

10th, January 1962

FR 215

Mngr.....
Sec.....
Asst. Sec.....
Ch. Acct	15 JAN 1962
.....	Supply Sales
Stores.....
Ansd.....	Int.....

MISSION AUSTRALIENNE
S.N.E.C.M.A.
70, bld Kellermann

PARIS 13e
France

COMMONWEALTH AIRCRAFT CORPORATION PTY.LTD.
BOX 779 H P.O.
Elizabeth st.

MELBOURNE
Australia

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QUAL. ENGR ✓	FOUNDRY SUPT.
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CH. INSP. E. F.	TOOL. ROOM. SUPT.
A/F MANAGER	SUPT. INSPECTION

Attention : the MANAGER

Subject : Heat treatment test pieces.

Dear Sir,

In response to your letter M 157 referring to the supply of extra forgings for heat treatment test pieces, we advise that the basis already adopted for the ordering of forgings is to allow an agreed percentage to cover both testing and possible wastage during manufacture. The following tabulation illustrates this point :

<u>No. of parts</u> <u>per engine</u>	<u>No. of parts</u> <u>for 10 engines</u>	<u>Add the following</u> <u>percentage</u>	<u>No. of forgings</u> <u>ordered</u>
1	10	20	12
2	20	15	23
3	30	10	33
more than 3	-	10	-

Forgings have been ordered with conditions de contrôle specified to either AIR 3385 "Instruction relative aux pièces forgées et matricées destinées aux constructions aéronautiques" or to the appropriate SNECMA DT 81 fiche d'essai de forge.

These specifications completely cover the procedure for acceptance of forgings, but in order to assess whether the quantities of forgings given above would be adequate for our requirements, the SNECMA procedure relating to heat treatment test pieces has been investigated and details are included in the

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appendix I prepared by Mr. KING.

It will be noted that the number of additional forgings required for cutting up is very small and since all forgings supplied to G.A.C. will already be covered by the AIR and/or DT specifications, the need for destructive production tests is considerably reduced and it is considered that the existing quantities of forgings on order should be adequate to meet most eventualities.

Yours faithfully,



G.H. FOSTER

APPENDIX I - Heat treatment test pieces ATAR 9C engine.

In regard to test pieces used during heat treatment at SNECMA Kellemann Heat treatment dept, the following is the position :

(a) Integral test pieces.

These are employed only one part - the turbine shaft and wheel forging.

N.B. These parts on order for C.A.C. (Hard core category) are being supplied at a stage after heat treatment and when testing has been carried out.

(b) Separate test pieces.

These are employed only for case depth determination on batches of carburised or nitrided parts. The test piece takes the form of a small piece of notched bar material that is subsequently fractioned.

(c) Turbine blades.

These are received at Kellemann in the solution heat treated condition. Samples are selected in accordance with the fiche d'essai de forge, and tested accordingly. There are therefore no test pieces used during production batch ageing heat treatment.

The control measures adopted at S.N.E.C.M.A. for the heat treatment operations are :

(a) Regular routine checking of furnace temperatures and instrumentation.

(b) Hardness checking by inspection.

(c) Limited destructive testing only.

N.B. Cut up tests, as a routine measure during production, are in fact not carried out. In general, any destructive check testing that is required is carried out on parts rejected during production for faults revealed, or for being outside dimensional tolerance.

It has been advised that providing C.A.C. are supplied with forgings that have been accepted by SNECMA as complying with specification AIR 3385 and the fiche d'essai de forge where applicable, and released as such, there would be no need to carry out any further destructive testing during subsequent heat treatment at C.A.C.

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