

GENERAL DISCUSSION ON THE ENGINE DIVISION PRODUCTION PROGRAMME - 4/2/1947.Present:

Mr. Moran	Mr. Knight
Mr. Story	Mr. Bellward
Mr. McDonald	
Mr. Brasch	

1. The following projects constitute the programme for the Engine Division for the next six (6) months:

- (a) Prototype Delivery Van.
- (b) Production of R-1830 Spares for R.A.A.F., R.A.F. and civil airlines.
- (c) Overhaul of R-1830 and R-1340 engines for R.A.A.F. and reconditioning of components.
- (d) Overhaul of R-1830 engines and factory reconditioning of components for R.A.F.
- (e) Factory reconditioning of R-1830 components for civil airlines.
- (f) Overhaul of R-985 engines for Associated Airlines and the reconditioning of components (engines and airframe).
- (g) Merlin inlet and exhaust valves.
- (h) Automobile valves.
- (j) General commercial work for outside customers.
- (k) Commercial work for Aircraft and Housing Divisions.
- (m) CA-18 assemblies and components.
- (n) Tool design for General Motors.
- (o) Tool manufacture for General Motors.

2. Regarding priorities, every effort is to be made to complete the components and assemblies for the Prototype Delivery Van. We are responsible for the complete power unit, gearbox and differential assembly. The front axle unit and drive shafts will be used from the Adler chassis. In addition, Engine Division will provide the steering gear and housing assembly which includes several Adler parts.

Two pairs of 600 c.c. cylinders have been made, one pair of chrome molybdenum steel and the other pair of the same material, but nitrided in the bore. The former pair are to be fitted first, and if they prove to be unsatisfactory, can be replaced by the nitrided cylinders. A design has been prepared for a pair of 750 c.c. cylinders and pistons. Material is to be obtained for these components, but the latter are not to be made unless the 600 c.c. engine proves to be inadequate for the purpose. The cylinders are to be made from chrome molybdenum, either plain or nitrided, as indicated by the tests on the 600 c.c. engine. In the event of the 750 c.c. cylinders being necessary, the existing pair of heads is to be reworked as required, but as we are concerned with obtaining high torques at moderate speeds, it should be unnecessary to increase the size of the valve.

It will be necessary to have a reasonably accurate estimate of the cost of production of the delivery van components, for which the Engine Division is responsible and therefore, the preliminary planning and estimating on all such components is to be accelerated immediately drawings are available. Some design changes will be necessary in production, but it is considered that the present prototype design is a reasonable basis for an estimate at this stage. Planning and estimating for this purpose will need to be given priority over ordinary commercial work.

In regard to design, the preparation of a set of production drawings is to be expedited as far as design capacity will permit. This will be the subject of a separate discussion.

3. The second priority in the machine shop is the production of spares and factory reconditioning of components for aero engines. Every effort is to be made to ensure that Associated Airlines requirements are met, but in general, R.A.A.F. and R.A.F. work will receive priority over civil airlines.

4. We are behind schedule in the production of some CA-18 components and this position is to be rectified at the earliest possible date. Subsequently, CA-18 may be expedited, i.e., ahead of schedule, if production capacity is available to ensure that there is no hold up in Mustang deliveries.

5. Valve production is handled in a separate section of the factory and in this department Merlin valves are to be given priority over automobile valves to the extent necessary to maintain Lidcombe's schedules.

It appears that orders may be forthcoming for R-1830 valves in sufficient quantities to justify production. As these valves are the components for which the section was originally established, this question must be given serious consideration. It appears that the inlets could be readily put in production as full tooling is available, and there have been no engineering changes. Some semi-finished exhaust forgings which were processed for the R-1340 hollow head valve are available and portion, at least, of these may be suitable to use for R-1830 exhaust valves. There have been changes on the stem bore and also on the collet groove, so that some tooling changes may be necessary before exhaust valves could be made.

The Planning Department is to clarify this position as soon as possible, so that a clear picture of the tooling necessary will be available.

So far, we have not been able to assess tool life accurately for the production of automobile valves. This will be the subject of a separate discussion, to decide whether it is likely that the job can be put on a satisfactory production basis.

6. Commercial work for the Aircraft Division relates almost completely to decorative plating. Separate plating and polishing sections are being established to handle this work and adequate capacity should be available to meet the 'bus and housing requirements. If surplus capacity is available, outside work may be undertaken, but at all times C.A.C. work is to have priority.

7. General commercial work for outside customers has been the major portion of the programme in the Planning and Estimating Departments, but the full benefit has not yet been felt in the machine shop. It appears that we shall need to cut down this work in favour of the delivery van and ultimately the "Nene" engine. No jobs in addition to those already to hand are to be started, unless they are particularly attractive in providing a large amount of factory <sup>work</sup> for a relatively small amount of planning and other preparatory effort. Any jobs now in hand which provide only a small amount of factory work and are doubtful as regards the acceptance of our quotation are to be stopped, and the customer advised. This is likely to occur in only a few cases.

8. Tool Design for General Motors.

We originally promised to allocate two hundred (200) man hours per week and we should adhere to this promise if possible. However, so much delay has occurred due to work not being available from General Motors, that we are not bound by the original promise made and our own work must be given priority if the necessity arises.

9. Tool Manufacture for G.M.H.

We originally indicated that we would allocate one thousand (1,000) man hours per week on this work. However, this has not been possible, due to -

- (a) Shortage of work from G.M.H.
- (b) Industrial holdups which have delayed supply of castings.

We should make every effort to handle as much G.M.H. work as possible, as this is our only tooling programme available. There should be plenty of capacity to handle our own work, but when the "Nene" programme starts, it will be necessary to review the position in regard to capacity available for G.M.H.

*A. Knight*