

Nov. 7, 1957.

Mr. J.C. Floyd.

M. A. Pesando.

MODIFIED LONG RANGE ARROW.

In view of the still apparent interest in a longer range version of the Arrow, we have undertaken to simplify the original proposal that we made. A hastily assembled brochure is attached for your perusal. You will see that the canard has now been eliminated with a resultant loss of 10,000 - 15,000 ft. in operating altitude. In other words the aeroplane should be good up to 70,000 - 75,000 ft. The fuselage should remain virtually unchanged and we hope that we can retain the basic wing components as well. The ramjets have been reduced in size with the corresponding slight reduction in performance which really does not show up because we should limit the aircraft within the Mach 3 and 75,000 ft. boundary. The piece to be added consists of an insert that is placed at the joint between the inner and outer wing panels and it consists of the pylon, undercarriage and ramjets.

We have carried out a check on the longitudinal balance, which appears to be in order. The missions of this particular proposal are fairly close to the original one so that in this brochure we have merely substituted pages of the original proposal with the necessary weight changes. However, I would like to suggest that for practical discussion purposes, a factor of 95% should be used in all of these figures.

During one of the Design Council meetings, it was mentioned that Perkins of the USAF was alleged to have said that the aircraft to meet the LRI specification should be under 100,000 lb. We obviously cannot do this without resorting to gimmicks such as flight re-fuelling, high energy fuels and buddy systems, etc., and I do not think any one else can do it either, within the present state-of-the-art. In other words there is no royal road to achieving this unless there are some major technical break-throughs, and I doubt whether the project can be postponed until these occur.

In view of the large investment that has gone into the Arrow, the onus rests on the Company to endeavour to find every means of exploiting its present capabilities and to seek out other conceivable development possibilities. For instance, in the proposal we have made, other steps could be to investigate the ducted rocket power plant installation that should get us over 100,000 ft. and the use of JATO units to get us off the ground within a reasonable distance.

ORIGINAL SIGNED BY
M. A. PESANDO

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