

B/4 FDF.

APOLLO 14	
FLIGHT PLAN	
PART NO.	S/N
SKB32100083-350	1002

CERNAN HOME  
591-2383

MCC-N

1423 CST

# FLIGHT PLAN

## NOTES

L/O CREW POSITIONS  
LEFT COUCH - CDR  
CENTER COUCH - CMP  
RIGHT COUCH - LMP  
AT SECO+20 SEC, S-IVB  
MNVRS TO LH AND  
INITIATES ORB RATE  
(HEADS DOWN)

THE DAP LOAD WILL  
BE SHOWN WHEN  
APPLICABLE IN THE  
TIME COLUMN OR  
AS A NOTE TO  
INDICATE STATUS

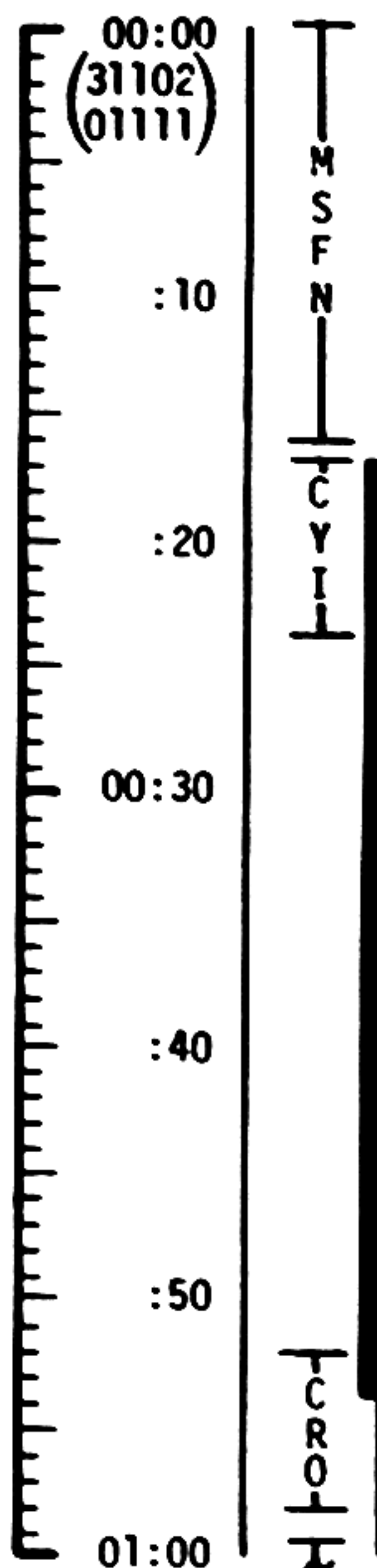
LIFT-OFF JANUARY 31, 1971

CSM LAUNCH CHECKLIST

SECO  
INSERTION AND SYSTEMS CHECKS PAGE L 2-11

UPDATE TO CSM  
Z TORQUING ANGLE

DUMP DSE



P52 IMU REALIGN  
OPTION 3 REFSMMAT  
(LAUNCH ORIENT)

P52 IMU REALIGN

N71: 22.24N05: 00

N93:

X+ 00.085Y+ 00.010Z+ 00.166GET 38:15

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	00:00 - 01:00	1/E.O.	3-1

NSC Form 29 (May 69)

FLIGHT PLANNING BRANCH

NASA — MSC

DETAILED  
TIMELINE

MCC-H

1523 CST

# FLIGHT PLAN

NOTES

01:00  
(31102)  
(01111)

H  
S  
K

REPORT: GYRO TORQUING ANGLES

:10

:20

01:30

M  
S  
F  
N

SCS ATT REF COMPARISON CHECK PAGE L 2-17  
EXTEND DOCKING PROBE PAGE L 2-18

:40

GO/NO-GO FOR PYRO ARM (CUE MSFN)  
LOGIC ON

:50

TLI PREPARATION PAGE L 2-23

PYRO ARM

02:00

DUMP DSE

UPDATE TO CSM  
TLI PAD  
TLI +90 MIN ABORT  
PAD  
P37 (L/O+8) PAD  
UPLINK TO CSM  
CSM S.V. & V66  
GO/NO-GO FOR PYRO  
ARM

AS A GENERAL RULE,  
EXCEPT DURING TEC,  
UNDocked PERIODS  
AND WHILE THE LM  
IS ON THE LUNAR  
SURFACE, MCC-H  
WILL UPLINK THE  
STATE VECTOR TO  
THE CSM SLOT AND  
TRANSFER IT VIA  
V66 TO THE LM  
SLOT IN ORDER TO  
HAVE REDUNDANT  
STATE VECTORS  
ONBOARD

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	01:00 - 02:00	1/E.O.	3-2

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# FLIGHT PLAN

## TLI BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+45° TERMINATE	$V_1 = \text{PAD VALUE} + 2 \text{ SEC}$	NO TRIM

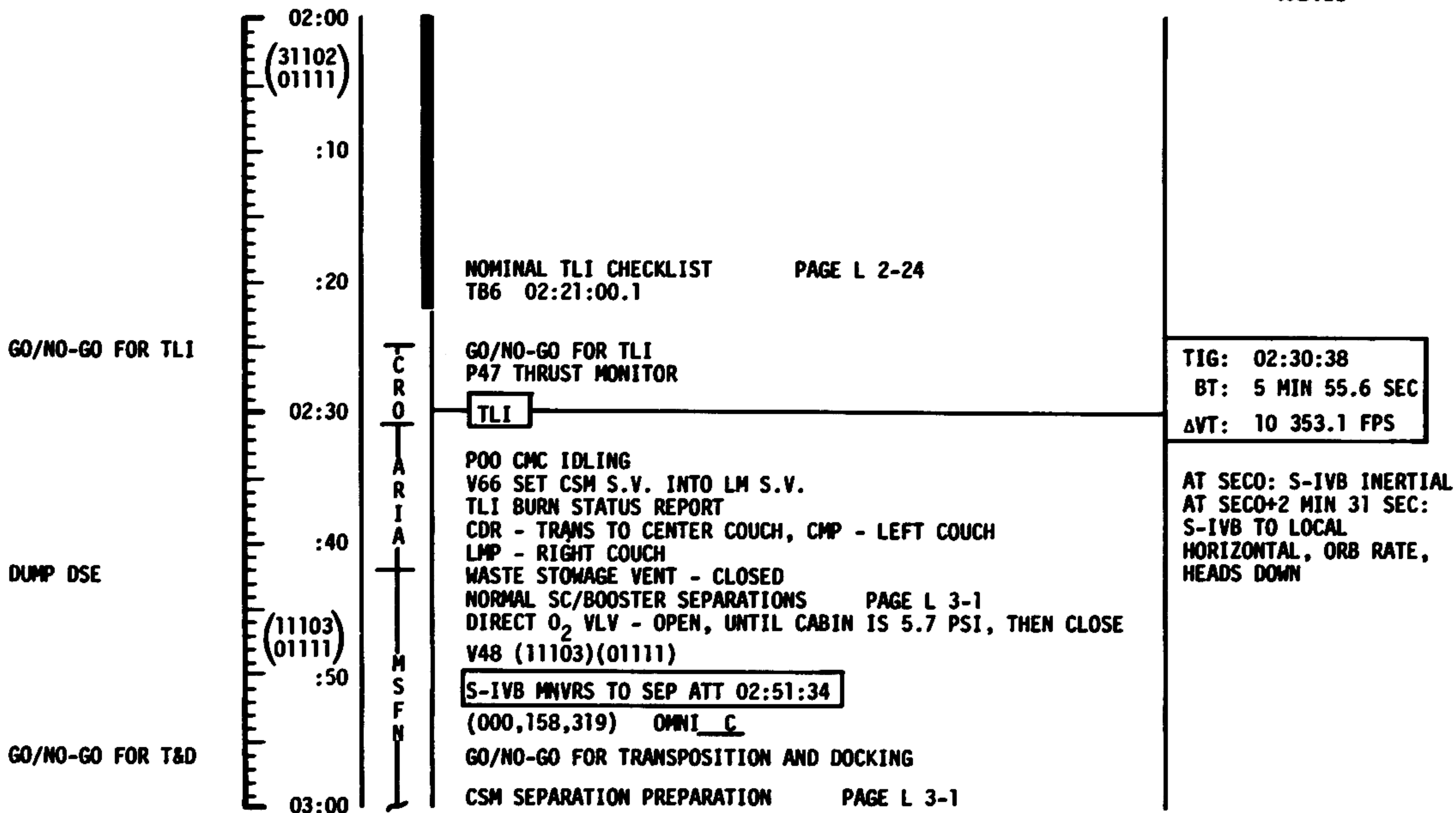
TABLE 3-1  
3-4

MCC-H

1623 CST

## FLIGHT PLAN

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	02:00 - 03:00	1/TLC	3-5

MCC-H

1723 CST

## FLIGHT PLAN

## NOTES

03:00  
(11102)  
(01111)

:10

:20

03:30

(21101)  
(X1111)  
:40

:50

04:00

CSM/S-IVB SEP 03:01

CSM MNVR TO DOCK ATT (301,338,041)(03:05)

V48 (11102)(01111) HGA P -3, Y 299

TV (GDS) 03:05 TO 03:30 CM4/TV - PEAK, BRKT (f22)

VISUALLY INSPECT AND PHOTOGRAPH S-IVB AND LM

DOCK 03:11

CSM/LM PRESSURE EQUALIZATION PAGE L 3-5

TUNNEL HATCH REMOVAL PAGE L 3-5

DOCKING LATCH VERIFICATION PAGE L 3-6

LM UMBILICAL CONNECTIONS PAGE L 3-6

HATCH INSTALLATION PAGE L 3-6

PRE LM SEP &amp; EJECTION PAGE L 3-7

S-IVB NON-PROPULSIVE VENT START (03:36:33.7)

V48 (21101) (X1111)

GO/NO-GO PYRO ARM (CUE MSFN)

LOGIC ON

PYRO ARM

P47 THRUST MONITOR

S-IVB NON-PROPULSIVE VENT COMPLETE (03:51:33.7)

PHOTOGRAPH LM EJECTION

CSM/LM EJECTION

POO, V66 SET CSM S.V. INTO LM S.V.

REPORT: GOOD EJECTION

T&amp;D MNVR

+X FOR 3 SEC ( $\Delta V \approx 0.5$  FPS),  
AFTER 15 SEC PITCH UP AT  
0.5°/SEC. V49 AUTO MNVR  
TO DOCKING ATT. NULL  
TRANSLATION AND RATES,  
+X FOR 4 SEC ( $\Delta V \approx 0.7$  FPS)DURING TLC, HGA IS  
REQUIRED ONLY FOR  
TD&E, TV TRANSMISSION,  
AND MCC'S. THE  
ANTENNA WILL BE  
STOWED AT OTHER TIMES.  
DURING PTC  
MCC-H WILL COMMAND  
OMNI SELECTION.SPRING ACTUATOR  
 $\Delta V \approx 0.8$  FPS. 5 SEC  
AFTER EJECTION THERE  
IS A 4 JET RCS -X  
TRANSLATION FOR 3 SEC  
( $\Delta V \approx 0.4$  FPS). TOTAL  
 $\Delta V \approx 1.2$  FPS.TIG: 03:56  
BT: 3 SEC  
 $\Delta VT$ : 0.4 FPS  
ULLAGE: NONE  
ORBIT: N/AGO/NO-GO FOR  
PYRO ARM AND  
CSM/LM EJECTIONTLI CUTOFF +  
1 HR 20 MIN

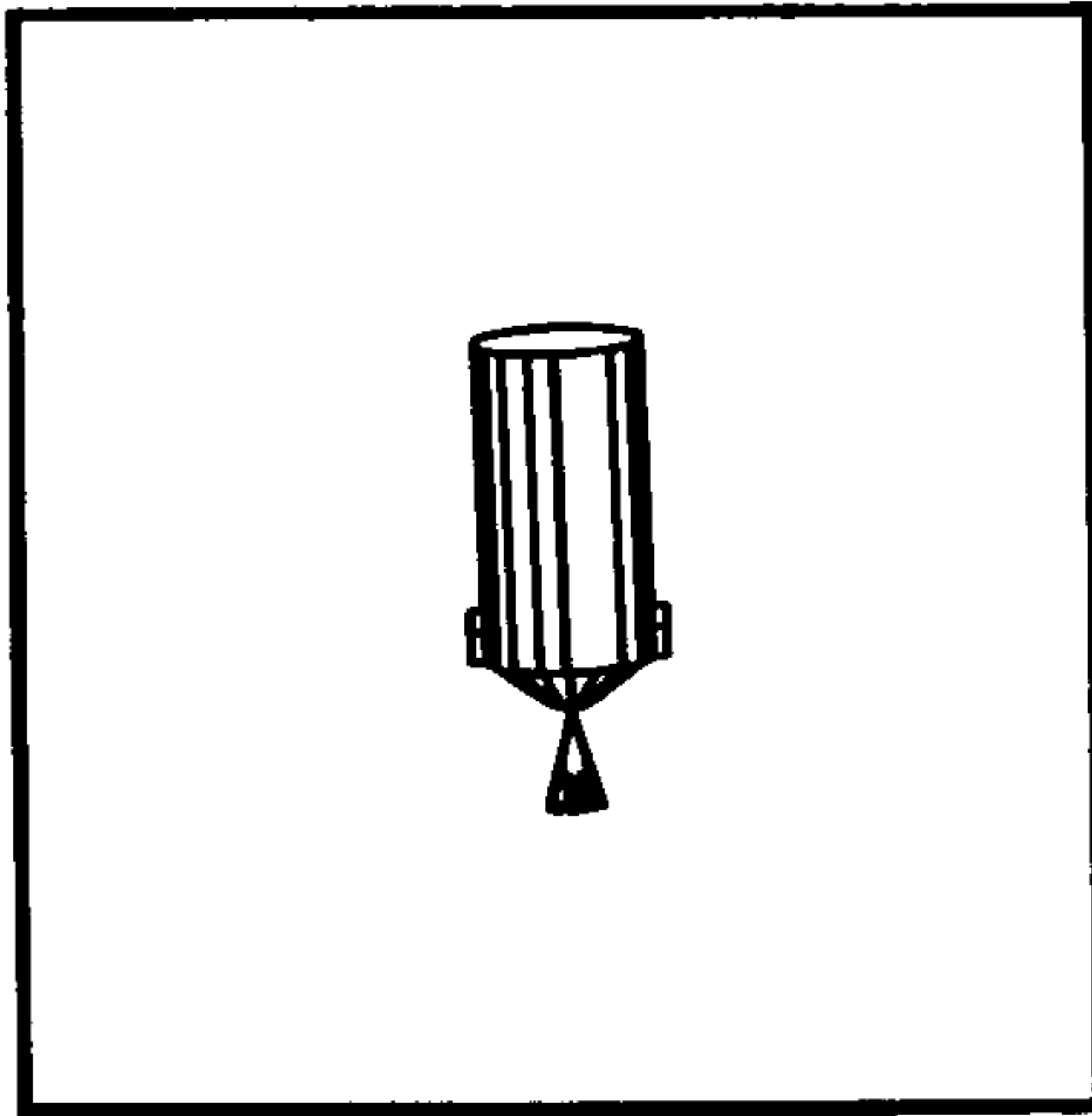
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	03:00 - 04:00	1/TLC	3-6



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GET 04:19

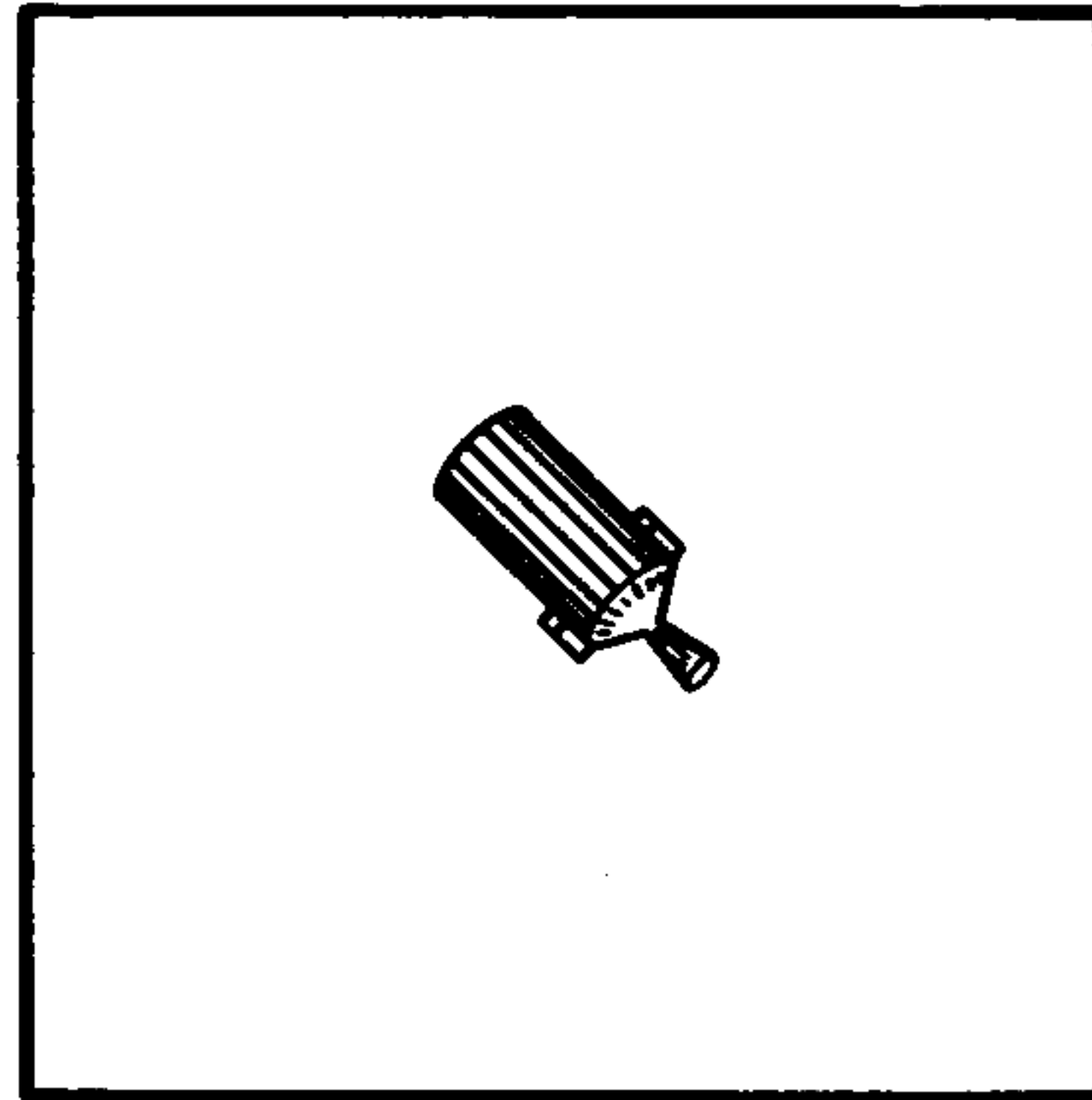
FOV 5°



S-IVB APS EVASIVE INITIATION  
CSM/S-IVB RANGE 1583 FT

GET 04:40

FOV 1°



S-IVB LOX DUMP INITIATION  
CSM/S-IVB RANGE 12 023 FT

MCC-H

1823 CST

## FLIGHT PLAN

## NOTES

GO FOR S-IVB YAW  
MNR INITIATIONGO/NO-GO FOR S-IVB  
EVASIVE BURN

DUMP DSE

04:00

(21101)  
(X1111)

:10

:20

04:30

:40

:50

05:00

M  
S  
F  
N

V49 MNR TO VIEW S-IVB IN HATCH WINDOW BY 04:09  
(090,340,356) OMNI D  
REPORT: GO FOR S-IVB YAW MNR  
VISUALLY INSPECT S-IVB/IU THERMAL SHROUD, TAKE PHOTOS IF  
DAMAGE IS EVIDENT

S-IVB YAW MNR 04:09 (GROUND COMMAND)

REPORT: GO FOR S-IVB EVASIVE BURN

S-IVB APS EVASIVE BURN 04:19 (GROUND COMMAND)

CHARGE BATTERY B

S-IVB MNRS TO PROPELLANT DUMP ATT (04:29)  
REPORT: LM/CM ΔP

S-IVB CONTINUOUS H<sub>2</sub> VENT-ON (04:36)

V49 MNR TO P52 ATTITUDE (05:20)

(230,300,356) HGA P 31, Y 310

S-IVB LOX DUMP (04:40)

DOFF PGA'S

TRANSFER ITEMS OUT OF PGA POCKETS  
ZIP SUIT AND INSTALL ELECTRICAL  
COVER PRIOR TO STOWING (PGA BAG)  
STOW COMM CARRIERS & UCTA (PGA BAG)

THE MNR TO ACQUIRE  
THE S-IVB WILL BE  
PERFORMED AT 0.2°/  
SEC AND WILL BE INI-  
TIATED AFTER GOOD  
EJECTION IS VERIFIED

GO FOR S-IVB YAW MNR  
INDICATES THAT THE  
S-IVB IS IN THE CREW  
FIELD OF VIEW AND  
ADEQUATE SPACECRAFT  
SEPARATION HAS BEEN  
ACHIEVED.  
THE S-IVB YAW MNR  
WILL BE PERFORMED  
NOMINALLY AT LM  
EJECTION +13 MIN

EVASIVE BURN ΔV  
≈ 9.4 FPS

LOX DUMP ΔV ≈ 28 FPS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	CHANGE A (JAN)	DECEMBER 23, 1970	04:00 - 05:00	1/TLC	3-9

MCC-H

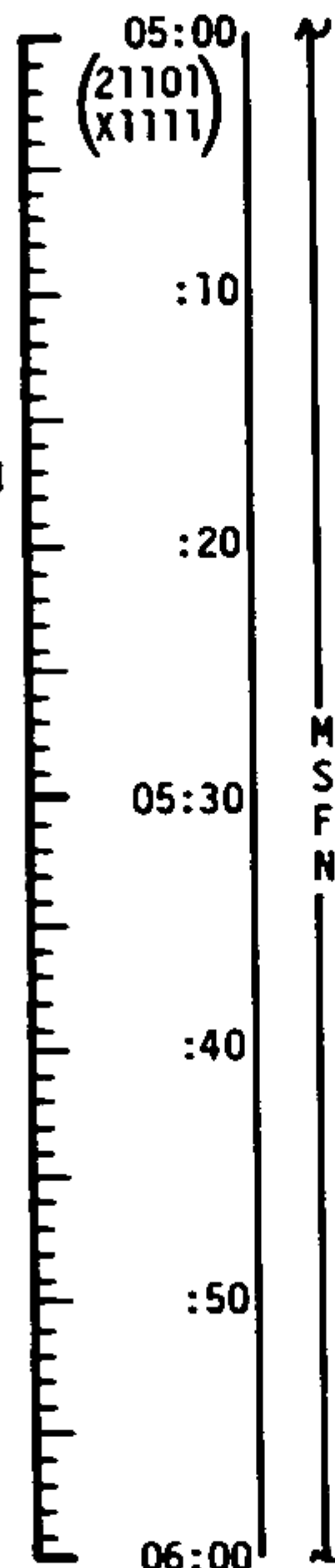
1923 CST

## FLIGHT PLAN

NOTES

UPLINK TO CSM  
DESIRED ORIENTATION  
(PTC)  
ZERO TRUNNION BIAS

UPDATE TO CSM  
P37 PAD (L/O+15)



PREPARE FOR LAUNCH VEHICLE  
SYSTEMS PERFORMANCE DEBRIEFING  
AT 27 HOURS. SEE QUESTIONS ON  
PAGE 3-28

ATT DEADBAND - MIN  
RATE - LOW  
BMAG (3) - ATT 1/RATE 2  
SC CONT - SCS

P52 IMU REALIGN  
OPTION 3 REFSMMAT  
(LAUNCH ORIENT)

REPORT: GYRO TORQUING ANGLES ✓

P52 IMU REALIGN  
OPTION 1 PREFERRED  
(PTC ORIENT)

SC CONT - CMC  
BMAG (3) - RATE 2

SECURE HGA, HGA TRACK - MAN OMNI C  
HGA P -52, Y 270  
- O<sub>2</sub> FUEL CELL PURGE { IF NO MCC-1  
- WASTE WATER DUMP  
VHF A SIMPLEX - OFF  
VERIFY WASTE STOWAGE VENT VALVE - VENT

STARS \_\_\_\_\_  
SA \_\_\_\_\_  
TA \_\_\_\_\_

SC INTERIOR PHOTOGRAPHY AT CREW OPTION  
CM/DAC/10/CIN- SPOT  
(T2.8,1/60,3) 6 fps  
(87% MAG)  
(MAG (H) \_\_\_\_\_, FR # \_\_\_\_\_

## P52 IMU REALIGN

N71: \_\_\_\_\_  
N05: \_\_\_\_\_  
N93: \_\_\_\_\_  
X \_\_\_\_\_  
Y \_\_\_\_\_  
Z \_\_\_\_\_  
GET \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_

P37 PAD ASSUMES  
NO MCC-1

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	CHANGE A (JAN)	DECEMBER 23, 1970	05:00 - 06:00	1/TLC	3-10

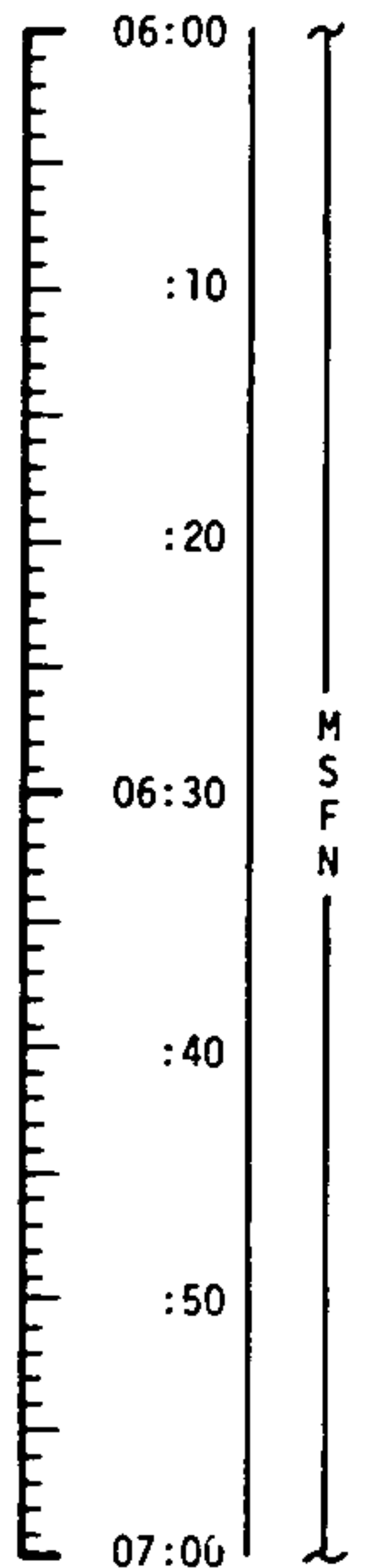
MCC-N

2023 CST

## FLIGHT PLAN

## NOTES

UPDATE TO CSM  
QUADS TO ENABLE  
FOR PTC SPINUP



## CSM G&amp;C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G 8-2  
V49 MNVR TO PTC ATTITUDE  
(N20,090,000)  
V79 (-0.3750)  
(+030.00)  
(+00000)

CREW EXERCISE PERIOD

PTC

S-IVB APS MCC-1  
GET  $\approx$  06:30  
 $\Delta V \approx$  30 FPS  
DAP LOAD STATUS  
(21101)(X1111)

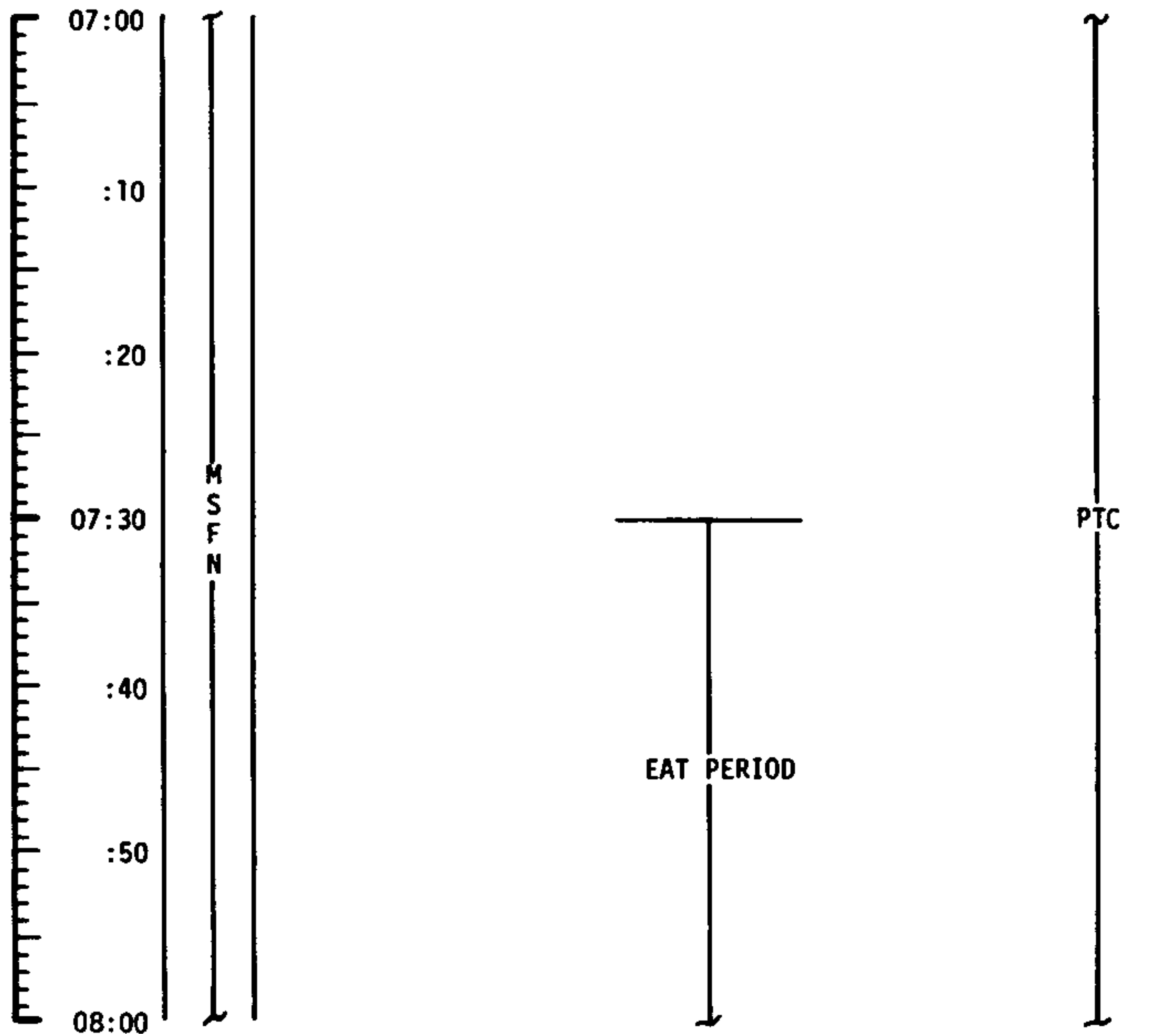
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	CHANGE A (JAN)	DECEMBER 23, 1970	06:00 - 07:00	1/TLC	3-11

2123 CST

# FLIGHT PLAN

## NOTES

DAP LOAD STATUS  
(21101)(X1111)



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	CHANGE A (JAN)	DECEMBER 23, 1970	07:00 - 08:00	1/TLC	3-12

MCC-H

2223 CST

# FLIGHT PLAN

## NOTES

DAP LOAD STATUS  
(21101)(X1111)

PTC

GET: 9:00

F.O.V. 10°

EAT PERIOD

08:00

:10

:20

08:30

:40

:50

09:00

M  
S  
F  
N

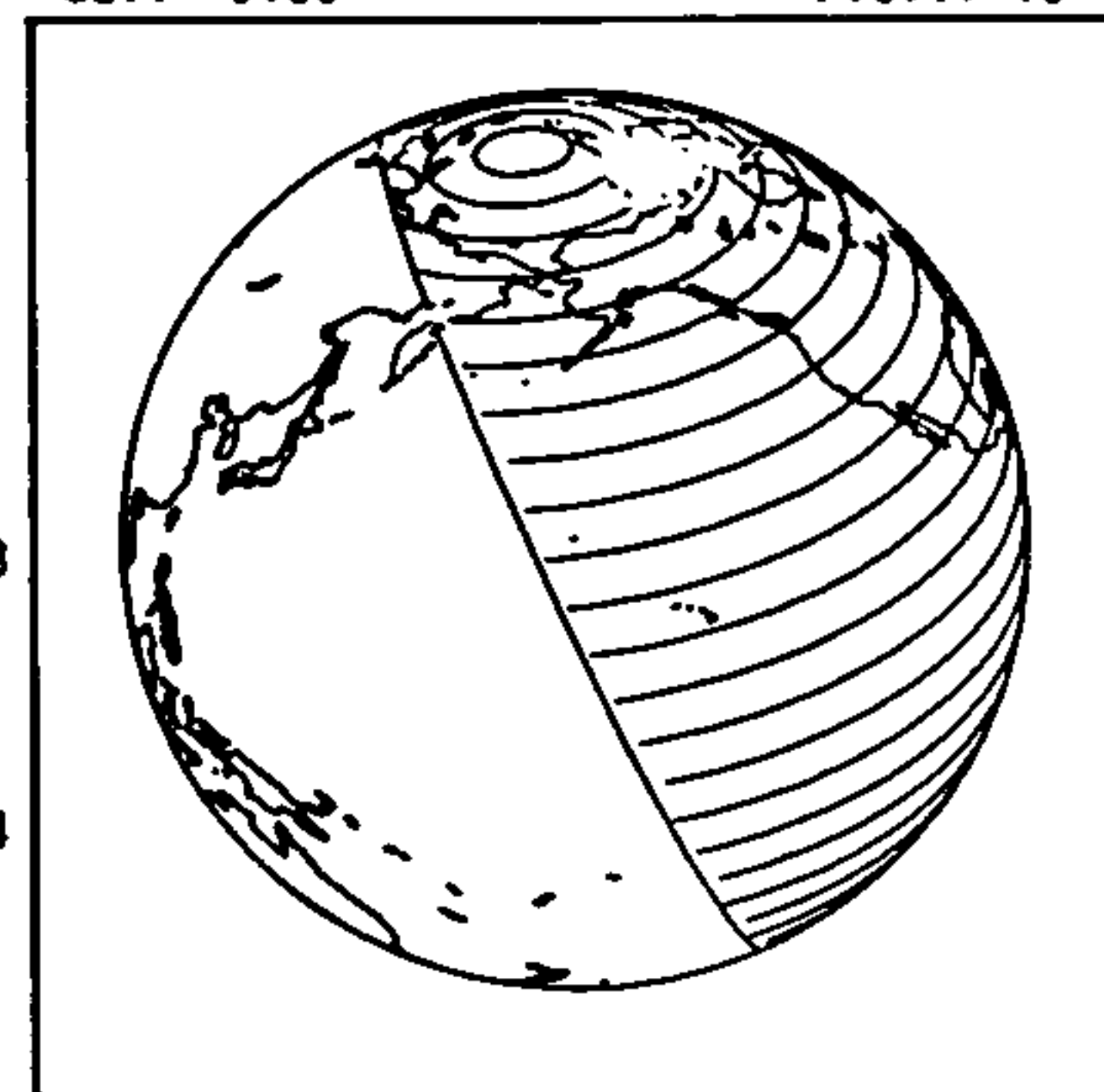
CSM SYSTEMS CHECKLIST

DEACTIVATE PRIMARY EVAP

PAGE S 1-13

COMM MODE -  
NORMAL LUNAR CONFIGURATION  
COAST AWAKE

PAGE S 1-24

S-IVB MCC-2 GET  $\approx$  09:30  
 $\Delta V$  IS NOMINALLY ZERO  
EARTH DISTANCE  
 $\approx$  44 241 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	CHANGE A (JAN)	DECEMBER 23, 1970	08:00 - 09:00	1/TLC	3-13

2323 CST

## FLIGHT PLAN

## NOTES

09:00

P52 IMU REALIGN  
OPTION 3 REFSMMAT  
(PTC ORIENT)

**:10**

**REPORT: GYRO TORQUING ANGLES**

## CSM G&C CHECKLIST

ΔV TEST & NULL BIAS CHECK PAGE G 2-5  
REPORT: BIAS

:20

**09:30**

$$\begin{pmatrix} 21101 \\ x1111 \end{pmatrix}$$

EXIT G&N PTC PAGE G 8-3  
V49 MNVR TO OPTICS CALIBRATION ATTITUDE  
(153,224,328)

OMNI A

P23 Cislunar Navigation  
Optics Calibration Star N70 (00034)  
P00

**:40**

V49 MNVR TO SIGHTING ATTITUDE  
(173,275,310) OMNI B  
V67 (+80000) (+00070) (+00003)

**: 50**

023 CISELUNAR NAVIGATION  
5 MARKS ON EACH STAR, UPDATE STATE VECTOR  
1. N70 (00000) (00000) (00120)  
N88 (-54083) (-07011) (-83821)

10:00

DAP LOAD STATUS  
(21101)(X1111)

P52 IMU REALIGN

N71: ,

N05: .

**N93:**

**X** .

Y .

2

GET 6:40:35

**PTC**

### LOAD N MATRIX

**72 GACRUX  
(EFH)**

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	CHANGE A (JAN)	DECEMBER 23, 1970	09:00 - 10:00	1/TLC	3-14



MCC-H

0023 CST

## FLIGHT PLAN

## NOTES

UPDATE TO CSM  
MCC-1 MNVR PAD  
CSM S.V.  
UPLINK TO CSM  
CSM S.V. & V66  
MCC-1 TGT LOAD

UPDATE TO CSM  
QUADS TO ENABLE  
FOR PTC SPINUP

10:00

(21101)  
(X1111)

:10

:20

10:30

:40

:50

11:00

M  
S  
F  
N

2. N70 (00000)(00000)(00110)  
N88 (-44989)(-89085)(-06316)

3. N70 (00000)(00000)(00120)  
N88 (-64872)(-11412)(-75242)

4. N70 (00000)(00000)(00110)  
N88 (-35412)(-91724)(-18240)

P00  
V49 MNVR TO OPTICS CALIBRATION ATTITUDE  
(153,224,328) OMNI A  
P23 CISELUNAR NAVIGATION  
OPTICS CALIBRATION STAR N70 (00034)

## CSM G&amp;C CHECKLIST

PASSIVE THERMAL CONTROL (G&amp;N)

PAGE G 8-2

V49 MNVR TO PTC ATTITUDE  
(N20,090,000)  
V79 (-0.3750)  
(+030.00)  
(+00000)

PTC

②

①

③ 161

④ 24 GENAH EFH

236 DELTA  
OPHIUCHI (ENH)

53 GAMMA  
CENTAURI (EFH)

202 ZETA  
OPHIUCHI (ENH)

DAP LOAD STATUS  
(21101)(X1111)  
START PTC IF  
MCC-1 NOT REQUIRED

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	10:00 - 11:00	1/TLC	3-15

# FLIGHT PLAN

MCC-1  
BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT + 1 SEC	IF <2 FPS, TRIM X AXIS TO 0.2 FPS IF >2 FPS, NO TRIM

TABLE 3-2  
3-16

MCC-H

0123 CST

## FLIGHT PLAN

NOTES

11:00  
(21101)  
(X1111)

:10

:20

11:30

:40

:50

12:00

M  
S  
F  
N

P30 EXTERNAL ΔV

*LM/CM ΔP = 0.5 PSI*

V49 MNVR TO PAD BURN ATTITUDE

WASTE STOWAGE VENT VLV - CLOSE (8 HOURS FROM VENT)

O<sub>2</sub> HEATERS 1&2 (2) - OFFO<sub>2</sub> HEATERS 3 (1) - AUTO

SXT STAR CHECK

P40 SPS THRUSTING OR P41 RCS THRUSTING

O<sub>2</sub> FUEL CELL PURGE

WASTE WATER DUMP

} IF NOT PERFORMED AT 05:55

MCC-1

TIG: 11:36:33

BT: NOM ZERO

ΔVT: NOM ZERO

ULLAGE: NONE

ORBIT: N/A

V66 SET CSM S.V. INTO LM S.V.

BURN STATUS REPORT

REPORT: LM/CM ΔP

VENT BATTERIES UNTIL SYSTEM TEST METER 4A=0

LiOH CANISTER CHANGE

(3 INTO A, STOW 1 IN B5)

MCC-1 WILL BE  
DELAYED TO MCC-2  
IF PROPELLANT  
COST IS NOT  
PROHIBITIVE

## BURN STATUS REPORT

Y	X		•	ΔTIG
X	X		•	BT
			•	V <sub>gx</sub>
TRIM				
X	X	X		R
X	X	X		P
X	X	X		V
			•	V <sub>gx</sub>
			•	V <sub>gy</sub>
			•	V <sub>gz</sub>
			•	ΔV <sub>c</sub> *
X	X	X		FUEL*
X	X	X		OX*
X	X	X		UNBAL

PTC

\*ITEMS TO BE  
REPORTED TO MSFN

TLI CUTOFF +9 HR

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	11:00 - 12:00	1/TLC	3-17

0223 CST

# FLIGHT PLAN

## NOTES

UPDATE TO CSM  
QUADS TO ENABLE  
FOR PTC SPINUP

12:00

:10

:20

12:30

:40

:50

13:00

M  
S  
F  
N

## CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G 8-2

V49 MNVR TO PTC ATTITUDE

(N20,090,000)

V79 (-0.3750)  
(+030.00)  
(+00000)

152 (on school @ 09:00)

DAD LOAD STATUS  
(21101)(X1111)

START PTC IF  
MCC-1 WAS  
PERFORMED

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	12:00 - 13:00	1/TLC	3-18

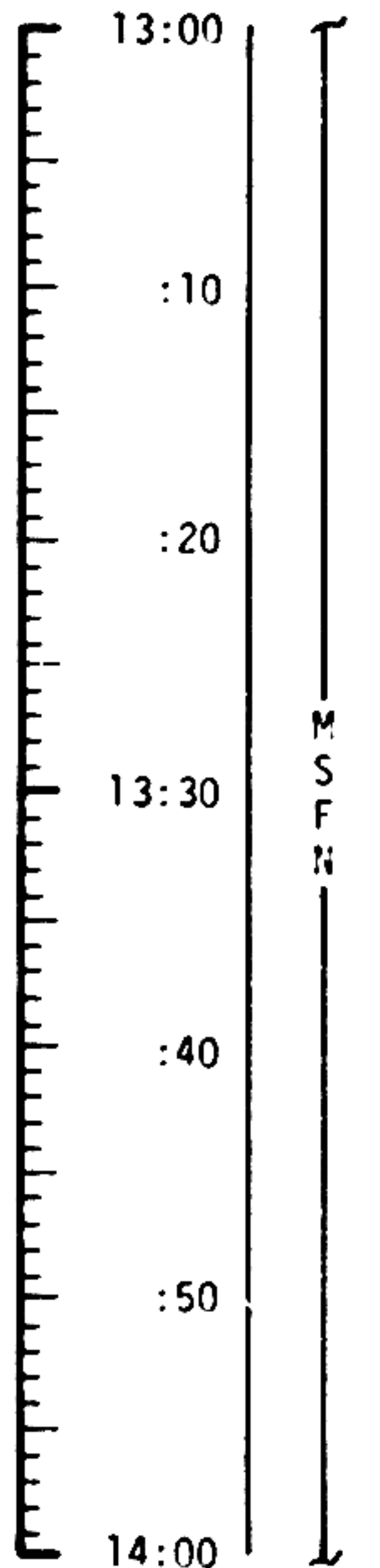
MCC-H

0323 CST

# FLIGHT PLAN

## NOTES

DAP LOAD STATUS  
(21101)(X1111)



PTC

UPDATE TO CSM  
P37 PADS (LAUNCH  
+ 25, 35, 45 & 60)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	13:00 - 14:00	1/TLC	3-19

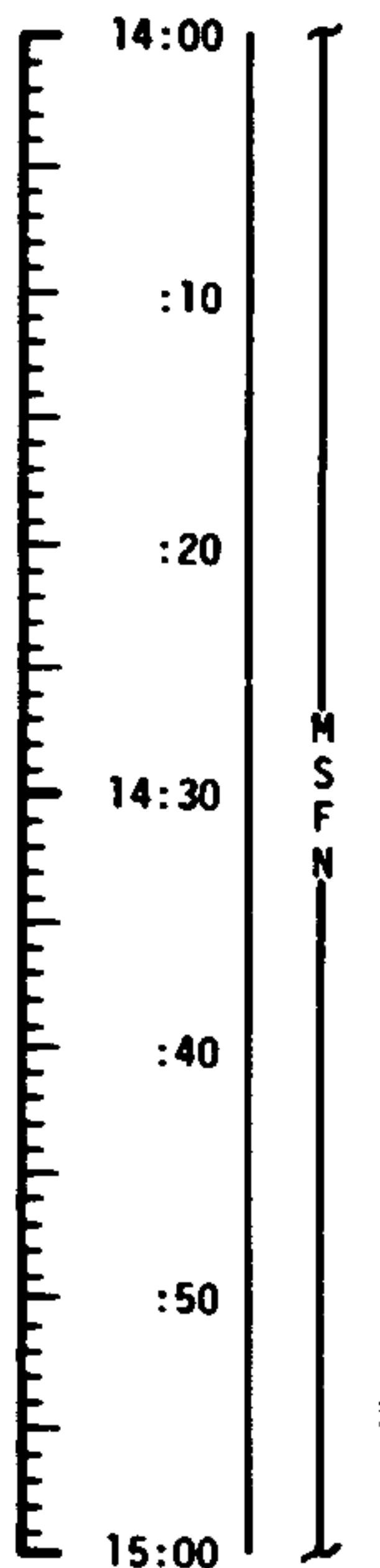
MCC-N

0423 CST

# FLIGHT PLAN

## NOTES

DAP LOAD STATUS  
(21101)(X1111)



PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	14:00 - 15:00	1/TLC	3-20

MCC-M

0523 CST

# FLIGHT PLAN

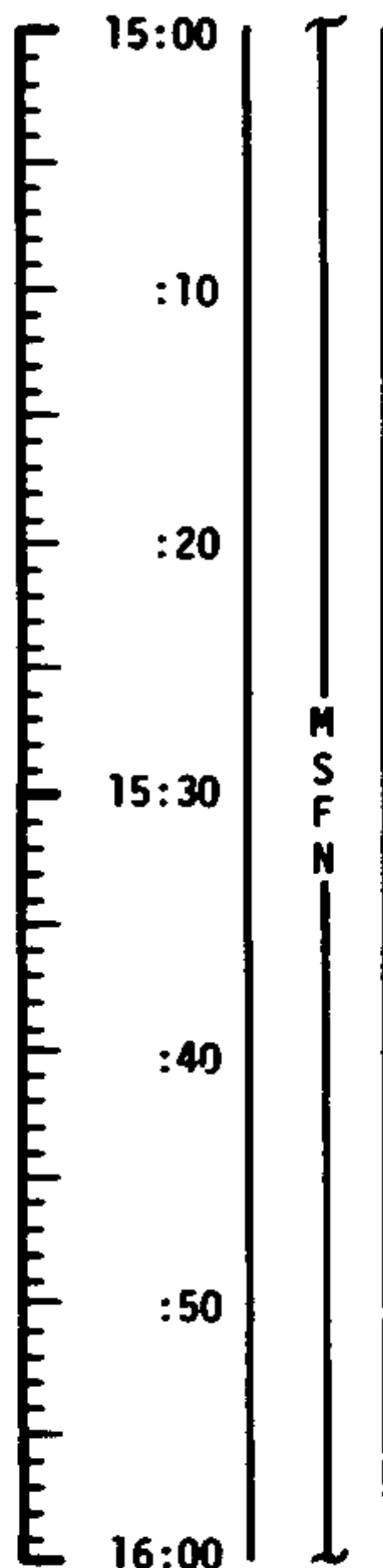
## NOTES

DAP LOAD STATUS  
(21101)(X1111)

### ONBOARD READOUT

BAT C \_\_\_\_\_  
 PYRO BAT A \_\_\_\_\_  
 PYRO BAT B \_\_\_\_\_  
 RCS A \_\_\_\_\_  
 B \_\_\_\_\_  
 C \_\_\_\_\_  
 D \_\_\_\_\_

DC IND SEL - MNA OR B



EAT PERIOD

PTC

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST

PAGE S 1-26

EARTH DISTANCE  
≈ 73 991 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	15:00 - 16:00	1/TLC	3-21

MCC-H

0623 CST

# FLIGHT PLAN

## NOTES

16:00  
:20  
:40  
17:00  
:20  
:40  
18:00

M  
S  
F  
H

REST PERIOD  
(10 HOURS)

PTC

DAP LOAD STATUS  
(21101)(X1111)  
DURING REST PERIOD,  
TWO CREWMEN IN  
REST STATIONS AND  
ONE IN COUCH

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	16:00 - 18:00	1/TLC	3-22



MCC-H

0823 CST

# FLIGHT PLAN

## NOTES

DAP LOAD STATUS  
(21101)(X1111)

18:00  
:20  
:40  
19:00  
:20  
:40  
20:00

M  
S  
F  
N

REST PERIOD  
(10 HOURS)

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	18:00 - 20:00	1/TLC	3-23

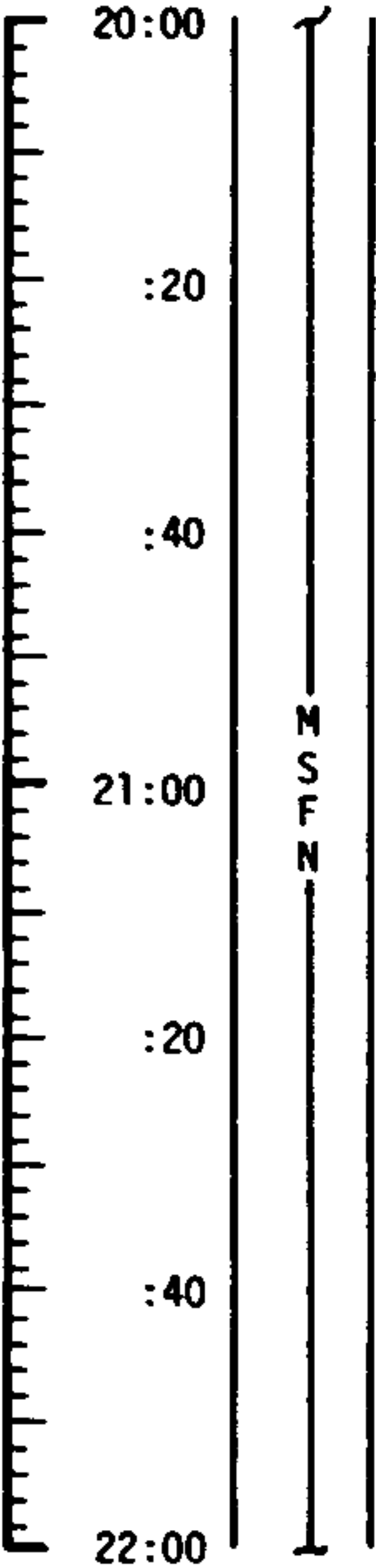
MCC-H

1023 CST

# FLIGHT PLAN

NOTES

DAP LOAD STATUS  
(21101)(X1111)



REST PERIOD  
(10 HOURS)

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	20:00 - 22:00	1/TLC	3-24

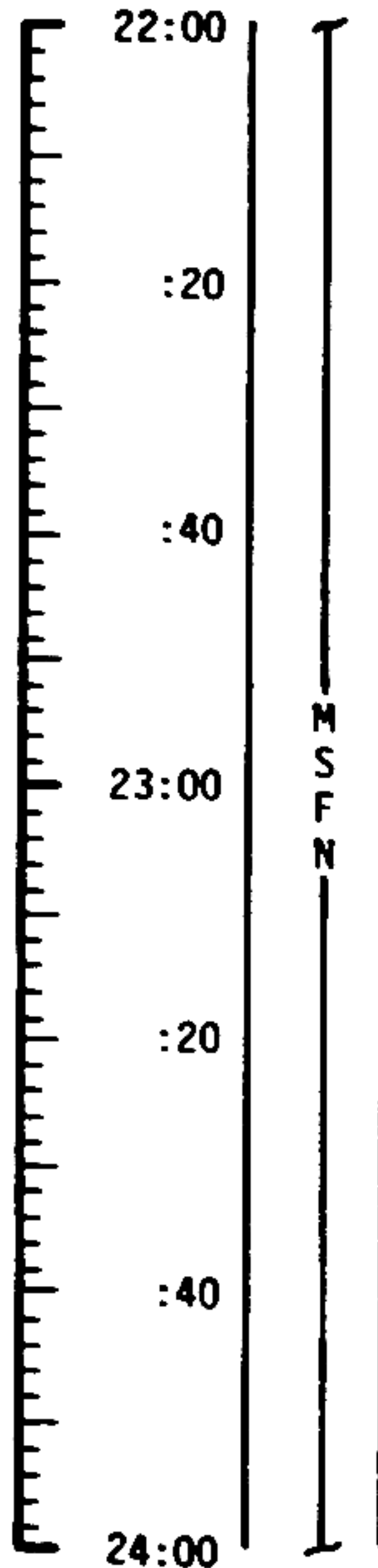
MCC-H

1223 CST

# FLIGHT PLAN

## NOTES

DAP LOAD STATUS  
(21101)(X1111)



REST PERIOD  
(10 HOURS)

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	22:00 - 24:00	1/TLC	3-25

MCC-N

1423 CST

# FLIGHT PLAN

## NOTES

DAP LOAD STATUS  
(21101)(X1111)

24:00  
:20  
:40  
25:00  
:20  
:40  
26:00

M  
S  
F  
N

REST PERIOD  
(10 HOURS)

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 14	FINAL (JAN)	DECEMBER 2, 1970	24:00 - 26:00	1/TLC	3-26