APOLLO SPACECRAFT SOFTWARE CONFIGURATION CONTROL BOARD PROGRAM CHANGE REQUEST

NUMBER (Completed by FSB): 1058

1.0 COMPLETED BY ORIGINATOR

1.1 ORIGINATOR	DATE	1.2 ORGANIZATION	APPROVAL	DATE
EYLES	July 6,'70	MIT		

1.3 EFFECTIVITY: LUMINARY 1E (Apollo 15)

1.4 TITLE OF CHANGE: New Landing Analog Displays (R10)

1.5 REASON(S) FOR CHANGE: See attached sheet.

1.6 DESCRIPTION OF CHANGE: See attached sheet.

2.0 SOFTWARE CONTROL BOARD OR FLIGHT SOFTWARE BRANCH DECISION FOR VISIBILITY IMPACT ESTIMATE BY MIT

2.1 ☐ APPROVED ☐ DISAPPROVED

2.2 REMARKS:

2.3 SOFTWARE CONTROL BOARD OR FLIGHT SOFTWARE BRANCH SIGN OFF

DATE

3.0 MIT VISIBILITY IMPACT EVALUATION:

3.1 SCHEDULE IMPACT

3.2 IMPACT OF PROVIDING DETAILED EVALUATION

3.3 STORAGE IMPACT

3.4 REMARKS:

3.5 MIT COORDINATOR

DATE

4.0 SOFTWARE CONTROL BOARD ACTION

4.1 ☐ IMPLEMENT AND PROVIDE DETAILED CHANGE EVAL. ☐ PROVIDE DETAILED CHANGE EVALUATION ☐ DIS-APPROVED

4.2 REMARKS

4.3 SOFTWARE CONTROL BOARD SIGN OFF

DATE

5.0 MIT DETAILED PROGRAM CHANGE EVALUATION

5.1 MIT COORDINATOR

DATE

5.2 MIT EVALUATION

6.0 SOFTWARE CONTROL BOARD DECISION ON MIT DETAILED PROGRAM CHANGE EVALUATION

6.1 ☐ START OR CONTINUE IMPLEMENTATION ☐ DISAPPROVED OR STOP IMPLEMENTATION

6.2 REMARKS:

6.3 SOFTWARE CONTROL BOARD SIGN OFF

DATE

APOLLO SPACECRAFT SOFTWARE CONFIGURATION CONTROL BOARD

-DATA AMPLIFICATION SHEET -

PAGE____ OF____

PROGRAM CHANGE REQUEST NO. 1058	PREPARED BY: EYLES DATE: July 6, 1970	ORGANIZATION: MIT

CONTINUATION SECTION (REFER TO BLOCK NUMBER AND TITLE ON PROGRAM CHANGE REQUEST FORM)

1.5 Reasons for Change:

(1) Eliminate errors in forward and lateral velocity displayed on the cross-pointers.

(2) Eliminate the periodic "lurch" in the altitude-rate displayed on the tape meter.

(3) Correct error and excessive granularity of the forward velocity displayed in R1 of noun 60 (during P66).

(4) Speed up display of altitude and altitude-rate (display each every 1/4 second instead of every 1/2 second as at present).

(5) Begin displaying analog data at TIG - 30 seconds when average-G is turned on instead of waiting for ignition.

(6) Eliminate the R10FLAG so that cross-pointer displays be available during ascent and aborts as well as descent.

1.6 Description of Change:

Incorporate in LUMINARY the LAD routine now running in off-line program ZERLINA. GSOP impact aspects of this change are (1) the addition of a PIPA bias correction term to the velocity computation which is the starting point of the LAD computations, and (2) a simpler altitude extrapolation:

$$\text{ALTITUDE} = \frac{\text{HDOTLAD} + \text{ALTRATE}}{2}\,\text{DT} + \text{HCALCLAD}$$

where HDOTLAD and HCALCLAD are altitude-rate and altitude at PIPTIME, DT is time since PIPTIME, and ALTRATE is the current altitude-rate computed by LAD. Items 4-6 under "Reasons for Change" may require minor GSOP modifications, too.

REMARKS

This change is not dependent on approval of the Variable Guidance Period Servicer (PCR 1024) but could most conveniently be put into LUMINARY at the same time as that larger change.

TP#21812

Russ,

There isn't anything the least objectionable about the way ZERLINA is mentioned in this PCR, and it at least is a concise way of identifying which new version is intended, and the will have flown it in ZERLINA by the time they approve this.

I've rewritten it to add "off-line program" ahead of "ZERLINA" and to add a 6th reason — all that I plan to do

How about giving it a number & shipping it out — why has it lain fallow a week already? Ken