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12 March 1957
Mr. F. T. Smye
J. C. Floyd
SOME HIGHLIGHTS OF VISIT TO OTTAWA,
MARCH 6-7-8TH/57

PRIVATE AND VERY CONFIDENTIAL

People Visited :-

Mr. J. L. Orr	- Defence Research Board	March 7/58 57 ?
Dr. Watson	- " " "	
A/V/M M.M. Hendrick	- R.C.A.F. Headquarters	March 8/57
A/C G.G. Truscott	- " "	
G/C R.R. Foottit	- " "	

While this visit was mainly to introduce Mr. Pesando to the various levels in the R.C.A.F. and D.R.B., so that we may set up an adequate engineering exchange, there were several points covered in our conversations which were worthy of note.

In our conversations with Dr. Watson, he indicated that the recent study which D.R.B. had carried out on the defence of Canada from 1960 to 1970 showed a definite requirement for a manned interceptor in addition to guided missiles.

The report favors the idea of taking the battle North and intercepting the threat as far North as possible, primarily because of the hazards of exploding atomic warhead defensive weapons close to populated areas, and, at the same time, to accomplish an interception prior to the point at which the enemy could launch a guided bomb, which might have a range of 200 to 300 miles under its own power, and be difficult to intercept because of its speed.

Dr. Watson indicated that the minimum radius which should be considered was around 800 nautical miles, and that 1500 was desirable. However, he believed that the Air Force should shoot for 1000 nautical mile radius.

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The interceptor should be capable of Mach 3 for at least short bursts, in order to have some pursuit capability over a supersonic bomber threat. This is made increasingly necessary because of the fantastically high closing rates of a supersonic fighter to supersonic bomber in head-on collision course, and it is almost impossible to get sufficient acquisition range to make an attack of this kind when you consider the differential in speed of approximately Mach 5. For the same reason, two crew would probably be required, and it is realized that this will be a very large airplane.

The picture on weapons is, as usual, anything but clear, however Dr. Watson agrees with our philosophy with regard to the optimization of aircraft, weapons, and fire control system, and believes that this will make for much longer range weapons with larger motors and atomic warheads, with the weapon taking over the maneuvering phases after launch and allowing some degradation in aircraft maneuverability.

The general picture then, which came out of the discussions with Dr. Watson and Mr. Orr was as follows:-

Range: As close to 1,000 miles as possible.

Speed: Mach 3 for as long a period as possible (depending on achieving a practical aircraft weight and runway length).

Altitude: Around 60,000 feet (it is expected that the weapon will climb to 15 to 20,000 feet above this altitude).

The discussions with A/V/M Hendrick, A/C Truscott and G/C Foottit generally confirmed the requirement for a manned interceptor beyond the Arrow Mark 3, and they didn't quarrel with Dr. Watson's predictions. I pointed out that the Company could only operate properly as their advisors by a working relationship with both D.R.B. and the R.C.A.F., where they gave us their own thinking on the long range future, and we provided them with surveys on the state of the art, in order

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to allow them to come up with a firm specification for an aircraft, which would be required in the 1966 to '72 period. I offered to carry out studies based on the above inputs and general requirements, for later discussion with D.R.B. and the R.C.A.F.

A/V/M Hendrick agreed to provide us with a copy of Dr. Watson's report. Incidentally, he had not seen the D.R.B. report, which had apparently gone straight to A/C Easton.

During the discussions with Mr. Orr, he expressed a good deal of interest in the Navy V.T.O. concept, which he had seen on his last visit to the Plant, and said that the Royal Canadian Navy had a requirement for an aircraft of this type, but with a 300 nautical mile radius, and he asked whether D.R.B. could have a briefing on this project at Malton, to enable them to talk to the Navy about it. I agreed to this, and will endeavor to get Mr. Smye's thoughts on briefings of this kind.

I believe that D.R.B. will obviously be interested in a number of projects that we have been considering, such as the Coleopter, Bolacopter, etc., and Mr. Orr expressed his willingness to listen to anything of this nature on which we care to give them a briefing. I personally feel that it would be in the Company's best interests to feed this type of information to D.R.B., and there is every chance that they would give us the opportunity of doing a number of studies on items which the Army and Navy require.

Mr. Orr suggested that for the Company to establish a 'need to know' on a particular project, and in order to be able to receive information from the United States, we would have to have a contract of some kind, and he would be willing to negotiate a D.R.B. contract, either on a no-profit basis, or on a dollar contract basis, in order to establish our 'need to know'.

I believe that we should discuss this whole question at Management level, and get a firm policy on what we

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would be willing to do in this regard, because I am sure the way is open for us now to get closer to both D.R.B. and our Air Force. Canadair and de Havilland have done a number of such studies for D.R.B., and, in some cases, they carried these out at no cost.

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

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