OCT 1961 750 BULLETIN.

# What's Cooking? A competitions gossip column—Contributions invited.

## U.2 NEWS—By Arthur Mallock

W.J. 1515, the original U.2 1172 has been extensively re-hashed by Colin Smith and now races at the **Coldwell U.2.** It has Cooper 500 front wheels, B.M.C. A. engine and gearbox, and off set Minor 1000 rear axle, using an A.35 near side half shaft. He was in the lead at Linton on Ouse when eliminated by gearbox trouble.

A cheap light strong gearbox with reasonable ratios for 1000 c.c. sports car use is difficult to find.

Colin was using a standard A.35 gearbox with ratios 1.412, 2.374 and 3.628. These are not too bad for Rufforth or Brands Hatch, but pretty well useless anywhere else. The new Sprite ratios are 1.357, 1.96 and 3.2. Not ideal by any means, but representing a saving of about £35 to £45 compared to proprietary close ratio boxes, would seem to be a reasable compromise for the "poor man." They should also be very useful for hill-climbs.

John Harwood's U.2 Junior has been reshod in line with my car, i.e., ex-Gilby 4½in. rim "Sprite" rear wheels and Condor 13in. fronts.

It has a completely new body and chassis much narrower and more curvacious. The engine has been moved back, to give 55 per cent. weight on the rear.

The narrower body results in a very draughty right elbow.

Steering is now rack and pinion, using a cantilevered rack from a Lloyd 600—1¾ turns between generous locks.

John's sponsor had all the bits to make a "Cosworth replica" engine: Mark III cam, 40 D.C.O.E.'s Cosworth head, etc. Unfortunately, so far he hasn't found the right way to screw them all together and it has proved much slower than last year's "750" engine, i.e., Jack French tuned with Wershat S.U. manifolds and push-rods.

My own car now has an engine using "Martin" head and cam and is giving some really useful power.

7in. x 1¼in. rear brakes were replaced by 8in. x 1½in. LS/TS early in the season without much improvement, but A.40 2 LS 8in. x 1½in. are now used which are very much better. Inside rear wheel-spin has been greatly reduced by softening the rear springs (now only four leaves).

A weight reduction campaign has unfortunately reduced the laden rear weight to 52.5 per cent. which is well below optimum for Junior, so that at Silverstone my fastest lap (97.03 m.p.h.) was my second (with a full tank). Perhaps if I can get an 1100 c.c. engine, I can put my lorry battery back again. Next year the engine will be much further back.

I shall be trying out a Triumph Herald rack and pinion at Snetterton.

John Heseltine, assisted by Derek Clarke, has the honour of being the first non-Works U.2 to be completed. Its debut at the "8 clubs" was thwarted by an argument with an Alfa-Romeo in practice, but things went a bit better at the Trio. Main troubles were: Heavy steering caused by excessive negative camber, some queer U.J. angles and steering wheel too far from driver. Rear shockers were also too hard.

John's car uses an A.30 rear axle, and to avoid having to off-set it, the whole chassis is displaced three-quarters to one side. Engine is ex-Yimkin 1172.

John damaged one of his Cooper 500 front wheels in his prang, and Coopers shook everyone rigid by supplying a replacement "over the counter."

David Wragg, another 750 member from Sheffield, hopes to have his 1,000 c.c. sports model ready for the Club Snetterton Meeting (this will make three at the Bank Holiday meeting). His Ford 105E engine has an unmodified bottom end, with Jack French head and cam from my last year's engine. Northern meetings often bar twin Webers, which works in well with financial limitations. Gearbox is Ford 105E, with Buckler gears. Front wheels are Ford 100E, and rear axle is off-set Minor 1000 as on the Works cars.

Roger Fry is building a "Poor Man's" version with A.7 rear axle and the Arden tuned 1172 engine and Wolseley Hornet gearbox from W.J. 1515.

John Mangoletsi is building a sports car roughly to the same spec. as David Wragg, but with a B.M.C. engine (G.M. tuned of course), and Mr. Prince, of Arthur Prince's Garages, Loughborough, should have an exciting vehicle when he gets his 1,100 c.c. Climax engined version going.

A thought about steering wheel position. Both John Heseltine and myself found that a near vertical steering wheel combined with a "Farina" style driving position result in an impossible physical effort being required. I moved the wheel 1½in. towards me, which quite transformed the control obtainable. A study of current "arms length" driving position will reveal that they are invariably combined with a "Chummy" like steering rake, which of course gives a better leverage at arms length, so if you favour a steep rake, bear in mind that the wheel must be much closer to you to give a reasonable leverage.

"The Mallock theory of streamlining for open-wheeled cars"' came in for a severe test at Rheims recently and passed with flying colours. Stated briefly, the theory is that small overall dimensions are more important than flying pencil body silhouettes.

The U.2 has a track of 44½in. and a maximum body height of 22½in., both about 10 per cent. less than most rival Juniors.

The U.2 was some 9 b.h.p. down on power due mainly to No. 4 inlet cam being almost non-existent, but nonetheless held a corrected rev. counter reading of 8,100 r.p.m. on the Soissons straight. Using the Dunlop figure for rolling radius of the 5.25 x 13 tyre and allowing 2 per cent. for tyre growth due to centrifugal force, and a 4.22 ratio, this is equal to 137 m.p.h. which is very close to the fastest speeds recorded by the works cars. Bearing in mind the power difference, this suggests that the drag of the U.2 is certainly no greater than that of its rivals.

**P.S.**

Since writing the above notes, there have been several new developments.

David Wragg finished fourth in his very first race at Mallory Park on August Bank Holiday. His next meeting he was third and then second at Catterick.

John Heseltine has been a fairly consistent fourth in 1172 Formula events, but an engine development programme has been thwarted by an overseas posting.

John Harwood's "Sponsor" has proved rather a mixed blessing, as he takes six weeks to build an engine and will insist on "Improving Cosworth". John has now decided to look a gift horse in the mouth and for Zandvoort he reverted to his last year's Jack French S.U. engine. *Result*—best showing this year, when he finished eighth. I finished sixth, an altogether delightful trip.

The early part of the season was rather miserable for the Mercury Stable. Persistent engine trouble necessitating a rebuild on the average of once per meeting.

Most of the trouble was lack of lubrication.

By putting back the ¾in. we had chopped off the sump, oil temperature dropped from 112°C. to 88°C. Oil surge was cured by filling the sump 1½in. (one and a half inches) over the full mark. Strange inconsistencies in oil and petrol consumptions have also been explained. The trailer is rather nose down and with a full tank, gravity has been causing the carbs to fill and flood, causing the loss of 1½ galls. of petrol, at least a quart of which found its way into the sump. We have now done five meetings without the engine missing a beat.

Special cams will reveal weaknesses in the lubrication of 1172's. I would strongly advise fitting an oil temperature gauge and keeping the temperature below 100°C. An oil cooler is a must.

My local acting unpaid voluntary assistant, Mick Paris, has been driving my car in sports car events. He has only driven in three races, finishing fifth, second and fourth, usually being fastest "1,000".

# The Saga Seven

**by David Gosling**

I think you will agree that on sighting, the car appears to be not so much slab sided, as slab topped! This 750 is so low and well finished that you can certainly say that B. O. Patchett has got away with constructing a flat panelled-square cornered body, the air intake treatment also contributing very much towards this end. The bonnet is low enough for the engine to protrude through it, so it is enclosed in its own Cooper-Bristol type trunking. In line astern of the block is the header tank for the inevitable cross-flow rad. The aero screen just equals the height of the trunking. Also intriguing is the fact that in spite of the "Farina" line to the front end, the car has a "boat-tail", which only heightens the effect.

On the technical side, the Saga Seven shares a number of features with the hottest 750 formula machinery as well. The basis is a 6ft. 9in. A-frame, boxed, and powered by a +80 thou rebore Ulster engine. This engine, of course, has the advantage of having the 1½in. pressure lubricated crank, gear driven mag and water pump, and a very good design hot cam, as standard. However, it has been further modified along the usual 750 formula lines by the fitting of 1⅛in. inlet valves, Nippy deep sump, lightened flywheel, '36 head, and balancing the crank. About cylinder heads:—

The '36 head, like the '37, is made of cast iron, has the Ricardo 1914 pattern squish head (yet another example of Austin progressive design policy!!) and plugs offset over the valves. There are two differences, the '36 still has 18mm. plugs, whereas the '37 has 14s, and the combustion chambers depend on differing lines of thought.

The '36 type allows the fresh charge to utilise the back of the valve to get in, if it so desires, travelling back across the valve head as shown. The later head makes the assumption the gas will take the shortest route regardless, and blanks off the alternative long-cut by bringing the chamber roof down low over the valve area. The '36 can take pretty hefty face milling before a high lift cam can cause valve crash with the roof, in extreme cases taking on '37 type breathing as outlined above. The other has the better breathing-c.r. compromise as standard, but will obviously not allow as much milling without putting in valve recesses. These iron heads and most of the alloy ones all follow the 1914 Ricardo pattern parrot fashion, and it has been left to our own 750 members to develop the s.v. head a stage further. Their mod is this, looking at the gasket face:—