IN REPLY REFER TO   70-FS55-132   AUG 1 9 1970

MEMORANDUM TO: See list attached

FROM   :   FS/Chief, Flight Support Division

SUBJECT   :   Minutes of meeting to discuss the P66 castellation problem

1. A meeting was held on August 4, 1970, in the building 30 auditorium to discuss the P66 castellation problem. The purpose of this meeting was to determine what constants should be used for the engine response time (fixed memory) and also the value of the erasable parameter LAG/TAU for the Apollo 14 LUMINARY Program. Proposed changes for the Apollo 15 Program were also to be discussed, but none of the attendees had any comments so this item was not included in the discussion.
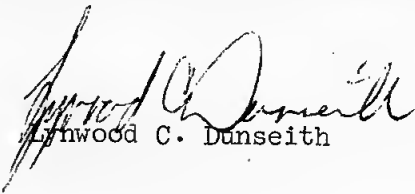
2. The MIT/SDL (Messrs. A. Klumpp and G. Kalan) presented the results of a stability analysis performed on the LUMINARY descent programs using Z-transform analysis and bit-by-bit testing procedures. Briefly, the results were:

     a. The value to use for the engine response time is the best knowledge of the actual response time. That value is 0.08 seconds.

     b. Two values for TAU were considered. A value of 1.2 seconds will give a more responsive system, but 1.5 seconds results in a more stable system. The present system has an adequate response, so it was decided to go with the 1.5 seconds to achieve a wider stability margin.

     c. Then from the Z-transform analysis LAG was determined to optimally be a value of 0.35 seconds.

3. The other attendees at the meeting concurred with these conclusions, so no other presentations were made. It is recommended that the above constants be used in all simulators using the Apollo 14 LUMINARY Program. Any questions or comments or requests for copies of the data slides presented at this meeting should be directed to the LUMINARY Program Engineer, Mr. T. G. Price, at extension 2308.

Lynwood C. Dunseith

FS55:TGPrice:beb

Addressees:
NASA Hqs./L. Casey, MAT
      G. Roth, MAP-6
Bellcomm/W. G. Heffron
KSC/J. J. Tadich, LS-ENG-62
    R. D. McCafferty, CFK
MIT/KSC/R. O'Donnell
NR/Downey/B. Schoen
MIT/SDL/D. G. Hoag
    R. H. Battin
    K. W Greene
    A. Klumpp

> THIS COPY FOR → R. Larson

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    R. Covelli
GAC/Bethpage/C. Tillman
GS/R. C. Croston, 724
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EA2/L. A. Gardiner
ED3/J. Shead
EG/AC/K. G. Korth
EG/D. C. Cheatham
    C. W. Frasier
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EG5/W. L. Swingle
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