

19 December, 1955

Sir Roy H. Dobson, C.B.E., J.P.,  
Managing Director,  
A. V. Roe & Co. Ltd.,  
Greengate, Middleton,  
Manchester,  
ENGLAND.

VERY CONFIDENTIAL

Dear Sir Roy:-

I hope that you had a good trip back to the U.K. and that the weather was a little kinder to you than I understand it was on the way over. After being back here for five days, in the middle of another "agonising re-appraisal", I feel as if I had never been away.

I want to thank you, Sir Roy, for your wonderful hospitality on my stay at Sutton Grange. Mrs. Hardy really looked after me well, and Betty and Harry also looked after me at Tan-y-coed, when I went up to see the boat and stayed the night with them. I think Tan-y-coed is one of the nicest spots I have ever seen in the British Isles.

With regard to the trip itself, I believe that it was well worthwhile for a number of reasons, one of the most important to me being that the discussions with Roy Evans and the boys at Woodford, and also with Nicholson and his experts at the R.A.E., made me more sure than ever that we are really on the right track on the CF-105, especially with regard to the aerodynamic side. While Roy himself may or may not still have certain reservations about the aircraft, the reports which he very kindly obtained for me, of the tests which were done by Bethwaite and Leavy at Woodford on the leading edge notch and extension, which were tried on the 707, tend to confirm what we have been assuming on the CF-105.

I spent a day with Nicholson, Chief of the Supersonic Aerodynamics Group at the R.A.E., Mr. Newby, and Dr. Kuschmann, and a number of other people, and asked them point-blank whether they felt there was anything on the CF-105 which would cause them to lose any sleep, bearing in mind the present state of the art. Nicholson emphatically said that there was not, and that he still believed the CF-105 is more advanced than any contemporary aircraft on this side of the Iron Curtain. He indicated that the R.A.E. had put in good reports to the Ministry of Supply from time to time.

I believe I was encouraged most of all by a visit to my old friend, Bob Lickley, Chief Designer of Fairley's, since they have been having a lot of success with their delta which has done over forty supersonic flights in the last six weeks, and it is considered by Farnborough to be far superior, performance-wise, than the calculations would have indicated. I understand that the performance exceeds even what Fairley's had put out, which indicates that the drag is lower than anticipated.

The Fairley delta is closer to the CF-105 than anything else that is flying at the moment. It is a 60° delta with a high wing, with a 4% thickness chord ratio. The aircraft is almost a 1/3 scale model of the CF-105, which is certainly encouraging to me personally, and in the absence of our extensive supersonic wind tunnel tests, should give us a great deal of satisfaction.

I had an excellent discussion with A/V/M Satterley and his people, and also with Sir Thomas Pike and Mr. Handel Davies, Scientific Advisor to the Air Ministry. I also visited Sir John Baker and A/V/M Silyn Roberts, and Mr. Woodward-Nutt, the Principal Director of Aircraft Research and Development in the Ministry of Supply.

They were all very keen technically on the CF-105 and considered it to be the most potent weapon in its time scale. I told them that we could fulfil the requirements of their new O.R.329 with more power or the use of an auxiliary rocket and they were more than interested. One thing that worries them of course, is the method of financing the project. They feel that the Canadian version would be too expensive for them to purchase, and that if they were made in the U.K. they felt that there would be a difficult problem of liaison, similar to

the horrible mess that English Electric and Martin's got into on the production of the Canberra in the United States. I pointed out that if the aircraft was manufactured by somebody in the Group in the U.K., this would certainly not be a problem, since there would not be the same industrial pressure and reluctance of one company to have to accept something designed by another.

I suggested that there could be a middle course, which would be to purchase a fairly small number of aircraft from Canada, say ten or twelve, and produce the rest in the U.K., which would mean that for a commitment of somewhere around twenty to twenty-five million dollars, they would be able to swing into the program, and do their evaluation, training, and operational trials considerably sooner than if the aircraft were manufactured from scratch in the U.K.

I strongly recommended to Sir John Baker and to Sir Thomas Ples that they team up together and make a visit over to Canada in the Spring, with representatives of the Air Ministry, the Ministry of Supply, and the operators, to do a detailed evaluation on the cost of manufacturing in the U.K.

I think, Sir Roy, that if we could have someone on the manufacturing side in the Group come over and do an evaluation of the cost to tool and manufacture, say, 200 units, which I understand, would be the minimum force which would be required in the U.K., then we could have some figures ready to discuss with the Ministry and MoD, when they come over. What do you think?

There is no question that there is a genuine interest in the aircraft in the U.K., and especially in its collection course armament, and I believe a lot of the spare work has now been done, and it is now a matter of follow-up and keeping the interest of the people concerned, which we will endeavor to do.

With regard to the other projects that I saw in the U.K., my own opinion, for what it is worth, runs something like this.

Generally, the Group appears to be in the doldrums from a technical design point of view, and on the aircraft side,

SECRET

*Papers 9 Nov*



DEPARTMENT OF THE AIR FORCE

Washington

Office of  
The Secretary

Nov. 9, 1955

Dear Mr. Campney:

At the request of Air Marshal Slemon and Dr. Solandt, representatives of the U.S. Air Force at Toronto on October 31 and November 1, evaluated the CF-105 all weather interceptor, including its PS-13 engine.

The terms of reference of the evaluation were:

"Should the RCAF proceed with development and production of the CF-105 in the face of a firm U.S. Air Force program for development and production of the F-102B medium range interceptor; the F-101B long range interceptor; and the LRIIXI, which is being developed to replace the F-101B?"

A summary of the evaluation is attached.

It is the recommendation of the U.S. Air Force that development and production of the CF-105 proceed as now planned.

Sincerely yours,

(Sgd) Donald A. Quarles

- 1 Incl
- USAF Evaluation of the CF-105
- Acft and PS-13 Engine

The Honorable Ralph Campney  
Minister of National Defense  
Ottawa, Ontario  
Canada

DS 55-5223-3

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Letter from Donald Quarles, Secretary of the United States Air Force, to Ralph Campney, Minister of National Defence re. recommendation for Arrow programme. Both the United States Air Force and the Royal Air Force consistently expressed admiration for the Arrow, but no other country was seriously interested in purchasing it.<sup>19</sup>

RL 853-1955

APPENDIX "C"

S E C R E T

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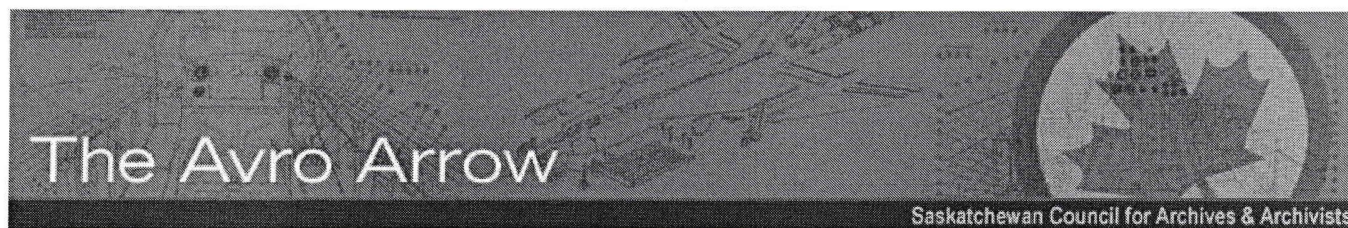
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Sgd. Donald A. Quarles

1 Encl.  
USAF Evaluation of the CF-105 Acft  
and PS-13 Engine

The Honourable Ralph Campney  
Minister of National Defence  
Ottawa, Ontario  
Canada

DS 55-5223-3



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Excerpts from the minutes of the March 23, 1955 Cabinet meeting during which approval was given to proceed with the Arrow programme.<sup>18</sup>

MARCH 23 1955 CABINET MEETING

ILL. 853-1955

Royal Canadian Air Force; development of CF-105TOP SECRET

40. The Minister of Finance, referring to discussion at the meeting of March 8th, said that the Department of National Defence had now sought Treasury Board authority for the expenditure of \$40 million to proceed with the first stage in the development of the new CF-105 supersonic all-purpose fighter aircraft. This sum would cover the cost of the first eleven aircraft as well as the cost of tooling. The overall programme would involve construction of forty aircraft, and the development and procurement of engines for them, at a total expenditure of some \$260 million.

41. The Minister of National Defence pointed out that the total expenditure of \$260 million for the completed project would be spread over a six-year period. It was anticipated that the magnitude of annual expenditure would be of the order of \$15 million the first year, \$47 million the second, \$61 million the third, \$66 million the fourth, \$40 million the fifth and \$30 million the final year.

42. In the course of discussion the following points emerged:

(a) There was no doubt that, at the drafting-board stage, the CF-105 appeared to be a very useful aircraft well suited to the long distances and severe atmospheric conditions of the Canadian north, which would serve the R.C.A.F. as an effective weapon against long range supersonic bombers flying at high altitudes. This development involved the expenditure of very substantial sums of public money and constituted what some might consider expensive insurance against an emergency which might or might not occur.

(b) Good as this aircraft might turn out to be, it was unlikely that other N.A.T.O. governments would adopt it for their own use. One of the reasons for this was that the aircraft was designed to meet conditions peculiar to northern Canada and might not be entirely suitable for use in western Europe; another was that we could not expect the U.S. and U.K. to adopt a Canadian plane rather than develop one of this importance themselves.

(c) It was understood that the \$260 million project could be fitted within total defence expenditure on the present scale; it was hoped that the long-term commitments in this development would not prevent further cuts being made in the overall defence budget during the next few years, if the international situation at that time made such reductions possible.

(d) Without questioning the desirability of proceeding with the CF-105 project, it was suggested that sufficient attention was not being