APOLLO SPACECRAFT	SOFTWARE ROGRAM CHA	CONFIGURA NGE REOUI	ATION C	ONTROL BOARD	NUMBER (Completed by FSB)			
1.0 COMPLETED BY ORIGINATOR								
1.1 ORIGINATOR	DATE	1.2 ORGANIZA		APPROVAL	DATE			
EYLES	July 6,'70	MIT						
LUMINARY 1E (Apollo 15)				New Landing Analog Displays (R10)				
See attached sheet.				<b></b>				
See attached sheet.								
	SOFTWARE CON DECISION FOR	VISIBILIT	Y IMPACT	HT SOFTWARE BRAI ESTIMATE BY MI	N C H T			
2.1 APPROVED	DISAPPROVED	2.2 RE	MARKSI					
2.3 SOFTWARE CONTROL BOARD O BRANCH SIGN OFF  DATE	R FLIGHT SOFTWAR							
3.0 MIT VISIBILITY IMPACT E	VALUATION:							
3.1 SCHEDULE IMPACT			3.2 IMPACT	OF PROVIDING DETAIL	ED EVALUATION			
1. I STORAGE IMPACT		3.4 RE	MARKSI					
3.5 MIT COORDINATOR								
DATE								
	4.0 SOF	TWARE CONT	ROL BOAR	D ACTION				
	VIDE AILED DIS NGE LUATION IGN OFF		MARK 5					
PATE								
	5.0 MIT DETA	ILED PROGR	AM CHANG	E EVALUATION				
5.1 MIT COORDINATOR		5.2 MI	T EVALUATIO	N				
DATE								
6.0 SOFTWARE CONTROL BOARD DECISION ON MIT DETAILED PROGRAM CHANGE EVALUATION								
IMPLEMENTATION	DISAPPROVED OR S'	TOP 6.2 RE	MARKS					
6.3 SOFTWARE CONTROL BOARD S	IGN OFF							
DATE								

MSC Form 288 (Jul 88) TP#21812

# APOLLO SPACECRAFT SOFTWARE CONFIGURATION CONTROL BOARD -DATA AMPLIFICATION SHEET -

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

## 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:

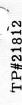
Incorporate in LUMINARY the LAD routine now running in off-line program ZERLINA. GSOP impact aspects of this change are (1) the addition of a PIPA bias correction term to the velocity computation which is the starting point of the LAD computations, and (2) a simpler altitude extrapolation:

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

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.



There isn't anything the trast objectionable about the war RERLINA is mentioned in this PCR, and it at least is a 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 t shipping it out—why has it lain tallow a week already?