

21 June 1957

Mr. I. Fleming,  
Roosevelt Hospital,  
NEW YORK CITY, N.Y.  
U. S. A.

Dear Ian :-

First, I want to say how sorry I was to hear you were sick and I was, of course, very disappointed not to see you along with John Knott. We rang Mr. Ryan today and he said that your cardiograph was quite clean, which everybody was very pleased to know. I guess you have just been going at it like hell, as usual. We certainly hope that you will continue to improve, and if there is anything that we can do while you are over here, please don't hesitate to let me know.

Since I did not get an opportunity to talk to you, I thought that you might like to be brought generally up to date, on a broad brush basis, with our Engineering operations at Avro, and am enclosing some data on the Company in general which might be of interest.

As you will guess, security clearances will not allow me to send you information on our new supersonic fighter, the Arrow, but I believe that you do know something about this already in any case. The aircraft is designed for 2 'g' maneuver factor at constant altitude and speed at Mach 2 at 50,000 feet. It has a subsonic range, including 5 minutes supersonic combat at full power and all allowances, and, since we feel that this radius is low, we have put in tankage for approximately twice this radius. The gross weight of the aircraft in full fighting trim is approximately 60,000 lb. It has two Orenda Iroquois engines, two crew members, and a sophisticated Fire Control System, firing a variety of missiles. Generally, the aircraft configuration is fairly similar to a

..... 2

Convair F106 but with two engines, two men, about twice the armament package, and about twice the weight. We hope to fly the first aircraft by the end of this year, and production Mk 2 units should be coming out by the end of next year.

#### Type of Contract

Our present contract is for five Mark 1 pre-production units (not prototypes, as such), manufactured by our production people, and the first three Mark 2 production vehicles are also included in the development program, making a total of eight aircraft. The R.C.A.F. and ourselves then have an extensive development program involving some thirty-three aircraft, most of which, of course, later go into the Squadrons.

Our engineering contract includes a modified Systems Management, the R.C.A.F. choosing the weapon and fire control system, and then giving us the job of Project Coordinators.

In addition to the actual aircraft design, we also have the job of designing and, in many cases, manufacturing the ancillary and ground handling equipment for the support of the aircraft in the field.

We have set up extensive development facilities for static and functional testing in the Company so that our engineering covers all aspects until the aircraft is fully proven, there being no Boscombe Down type of operation in Canada, although the R.C.A.F. do have a Proving Establishment for their operational suitability testing.

#### Organization

I am including a couple of organization charts, which will give you an indication of how the Engineering side is set up. All told, I have about 1,900 people, of which about 1,100 are in the Design and Development group, 500 in the Static and Functional Testing, Flight Test and Laboratory groups.

The rest are hourly paid Experimental workers who are manufacturing our test rigs and maintaining the development aircraft, etc.

#### New Projects

Since the days of the manned fighter are obviously numbered, although I believe the number is greater than most people would assume, and the Canadian Government have certainly not decided to go into the interceptor missile development business, our future may very well be concerned with other than fighter aircraft.

I have recently set up a Project Research Group which is looking at a number of avenues, including non-aircraft projects. This group is really a Management tool, so that we can have the statistics and data, and an examination of technical breakthroughs in various fields, to be able to move off in any direction that appears to be profitable should the opportunity arise. This group consists, at the present time, of five picked Senior Engineers.

This group is in addition to our Initial Projects Office, which takes a project sold to Management by the Project Research Group and develops it to the stage where it can go out into the main D.O.

In general, our operations over here are probably more comparable with American companies, such as Convair, Northrop, Martin, etc., than they are with those in Britain. I know that Sir Roy always has a fit when he sees the relatively large set-up that we have for development over on this side, but, in this day and age of specialization and the requirement to do things fast, we have found it necessary to expand considerably.

I realize that this is a very quick and inadequate broad brush picture on our operations, however, as you can guess, it is difficult to describe in a letter what I would have been delighted to have shown you, had you been able to make

..... 4

Page Four  
21 June 57

it. I could have also discussed our projects much more fully with you on a personal basis. However, I understand that the Doc will not let you come to Canada now, and that you have to get home as quickly as you can on a "slow boat to China" basis. I am sure that he is right, and what I would like you to do, Ian, is that if there are any specific points on which you would like more information, please drop me a line.

I was looking forward very much to seeing you, and was looking the other day at an old photograph of the Technical Office at Chadderton, with a picture of yourself, I believe, next to Tommy Thompson, who, as you probably know, was working for us over here for some time. He has now returned to the U.K. in semi-retirement, to be able to enjoy a slightly less hectic life, as he puts it, and, I understand, spends quite a bit of his time doing water colors around the Dover area.

If and when you get a change to come to this Continent again, why not visit us first? I would very much like to be in the position to be able to visit Australia and see what is happening over there, but I am sure that will not happen for the next ten or twenty years ! In the meantime, take it a little easier, and I hope that by the time you get home you will be feeling very much better.

Very best regards,

Sincerely,

J.C. Floyd,  
VICE-PRESIDENT, ENGINEERING.

JCF-kas