paid 8/- for the four.

Dear Sir,

Your recent letter is received in good order today and thank you for the copy *Yowl*.

What does the word above-mentioned mean?

Indeed I own a Scott which is in perfect condition but the year of birth is, according to my information 1912, because the man who gave the machine, in disastrous bad condition, supplied me a handbook and a picture which was taken in 1913 on his wedding trip to Switzerland. And the wife, who is now a widow, assured me that her husband, Mr. Japikse, studied his practical year in 1912 in England at the Scott factory or nearby. I have also a design in pencil written with eventually future plans at that time for developing it.

The exact picture of my Scott is on the cover of the book called "VETERAN & VINTAGE MOTOR CYCLES" written by James Sheldon which I believe you also have. It was a great help for me to restore my Scott. The engine number is 2322. I am very likely to hear more from you.

Yours faithfully,

W. S. LAMING.

(2322 is in fact a 1914 No. but it appears that Mr. Laming's bike is after all a conventional machine—Ed.).

The day after writing the piece on casting, which appears elsewhere in this issue, I received, by coincidence, a letter from Jim Best dealing with the same subject. Jim has a friend, "Herb." Fisher, who has had some R/H aluminium shields cast for "Flyers." They have a hole for the oil pump on the mag. platform and need polishing of course. End caps for "coffee-pot" silencers are also available but these need machining also. He is at present preparing a pattern for the L/H shield (the one with the little "ear" which goes over the rear tray bolt) and these will be available shortly. Approximate prices are 50/- R/H shield and 30/- silencer ends depending upon demand, which applies also to the L/H shield—this price is not yet known. Please write to Jim at 17, Stirling Road, Whitton, Twickenham, Middx. Jim also recommends Jenkins Bros., 52, Hounslow Road, Whitton, for boring blind-head blocks—25/- per bore to S.O.C. members, given the pistons or dimensions.

NEW MEMBERS

Clifford, G. E., 11, Dunster Drive, London. N.W.9.
Cravos, P. T. 86, Pencisely Road, Llandaff, Cardiff.
Goldthorpe, B. C., 38, Bromley Gardens, Shortlands, Bromley, Kent.
Lindley, D., 133, Sunnybank Road, Mirfield, Yorkshire.
Penpraze, R. N., 7, Upper Castle Park, Belfast, N. Ireland.
Taylor, P., 43a, Leicester Road, Shepshed, Loughborough, Leics.
Wood, S. R., 386, Western Avenue, Llandaff, Cardiff.
Hughes, Ian, 1, Elwell Crescent, Parkes Hall, Woodsetton, Nr. Dudley, Worcs.
Fritz, S. E., 1, Melbourne Road, Merton Park, London, S.W.9.
Cutler, J. P., 9, Crowley Drive, Wath-upon-Deerne, Nr. Rotherham, Yorks.
Hambridge, P., 25, Kennington Avenue, Great Tapots, Essex.

CHANGE OF ADDRESS

Rhodes, D. K., "The Warren," Raith Drive, Kirkcaldy, Fife.
Bushell, D. J., 120, Farningham Road, Caterham, Surrey.

REJOINED

Brandstetter, W., St. Polten, Austria.
Parry, D. E., Air Staff, H.Q. Royal Air Force, Germany, B.F.P.O. 20.
Collins, T. C., 101, Cottenham Road, Histon, Cambs.

RESIGNATIONS

Butler, J. C., 83, Judd Street, Tonbridge, Kent.
Ransley, D., 37, Rooley Lane, Sowerby, Sowerby Bridge, Yorks.

SERVICE SHEETS

Before his departure to the "wide open spaces" Lofty Avis our Technical Correspondent (who, in spite of the family upheaval has kept up the wrist movement and has produced an enlightening piece on piston seizures and their avoidance for the June issue) grew tired of repeating Scott "lore" to novices. He, therefore, produced at his own expense some "cartoon strip" service sheets, based primarily on the short maintenance series which appeared in *Motorcycling* in Feb. '62, but including a few essential extras. They are available from our new Membership Secretary, Harry Beal, 25, Beeleigh Cross, Basildon, Essex. price 2/6d. including postage.

WANTED: Rear wheel for '26 Super or brake drum and brake plate only, Any size or condition considered. Peter Godwin, 59, Normanhurst Road, Walton-on-Thames, Surrey.

WANTED: For '29 Replica, Rear brake rod, Aluminium L/H & R/H covers (footchange box) Extension and silencer for 2 ins. dia. L/H exhaust pipe, also rear stand and Scott girder fork guide bushes and nuts. A. L. Shepherd, "Grenaby," 1, Kilburn Avenue, Eastham (1209) Wirral, Cheshire.

WANTED: Vintage Scott wanted. One needing restoration not objected to as long as it is fairly original. Offers to Eric Cliffe, 1, Broadcroft Ave., Stanmore, Middx.

WANTED: Part "G" $\frac{1}{2}$ comp. linkage (Feb. *Yowl*) any vintage control levers or parts, some to exchange. Racing pad for rear guard, Original Scott squirrel mascot, Good 16, 18 & 20 tooth outrigger sprockets. Geoff Lee—Editor.

WANTED: For 1926 Super Squirrel 2/speed machine. Complete rear wheel or hub only. Rear stand. Engine tray. Complete half compression valve assy. Twin A.M.A.C. or similar handlebar levers complete for 1 in. bar. All wearing parts for 2/speed kick-starter. Sheet metal cover for magneto. Sound & working magneto and generator, electric lamp, cut-out and battery case. Radiator in good condition, maximum height 11 ins. A. R. Tucker, Cavendish House, Bridge Street, Bishop Stortford, Herts.

FOR SALE: Veteran Triumph (1914) Rough but restorable. Altered to 1915 spec. by having S/A gearbox grafted on. Will swop for any pre '30 Scott regardless of condition and which need not be complete. Also available brand-new 2 $\frac{3}{8}$ + .020" (L.S. 498 c.c.) pistons and rings (rings 2/- each) 2 Rear "D" section mudguards, new and undrilled £1 each incl. postage. Glyn Chambers, 80, London Road, Knebworth, Herts.

FOR SALE: Small Lycett saddle, scruffy but sound 15/-. L/H Replica longstroke crank 50/-. Cylinder holding-down bolts, 7/6 set four. Vintage (square section) transfer ports 7/6 pr. 4 gallon tank, no caps but otherwise excellent 50/-. Brass (vintage) 1 in. twistgrip 10/-. Radiator mounting rubber washers, new, 2/6 set of 6. Pair mudguards Dowty-forked Scott £2 not rusty, Cylinder heads 30/-. 2 rear wheels minus races, brake parts etc., W.M. 3 & W.M.2. 25/- each, sprocket 30/-. Geoff Lee, Editor.

FOR SALE: Pair Webb and pair Dowty forks. 2 bars (sports and touring) Mag. clutch and air levers also twist grip all 1 in. dia. Wanted cheap radiator. Wilson Barrett, 17, Godley Road, Halifax, Yorks.

FOR SALE: 1959 Engine, completely overhauled and ready to run, very sound—offers. Gearbox with clutch and folding kick-start—best offer. Stove enamelled oil tank 60/- o.n.o. David E. Parry, Air Staff H.Q. R.A.F. Germany, B.F.P.O. 40... (Parts in this country).