

IBM Xerox

11/2/44

EG151/72-64-26

August 1, 1964

TO : NASA Headquarters
 Attention: Deputy Director, Apollo Program, MA

FROM : PA/Manager, Apollo Spacecraft Program Office

SUBJECT : Saturn V Guidance Computer for use as Apollo backup computer

REFERENCE: (a) Your letter, 14 May 1964, Subject: Saturn V/Apollo Spacecraft Guidance Computer Conference
 (b) Telephone conversation, General Phillips and Commander Duncan, July 10, 1964

I would like to summarize the status of our actions resulting from the May 7, 1964 meeting with you, as outlined in reference (a).

a. The completion of our guidance and control studies confirmed our suspicion that we would require only one Apollo Guidance Computer. Thus, system reliability can be met with a simplex primary computer in the Block II guidance and navigation system. However, the MIT computer is still a very critical element in our program, and I believe that a program definition and preliminary design as described in the May 7 meeting for a backup program based on the IBM Saturn V Computer is warranted.

b. Our study with MSFC and Bellcomm on the utilization of the spacecraft computer in the launch vehicle indicates that while it is technically feasible, early launch vehicle schedules could not be met, comprehensive redesign would be required to achieve redundancy, and a significant manpower constraint will exist at MIT/IL if the program is started before early 1965.

c. As a result of the above, we would like to uncouple our backup effort from MSFC as discussed in reference (b). We plan to initiate our

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one-year study effort this month, with local authority, and to continue to support the MSFC planning as required.

I plan to continue our close coordination with MSFC and feel that the exchanges have improved the programs of both centers.

Original Signed By:
Joseph F. Shea

Joseph F. Shea

- cc:
- MSFC/W. Haeussermann
- MSFC/R. Young
- PS/A. Cohen
- PP6/W. Young
- AC5/J. W. Epperly

EG/MDHolley:mk 6/19/64
Rewritten PA/JFShea:llk 8/1/64

CONCURRENCES:

MSC Form 192 (Mar 64)

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EG151/72-64-26

TO : Office of Manned Space Flight, MA/Deputy Director
Apollo Program

FROM : FO/Manager, Apollo Spacecraft Program Office

SUBJECT: Saturn V Guidance Computer for use as Apollo backup computer

REFERENCE: (a) Your letter, 14 May 1964, Subject: Saturn V/Apollo
Spacecraft Guidance Computer Conference
(b) Telephone conversation, General Phillips and
Commander Duncan, July 10, 1964.

I would like to summarize the status of our actions resulting from the May 7, 1964 meeting with you, as outlined in reference (a).

a. The completion of our guidance and control studies confirmed our suspicion that we would require only one Apollo Guidance Computer. Thus, system reliability can be met with a simplex primary computer in the Block II guidance and navigation system. This situation makes it more difficult to justify the insurance of a full backup computer program; however a backup computer program still is attractive enough for the Apollo program that a program definition and preliminary design effort as described in the May 7 meeting is warranted.

b. Our study with MSFC and Belcomm on the utilization of the spacecraft computer in the launch vehicle indicates that while it is technically feasible, early launch vehicle schedules could not be met, comprehensive redesign would be required to achieve redundancy, and a significant manpower constraint will exist at MIT/IL if the program is started before early 1965.

c. As a result of the above, we would like to uncouple our backup effort from MSFC as discussed in reference (b). We plan to initiate our one-year study effort this month, with local authority, and to continue to support the MSFC planning as required.

CONCURRENCES:

MSC Form 192 (Mar 64)

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