

Minutes of the Motorcycle Development Meeting  
held on 17th October, 1961.

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Present:- Major V.T. Mountford  
Mr. J.J. Booker  
Mr. G.H. Baker  
Mr. R. Thomas  
Mr. R.A. Wilson-Jones

Matters arising:-

1.- Bottom Link Front Forks:-

Three sample pressed steel casquettes have been received from Lee Metals, and although there was some doubt of the location of the steering lock aperture, it was decided to accept delivery of initial quantities so as to enable production of the first forks to be completed. A complete production fork would then be assembled, and this is to be run on the road fitted up with all meters etc. as soon as possible.

It is to be noted that when the fork is available in its final production form, it is to be tested for the alignment of the head lamp beam.

The trouble with damper units reported in Mr. Wilson-Jones' report of the 6/10/61 has been dealt with.

Front Mudguard:-

Mr. Thomas reported that he had not yet had time to prepare a design for a spindle mounted front mudguard. He undertook to produce a design for the next Development Meeting.

A decision was still awaited with regard to the suitability of the P.T.F.E. bushes. A small mileage has been covered and tests will continue on the first production fork.

2.- 750 cc Engine:-

A design for a 750 cc engine incorporating all the following modifications to oiling which had been approved :-

- (a) Enlarged sump
- (b) Steel ring seals for cylinder spigots.

- (c) The draining of oil from the inlet camshaft tunnel direct back to the tank, and from the exhaust cam tunnel to the timing cover.
- (d) The draining of oil from the timing cover direct to the sump by means of a drilled oil way in the casting.
- (e) Ferrules in the push rod tunnels to avoid oil leakage at the cylinder head joints.
- (f) Cross cylinder head joints.

A sanction for 250 engines has been issued, and it is hoped that production will commence in mid-March.

A prototype engine incorporating all the above modifications is now being prepared, and will be tested as soon as possible.

A prototype of the new type frame for this engine is in course of production, and it is intended to test the engine in this frame.

In the meantime, Mr. Booker is having a piston lightened as much as possible, and a crankshaft is being rebalanced to a factor 10% lower than standard with a view to reducing vibration.

### 3.- Silencing:-

Mr. Baker produced a silencer in which the centre perforated section and end are retained solely by self tapping screws. This dispenses altogether with the centre rod, which has been used hitherto, and which has been a source of trouble. Some discussion was entered into regarding the possibility of the components coming loose, and it was decided to assemble the sample silencer, and subject it to a rigorous test at M.I.R.A. without delay. The packing in this instance is to be co-si-wrap.

With regard to further development; after some discussion it was agreed that a silencer should be produced on the lines of the existing one, but with a diameter increased by  $\frac{1}{2}$ " so as to permit the use of a perforated tube enclosed first by fibre glass wool, and the fibre glass wool then enclosed by an expanded metal wrap - finishing up with a final layer of wool between the expanded metal the the silencer body.

Subject to the results of the aforementioned tests being satisfactory, the silencer can be retained by self tapping screws as outlined above.

### 4.- Five Speed Gearbox:- (Heavy weight)

Tests of the five speed gearbox when received back from Albion's

are to be continued on the 750 cc experimental engine. The trouble reported on the five speed gearbox by Mr. Wilson-Jones in his report of the 6/10/61 appears to be due to bad maintenance or faulty workmanship.

5.- Crusader 350:-

Mr. Booker reported that he had checked by means of a sectioned chain cover that the clearance between the heads of the screws of the spring retaining plate was adequate even when the original long distance pieces were fitted. The fitment of the correct pieces should ensure even more clearance.

It was pointed out that it will be necessary to readjust the spring pressure to allow for the reduced length of the packing pieces. It was also pointed out that it might be necessary to utilize six springs.

Mr. Booker reported that a Crusader 350 engine was being rebuilt with a new sample piston from B.H.B. This gives a compression ratio of approximately 8.5, and it may therefore be necessary to use a gasket to reduce the compression ratio to 8.25. A prototype Crusader 350 must be built as soon as possible.

Clutches:-

The intention is to use a malleable iron clutch drum instead of steel on all 250 cc machines, and the new 350 cc. This is to include the slow taper on the mainshaft as is used on the new Crusader 350 type engine. Mr. Thomas will investigate the whole position.

Chains:-

Whilst experiments are to continue with the use of heavier chains on the Crusader Sports machine, it was stated that on the Crusader 350, which is undergoing road tests, the wear on the rear chain appeared to be less than would be expected. This could be attributed to the fact that a larger countershaft sprocket is used on this machine, and therefore the use of a larger countershaft sprocket on the 250 cc might have the same result. Mr. Thomas is to investigate the possibility of using a larger countershaft sprocket and rear wheel sprocket on the 250 cc machine.

Mr. Booker is to compile a list of new components involved.

6.- 250 cc Frame with B quality side tubes:-

No decision will be taken in this respect until it has finished 500 miles on the Pave.

Adopted  
No scrap - No delay

7.- 175 cc Engine:-

Mr. Thomas submitted a general layout drawing of the 175 cc machine, which was broadly approved, and he was asked to finalise this, and then proceed as quickly as possible with the engine details so that a prototype can be produced.

8.- Chromium Plated Cylinder Bores:-

The matter rests.

9.- The Scooter:-

It was urged that the second prototype scooter should be completed as quickly as possible. Attention being paid in the new one to carburettor adjustment, and the other points raised in Mr. Wilson-Jones' report.

10.- Batch Tests:-

It was agreed that a Super Meteor solo, and a Constellation model should be tested as soon as possible.

11.- Nylon Idler Gears:-

Reports indicated that nylon was not a suitable material for the intermediate pinion on the 250 cc type engine, but it was agreed that this material should be used where possible on the prototype 175 cc engine.

12.- Sports Airflow Pairing:-

Nothing to report.

*J. J. Booker*  
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(J. J. Booker.)