

17 March 1967

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TO: [REDACTED]

SUBJECT: Non-Metallic Construction for LH<sub>2</sub> Tankage

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During [REDACTED] recent visit to our facility, discussions were held on unknown factors which needed to be investigated before an authoritative decision could be made on the feasibility of the Blivot concept. One of these involved the properties of non-metallic sandwich construction for containment of the liquid hydrogen fuel for this application.

At this point, this type of construction provides inherent advantages of light weight, producibility, and aerodynamic smoothness. In addition, theoretical studies by our engineers showed that non-metallics should prove superior to conventional structures for LH<sub>2</sub> tankage applications. To experimentally determine the accuracy of this latter premise, [REDACTED] requested that we formulate a suitable test program to be submitted for your funding consideration.

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In compliance with his request, two copies of our Proposal No. 100-2989 accompany this memorandum, along with one copy of [REDACTED] initial Engineering Report No. 66-E5 on Thermostructural Design Concepts for LH<sub>2</sub>-fueled Hypersonic Vehicles (it should be noted that the latter was an independent work having no relationship to the Blivot concept). As indicated in the accompanying proposal, we feel that a relatively short 14 week program should not only prove the feasibility of non-metallic construction for the Blivot, but also permit the selection of the optimum wall configuration for any desired future weight and structural design studies.

Your consideration of this proposal, or any modification thereof, is solicited. Incidentally, [REDACTED] recently spent a day consulting at the Area under tail-end CS-200 funding; reports have indicated that this visit proved of aid to your personnel at that facility. It is hoped that this consulting relationship can be maintained via a contractual arrangement similar to that outlined by [REDACTED] in our memorandum DTEM 1664 of 17 February 1967. Your consideration of the latter proposal would also be appreciated.

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cc: [REDACTED] (W/Enc 100-2989)

DTEM 1672

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