

21 January 1957  
MR. J. A. MORLEY  
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CHANGE CONTROL CF-105 AIRCRAFT

With reference to your memorandum of December 28, 1956 and the R.C.A.F. letter of January 2, 1957, it seems that very significant basic issues have been raised by this correspondence.

Interpreting the R.C.A.F. letter at its face value and in the light of the contractual arrangements for the CF-105, it appears that the R.C.A.F. intend to control in detail the development of the aircraft from first flight onwards. Engineering programs for the CF-105 include financial and manpower allowances for the continued engineering development of the aircraft during the test flying phase. The complexity of the aircraft and its systems is such that development tools in the form of flying aircraft must be made available to the designers to enable them to complete the development prior to offering up the aircraft for R.C.A.F. evaluation. This development phase is reflected in a very significant engineering effort and we have estimated the output resulting from this effort in terms of its effect on the manufacturing program as something approaching 17,000 equivalent new parts for the Mark 1 aircraft alone. We understand that the Manufacturing Division's budgets for Program 4 include allowances for undertaking the work implied by this output.

The R.C.A.F. letter appears to indicate that it is their intention to control in detail this development effort. If this is to be the case, and we feel most strongly that this must not be so, then it is clear that not only are we not the overall weapon system manager but we shall have relinquished the technical management of the airframe itself. Experience on the CF-100 shows that the flow time necessary to prepare, submit and receive approval of an ECP is of the order of at least one month, although we do have cases which have been in R.C.A.F. hands for a year. Clearly any control as cumbersome as this would extend the development period to a fantastic extent.

As a result of discussions with R.C.A.F. Officers we get the impression that the R.C.A.F. letter does not necessarily represent firm policy and that a return to the agreement reached in the October meeting with the R.C.A.F. is probably much nearer the

intention. You will recall that it was then agreed that development ECP's covering changes within the definition of the scope of work would be submitted for record purposes only, and that these changes would be processed without R.C.A.F. or D.D.P. approval, whilst on the other hand development ECP's for changes resulting from requirements outside the scope of work would be processed through the formal channels with the requirement for D.D.P. and R.C.A.F. approval. Should this be the case then the problem is no longer one between the R.C.A.F. and the Company, as the Company will be firmly established as at least the airframe system manager.

The problem is then within the Company. As you are aware we regard the present unsettled state of Company policy on internal system management with considerable concern. Control of the program is at present divided between the various divisions with the President himself providing the only strong co-ordinating function. Although this works well enough in matters of major policy, it is difficult to see how this can be successful in dealing with the multitude of minor problems arising out of the development program. Obviously we must demonstrate to the customer our capability to manage the airframe system development program before he will gain the confidence to entrust to us the management of the overall weapon system.

In view of these circumstances we feel that the Company policy should be as follows:-

Firstly, with regard to the R.C.A.F. --

1. The Company should reiterate its understanding that it is charged with the system management responsibility for the airframe development program.
2. The Mark 1 Model Specification describing the first aircraft will contain a provisional master record index. The Mark 2 Model Specification will describe the Mark 2 combat aircraft and will include a sealed master record index at the appropriate time. It should be noted that delays with regard to the engineering content and availability of certain items, in particular items of GFE such as Astra I mean that the first Mark 2 aircraft will not be the complete combat aircraft and will be described by the Mark 2 Model Specification plus deviations.
3. The CF-105 contracts will be amended in line with the statement of work contained in AD 44.

4. All changes to the Mark 1 aircraft will be processed by the Avro Change Control Board. Development ECP's will be prepared for all significant changes within the scope of work and submitted to the R.C.A.F. for record purposes. However, the implementation of these changes will proceed without specific R.C.A.F. or D.D.P. approval. Significant changes outside the scope of work will be submitted to the R.C.A.F. by means of development ECP's. These changes will not be implemented until R.C.A.F. approval has been obtained and the work involved has been funded.

It should be noted that the intention is not to eliminate the prerogative of the R.C.A.F. to control the technical content of the aircraft. However, it is the intention to permit the Company to proceed with the development program as rapidly as possible. Development ECP's submitted to the Air Force to record significant changes, although these are within the scope of work, permit the R.C.A.F. to have detailed information on the policy and progress of the development program.

Secondly, within the Company the Engineering Division by reason of the development management authority vested in it will direct the C.C.B. in allocating changes. In cases where the allocation is essential to the progress of the development program, even though this allocation may involve some disruption of divisional activities, the Engineering Division will give the C.C.B. firm direction. In cases where the allocation has less development significance the allocation will be arrived at by the normal procedures of the C.C.B.

We believe that a firm Company attitude in line with these recommendations will permit us to undertake the development program with the minimum of interference and that at the same time we shall meet the requirements of the R.C.A.F. in this matter.

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