

QTR5

APOLLO 13	
LM DATA CARD BOOK	
PART NO	S/N
SKB 32100082-387	

FINAL

CHANGE
MARCH 30, 1970

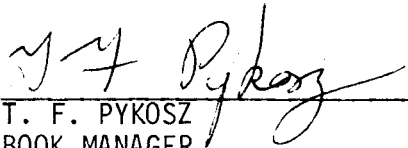
APOLLO 13

FINAL

LM DATA CARD BOOK

MARCH 30, 1970 CHANGE

PREPARED BY:


T. F. PYKOSZ
BOOK MANAGER
TRW TASK 81

MARCH 30, 1970

APPROVED BY:

SIGNATURE AUTHORIZED BY TELECOM;
J. W. O'NEILL
CHIEF
FLIGHT PLANNING BRANCH

MARCH 30, 1970

It is requested that any organization having comments, questions, or suggestions concerning this document contact T. F. Pykosz, Building 4, Room 278A, Telephone Number HU-3-4015.

This document is under the configuration control of the Crew Procedures Control Board (CPCB). All proposed changes should be submitted to the Apollo Flight Data File Manager, Mr. T. W. Holloway, CF34, Room 230, telephone HU3-4271.

Distribution of this document is controlled by Mr. J. W. O'Neill, Chief, Flight Planning Branch, Flight Crew Support Division.

APOLLO FLIGHT DATA FILE

LM DATA CARD BOOK

BASIC DATE 3/17/70 CHANGE 3/30/70

LIST OF EFFECTIVE PAGES

*Indicates Current Change

PAGE NUMBER	ISSUE
13/24/70
2 thru 7.3/17/70
83/24/70
*9 thru 113/30/70
12 thru 14.3/17/70

This LOEP reflects changes incorporated
as a result of approved changes:

027, ΔR VALUES

DATE MARCH 24, 1970

LM DATA CARD BOOK

LM ACTIVATION CARD

DAP PAD						LM WT
+		3	3	7	3	1
+		3	7	5	0	0
+		0	0	4	7	6
+		0	0	5	7	2

GYRO TORQUING						R1	R2	R3

V06 N20									
GET 97 :	LM	R1	R2	R3	LM	R1	R2	R3	

GET 98 :	LM	R1	R2	R3	LM	R1	R2	R3	

GET :	LM	R1	R2	R3	LM	R1	R2	R3	

S-BD		
P	(+112)	(97) 21)
Y	(+34)	
P	(+130)	(99) 10)
Y	(+40)	
P	()	())
Y	()	())

AGS										
K FACTOR										
										(90) 00) 00)
+		6	0	4	2	7				224
+		2	9	4	0	2				225
+		6	0	4	6	9				226
-		0	1	7	1	8				305
-		5	4	5	0	0				662
-		3	1	7	0	1				673
										540 (-00002)
										541 (+00001)
										542 (-00002)
										544 (-00006)
										545 (+00030)
										546 (+00047)

UNDOCK/SEP GET

(99) 16 : 21)

GYRO DRIFT COMPENSATION

ACTIVATION
GYRO DRIFT COMP

ΔT COMPUTATION	
N93 PRO TIME	● : ●
PREVIOUS TORQ	● : ●
TIME	● : ●
ΔT	● : ●
BIAS SHIFT	
BIAS SHIFT	
N93	BIAS SHIFT
X	=
ΔT	●
Y	=
ΔT	●
Z	=
ΔT	●
GYRO DRIFT	
X	Y
0.0150	0.0030
	0.0060
	NBD (OLD)
	BIAS SHIFT
	NBD (NEW)
	OCTAL
PROCEDURES	
V25N01E	V21N01E
1460E	1460E
NBDX XXXXXE	NBDX XXXXXE
NBDY XXXXXE	NBDY XXXXXE
NBDZ XXXXXE	NBDZ XXXXXE

DEC/HR	OCTAL		DEC/HR	OCTAL	
	DRIFT	DRIFT		DRIFT	DRIFT
.000	00000	00000	.765	14532	63245
.015	00177	77600	.780	14731	63046
.030	00377	77400	.795	15131	62646
.045	00576	77201	.810	15330	62447
.060	00775	77002	.825	15527	62250
.075	01174	76603	.840	15726	62051
.090	01374	76403	.855	16126	61651
.105	01573	76204	.870	16325	61452
.120	01772	76005	.885	16524	61253
.135	02171	75606	.900	16723	61054
.150	02371	75406	.915	17123	60654
.165	02570	75207	.930	17322	60455
.180	02767	75010	.945	17521	60256
.195	03166	74611	.960	17721	60056
.210	03366	74411	.975	20120	57657
.225	03565	74212	.990	20317	57460
.240	03764	74013	1.005	20516	57261
.255	04163	73614	1.020	20716	57061
.270	04363	73414	1.035	21115	56662
.285	04562	73215	1.050	21314	56463
.300	04761	73016	1.065	21513	56264
.315	05160	72617	1.080	21713	56064
.330	05360	72417	1.095	22112	55665
.345	05557	72220	1.110	22311	55466
.360	05756	72021	1.125	22510	55267
.375	06155	71622	1.140	22710	55067
.390	06355	71422	1.115	23107	54670
.405	06554	71223	1.170	23306	54471
.420	06753	71024	1.185	23505	54272
.435	07152	70625	1.200	23705	54072
.450	07352	70425	1.215	24104	53673
.465	07551	70226	1.230	24303	53474
.480	07750	70027	1.245	24502	53275
.495	10150	67627	1.260	24702	53075
.510	10347	67430	1.275	25101	52676
.525	10546	67231	1.290	25300	52477
.540	10745	67032	1.305	25477	52300
.555	11145	66632	1.320	25677	52100
.570	11344	66433	1.335	26076	51701
.585	11543	66234	1.350	26275	51502
.600	11742	66035	1.365	26474	51303
.615	12142	65635	1.380	26674	51103
.630	12341	65436	1.395	27073	50704
.645	12540	65237	1.410	27272	50505
.660	12737	65040	1.425	27472	50305
.675	13137	64640	1.440	27671	50106
.690	13336	64441	1.455	30070	47707
.705	13535	64242	1.470	30267	47510
.720	13734	64043	1.485	30467	47310
.735	14134	63643	1.500	30666	47111
.750	14333	63444			

DATE MARCH 17, 1970

LM DATA CARD BOOK

ALTITUDE CHECK/PDI RULES CARD

PDI RULES

1. NO ULLAGE-NO GO FOR PDI.
2. NO IGNITION DELAY 2 SEC THEN START PB-PUSH; THEN SET DES ENG OVRD-ON AT 5 SEC.
3. T/W >1.6 AND DSKY CHANGES >18 fps/2 SEC.
4. ATT/RATE <5°/SEC.
5. ΔH WITHIN LIMITS >10 SEC AND NOT OUT OF LIMITS >60 SEC.
6. DATA GOOD AT >10,000 FT.
7. IF NO THROTTLE DOWN BY P64 +15 SEC-ABORT.
8. BINGO FUEL 1 MIN 34 SEC AFTER LOW LEVEL OR WHEN FUEL QTY <2% UNLESS LANDING IMMINENT.

NOTE: FOR FLASHING LR ALT OR VEL LIGHTS THAT ARE PRECEDED BY A STEADY LR LIGHT, CYCLE THE RADAR TEST SWITCH.

CSM CIRC BURN

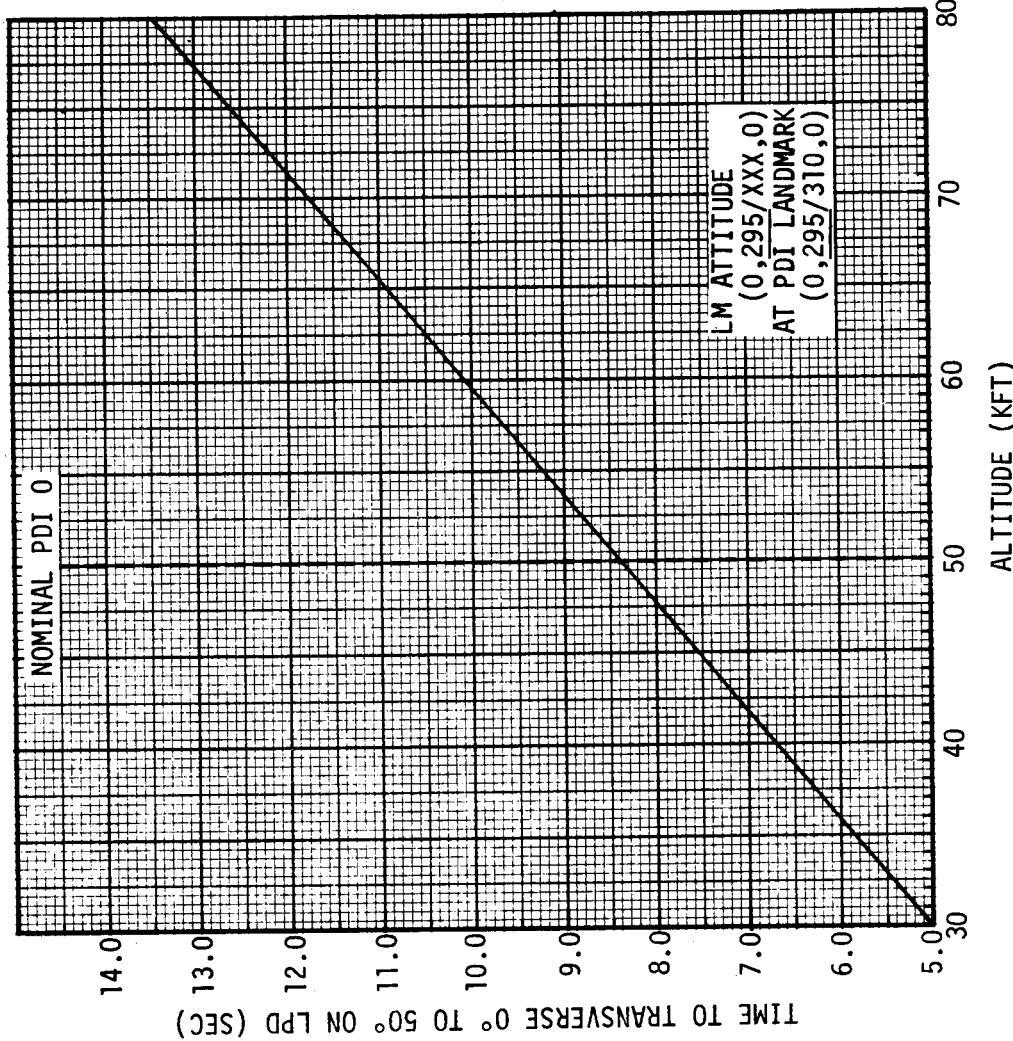
P76

+	0	0				+	0	0	1	0	0	HRS	N33
+	0	0	0			+	0	0	0	3	5	MIN	TIG
+	0					+	0	0	5	0	0	SEC	
						+	0	0	6	9	0	ΔVX	N84
						+	0	0	0	0	0	ΔVY	
						+	0	0	1	4	0	ΔVZ	

CSM HA/HP

CMC	/	LGC	V82
		/	OPT 2

ALTITUDE DETERMINATION CHART



PREPARED BY FPRB/OPS
MISSION APOLLO 13, FEBRUARY 3, 1970

PDI 0/NO PDI + 12 CARD

PDI 0 ABORT PAD																	
+	0	0								+	0	0	1	0	1	HRS	N33
+	0	0	0							+	0	0	0	0	3	MIN	TIG
+	0									+	0	5	3	4	0	SEC	
										+	0	1	0	0	0	AVX	N81
										+	0	0	0	0	0	AVY	LV
										+	0	0	0	1	4	AVZ	
										+	0	1	3	6	3	HA	N42
										+	0	0	0	8	4	HP	
										+	0	1	0	0	0	AVR	
X	X	X								X	X	X	0	3	6	BT	
X	X	X								X	X	X	1	8	1	R	FDAI
X	X	X								X	X	X	0	0	3	P	INER
										+	0	1	0	0	0	AVX	N86
										+	0	0	0	0	0	AVY	AGS
										+	0	0	0	3	4	AVZ	
+	0	0								+	0	0	1	0	2	HRS	N11
+	0	0	0							+	0	0	0	3	7	MIN	CSI
+	0									+	0	2	8	6	0	SEC	
+	0	0								+	0	0	1	0	4	HRS	N37
+	0	0	0							+	0	0	0	2	2	MIN	TPI
+	0									+	0	1	1	3	0	SEC	

RESIDUALS

PGNS					AGS				
		AVX	N85				AVX	500	
		AVY					AVY	501	
		AVZ					AVZ	502	

NO PDI + 12 ABORT PAD																	
+	0	0								+	0	0	1	0	3	HRS	N33
+	0	0	0							+	0	0	0	4	2	MIN	TIG
+	0									+	0	0	6	5	0	SEC	
										+	0	1	1	0	2	AVX	N81
										+	0	0	0	0	0	AVY	LV
										-	0	0	4	8	6	AVZ	
										+	0	1	4	3	9	HA	N42
										+	0	0	0	8	9	HP	
										+	0	1	2	0	4	AVR	
X	X	X								X	X	X	0	3	8	BT	
X	X	X								X	X	X	1	8	2	R	FDAI
X	X	X								X	X	X	0	0	2	P	INER
										+	0	1	1	1	2	AVX	N86
										+	0	0	0	0	0	AVY	AGS
										-	0	0	4	6	1	AVZ	
+	0	0								+	0	0	1	0	6	HRS	N11
+	0	0	0							+	0	0	0	3	7	MIN	CSI
+	0									+	0	2	1	4	0	SEC	
+	0	0								+	0	0	1	0	8	HRS	N37
+	0	0	0							+	0	0	0	1	8	MIN	TPI
+	0									+	0	4	4	5	0	SEC	

RESIDUALS

PGNS					AGS				
		AVX	N85				AVX	500	
		AVY					AVY	501	
		AVZ					AVZ	502	

BURN TIME IF > 1 SEC : _____
DATE MARCH 17, 1970

BURN TIME IF > 1 SEC : _____
LM DATA CARD BOOK

PDI 1 ABORT CARD

PDI 1 PAD																																																											
+	0	0	+	0	0	1	0	3	HRS	N33																																																	
+	0	0	+	0	0	0	3	0	MIN	PDI																																																	
+	0	0	+	0	3	5	3	4	SEC																																																		
X	X		X	X	Q	9	4	5	TGO	N61																																																	
			+	Q	Q	Q	Q	1	CROSSRANGE																																																		
X	X	X	X	X	X	0	0	0	R	FDAI																																																	
X	X	X	X	X	X	1	1	0	P	AT TIG																																																	
X	X	X	X	X	X	0	0	0	Y																																																		
									DEDA 231 IF RQD																																																		
(1 <PDI 1 ≤ 5:40) ABORT PAD EARLY																																																											
LOG INSERTION GET= _____ : _____																																																											
+ BOOST GET= _____ 1 0 0 0 0 _____																																																											
+ HAM GET= _____ 1 0 0 0 0 _____																																																											
+ CSI GET= _____ 1 0 0 0 0 _____																																																											
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+	0	0	+	0	0	1	0	8	HRS	N37																																																	
+	0	0	+	0	0	0	1	8	MIN	TPI																																																	
+	0	0	+	0	4	7	6	0	SEC																																																		
T1-1 (5:40 <PDI 1 ≤ 15) ABORT PAD LATE																																																											
LOG INSERTION GET= _____ : _____																																																											
+ CSI TIG= _____ 5 5 0 0 _____																																																											
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+	0	0	+	0	0	1	0	6	HRS	N37																																																	
+	0	0	+	0	0	0	2	0	MIN	TPI																																																	
+	0	0	+	0	2	9	5	0	SEC																																																		

T2-1 (PDI 1+20:45) ABORT PAD																																																											
LOG INSERTION GET= _____ : _____																																																											
+ BOOST GET= _____ 5 0 0 0 _____																																																											
+ HAM GET= _____ 1 0 0 0 0 _____																																																											
+ CSI GET= _____ 5 0 0 0 _____																																																											
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+	0	0	+	0	0	1	0	3	HRS	N33																																																	
+	0	0	+	0	0	0	5	1	MIN	TIG																																																	
+	0	0	+	0	1	9	0	0	SEC																																																		
T2-1 AT PDI + _____ 20:45 _____																																																											
N69																																																											
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									ΔDN RNG																																																		
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THROTTLE DOWN _____ : _____																																																											
N43																																																											
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									LAT (+N)																																																		
									LONG (+E)																																																		
									ALT																																																		

PDI 1/PDI 1 ABORT
PDI 2/PDI 2 ABORT

PDI 2 ABORT CARD

PDI 1/PDI 1 ABORT
PDI 2/PDI 2 ABORT

PDI 2 PAD

+ 0 0	+ 0 0 1 0 5	HRS	N33
+ 0 0 0	+ 0 0 0 2 4	MIN	PDI
+ 0	+ 0 1 2 7 0	SEC	
X X	X X	TGO	N61
		CROSSRANGE	
X X X	X X X	R	FDAI
X X X	X X X	P	AT TIG
X X X	X X X	Y	
		DEDA 231	IF RQD

(1 <PDI2 ≤8:30) ABORT PAD EARLY

LOG INSERTION GET= _____ : _____ : _____

+ BOOST GET= _____ 1 0 0 0

+ HAM GET= _____ 1 0 0 0

+ CSI GET= _____ 1 0 0 0

+ 0 0	+ 0 0 1 1 0	HRS	N37
+ 0 0 0	+ 0 0 0 1 7	MIN	TPI
+ 0	+ 0 0 5 7 0	SEC	

T1-2 (8:30 ≤PDI 2 ≤ 15) ABORT PAD LATE

LOG INSERTION GET= _____ : _____ : _____

+ CSI TIG= _____ 5 5 0 0

+ 0 0	+ 0 0 1 0 8	HRS	N37
+ 0 0 0	+ 0 0 0 1 8	MIN	TPI
+ 0	+ 0 4 7 6 0	SEC	

T2-2 (PDI 2+{8:56) ABORT PAD

LOG INSERTION GET= _____ : _____ : _____

+ CSI GET= _____ 5 0 0 0

+ 0 0	+ 0 0 1 0 5	HRS	N33
+ 0 0 0	+ 0 0 0 4 3	MIN	TIG
+ 0	+ 0 0 9 3 0	SEC	
+ 0 0	+ 0 0 1 0 8	HRS	N37
+ 0 0 0	+ 0 0 0 1 8	MIN	TPI
+ 0	+ 0 4 8 0 0	SEC	

T2-2 AT PDI + _____ 18:56

N69			
		ADN RNG	
		ΔX RNG	
		ΔRLS	

THROTTLE DOWN _____ : _____

N43			
		LAT (+N)	
		LONG (+E)	
		ALT	

DATE MARCH 17, 1970

LM DATA CARD BOOK

FIRST REV ACTIVITY

G&N LUNAR SURFACE CARD

LAUNCH PREP

N20 _____ OG _____
 _____ IG _____
 _____ MG _____

047 _____ 053 _____
 544 _____ +5:02 _____
 545 _____
 546 _____

P57, A/T 1, REFSMMAT _____
 N04 _____, TILT _____
 N05 _____
 N93 _____ X _____ Y _____ Z _____

377 _____
 544 _____ +5:02 _____
 545 _____
 546 _____
 514 _____
 515 _____
 516 _____
 047 _____
 053 _____

P57 A/T 2, REFSMMAT _____
 STAR1 _____
 CURS _____ SPIR _____
 CURS _____ SPIR _____
 V32 _____
 CURS _____ SPIR _____
 V32 _____
 CURS _____ SPIR _____
 STAR2 _____
 CURS _____ SPIR _____
 V32 _____
 CURS _____ SPIR _____
 V32 _____
 CURS _____ SPIR _____
 N05 _____ ANGLE DIFF _____
 N93 _____ X _____ Y _____ Z _____
 N89 _____ LAT _____
 _____ LONG/2 _____
 _____ ALT _____

P57, A/T 2, REFSMMAT _____
 STAR1 _____
 CURS _____ SPIR _____
 CURS _____ SPIR _____
 V32 _____
 CURS _____ SPIR _____
 V32 _____
 CURS _____ SPIR _____
 STAR2 _____
 CURS _____ SPIR _____
 CURS _____ SPIR _____
 V32 _____
 CURS _____ SPIR _____
 N05 _____ ANGLE DIFF _____
 N93 _____ X _____ Y _____ Z _____
 N89 _____ LAT _____
 _____ LONG/2 _____
 _____ ALT _____

P57, A/T 3 LANDING SITE _____
 N04 _____, TILT _____
 STAR1 _____
 CURS _____ SPIR _____
 V32 _____
 CURS _____ SPIR _____
 V32 _____
 CURS _____ SPIR _____
 N05 _____ ANGLE DIFF _____
 N93 _____ X _____ Y _____ Z _____

377 _____
 544 _____ +5:02 _____
 545 _____
 546 _____
 514 _____
 515 _____
 516 _____
 047 _____
 053 _____

P22 ACQ TIME _____ : _____ : _____

P22 ACQ TIME _____ : _____ : _____

P22 ACQ TIME _____ : _____ : _____

NOTES:

LUNAR SURFACE ABORT/ASCENT

ABORT/ASCENT CARD

ASCENT RULES

UNDERBURN		PGNS		AGS	
AV FPS	TIME SEC				
<400	20	NULL RESIDUALS		AUTO, A/H 15fps	
>400	20	A/H BURN Hp		AUTO, A/H 15fps	

INSERTION

AGS AND PGNS RESIDUALS AGREE WITHIN 10FPS,
TRIM TO LESS THAN 2FPS (AGS X-AXIS ONLY)
AND STANDBY FOR TWEAK.
TWEAK AT INSERTION PLUS 4 MINUTES
(10° OHW OR 250° FDAI)

FOR NO VOICE

PGNS, AGS DIFFER <10FPS, TRIM ACTIVE SYSTEM
PGNS, AGS DIFFER >10FPS, TRIM SYSTEM WHICH
AGREES WITH RR
ATT/RATE ERROR >10%/SEC

T3 (1 REV) ABORT PAD

LOG INSERTION GET=

+

CSI TIG=

+

TPI TIG=

+	0	0	0	1	0	5	HRS	N33
+	0	0	0	0	4	1	MIN	TIG
+	0	0	0	3	7	0	SEC	

P22 ACQUISITION TIME

____:____:____

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LM ASCENT PAD

+	0	0	1	3	7	+	0	0	1	3	7	HRS	N33
+	0	0	0	1	2	+	0	0	0	0	9	MIN	TIG
+	0	5	3	0	0	+	0	1	5	8	1	SEC	
+	5	5	4	0	2	+	5	5	3	3	8	V (HOR)	
+	0	0	3	2	4	+	0	0	3	6	3	V (VERT) N76	
+	0	0	0	0	0	+	0	0	0	0	0	*CROSSRANGE	
+	3	7	7	5	0	+	0	0	0	0	0	047	
-	7	6	2	3	3	+	4	0	0	0	0	053	
+	5	8	6	7	1	+	5	8	5	8	1	224/226	
+	5	6	9	7	8	+	5	6	9	7	8	231	
+	0	0	3	2	4	+	0	0	3	6	5	465	
+	0	0	1	3	7	+	0	0	1	3	9	HRS	N37
+	0	0	0	5	8	+	0	0	0	4	5	MIN	TPI
+	0	1	2	0	0	+	0	4	0	6	0	SEC	
+	1	0	7	7	5	+	1	0	6	8	9	LM WT	
+	3	5	6	3	9	+	3	5	6	7	1	CSM WT	

*NOTE: LOAD 8 NM CROSSRANGE IF GREATER THAN 8 NM
COMMENTS:

RESIDUALS

+			HA	V82	+				HA	315
+			HP		+				HP	403

PGNS

AGS

	AVX	N85		AVX	500
	AVY			AVY	501
	AVZ			AVZ	502

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CSI CARD

+ 0 0		+ 0 0	1 3 8	HRS	N11
+ 0 0 0		+ 0 0 0	0 0 6	MIN	CSI
+ 0		+ 0 0 0	9 0	SEC	
R1(+00001), R2(+02660), R3(+13000)					
+ 0 0		+ 0 0 1	3 9	HRS	N37
+ 0 0 0		+ 0 0 0	4 5	MIN	TPI
+ 0		+ 0 4 0	6 0	SEC	
+ 0		+ 0 0 4	9 6	ΔVX	N81
+ 0		+ 0 0 0	0 0	ΔVY	LV

410+1, 605+00777, 416+1, 623+0

+ 0		+ 0 4 8 6	0	373	
+ 0		+ 0 5 8 5	8	275	
+ 0		+ 0 0 4 9	6	ΔVX	N86
+ 0		+ 0 0 0 0	0	ΔVY	AGS
+ 0		+ 0 0 0 0	0	ΔVZ	

BURN RULES

CRITERIA IS $\dot{X}=3\text{fps}$
 PRIORITY OF SOLUTIONS-PGNS, AGS, CMC, CHARTS.

A. RR AGREES WITH VHF WHERE
 $\Delta R = R + 0.5\text{NM}$, ΔR IS ALWAYS ≥ 100
 IF TWO OF THREE SOLUTIONS AGREE,
 BURN THE PRIORITY SOLUTION.

B. RR DOES NOT AGREE WITH VHF.
 MSFN ISOLATES FAILED SYSTEM.

C. V90-5fps-NO BURN.

MAX N49 (2.0,12.0)		RESIDUALS		
PGNS	AGS	PGNS	AGS	
			ΔVX N85	ΔVX 500
			ΔVY	ΔVY 501
			ΔVZ	ΔVZ 502
		HA		
		HP		

PGNS	N75 CSI		N81 CSI		N82 CDH		PGNS	
	ΔH (15.0)	CSI/CDH (58:13)	CDH/TPI (41:27)	ΔVX (49.6)	YDOT(H90) (+0.0)	ΔVY (+0.0)		ΔVZ (+0.0)

AGS	N75 CSI		N81 CSI		N82 CDH		AGS	
	402 ΔH	372 CSI/CDH	267/450 AVG (CSI)	ΔVX CSI	ΔVY CSI	ΔVZ CSI		YDOT CSI ΔV CDH

CSM SOLUTION (CHANGE SIGN)		BIAS	
ΔVX CSI	ΔVY CSI	ΔVX = -1.0	
.	.		
.	.		
.	.		

CSI
 CDH/PLANE CHANGE

CDH/PLANE CHANGE CARD

+	0	0	+	0	0	1	3	9	HRS	N13
+	0	0	+	0	0	0	0	4	MIN	CDH
+	0	0	+	0	1	4	1	0	SEC	
0	0		+	0	0	0	0	0	AVX	N81
0	0		+	0	0	0	0	0	AVY	LV
0	0		+	0	0	0	0	0	AVZ	
X	X	X	X	X	X				PLM	FDAI
+			+	0	5	4	4	2	373	
0	0		+	0	0	0	0	0	AVX	N86
0	0		+	0	0	0	0	0	AVY	
0	0		+	0	0	0	0	0	AVZ	
0	0		+	0	0	0	0	0	AVZ	

PLANE CHANGE P30, V90, 410+5

TIG	CDH	_____	_____	_____	_____	_____	_____	_____
TIG	PC	_____	_____	_____	_____	_____	_____	_____

YDOT

CSM (N90)	PGNS (N90)	AGS (270)
(-) _____	(-) _____	() _____
(-) _____	(-) _____	() _____

MAX N49 (0.8,5.0)

PGNS		AGS		RESIDUALS	
HA	HP	AVX	N85	AVX	500
		AVY		AVY	501
		AVZ		AVZ	502

PGNS		AGS		RESIDUALS	
AVX	N85	AVX	500	AVX	500
AVY		AVY	501	AVY	501
AVZ		AVZ	502	AVZ	502

PGNS			AGS		
ΔH	ΔT TPI/CDH	TPI SLIP	AVX	YDOT N90	AVZ
(15.0)	(41:27)	(0:00)	(+0.0)	(+0.0)	(+0.0)
•	•	•	•	(-) _____	•
•	•	•	•	(-) _____	•
•	•	•	•	(-) _____	•

PGNS			AGS		
ΔH	ΔT TPI/CDH	TPI SLIP	AVX	YDOT N90	AVZ
(15.0)	(41:27)	(0:00)	(+0.0)	(+0.0)	(+0.0)
•	•	•	•	(-) _____	•
•	•	•	•	(-) _____	•
•	•	•	•	(-) _____	•

AGS			RESIDUALS		
402	450	452	AVX	YDOT N90	AVZ
ΔH	ΔVX	ΔVZ	(+0.0)	(+0.0)	(+0.0)
•	•	•	•	(-) _____	•
•	•	•	•	(-) _____	•
•	•	•	•	(-) _____	•

AGS			RESIDUALS		
263	270		AVX	YDOT N90	AVZ
ΔVY (CDH)	ΔVY (NOW)		(+0.0)	(+0.0)	(+0.0)
•	•	•	•	(-) _____	•
•	•	•	•	(-) _____	•
•	•	•	•	(-) _____	•

CRITERIA IS $\dot{x}=2\text{fps}$, $\dot{z}=6\text{fps}$
 PRIORITY OF SOLUTIONS-PGNS, AGS, CMC CHARTS.

A. RR AGREES WITH VHF WHERE
 $\Delta R = R + 0.5NM$, ΔR IS ALWAYS ≥ 1
 100

IF TWO OF THREE SOLUTIONS
 AGREE, BURN THE PRIORITY
 SOLUTION.

B. RR DOES NOT AGREE WITH VHF.
 MSFN ISOLATES FAILED SYSTEM.

C. V90<5fps-NO BURN.

AK
+ 66.5
+ 2.2
- 81.0

TPI CARD

+ 0 0		+ 0 0 1 3 9	HRS	N37
+ 0 0 0		+ 0 0 0 4 5	MIN	TPI
+ 0		+ 0 4 0 6 0	SEC	
R1(+00000), R2(+02660), R3(+13000) N55				
+ 0		+ 0 0 2 1 9	ΔVX	N81
+ 0		+ 0 0 0 1	ΔVY	LV
- 0		- 0 0 1 1 0	ΔVZ	
+ 0		+ 0 3 7 7 7	R	N54
- 0		- 0 1 1 1 5	R	TIG-5
+ 0		+ 0 0 2 4 5	ΔVF ⁺ /A ⁻	N59
+ 0		+ 0 0 0 1	ΔVR ⁺ /L ⁻	L0S
- 0		- 0 0 0 1	ΔVD ⁺ /U ⁻	
X X		X X 0 0 2 2	BT	
307+043.00				

BURN RULES

CRITERIA IS $\dot{X}=2\text{fps}$, $\dot{Y}=5\text{fps}$, $\dot{Z}=6\text{fps}$
 PRIORITY OF SOLUTIONS-PGNS, AGS, CMC, CHARTS.

A. RR AGREES WITH VHF WHERE
 $\Delta R = R + 0.5\text{NM}$, ΔR IS ALWAYS $\geq 1\text{NM}$
 IF TWO OF THREE SOLUTIONS AGREE;
 BURN THE PRIORITY SOLUTION.

B. RR DOES NOT AGREE WITH VHF.
 MSFN ISOLATES FAILED SYSTEM.

MAX N49 (0.8,5.0)		RESIDUALS	
PGNS	AGS	PGNS	AGS
		ΔVX N85	ΔVX 500
		ΔVY	ΔVY 501
		ΔVZ	ΔVZ 502
		HA	
		HP	

PGNS		AGS	
N37 TPI	N58 TPI	N81 TPI	N59 TPI
TIG (139:45:41) 2,180 2,176	HP (43:3)	ΔVX (+21.9)	ΔVR ⁺ /A ⁻ (24.5)
137 : 58 : 12	44.4 104.9 46.3	ΔVY (-11:0)	ΔVD ⁺ /U ⁻ (-0.1)
:	44.4 104.8 40.5		
:			
:			
373 TIG	267 ΔV	CSM SOLUTION (CHANGE SIGN)	CSM SOLUTION
7.8	371 ΔV TPI+TPF	ΔVX	ΔVY
(+0585.8)			

TPI
P76/P27

P76/P27 PADS

RP 16

P76 PAD										
PURPOSE										
+	0	0						+	0	0
+	0	0	0					+	0	0
+	0	0	0					+	0	0
+	0	0						+	0	0
PURPOSE										
+	0	0						+	0	0
+	0	0	0					+	0	0
+	0	0						+	0	0
PURPOSE										
+	0	0						+	0	0
+	0	0	0					+	0	0
+	0	0						+	0	0
PURPOSE										
+	0	0						+	0	0
+	0	0	0					+	0	0
+	0	0						+	0	0
PURPOSE										
+	0	0						+	0	0
+	0	0	0					+	0	0
+	0	0						+	0	0
PURPOSE										
+	0	0						+	0	0
+	0	0	0					+	0	0
+	0	0						+	0	0
PURPOSE										
+	0	0						+	0	0
+	0	0	0					+	0	0
+	0	0						+	0	0

CSM		LM/P27 PAD		PURP	
V	7	V	7	V	7
103:25:00	INDEX 2	103:25:00	INDEX 2	103:25:00	INDEX 4
1501	21	1501	21	0173	01
0000	21	0000	21	0173	02
0034	10	0034	07	0342	03
1764	32	0034	07	0342	04
1779	67	0034	07	0342	05
5754	37	0034	07	0342	06
7777	55	0034	07	0342	07
7605	57	0034	07	0342	08
7924	66	0034	07	0342	09
4302	25	0034	07	0342	10
6142	76	0034	07	0342	11
7644	44	0034	07	0342	12
7043	47	0034	07	0342	13
4373	35	0034	07	0342	14
0434	10	0034	07	0342	15
1600	01	0034	07	0342	16
		0034	07	0342	17
		0034	07	0342	18
		0034	07	0342	19
		0034	07	0342	20
		0034	07	0342	21
		0034	07	0342	22
		0034	07	0342	23
		0034	07	0342	24
		0034	07	0342	25
		0034	07	0342	26
		0034	07	0342	27
		0034	07	0342	28
		0034	07	0342	29
		0034	07	0342	30
		0034	07	0342	31
		0034	07	0342	32
		0034	07	0342	33
		0034	07	0342	34
		0034	07	0342	35
		0034	07	0342	36
		0034	07	0342	37
		0034	07	0342	38
		0034	07	0342	39
		0034	07	0342	40
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		0034	07	0342	44
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		0034	07	0342	66
		0034	07	0342	67
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		0034	07	0342	76
		0034	07	0342	77
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		0034	07	0342	83
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		0034	07	0342	89
		0034	07	0342	90
		0034	07	0342	91
		0034	07	0342	92
		0034	07	0342	93
		0034	07	0342	94
		0034	07	0342	95
		0034	07	0342	96
		0034	07	0342	97
		0034	07	0342	98
		0034	07	0342	99
		0034	07	0342	100

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AGS SV/IMPACT CARD

AGS STATE VECTOR PAD										PURP	LOAD
										240	
										241	
										242	
										260	
										261	
										262	
										254	414+2
										244	
										245	
										246	
										264	
										265	
										266	
										272	414+3
AGS STATE VECTOR PAD										PURP	LOAD
										240	
										241	
										242	
										260	
										261	
										262	
										254	414+2
										244	
										245	
										246	
										264	
										265	
										266	
										272	414+3

IMPACT CARD															
+	0	0	0	0	0	0	0	1	4	4	HRS	N33			
+	0	0	0	0	0	0	0	3	2	2	MIN	TIG			
+	0	0	0	0	2	0	2	0	2	0	SEC				
											ΔVX	N81			
											ΔVY	LV			
											ΔVZ				
+											HA	N42			
											HP				
											ΔVR				
+	X	X	X	X	X	X	X	1	8	5	BT				
X	X	X	X	X	X	X	X				R	FDAI			
X	X	X	X	X	X	X	X				P	INER			
											ΔVX	N86			
											ΔVY	AGS			
											ΔVZ				

AGS SV
IMPACT PAD

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