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29 July 57

MEMORANDUM TO FILE

RE: NOTE ON VISIT OF DR. COURTLAND PERKINS,
CHIEF SCIENTIST, U.S.A.F., (JULY 18/57)

Dr. Perkins said that his interest and feelings on the Arrow at present ran something like this. U.S.A.F. have let out a contract for a design study on an L.R.I. with North American, and are embarking on a complete and major weapon system program with associated engine, missiles, fire control system, etc., in much the same manner as the R.C.A.F. embarked on the Arrow complete weapon system.

In view, however, of the figures which are coming out of the design study, both in aircraft weight, which is around 110,000 lbs., and the situation on dollars for defence, the project appears to be losing a great deal of support, and he went so far as to say that he felt it might be discarded in the not too distant future.

In any event, there is quite a lot of feeling that in view of the timing on this project, there should be an interim aircraft, for example, the McDonnell F4H, or the Arrow. Since the Arrow comes closer to the requirement than anything they have seen at the present time, he felt that we should keep U.S.A.F. constantly aware of our progress on the aircraft so that in the event of a cancellation of the L.R.I., there would be a good chance that they would become vitally interested in the Arrow, especially if this aircraft had already flown successfully around that time. The L.R.I. basic requirement is for the interceptor to be scrambled on the receipt of Dew Line information, fly out to 250 nautical miles radius, loiter for one hour with very high search capability, and then be able to proceed at Mach 3 for a distance of another 325 nautical miles. On encountering the target, 10 minutes combat is required, at 1.2 'g', at 70,000', at Mach 3.

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On the basis of the previous visit to Dr. Perkins by Messrs Lindley and Chamberlin, we had a look at the Arrow in this role and, while it is not possible to stretch the aircraft in its present configuration to meet this requirement, if re-fuelling was permissible during the loiter period, we could achieve the complete mission, provided that we made certain modifications to the aircraft, such as variable intakes, insulated skins, optimized Iroquois, etc. Dr. Perkins said that there was no mention of re-fuelling in the requirement, and North American had done all their studies assuming that this would not be permissible. However, he felt that it was well worth talking about and asked us to write up a note for him on our philosophy on the possibilities of using the Arrow with re-fuelling for this particular mission.

The weapons specified are two Falcon "Z" type missiles weighing approximately 750 lb. each, with 25 miles range and 40,000 foot differential altitude. He suggested that we keep very close to Messrs Horner and Putt to try to keep the Arrow in the picture, without appearing to be on a sales campaign. He particularly suggested that we do not approach U.S.A.F. with a new type of airplane to meet this mission and said that our studies should be confined to outlining what the Arrow will do and showing the effect of certain modifications.

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