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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APOLLO 16

APRIL 16 LAUNCH

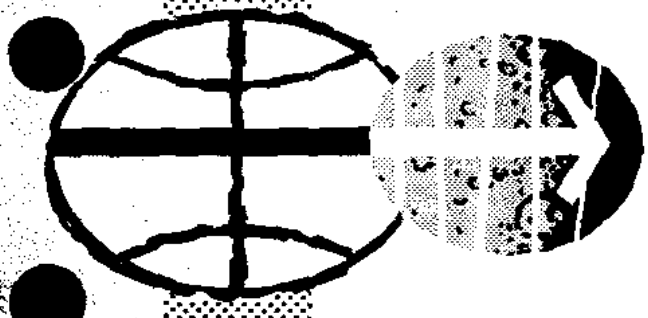
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CHANGE A

FLIGHT PLAN

PREPARED BY

FLIGHT PLANNING BRANCH
CREW PROCEDURES DIVISION



MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

MARCH 27, 1972

APOLLO 16

APRIL 16, 1972

FLIGHT PLAN

CHANGE A

MARCH 27, 1972

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ABBREVIATIONS

ABB	abbreviation or abbreviated
AC	alternating current
ACCEL	accelerometer
ACN	Ascension
ACT	activation
ACQ	acquisition or acquire
ADAPT	adapter
AEA	abort electronics assembly
AGS	abort guidance subsystem
AH	ampere hours
ALSCC	Apollo lunar surface close-up camera
ALSD	Apollo lunar surface drill
ALSEP	Apollo lunar surface experiment package
ALT	altitude
ALTM	altimeter
AM	amplitude modulation
AMP or amp	amperes
AMPL	amplifier
ANG	Antigua
ANT	antenna
AOH	Apollo Operations Handbook
AOL	Atlantic Ocean line
AOS	acquisition of signal or acquisition of site
AOT	alignment optical telescope
AP	alpha particle spectrometer
APS	ascent propulsion subsystem
ARIA	Apollo range instrumentation aircraft
ARS	atmosphere revitalization system
ASC	ascent
A/T	alignment technique
ATT	attitude
AUX	auxiliary
AZ	azimuth
BAT	battery
BEF	blunt end forward
BD	band
BDA	Bermuda
BIOMED	bio-medical data
BKWD	backward
BMAG	body mounted attitude gyro
BP	barber pole
BRKT	bracket
BSLSS	buddy secondary life support system
BT	burn time
BU	backup

ABBREVIATIONS (CONT)

BW	black and white (Film 3400)
BWD	backward
BW1	black and white (Film 3401)
CAP COM	capsule communicator
CAL	calibration
CAMR or CAM	camera
CARR	carrier
CB or cb	circuit breaker
CCGE	cold cathode gage experiment
CCIG	cold cathode ion gage
CCU	Comm carrier umbilical
CCW	counter clockwise
CDH	constant delta altitude
CDR	Commander
CDU	coupling data unit
CEX	color exterior(SO-368)
CIN	color interior(SO-168)
CIRC	circulation
CK	check
CKT	circuit
C/L	centerline or checklist
CM	command module
CMC	command module computer
CMD	command
CMP	Command Module Pilot
CNTL	control
C/O	check out
COAS	crew optical alignment sight
COMM	communications
CONFIG	configuration
COMP	compare or compensate
CONT	continue or contingency
CP	control point
CPLEE	charged particle lunar environment experiment
CRO	Carnarvon, Australia
CRYO	cryogenic
CS	contingency sample
CSI	coelliptic sequence initiation
CSM	command and service modules
CST	central standard time
CSVC	core sample vacuum container
C/S	central station
CTR	center
C&WS	caution and warning system
CW	clockwise
CWEA	caution and warning electronics assembly

ABBREVIATIONS (CONT)

CWG	constant wear garment
CYI	Grand Canary Island
DAC	data acquisition camera
DAP	digital auto pilot
DB	deadband
DC	direct current or data camera (70mm)
DC5	500mm data camera/lens
DCA	digital command assembly
DCC	Commander's data camera
DCL	Lunar Module Pilot's data camera
DECON	decontamination
DEDA	data entry and display assembly
DEG	degrees
DEPL	depletion
DES	descent
DET	digital event timer
DIFF	difference
DIR	direct
DK	docked
DO	detailed objective
DOI	descent orbit insertion
DPLY	deployment
DPS	descent propulsion system
DR	door
DRT	dome removal tool
DS	documented sample
DSCRM	discreminator
DSE	data storage equipment(CSM)
DSEA	data storage equipment assembly (LM)
DSKY	display and keyboard
DSM	deep space measurement
DTO	detailed test objective
DUA	digital uplink assembly
DWN	down
E	erasable or enter
ECS	environmental control system
ED	explosive device
EDT	eastern daylight time
EFH	earth far horizon
EI	earth (atmosphere) interface and entry interface
EKG	electrocardiogram
EL	electric Hasselblad camera
ELECT	electrical
ELEV	elevation

ABBREVIATIONS (CONT)

EMER	emergency
EMS	entry monitor system
EMU	extravehicular mobility unit
ENG	engine
ENH	earth near horizon
ENT	entry
E.O.	earth orbit
EOM	end of mission
EPO	earth parking orbit
EPHEM	Ephemeris
EPS	electrical power subsystem
EQUIP	equipment
ERECT	erectable
ERR	error
EST	eastern standard time
ETB	equipment transfer bag
EV	extravehicular
EVA	extravehicular activity
EVAP	evaporator
EVCS	extravehicular communications system
EVT	extravehicular transfer
EXP	experiment
EXT	external
EXTD	extend
f	f-stop
FAM	familiarize or familiarization
FC	fuel cell
FCS	fecal containment system
FDAI	flight director attitude indicator
FLT	flight
FM	frequency modulated
FOV	field of view
FPS	feet per second
fps	frames per second
FR	frame(s)
FREQ	frequency
FT or ft	feet
FTO	flight test objective
FTP	full throttle position
FTT	fuel transfer tool
FWD	forward
G.A.	gas analysis
GA	gimbal angle
GAL	galactic
GBI	Grand Bahama Islands

ABBREVIATIONS (CONT)

GBM	Grand Bahama (MSFN)
GDC	gyro display coupler
GDS	Goldstone, California
GET	ground elapsed time
GETI	ground elapsed time of ignition
GETIL	ground elapsed time of landing for TIG time of abort burn
GLY	glycol
GMT	Greenwich mean time
G&C	guidance and control
G&N	guidance and navigation
GNCS	guidance, navigation and control system (CSM)
GR	gamma ray spectrometer
GWM	Guam
GYM	Guaymas, Mexico
H_2	hydrogen
HA	apogee altitude
HAW	Hawaii
HBR	high bit rate (TLM)
HBW	high speed black and white film
HD	highly desirable
HDC	hasselblad data camera
HFE	heat flow experiment
HGA	high-gain antenna
HI	high (switch position)
HOR	horizon
H2O	water
HP	perigee altitude
HR	hour(s)
HSB	helmet stowage bag
HSK	Honeysuckle (Canberra, Australia)
HTC	hand tool carrier
HTR	heater
HTV	USNS Huntsville
ICDU	inertial coupling data unit
ID	identification
ICG	inflight coverall garment
ICS	intercomm system
IGA	inner gimbal angle
IGN	ignition
IMC	image motion compensation
IMU	inertial measurement unit
INCR	increase
IND	indicator
INIT	initialization
INT	interval

ABBREVIATIONS (CONT)

IP	initial point
ISA	interim stowage assembly
ISS	interim stowage shelf
IU	instrumentation unit
IVC	intervehicular communications
IVL	intervalometer
IVT	intravehicular transfer
iR	inclination of the ascending return
JETT	jettison
KA	kilogram
KM	kilometer
kwh	kilowatt hour
LA	launch azimuth or laser altimeter
LAT	latitude
LBR	low bit rate (TLM)
LB or lb	pound(s)
LCG	liquid cooled garment
LCRU	lunar communications relay unit
L/D	lift/drag
LD	lunar day (TV lens)
LDG	landing
LDMK	landmark
LEB	lower equipment bay
LEC	lunar equipment conveyor
LEVA	lunar extravehicular visor assembly
LFH	lunar far horizon
LGC	LM guidance computer
LH	left-hand
L/H	local horizontal
LHEB	left-hand equipment bay
LHFEB	left-hand forward equipment bay
LHSSC	left-hand side storage container
LiOH	lithium hydroxide
LLM	lunar landing mission
LLOS	landmark line of sight
LM	lunar module
LMP	Lunar Module Pilot
LNH	lunar near horizon
L/O	lift-off
LOD	lunar orbit docked
LOI	lunar orbit insertion
LONG	longitude

ABBREVIATIONS (CONT)

LOS	loss of signal or loss of site
LPD	landing point designator
LPO	lunar parking orbit
LPM	lunar portable magnetometer
LR	landing radar
LRRR or LR3	laser ranging retro-reflector
LRV	lunar roving vehicle
L/S or LS	landing site or lunar surface
LSM	lunar surface magnetometer
LT	light
LTG	lighting
LUB	lubrication
LV	launch vehicle
L/V	local vertical
LVPD	launch vehicle pressure display
M	mandatory
MAD	Madrid, Spain
MAG	magazine (camera)
MAN	manual
MAX	maximum
MAX Q	maximum dynamic pressure
MBW	medium black and white film
MC	mapping camera
MCC	midcourse correction
MCC-H	Mission Control Center - Houston
MDC	main display console
MEAS	measurement
MED	medical
MEED	microbial ecology evaluation device
MESA	modular experiment stowage assembly
MET	mission event timer
MGA	middle gimbal angle
M/I	minimum impulse
MIN	minimum or minutes(s)
MIR	mirror
MLA	Merrit Island, Florida, launch area
mm or MM	millimeter
MNA or MNB	main electrical bus A or B
MNVR	maneuver
MON	monitor
MONO	monaural
MPL	mid-Pacific line
MPS	main propulsion system
M/R	mixture ratio (fuel to oxidizer)

ABBREVIATIONS (CONT)

MS	mass spectrometer
MSFN	Manned Space Flight Network
MSO	mass spectrometer outgasing
MTN	motion
MTVC	manual thrust vector control
MULT	multiplier
N_2	nitrogen
NAV	navigation
NEG	negative
NK	Nikon camera
NM	nautical miles
NO.	number
NOM	nominal
NXX	Noun XX
O_2	oxygen
OBS	observation
O/F	oxidizer to fuel ratio
OGA	outer gimbal angle
OID	octal identifier
OMNI	omnidirectional antenna
OPR	operate
OPS	oxygen purge system
OPT	option
ORB	orbital
ORDEAL	orbit rate display earth and lunar
ORIENT	orientation
OVBD	overboard
OVHD	overhead
P	pitch or program
PAD	voice update
PAN	panoramic
PART	particle
PCM	pulse code modulation
PC	plane change or chamber pressure
PDI	powered descent initiation
PER or PC	Pericynthion
PGA	pressure garment assembly
PGNCS	primary guidance, navigation and control system (LM)
PGNS	primary guidance navigation system (LM)
PHOTO	photograph
PIPA	pulse integrating pendulous accelerometer
PKG	package

ABBREVIATIONS (CONT)

PKS	Parks, Australia
PLSS	portable life support system
PM	phase modulated
POL	polarity or polarizing
POS	positive
PRD	personal radiation dosimeter
PREF	preferred
PREP	preparation
PRESS	pressure
PRIM	primary
PROP	proportional
PRN	pseudo random noise
PRPLNT	propellant
PSE	passive seismic experiment
PSIA	pounds per square inch absolute
PSID	pounds per square inch differential
PSIG	pounds per square inch gage
PT	point
PTC	passive thermal control
PTT	push to talk
PU	propellant utilization
PUGS	propellant utilization gaging system
PWR	power
PXX	Program XX
PYRO	pyrotechnic
QTY	quantity
QUAD	quadrant
R	roll or range
R&B	red and blue
RAD	radiator, radial, or radiation
RCDR	recorder
RCS	reaction control system
RCU	remote control unit
RCV	receiver
REACQ	reacquire
REFSMMAT	reference stable member matrix
REG	regulator
REL	release
REQD	required
RETR	retract
REV	revolution
RH	right-hand
RHC	rotational hand controller
RING	ringsight
RLS	radius of landing site

ABBREVIATIONS (CONT)

RMT	*remote*
RNDZ	rendezvous
RNG	*range or ranging*
ROD	rate of descent
RR	*rendezvous radar*
RSI	roll stability indicator
RSLV	*resolver*
RT	realtime
RTC	*realtime command*
RTG	radioisotope thermoelectric generator
RXX	*Routine XX*
SA	shaft angle
SATT	satellite
S-BD	*S-BAND*
SC	spacecraft
SCE	signal conditioning equipment
SCS	stabilization control system
SCT	scanning telescope
SE	southeast or subearth
SEC	secondary
SECO	S-IVB engine cutoff
SECS	sequential events control system
SEF	sharp end forward
SEL	select
SEP	separate
SEQ	sequence
SEVA	standup extravehicular activity
SIDE	suprathermal ion detector experiment
SII	Saturn II (second stage)
SIM	scientific instrument module
S-IVB	Saturn IVB(third stage)
SLA	service module LM adapter
SLOS	star line-of-sight
SM	service module
SPECT	spectrometer
SPOT	spot meter
SPS	service propulsion system
SR	sunrise
SRC	sample return container
SRX	S-Band receiver mode no. X
SS	sunset or subsolar
STBY	standby
STDN	Spaceflight Tracking and Data Network (formerly MSFN)
STX	S-Band transmit mode no. X

ABBREVIATIONS (CONT)

SUBSAT	subsatellite
S.V.	state vector
SW	switch
SWC	solar wind composition
SWE	solar wind experiment
SXT	sextant
SYS	system
T EPHEM	time of Ephemeris update
TA	trunnion angle
TAN	Tananarive, Madagascar
TB	time base or talkback
TCA	time of closest approach
TD	touchdown
T&D	transposition and docking
TD&E	transposition docking and LM ejection
TDS	thermal degradation sample
TEC	transearth coast
TECH	technique
TEI	transearth injection
TEMP	temperature or temporary
TERM	terminate
TEX	Corpus Christi, Texas
TGT	target
THC	translation hand controller
TIG	time of ignition
TLC	translunar coast
TLI	translunar injection
TLM or TM	telemetry
TPF	terminal phase final
TPI	terminal phase initiation
TPM	terminal phase midcourse
T/R	transmitter/receiver
TRANS	translation
TRK	track or tracking
TRUN	trunnion
TSB	temporary stowage bag
TV	television
TVC	thrust vector control
TWR	tower
UCTA	urine collection transfer assembly
UHT	universal hand tool
ULL	ullage
UMB	umbilical

ABBREVIATIONS (CONT)

UNBAL	unbalance (meter)
UNDK	undock
US	United States
UV	ultraviolet
V	velocity
VG_{IMU}	velocity to be gained as related to IMU orientation
VGX	velocity to be gained (X-body axis)
VGY	velocity to be gained (Y-body axis)
VGZ	velocity to be gained (Z-body axis)
VR	resultant velocity
VX	velocity along the X-axis
VY	velocity along the Y-xis
VZ	velocity along the Z-axis
VAN	USNS Vanguard
VHBW	very high speed black and white film (2485)
VHF	very high frequency
VLV	valve
VOX	voice keying
VXX	Verb XX
W	Watts
WRT	with respect to
X	time of closest approach (symbol)
XDOT	rate of change along the X-axis
XFER	transfer
XMIT	transmit or transmitter
XPNDER	XPNDRtransponder
Y	yaw
YDOT	rate of change along the Y-axis
ZDOT	rate of change along the Z-axis
ZPN	impedance pneumogram
ΔH	altitude change (difference)
ΔP	pressure change (difference)
ΔR	position change (difference)
ΔV	velocity change (difference)
ΔVC	velocity change at engine cutoff
ΔVT	velocity change loaded pre-burn
#	frame number(s) (for camera data)
$\emptyset$	latitude
λ	longitude

PHOTOGRAPHIC NOMENCLATURE

AAA/BBB/CCC/DDD - EEE, EEE, (fGG, HHH, III) JJ fps or JJ FR (KK% MAG)

AAA - Location from which photography is to be accomplished

BBB - Camera

CCC - Lens

DDD - Film Type

EEE - Photography aids (i.e., brackets, intervalometer, mirror, etc.)

fGG - Lens Aperture Setting

HHH - Shutter Speed

III - Focus Distance in Feet

JJ - Number of frames for DC, EL & NK cameras
JJ - Frame Rate for the DAC only

KK - Magazine percent for the DAC only

CODE EXAMPLE:

1. CM4/DAC/18/CEX-BRKT, SPOT (S,1/250,∞) 12 fps (50% MAG)

Meaning: Photos are taken from CM right hand rendezvous window using the DAC with 18mm lens and SO368 film. The camera will be bracket mounted with the following camera settings: f-stop from spotmeter reading, shutter speed 1/250 of a second, focus at infinity, 12 frames per second, 50% MAG.

2. CM4/EL/80/BW-BRKT, IVL (f5.6,1/250,∞) 10 FR

Meaning: Photos are taken from CM right hand rendezvous window using the Electric Hasselblad camera with the 80mm lens and black & white film (3400). The camera will be bracket mounted with the following settings: f-stop (aperture) f5.6, shutter speed 1/250, and focus at infinity. The operation of the shutter will be controlled by the intervalometer. Ten frames have been allotted for this sequence.

CAMERA LOCATIONS

COMMAND MODULE

CM-1	LH Side Window
CM-2	LH Rendezvous Window
CM-3	Hatch Window
CM-4	RH Rendezvous Window
CM-5	RH Side Window

LUNAR MODULE

LM-1	LH Window
LM-2	Docking Window
LM-3	RH Window

CAMERA MOUNTS

CSM

Electric Hasselblad (EL) +X axis +12°

Electric Hasselblad (EL) normal to RH Side Window

Data Acquisition Camera (DAC) with right angle mirror +X axis

Data Acquisition Camera (DAC) with SXT Adapter - same as SXT shaft & trunnion.

Data Acquisition Camera (DAC) with right angle mirror rotated 180° looking aft out RH side window.

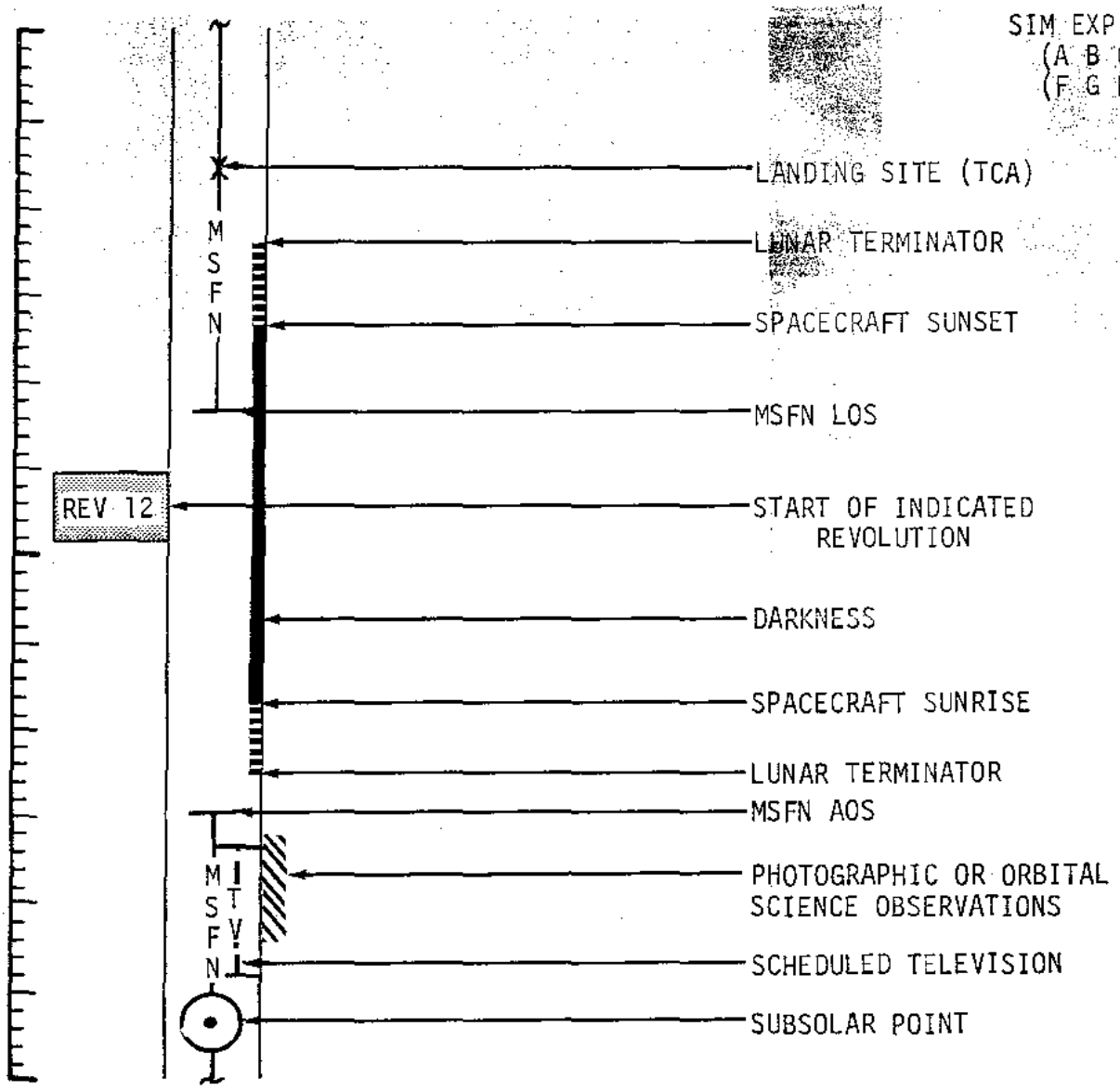
NIKON (NK) Two positions

parallel to +X axis

+X axis +30°

SYMBOL NOMENCLATURE

SIM EXP STATUS
(A B C D E)
(F G H I J)



EXP STATUS CODE

A	B	C	D	E
SIM ATT	MAP CAMR (Cover/Position)	GAMMA RAY BOOM	MASS SPECT BOOM	ALPHA/X-RAY COVER
+ +X FWD - -X FWD * NON SIM	0 CLOSED 1 OPEN/EXTD 2 OPEN/RETR	0 RETR 1 DPLY 2 PARTIAL	0 RETR 1 DPLY 2 PARTIAL	0 CLOSED 1 OPEN
F	G	H	I	J
PAN CAMR	MAP CAMR/ LASER ALTM	GAMMA RAY EXP/SHIELD	MASS SPECT EXP/ION SOURCE	ALPHA/X-RAY
0 OFF 1 STBY 2 ON 3 BOOST	0 OFF/OFF 1 STBY/OFF 2 ON/ON 3 STBY/ON 4 ON/OFF 5 ON (IMC OFF)/OFF	0 OFF 1 ON/OFF 2 ON/ON	0 OFF/OFF 1 STBY/OFF 2 ON/ON 3 ON/STBY 4 STBY/STBY	0 OFF/OFF 1 OFF/STBY 2 ON/ON 3 OFF/ON 4 ON/STBY

SCIENTIFIC INSTRUMENT MODULE
EXPERIMENT STATUS CODE

SIM EXP STATUS
(ABCDE)
(FGHIJ)

3/6/72

SECTION 1 - FLIGHT PLAN NOTES

FLIGHT PLAN NOTES

I. Crew

A. Crew designations are as follows:

Designation	Prime	Backup
Commander (CDR)	Young	Haise
Command Module Pilot (CMP)	Mattingly	Roosa
Lunar Module Pilot (LMP)	Duke	Mitchell

B. The nominal CM couch positions are:

Activity	Left	Center	Right
Launch thru TLI	CDR	CMP	LMP
T&D thru Entry	CMP	CDR	LMP

C. The PGA's are worn as shown in Table 2-1.

D. The crew biomedical harness and sensor wearing schedule is shown in Table 2-2.

E. A crew status report containing the following information for each crewman is voiced to MCC-H after each crew sleep period:
1. Radiation - Personal Radiation Dosimeter (PRD) readout.
2. Food - all menu items not consumed and all pantry snack items eaten.
3. Sleep - estimated sleep quantity and quality.
4. Medication - All medications taken.
5. Medical Observation - commentary solicited on health status, adaptation to spaceflight, medical hardware performance, etc.

F. Negative reporting is used in reporting completion of each checklist.

G. All onboard gauge readings are read directly from the gauges with no calibration bias applied.

II. CSM Systems

A. Communications

1. The preferred S-Band communication modes are:
(a) Uplink Mode 6 (Voice, PRN, and Updata)
(b) Downlink Mode 2 (Voice, PRN, TLM-HBR)

2. VHF Duplex B is used for launch, and Simplex A is used for earth-orbit operations.

3. Table 2-3 summarizes the MSFN coverage available for the CSM.

4. Table 2-4 contains a summary of the scheduled CSM & LM TV transmissions.

5. MCC-H switches OMNI antennas during TLC PTC periods, OMNI and HGA during TEC PTC periods. The crew manages antenna operations during all other TLC and TEC periods.

6. The HGA will be managed by the crew and MCC-H in order to minimize SIM bay experiment data loss at AOS and LOS while in lunar orbit during awake periods. Data System will be controlled by MCC-H after the initial turn-on during TLC.

B. DSE

1. During the earth-orbit phase, the CSM LBR data is recorded when the CSM is not within MSFN coverage. The DSE is dumped during the pass over the US prior to TLI if possible.

2. CSM LBR data will be recorded during all P24 landmark tracking.

3. CSM HBR will be recorded during Launch, TLI, SIVB/CSM SEP, TD&E, all CSM SPS maneuvers, Sim Door Jettison, docking, undocking, and LM Final Separation.

4. LM LBR data will be recorded during MSFN LOS periods between LM comm activation and PDI.

5. All entry data will be recorded in HBR during the blackout.

C. Electrical Power

1. The CSM normally remains powered up throughout the mission.

2. Table 2-5 lists the fuel cell purges.

3. Based on cryo purity and performance, the time between fuel cell O_2 purges may be increased to coincide with water dump times. The O_2 purge at 11 hours allows a judgement to be made on the defined purge schedule.

4. The cryogenic heaters are managed such that the planned usage is obtained out of each O_2 tank. The H_2 fans are operated manually for one minute before and after each sleep cycle.

5. Table 2-6 contains the battery charge schedule.

D. ECS and Water Management

1. Potable water is chlorinated once a day after the eat period prior to each sleep period.

2. Waste water dump and fuel cell purge scheduling criteria:

(a) Table 2-5 contains the scheduled fuel cell purges, urine dumps and waste water dumps

(1) Approximately once during each 24 hours following the initial dump and purge when three crewmen are in the CSM. Reduce interval to 22 hours when one crewman is in the CSM.

(2) H_2 fuel cell purges are scheduled at every other O_2 fuel cell purge after the first O_2 fuel cell purge

(b) The most opportune times to perform waste water dumps and fuel cell purges are as follows:

(1) Immediately after the sextant star check in maneuver preparation or cislunar navigation

(2) Behind the moon, with completion of dump or purge before AOS

(3) At least three hours prior to SIM Bay photography and laser altimeter operation

(c) If possible, dumps and purges are not scheduled during the following periods:

(1) Ten hours before MCC-2

(2) Eight hours before MCC-5

(d) Dumps and purges are <u>not</u> scheduled during the following MSFN tracking periods:

(1) Between MCC-4 and LOI

(2) MSFN coverage in lunar orbit

(3) Ten hours before MCC-7 until entry

(e) All waste water dumps are manual.

3. Only one CO_2 absorber filter (LiOH canister) is changed at a time. Table 2-7 lists the LiOH canister change schedule. There are 26 filters on board, with 24 stowed at launch, only 23 are required.

4. At lift-off, the cabin contains 60% O_2 and 40% N_2. The CM is purged after launch. The purge is terminated prior to LM pressurization after TLI. After the LM is configured for ejection, it is isolated and the CM is purged for eight more hours.

5. CSM O_2 pressurizes the LM after transposition and docking; and repressurizes the LM before TLC LM entry, MCC-4 and LM activation.

E. Guidance and Navigation

1. REFSMMAT Definitions

(a) The "Launch Pad" REFSMMAT is used for launch, TLI, and TD&E. This REFSMMAT places the IMU X-axis along the launch azimuth at the pad and the Z-axis along the negative radius vector. The FDAI, at launch, will display roll 162° (launch azimuth +90°), pitch 90°, and yaw 0°.

(b) The "PTC" REFSMMAT is used for all midcourse maneuvers (except MCC-7) and for other operations during TLC and TEC. This REFSMMAT places the X-axis in the ecliptic plane and perpendicular to the earth-moon line projection in the ecliptic plane at the average time of transearth injection for the monthly launch window and azimuth range. The Z-axis is perpendicular to the ecliptic and directed south. At the beginning of the PTC Mode the spacecraft maneuvers to an FDAI display of pitch 90° or 270°.

(c) A "Preferred" REFSMMAT is used by the CSM for LOI, Lunar-Orbit Plane Changes, and TEI. The CSM IMU X-axis aligns normally with the spacecraft X-body axis at the vehicle attitude for ignition with the thrust directed through the center of gravity. At burn ignition, the FDAI displays roll 0°, pitch 0°, and yaw 0°, except roll 180° for TEI.

(d) The "Landing Site" REFSMMAT is used for DOI, PDI, landing, and CSM lunar orbit activities up to the first plane change. This REFSMMAT places the CSM and LM IMU X-axis along the positive lunar radius vector at the landing site at the predicted landing time and places the Z-axis in the direction of flight parallel to the CSM orbital plane. At nominal touchdown, the LM FDAI displays roll 0°, pitch 0°, and yaw 0°.

(e) The "Lift-Off" REFSMMAT is used for all lunar activities after plane change 1, except plane change 2, and until transearth injection. This REFSMMAT places the CSM and LM IMU X-axis along the positive lunar radius vector at the landing site at predicted lift-off time, with the Z-axis down range parallel to the CSM orbital plane. At nominal lift-off time, the LM FDAI displays roll 0°, pitch 0°, and yaw 0° with slight differences reflecting actual touchdown yaw and slope tilt angles.

(f) The "Entry" REFSMMAT aligns the IMU X-axis in the local horizontal plane in the direction of flight at entry interface. The entry REFSMMAT is used for MCC-7 and all remaining activities. The Z-axis is down along the negative radius at entry interface. At entry interface, with wings level, local horizontal, heat shield forward, inplane, lift up, heads down, the FDAI displays roll 0°, pitch 180°, and yaw 0°.

2. The CSM external lighting is operated during the rendezvous from lift-off to docking. The running lights only are on from CSM/LM separation to PDI.

3. The time tags on attitude maneuvers in Section 3 indicate the be-there-by time unless otherwise stated. All maneuver angles are the angles read on the FDAI after the maneuver has been completed.

4. CSM/LM and CSM attitude maneuvers are normally performed at the rate of 0.2°/sec unless other rates are required. LM maneuvers are normally performed at 2°/sec unless otherwise specified.

5. The SIM Bay RCS configuration provides single jet control authority in each axis to eliminate contamination of the SIM experiments. Table 2-8 identifies the periods when the CSM RCS is in an uncoupled configuration.

6. Undocking is done radially, CSM below, using the soft undocking procedure. The probe is extended its full length with the LM held on by the capture latches. When the rates are nulled, the CSM releases the LM. The separation maneuver is then performed immediately.

7. LM jettison is done radially, CSM below, with final sep pyros providing approximately 0.4 foot per second thrust radial. The separation burn is performed five minutes after jettison, providing 2 foot per second thrust posigrade.

8. The standard register load for nouns 78 and 70 for SIM bay experiment pointing using the Universal Tracking Program P20, option 5 is:

N78 (+090.00)
(+052.25)
(+180.00) +X-axis forward
or (+000.00) -X-axis forward
N70 (00050)

Only changes to this standard register load will be shown as required in Section 3 of the flight plan.

9. The SC RCS configuration and maneuver control is shown as a DAP LOAD code in the time column where applicable in Section 3. During passive thermal control the code is shown as a note indicating the status of the DAP.

F. Propulsion Systems

1. In order to conserve SM RCS, the SPS engine is used to "back-up" all LM rendezvous burns requiring a ΔV greater than 12 FPS. The SPS gimbal motors are not turned on during the normal maneuver preparation.

2. The SPS always is started using a single bank, however, the other bank will be opened 2 to 5 seconds after ignition for burns longer than 6 seconds. DOI will be performed on a single bank.

3. Table 2-9 lists the CSM propulsion burns.

G. Scientific Instruments Module

1. The panoramic and mapping cameras will be placed in the boost and standby modes, respectively, during launch through TD&E, rendezvous, and all SPS thrusting maneuvers.

2. The following switches may be left in their command position between uses in order to keep track of SIM Bay experiment status:

   a) Mapping Camera Track
   b) Gamma Ray Boom Deploy
   c) Mass Spectrometer Boom Deploy
   d) Mapping Camera/Laser Cover
   e) Alpha/X-Ray Cover

   These switches will be in the OFF (center) position during SPS burns and all other events that may induce vibration or shock, i.e., undocking and rendezvous through LM jettison.

3. The SIM experiment status will be indicated in the upper right-hand corner of each page, or half page in the CSM flight plan, of Section 3. The first line will indicate the CSM attitude and experiments positions at the beginning of each hour or half-hour as applicable. The second line indicates the experiments' functional modes as previously set up. Page xxiv defines the SIM experiment position and mode status code.

4. The position of boom mounted experiments is indicated by the length of the boom measured from the fully retracted position.

III. LM Systems

A. Communications

1. The preferred S-Band communications are:
   (a) Uplink Mode 7 (Voice, Updata)
   (b) Downlink Mode 2 (Voice, TLM-HBR, PRN, BIOMED)

2. The LM DSEA schedule is shown in Table 2-10.

B. ECS

1. The LM contains ambient air at lift-off. During launch the pressure bleeds to zero psia. CSM O_2 pressurizes the LM after T&D. The LM is isolated after T&D and after each entry and allowed to bleed down via leakage. Before the first entry into the LM, the LM is vented to at least 2.7 PSID and repressurized with CSM O_2 in order to enrich the LM atmosphere. CSM O_2 is used to repressurize the LM for the second and third entries.

2. LM O_2 is used to pressurize the LM five times; after EVA-1, EVA-2, EVA-3, and two equipment jettison periods.

3. Table 2-7 lists the LiOH canister change schedule.

C. Guidance Systems

1. The LGC and CMC use the same landing site and lift-off REFSMMATS.

2. The AGS is placed in standby after the "GO" is given for lunar stay at T3.

3. The IMU platform is oriented so that all PIPA input axes are normal to the gravity vector, then powered down and the LGC placed in standby approximately 1 hour after TD until approximately 4 hours prior to lift-off. The LGC is placed in operate several times to update the computer clock and CSM State Vector.

4. To prevent overheating of the antenna, the rendezvous radar is pointed away from the sun and turned off when no functional use is required.

5. The LM tracking light is operated continuously in the S/C dark period during rendezvous.

D. Propulsion Systems

1. The APS/RCS interconnect is used during the lunar lift-off and ascent only.

2. Table 2-11 lists the LM propulsion burns.

E. Electrical Power System

1. The LM is powered down to a minimum level to conserve battery consumables on the lunar surface from PDI +1:00 to lift-off -4:00 hours.

2. LM battery management is scheduled on the lunar surface to equalize the usage of the five descent stage batteries. Table 2-6 contains the LM battery management schedule.

IV. Procedures

A. CSM - Crew procedures called out in the flight plan may be found in the following documents:

1. Apollo Operations Handbook - CSM 113 (AOH), Volume 2
2. Crew Checklists
3. CSM Rendezvous Procedures
4. Lunar Landmark Tracking Attitude Studies
5. Lunar Orbit Attitude Sequence for Mission J-2

B. LM - Crew procedures called out in the flight plan may be found in the following documents:

1. Apollo Operations Handbook LM-11, Volume 2
2. Crew Checklists
3. LM Rendezvous Procedures
4. LM Descent/Ascent Procedures
5. EVA Procedures
6. Lunar Surface Procedures

V. Synchronization of Ground Elapsed Time (GET)

The realtime GET is synchronized with the Flight Plan GET. In TLC, the GET is synchronized at 48:30 if the difference is more than +1 minute. In lunar orbit the GET is synchronized at 81:35 and at 191:20 if the difference is more than +2 minutes. The time changes are based on the expected difference between realtime and flight plan GET's at the start of lunar orbit revs. The synchronization is performed by a V70 uplink from the ground followed by the crew synchronizing the mission timer to the CMC clock.

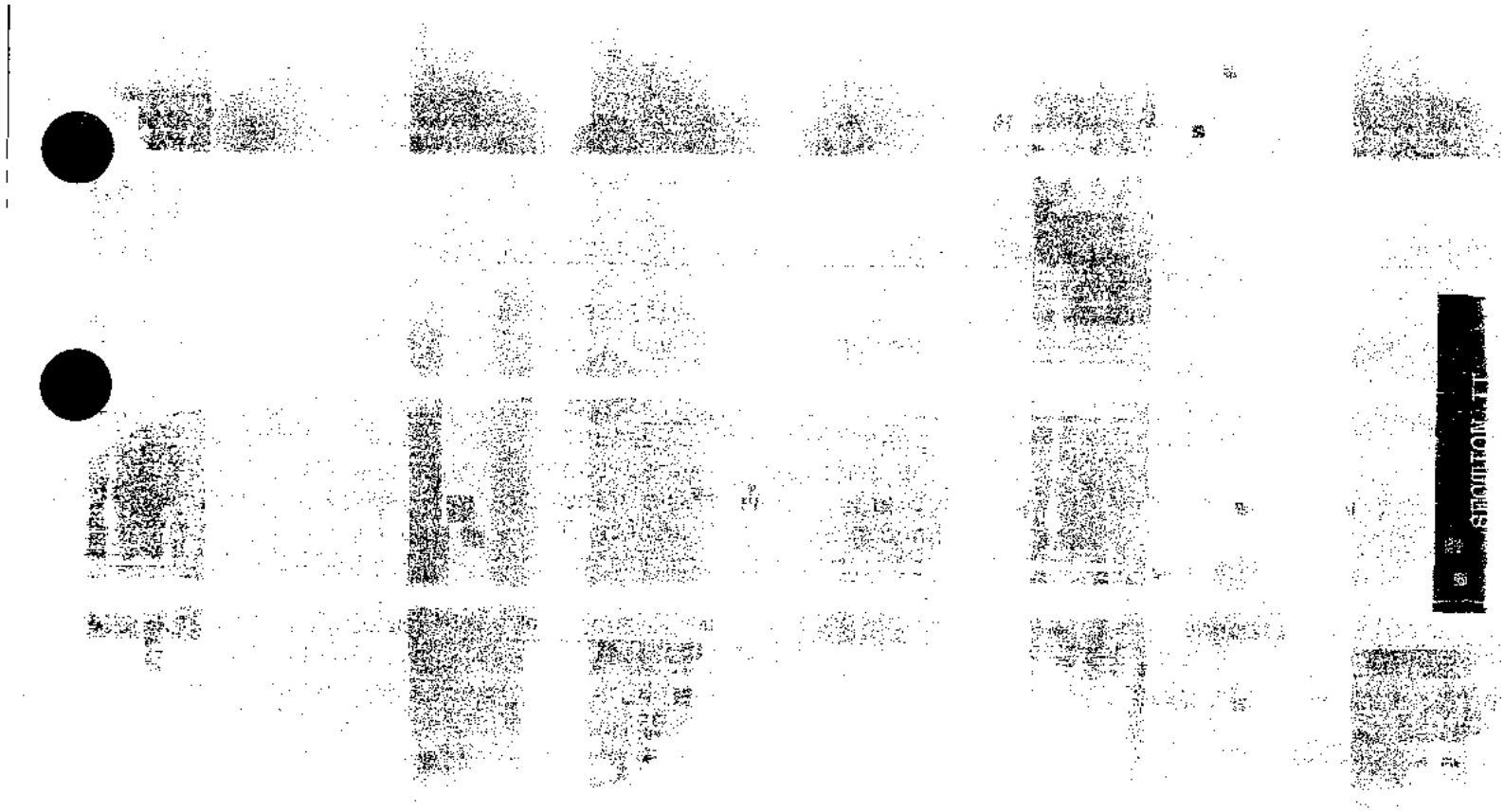
VI. Miscellaneous

A. Table 2-12 contains a schedule of the return to earth block data updates.

B. Table 2-13 is the landmark tracking and landing site data.

C. Table 2-14 contains the cryo management schedule.

D. Table 2-15 contains the Apollo 16 Film Budget.



SECTION 2 - CHARTS & TABLES

TABLE 2-1
(4/16)

SUIT WEARING SCHEDULE

ACTIVITY	PRESSURIZED (HARD SUIT)	SUITED (SOFT SUIT)	PARTIAL SUIT WITH-OUT HELMET & GLOVES	SHIRTSLEEVES (ICG)
LAUNCH		ALL		
EARTH ORBIT THRU S-IVB EVASIVE MNVR			ALL	
TLC & TEC EXCEPT TEC EVA				ALL
PGA TEST			ALL	
LM ACTIVATION			ALL	
UNDOCKING		CDR & LMP	CMP*	
UNDOCK +5MIN THRU CIRC			ALL	
PDI thru TD		CDR & LMP	CMP	
LUNAR STAY EXCEPT EVA				ALL
LUNAR SURFACE EVA'S & EQUIP JETT	CDR & LMP			CMP
LIFT-OFF PREP			ALL	
LIFT-OFF THRU DOCKING		CDR & LMP	CMP	
DOCKING TO LM JETT			ALL	
LM JETT		ALL		
POST LM JETT THRU TEI				ALL
TEC EVA	ALL			
ENTRY				ALL

*CMP DON HELMET & GLOVES FOR DOCKING LATCHES RELEASE.

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TABLE 2-2

CREW BIOMED HARNESS WEARING SCHEDULE*

(4/16)

GET(HR:MIN)	CDR	CMP	LMP
Prelaunch	on	on	on
14:37	off	off	
24:55	on		off
37:20	off	on	
45:58		off	on
55:50	on		off
67:44	off	on	
79:50		off	on
93:10	on		
93:23		on	
110:45	off**		
122:35	on		
133:13			off**
146:25			on
156:55	off**		
169:05	on		
177:47	off	off	
191:02	on		off
200:55	off	on	
212:29		off	on
223:57	on		off
240:52		on	on
242:22		off	off
251:54	off		on
260:35		on	off
273:40	on	off	
284:15		on	on

*In the event of an inflight medical problem or illness the Flight Surgeon has the option to revise this schedule.

**Crew option - the Crewman not on BIOMED data downlink may elect to remove his BIOMED Harness during the lunar surface rest periods.

CSM COVERAGE BY MSFN STATIONS USING 85 FT/210 FT DISH/ANTENNA

	GOLDSTONE (GDS)		PARKS (PKS)		HONEYSUCKLE (HSK)		MADRID (MAD)	
	AOS	LOS	AOS	LOS	AOS	LOS	AOS	LOS
EARTH ORBIT					01:00	01:05		
	01:29	01:33						
TLI (2:30)	02:50	14:01						
					08:40	17:38		
							15:58	31:14
	24:03	38:34						
TRANSLUNAR COAST					33:06	42:25		
							40:36	55:24
	48:28	62:41						
					57:10	66:39		
							64:50	74:18
LOI (74:29)	74:50	76:15						
TEI (220:20)	222:31	233:29						
							222:31	225:57
					227:57	240:34		
							239:02	249:46
TRANSEARTH COAST	246:31	257:20						
					251:52	264:46		
							263:23	273:29
	270:58	280:59						
					275:48	290:18		
EI (290:23)								

TABLE 2-3 (CONT)
(4/16)

CSM COVERAGE BY MSFN STATIONS USING 85 FT/210 FT DISH ANTENNA

REV	GET AT END OF REV	GOLDSTONE (GDS)		PARKS (PKS)		HONEYSUCKLE (HSK)		MADRID (MAD)	
LOI	74:29	AOS	LOS	AOS	LOS	AOS	LOS	AOS	LOS
1	76:40	74:50	76:15					74:51	76:15
2	78:48	76:59	78:24					76:59	78:24
3	80:42	79:11	80:16					79:11	79:28
4	82:36	81:05	82:10			81:16	82:10		
5	84:30	82:59	84:04			82:59	84:04		
6	86:24	84:53	85:39			84:53	85:58		
7	88:18	86:47	86:58			86:47	87:52		
8	90:12					88:41	89:46	89:29	89:45
9	92:06					90:35	91:23	90:35	91:40
10	94:00							92:28	93:34
11	95:54							94:22	95:28
12	97:48							96:17	97:22
13	99:47	98:09	99:21					98:09	99:21
14	101:45	100:07	101:19					100:08	101:20
15	103:44	102:06	103:18					102:06	103:18
16	105:42	104:04	105:17						
17	107:41	106:03	107:15			106:03	107:15		
18	109:39	108:02	109:14			108:01	109:13		
19	111:38	110:00	111:12			110:00	111:12		
20	113:36					111:59	113:11		
21	115:35					113:57	115:09	114:06	115:05
22	117:33					115:56	116:26	116:58	117:07
23	119:32							117:22	119:08
24	121:30							119:52	121:05
25	123:29	122:36	123:03					121:51	123:03
26	125:27	123:49	125:01					123:49	125:02
27	127:26	125:48	126:07					125:48	127:00
28	129:24	127:46	128:09					127:46	128:32
29	131:22	129:45	130:57			130:24	130:57		
30	133:21	131:43	132:56			131:43	132:55		
31	135:19	133:42	134:54			133:42	134:54		
32	137:18	135:40	136:06			135:40	136:53		
33	139:16					137:39	138:20		
34	141:15					139:38	140:50	139:38	140:49
35	143:13							141:36	142:48
36	145:12							143:34	144:46
37	147:10							145:33	146:45
38	149:09	147:34	148:43					147:31	148:43
39	151:07	149:29	150:42					149:30	150:42
40	153:06	151:28	152:40					151:28	152:29

CSM COVERAGE BY MSFN STATIONS USING 85 FT/210 FT DISH ANTENNA

REV	GET AT END OF REV	GOLDSTONE (GDS)		PARKS (PKS)		HONEYSUCKLE (HSK)		MADRID (MAD)	
LOI	74:29	AOS	LOS	AOS	LOS	AOS	LOS	AOS	LOS
41	155:04	153:27	154:39					152:29	152:41
42	157:03	155:25	156:38			155:25	156:37		
43	159:01	157:24	158:36			157:24	158:36		
44	161:00	159:22	160:32			159:22	160:35		
45	162:59					161:21	162:33		
46	164:57					163:19	164:32		
47	166:55					165:18	166:28	165:17	166:30
48	168:54							167:16	168:28
49	170:52							169:14	170:27
50	172:50							171:13	172:25
51	174:49	173:11	174:23					173:12	174:24
52	176:47	175:10	176:22					175:10	176:23
53	178:46	177:08	178:21					177:09	177:18
54	180:45	179:07	180:20			179:16	180:19		
55	182:43	181:06	182:18			181:06	182:18		
56	184:42	183:05	184:17			183:04	184:16		
57	186:40					185:03	186:15		
58	188:39					187:02	188:14		
59	190:38					189:01	190:13		
60	192:37					190:59	191:23	190:58	192:11
61	194:35							192:57	194:10
62	196:33							194:56	196:08
63	198:32							196:54	198:07
64	200:31	197:30	198:07					198:53	200:06
65	202:29	198:53	200:05					200:52	201:40
66	204:28	200:51	202:04			203:41	204:03		
67	206:26	202:50	204:03			204:49	206:01		
68	208:25	206:48	208:00			206:47	208:00		
69	210:24	208:46	209:20			208:46	209:57		
70	212:22					210:45	211:57		
71	214:21					212:43	213:56		
72	216:19					214:42	215:55	214:42	215:54
73	218:20							216:40	217:55
74	220:20							218:41	219:55
75	222:20							220:41	221:56
TEI	222:20								

TABLE 2-4
(4/16)

APOLLO 16 TV SCHEDULE

DAY	DATE	CST	GET (HR:MIN)	DURATION (HR:MIN)	ACTIVITY SUBJECT	VEHICLE	STATION
SUNDAY	16 APRIL	3:03 PM	3:09	0:19	TRANSPOSITION & DOCKING	CSM	GDS
THURSDAY	20 APRIL	6:19 PM	102:25	6:47	LUNAR SURFACE EVA-1*	LM/LRV	GDS
FRIDAY	21 APRIL	5:04 PM	125:10	6:35	LUNAR SURFACE EVA-2*	LRV	GDS
SATURDAY	22 APRIL	4:40 PM	148:45	8:04	LUNAR SURFACE EVA-3* & EQUIP JETT #1	LRV	GDS
SUNDAY	23 APRIL	2:02 PM	170:08	0:12	EQUIP JETT #2	LRV	MAD
SUNDAY	23 APRIL	3:24 PM	171:30	0:25	LM LIFT-OFF	LRV	MAD
SUNDAY	23 APRIL	5:16 PM	173:20	0:06	RENDEZVOUS	CSM	GDS
SUNDAY	23 APRIL	5:40 PM	173:46	0:05	DOCKING	CSM	GDS
WEDNESDAY	26 APRIL	1:49 PM	241:55	1:10	TRANSEARTH EVA	CSM	MAD

*TV will not be used while LRV is in operation.

TABLE 2-5

(4/16)

FUEL CELL PURGE, URINE DUMP AND WASTE WATER DUMP SCHEDULE

GET	O_2 FUEL CELL PURGE		WASTE H_2O DUMP		URINE DUMP		H_2 FUEL CELL PURGE	
(HR:MIN)	NO	ΔT (HR:MIN)	NO	ΔT (HR:MIN)	NO	ΔT (HR:MIN)	NO	ΔT (HR:MIN)
11:15	1	11:15	1	11:15				
30:20	2	19:05	2	19:05			1	30:20
53:00	3	22:40	3	22:40				
76:23	4	23:23	4	23:23	1	06:43	2	46:03
99:25	5	23:02	5	23:02	2	23:02		
119:12	6	19:47	6	19:47	3	19:47	3	42:49
130:59			7	11:47	4	11:47		
150:44	7	31:32	8	19:45	5	19:45		
170:29	8	19:45	9	19:45	6	19:45	4	51:17
192:25	9	21:56	10	21:56	7	21:56		
216:06	10	23:41	11	23:41	8	23:41	5	45:37
239:00	11	22:54	12	22:54	9	22:54		
264:30	12	25:30	13	25:30	10	25:30	6	48:24

TABLE 2-6

CSM BATTERY CHARGE AND LM BATTERY MANAGEMENT SCHEDULES

(4/16)

CSM BATTERY CHARGE SCHEDULE

GET (HR:MIN)	BATTERY
4:33	B
23:05	A
30:50 (IF MCC 2 IS PERFORMED)	A
48:36	B
118:55	B
142:00	A
193:48	B
211:37	A
239:30	B
268:30	A

LM BATTERY MANAGEMENT SCHEDULE

GET (HR:MIN)	BATTERY						
	1	2	3	4	5	6	L
93:50	ON	ON	ON	ON	OFF	OFF	OFF
94:50					ON	ON	
94:56					OFF	OFF	
98:05					ON	ON	
98:55					OFF	OFF	
99:21	OFF	OFF					LMP
110:25	ON	ON	OFF	OFF			CDR
123:13			ON	ON			OFF
132:50	OFF	OFF					LMP
146:50	ON	ON	OFF	OFF			CDR
156:45			ON	ON			OFF
171:09	OFF		OFF		ON	ON	
171:31		OFF		OFF			

L - LUNAR BATTERY MAY BE USED ON EITHER CDR OR LMP BUS

TABLE 2-7
(4/16)

LiOH CANISTER CHANGE SCHEDULE

CSM LiOH CANISTER CHANGE

CHANGE NO	APPROX GET (HR:MIN)	APPROX ΔT (HR)	INSTALL		REMOVE & STOW	
			CANISTER NO.	POSITION	CANISTER NO.	STOWAGE LOCATION
1	12:08	12	3	A	1	B5
2	24:30	13	4	B	2	B5
3	37:00	12	5	A	3	B5
4	48:37	9	6	B	4	B5
5	57:30	14	7	A	5	B6
6	71:05	11	8	B	6	B6
7	81:54	12	9	A	7	B6
8	93:25	27	10	B	8	B6
9	120:35	24	11	A	9	A9
10	144:52	23	12	B	10	A9
11	167:29	11	13	A	11	A9
12	178:25	12	15	B	12	A3
13	189:59	12	16	A	13	A3
14	202:01	13	17	B	15	A3
15	215:00	9	18	A	16	A3
16	224:11	15	19	B	17	A4
17	238:45	13	20	A	18	A4
18	251:58	12	21	B	19	A4
19	264:18	10	22	A	20	A4
20	273:57	10	23	B	21	A5
21	284:20		24	A	22	A5

NOTE: CSM LiOH CANISTER #14 IS NOT USED. IT IS TRANSFERRED TO THE LM AFTER DOCKING TO PROVIDE ROOM FOR AN SRC.

LM LiOH CANISTER CHANGE: GET (HR:MIN) 122:55 AND 157:05

TABLE 2-8

(4-16)

CSM RCS UNCOUPLED CONFIGURATION

FROM (HR:MIN)	TO (HR:MIN)	REASON
13:20	13:40	RATE DAMPING FOR PTC
35:45	36:05	RATE DAMPING FOR PTC
56:05	56:25	RATE DAMPING FOR PTC
79:43	92:24	SIM EXP
100:57	150:26	SIM EXP
152:34	167:14	SIM EXP
178:49	191:58	SIM EXP
193:33	216:22	SIM EXP & SOLAR CORONA
217:42	218:11	SIM EXP
222:32	226:50	SIM EXP
226:50	227:10	RATE DAMPING FOR PTC
237:45	239:10	SIM EXP
241:20	244:03	CSM EVA
245:05	251:32	SIM EXP
251:33	251:53	RATE DAMPING FOR PTC
260:50	261:05	MNVR & RATE DAMPING FOR SUPER GAL AUX PTC
264:00	264:15	MNVR & RATE DAMPING FOR ECLIPTIC AUX PTC
267:00	270:00	SCO X-1
270:10	273:15	SKYLAB CONTAMINATION
273:15	275:50	CYG X-1
275:50	276:20	MNVR & RATE DAMPING FOR SUPER GAL PTC

TABLE 2-9
(4/16)

CSM BURN/EVENT SCHEDULE

BURN/ EVENT	GET I(HR:MIN)/ BURN TIME	ΔVT (FPS)	ULLAGE BT	REFSMMAT	RESULTANT HA/HP(NM)	DATE/ CST
LAUNCH SATURN	00:00 11MIN 44SEC	25,599.0	--	LAUNCH	90 90	APR 16 1154
S-1VB TLI	2:33:35.1 5MIN 44.2SEC	10,374.3	--	LAUNCH	--	APR 16 1428
CSM/LM EJECTION	3:59:20 3.0 SEC	0.4	--	LAUNCH	--	APR 16 1553
MCC-1	11:39	Nom Zero	--	PTC	--	APR 16 2333
MCC-2	30:39	Nom Zero	--	PTC	--	APR 17 1833
MCC-3	52:29	Nom Zero	--	PTC	--	APR 18 1623
MCC-4	69:29	Nom Zero	--	PTC	--	APR 19 0923
LOI SPS	74:28:38.5 6MIN 15SEC	2807.0	NONE	LOI	170.6 58.5	APR 19 1423
DOI SPS	78:35:30.3 24.1SEC	206.0	4 JETS 15 SEC	LDG SITE	58.6 10.8	APR 19 1830
BAILOUT SPS	79:22:07.9 11.0SEC	100.0	4 JETS 16 SEC	LDG SITE	62.6 5.3	APR 19 1916
DOI TRIM SPS	AS REQD			LS OR LOPC-1 AS REQD		
UNDOCK & SEP(RCS)	96:13:30.8 3.4SEC	1.0	NONE	LDG SITE	60.5 8.9	APR 20 1208
CSM CIRC SPS	97:41:44.5 5.9SEC	99.6	2 JETS 16 SEC	LDG SITE	68.2 51.8	APR 20 1336
LOPC-1 SPS	152:28:48.1 9.1SEC	158.7	2 JETS 17 SEC	LOPC-1	62.0 57.3	APR 22 2023
LM JETT	177:31:15.0 NO BURN	~0.4	--	LIFT-OFF	62.0 57.3	APR 23 2125
CSM SEP RCS	177:36:15.0 13.2SEC	2.0		LIFT-OFF	61.7 59.5	APR 23 2130

TABLE 2-9 (CONT)
(4/16)

CSM BURN/EVENT SCHEDULE

BURN/ EVENT	GET I(HR:MIN)/ BURN TIME	ΔVT (FPS)	ULLAGE BT	REFSMMAT	RESULTANT HA/HP(NM)	DATE/ CST
LOPC-2 SPS	198:13:46.2 15.8SEC	282.5	2 JETS 16 SEC	LOPC-2	62.9 57.9	APR 24 1308
CSM SHAPE SPS	216:49:11.7 02.2SEC	38.0	2 JETS 17 SEC	LIFT-OFF	85.0 55.0	APR 25 1243
SUBSAT LAUNCH	218:02:08	NO BURN	-- --	LIFT-OFF	-- --	APR 25 1356
TEI SPS	222:20:32.8 2MIN 30.5SEC	3212.2	2 JETS 17 SEC	TEI	--	APR 25 1815
MCC-5	239:21	Nom Zero	--	PTC	--	APR 26 1115
MCC-6	268:23	Nom Zero	-- --	PTC	-- --	APR 27 1617
MCC-7	287:23	Nom Zero	-- --	ENTRY	-- --	APR 28 1117
EI	290:22:45.8	NO BURN	-- --	ENTRY	-- --	APR 28 1417
SPLASH- DOWN	290:36:03	NO BURN	--	ENTRY		APR 28 1430

APOLLO 16 DSEA

ACTIVITY	MODE	GET (HR:MIN)	RECORD TIME X DUTY CYCLE = TAPE USED (HR:MIN)	ACCUM. TAPE USED (HR:MIN)
COMM ACTIVATION	ICS/PTT	94:20	4:04 x 100%	
PDI PREP	VOX	98:24	= 4:04	4:04
PDI PREP	VOX	98:24	0:30 x 63%	
POST TOUCHDOWN (T2)	OFF	98:54	= 0:18.9	4:23
EVA-1 PLSS COMM CK	VOX	101:50	0:50 x 63%	
EVA-1 LMP EGRESS	OFF	102:40	= 0:31.5	4:55
EVA-2 PLSS COMM CK	VOX	124:17	0:50 x 63%	
EVA-2 LMP EGRESS	OFF	125:07	= 31.5	5:26
EVA-3 PLSS COMM CK	VOX	147:50	0:50 x 63%	
EVA-3 LMP EGRESS	OFF	148:40	= 0:31.5	5:58
JETTISON #1 PREP	VOX	156:30	0:20 x 63%	
JETTISON #1 POST	OFF	156:50	= 0:13	6:11
JETTISON #2 PREP	VOX	170:03	0:17 x 63%	
JETTISON #2 POST	OFF	170:20	= 0:10.6	6:22
ASCENT COMM (L/O -17 MIN)	ICS/PTT	171:28	0:15 x 100%	
LIFT-OFF -2 MIN	VOX	171:43	= 0:15	6:37
LIFT-OFF -2 MIN	VOX	171:43	0:09 x 63%	
INSERTION	ICS/PTT	171:52	= 0.05.7	6:42
INSERTION	ICS/PTT	171:52	2:33 x 100%	
POST DOCKING	OFF	174:25	= 2:33	9:15*

*REMAINING TAPE (0:45) MAY BE USED AT CREW DISCRETION.

TABLE 2-11
(4/16)

LM BURN/EVENT SCHEDULE

BURN/ EVENT	GETI(HR:MIN)/ BURN TIME	ΔVT (FPS)	ULLAGE BT	REFSMMAT	RESULTANT HA/HP(NM)	DATE/ CST
PDI	98:34:40.8 12MIN 01.5SEC	6696.3	4 JET 7.5 SECS	LDG SITE	-- --	APR 20 1429
LANDING	98:46:42.0 --	NO BURN	-- --	-- --	LUNAR SURFACE	APR 20 1441
EVA-1	102:25 TO 109:25	NO BURN	-- --	-- --	-- --	APR 20 1819
EVA-2	124:50 TO 131:50	NO BURN	-- --	-- --	-- --	APR 21 1644
EVA-3	148:25 TO 155:25	NO BURN	-- --	-- --	-- --	APR 22 1619
ASCENT	171:45:08.6 7MIN 14.3SEC	6047.9	None	LIFTOFF	45.0 9.0	APR 23 1539
ORBIT INSERTION	171:52:23	NO BURN	-- --	-- --	45.0 9.0	APR 23 1546
TPI	172:39:22.9 2.5 SEC	72.1	4 JET 10.0 SEC	LIFTOFF --	61.9 44.0	APR 23 1633
BRAKING GATES	173:18:25.4 TO 173:24:27.2	33.4	-- --	-- --	59.8 59.3	APR 23 1712
DOCKING	173:50:00.0	NO BURN	--	--	59.8 59.3	APR 23 1734
LM DEORBIT	179:16:29 1MIN 35.5SEC	229.6	N/A --	LIFTOFF --	68.2 -40.6	APR 23 2310

TABLE 2-12
(4/16)

APOLLO 16 RETURN TO EARTH BLOCK DATA SCHEDULE

DATA	GET UPDATE (HR:MIN)	GETI* (HR:MIN)	PAD TYPE
TLI+90	1:30	4:07	COMPLETE P-30
LO+8	1:30	8:00	P37
LO+15	5:55	15:00	P37
LO+25	13:30	25:00	P37
LO+35	13:30	35:00	P37
LO+45	13:30	45:00	P37
LO+55	13:30	55:00	P37
FLYBY	33:55	69:28	COMPLETE P-30 (DOCKED)
PER+2	68:05	76:25	ABB P-30 (DOCKED)
TEI 4	72:20	83:08	ABB P-30
TEI 5	77:35	84:34	ABB P-30
TEI 12	81:30	97:45	ABB P-30
TEI 19	81:30	111:31	ABB P-30
TEI 26	108:58	125:26	ABB P-30
TEI 32	122:11	137:12	ABB P-30
TEI 41	132:30	155:07	ABB P-30
TEI 53	149:40	178:48	ABB P-30
TEI 62	177:41	196:33	ABB P-30
TEI 65	191:19	202:21	ABB P-30
TEI 72	201:25	216:17	ABB P-30
TEI 74	212:59	220:19	ABB P-30
PREL			
TEI 75	219:20	222:20	COMPLETE P-30
NOM			
TEI 75	220:58	222:20	COMPLETE P-30
TEI 76	220:58	224:21	ABB P-30

*The maneuver solutions are based on the March 1, 1972, Apollo 16 (Mission J-2) operational Trajectory Simulator Data Pack in 72-FM-61.

TABLE 2-12 (CONT)
(4/16)

APOLLO 16 RETURN TO EARTH BLOCK DATA SCHEDULE

NOTES:

1. All block data maneuvers are to the MPL line except

   a. Nominal TEI 75 and backup Rev TEI 76 is to the EOM target (= 169°34'W)

2. Pass FLYBY early if pericynthion is not clear of moon

3. The FLYBY and PER+2 maneuvers are docked. All other aborts are undocked.

4. TEI 4 assumes no DOI.

5. TEI 5 assumes DOI.

6. TEI 12 assumes no CIRC.

7. TEI 19 assumes CIRC.

8. TEI 41 assumes no LOPC 1.

9. TEI 53 assumes LOPC 1.

10. TEI 62 assumes no LOPC 2.

11. TEI 65 assumes LOPC 2.

12. TEI 72 assumes no SHAPE MNVR.

13. TEI 74 assumes the SHAPE MNVR.

TABLE 2-13
(4/16)

LANDMARK AND LANDING SITE DATA

SITE	REV	LATITUDE (DEG)	LONGITUDE (DEG)	ALTITUDE* (NM)
DESCARTES		-9.000	15.516	-.1404
J-2	3	-8.917	24.481	.0000
16-1	12**	-8.859	15.482	-.0900
16-2	12**	-8.936	15.494	-.1100
16-3	12**,13&48	-9.000	15.490	-.1400
16-4	12**	-9.056	15.299	-.2000
16-5	12**	-9.122	15.641	+.0600
16-6	12**	-9.181	15.674	+.0300
F-1	49	01.872	88.253	.0000

*Difference between landmark radius vector and 938.4935 (Mean Lunar Radius)

**One of these landmarks will be picked in real time as the best landmark to use for the low altitude landmark tracking on REV 12.

TABLE 2-14
(4/16)
CRYO MANAGEMENT SCHEDULE

GET	O_2 HTRS 1,2,&3		H_2 HTRS 1&2		H_2 FANS 1,2,&3		
HRS:MIN	AUTO	OFF	AUTO	OFF	AUTO	ON	OFF
00:00	1,2	3	1,2			3	1,2
03:15	1,2,3						
04:15	1,2	3					
14:38	3	1,2			3		
23:07				1,2			
31:30	1,2,3						
32:56	3	1,2					
53:20**	1,2,3						
53:45**	3	1,2					
66:10**	1,2,3						
67:45**	3	1,2					
70:05*	1,2	3	1,2				3
93:48	3	1,2					
107:25	1,2	3					
191:27	3	1,2					
201:30	1,2	3					
241:22	1,2,3						
245:00	1,2	3					

*Open 50W cb in oxygen tanks 1, 2, & 3 at 70:05

**If LM/CM $\Delta P > 2.4$ PSID, these actions are required.

APOLLO 16 FILM BUDGET

CSM

GET	REV	TARGET	FILM USED	FILM REMAINING
CAMERA:DAC	FILM: CEX	MAGAZINE: AA	CAPACITY: 100%	
3:13	TL	UNDOCK S4BLM	30%	70%
3:59	TL	LM EJECTION	70%	00%
CAMERA:DAC	FILM: CEX	MAGAZINE: BB	CAPACITY: 100%	
69:59	TL	DOOR JETT	5%	95%
96:44	12	LDMK TRK	3%	92%
98:40	13	LDMK TRK	4%	88%
169:21	49	LDMK TRK F1	4%	84%
169:45	49	16-3	4%	80%
173:18	51	RENDEZVOUS	40%	40%
CAMERA:DAC	FILM: CEX	MAGAZINE: CC	CAPACITY:100%	
96:14	12	UNDOCKING	100%	00%
CAMERA:DAC	FILM: CEX	MAGAZINE: DD	CAPACITY: 100%	
177:31	53	LM JETT	50%	50%
CAMERA:DAC	FILM: CEX	MAGAZINE: EE	CAPACITY: 100%	
UNSCHEDULED				
CAMERA:DAC	FILM: CEX	MAGAZINE: FF	CAPACITY: 100%	
241:55	TE	EVA	100%	00%

CSM

GET	REV	TARGET	FILM USED	FILM REMAINING
CAMERA:DAC	FILM: CEX	MAGAZINE: GG	CAPACITY: 100%	
290:23	E	ENTRY	50%	50%
290:31	E	CHUTES	50%	00%
CAMERA:DAC	FILM: VIBW	MAGAZINE: HH	CAPACITY: 100%	
149:02	38	SR CORONA	2%	98%
195:35	62	SS CORONA	5%	93%
197:35	63	SS CORONA	5%	88%
200:15	64	SR CORONA	5%	83%
272:07	TE	SL CONTAM	1%	82%
272:17	TE	SL CONTAM	20%	62%
CAMERA:DAC	FILM: BW164	MAGAZINE: II	CAPACITY: 100%	
153:06	41	MASS SPECT.	76%	24%
CAMERA:DAC	FILM: CIN	MAGAZINE: JJ	CAPACITY: 100%	
05:05	TL	SC INT (OPT)	87%	13%
50:05	TL	SKYLAB FOOD	1%	12%
CAMERA:DAC	FILM: CEX	MAGAZINE: KK	CAPACITY: 100%	
UNSCHEDULED				
CAMERA:DAC	FILM: BW 164,	MAGAZINE & LL	CAPACITY: 100%	
UNSCHEDULED				

3/27/72

2-19

TABLE 2-15

APOLLO 16 FILM BUDGET

CSM

GET	REV	TARGET	FILM USED	FILM REMAINING
CAMERA:DAC	FILM: VHBW	MAGAZINE: MM	CAPACITY: 100%	
PREFLT	-	CALIBRATION	5%	95%
272:17	TE	SL CONTAM	20%	75%
PSTFLT	-	CALIBRATION	5%	70%
CAMERA:EL	FILM: CEX	MAGAZINE: NN	CAPACITY: 160 FR	
3:13	TL	S4BLM	10 FR	150 FR
3:59	TL	LM EJECTION	5 FR	145 FR
7:15	TL	UV EARTH	1 FR	144 FR
12:30	TL	UV EARTH	1 FR	143 FR
29:30	TL	UV EARTH	1 FR	142 FR
52:30	TL	UV EARTH	1 FR	141 FR
68:00	TL	MOON	1 FR	140 FR
96:14	12	UNDOCKING	10 FR	130 FR
103:43	16	1 SHARANOV	63 FR	67 FR
103:55	16	7 MENDELEEV	22 FR	45 FR
214:47	72	11 AL-BIRUNI	33 FR	12 FR
CAMERA:EL	FILM: UV	MAGAZINE: OO	CAPACITY: 110 FR	
7:15	TL	EARTH	8 FR	102 FR
12:30	TL	EARTH	8 FR	94 FR
29:30	TL	EARTH	8 FR	86 FR
52:30	TL	EARTH	8 FR	78 FR
68:00	TL	MOON A	8 FR	70 FR
68:00	TL	MOON B	8 FR	62 FR
104:31	16	LUNAR MARIA	10 FR	52 FR
126:20	27	LUNAR TERRA	10 FR	42 FR
151:27	40	LUNAR HORIZ	12 FR	30 FR
223:00	TE	MOON A	8 FR	22 FR
223:00	TE	MOON B	8 FR	14 FR
287:50	TE	EARTH B	8 FR	6 FR
CAMERA:EL	FILM: CEX	MAGAZINE: PP	CAPACITY: 160 FR	
106:23	17	12 CROZIER	33 FR	127 FR
106:33	17	14 DESCARTES	20 FR	107 FR
130:13	29	13 CATHARIN	41 FR	66 FR
145:36	37	10 SAENGER	7 FR	59 FR
151:27	40	LUNAR HORIZ	1 FR	58 FR
212:38	71	9 FLEMING	45 FR	13 FR

CSM

GET	REV	TARGET	FILM USED	FILM REMAINING
CAMERA:EL	FILM: CEX	MAGAZINE: QQ	CAPACITY: 160 FR	
155:13	42	5 KOHLSCHUT	80 FR	80 FR
173:45	51	DOCKING	10 FR	70 FR
191:40	60	22 PARRY	37 FR	33 FR
CAMERA:EL	FILM: CEX	MAGAZINE: RR	CAPACITY: 160 FR	
215:11	72	15 DESCARTES	20 FR	140 FR
215:16	72	17 VOGEL	30 FR	110 FR
215:20	72	17 LASSELL	14 FR	96 FR
215:24	72	23 BULLIALDU	26 FR	70 FR
215:29	72	23 GASSENDI	36 FR	34 FR
215:34	72	26 HANSTEEN	10 FR	24 FR
223:00	TE	MOON	1 FR	23 FR
287:50	TE	UV EARTH	1 FR	22 FR
CAMERA:EL	FILM: VHBW	MAGAZINE: SS	CAPACITY: 115 FR	
94:51	11	16 DESCARTES	6 FR	109 FR
108:39	18	18 PTOEMAEUS	6 FR	103 FR
118:36	23	20 DAVY	6 FR	97 FR
120:32	24	19 ALPHONSUS	6 FR	91 FR
128:26	28	21 GUERICKE	6 FR	85 FR
131:28	30	2 SPENCER J	6 FR	79 FR
147:15	38	4 MILLS	6 FR	73 FR
149:02	38	SR CORONA	9 FR	64 FR
154:15	41	24 DARNEY	6 FR	58 FR
165:04	47	6 ST JOHN	6 FR	52 FR
193:51	61	25 LETRONNE	6 FR	46 FR
195:35	62	SS CORONA	10 FR	36 FR
196:50	63	8 VETCHINKI	6 FR	30 FR
197:35	63	SS CORONA	10 FR	20 FR
CAMERA:EL	FILM: VHBW	MAGAZINE: TT	CAPACITY: 115 FR	
PREFLT	-	CALIBRATION	30 FR	85 FR
200:15	64	SR CORONA	10 FR	75 FR
238:00	TE	CORONA CAL	6 FR	69 FR
272:07	TE	SL CONTAM	5 FR	64 FR
PSTFLT	-	CALIBRATION	15 FR	49 FR

TABLE 2-15

APOLLO 16 FILM BUDGET

GET	REV	TARGET	FILM USED	FILM REMAINING
CSM				
CAMERA:EL FILM: HBW MAGAZINE: UU CAPACITY: 160 FR				
25:00	TE	ELECTROPHOR	160 FR	00 FR
CAMERA:NK FILM: CIN MAGAZINE: VV CAPACITY: 70 FR				
47:00	TL	ALPMED	6 FR	64 FR
CAMERA:NK FILM: VHBW MAGAZINE: WW CAPACITY: 50 FR				
UNSCHEDULED (BACKUP DIM LIGHT PHOTOGRAPHY)				
CAMERA:NK FILM: VHBW MAGAZINE: XX CAPACITY: 50 FR				
102:52	14	EARTHSINE	22 FR	28 FR
121:10	24	GUM NEB PT 1	6 FR	22 FR
CAMERA:NK FILM: VHBW MAGAZINE: YY CAPACITY: 50 FR				
123:10	25	ZODIACAL	42 FR	8 FR
CAMERA:NK FILM: VHBW MAGAZINE: ZZ CAPACITY: 50 FR				
127:03	27	GEGENSCHEIN	4 FR	46 FR
142:27	35	GEGENSCHEIN	9 FR	37 FR
180:20	54	GUM NEB PT3	6 FR	31 FR
196:10	62	GUM NEB PT2	6 FR	25 FR
202:11	65	GEGENSCHEIN	3 FR	22 FR
202:23	65	GEGENSCHEIN	4 FR	18 FR
CAMERA:EL FILM: CEX MAGAZINE: V CAPACITY: 160 FR				
UNSCHEDULED				

GET	REV	TARGET	FILM USED	FILM REMAINING
CSM				
CAMERA:NK FILM: VHBW MAGAZINE: W CAPACITY: 50 FR				
CALIBRATION				
CAMERA:NK FILM: VHBW MAGAZINE: X CAPACITY: 50 FR				
213:49	71	GAL SURVEY	4 FR	46 FR
214:26	71	SL CONTAM	12 FR	34 FR
238:20	TE	SL CONTAM A	6 FR	28 FR
271:05	TE	SL CONTAM B	18 FR	10 FR
CAMERA:NK FILM: VHBW MAGAZINE: Y CAPACITY: 50 FR				
CALIBRATION				
CAMERA:NK FILM: CIN MAGAZINE: Z CAPACITY: 70 FR				
UNSCHEDULED				

TABLE 2-15

APOLLO 16 FILM BUDGET

GET	REV	TARGET	FILM USED	FILM REMAINING
LM				
CAMERA:DCL	FILM: HCEX	MAGAZINE: A	CAPACITY: 160 FR	
96:14	12	LM/CM SEP	10 FR	150 FR
96:20	12	CABIN INTERIOR	5 FR	145 FR
96:46	12	LDG SITE	5 FR	140 FR
97:55	13	EARTHRISE	5 FR	135 FR
(102:25)	LS	EVA-1	75 FR	60 FR
CAMERA:DCC	FILM: HCEX	MAGAZINE: B	CAPACITY: 160 FR	
(102:25)	LS	EVA-1	47 FR	113 FR
CAMERA:DCC	FILM: HCEX	MAGAZINE: C	CAPACITY: 160 FR	
(102:25)	LS	EVA-1	UNSCHEDULED	--
(124:50)	LS	EVA-2	105 FR	55 FR
CAMERA:DCC	FILM: HCEX	MAGAZINE: D	CAPACITY: 160 FR	
(124:50)	LS	EVA-2	UNSCHEDULED	--
CAMERA:DCC	FILM: HCEX	MAGAZINE: E	CAPACITY: 160 FR	
(148:25)	LS	EVA-3	97 FR	63 FR
CAMERA:DCC	FILM:HCEX	MAGAZINE: F	CAPACITY: 160 FR	
(148:25)	LS	EVA-3	UNSCHEDULED	—
CAMERA:DCL	FILM: HBW	MAGAZINE: G	CAPACITY: 170 FR	
(102:25)	LS	EVA-1	63 FR	107 FR
CAMERA:DCL	FILM: HBW	MAGAZINE: H	CAPACITY: 170 FR	
(124:50)	LS	EVA-2	126 FR	44 FR
CAMERA:DCL	FILM: HBW	MAGAZINE: I	CAPACITY: 170 FR	
(124:50)	LS	EVA-2	74 FR	96 FR
CAMERA:DCL	FILM: HBW	MAGAZINE: J	CAPACITY: 170 FR	
(148:25)	LS	EVA-3 (POL)	132 FR	38 FR
CAMERA:DCL	FILM: HBW	MAGAZINE: K	CAPACITY: 170 FR	
(148:25)	LS	EVA-3	102 FR	68 FR

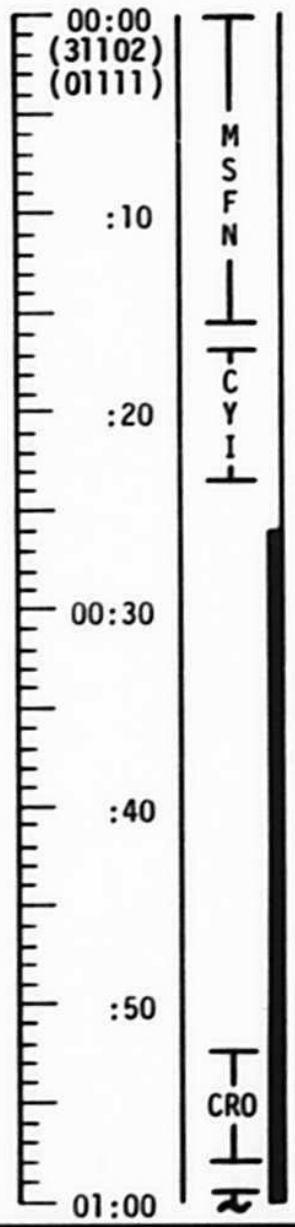
GET	REV	TARGET	FILM USED	FILM REMAINING
LM				
CAMERA:DC5	FILM: HBW	MAGAZINE: L	CAPACITY: 170 FR	
(102:25)	LS	EVA-1	20 FR	150 FR
(124:50)	LS	EVA-2	40 FR	110 FR
(148:25)	LS	EVA-3	60 FR	50 FR
CAMERA:DC5	FILM: HBW	MAGAZINE: M	CAPACITY: 170 FR	
(148:25)	LS	EVA-3	100 FR	70 FR
CAMERA:DAC	FILM: CEX	MAGAZINE: N	CAPACITY: 100%	
96:14	12	LM/CM SEP	6%	94%
96:20	12	CABIN INTERIOR	13%	81%
96:46	12	LDG SITE	6%	75%
98:42	13	DESCENT	75%	0%
CAMERA:DAC	FILM: CEX	MAGAZINE: O	CAPACITY: 100%	
171:43	50	ASCENT	75%	25%
173:35	51	CSM & SIM BAY	25%	0%
CAMERA:DAC	FILM: CEX	MAGAZINE: P	CAPACITY: 100%	
108:35	LS	GRAN PRIX	100%	0%
CAMERA:DAC	FILM: CEX	MAGAZINE: Q	CAPACITY: 100%	
125:50	LS	EVA-2	100%	0%
CAMERA:DAC	FILM: CEX	MAGAZINE: R	CAPACITY: 100%	
127:13	LS	EVA-2	24%	70%
149:10	LS	EVA-3	76%	0%
CAMERA:DAC	FILM: CEX	MAGAZINE: S	CAPACITY: 100%	
152:48	LS	EVA-3	100%	0%
CAMERA:DAC	FILM: CEX	MAGAZINE: T	CAPACITY: 100%	
155:00	LS	GRAN PRIX	100%	0%
CAMERA:DAC	FILM: CEX	MAGAZINE: U	CAPACITY: 100%	
154:30	LS	EVA-3	100%	0%

TABLE 2-15

FLIGHT PLAN

MCC-H

1154 CST



LIFT-OFF APRIL 16, 1972 CSM LAUNCH CHECKLIST

BOOST PAGE L/2-7

SECO

INSERTION AND SYSTEM CHECKS PAGE L/2-11

UPDATE TO CSM
Z TORQUING ANGLE

P52 IMU REFSMMAT REALIGN CHECK PAGE L/2-17

GDC ALIGN

REPORT: GYRO TORQUING ANGLES

NOTES

AT SECO+20 SEC, S-IVB MNVRS TO LH AND INITIATES ORB RATE (HEADS DOWN)

P52 IMU REALIGN	
N71:	__ __,__ __
N05:	__ __ __.__ __
N93:	
X	__ __.__ __ __
Y	__ __.__ __ __
Z	__ __.__ __ __
GET	__ __ __:__ __:__ __

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	00:00 - 01:00	1/LAUNCH-E.0	3-1

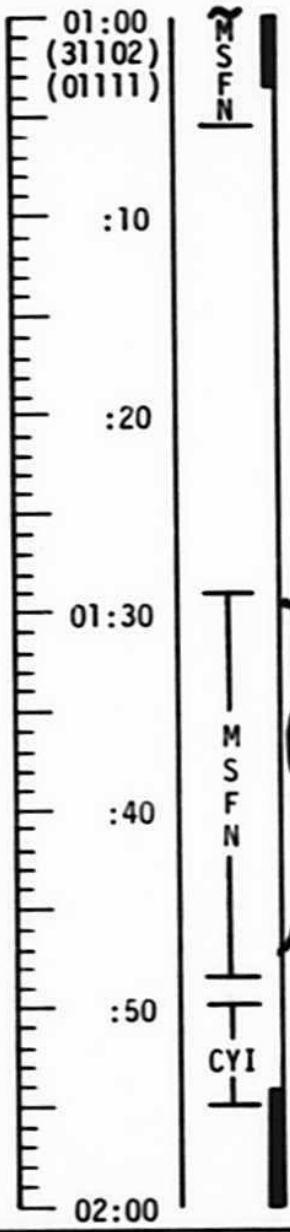
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1254 CST

NOTES



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

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

U.S. PASS THROUGH BDA

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

WATCH FIRES & SIGHTS OF AFRICA

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	01:00 - 02:00	1/E.O.	3-2

FLIGHT PLANNING BRANCH

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TLI
BURN TABLE

ROLL RATES	P OR Y RATES	P OR Y ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
>20°/SEC TERMINATE	>10°/SEC TERMINATE	±45° TERMINATE	V_i = PAD VALUE + 2 SEC	NO TRIM

FLIGHT PLAN

MCC-H 1354 CST

NOTES

02:00 (31102) (01111)

TLI PREPARATION PAGE L/2-27

:10

TLI, NOMINAL & MANUAL PAGE L/2-28

:20

ARIA

TB6 02:23:57.1

GO/NO-GO FOR TLI

GO/NO-GO FOR TLI

CRO

02:30

TLI

TIG: 02:33:35.1
BT: 5 MIN 44.2 SEC
ΔVC: 10,374.3 FPS

ARIA

POO

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

Moon is out of Window #2
CM 2/EL/250/CEX/Ring Sight
(f5.6, 1/250, ∞)

AT SECO: S-IVB INERTIAL
AT SECO +2 MIN 31 SEC:
S-IVB TO LOCAL
HORIZONTAL, ORB RATE,
HEADS DOWN

:40

TLI BURN STATUS REPORT
CDR - TRANS TO CENTER COUCH, CMP - LEFT COUCH

(11103) (01111)

NORMAL SC/BOOSTER SEPARATIONS PAGE L/3-1
DIRECT O2 VLV - OPEN, UNTIL CABIN IS 5.7 PSI, THEN CLOSE
V48 (11103)(01111)

:50

MSFN

S-IVB MNVRS TO SEP ATT 02:54:20

(359,146,319) OMNI C
GO/NO-GO FOR TRANSPOSITION AND DOCKING
CSM SEPARATION PREP PAGE L/3-1

GO/NO-GO FOR T&D

03:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	02:00 - 03:00	E.O./TLC	3-5

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1454 CST

NOTES

03:00
(11103)
(01111)
(11102)
(01111)
:10
:20
DUMP DSE
03:30
:40
GO/NO-GO FOR PYRO ARM AND CSM/LM EJECTION
(21101)
(X1111)
:50
TLI CUTOFF + 1 HR 20 MIN
04:00

TV

MSFN

CSM/S-IVB SEP 03:04:20

CSM MNVR TO DOCK ATT (301,326,041) (03:13)
V48 (11102)(01111)
TV (GDS) 3:09 TO 3:28 CM4 - BRKT (f22,MONITOR)
VISUALLY INSPECT AND PHOTOGRAPH S-IVB AND LM, MAG(AA,NN)

DOCK 03:14:20

CM/LM PRESSURE EQUALIZATION (DECAL) PAGE L/3-5
TUNNEL HATCH REMOVAL (DECAL)
DOCKING LATCH VERIFICATION (DECAL)
LM UMBILICAL CONNECTIONS (DECAL)
HATCH INSTALLATION (DECAL)
PRE LM SEP & EJECTION

S-IVB NON-PROPULSIVE VENT START (03:39)

V48 (21101) (X1111)
GO/NO-GO FOR PYRO ARM (CUE MSFN)
LOGIC ON
PYRO ARM
P47 THRUST MONITOR
S-IVB NON-PROPULSIVE VENT COMPLETE (03:54)
PHOTOGRAPH LM EJECTION, MAG (AA,NN)

CSM/LM EJECTION

TIG: 03:59:20
BT: 3 SEC
ΔVT: 0.4 FPS
ULLAGE: NONE

T&D MNVR
+X FOR 3 SEC (ΔV ~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 (ΔV ~0.7 FPS)

Earth out of window #1
CM 1/EL/80/CEX
(f11, 1/250, ∞)

SPRING ACTUATOR ΔV
~ 0.8 FPS. 5 SEC AFTER
EJECTION THERE IS A
4 JET RCS -X TRANSLA-
TION FOR 3 SEC (ΔV
~ 0.4 FPS) TOTAL ΔV
~ 1.2 FPS.

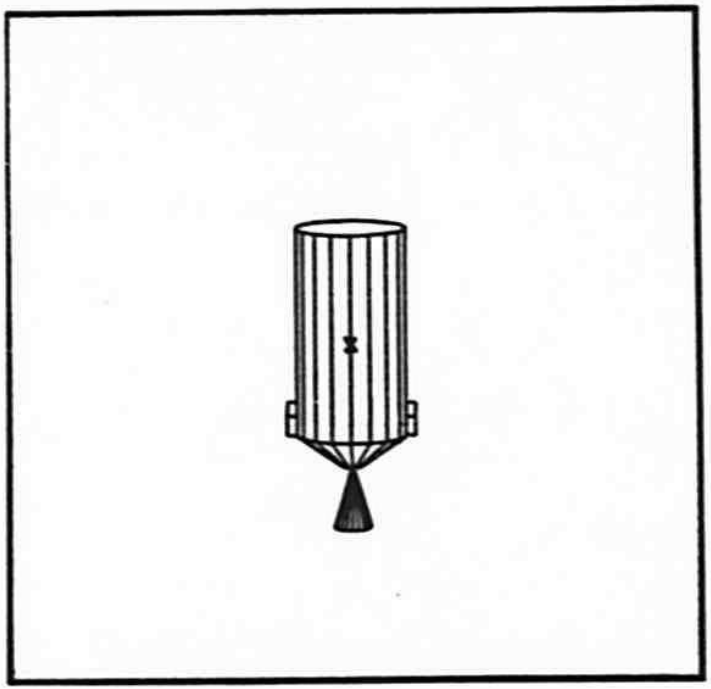
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	03:00 - 04:00	1/TLC	3-6

FLIGHT PLANNING BRANCH

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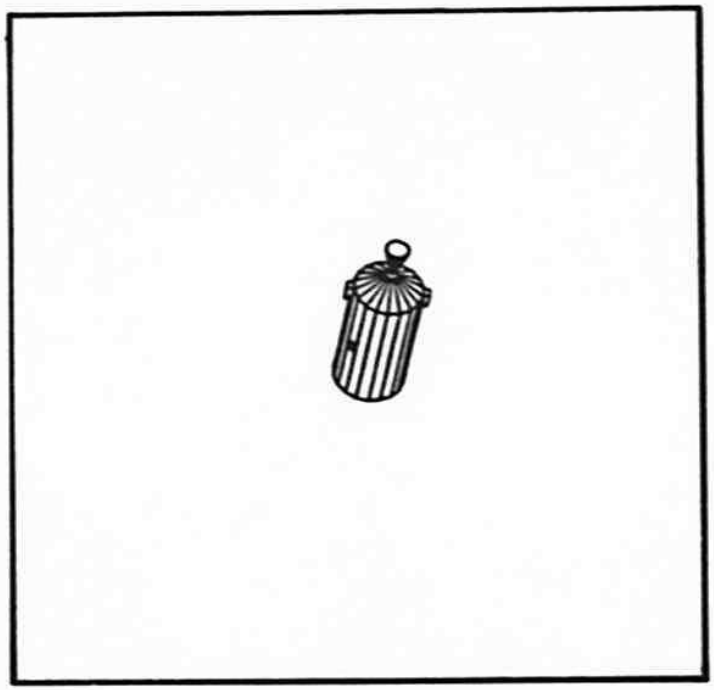
FLIGHT PLAN

GET 04:20 FOV 5°



S-IVB APS EVASIVE INITIATION

GET 04:41 FOV 1°



S-IVB LOX DUMP INITIATION

FLIGHT PLAN

MCC-H | 1554 CST

GO FOR S-IVB YAW MNVR INITIATION

GO/NO-GO FOR S-IVB EVASIVE BURN

DUMP DSE (DSE VOICE QUALITY CHECK)

04:00 (21101) (X1111)

:10

:20

04:30

:40

:50

05:00

MSFN

P00, V66 SET CSM S.V. INTO LM S.V.
REPORT: GOOD EJECTION
V49 MNVR TO VIEW S-IVB IN HATCH WINDOW BY 04:12
(090,326,356) OMNI A
REPORT: GO FOR S-IVB YAW MNVR
VISUALLY INSPECT S-IVB/IU THERMAL SHROUD

CM3/EL/250/CEX (f8, 1/250, ∞)
NOTE: 80mm Lens if < 400ft.

S-IVB YAW MNVR 04:12:20 (GROUND COMMAND)

REPORT: GO FOR S-IVB EVASIVE BURN

S-IVB APS EVASIVE BURN 04:22:20 (GROUND COMMAND)

V49 MNVR TO P52 ATTITUDE (05:25) (040,326,035)
DOFF AND STOW PGA'S HGA P -47, Y 98
TRANSFER ITEMS OUT OF PGA POCKETS
TRANSFER PRD TO CWG

S-IVB MNVRS TO PROPELLANT DUMP ATT 04:32

REPORT: LM/CM ΔP
CHARGE BATTERY B

S-IVB CONTINUOUS H_2 VENT - ON 04:39

S-IVB LOX DUMP 04:43

INSTALL CABIN FAN FILTER (U2)

TIME & LOG ALL URINE VOIDS AND MEASURE FLUID INTAKE UNTIL ~ 66:30 GET

NOTES

THE MNVR TO ACQUIRE THE S-IVB WILL BE PERFORMED AT 0.2°/SEC AND WILL BE INITIATED AFTER GOOD EJECTION IS VERIFIED.

GO FOR S-IVB YAW MNVR INDICATES THAT THE S-IVB IS IN THE CREW FIELD OF VIEW AND ADEQUATE SPACECRAFT SEPARATION HAS BEEN ACHIEVED.
THE S-IVB YAW MNVR 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 16	FINAL (4/16)	3/6/72	04:00 - 05:00	1/TLC	3-9

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1654 CST

05:00
(21101)
(X1111)

UPLINK TO CSM
DESIRED ORIENT (PTC)
ZERO TRUNNION BIAS

:10

:20

05:30

:40

:50

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

06:00

MSFN

FILM MAGS REQD FOR REST OF DAY:
DAC: CIN-JJ
EL: UV-00, CEX-NN

LIMIT CYCLE - ON
ATT DEADBAND - MIN
RATE - LOW
BMAG (3) - ATT 1/RATE 2
SC CONT - SCS
P52 (OPTION 3)
(LAUNCH ORIENT)

STARS_____,_____
SA_____,_____
TA_____,_____

REPORT: GYRO TORQUING ANGLES

P52 (OPTION 1)
(PTC ORIENT)

GDC ALIGN
SC CONT - CMC
BMAG (3) - RATE 2

VHF A SIMPLEX - OFF
WASTE STOWAGE VENT VALVE - VENT (VERIFY)

NOTES

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

S-IVB APS MCC-1
GET ~05:30
ΔV ~30 FPS

P52 IMU REALIGN	
N71:	__ __,__ __
N05:	__ __ __.__ __
N93:	
X	__ __.__ __ __
Y	__ __.__ __ __
Z	__ __.__ __ __
GET	__ __ __:__ __:__ __

P37 PAD ASSUMES
NO MCC-1

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHGB	~~3/6/72~~ 1/7/72	05:00 - 06:00	1/TLC	3-10

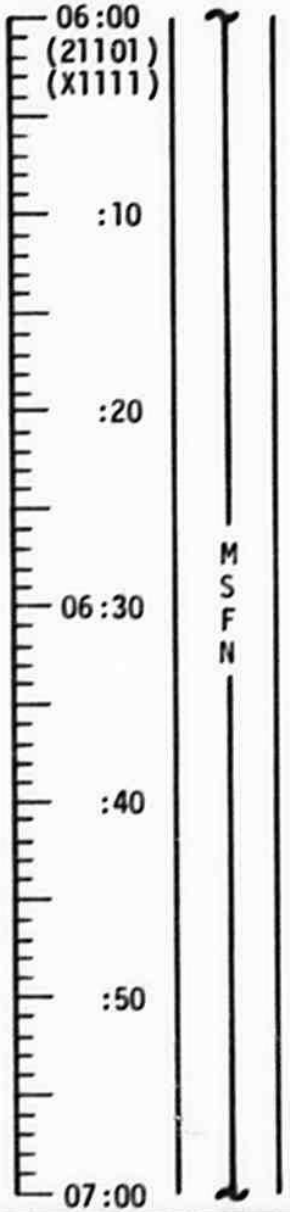
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1754 CST

NOTES



EAT PERIOD

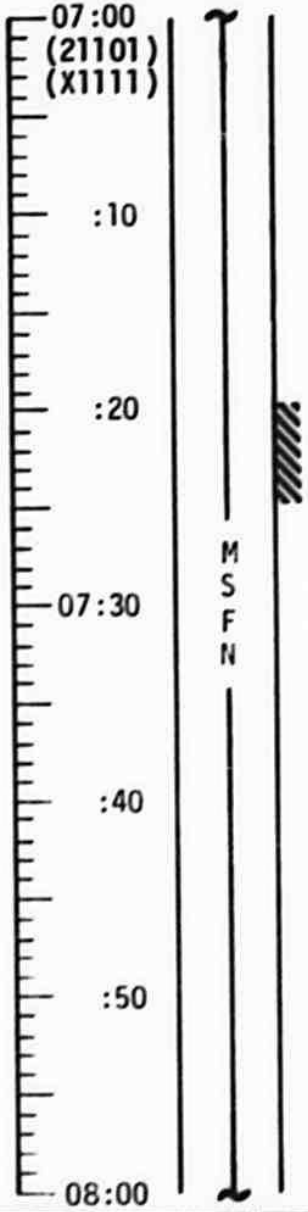
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	06:00 - 07:00	1/TLC	3-11

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1854 CST



CSM EXP/EVA CHECKLIST

V49 MNVR TO EARTH UV PHOTO ATT (07:15)
(207,355,039) OMNI D
EARTH UV PHOTOGRAPHY SEQ A, *PAGE X/2-16*
MAG (00)
MAG (NN)

CSM SYSTEMS CHECKLIST

DEACTIVATE PRIMARY EVAP PAGE S/1-16

NOTES

EARTH DISTANCE
~ 33,300 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16)	*3/27/72* ~~3/16/72~~	07:00 - 08:00	1/TLC	3-12

CHANGE A

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1954 CST

NOTES

08:00
(21101)
(X1111)

V49 MNVR TO OPTICS CALIBRATION ATTITUDE (08:06)
(157,246,330). HGA P -85, Y 153

EARTH DISTANCE
~38,900 NM

P23 CISLUNAR NAVIGATION
OPTICS CALIBRATION STAR N70 (00042)
P00

42 PEACOCK

:10

V49 MNVR TO SIGHTING ATTITUDE (08:20)
(174,288,320) HGA P -58, Y 350
V67 (+80000) (+00070) (+00003)

LOAD W MATRIX

P23 CISLUNAR NAVIGATION
5 MARKS ON EACH STAR, UPDATE STATE VECTOR

:20

1. N70 (00000) (00000) (00120)
   N88 (-45035)(-60456)(-65703)

173 GAMMA LUPI
(EFH)

MSFN

08:30

2. N70 (00000) (00000) (00110)
   N88 (+27321)(-89225)(-35950)

235 PI SAGITTARII
(ENH)

:40

:50

3. N70 (00000) (00000) (00110)
   N88 (+22735)(-83636)(-49882)

214 ZETA SAGITTARII
(ENH)

09:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	08:00 - 09:00	1/TLC	3-13

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H | 2054 CST | NOTES

09:00 (21101) (X1111)

4. N70 (00000) (00000) (00120) — 204 SABIK (EFH)
   N88 (-21341)(-93678)(-27046)

INSTALL AND EVALUATE POLAROID FILTER ON LAST P23
LOOK AT DARK PORTION OF EARTH IN SXT-REFLECTION!

:10

P00
V49 MNVR TO OPTICS CALIBRATION ATTITUDE (9:30)
(157,246,330) HGA P -85, Y 153
P23 CISLUNAR NAVIGATION
OPTICS CALIBRATION STAR N70 (00042) — 42 PEACOCK
READ & NOTE TPAC VALUES VS. N91
CHECK TPAC DRIFTS IN CMC & MANUAL

:20

OMNI B
SECURE HGA: MAN, WIDE HGA P -52, Y 270 — S-IVB APS MCC-2
V49 MNVR TO THERMAL ATTITUDE (9:40) — GET ~09:30
(033,246,330) OMNI C — ΔV NOM. ZERO

09:30

M S F N

UPDATE TO CSM GO/NO-GO FOR MCC-1

(21111) (X1111)
V48 (21111) (X1111)
INFLIGHT EXERCISER (A-8 SECTION I)

:40

* CSM G&C CHECKLIST — *PERFORM IF MCC-1 IS REQUIRED
*EMS ΔV TEST & NULL BIAS CHECK PAGE G/2-5
*REPORT: BIAS

:50

CREW EXERCISE PERIOD

10:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	09:00 - 10:00	1/TLC	3-14

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2154 CST

10:00
(21111)
(X1111)

:10

:20

10:30

:40

:50

11:00

MSFN

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

CREW EXERCISE PERIOD

P52 (OPTION 3)
(PTC ORIENT)

REPORT: GYRO TORQUING ANGLES
GDC ALIGN

NOTES

EARTH DISTANCE
~ 51,400 NM

P52 IMU REALIGN
N71: __ __,__ __
N05: __ __ __.__ __
N93:
X __ __.__ __ __
Y __ __.__ __ __
Z __ __.__ __ __
GET __ __ __:__ __:__ __

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	10:00 - 11:00	1/TLC	3-15

FLIGHT PLANNING BRANCH

MCC-1
BURN TABLE
NO MANUAL START OR RESTART

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

FLIGHT PLAN

MCC-H

2254 CST

NOTES

*PERFORM IF MCC-1 IS REQUIRED

11:00
(21111)
(X1111)

:10

:20

11:30

:40

:50

12:00

MSFN

TLI CUTOFF +9 HR

WASTE STOWAGE VENT VLV - CLOSE (8 HOURS FROM VENT)
*P30 EXTERNAL ΔV
*CYCLE CMC MODE - FREE/AUTO
*V48 (2110!)(X1111)
*V49 MNVR TO PAD BURN ATTITUDE
*IF SPS MIDCOURSE REQUIRED:
* PRE SPS BURN SIM PREP (CUE CARD)
*SXT STAR CHECK
*P40 SPS THRUSTING OR P41 RCS THRUSTING
O_2 FUEL CELL PURGE
WASTE WATER DUMP

MCC-1

TIG: 11:39
BT: NOM ZERO
ΔVT: NOM ZERO
ULLAGE: NONE

*V66 SET CSM S.V. INTO LM S.V.
*REPORT: BURN STATUS
*IF SPS MIDCOURSE PERFORMED:
* PC - OFF
* MC - OFF
* SM/AC PWR - OFF

BURN STATUS REPORT

X	X		●			ΔTIG
X	X		●			BT
					●	V_{gx}
		TRIM				
X	X	X				R
X	X	X				P
X	X	X				Y
	.				●	V_{gx}
					●	V_{gy}
					●	V_{gz}
			.		● .	ΔV_c
X	X	X				FUEL
X	X	X				OX
X	X	X				UNBAL

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	11:00 - 12:00	1/TLC	3-17

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2354 CST

12:00
(21111)
(X1111)

REPORT: LM/CM ΔP
VENT BATTERIES UNTIL SYSTEM TEST METER 7A=0

LiOH CANISTER CHANGE
(3 INTO A, STOW 1 IN B5)
IF MCC-1 NOT PERFORMED
CYCLE CMC MODE - FREE/AUTO
V48 (21101) (X1111)

CSM EXP/EVA CHECKLIST

:10
(21101)
(X1111)

V49 MNVR TO EARTH UV PHOTO ATT (12:30)
(207,356,030) OMNI D
EARTH UV PHOTOGRAPHY SEQ B, PAGE X/2-17
MAG (00)
MAG (NN)

:20

M
S
F
N

12:30

:40
(21111)
(X1111)

V48 (21111)
(X1111)

CREW EXERCISE PERIOD

:50

13:00

NOTES

EARTH DISTANCE
~ 58,100 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	3/27/72 ~~3/6/72~~	12:00 - 13:00	1/TLC	3-18

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0054 CST

NOTES

13:00
(21111)
(X1111)

:10

(21101)
(X1111)

:20

13:30

:40

:50

14:00

MSFN

UPDATE TO CSM
QUADS TO ENABLE
FOR PTC SPINUP

UPDATE TO CSM
P37 PADS (LAUNCH
+25,35,45, & 55)

CREW EXERCISE PERIOD

CYCLE CMC MODE - FREE/AUTO
V48 (21101)(X1111)

CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2
V49 MNVR TO PTC ATTITUDE
(N20,270,000)
P20 OPT 2 X-AXIS
N78 (0,0,0)
N79 (-0.4200, +000.50)
N34 (0,0,0)

EAT PERIOD

PTC

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	13:00 - 14:00	1/TLC	3-19

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0154 CST

14:00

:10

:20

14:30

:40

:50

15:00

MSFN

EAT PERIOD

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST PAGE S/1-29

COMM - OMNI
CDR & CMP DOFF BIOMED HARNESS
H_2 HEATERS 1&2 - AUTO (VERIFY)
H_2 FANS 3 - AUTO
O_2 HEATERS 1&2 - OFF
O_2 HEATERS 3 - AUTO

FILM MAGS REQD FOR NEXT DAY:
EL: HBW-UU, UV-OO, CEX-NN

PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)

EARTH DISTANCE
~68,400 NM

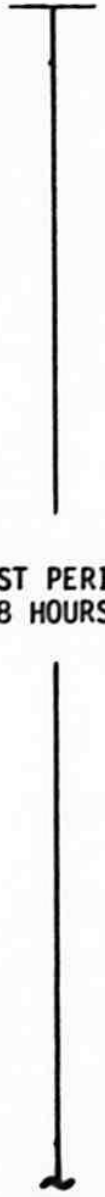
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) Chg. B	~~3/6/72~~ 4/7/72	14:00 - 15:00	1/TLC	3-20

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H







NOTES

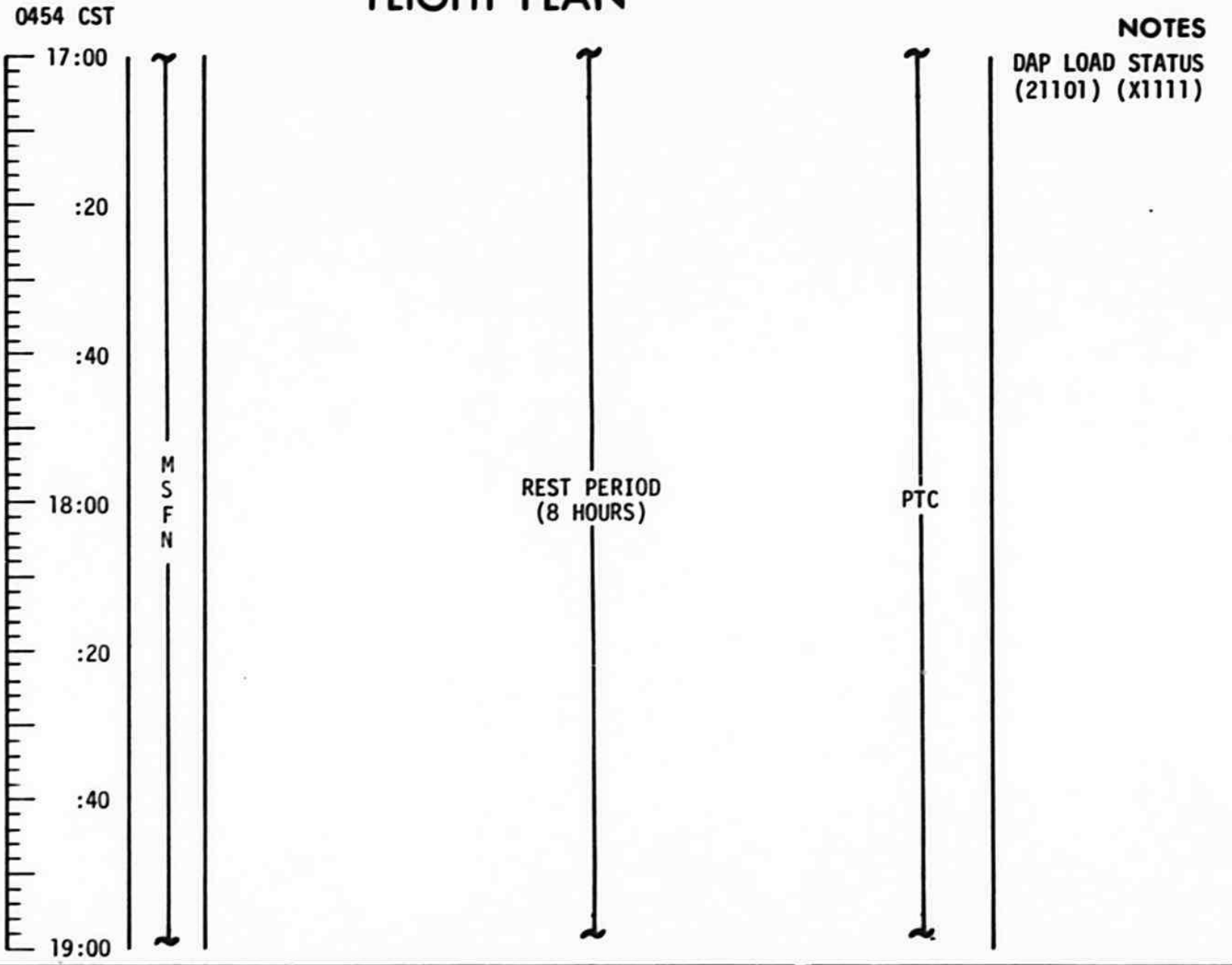
DAP LOAD STATUS
(21101) (X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	15:00 - 17:00	1/TLC	3-21

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

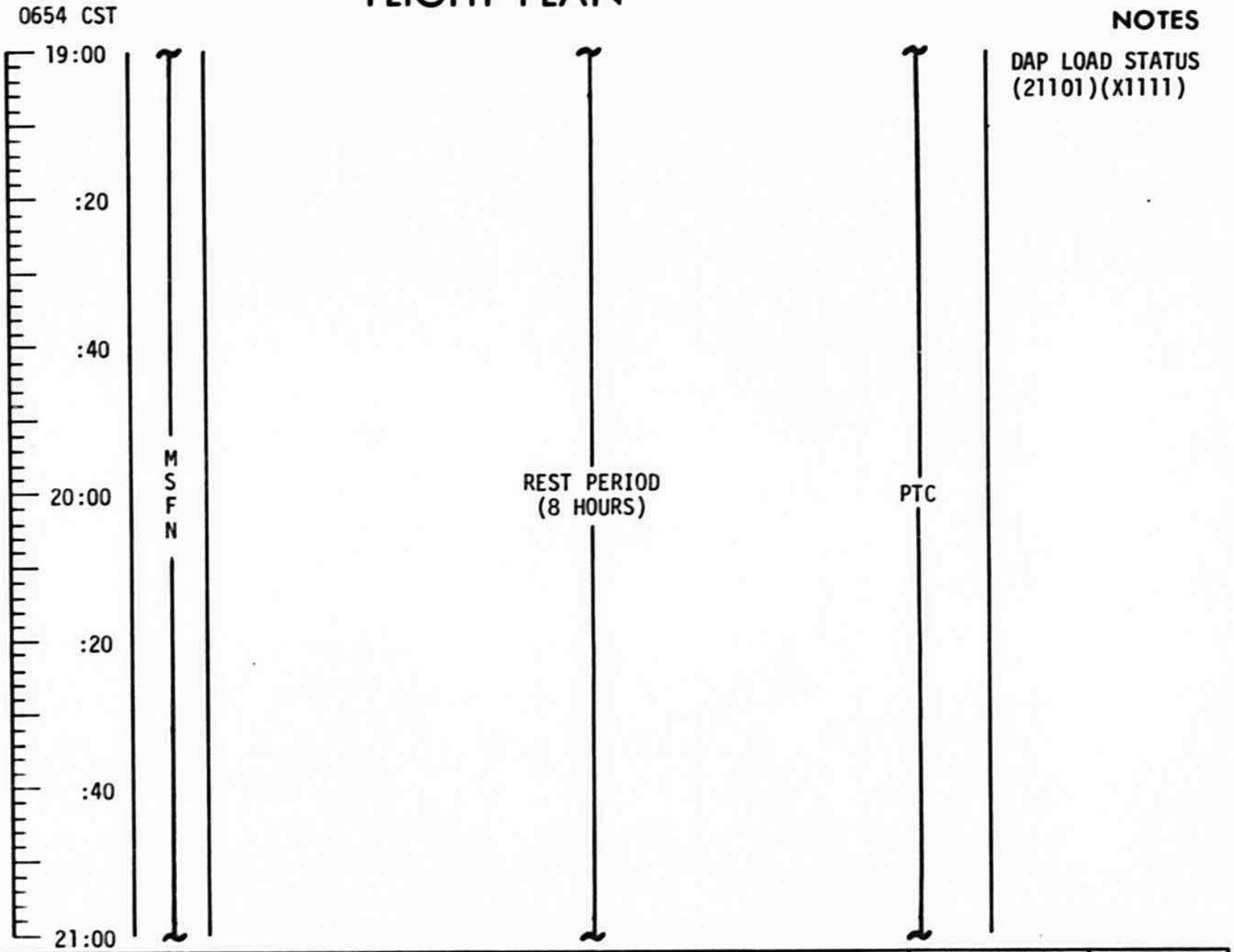


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	17:00 - 19:00	1/TLC	3-22

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H



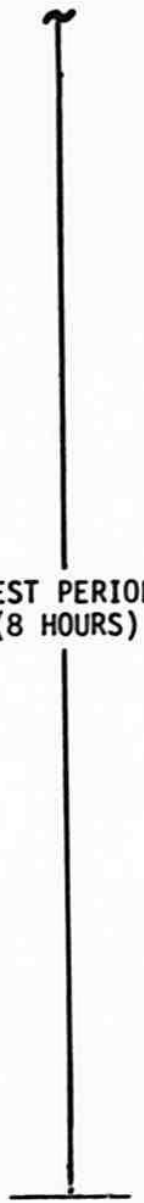
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	19:00 - 21:00	1/TLC	3-23

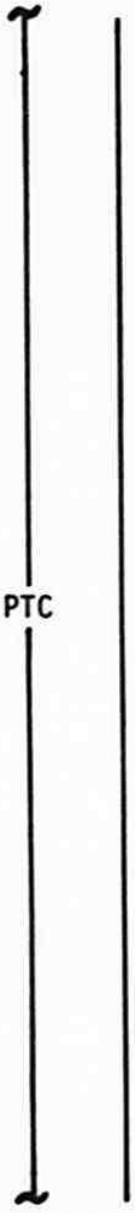
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H







NOTES

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	21:00 - 23:00	1/TLC	3-24

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

UPDATE TO CSM
CONSUMABLES STATUS
FLIGHT PLAN

1054 CST

23:00
:10
:20
23:30
:40
:50
24:00

MSFN

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE S/1-29
CHARGE BATTERY A
H_2 HEATERS 1&2 - OFF

BEGIN URINE COLLECTION PERIOD:
UNSTOW URINE SAMPLE BAGS, AS NEEDED (A6)
COLLECT URINE PER URINE DUMP MODES PAGE S/1-11
C. UTS (COLLECTION)
D. UTS/URINE BAG (TRANSFER)

EAT PERIOD

PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)
EARTH DISTANCE
~ 97,700 NM

COLLECTION PERIOD BEGINS WITH SECOND VOID AFTER WAKEUP. EACH CREWMAN WILL USE A SEPERATE URINE SAMPLE BAG FOR URINE COLLECTION.

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	23:00 - 24:00	2/TLC	3-25

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1154 CST

NOTES

DAP LOAD STATUS
(21101)(X1111)

24:00

:10

:20

24:30

:40

:50

25:00

MSFN

EAT PERIOD

PTC

LiOH CANISTER CHANGE
(4 INTO B, STOW 2 INTO B5)

UPDATE TO CSM
HGA ANGLES FOR
FILM CYCLE

ACQ MSFN, HGA: REACQ, NARROW (CUE MSFN FOR PITCH AND YAW ANGLES)
REPORT: LM/CM ΔP

CSM EXP/EVA CHECKLIST

PC AND MC FILM CYCLING, PAGE X/1-17

MSFN CMD
DATA SYS - OFF

OMNI B
SECURE HGA: MAN, WIDE HGA P -52, Y 270

CDR DON BIOMED HARNESS
LMP DOFF BIOMED HARNESS

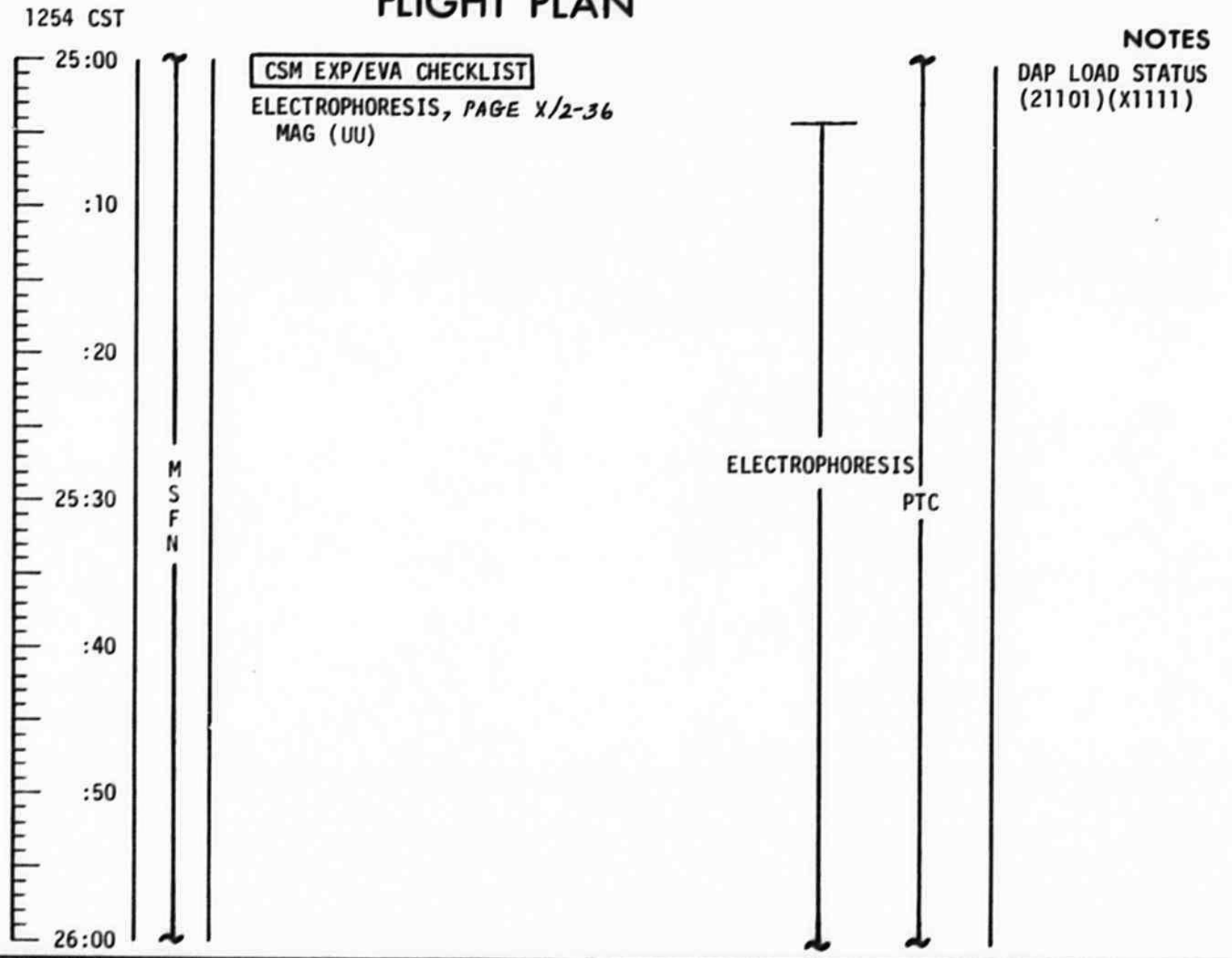
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16)	3/17/72 ~~3/6/72~~	24:00 - 25:00	2/TLC	3-26

CHANGE A

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H



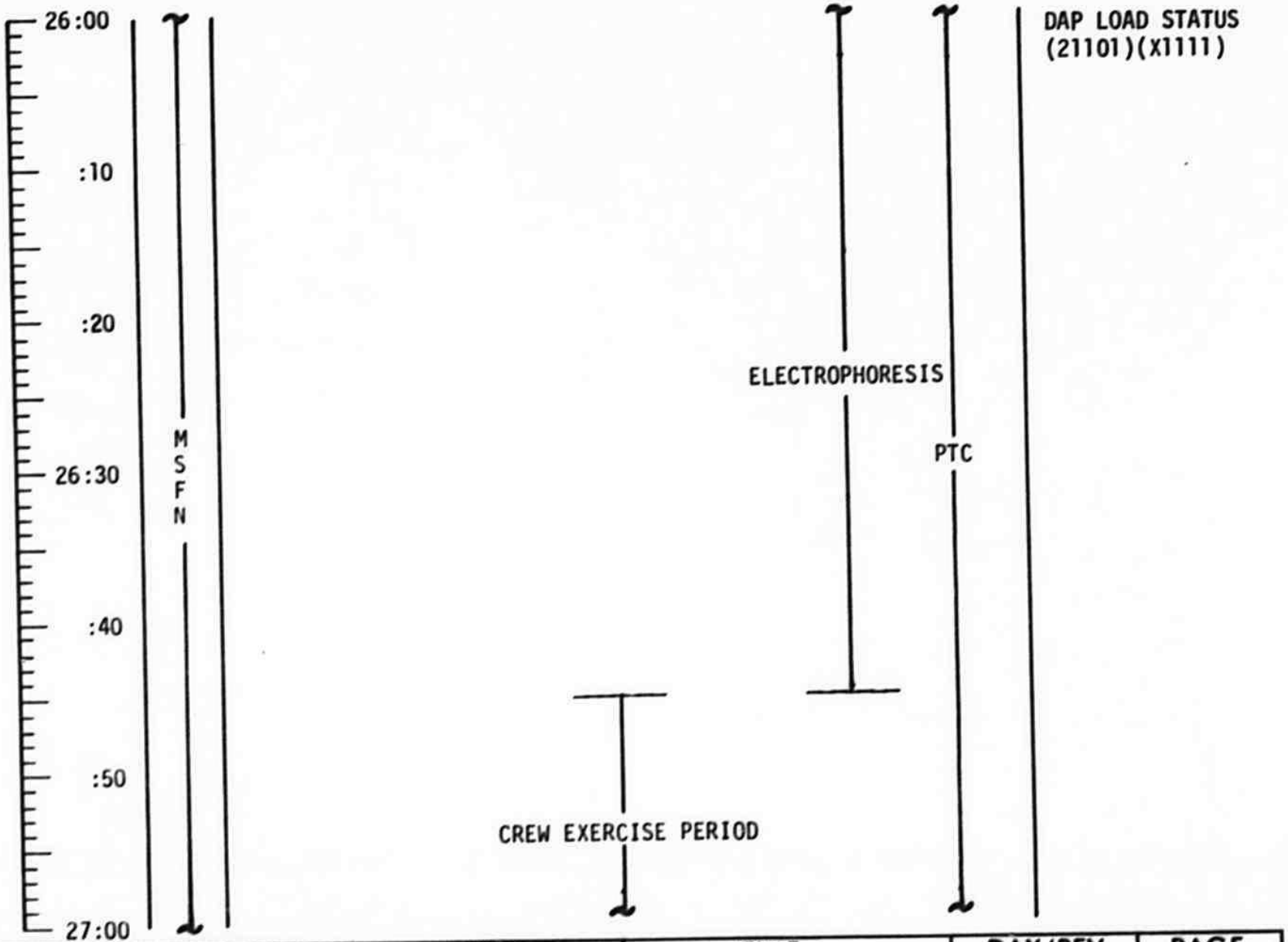
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16)	~~3/27/72~~ ~~3/16/72~~	25:00 - 26:00	2/TLC	3-27

CHANGE A

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H



NOTES

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	26:00 - 27:00	2/TLC	3-28

FLIGHT PLANNING BRANCH

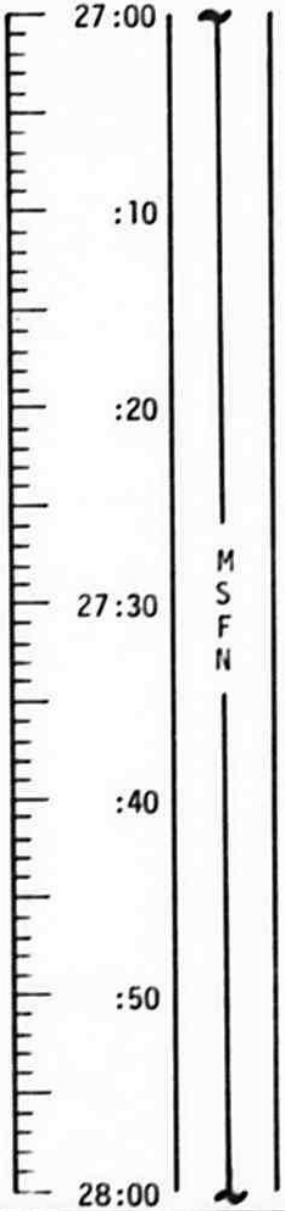
FLIGHT PLAN

MCC-H

1454 CST

NOTES

DAP LOAD STATUS
(21101)(X1111)



MSFN

CREW EXERCISE PERIOD

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	27:00 - 28:00	2/TLC	3-29

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1554 CST

28:00

:10

:20

28:30

:40

:50

29:00

M S F N

CREW EXERCISE PERIOD

PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)

UPDATE TO CSM
GO/NO-GO FOR MCC-2

* CSM G&C CHECKLIST

*EMS ΔV TEST & NULL BIAS CHECK PAGE G/2-5

*REPORT: BIAS

MEASURE SPEED REPEATABILITY OF TAPE RECORDER & PREPARE ZODIACAL LIGHT & S.R. SOLAR CORONA TAPES

*PERFORMED IF MCC-2 IS REQUIRED

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	28:00 - 29:00	2/TLC	3-30

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1654 CST

29:00

:10

(21101)
(X1111)

:20

29:30

:40

(21111)
(X1111)

:50

30:00

M
S
F
N

UPLINK TO CSM
CSM S.V. & V66
MCC-2 TGT LOAD

UPDATE TO CSM
MCC-2 MNVR PAD

CSM G&C CHECKLIST

EXIT G&N PTC PAGE G/8-3

CSM EXP/EVA CHECKLIST

V49 MNVR TO EARTH UV PHOTO ATT (29:30)
(208,358,022) OMNI D
EARTH UV PHOTOGRAPHY SEQ A, PAGE X/2-16
MAG (00)
MAG (NN)

V48(21111)
(X1111)
P52 (OPTION 3)
(PTC ORIENT)

REPORT: GYRO TORQUING ANGLES
GDC ALIGN

PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)

P52 IMU REALIGN
N71: __ __,__ __
N05: __ __ __.__ __
N93:
X __ __.__ __ __
Y __ __.__ __ __
Z __ __.__ __ __
GET __ __ __:__ __:__ __

EARTH DISTANCE
~ 117,600 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	3/27/72 ~~3/16/72~~	29:00 - 30:00	2/TLC	3-31

FLIGHT PLANNING BRANCH

MCC-2
BURN TABLE

NO MANUAL START OR RESTART

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

FLIGHT PLAN

MCC-H

1754 CST

30:00 (21111) (X1111)

:10

:20

30:30

:40

:50

31:00

MSFN

H_2 PURGE LINE HEATERS - ON

*P30 EXTERNAL ΔV
*CYCLE CMC MODE - FREE/AUTO
*V48(21101)(X1111)
*V49 MNVR TO PAD BURN ATTITUDE
*IF SPS MIDCOURSE REQUIRED:
* PRE SPS BURN SIM PREP (CUE CARD)
* TERMINATE BATTERY CHARGE A
*SXT STAR CHECK
*P40 SPS THRUSTING OR P41 RCS THRUSTING
WASTE WATER DUMP
H_2 & O_2 FUEL CELL PURGE

H_2 PURGE LINE HEATERS - OFF

TLI CUTOFF +28 HR

MCC-2

TIG: 30:39
BT: NOM ZERO
ΔVT: NOM ZERO
ULLAGE: NONE

*V66 SET CSM S.V. INTO LM S.V.
*IF SPS MIDCOURSE PERFORMED:
* PC - OFF
* MC - OFF
* SM/AC PWR - OFF
* CHARGE BATTERY A
*REPORT: BURN STATUS
*V48(21111)
(X1111)
REPORT: LM/CM ΔP
IF LM/CM ΔP <2.7 PSID, TUNNEL VENT VLV-VENT
UNTIL ΔP ≥2.7 PSID.

NOTES

*PERFORM IF MCC-2 IS REQUIRED

BURN STATUS REPORT

X	X		•			ΔTIG
X	X		•			BT
					•	V_{gx}
			TRIM			
X	X	X				R
X	X	X				P
X	X	X				Y
	.				•	V_{gx}
					•	V_{gy}
					•	V_{gz}
			.		• .	ΔV_c
X	X	X				FUEL
X	X	X				OX
X	X	X				UNBAL

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	30:00 - 31:00	2/TLC	3-33

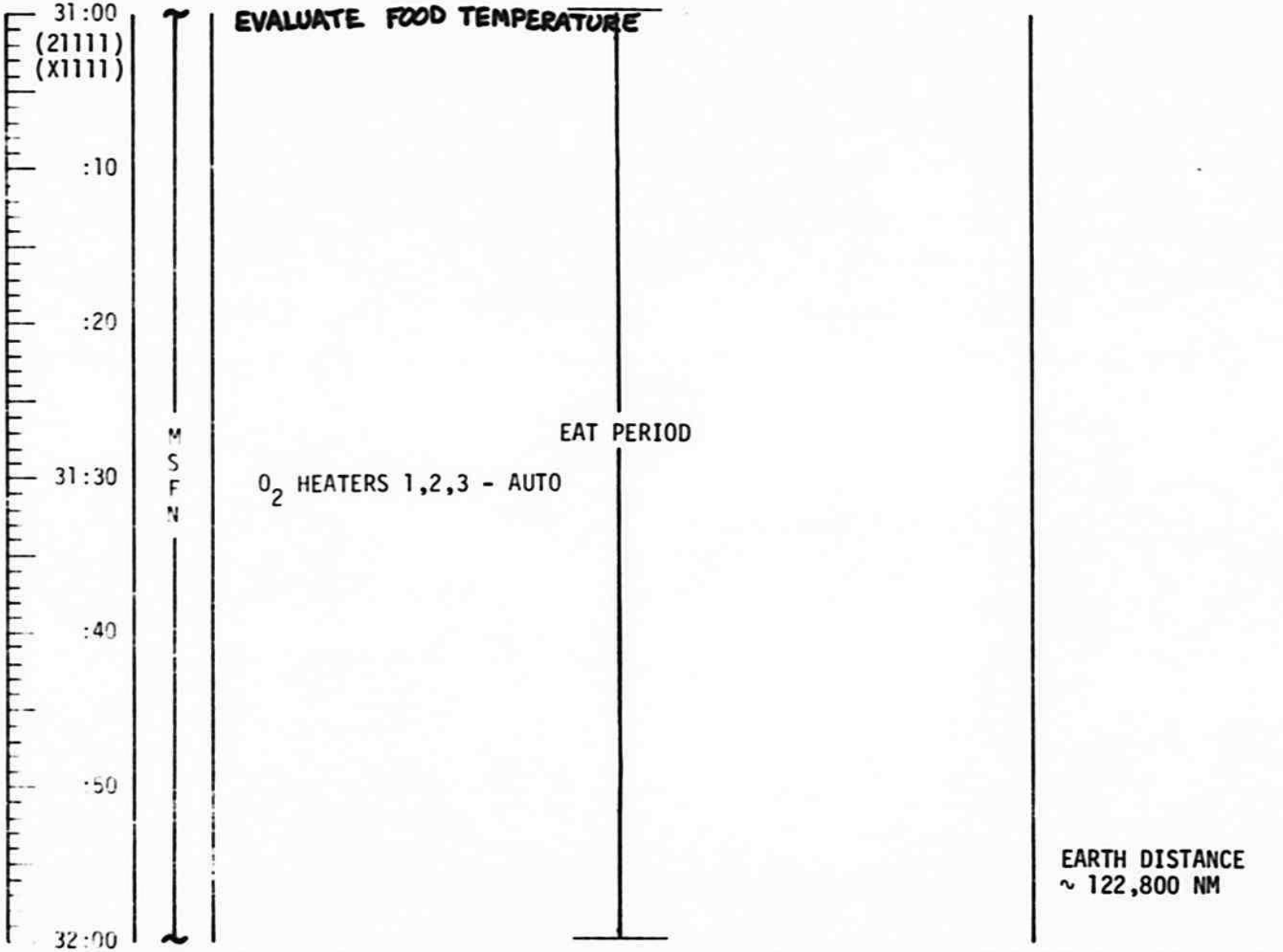
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1854 CST

NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	31:00 - 32:00	2/TLC	3-34

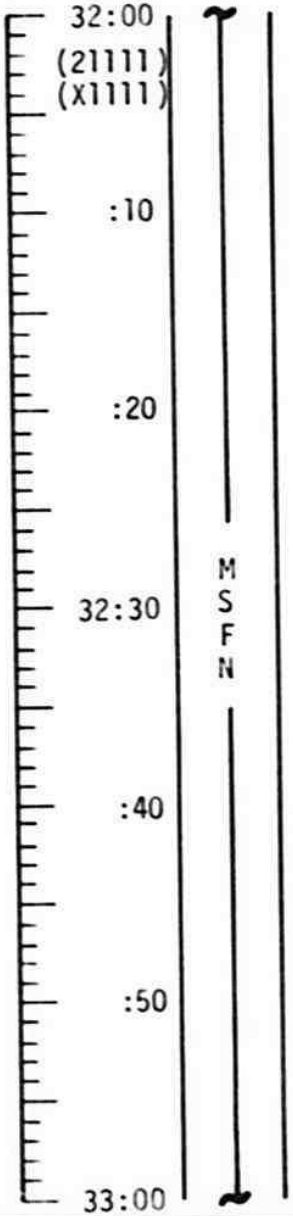
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1954 CST

NOTES



PREPARE ITEMS PER CSM TO LM TRANSFER LIST

DIRECT O_2 VLV - OPEN
UNTIL CABIN PRESS
=5.7 PSIA, then CLOSE
V49 MNVR TO LM
CHECK OUT ATT (32:45)
(337,087,000)
HGA P -30, Y 270

CSM TO LM TRANSFER LIST (TLC)

CSM LOCATION	ITEM	LM LOCATION
A2	JETTISON BAG	TEMP STOW
ICG	SCISSORS (1)	DATA FILE
CCU CABLE	CWG ELECT ADAPT W/CAP (2)	ON CREW
ON CREW	COMM CARR (2)	ON CREW
R5	INFLIGHT STRAPS (4)	ON CDR'S UMBIL
R5	UTILITY STRAPS (3)	LHSSC
R13	70MM MAG (4) IN BAG	AFT RHSSC (BW-L, HCEX-A,E & F)
R13	70MM MAG (3) IN BAG	AFT ENG COVER (BW-H & I,HCEX-D)
A8	70MM MAG (3) IN BAG	AFT ENG COVER (BW-~~L,K,M~~ J, K, M)
R13	70MM MAG (3) IN BAG	FWD RHSSC (BW-G,HCEX-B&C)
R13	16MM MAG (6) W/BAG INCL PASSIVE DOS(0101)	RHSSC (P,Q,R,S,T & U)
R13	16MM MAG (2) IN BAG	1-W/BAG PKT (O) 1-WINDOW SEQ CAMR (N)
R3	LM ACTIVATION C/L (2)	DATA FILE

COUCHES: CDR - 0°, CMP - 0°, LMP - 180°
TUNNEL LIGHTS - ON
CM/LM PRESSURE EQUALIZATION (DECAL)
TUNNEL HATCH REMOVAL (DECAL)
PROBE REMOVAL (DECAL)
DROGUE REMOVAL (DECAL)
O_2 HEATERS 1,2 - OFF
O_2 HEATERS 3 - AUTO

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE ~~K~~ (4/16)	~~3/27/72~~ 4/7/72	3~~1~~2:00 - 3~~5~~9:00	2/TLC	3-35

FLIGHT PLANNING BRANCH

FLIGHT PLAN

CSM | **LM** | **MCC-H**

2054 CST

CMP

REPORT: DOCKING TUNNEL INDEX ANGLE
OPEN LM HATCH
LMP TRANSFER TO LM
TRANSFER ITEMS PER LM ACTIVATION CHECKLIST

MSFN

33:00 (21111) (X1111)

CDR | **LMP**

LM ACTIVATION CHECKLIST PAGE 1-3

IVT TO LM

ENTRY STATUS CHECK

:10

IVT TO LM

:20

HOUSEKEEPING

33:30

FABRICATE FLOOD LIGHT SHADES
ADD TAPE TO TUNNEL DECALS

:40

EVALUATE FLUID BEHAVIOR

:50

34:00

UPDATE TO CSM
LOI -5 HR FLYBY

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	33:00 - 34:00	2/TLC	3-36

FLIGHT PLAN

CSM		LM		MCC-H
CMP		CDR	LMP	
	2154 CST			
	34:00 (21111) (X1111)	HOUSEKEEPING		
	:10			
LM PWR - RESET/OFF (AT LMP REQUEST) REPORT: GET(___:___:___) SYS TEST - 7D SYS TEST IND = 0 VOLTS	:20	COMM ACTIVATION		
CSM/LM VHF VOICE CHECK (SIMPLEX A&B)	34:30	S-BAND/VHF SIMPLEX VOICE TEST		
	:40			
		OPS CHECKOUT		
		COMM DEACTIVATION		
LM PWR - ON (AT LMP REQUEST) REPORT: GET(___:___:___) SYS TEST - 7D SYS TEST IND = 0.5-3.2 VOLTS	:50			
	35:00	LMP & CDR IVT TO CSM PAGE 1-21		

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	34:00 - 35:00	2/TLC	3-37

FLIGHT PLAN

MCC-H

2254 CST

35:00
(21111)
(X1111)

:10

:20

35:30

:40
(21101)
(X1111)

:50

36:00

M
S
F
N

CLOSE LM HATCH
INSTALL DROGUE (DECAL)
INSTALL PROBE (DECAL)
HATCH INSTALLATION (DECAL)
LM TUNNEL VENT VALVE - LM/CM ΔP
TUNNEL LIGHTS - OFF

CYCLE CMC MODE - FREE/AUTO
V48 (21101)(X1111)
OMNI B
SECURE HGA: MAN, WIDE HGA P -52, Y 270

CSM G&C CHECKLIST

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

V49 MNVR TO PTC ATTITUDE
(N20,270,000)
P20 OPT 2 X-AXIS
N78 (0,0,0)
N79 (-0.4200, +000.50)
N34 (0,0,0)

UPDATE TO CSM QUADS TO ENABLE FOR PTC SPINUP

PTC

DAP LOAD STATUS
(21101)(X1111)

NOTES

LM TO CM TRANSFER LIST (TLC)

LM LOCATION	ITEM	CM LOCATION
ON CREW	COMM CARR (2)	ON CREW
ON CREW	CWG ADPTR W/CAP(2)	CCU CABLE
TEMP. STG.	LM ACT C/L (1)	R3
TEMP. STG.	JETTISON BAG	A2
JETT BAG	DRINK BAG (2)	TEMP STOWAGE
JETT BAG	FOOD STICK (1)	TEMP STOWAGE

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	35:00 - 36:00	2/TLC	3-38

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2354 CST

36:00

:20

:40

37:00

:20

:40

38:00

MSFN

EAT PERIOD

LiOH CANISTER CHANGE
(5 INTO A, STOW 3 INTO B5)

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST
COMM-OMNI

CMP DON BIOMED HARNESS
CDR DOFF BIOMED HARNESS

REST PERIOD
(8 HOURS)

PTC

PAGE S/1-29
FILM MAGS REQD FOR NEXT DAY:
DAC: CIN-JJ
EL: LV-00, CEX-NN
NK: CIN-VV

NOTES

DAP LOAD STATUS
(21101)(X1111)
EARTH DISTANCE
~ 132,500 NM

ONBOARD READOUT	
BAT C	
PYRO BAT A	
PYRO BAT B	
RCS A	
B	
C	
D	
DC IND SEL - MNA OR B	

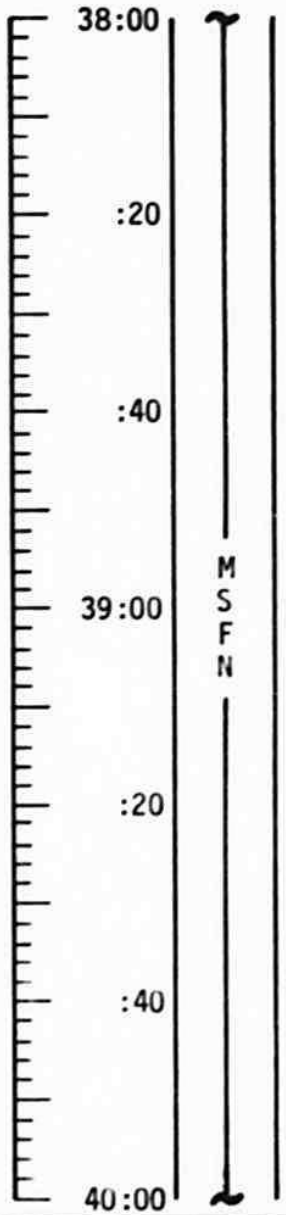
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) Chg. 8.	~~3/6/72~~ 4/7/72	36:00 - 38:00	2/TLC	3-39

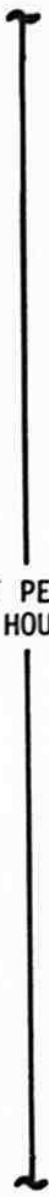
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0154 CST







NOTES

DAP LOAD STATUS
(21101)(X1111)

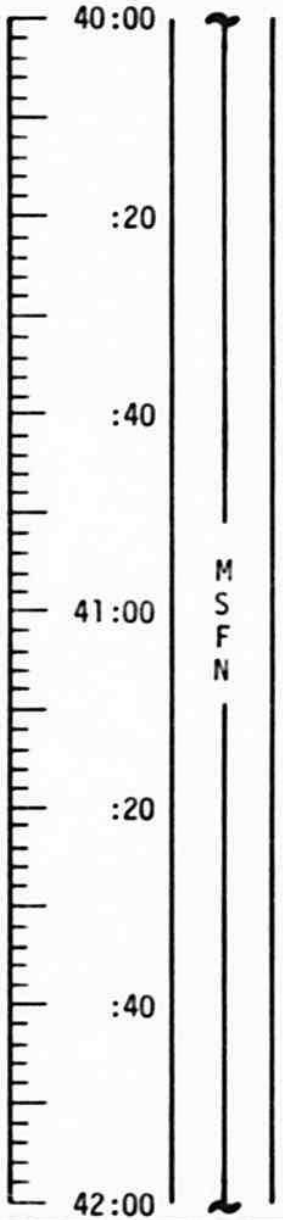
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	38:00 - 40:00	2/TLC	3-40

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0354 CST



REST PERIOD
(8 HOURS)

PTC

NOTES

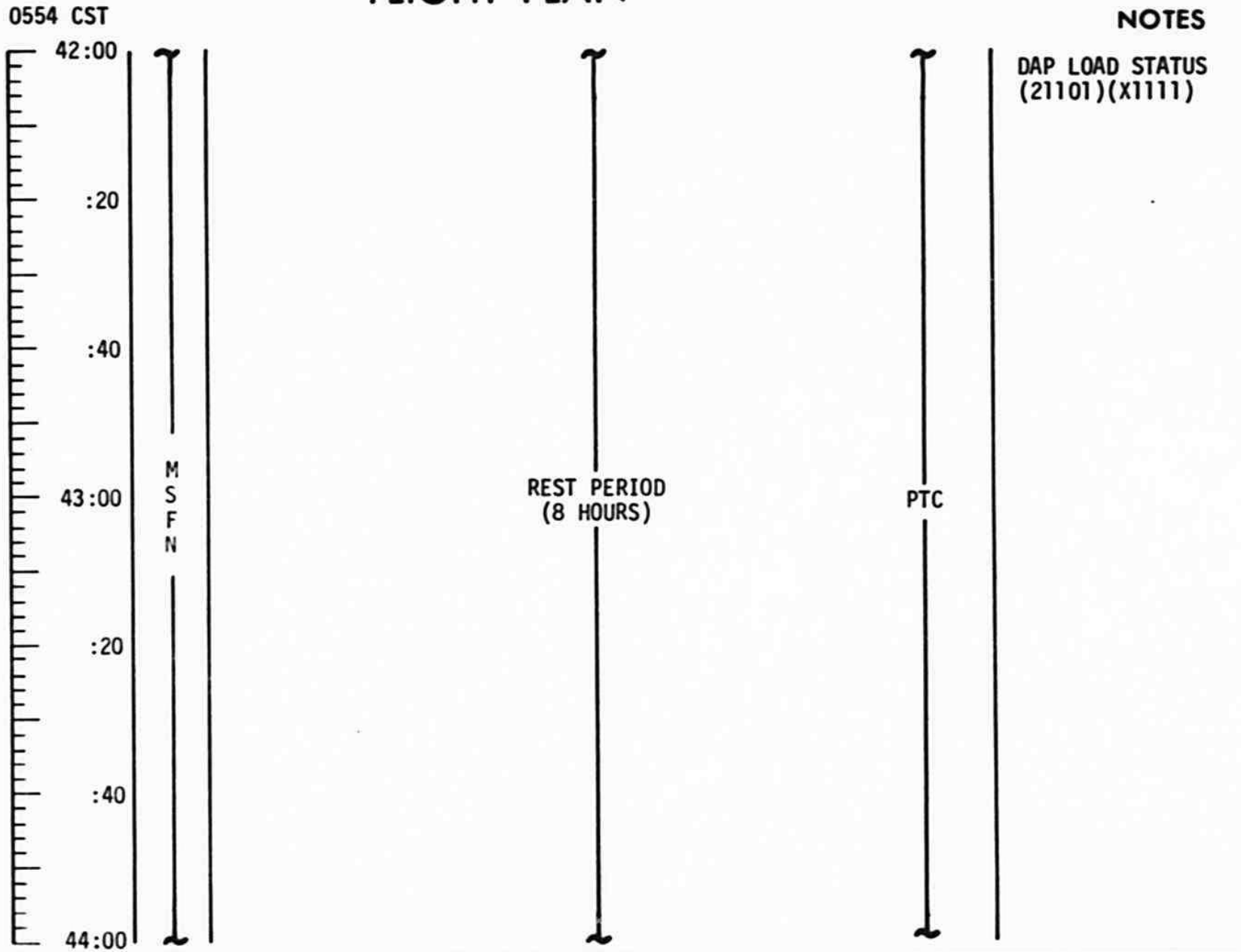
DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	40:00 - 42:00	2/TLC	3-41

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H



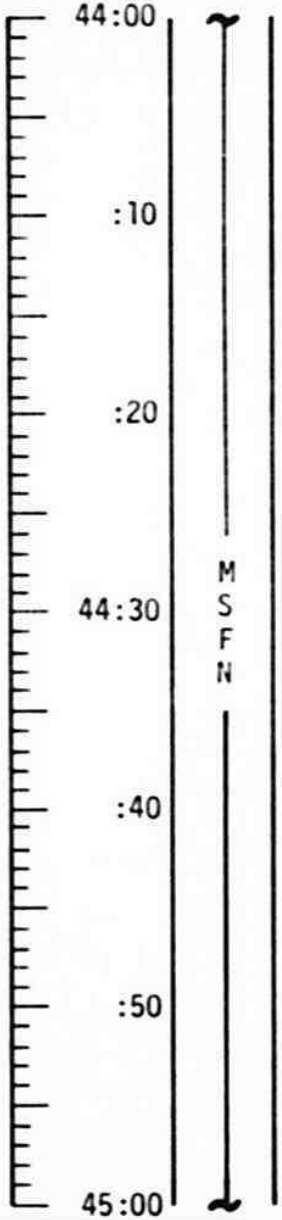
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	42:00 - 44:00	2/TLC	3-42

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0754 CST



REST PERIOD
(8 HOURS)

PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	44:00 - 45:00	2-3/TLC	3-43

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0854 CST

45:00

:10

:20

45:30

:40

:50

46:00

MSFN

REST PERIOD
(8 HOURS)

PTC

UPDATE TO CSM
CONSUMABLES STATUS
FLIGHT PLAN

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE S/1-29

TERMINATE URINE COLLECTION PERIOD:
UNSTOW OVERBAGS (A6)
INSERT EACH SAMPLE BAG IN AN OVERBAG & STOW (A6)
IF BAGS WILL NOT FIT, MANUALLY AGITATE BAGS TO INSURE HOMOGENEITY AND DUMP PART OF URINE OVERBOARD PER URINE DUMP MODE PAGE S/1-12
G. URINE STOWAGE BAG (DUMP)

LMP DON BIOMED HARNESS
CMP DOFF BIOMED HARNESS

NOTES

DAP LOAD STATUS
(21101)(X1111)

URINE COLLECTION ENDS WITH FIRST VOID AFTER WAKEUP.

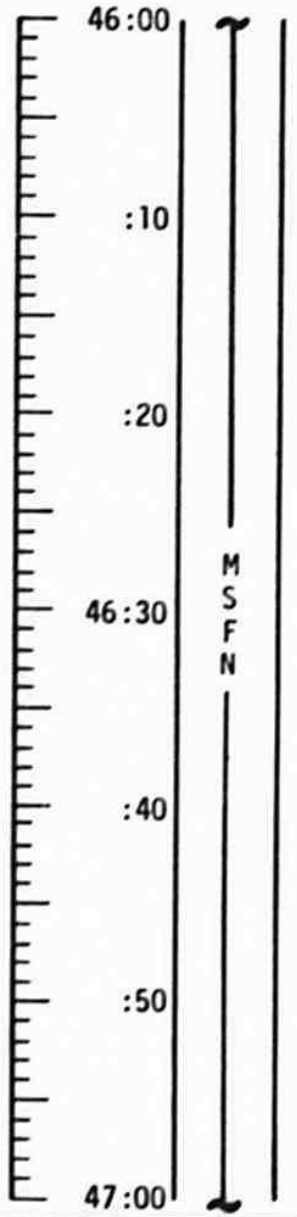
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	45:00 - 46:00	3/TLC	3-44

FLIGHT PLANNING BRANCH

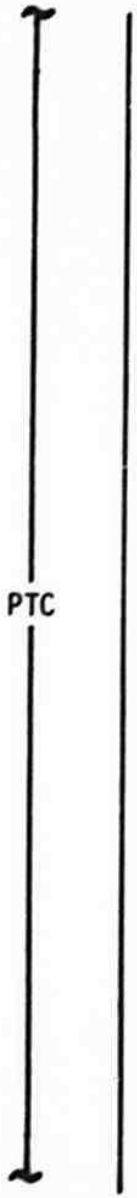
FLIGHT PLAN

MCC-H

0954 CST







NOTES

DAP LOAD STATUS
(21101)(X1111)
EARTH DISTANCE
~154,300 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	46:00 - 47:00	3/TLC	3-45

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1054 CST

NOTES

MSFN CMDS:
DSE RECORD

47:00

:10

:20

47:30

:40

:50

48:00

CSM EXP/EVA CHECKLIST

ALFMED, PAGE X/2-38
MAG (VV)

M
S
F
N

ALFMED

PTC

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	~~3/27/72~~ ~~3/6/72~~	47:00 - 48:00	3/TLC	3-46

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1154 CST

48:00

:10

:20

48:30

:40

:50

49:00

MSFN

MSFN CMDS:
DSE STOP
UPLINK TO CSM
LIFT-OFF TIME
(IF REQUIRED)

ALFMED

SYNCHRONIZE MISSION TIMER TO CMC CLOCK (IF REQUIRED)
V05N01E, 1706E (T EPHEM VERIFICATION BY MSFN,
COPY ON MSFN CUE FROM DSKY)

CHARGE BATTERY B
LiOH CANISTER CHANGE
(6 INTO B, STOW 4 INTO B5)

CREW EXERCISE PERIOD

PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)

T EPHEM UPDATE

OID	LOAD B
03	_ _ _ _ _
04	_ _ _ _ _
05	_ _ _ _ _

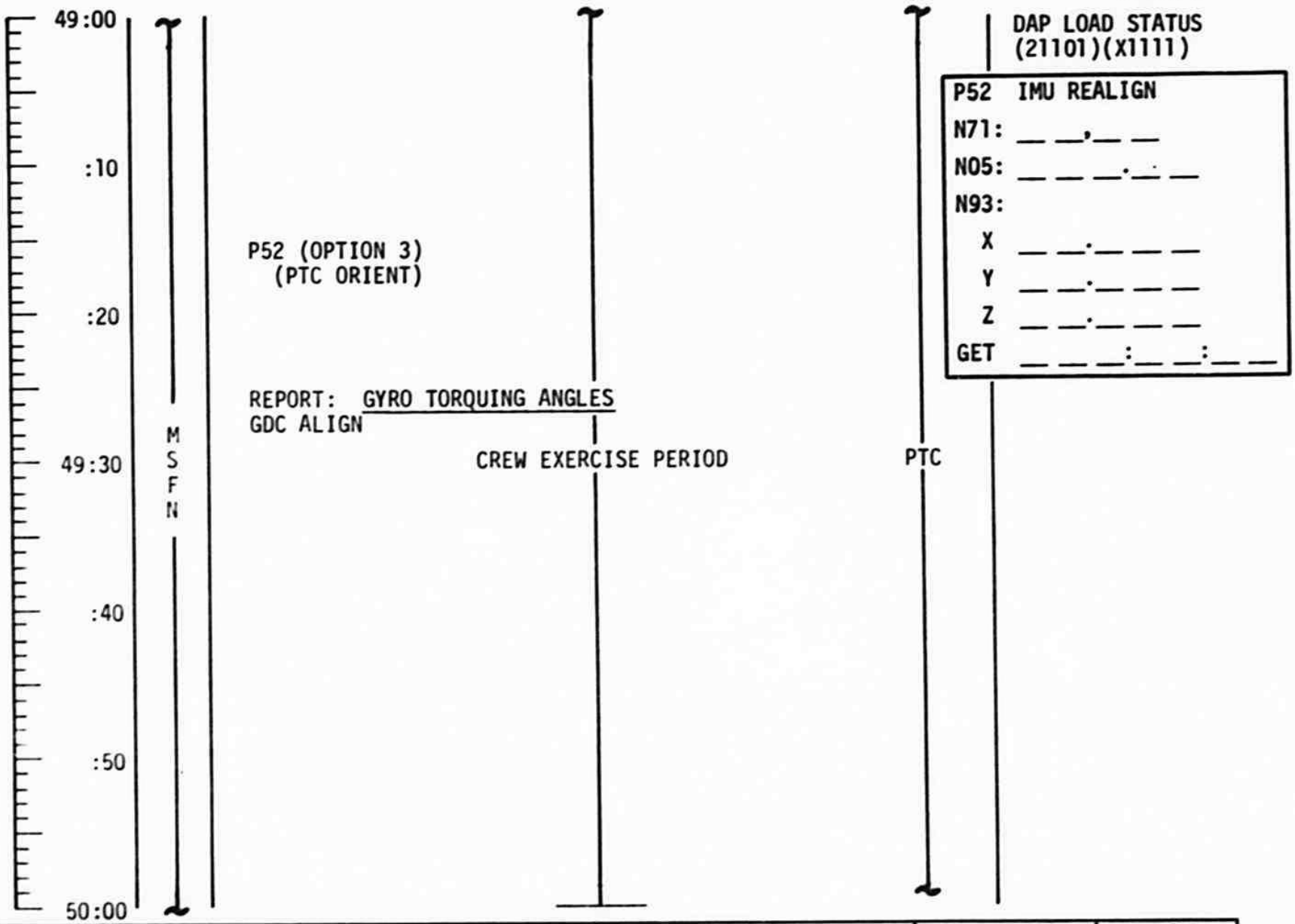
LIFT-OFF TIME WILL BE UPDATED IF THE TIME PROPAGATED AHEAD TO START OF REV 2 DIFFERS FROM 76:39:38.7 BY MORE THAN 1 MINUTE

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	48:00 - 49:00	3/TLC	3-47

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

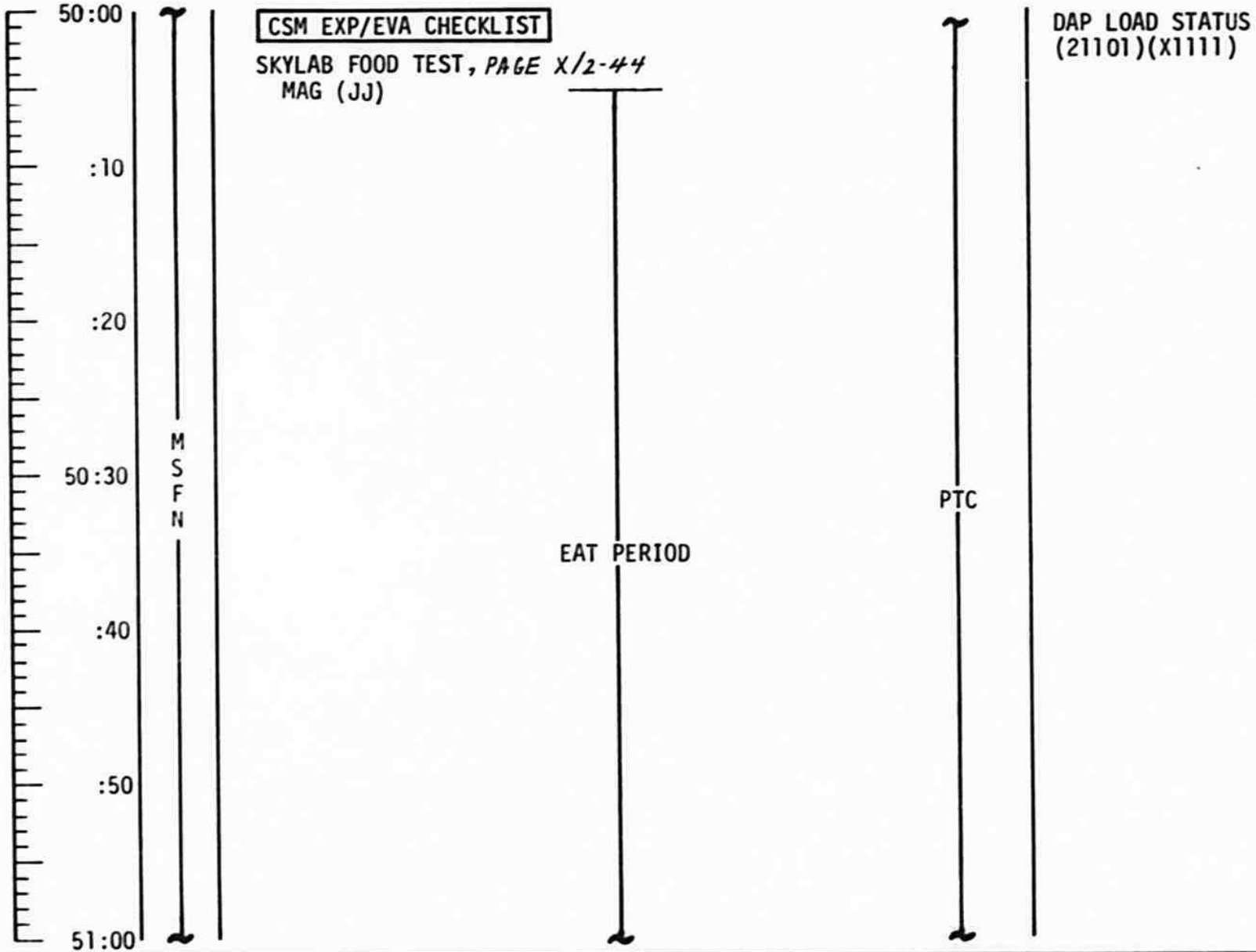


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	49:00 - 50:00	3/TLC	3-48

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	~~3/27/72~~ ~~3/6/72~~	50:00 - 51:00	3/TLC	3-49

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1454 CST

NOTES

51:00

DAP LOAD STATUS
(21101)(X1111)

UPLINK TO CSM
CSM S.V. & V66

:10

EAT PERIOD

:20

M
S
F
N

51:30

PTC

IF MCC-3 IS REQD,
UPLINK TGT LOAD
UPDATE MNVR PAD

EVALUATE TRANSMISSION OF SXT, SCT, & WINDOWS WITH SPOTMETER ON SUN

:40

UPDATE TO CSM
HGA ANGLES FOR
FILM CYCLING
MSFN CMD
DATA SYS - ON

ACQ MSFN, HGA: REACQ, NARROW (CUE MSFN FOR PITCH AND YAW ANGLES)

:50

CSM EXP/EVA CHECKLIST

PC AND MC FILM CYCLING, PAGE X/1-17
MC TO STBY MODE, PAGE X/1-15

52:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16)	~~3/27/72~~ ~~3/6/72~~	51:00 - 52:00	3/TLC	3-50

CHANGE A

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1554 CST

NOTES

MSFN CMD
DATA SYS - OFF

52:00

OMNI B
SECURE HGA: MAN, WIDE HGA P -52, Y 270

PTC

DAP LOAD STATUS
(21101)(X1111)

CSM G&C CHECKLIST

EXIT G&N PTC PAGE G/8-3

:10
(21101)
(X1111)

CSM EXP/EVA CHECKLIST

V49 MNVR TO EARTH UV PHOTO ATT (52:30)
(208,000,017) OMNI D
EARTH UV PHOTOGRAPHY SEQ B, *PAGE X/2-17*
MAG (00)
MAG (NN)

:20

LOI -22 HOURS

52:30

M
S
F
N

IF MCC-3 IS REQUIRED,
PERFORM AT GET 52:29

:40

50
(21111)
(X1111)

V48 (21111)
(X1111)

53:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	3/21/72 ~~3/6/72~~	52:00 - 53:00	3/TLC	3-51

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1654 CST

NOTES

53:00 (21111) (X1111)

O_2 FUEL CELL PURGE
WASTE H_2O DUMP

:10

REPORT: LM/CM ΔP
IF ΔP > 2.4 PSID:
O_2 HEATERS 1&2 - AUTO
PRESSURIZE CSM TO 5.7 PSIA
COUCHES: CDR - 0°, CMP - 0°, LMP - 180°

:20

MSFN

53:30

V49 MNVR TO LM CHECKOUT ATTITUDE (53:45)
(341,088,000) HGA P -30, Y 270
TUNNEL LIGHTS - ON
EQUALIZE CM/LM PRESSURE (DECAL)
TUNNEL HATCH REMOVAL (DECAL)
PROBE REMOVAL (DECAL)
DROGUE REMOVAL (DECAL)
REPORT: DOCKING TUNNEL INDEX ANGLE
O_2 HEATERS 1&2 - OFF (VERIFY)

:40

CSM

OPEN LM HATCH

:50

LM

LM ACTIVATION CHECKLIST
IVT TO LM PAGE 2-1

(AT LM REQUEST)
LM PWR - RESET/OFF
REPORT: GET ___:___:___

54:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	53:00 - 54:00	3/TLC	3-52

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1754 CST

NOTES

	CSM	LM
54:00 (21111) (X1111)	SYS TEST - 7D SYS TEST IND = 0 VOLTS PERFORM COMM CHECKS WITH LM	COMM ACTIVATION
:10		
	(AT LM REQUEST) LM PWR - ON REPORT: GET___:___:___ SYS TEST - 7D SYS TEST IND = 0.5-3.2 VOLTS	COMM DEACTIVATION
:20		
54:30		
:40		IVT TO CSM
:50	LMP DON PGA WITHOUT HELMET AND GLOVES	Photo A7L6 Suit Donning DAC, CIN, 10mm Lens
55:00		

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	54:00 - 55:00	3/TLC	3-53

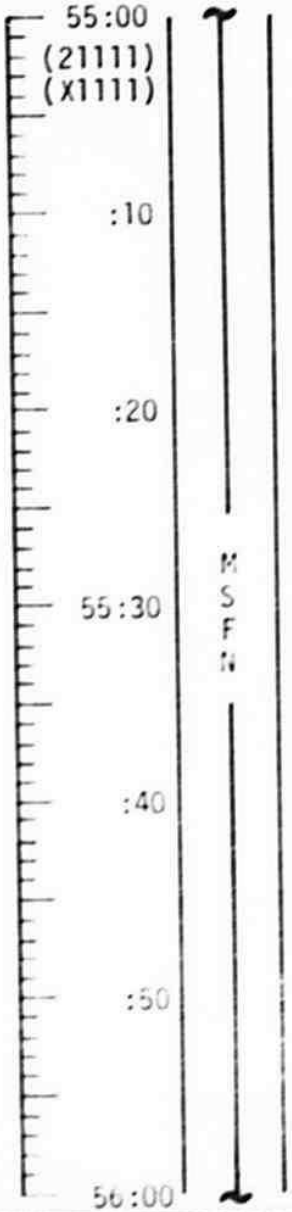
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1854 CST

NOTES



CDR DON PGA WITHOUT HELMET AND GLOVES

CMP DON PGA WITHOUT HELMET AND GLOVES

LMP & CDR IVT TO LM
ZIP PGA'S

LMP & CDR IVT CSM
CLOSE LM HATCH
INSTALL DROGUE (DECAL)
INSTALL PROBE (DECAL)
HATCH INSTALLATION (DECAL)
LM TUNNEL VENT VALVE - LM/CM ΔP
TUNNEL LIGHTS - OFF

DOFF PGA'S

STOW PGA'S WITH URINE BAG ON TOP (PGA BAG)

CDR DON BIOMED HARNESS
LMP DOFF BIOMED HARNESS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	55:00 - 56:00	3/TLC	3-54

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H	1954 CST		NOTES
UPDATE TO CSM QUADS TO ENABLE FOR PTC SPINUP	56:00 (21101) (X1111)	CYCLE CMC MODE - FREE/AUTO V48 (21101)(X1111)	DAP LOAD STATUS (21101)(X1111)
		CSM G&C CHECKLIST	
		PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2 V49 TO PTC ATTITUDE (N20,270,000) P20 OPT 2 X-AXIS N78 (0,0,0) N79 (-0.4200, +000.50) N34 (0,0,0)	
	:10		
	:20	S-170 BISTATIC RADAR FREQUENCY CHECK VHF AM B - DUPLEX VHF RNG - RNG VHF ANT - LEFT (VERIFY)	
S-BAND UPLINK OFF MEASURE DOWNLINK FREQUENCY	56:30	ON GROUND CUE: VHF AM B - OFF VHF RNG - OFF	
	:40		
	:50	EAT PERIOD	
	57:00		

MSFN

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	56:00 - 57:00	3/TLC	3-55

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2054 CST

57:00

:10

:20

57:30

:40

:50

58:00

MSFN

EAT PERIOD

LiOH CANISTER CHANGE
(7 INTO A, STOW 5 INTO B6)

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST PAGE S/1-29
COMM - OMNI
SECURE HGA: MAN, WIDE HGA P -52, Y 270

FILM MAGS REQD FOR NEXT DAY:
DAC: CEX-BB
EL: UV-00, CEX-NN

PTC

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	

EARTH DISTANCE
~176,400 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHG. B	~~3/16/72~~ 4/7/72	57:00 - 58:00	3/TLC	3-56

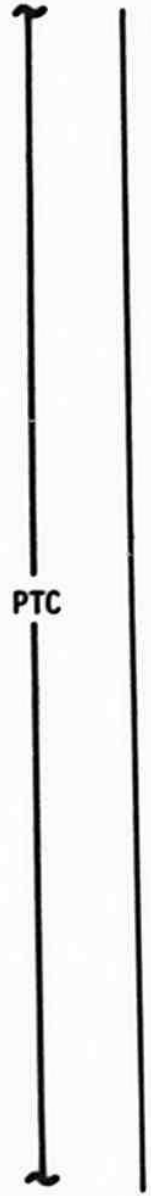
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H







NOTES

DAP LOAD STATUS
(21101)(X1111)

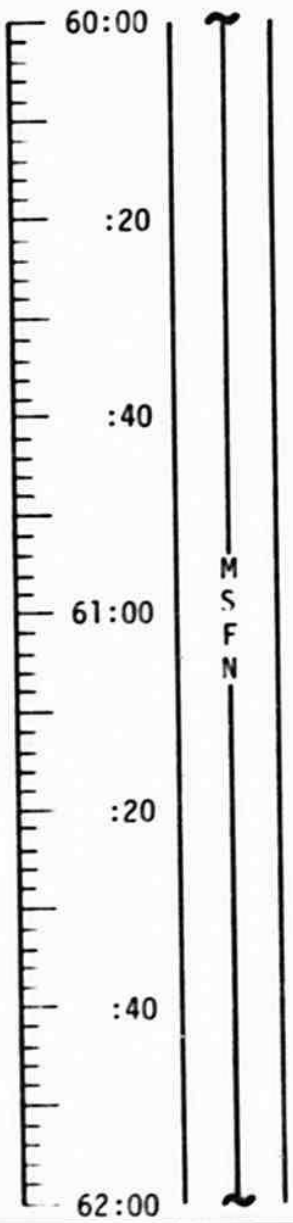
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	58:00-60:00	3/TLC	3-57

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2354 CST



REST PERIOD
(8 HOURS)

PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	60:00 - 62:00	3/TLC	3-58

FLIGHT PLANNING BRANCH

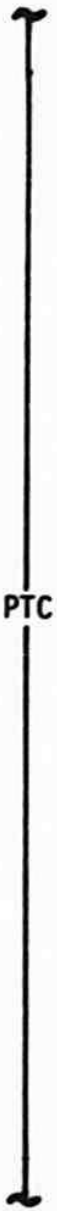
FLIGHT PLAN

MCC-H

0154 CST







NOTES

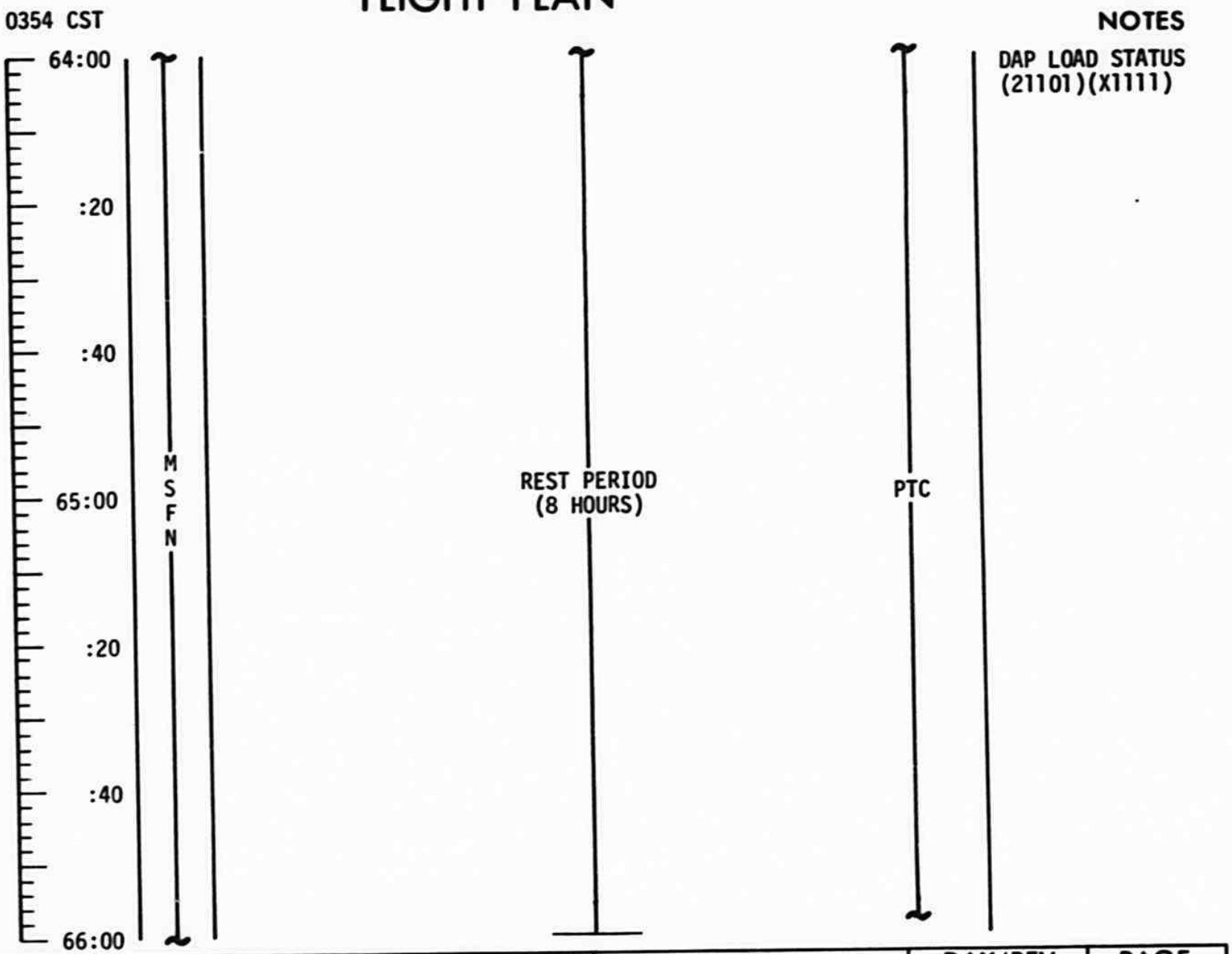
DAP LOAD STATUS
(21101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	62:00 - 64:00	3/TLC	3-59

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	64:00 - 66:00	3/TLC	3-60

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

UPDATE TO CSM
CONSUMABLES STATUS
FLIGHT PLAN

0554 CST

66:00

:10

:20

66:30

:40

:50

67:00

MSFN

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE S/1-29

REPORT: LM/CM ΔP
IF ΔP >2.4 PSID:
O_2 HEATERS 1&2 - AUTO
PRESSURIZE CSM TO 5.7 PSIA

TERMINATE TIMING VOIDS AND MEASURING FLUID INTAKE

EAT PERIOD

PTC

NOTES

DAP LOAD STATUS
(21101)(X1111)

EARTH DISTANCE
~189,400 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	66:00 - 67:00	4/TLC	3-61

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

UPDATE TO CSM
GO/NO-GO FOR MCC-4

0654 CST

67:00

:10

:20

67:30

(21101)
(X1111)

:40

:50

68:00

M
S
F
N

~~ADD RULED MEASURE TO BACK OF STAR CHART IN CM~~

EVAL RELEASING OBJECTS WITH REPEATABLE I.C.'s

EAT PERIOD

PTC

CSM G&C CHECKLIST

*EMS ΔV TEST & NULL BIAS CHECK PAGE G/2-5
*REPORT: BIAS
EXIT G&N PTC PAGE G/8-3

CM/LM PRESSURE EQUALIZATION (DECAL)
PRESSURE EQUAL VALVE - CLOSED
O_2 HEATERS 1&2 - OFF (VERIFY)
CMP DON, CDR DOFF BIOMED HARNESS

CSM EXP/EVA CHECKLIST

V49 MNVR TO MOON UV PHOTO ATT (68:00)
(144,233,000) HGA P -62, Y 157
MOON UV PHOTOGRAPHY, PAGE X/2-19
MAG (00)
MAG (NN)

NOTES

DAP LOAD STATUS
(21101)(X1111)

*PERFORM IF MCC-4 IS REQUIRED

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	~~3/27/72~~ ~~3/6/72~~	67:00 - 68:00	4/TLC	3-62

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

UPDATE TO CSM
MCC-4 MNVR PAD
PERICYNTHION +2 HR
ABORT PAD
UPLINK TO CSM
CSM S.V. & V66
MCC-4 TGT LOAD

0754 CST

68:00
(21101)
(X1111)

:10

:20

68:30

:40

:50

69:00

M
S
F
N

CONFIGURE CAMERA FOR SIM DOOR JETT PHOTOS
CM5/DAC/75/CEX (f8,1/250,100) 12 fps (5% MAG)

MAG (BB) _____, MAG % _____
CONFIGURE CABIN FOR LUNAR ORBIT
P52 (OPTION 3)
(PTC ORIENT)

PUT VELCRO ON EL SHUTTER SPEED

REPORT: GYRO TORQUING ANGLES

GDC ALIGN

*P30 EXTERNAL ΔV
*V49 MNVR TO PAD BURN ATT
*IF SPS MIDCOURSE REQUIRED
* PRE-SPS BURN SIM PREP (CUE CARD)

NOTES

PERICYNTHION +2 HR
ABORT PAD TARGETED
FOR A FAST RETURN
TO MPL

P52 IMU REALIGN	
N71:	__ __,__ __
N05:	__ __ __.__ __
N93:	
X	__ __.__ __ __
Y	__ __.__ __ __
Z	__ __.__ __ __
GET	__ __ __:__ __:__ __

*PERFORM IF MCC-4
IS REQUIRED
EARTH DISTANCE
~194,100 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	68:00 - 69:00	4/TLC	3-63

FLIGHT PLANNING BRANCH

MCC-4
BURN TABLE
NO MANUAL START OR RESTART

P OR Y RATE	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT + 1 SEC	TRIM ONLY X AXIS TO 0.2 FPS

FLIGHT PLAN

MCC-H

0854 CST

69:00
(21101)
(X1111)

:10

:20

69:30

:40

:50

70:00

MSFN

LOI -5 HR

MSFN CMD
DATA SYS-ON
DSE RECORD

MSFN UPDATE
GO/NO-GO FOR
SIM DOOR JETT

*SXT STAR CHECK
*P40 SPS THRUSTING OR P41 RCS THRUSTING

MCC-4

TIG: 69:29
BT: NOM ZERO
ΔVT: NOM ZERO
ULLAGE: NONE

*V66 SET CSM S.V. INTO LM S.V.
*REPORT: BURN STATUS
V49 MNVR TO SIM DOOR JETTISON ATTITUDE (69:49)
(353,042,000) HGA P -25, Y 307

CSM EXP/EVA CHECKLIST
SIM DOOR JETTISON, *PAGE X/1-7*

GO/NO-GO FOR SIM DOOR JETTISON (CUE MSFN)

SIM DOOR JETTISON 69:59

NOTES

*PERFORM IF MCC-4 IS REQUIRED

BURN STATUS REPORT

X	X		●			ΔTIG
X	X		●			BT
					●	V_{gx}
		TRIM				
X	X	X				R
X	X	X				P
X	X	X				Y
					●	V_{gx}
					●	V_{gy}
					●	V_{gz}
					●	ΔV_c
X	X	X				FUEL
X	X	X				OX
X	X	X				UNBAL

BECAUSE OF SIM BAY CONSTRAINTS, URINE WILL BE COLLECTED AND DUMPED AS SCHEDULED IN THE FLIGHT PLAN FOR THE REMAINDER OF THE MISSION

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	~~3/27/72~~ ~~3/6/72~~	69:00 - 70:00	4/TLC	3-65

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0954 CST

NOTES

70:00
(21101)
(X1111)

:10

:20

70:30

:40

:50

71:00

MSFN

V49 MNVR TO P52 ATTITUDE (70:15)
(324,094,316) HGA P -17, Y 296
H_2 HEATERS 1 & 2 - AUTO
H_2 FANS 3 - OFF
cb O_2 TK 50W HTRS (3) - OPEN
O_2 HEATERS 1 & 2 - AUTO
O_2 HEATER 3 - OFF
REPORT: LM/CM ΔP
IF ΔP < 0.2 PSID, PRESSURE EQUAL VALVE - OPEN
IF ΔP > 0.2 PSID, PERFORM CM/LM PRESSURE EQUALIZATION (DECAL)

CHECK MISSION TIMER AGAINST CMC CLOCK

CSM G&C CHECKLIST

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

UPLINK TO CSM
CSM S.V. & V66
(PRELIMINARY)
LOI TGT LOAD
(PRELIMINARY)
DESIRED ORIENT(LOI)

UPDATE TO CSM
LOI MNVR PAD
(PRELIMINARY)

SIM EXP STATUS
(*0000)
(31014)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	70:00 - 71:00	4/TLC	3-66

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1054 CST

71:00
(21101)
(X1111)

GR: EXP - ON
SHIELD - ON (CTR)
LiOH CANISTER CHANGE
(8 INTO B, STOW 6 INTO B6)

:10

:20

LIMIT CYCLE - ON
ATT DEADBAND - MIN
RATE - LOW
BMAG (3) - ATT 1/RATE 2
SC CONT - SCS
P52 (OPTION 3)
(PTC ORIENT)

71:30

M
S
F
N

:40

REPORT: GYRO TORQUING ANGLES
P52 (OPTION 1)
(LOI ORIENT)

:50

SC CONT - CMC
BMAG (3) - RATE 2
GDC ALIGN

72:00

STARS _____, _____
SA _____, _____
TA _____, _____

NOTES

SIM EXP STATUS
(*0000)
(31014)

P52 IMU REALIGN

N71: __ __,__ __
N05: __ __ __.__ __
N93:
X __ __.__ __ __
Y __ __.__ __ __
Z __ __.__ __ __
GET __ __ __:__ __:__ __

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	71:00 - 72:00	4/TLC	3-67

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1154 CST

72:00
(21101)
(X1111)
:10
:20
72:30
:40
:50
73:00

M S F N

GR: SHIELD - OFF

GR: SHIELD - ON

EAT PERIOD

NOTES

SIM EXP STATUS
(*0000)
(31214)

TEI 4 PAD
ASSUMES NO DOI

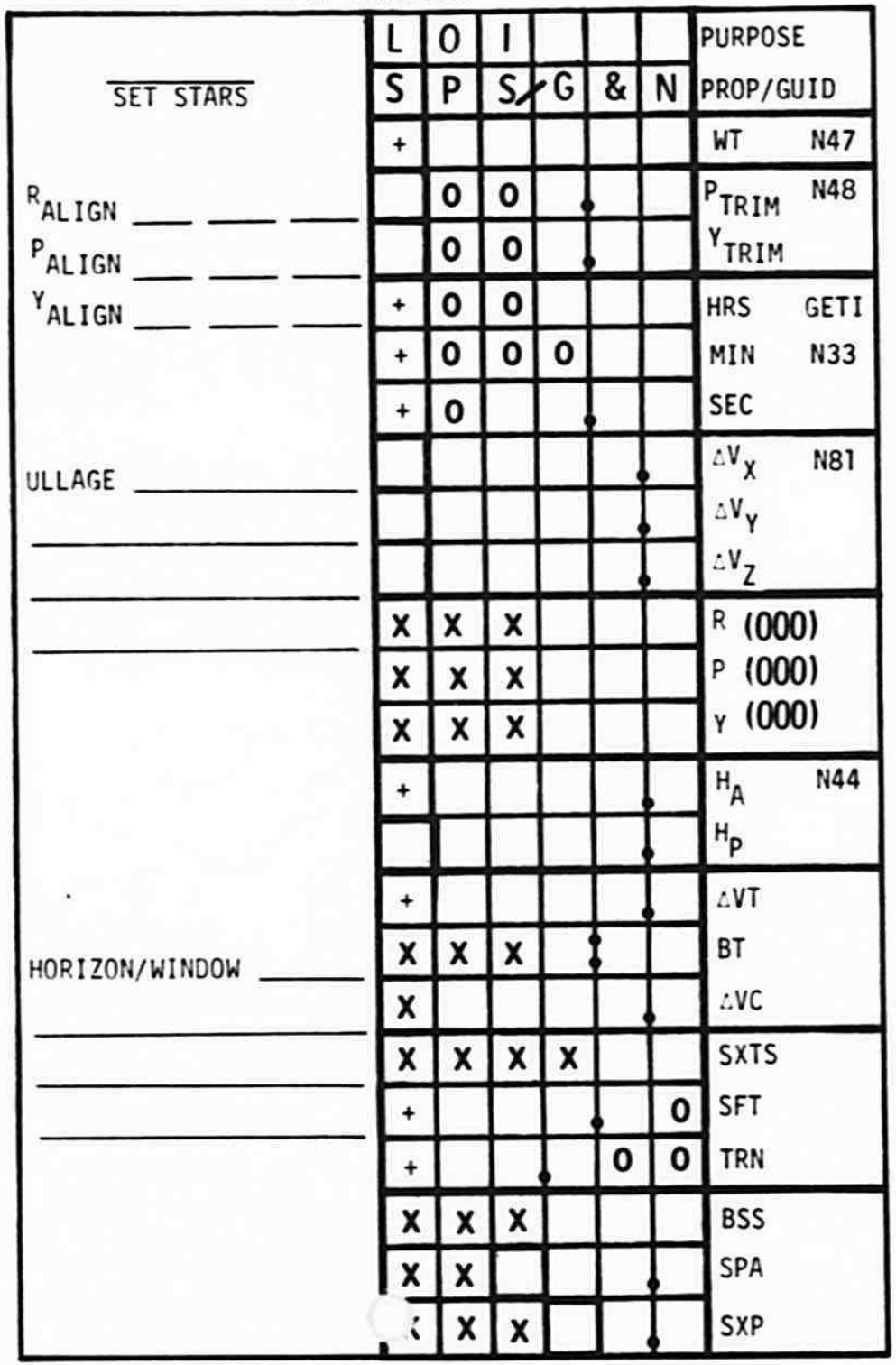
UPDATE TO CSM
TEI 4 PAD

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	72:00 - 73:00	4/TLC	3-68

FLIGHT PLANNING BRANCH

THIS PAGE INTENTIONALLY BLANK

P30 MANEUVER



FLIGHT PLAN

MCC-H

1254 CST

73:00
(21101)
(X1111)
:10
:20
73:30
:40
:50
74:00

MSFN

EAT PERIOD

UPDATE TO CSM
LOI MNVR PAD
MAP UPDATE REV 1

UPLINK TO CSM
CSM S.V. & V66
LOI TGT LOAD

CSM SYSTEMS CHECKLIST

PRE-LOI SECONDARY GLYCOL LOOP CHECK PAGE S/1-19
C/W SYSTEM OPERATIONAL CHECK PAGE S/1-20
SPS MONITORING CHECK PAGE S/1-1
SM RCS MONITORING CHECK
CM RCS MONITORING CHECK
ECS MONITORING CHECK PAGE S/1-5
REPORT: LM/CM ΔP
OXIDIZER FLOW VALVE INCR - NORM (VERIFY)

PRE-SPS BURN SIM PREP (CUE CARD)

P30 EXTERNAL ΔV

V49 MNVR TO PAD BURN ATTITUDE (73:50)

OMNI D

SXT STAR CHECK

NOTES

SIM EXP STATUS
(*0000)
(31214)

DO NOT USE PU VALVE FOR LOI.

THE APPROXIMATE TIME OF CROSSOVER IS 4:20 TO 4:25 INTO THE LOI BURN.

MAP UPDATE 1

LOS: __ __ __:__ __:__ __

180°: __ __ __:__ __:__ __

AOS WITH LOI: __ __ __:__ __:__ __

AOS WITHOUT LOI: __ __ __:__ __:__ __

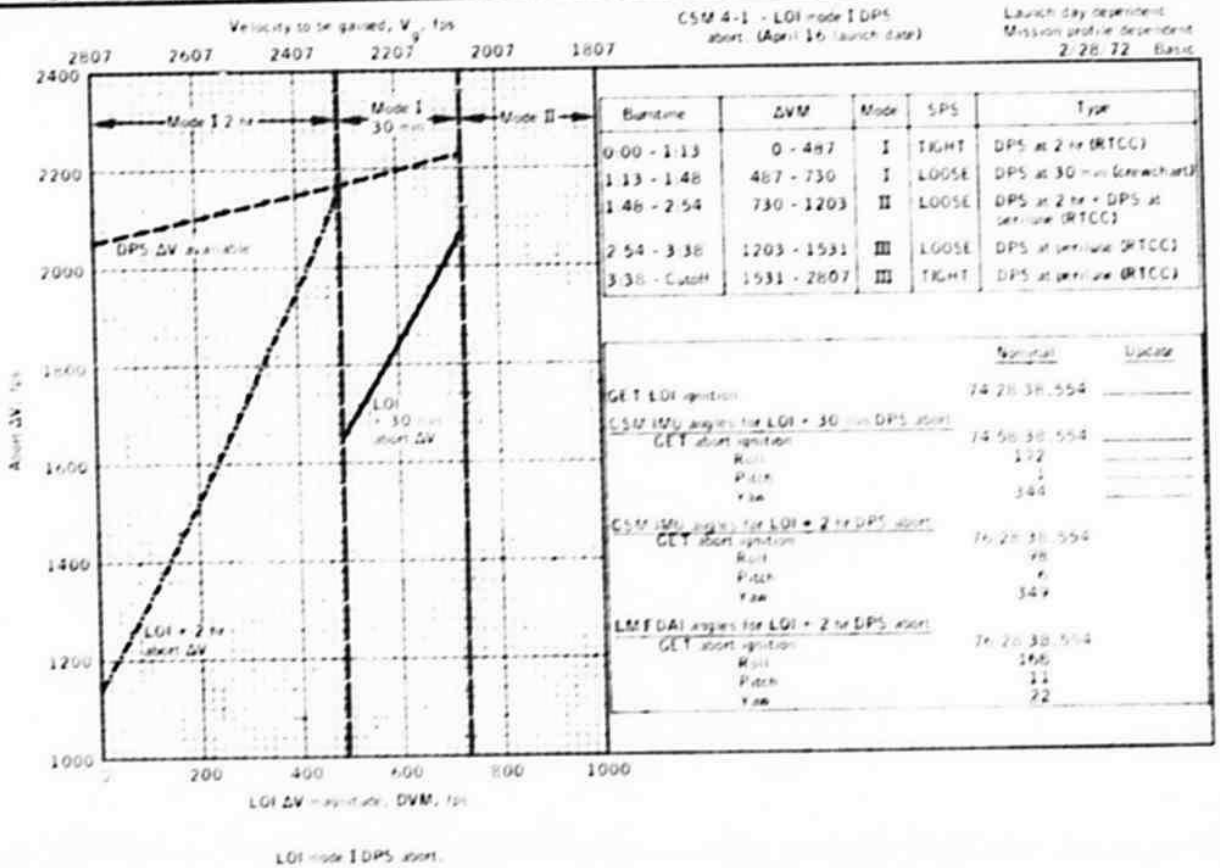
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	73:00 - 74:00	4/TLC	3-71

FLIGHT PLANNING BRANCH

LOI
BURN TABLE

IGN DELAY < 2 MIN

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TAKEOVER & COMPLETE	+10° TAKEOVER & COMPLETE	BT + 10 SEC	DO NOT TRIM



CSM 4-1 - LOI mode I DPS abort (April 16 launch date)

Launch day dependent
Mission profile dependent
2 28 72 Basic

Burntime	ΔVM	Mode	SPS	Type
0 00 - 1 13	0 - 487	I	TIGHT	DPS at 2 hr (RTCC)
1 13 - 1 48	487 - 730	I	LOOSE	DPS at 30 min (Gravimetric)
1 48 - 2 54	730 - 1203	II	LOOSE	DPS at 2 hr + DPS at pericynthion (RTCC)
2 54 - 3 38	1203 - 1531	III	LOOSE	DPS at pericynthion (RTCC)
3 38 - Cutoff	1531 - 2807	III	TIGHT	DPS at pericynthion (RTCC)

	Nominal	Update
GET LOI ignition	74 28 38.554	
CSM IMU angles for LOI + 30 min DPS abort		
GET abort ignition	74 58 38.554	
Roll	132	
Pitch	1	
Yaw	344	
CSM IMU angles for LOI + 2 hr DPS abort		
GET abort ignition	76 28 38.554	
Roll	48	
Pitch	6	
Yaw	349	
LM FDAI angles for LOI + 2 hr DPS abort		
GET abort ignition	76 28 38.554	
Roll	168	
Pitch	11	
Yaw	22	

FLIGHT PLAN

MCC-H

1354 CST

74:00
(P40)
(0.5°DB)
(21101)
(X1111)

RECORD VG_{IMU} DATA
GO/NO-GO FOR LOI

MSFN

P40 SPS THRUSTING

GO/NO-GO FOR LOI

:10

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

:20

74:30

LOI

TIG: 74:28:38.5
BT: 6 MIN 15 SEC
ΔVT: 2807.0 FPS
ULLAGE: NONE
ORBIT: 170.6 x 58.5 NM

P00
V66 SET CSM S.V. INTO LM S.V.
V48 (21112)(X1111)
V49 MNVR TO COMM ATT (74:49)
(176,046,007)

(21112)
(X1111)

:40

POST-SPS BURN SIM PREP (CUE CARD)

ACQ MSFN HGA P -57, Y 346

MSFN CMDS:
DUMP DSE

:50

PC: MODE - STBY
PWR - ON

REPORT: BURN STATUS
V48 (21111)(X1111)
PC: PWR - OFF (MSFN CUE)

(21111)
(X1111)

75:00

MSFN

NOTES

SIM EXP STATUS
(*0000)
(31000)
S-IVB LUNAR IMPACT
GET: 74:30:08
LAT: 2.28°S
LONG: 31.79°W

PREDICTED LOI SINGLE BANK BURN TIME:
6 MIN 29 SEC

BURN STATUS REPORT

X	X					ΔTIG
X	X					BT
						V_{gx}
		TRIM				
X	X	X				R
X	X	X				P
X	X	X				Y
						V_{gx}
						V_{gy}
						V_{gz}
						ΔV_c
X	X	X				FUEL
X	X	X				OX
X	X	X				UNBAL

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	74:00 - 75:00	4/TLC-1	3-73

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

75:00

(21111)
(x1111)

SIM EXP STATUS
(*0000)
(01214)

75:10

75:20

(P20)
(3.0°DB)

V44 (SET LUNAR SURFACE FLAG)
CYCLE CMC MODE - FREE/AUTO
P20 OPT 5 (+X FWD, -Z DWN)(75:23)
N78 (+090.00)
(+090.00)
(+180.00)
N79 (+003.00)
(176.000/046.007)

NOTE: PRO ON ~~N79~~ N70 AT 75:23 TO INSURE P20 ATT = INERTIAL ATT.

MSFN UPDATE:
TEI 4 TIG (IF REQD) AND GIMBAL ANGLES

75:30

75:30

(P20)
(3.0°DB)

(21111)
(x1111)

MSFN UPLINK:
DESIRED ORIENT (LDG SITE)

SIM EXP STATUS
(*0000)
(01214)

GR: SHIELD - OFF

75:40

GR: SHIELD - ON (CTR)

CMC MODE - FREE
P52 (OPTION 3)
(LOI ORIENT)

REPORT: GYRO TORQUING ANGLES

75:50

P52 (OPTION 1)
(LDG SITE ORIENT)

P20, CMC MODE - AUTO
GDC ALIGN

CONFIGURE FOR URINE DUMP

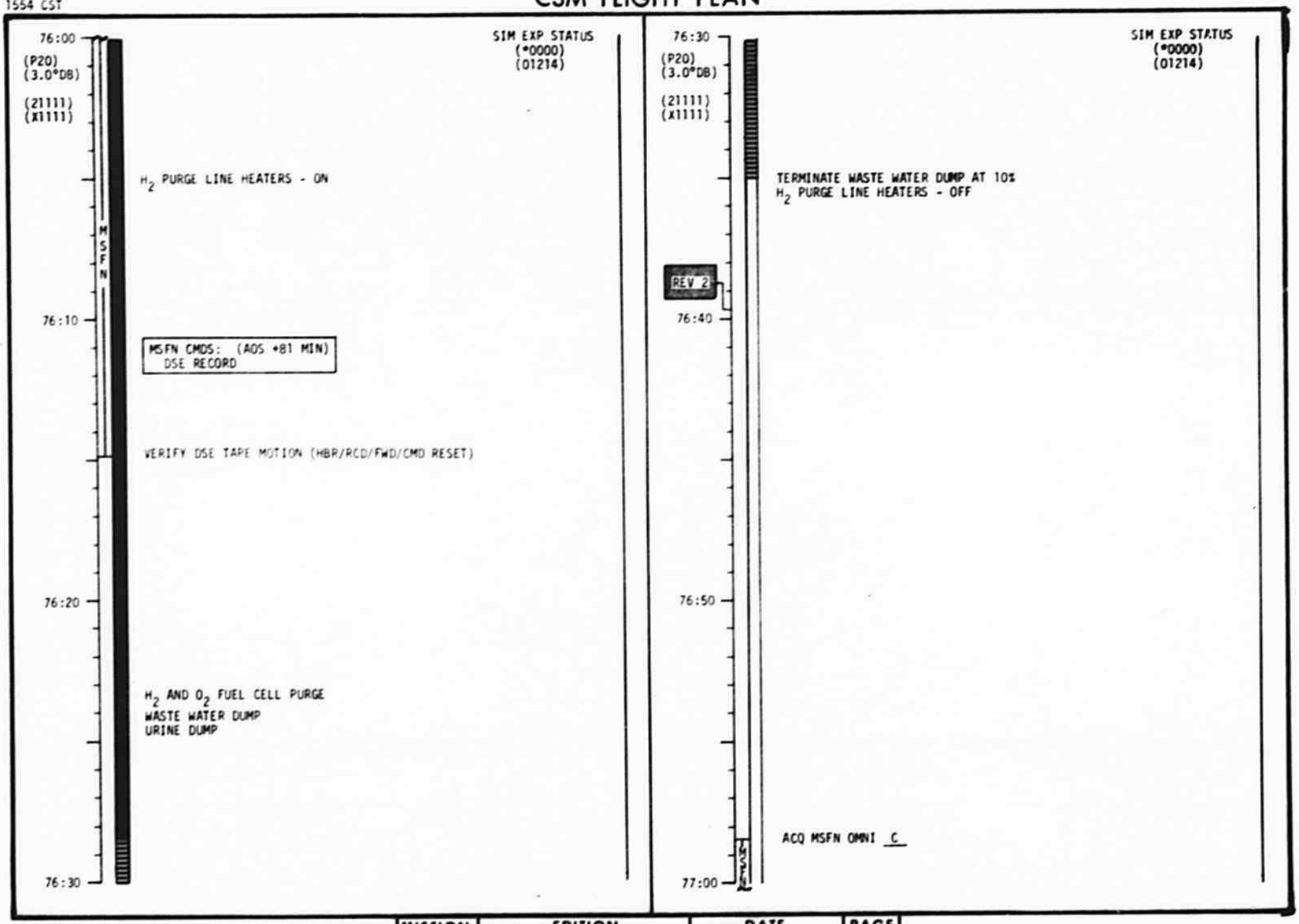
P52 IMU REALIGN

N71: ___ ___, ___ ___
N05: ___ ___ ___.___ ___
N93:
X ___ ___.___ ___ ___
Y ___ ___.___ ___ ___
Z ___ ___.___ ___.___
GET ___ ___ ___.___ ___.___

76:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHG. B ~~FINAL~~ (4/16)	~~3/6/72~~ 4/1/72	3-74

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-75

1654 CST

CSM FLIGHT PLAN

77:00
(P20)
(3.0°DB)
(21111)
(X1111)

MSFN CMDS: (AOS +2 MIN)
DSE REWIND

SIM EXP STATUS
(*0000)
(01214)

ACQ MSFN HGA: MAN, WIDE P 10, Y 355
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN CMDS: (AOS +10 MIN)
DSE PLAYBACK
CUE: HGA AUTO

77:10

PC: MODE - STBY
PWR - 0%

PC: PWR - OFF (MSFN CUE)

77:20

77:30

77:30
(P20)
(3.0°DB)
(21111)
(X1111)

MSFN UPLINK:
DOI TARGET LOAD
CSM S.V. AND V66
PIPA BIAS

SIM EXP STATUS
(*0000)
(01214)

MSFN UPDATE:
DOI MNVR PAD (78:15)
MAP UPDATE REV 3 (79:06)
J-2 LDMK OBS PAD (79:35)
TEI 5 PAD

77:40

Descartes
CM B/EL/250/VHBW
(f5.6, 1/250, ∞) 6FR
MAG 5S

P52 IMU REALIGN

N71: __ __, __ __
N05: __ __ __ __ __
N93:
X __ __ __ __ __
Y __ __ __ __ __
Z __ __ __ __ __
GET __ __ __ __ __

77:50

(21111)
(X1111)

P00

P52 (OPTION 3)
(LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES
GDC ALIGN

CSM SYSTEMS CHECKLIST

C/W OPERATIONAL CHECKS PAGE S/1-20
SPS MONITORING CHECK PAGE S/1-1
SM RCS MONITORING CHECK PAGE S/1-1
CM RCS MONITORING CHECK PAGE S/1-1
ECS MONITORING CHECK PAGE S/1-5

78:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-76

CSM FLIGHT PLAN

78:00
(21111)
(X1111)

P30; VERIFY DOI TIG AND ΔV'S
CYCLE CMC MODE - FREE/AUTO
V48 (21101)(X1111)
P40

(21101)
(X1111)

MSFN RECORD:
VG_{IMU} DATA

P00
V49 MNVR TO DOI PAD BURN ATT (78:22)
ACQ MSFN OMNI D

78:10

MSFN CMDS:
DSE REWIND

MSFN

PRE-SPS BURN SIM PREP (CUE CARD)

MSFN UPDATE:
GO/NO-GO FOR DOI

78:20

MSFN CMDS:
DSE RECORD

SXT STAR CHECK
P40 (TRIM)

(P40)
(0.5°DB)

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

78:30

SIM EXP STATUS
(*0000)
(01214)

P30 MANEUVER

SET STARS	DSI	DOI	DSI/G	&	N	PURPOSE / PROP/GUID	
	•					WT	N47
R_{ALIGN} ___ ___ ___		O	O			P_{TRIM}	N48
P_{ALIGN} ___ ___ ___		O	O			Y_{TRIM}	
Y_{ALIGN} ___ ___ ___	•	O	O			HRS	GETI
	•	O	O	O		MIN	N33
	•	O				SEC	
ULLAGE ___						ΔV_X	N81
___						ΔV_Y	
___						ΔV_Z	
___	X	X	X			R	(000)
	X	X	X			P	(282)
	X	X	X			Y	(359)
	•					H_A	N44
						H_P	
	•					ΔVT	
HORIZON/WINDOW ___	X	X	X			BT	
___	X					ΔVC	
___	X	X	X	X		SXTS	
___	•				O	SFT	
	•			O	O	TRN	
	X	X	X			BSS	
	X	X				SPA	
	X	X	X			SXP	
OTHER ___		O				LAT	N61
___						LONG	
___	•					RTGO	EMS
	•					VIO	
						GET 0.05G	

CSM FLIGHT PLAN

78:30
(P40)
(0.5°/06)
(21101)
(x1111)

SIM EXP STATUS
(*0000)
(31000)

NOTE: DOI WILL BE PERFORMED ON BANK A ONLY

DOI (000,180/282,359)
_____:_____:_____.____

TIG: 78:35:30.3
BT: 24.1 SEC
ΔVT: 206.0 FPS
ULLAGE: 4 JET, 15 SEC
ORBIT: 58.6 x 10.8

(21101)
(x1111)

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

78:40

DELAY POST SPS BURN SIM PREP UNTIL 79:42

V49 MNVR TO BAILOUT BURN ATTITUDE (79:10)
(000,040,000)
SET HGA P -58, Y 15 FOR AOS ACQ

REV 3

78:50

UNSTOW AND STUDY LDMK BOOK

79:00

DOI BURN TABLE **NO MANUAL START**

P OR Y RATES	ATT DEVIATIONS	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT	*TRIM OVERBURNS IN X TO WITHIN 1 FPS, DO NOT TRIM Y & Z

*IF OVERBURN IS > 2.2 FPS AND < 10 FPS PITCH 180° AND TRIM WITH +X RCS THRUSTERS, IF > 10 FPS USE SPS

BURN STATUS REPORT

X	X					ΔTIG
X	X					BT
						V_{gx}
	TRIM					
X	X	X				R
X	X	X				P
X	X	X				Y
						V_{gx}
						V_{gy}
						V_{gz}
						ΔV_c
X						FUEL
X						OX
X						UNBAL

CSM FLIGHT PLAN

79:00
(21101)
(x1111)

SIM EXP STATUS
(*0000)
(31000)

MAP UPDATE REV 3

LOS : _ _ _ _ _ _ _

180°: _ _ _ _ _ _ _

AOS : _ _ _ _ _ _ _

- AOS - NO UP VOICE PROCEDURE
- 1. WAIT 30 SEC, CHECK HGA
- 2. SELECT OMNI A
- 3. SELECT SEC XPNDR
- 4. AFTER 3 MIN GO TO LOSS OF COMM CUE CARD

79:10

ACQ MSFN HGA P -58, Y 15

MSFN CMDS:
DSE STOP

REPORT: BURN STATUS

MSFN CMDS:
DSE REWIND

MSFN CMDS:
DSE PLAYBACK

MSFN UPDATE:
STAY/BAILOUT

NOTE: IF STAY, PROCEED WITH ACTIVITIES AT 79:27 IMMEDIATELY

79:20

*SC CONT - SCS
*P47 THRUST MONITOR
* BAILOUT BURN (000,083/040,000)
_____:_____:_____._____

TIG: 79:22:07.9
BT: 11:05 SEC
ΔVC: 94.7 FPS
ULLAGE: 4 JET, 16 SEC
ORBIT: 62.6X5.3

*P00
*V66 SET CSM S.V. INTO LM S.V.

MSFN CMDS:
DSE REWIND

V49 MNVR TO LDMK OBS ATT (79:35)(IF NO BAILOUT REQD)
(015,292,000) OMNI D
LOAD N89 (J-2 OBS)

79:30

79:30
(21101)
(x1111)

SIM EXP STATUS
(*0000)
(31000)

P24 (ORB NAV MONITOR LDMK)(TAKE MARKS)
OPT ZERO - OFF
OPT MODE - CMC
OPT TEL TRUN - SLAVE TO SXT
OPT COUPLING - RSLV
OPT SPEED - HI

LDMK J-2 OBS

T HOR: ___ ___:___ ___:___ ___

TCA -20 SEC: ___ ___:___ ___:___ ___

LAT: -08.917
LONG/2: +12.241
ALT: +000.00

LDMK ACQUISITION
(TGT IN FOV ~1 MIN)

TCA

R/S N89 = -09.000,
+07.745

(21101)
(x1111)

V48 (21101)(x1111)

MSFN UPDATE:
MAP CAMERA PHOTO PAD (80:35)
PAN CAMERA PHOTO PAD (80:40)

79:40

POST SPS BURN SIM PREP (CUE CARD)

INHIBIT ALL JETS EXCEPT A1 & C2 OR D1 & B2,A3,C4,B3,D4
P20 OPT 5 (+X FWD SIM ATT) (79:59)
N79 (+000.50)
HGA P -21, Y 209

(P20)
(0.5°DB)

79:50

CMP DOFF BIOMED HARNESS
LMP DON BIOMED HARNESS

CSM EXP/EVA CHECKLIST

SOLAR MONITOR DOOR/EXP TIEDOWN RELEASE, PAGE X/1-7

80:00

CSM FLIGHT PLAN

80:00
(P20)
(0.5°DB)
(21101)
(X1111)

MC/LA COVER - OPEN
AP/XR COVER - OPEN
MC - EXTD
GR - DPLY (BP +2 SEC ONLY) then OFF (CTR)
GR - RETR
MS - DPLY (BP +2 SEC ONLY) then OFF (CTR)
MS - RETR

XR - ON

SIM EXP STATUS
(+0000)
(01214)

CAUTION: DO NOT EXCEED 12 SEC WITH SWITCH IN DEPLOY POSITION

REPORT: GAMMA RAY AND MASS SPECT BOOM DEPLOY AND RETRACT COMPLETED

MS - DPLY TO 8.4 FEET (1 MIN 01 SEC)

MSFN

LA - ON
MS: EXP - ON
ION SOURCE - STBY

80:10

MSFN CMDS: (AOS +61 MIN)
DSE RECORD

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

EAT PERIOD

80:20

80:30

80:30
(P20)
(0.5°DB)
(21101)
(X1111)

SIM EXP STATUS
(+1021)
(03232)

MAP CAMERA PHOTO PAD
T-START: ___ ___ ___:___ ___:___ ___
T-STOP: ___ ___ ___:___ ___:___ ___
(167.3°W TO 168.0°E)

PC: STBY
STEREO
PWR

IMAGE MTN - ON
MC - ON (T START)
PC - OPR (T START)
IMAGE MTN - INCR (BP +1 STEP)/ON

PAN CAMERA PHOTO PAD
T-START: ___ ___ ___:___ ___:___ ___
T-STOP: ___ ___ ___:___ ___:___ ___
(167.3°W TO 168.0°E)

80:40

REV 4

IMAGE MTN - INCR (BP +2 STEPS)/ON

EAT PERIOD

PC - STBY (T STOP)
MC - OFF (T STOP)
WAIT 30 SEC
MC - STBY
LA - OFF
IMAGE MTN - OFF
MC - RETR
MANUALLY ROLL CCW 40°

80:50
(P20)
(2.0°DB)

P20 OPT 5 (-X FWD SIM ATT)(81:05)
N78 (+086.74)
(+052.20)
(+358.45)
N79 (+002.00)
SET HGA P 0, Y 170 FOR AOS ACQ

MC/LA COVER - CLOSE
MS - DPLY
GR - DPLY

81:00

CSM FLIGHT PLAN

81:00
(P20)
(8.0°DB)
2
(21101)
(X1111)

LOOK FOR BOOMS AT FULL DEPLOYMENT

SIM EXP STATUS
(-0111)
(11232)

CONFIGURE DSE (STOP/CMD RESET/REWIND)(AOS -3 MIN)

EAT PERIOD

ACQ MSFN HGA: MAN, WIDE P 0, Y 170
S-BD ANT IND >1/2 SCALE HGA: REACQ, NARROW

MSFN CUE: (AOS +4 MIN)
HGA AUTO

MSFN COMDS: (AOS +5 MIN)
DSE PLAYBACK

81:10 MS: ION SOURCE - ON
MULT - LOW (VERIFY)
DSCRM - LOW (VERIFY)

GR: SHIELD - OFF
MS: MULT - HIGH

PC: PWR - OFF (MSFN CUE)

81:20 MS: DSCRM - HIGH

GR: GAINSTEP - ON(UP) 6 STEPS (STEP 1)/SHIELD - ON (CTR)
MS: MULT - LOW

81:30 MS: DSCRM - LOW

MSFN

81:30
(P20)
(8.0°DB)
2
(21101)
(X1111)

MSFN UPDATE:
TRAJECTORY STATUS
REFSMMAT 00 TIME (IF REQD)
TEI 12 AND TEI 19
LM DAP LOAD (COPY ON PAGE 1 IN THE LM DATA CARD BOOK)

MSFN UPLINK:
SHORT BURN CONSTANTS
CSM S.V. AND V66
LIFT-OFF TIME (IF REQD)
DESIRED ORIENT (LDG SITE) (IF REQD)

SIM EXP STATUS
(-0111)
(01222)

NOTE: LIFT-OFF TIME WILL BE UPDATED IF THE TIME OF REV 26 MERIDIAN CROSSING DIFFERS MORE THAN ±2 MIN FROM 123:28:33.1

SYNCHRONIZE MISSION TIMER TO CMC (IF REQD)
V05N01E, 1706E (T EPHEM VERIFICATION BY MSFN, COPY ON MSFN CUE FROM DSKY)

CMC MODE - FREE

81:40 P52 (OPTION 3)
(LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

P52 (OPTION 1)(IF REQD)
(LDG SITE ORIENT)

T EPHEM UPDATE

OID	LOAD B
03	_ _ _ _ _
04	_ _ _ _ _
05	_ _ _ _ _

REFSMMAT 00 TIME

+	0	0				HRS
+	0	0	0			MIN
+	0					SEC

81:50 P20, CMC MODE - AUTO
GDC ALIGN

P52 IMU REALIGN

N71: _ _ _ , _ _ _
N05: _ _ _ . _ _ _
N93:
X _ _ _ . _ _ _
Y _ _ _ . _ _ _
Z _ _ _ . _ _ _
GET _ _ _ . _ _ _

L10H CANISTER CHANGE
(9 INTO A, STOW 7 IN B6)

MSFN UPLINK:
JET-ON MONITOR LOADS

MSFN CMDS: (AOS +54 MIN)
DSE REWIND

82:00 PRESSURE EQUALIZATION VALVE - CLOSE

MSFN

2154 GST

CSM FLIGHT PLAN

82:00

(P20)
(~~X~~.0°DB)
2
(21101)
(x1111)

MSFN

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST PAGE S/1-29

LOGIC PWR (2) - OFF

MSFN CMDS: (AOS +61 MIN)
DSE RECORD

SIM EXP STATUS
(-0111)
(01222)

ONBOARD READOUT

BAT C _____

PYRO BAT A _____

PYRO BAT B _____

RCS A _____

B _____

C _____

D _____

DC IND SEL - MNA OR B

82:10

FILM MAGS REQD FOR NEXT DAY:
DAC: CEX-BB & CC
EL: CEX-NN & PP, ULV-00, VHBW-SS
NK: VHBW-XX

82:20

82:30

82:30

(P20)
(~~X~~.0°DB)
2
(21101)
(x1111)

REV 5

82:40

82:50

83:00

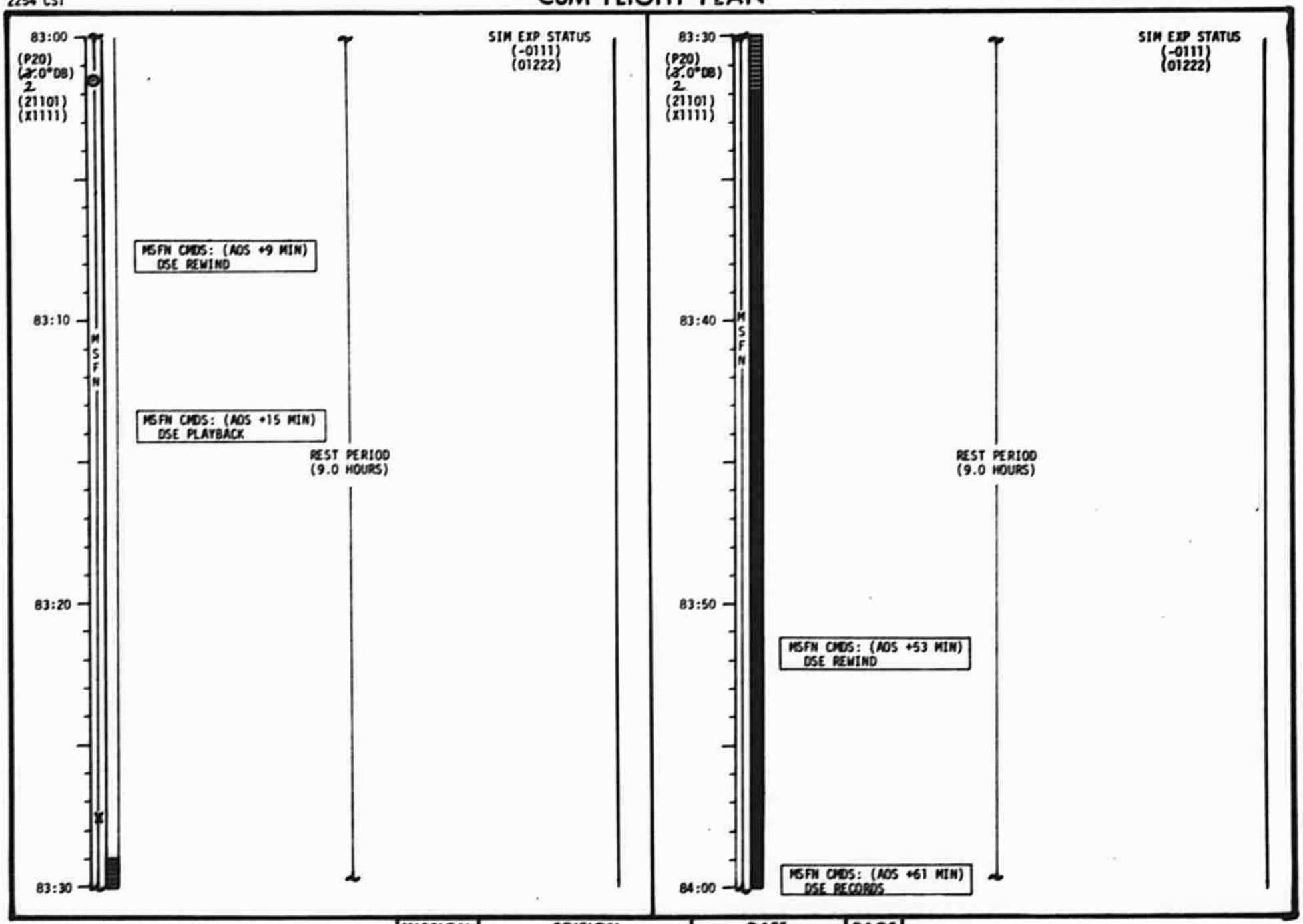
SIM EXP STATUS
(-0111)
(01222)

REST PERIOD
(9.0 HOURS)

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE B ~~FINAL~~ (4/16)	~~3/30/72~~ 4/7/72	3-82

2254 CST

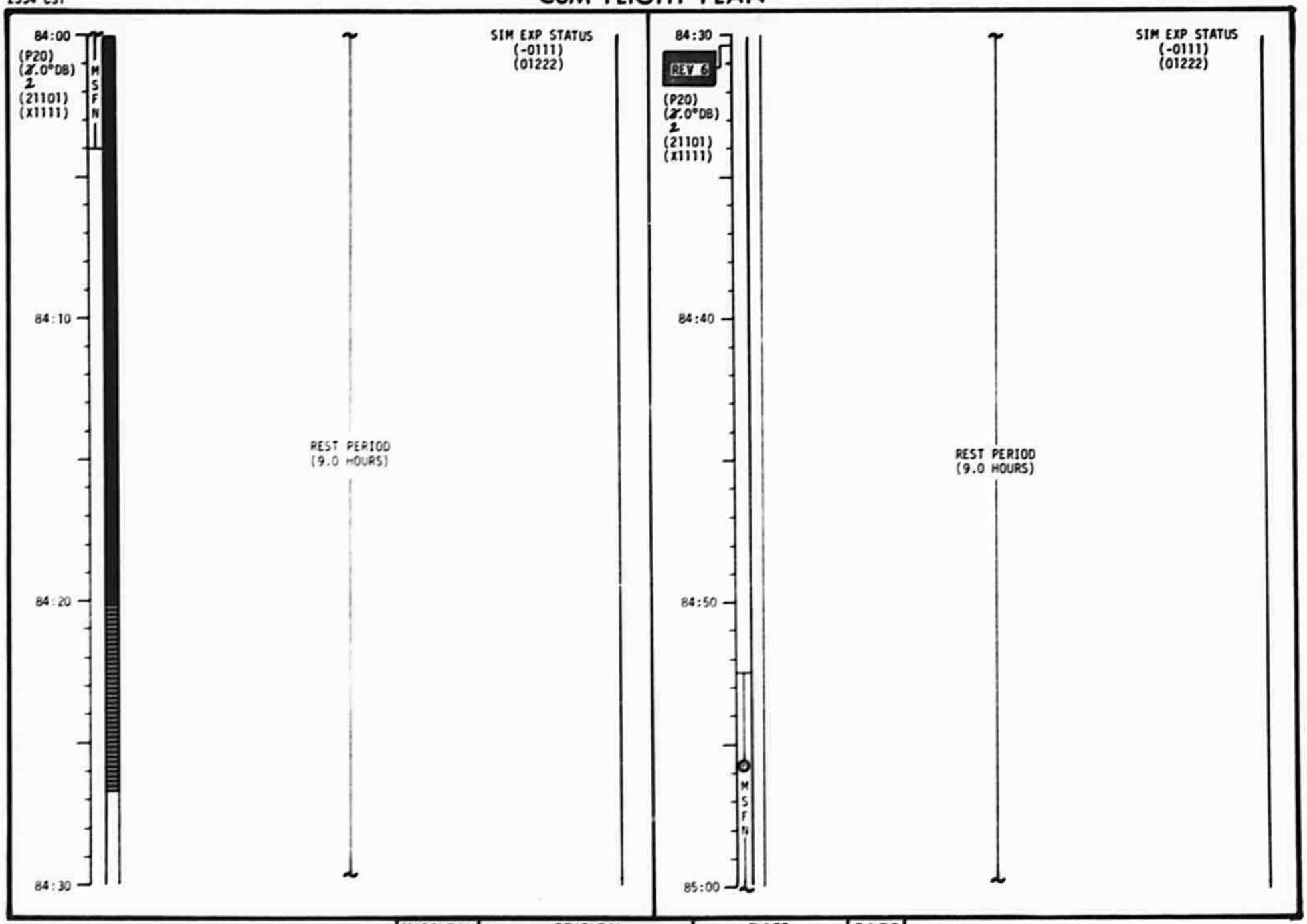
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	~~CHANGE A FINAL~~ (4/16)	3/27/72 ~~3/16/72~~	3-83

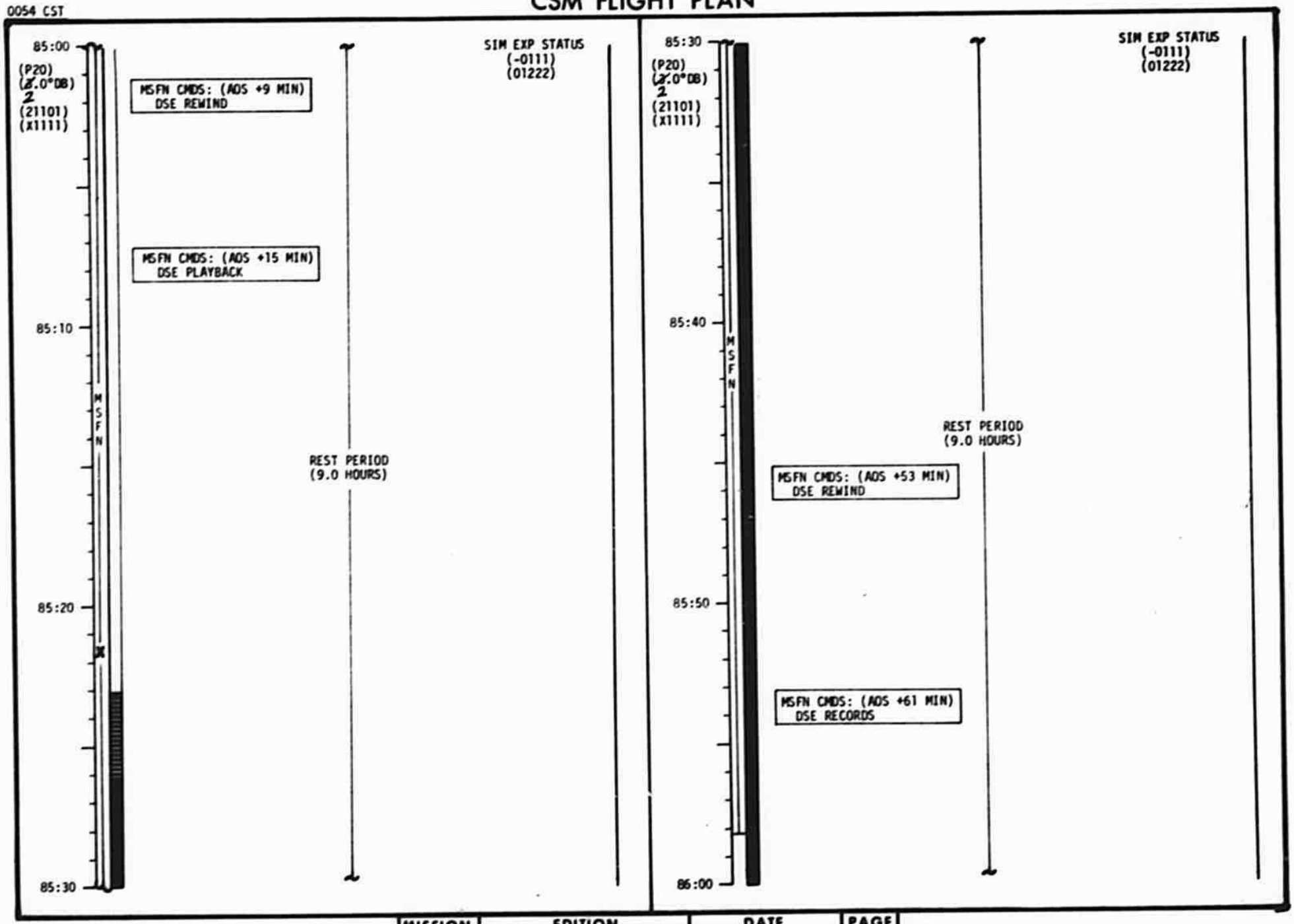
2354 CST

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A ~~FINAL~~ (4/16)	3/27/72 ~~3/16/72~~	3-84

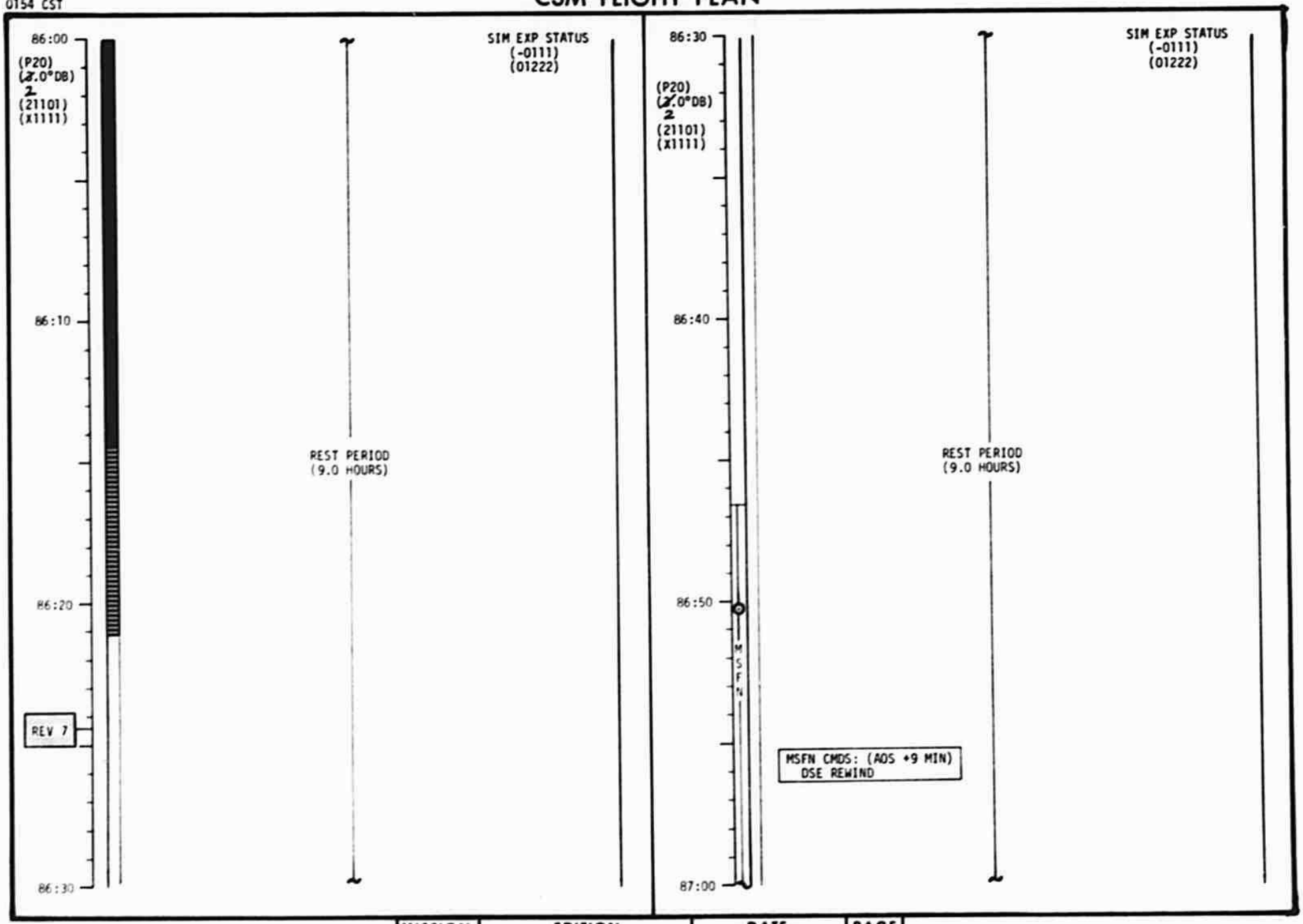
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A ~~FINAL~~ (4/16)	3/31/72 ~~3/16/72~~	3-85

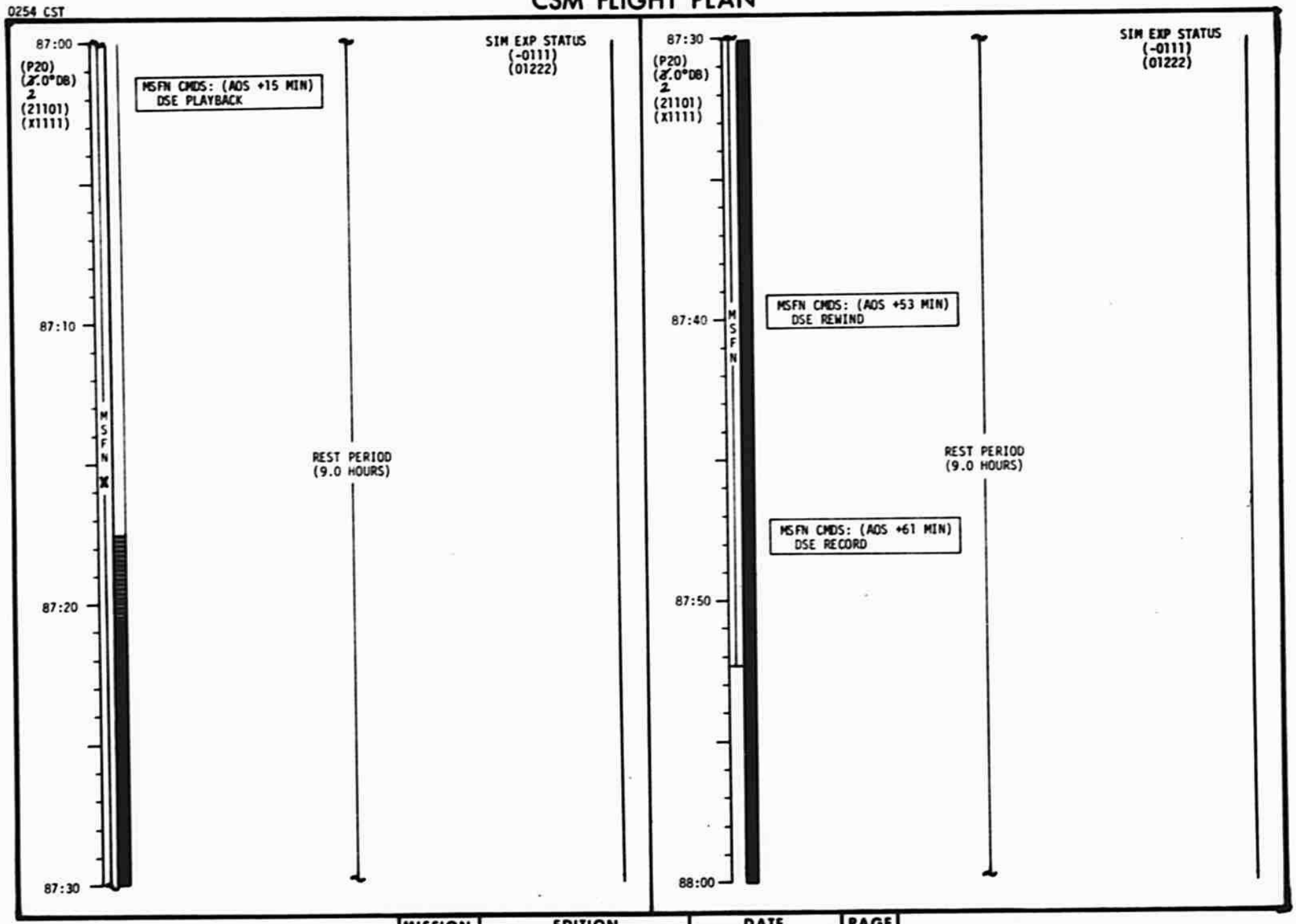
0154 CST

CSM FLIGHT PLAN



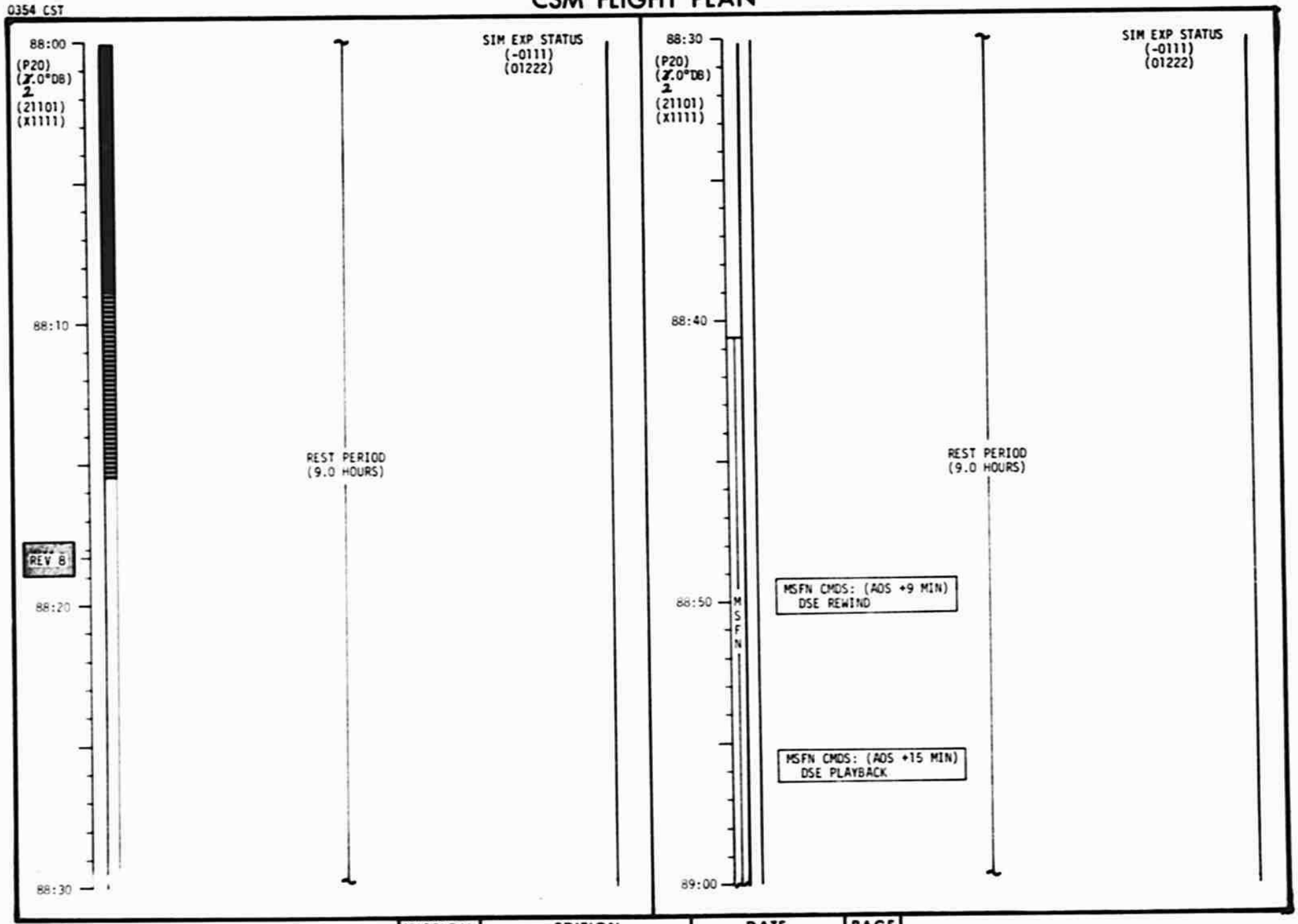
MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A ~~FINAL~~ (4/16)	3/27/72 ~~3/6/72~~	3-86

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	~~CHANGE A FINAL~~ (4/16)	3/27/72 ~~3/16/72~~	3-87

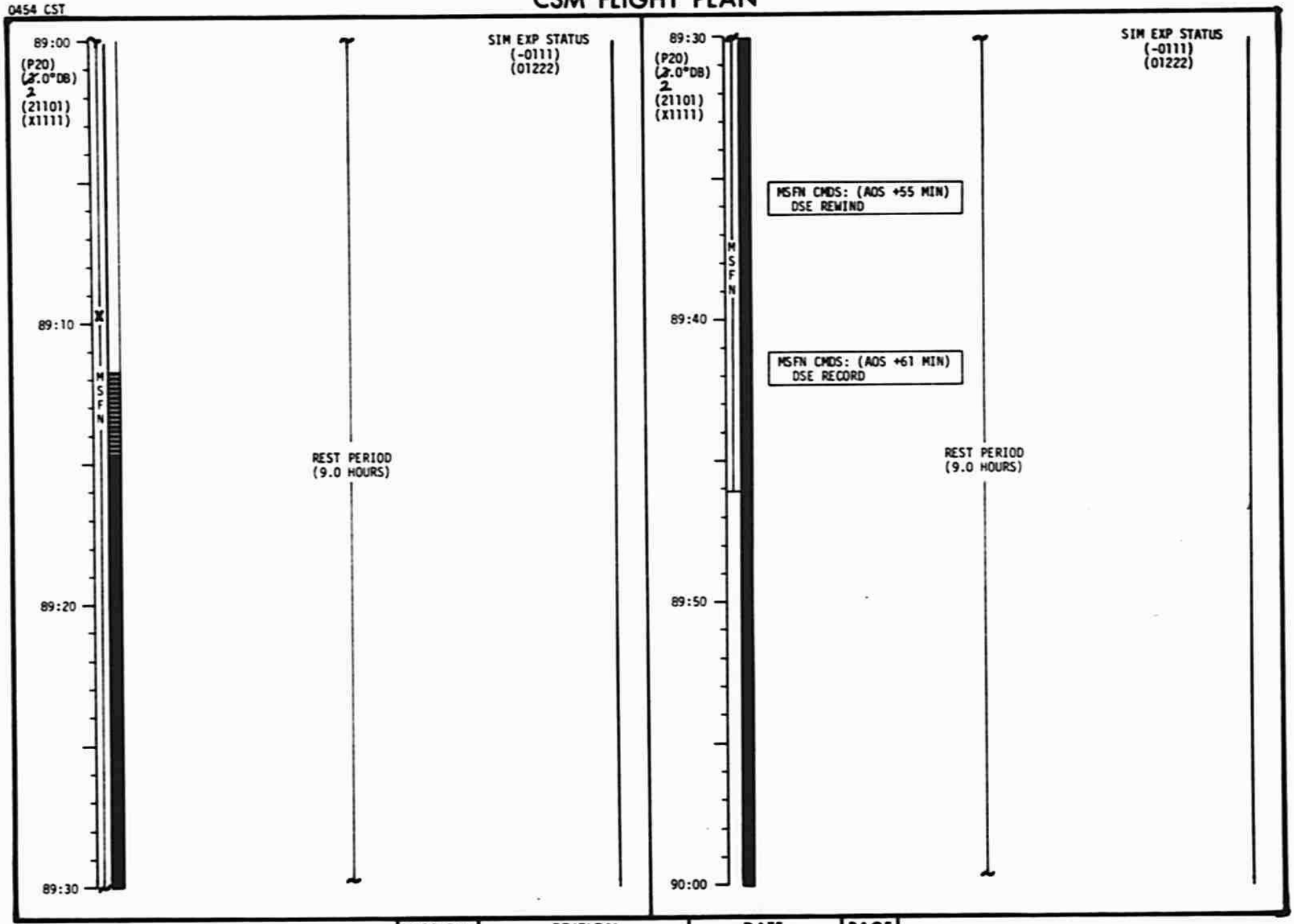
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	~~CHANGE A FINAL~~ (4/16)	~~3/27/72~~ 3/6/72	3-88

CSM FLIGHT PLAN

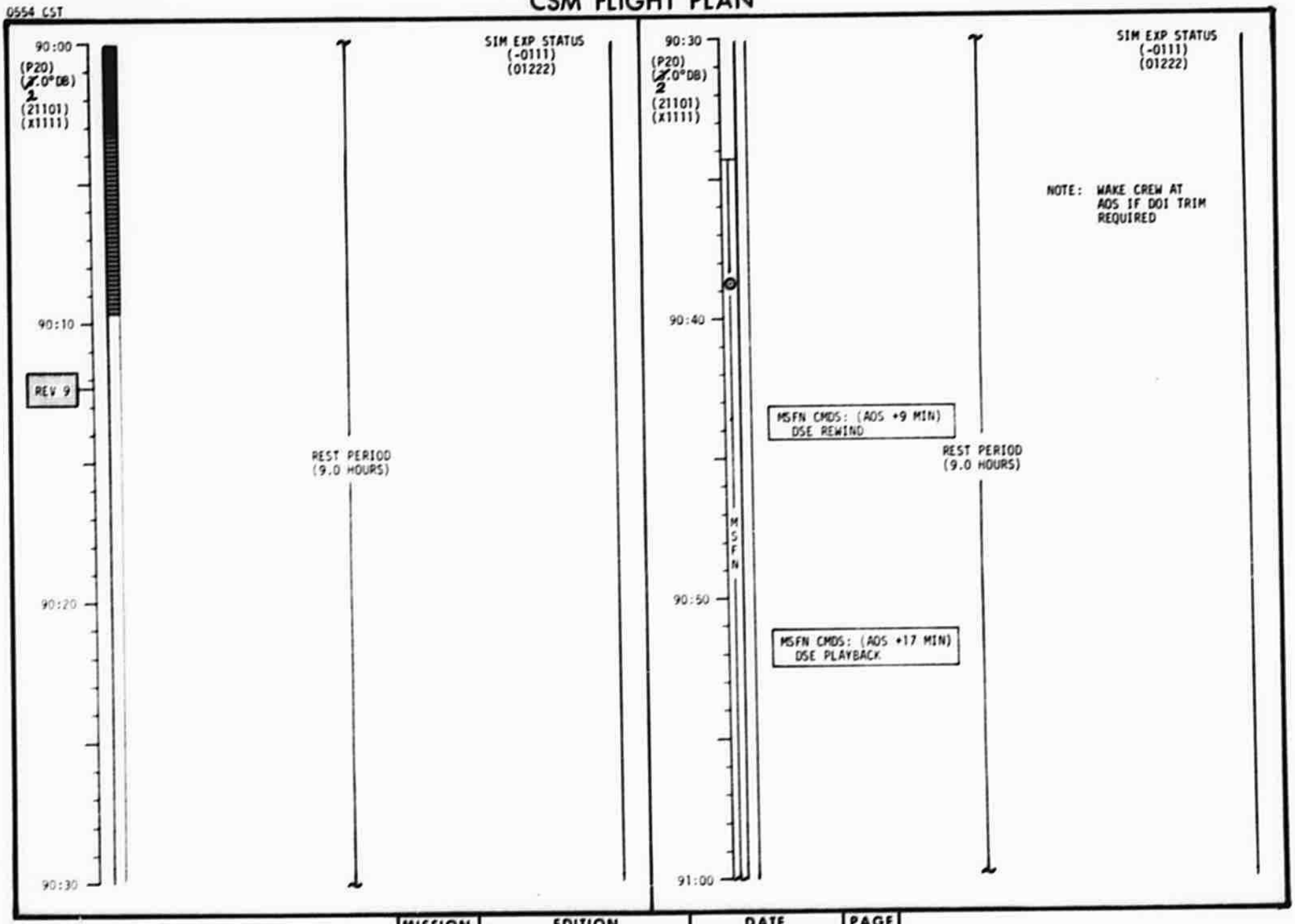
0454 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A ~~FINAL~~ (4/16)	3/27/72 ~~3/6/72~~	3-89

CSM FLIGHT PLAN

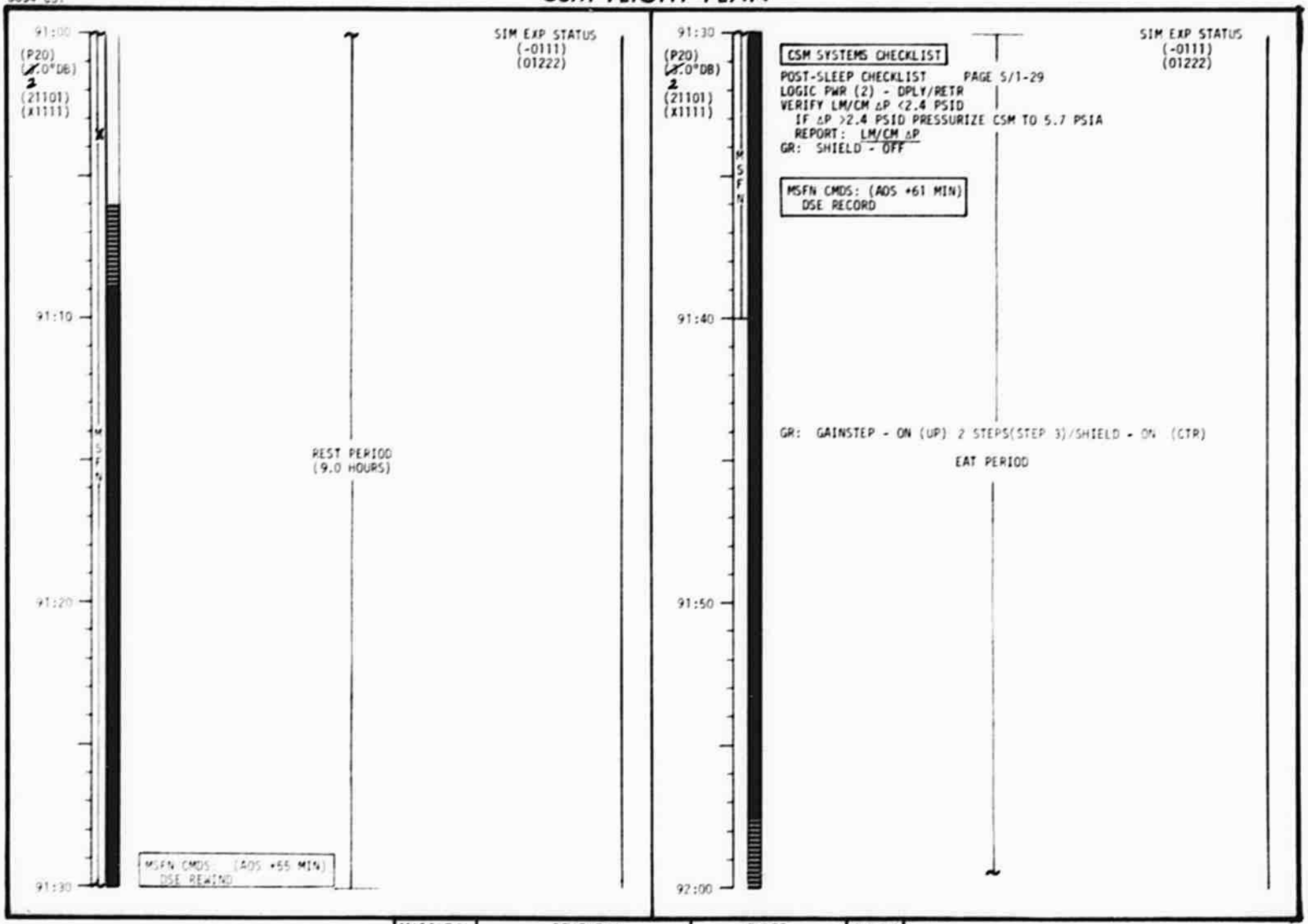
0554 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A ~~FINAL~~ (4/16)	3/27/72 2/16/72	3-90

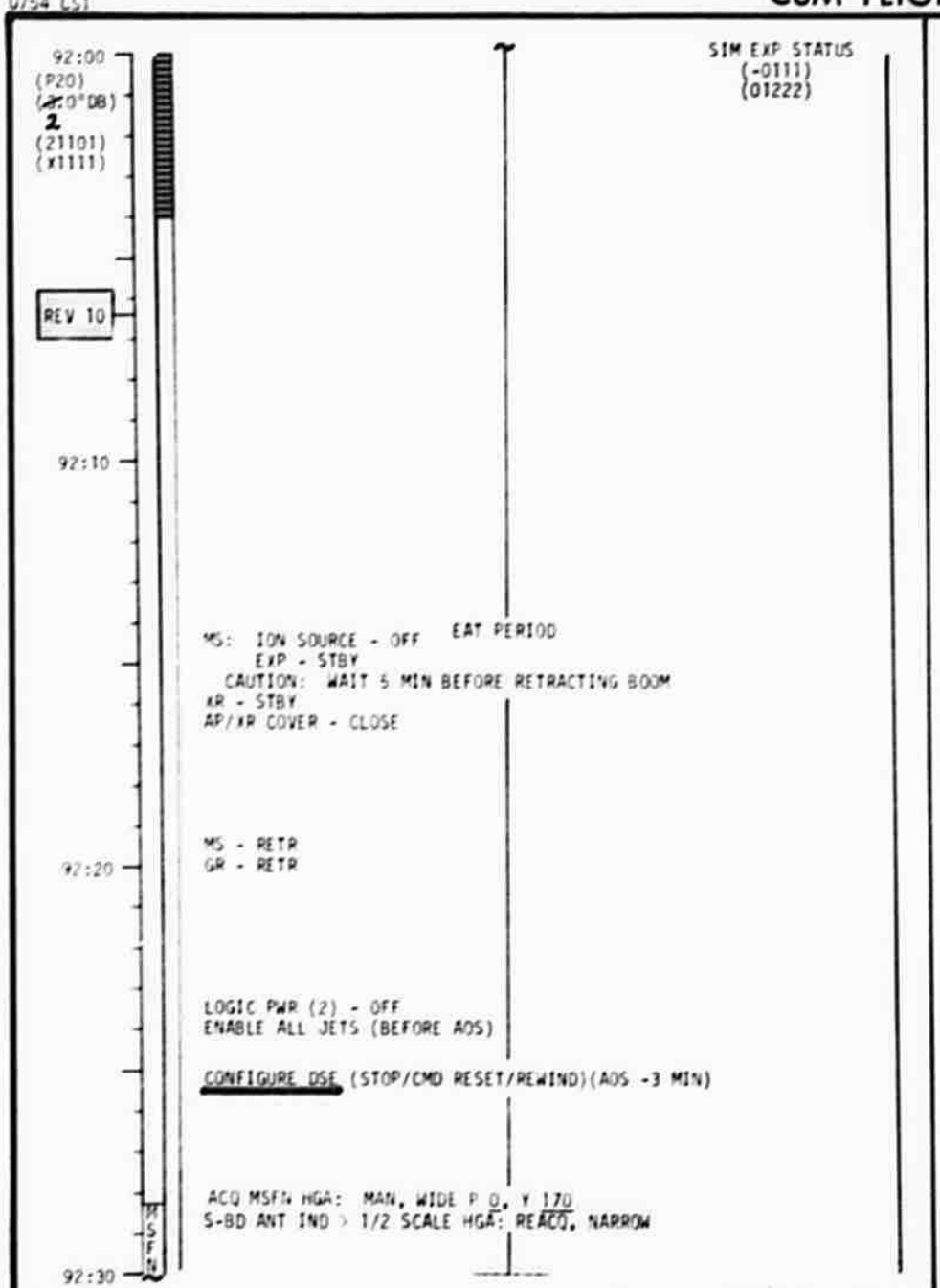
CSM FLIGHT PLAN

0654 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A ~~FINAL~~ (4/16)	3/27/72 ~~3/16/72~~	3-91

CSM FLIGHT PLAN



CSM FLIGHT PLAN

92:30
(P20)
(2.0°DB)
(21101)
(X1111)

LMP: FILL DRINK BAG - EVAC, INSTALL
INSTALL FOOD STICK

SIM EXP STATUS
(-0000)
(01214)

MSFN CUE: (AOS +4 MIN)
HGA AUTO

MSFN CMDS: (AOS +5 MIN)
DSE PLAYBACK

MSFN UPLINK:
CSM S.V. AND V66

MSFN UPDATE:
TRAJECTORY STATUS
FLIGHT PLAN

CDR: FILL DRINK BAG - EVAC, INSTALL

PREPARE COUCHES: CDR -0°, CMP -0°, LMP -180°
REMOVE PROBE STRAPS (R5)
TUNNEL LIGHTS - ON(UP)
92:40
VERIFY LM/CM $\Delta P < 0.2$ PSID
IF $\Delta P > 0.2$ PSID PERFORM CM/LM PRESSURE EQUALIZATION (DECAL)
TUNNEL HATCH REMOVAL (DECAL); STOW HATCH
PROBE REMOVAL (DECAL); STOW PROBE
DROGUE REMOVAL (DECAL); STOW DROGUE

REPORT: DOCKING TUNNEL INDEX ANGLE

LMP DON LCG AND PGA WITHOUT HELMET AND GLOVES

MSFN

92:50

93:00

CSM TO LM TRANSFER LIST

CSM LOCATION	ITEM	LM LOCATION
A2	JETTISON BAG (1)	TEMP STWG
ON CREW	BIO INSTRUMENTATION (2)	ON CREW
PGA BAG	UCTA (2)	ON CREW
A2	FCS (2)	ON CREW
U1	LCG (2)	ON CREW
TEMP STWG	DRINK BAG (2)	ON PGA
TEMP STWG	FOOD STICK (1)	ON PGA
PGA BAG	SUIT ITSLA-EV (2)	ON CREW
ICG	SUNGLASSES IN POUCH (2)	PGA POCKET
ON CREW	WATCH/WRIST MIRROR/WATCHBAND (2)	ON PGA
ON CREW	PEN (2)	PGA POCKET
ON CREW	PEN - FELT TIP (2)	PGA POCKET
ON CREW	PENCIL (2)	PGA POCKET
ON CREW	POCKET, C/L & SCISSOR (2)	ON PGA
ON CREW	POCKET, DATA (2)	ON PGA
ON CREW	SCISSOR	ON CREW
ON CREW	PEN LIGHT (2)	PGA POCKET
ON CREW	EAR PLUG (2 PR)	PGA POCKET
ON CREW	DOSIMETER - PERSONAL (2) PASSIVE (6)	PGA POCKET
ON CREW	COMM CARRIER (2)	ON CREW
HELMET ACC BAG	IV GLOVES (2 PR) - CDR TRANSFER	TEMP STWG
HELMET BAG	HELMET (2) - CDR TRANSFER	TEMP STWG
R8	CWG ELECT ADPTR CAP (2)	ON CWG ADPTR
CCU CABLE	CWG ELECT ADPTR (2)	LHSSC
IN JETT BAG	LCG PLUG (2)	PURSE
ON PGA	GAS CONNECTOR PLUGS (4)	ON PGA
ON PGA	PGA ELECT CONN CAP (2)	PURSE
R3	LM XFER DATA CARD KIT LM TIMELINE BOOK LM DATA CARD BOOK LM LUNAR SURFACE C/L ORBIT MONITOR CHART (LM) ASCENT MONITOR CHART LM STAR CHARTS (3) LM ACT C/L (1)	DATA FILE
	(RETURN JETTISON BAG TO CSM)	

LM FLIGHT PLAN

MCC-H | 0854 CST | CDR | LMP | NOTES

93:00

:10

:20

93:30

:40

:50

94:00

MSFN

LM ACTIVATION CHECKLIST PAGE 3-1

-2:30

CDR	LMP
IVT TO LM	IVT TO LM
TRANSFER HELMETS & GLOVES	OPEN HATCH
	VERIFY DOCKING ANGLE
	TRANSFER POWER
	LIGHTS ON
	DES O_2 AND H_2O - OPEN
ZIP LMP SUIT	ZIP CDR SUIT
ATTACH RESTRAINTS	ATTACH RESTRAINTS

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	93:00 - 94:00	5/10	3-94

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

93:00 (21111) (X1111)

SIM EXP STATUS
(-0000)
(01214)

V48 (21111)
(X1111)
V45 (RESET LUNAR SURFACE FLAG)
P00

P52 (OPTION 3)
(LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

GDC ALIGN

93:10

CDR DON BIOMED HARNESS, LCG AND PGA WITHOUT HELMET AND GLOVES

P52 IMU REALIGN

N71: __ __ , __ __

N05: __ __ __ • __ __

N93:

X __ __ • __ __ __

Y __ __ • __ __ __

Z __ __ • __ __ __ • __

GET __ __ __ • __ __ • __ __

MSFN

MSFN CMDS:
DATA SYS - OFF

93:20

V49 MNVR TO UNDOCK ATT (93:35)
(000,104,000)
SET HGA P -63, Y 159 FOR AOS ACQ

CMP DON BIOMED HARNESS, PGA WITHOUT
HELMET AND GLOVES

LiOH CANISTER CHANGE
(10 INTO B, STOW B IN B6)

93:30

93:30 (21111) (X1111)

SIM EXP STATUS
(*0000)
(01214)

MSFN

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

CONFIGURE CAMERA: (UNDOCKING PHOTOS)
CM2/DAC/18/CEX-BRKT,MIR (T8,1/250,7) 12 fps (100% MAG)

MAG (CC) ____, MAG = ____
UTILITY PWR - ON

93:40

CONFIGURE CAMERA: (TERMINATOR PHOTOS)
CM3/EL/250/VHBW (f11,1/250,∞)6 FR

MAG (SS) ____, FR # ____

CDR & LMP IVT TO LM

O_2 HEATERS 1 & 2 - OFF
O_2 HEATERS 3 - AUTO

93:50

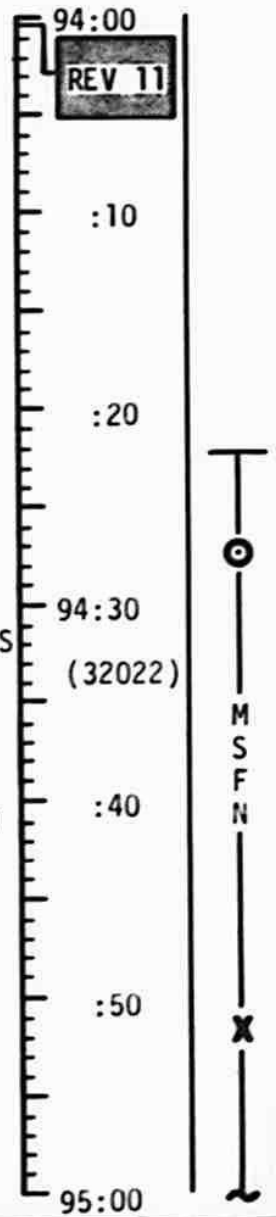
AT LMP REQUEST:
LM PWR - RESET/OFF GET _____:____:____(RECORD)
SYS TEST - 7D
SYS TEST ind - 0 volts

94:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-95

LM FLIGHT PLAN

MCC-H | 0954 CST



UPDATE TO LM
AGS ABORT CONSTANTS

UPLINK TO LM
L/S REFSMMAT
LM S.V. & V66
LGC ABORT CONSTANT
LGC ΔT CLOCK
SYNC (IF REQD)

CDR	LMP	NOTES
MISSION TIMER ACTIVATION	EPS ACTIVATION CONNECT TO LM COMM CONFIGURE S-BAND	
	PRIMARY GLYCOL LOOP ACT	
	CAUTION/WARNING CHECKOUT	
	ECS ACTIVATION & CHECKOUT	
CONNECT TO LM ECS CB ACTIVATION ACTIVATE RCS HEATERS	CONNECT TO LM ECS CB ACTIVATION TB VERIFICATION	-2:00
PGNS TURN ON AND SELF TEST	VHF CHECKOUT RECORDER - ON	
LGC/CMC CLOCK SYNC T EPHEM UPDATE V48 (32022) E-MEMORY DUMP DEPLOY LDG GEAR	PRIM S-BAND VOICE CHECK SEC S-BAND VOICE CHECK STEERABLE ANTENNA ACTIVATION BIOMED - RIGHT	
	SUIT FAN/H_2O SEP CHECK GLYCOL PUMP CHECK	-1:30
DOCKED IMU COARSE ALIGN	ASCENT BATTERY ACTIVATION AND CHECKOUT	
V06 N20		

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	94:00 - 95:00	5/10-11	3-96

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0954 CST

94:00

REV 11

(21111)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

AT CDR REQUEST:
MARK TO LM FOR LM MISSION TIMER SYNC

94:10

REMOVE AND STOW CSM/LM UMBILICAL IN F1 or F2
INSTALL DROGUE AND PROBE (DECAL)

PRE-LOAD PROBE (DECAL)

RELEASE DOCKING LATCH NO'S. 1 & 7
CB DOCKING PROBE (2) - CLOSED
PROBE EXT/REL - RETR
PROBE EXTD/REL tb (2) - bp (VERIFY)
CB DOCKING PROBE (2) - OPEN
PROBE EXTD/REL - OFF
VERIFY PROBE EXTEND LATCH
ENGAGED INDICATOR (RED)
NOT VISIBLE

94:20

VHF C/O AT LMP REQUEST
VHF ANT - RIGHT
VHF AM B - SIMPLEX FOR VHF B CHECK then OFF
VHF AM A - SIMPLEX FOR VHF A CHECK
ACQ MSFN HGA P -63, Y 159
REPORT: LM PWR - RESET/OFF GET

M S F N

LM CLOCK SYNC:
V16N65E
ON CDR MARK - V06N65E

LM T EPHEM UPDATE:
V05N01E, 1706E (T EPHEM)

94:30

94:30

(21111)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

MSFN CMDS:
DSE DUMP

MSFN UPLINK:
CSM S.V. AND V66

LM LANDING GEAR DEPLOY

94:40

MSFN UPDATE:
DAP DATA (95:54)
UNDOCK/SEP PAD COPY AT (96:25)
P24 TRK PAD: (L/S LDMK 16-X)(96:55)

M S F N

MAN ATT (3) - RATE CMD
LIMIT CYCLE - ON
ATT DB - MIN
RATE - LOW
BMAG (3) - ATT 1/RATE 2
SC CONT - SCS

LM DOCKED IMU COARSE ALIGN

94:50

TERMINATOR PHOTOS - IF TIME PERMITS

DESCARTES (P16-A10) CM3

CM3 (f11, 1/250,00) 6FR
FRE ____

V06 N20

DON HELMET AND GLOVES

95:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-97

LM FLIGHT PLAN

MCC-H	1054 CST	CDR	LMP	NOTES
	95:00 (32022)	P52 IMU REALIGN OPTION 3, REFSMMAT LDG SITE ORIENT (CURSOR/SPIRAL TECHNIQUE) V06 N20		
	:10	RCS PRESSURIZATION & CHECKOUT		
UPDATE TO LM PIPA BIAS (IF REQD)	:20			-1:00
GO/NO-GO FOR UNDOCKING AND SEPARATION	95:30	RR ACTIVATION & SELF TEST	VERIFY PROBE & DROGUE INSTALLATION CLOSE & SECURE HATCH VHF B XMTR-DATA PCM-LO	
	:40	DON HELMETS & GLOVES		
	:50	ARS/PGA INTEGRITY CHECK CABIN REGULATOR CHECK		-0:30
	REV 12		RATE GYRO TEST	
	96:00	UNDOCKING PREPARATION CONFIGURE CB'S FOR UNDOCKING	MOUNT CAMERA ON WINDOW BAR	

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	95:00 - 96:00	5/11-12	3-98

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

95:00 (21111) (X1111)

PGA Interconnects - AB

SUIT CKT INTEGRITY CHECK (DECAL)

SIM EXP STATUS (*0000) (01214)

V06 N20
ON LM CUE:
SC CONT - CMC
ATT DB - MAX
BMAG (3) - RATE 2
AT CDR'S REQUEST DURING RCS CHECKOUT
CMC MODE - FREE FOR RCS HOT FIRE

95:10

MSFN

PANEL 10
MODE - VOX
VOX SENS tw - 5
S-BD - OFF
INTERCOM - OFF
VHF AM T/R - T/R (VERIFY)

95:20

AFTER LM RCS CHECKOUT
CMC MODE - AUTO

LM RR SELF TEST
RNDZ XPNDR - OFF (VERIFY)
AUTO RCS SEL B3 - OFF
ROLL (8) - OFF UNTIL LM/CM ΔP > 3.5 PSID
DOCKING LATCH RELEASE (DECAL)
HATCH INSTALLATION (DECAL)

MSFN CMDS:
DSE RECORD

MSFN UPDATE:
GO/NO-GO FOR UNDOCK/SEP

HATCH INTEGRITY CHECK (DECAL)
VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

95:30

95:30 (21111) (X1111)

VHF ANT - RIGHT (VERIFY)
VHF RCV ONLY - B DATA
VHF AM A - SIMPLEX
VHF AM B - OFF

SIM EXP STATUS (*0000) (01214)

WHEN LM RR SELF - TEST COMPLETE:
AUTO RCS SEL B3 - ON
DOFF HELMET, GLOVES

95:40

RR XPNDR ACTIVATION AND SELF-TEST (DECAL)
RR XPNDR - HTR
CONFIGURE CAMERA: (UNDOCKING PHOTOS)
CM2/EL/80/CEX (f8,1/250,FOCUS) 10 FR

MAG (NN) ____, FR #____

113 VALUES
A~2.8
B~2.2 SELF TEST
C~0.3 UNLOCKED
~4.9 LOCKED

VERIFY:
CM2/DAC/18/CEX-BRKT, MIR (T8,1/250,7) 12 fps
UTILITY PWR - ON

95:50 (21101) (X1111)

TUNNEL LIGHTS - OFF
ROLL (4) - ON
CYCLE CMC MODE - FREE/AUTO
V48 (21101)
(X1111)
LOAD N47 & N48
V49 TRIM MNVR TO CSM SEP PAD ATT (95:56)

+						WT N47
	0	0				P_{TRIM} N48
	0	0				Y_{TRIM}

DEV P2

P30; LOAD CSM SEP

SET DET COUNTING UP TO UNDOCK/SEP
LOAD ΔV IN EMS TO -100.0
CHECK NULL BIAS
VERIFY EMS -100.0/ΔV/STBY

GDC ALIGN
VERIFY ORDEAL
ALT SET = 40 NM

96:00

LM FLIGHT PLAN

MCC-H | 1154 CST | CDR | LMP | NOTES

96:00 (32022)

LM TIMELINE BOOK

VERIFY UNDOCKING ATTITUDE

:05

(22012)

V48 (22012)
V06N20

:10

P47 THRUST MONITOR

CSM/LM UNDOCKING AND SEPARATION — 96:13:31

96:15

YAW LEFT 60°, PITCH UP 90°

SEPARATION PHOTOGRAPHY
LM3/DAC & DC

DOFF HELMET & GLOVES

DOFF HELMET & GLOVES
REPORT: V06N20 ANGLES & GET

VHF B XMTR-OFF, BIOMED-LEFT
PCM-HI

:20

DPS THROTTLE CHECK

CONFIGURE CAMERAS FOR
CABIN PHOTOS
LM/DAC & DC

MSFN

DPS PRESS & CHECKOUT

:25

LM CABIN PHOTOS
AGS ACTIVATION

LOAD AGS ABORT CONSTANTS

96:30

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	96:00 - 96:30	5/12	3-100

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1154 CST

96:00
(21101)
(x1111)

SIM EXP STATUS
(*0000)
(01214)

PERFORM UNDOCKING SWITCH CONFIGURATION

UNDOCKING SWITCH CONFIGURATION
- ATT DB - MIN
- RATE - LOW
- RHC PWR NORM - AC/DC
- RHC PWR DIR - MNA/MNB
- AUTO RCS (12) - MNA/MNB
- CB DOCKING PROBE (2) - CLOSED
- DSE (HBR/RCD/FWD/CMD RESET)

V06N20E (AT LM REQUEST)
P41 (TRIM)
BMAG (3) - ATT 1/RATE 2
SC CONT - SCS
V48 (11101)
(x1111)
RHC & THC - ARMED

(11101)
(x1111)
96:10

UNDOCKING CHECKLIST

NOTE: UNDOCKING MAY OCCUR:
1. FROM 45 MIN EARLY TO 8 MIN LATE ON THE NOMINAL INERTIAL (IMU) ATTITUDE
2. FROM TIG TO 8 MIN LATE ON THE NOMINAL INERTIAL (IMU) ATTITUDE OR THE NOMINAL LOCAL VERTICAL (ORDEAL) ATTITUDE
3. FROM 8 MIN LATE TO 40 MIN LATE ON THE NOMINAL LOCAL VERTICAL (ORDEAL) ATTITUDE

UNDOCK/SEPARATION (000.090/104.000)
_____:_____:_____.____

TIG: 96:13:30.8
BT: 3.4 SEC
ΔVT: 1.0 FPS
ULLAGE: N/A
ORBIT: 60.5 x 8.9

DAC - OFF
RECORD MAG # ____, FR # ____
ACQ MSFN HGA P -63, Y 159

MSFN CMDS:
DSE DUMP

96:20

NOTE: WILL LOSE LOCK UNTIL MNVR IS COMPLETED

V49 MNVR TO LOW ALT LDMK TRK PAD ATT (96:34)
OMNI C

MSFN

MONITOR S-BAND

MSFN UPDATE:
P24 T2 TIME (IF REQD)

CONFIGURE CAMERA: (LDMK TRK)
CM/DAC/SXT/CEX (EXP-PAD) 1 fps (3x MAG)

MAG (BB) ____, MAG # ____
UTILITY PWR - ON

96:30

UNDOCKING CHECKLIST

DAC - ON
59:30 EMS MODE - NORM
THC PWR - ON

00:00 PROBE EXT/REL - EXT/REL (MOM)
VERIFY PROBE EXTENDED, LM ATTACHED
ALLOW MOTION TO DAMP (5 SEC)
PROBE EXT/REL - EXT/REL (HOLD)(< 20 SEC)
AFTER 2 SEC XLATE (4 JET) AFT
FOR ~ 3 SEC (VGX to + 2.0)
AFTER PROBE/DROGUE DISENGAGED,
PROBE EXT/REL - OFF
CB DOCKING PROBE (2) - OPEN
THC & RHC - LOCKED
THC PWR - OFF
POO
SC CONT - CMC
ATT DB - MAX
ΔV CG - CSM
BMAG (3) - RATE 2
RHC PWR DIR - OFF
EMS FUNC - ΔV SET/VHF RNG
EMS MODE - VHF RNG
AT AOS:
VHF ANT - LEFT
VHF AM A - OFF
VHF AM B - DUPLEX
VHF RNG - RNG (DSE VOICE USE MARGINAL)
VHF AM RCV ONLY - OFF

P30 MANEUVER

SET STARS	C R	S C	M S/G	S N	E &	P N	PURPOSE / PROP/GUID	
	+			N	/	A	WT	N47
P_{ALIGN} ___ ___ ___		O	O	N	/	A	P_{TRIM}	N48
P_{ALIGN} ___ ___ ___		O	O	N	/	A	Y_{TRIM}	
Y_{ALIGN} ___ ___ ___	+	O	O				HRS	GETI
	+	O	O	O			MIN	N33
	+	O					SEC	
ULLAGE _____	+	0	0	0	0	0	ΔV_X	N81
_____	+	0	0	0	0	0	ΔV_Y	
_____	-	0	0	0	1	0	ΔV_Z	
_____	X	X	X				R	(000)
	X	X	X				P	(104)
	X	X	X				Y	(000)

LM FLIGHT PLAN

MCC-H	1224 CST	CDR	LMP	NOTES
	96:30 (22012)			
UPDATE TO LM AGS K-FACTOR REV 12 LS TCA		LANDING RADAR CHECKOUT	V47 AGS INITIALIZATION ALIGN AGS TO PGNS	
	:35	MNVR TO RR CHECK ATT	AGS CONTROL CHECK	
	:40	CONFIGURE CAMERAS FOR TCA LM3/DAC LM/DC		
	96:45	PHOTOGRAPH LDG SITE		
UPDATE TO LM CSM CIRC PAD NO PDI+12 ABORT PAD PDI PAD PDI EARLY ABORT PAD PDI LATE ABORT PAD T2 ABORT PAD T3 TIG		RENDEZVOUS RADAR CHECKOUT VHF/RR RNG COMPARE		
	:50			
		P52 IMU REALIGN OPTION 3, REFSMMAT (LDG SITE ORIENT)		
	:55			
	97:00			

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	96:30 - 97:00	5/12	3-102

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

96:30
(11101)
(X1111)

RR XPNDR - PWR

SIM EXP STATUS
(*0000)
(01214)

(11102)
(X1111)

V48 (11102)
(X1111)

P20 OPT 2 (LOW ALT LDMK TRK)
N78 (+090.00)
(LOAD LDMK PAD ROLL ANGLE)
N79 (-2.0000)
(+000.50)
N34 (LOAD T2 TIME)
PRO

(P20)
(-2.000)
(0.5°DB)
96:40

MSFN OMDS:
DSE RECORD

P24 (L/S LDMK 16-X)
OPT ZERO - OFF
OPT MODE - CMD
OPT TEL TRUN - SLAVE TO SXT
OPT COUPLING - RSLV
OPT SPEED - HI
0:00 - T1 (HORIZON) DET - RESET/START
DAC - ON

P52 IMU REALIGN

N71: __ __ , __ __
N05: __ __ __ . __ __
N93:
X __ __ . __ __ __
Y __ __ . __ __ __
Z __ __ . __ __ __ .
GET __ __ __ . __ __ . __ __

1:38 - T2 (AUTO PITCH RATE BEGINS) OPT MODE - MAN, TAKE MARKS
2:08 - TCA
2:30 - T3 (LDMK LOSS) DAC - OFF

STOP PITCH RATE AT P ~~000~~ 082
VHF RNG - RESET, COMPARE RR AND VHF RANGE
ACQ MSFN HGA P -68, Y ~~216~~ 93
RECORD MAG : ____, REMOVE & STOW DAC

(11102)
(X1111)

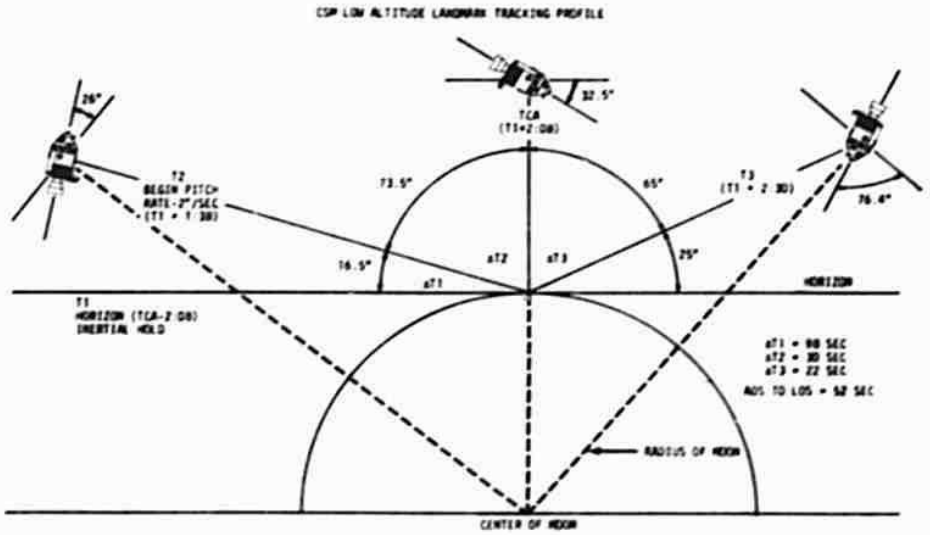
96:50

MSFN OMDS:
DSE DUMP

P00
P52 (OPTION 3)
(LDG SITE ORIENT) BACKUP STARS 45 & 44
REPORT: GYRO TORQUING ANGLES

GDC ALIGN
V49 MNVR TO COAS CALIB ATT (97:01)
(060,251,354) HGA P 37, Y 257

97:00



P24 LDMK TRACKING

TOT: (1/60)

T_1 __ __ __ : __ __ : __ __

T_2 __ __ __ : __ __ : __ __ . __ (96:45:15.7)

TCA __ __ __ : __ __ : __ __

T_3 __ __ __ : __ __ : __ __ .

P __ __ __ °P (015) __ __ __ °Y (296) __ __ __ °(T2 ACQ) (000)

N or S M __ __ / SA __ __ TA __ __ (T2 ACQ)

ACQ	16-1	16-2	16-3	16-4	16-5	16-6
LAT	-08.859	-08.936	-09.000	-09.056	-09.122	-09.181
LONG/2	+07.741	+07.747	+07.745	+07.650	+07.821	+07.838
ALT	-000.09	-000.11	-000.14	-000.20	+000.06	+000.03

LM FLIGHT PLAN

MCC-H	1254 CST	CDR	LMP	NOTES
	97:00 (22012)			
UPLINK TO LM CSM & LM S.V. (CIRC - 10) E-MEMORY DES TARGETING	:05	COAS CALIBRATION		
	:10	LPD CALIBRATION	V47 AGS INITIALIZATION ALIGN AGS TO PGNS	
	97:15			
UPDATE TO LM GYRO DRIFT COMP (IF REQD) PIPA BIAS	:20	MNVR TO AGS CAL ATT	VHF B XMTR-DATA, PCM-LO	
	:25			
	97:30			

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	97:00 - 97:30	5/12	3-104

FLIGHT PLANNING BRANCH

97:00

(11102)
(X1111)

P52 (COAS CALIB)
USE 26 (SPICA)

SIM EXP STATUS
(*0000)
(01214)

MSFN UPDATE:
CIRC PAD
PADS E-N (98:15)
PIPA BIAS (IF REQD)

COAS CALIB - N92

SHAFT: ___ ___ ___ • ___ ___

TRUN: ___ ___ • ___ ___ ___

MSFN UPLINK:
CSM S.V.(CIRC-10)
CIRC TARGET LOAD

P30; VERIFY CIRC TIG AND ΔV'S
V49 MNVR TO CIRC BURN PAD ATT (97:17)
HGA P -29, Y 171

M S F N

97:10

GDC ALIGN
VERIFY ORDEAL
ALT SET = 50 NM

PRE-SPS BURN SIM PREP (CUE CARD)
V48 (10101)
(X1111)
SET DET COUNTING UP TO CIRC

(10101)
(X1111)

(P40)
(0.5°DB)

P40 (TRIM)

MSFN UPDATE:
GO/NO-GO FOR CIRC

VHF AM B - OFF
VHF AM A - SIMPLEX
VHF RCV ONLY - B DATA
VHF RANGING - OFF

MSFN CMDS:
DSE RECORD

97:20

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

97:30

P30 MANEUVER

SET STARS	C S	I P	R S/C	G	&	N	PURPOSE / PROP/GUID
	•						WT N47
R_{ALIGN} ___ ___ ___		O	O		•		P_{TRIM} N48
P_{ALIGN} ___ ___ ___		O	O		•		Y_{TRIM}
Y_{ALIGN} ___ ___ ___	•	O	O				HRS GETI
	•	O	O	O			MIN N33
	•	O			•		SEC
ULLAGE ___						•	ΔV_X N81
___						•	ΔV_Y
___						•	ΔV_Z
___	X	X	X				R (000)
	X	X	X				P (141)
	X	X	X				Y (358)
	•					•	H_A N44
						•	H_P
	•					•	ΔVT
HORIZON/WINDOW ___	X	X	X		•		BT
___	X				•		ΔVC
___	X	X	X	X			SXTS
___	•				•	O	SFT
___	•			•	O	O	TRN
	X	X	X				BSS
	X	X				•	SPA
	X	X	X			•	SXP

LM FLIGHT PLAN

MCC-H	1324 CST	CDR	LMP	NOTES
	97:30		AGS CALIBRATION	
	(22012)			
	:35			
	:40			CSM CIRC 97:42
		P76 UPDATE CSM S.V.	V47 INITIALIZE AGS	
	97:45			
	REV 13	P63 IGNITION ALGORITHM TEST		
		MNVR TO PDI ATT		
	:50		CHECK ECS, RCS, EPS, APS	
	:55			
	(22112)	V48 (22112)	CAMERA PREP FOR PDI LM3/DAC	
			CAMERA PREP FOR EARTHRISE LM/DC	
		PRE-PDI ECS CHECK		
	98:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	97:30 - 98:00	5/12-13	3-106

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

97:30
(P40)
(0.5°DB)
(10101)
(x1111)

SIM EXP STATUS
(*0000)
(31000)

MANUAL START — CIRC BURN TABLE — RESTART WITH $\Delta V_{LOS} > 20$ fps

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	±10° TERMINATE	BT +1 SEC	IF X,Y,&Z ARE <5 FPS TRIM TO <0.2 FPS DO NOT TRIM IF ANY RESIDUAL >5 FPS

If (−) V_{gy} or (+) V_{gz}, ROLL & USE −Z THRUSTERS

97:40

CSM CIRCULARIZATION (000,047/141,358)

_____:_____:_____._____

TIG: 97:41:44.6
BT: 5.9 SEC
ΔVT: 99.6 FPS
ULLAGE: 2 JET, 16 SEC
ORBIT: 68.2 x 51.8

(10101)
(x1111)

P00 VOICE P76 BURN DATA TO LM
V82

V49 MNVR TO LDMK TRK ATT EXCEPT IN ROLL (98:00)
(060,276,000)
SET HGA P 39, Y 288 FOR AOS ACQ

REV 13

97:50

UNSTOW CSM RESCUE BOOK

POST SPS BURN SIM PREP (CUE CARD)

98:00

CIRC REQUIRES − CMC
ISS
0-DAC
4 SERVO LOOPS
1 DSKY
2 BANKS
7 of 8 ROLL THRUSTERS
3 of 4 PEY THRUSTERS

BURN STATUS REPORT

X	X			‡		±TIG
X	X			‡		BT
						V_{gx}
			TRIM			
X	X	X				R
X	X	X				P
X	X	X				Y
						V_{gx}
						V_{gy}
						V_{gz}
						ΔV_c
X						FUEL
X						OX
X						UNBAL

LM FLIGHT PLAN

MCC-H	1354 CST	CDR	LMP	NOTES
	98:00 (22112)	DON HELMET & GLOVES PRE-PDI SWITCH CHECK	DON HELMET & GLOVES PRE-PDI SWITCH CHECK	
			BATS 5 & 6 NORM FEED-ON	
	:05			
UPLINK TO LM LM S.V.(PDI - 10) RLS-2 UPDATE TO LM AGS RLS LPD BIAS	:10	REPORT: AGS CAL NO. ED BAT VOLTS ASC BATS ON TIME	PCM-HI VHF B XMTR - OFF VHF A XMTR - VOICE/RNG	
	98:15			
	:20	P63 POWERED DESCENT INITIATION	V47 AGS INITIALIZATION TARGET AGS FOR ABORT AUDIO MODE - VOX	
UPDATE TO LM N69 BACKUP RLS	:25		ALIGN AGS TO PGNS	
		LDG RDR ON FINAL TRIM		
	98:30			

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	98:00 - 98:30	5/13	3-108

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1354 CST

98:00
(10101)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

CONFIGURE CAMERA: (LDMK TRK)
CM/DAC/SXT/CEX (EXP-PAD) 1 fps (3.8% MAG)

MAG (BB) _____, MAG : _____
UTILITY POWER - ON

GDC ALIGN
VERIFY ORDEAL
ALT SET = 60 NM
ACQ MSFN HGA P 39, Y 288

98:10

MSFN CMDS:
DSE DUMP

REPORT: BURN STATUS

MSFN UPDATE:
P24 LDMK TRACK (98:50)

MSFN UPLINK:
CSM S.V. (P24 T2 ACQ)
LM S.V. (PDI-10)

98:20

P20 OPT 5 (LDMK TRK ATT) (98:34)
N78 (+000.00)
(-068.00)
(+000.00)
N79 (+000.50)
(000,338/276,000) OMNI D

(P20)
(0.5°DB)

MSFN

MSFN UPDATE:
GO/NO-GO FOR PDI

98:30

E, F, G, H

PURPOSE		NO PDI+12 ABORT					
GETI N33	HRS	◆	0	0			
	MIN	◆	0	0	0		
	SEC	◆	0			◆	
N84 LOCAL VERT	ΔVX						◆
	ΔVY						◆
	ΔVZ						◆
GETI CSI N11	HRS	◆	0	0			
	MIN	◆	0	0	0		
	SEC	◆	0			◆	
GETI TPI N37	HRS	◆	0	0			
	MIN	◆	0	0	0		
	SEC	◆	0			◆	

K

PURPOSE		PDI ABORT LATE PAD					
GETI TPI N37	HRS	◆	0	0			
	MIN	◆	0	0	0		
	SEC	◆	0			◆	

L, M

PURPOSE		T2-1 ABORT PAD					
GETI T2	HRS	◆	0	0			
	MIN	◆	0	0	0		
	SEC	◆	0			◆	
GETI TPI N37	HRS	◆	0	0			
	MIN	◆	0	0	0		
	SEC	◆	0			◆	

I

PURPOSE		PDI PAD					
GETI PDI N33	HRS	◆	0	0			
	MIN	◆	0	0	0		
	SEC	◆	0			◆	

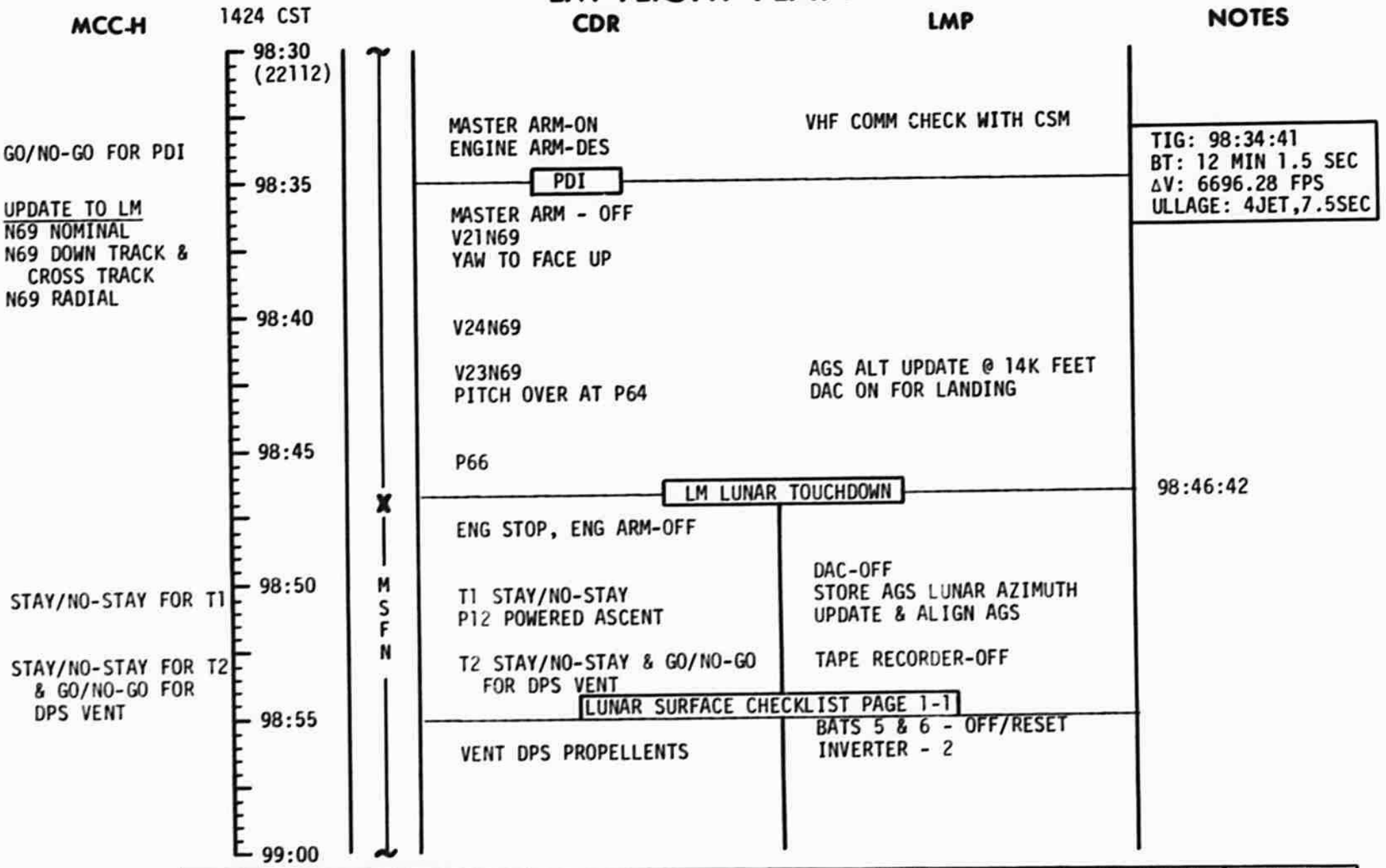
J

PURPOSE		PDI ABORT EARLY PAD					
GETI TPI N37	HRS	◆	0	0			
	MIN	◆	0	0	0		
	SEC	◆	0			◆	

N

PURPOSE		T3 ABORT PAD					
GETI T3	HRS	◆	0	0			
	MIN	◆	0	0	0		
	SEC	◆	0			◆	

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	98:30 - 99:00	5/13	3-110

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

98:30
(P20)
(0.5°DB)
(10101)
(X1111)

HGA REQUIRED for MSFN to LM VIA CSM RELAY

SIM EXP STATUS
(*0000)
(01214)

VHF COMM CHECK WITH LM

P24 (L/S LDMK 16-3)
OPT ZERO - OFF
OPT MODE - CMC

LM PDI (98:34:41)
_____:____:____:____

0:00 - T1 (HORIZON) DET - RESET/START

MSFN CMDS:
DSE RECORD

98:40

3:50 - DAC - ON

4:50 - T2 (LDMK ACQ) OPT MODE - MAN,
TAKE MARKS 10 SEC APART

6:30 - TCA
7:18 - T3 (LDMK LOSS) DAC - OFF

P00
V48 (10111)
(X1111)
V49 MNVR TO P52 ATT (98:58)
(140,296,000) HGA P -31, Y 310

(10111)
(X1111)

MSFN

LM TOUCHDOWN (98:46:42)
____:____:____.____

98:50

CONFIRM STAY/NO STAY FOR T1

VHF AM A - OFF (CTR)
VHF RCV ONLY - OFF
CONFIRM STAY/NO STAY FOR T2
RNDZ XPNDR - OFF
V44 (SET LUNAR SURFACE FLAG)

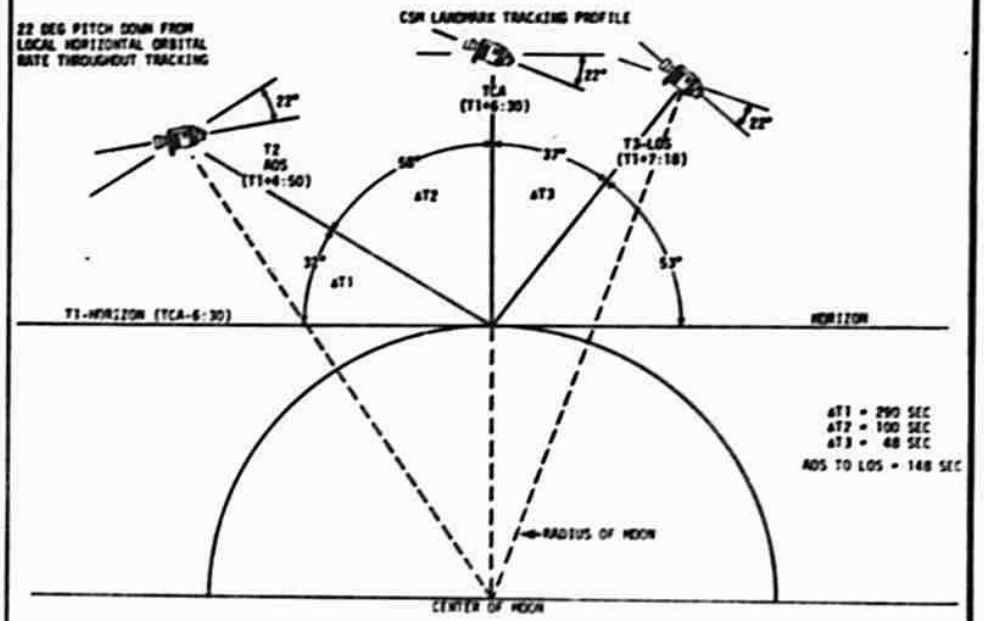
MSFN CMDS:
DSE DUMP

P52 (OPTION 3)
(LDG SITE ORIENT)

P52 IMU REALIGN

N71: __ __, __ __
N05: __ __ . __ __
N93:
X __ __ . __ __ __
Y __ __ . __ __ __
Z __ __ . __ __ __ .
GET __ __ __ . __ __ . __ __

99:00



P24 LDMK TRACKING
TGT: 16 - 3 (1/60)

T_1 __ __ __ ° __ __ ° __ __
T_2 __ __ __ ° __ __ ° __ __
TCA __ __ __ ° __ __ ° __ __
T_3 __ __ __ ° __ __ ° __ __
R __ __ __ °P __ __ __ °Y __ __ __ ° (T2 ACQ)
N or S NM __ __ / SA __ __ TA __ __ (T2 ACQ)
N89
LAT -09.000
LONG/2 +07.745
ALT -000.14

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-111

LM FLIGHT PLAN

MCC-H	1454 CST	CDR	LMP	NOTES
	99:00 (22112)	DOFF HELMET, GLOVES & RESTRAINTS CLOSE WINDOW SHADES	DOFF HELMET, GLOVES & RESTRAINTS REPORT: DEDA 047, 053 544, 545, 546	
	:10	P57 - LUNAR SURFACE ALIGN OPTION 3, REFSMMAT A/T-3, GRAVITY & ONE CELESTIAL BODY (LANDING SITE ORIENT) PARK IMU PLATFORM	AGS LUNAR SURFACE GYRO CALIBRATION	
STAY/NO-STAY FOR T3	:20	LM POWER DOWN PARK RR ANTENNA FOR STAY LGC STANDBY, IMU OFF OPEN WINDOW SHADES CONFIGURE FOR POWERDOWN	ALIGN AGS TO PGNS STORE AGS LUNAR AZIMUTH BATS 2,1 - OFF/RESET BAT L (LMP) - ON CHECK BUS VOLTS BIOMED - RIGHT	
UPDATE TO LM L/O TIMES FOR REVS 15 - 19	99:30	CABIN CONFIGURATION FOR LUNAR STAY STOW ARMRESTS, COAS, LEVA BAGS UNSTOW PLSS ON FLOOR STOW SLEEP RESTRAINTS TRANSFER RCU'S TO LCG BAG DEPLOY LM EVA ANTENNA DEPLOY ONE JETT BAG, STOW THREE		CSM REV 14
	:40			
	:50			
	100:00			

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	99:00 - 100:00	5/13-14	3-112

FLIGHT PLANNING BRANCH

1454 CST

CSM FLIGHT PLAN

99:00
(10111)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

REPORT: GYRO TORQUING ANGLES
GDC ALIGN

CONFIGURE FOR URINE DUMP

MSFN UPLINK:
CSM S.V.

99:10

MSFN

DOFF PGA

ZIP SUIT & INSTALL ELECTRICAL COVER PRIOR TO STOWING (PGA BAG)
STOW UCTA (PGA BAG)

MSFN CMDS:
DSE RECORD

99:20

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

O_2 FUEL CELL PURGE
WASTE WATER DUMP
URINE DUMP

99:30

99:30
(10111)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

TERMINATE WASTE WATER DUMP AT 10%

99:40

REV 14

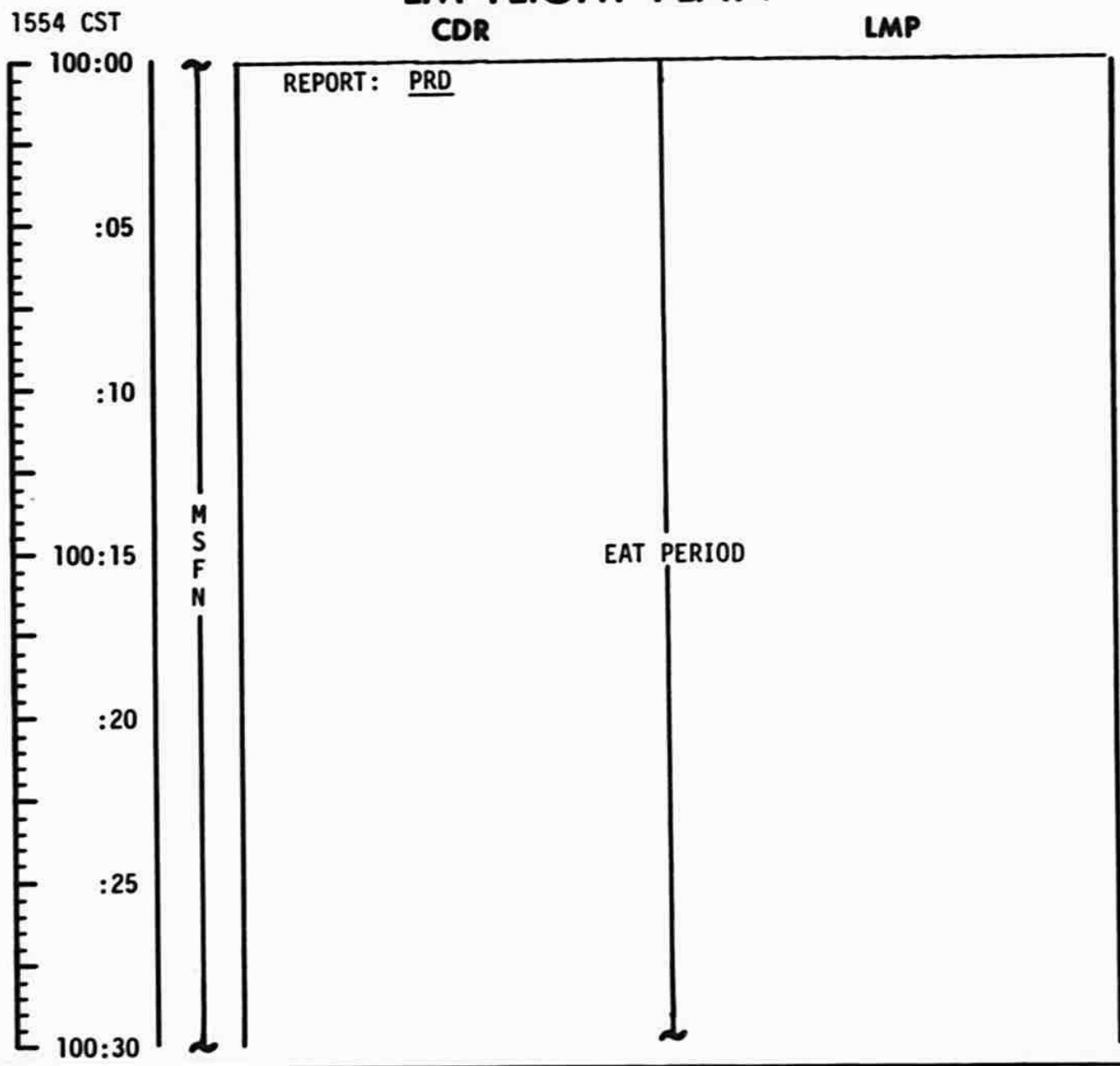
99:50

COMPARE VIZ WITH MONOCULAR & BINOCULAR

100:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-113

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	100:00 - 100:30	5/14	3-114

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1554 CST

100:00
(10111)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

ACQ MSFN HGA P -31, Y 310

MSFN UPDATE:
P24 LM VISUAL (100:55)
SIM EXP STATUS
DSE VOICE STATUS

MSFN CMDS:
DSE DUMP

100:10

M
S
F
N

CYCLE CMC MODE - FREE/AUTO
P20 OPT 5 (P24 LM VISUAL TRK ATT)(100:30)
N78 (+000.00)
(-080.00)
(+000.00)
N79 (+000.50)
(000,350/296,000) OMNI D

(P20)
(0.5°DB)

100:20

100:30

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-115

LM FLIGHT PLAN

MCC-H | 1624 CST | CDR | LMP | NOTES

100:30

:35

EAT PERIOD

:40

-1:45

CABIN PREP FOR EVA-1

STOW ALL LOOSE ITEMS NOT
REQUIRED FOR EVA

CONFIGURE 500MM CAMERA

CONFIGURE ETB FOR EVA

100:45

MSFN

:50

:55

-1:30

UNSTOW EVA-1 PREP & POST CARD

STOW LUNAR SURFACE CHECKLIST

101:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	100:30 - 101:00	5/14	3-116

FLIGHT PLANNING BRANCH

1624 CST

CSM FLIGHT PLAN

100:30
(P20)
(0.5°DB)
(10111)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

P24 (LM VISUAL TRACK)
OPT ZERO - OFF
OPT MODE - CMC

0:00 - T1 (HORIZON) DET - RESET/START

MSFN CMDS:
DSE RECORD

100:40

4:07 - T2 (LM ACQ) OPT MODE - MAN, TAKE MARKS 10 SEC APART

6:30 - TCA
6:58 - T3 (LM LOSS)

(P20)
(2.5°DB)

P20 OPT 5 (-X FWD SIM ATT)(100:59)
N79 (+002.50)
HGA P -41, Y 337
REPORT: INITIATION OF 2.5°DB TEST

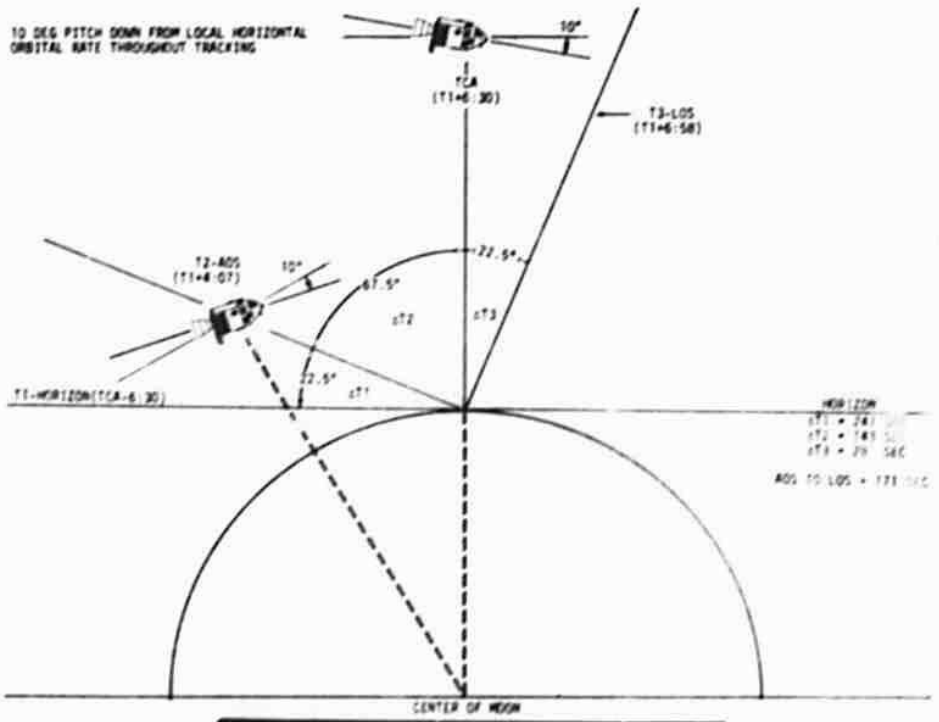
100:50

SIM BASIC CONFIG (CUE CARD)

MSFN CMDS:
DSE DUMP
DATA SYS - ON

101:00

CSM LM TRACKING PROFILE



P24 LDMK TRACKING
TGT: LM VISUAL

T_1	—	—	—	•	—	•	—	—
T_2	—	—	—	•	—	•	—	—
TCA	—	—	—	•	—	•	—	—
T_3	—	—	—	•	—	•	—	—

R ___ °P ___ °Y ___ ° (T2 ACQ)
N or S NM ___ / SA ___ TA ___ (T2 ACQ)
N89
LAT -09.000
LONG/2 +07.758
ALT -000.14

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-117

LM FLIGHT PLAN

MCC-H | 1654 CST | CDR | LMP | NOTES

101:00

EQUIPMENT PREP FOR EVA-1
EMPTY UCTA'S
CHECK PGA ZIPPERS
CDR, THEN LMP DON BOOTS -1:20

:10

CHECK & RESTOW OPS

INSTALL ISS -1:10

APPLY ANTI-FOG TO LEVA'S

:20

STOW HELMET BAG

STOW ETB
UNLOCK FWD HATCH HANDLE -1:00

M S F N

101:30

PLSS DONNING
CONFIGURE LMP PLSS
ATTACH OPS TO PLSS
LMP DON PLSS/OPS
CONNECT RCU -0:50

CDR REPEAT PLSS DONNING

:40

-0:40 CSM REV 15

:50

PLSS COMM CHECK
VERIFY POWERDOWN CB CONFIGURATION
CONFIGURE COMM FOR EVA, BIOMED - OFF, RECORDER - ON
COMM & TM CHECK, REPORT: PLSS O_2 QUANTITY -0:30

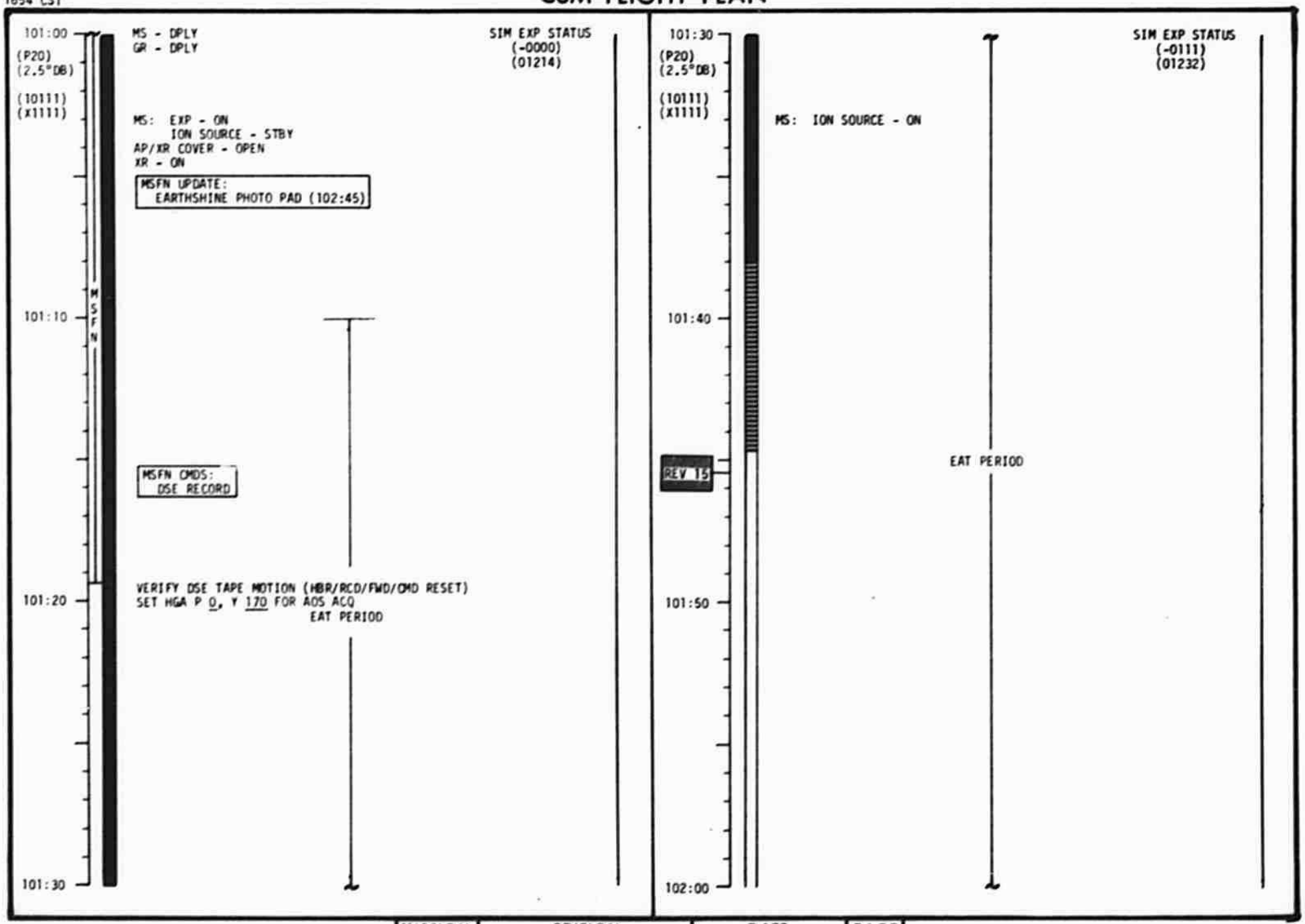
FINAL SYSTEMS PREP

102:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	101:00 - 102:00	5/14-15	3-118

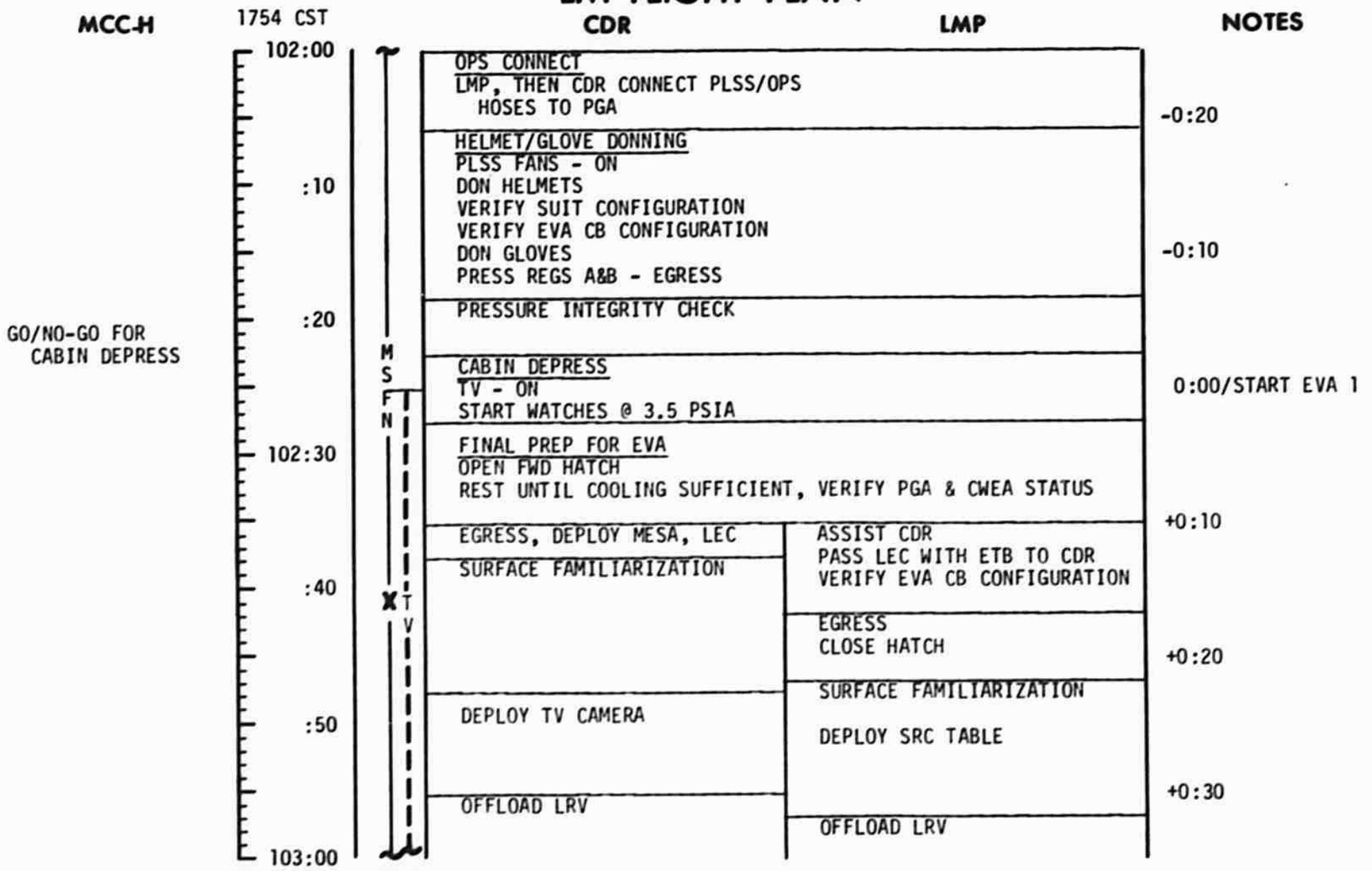
FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-119

LM FLIGHT PLAN

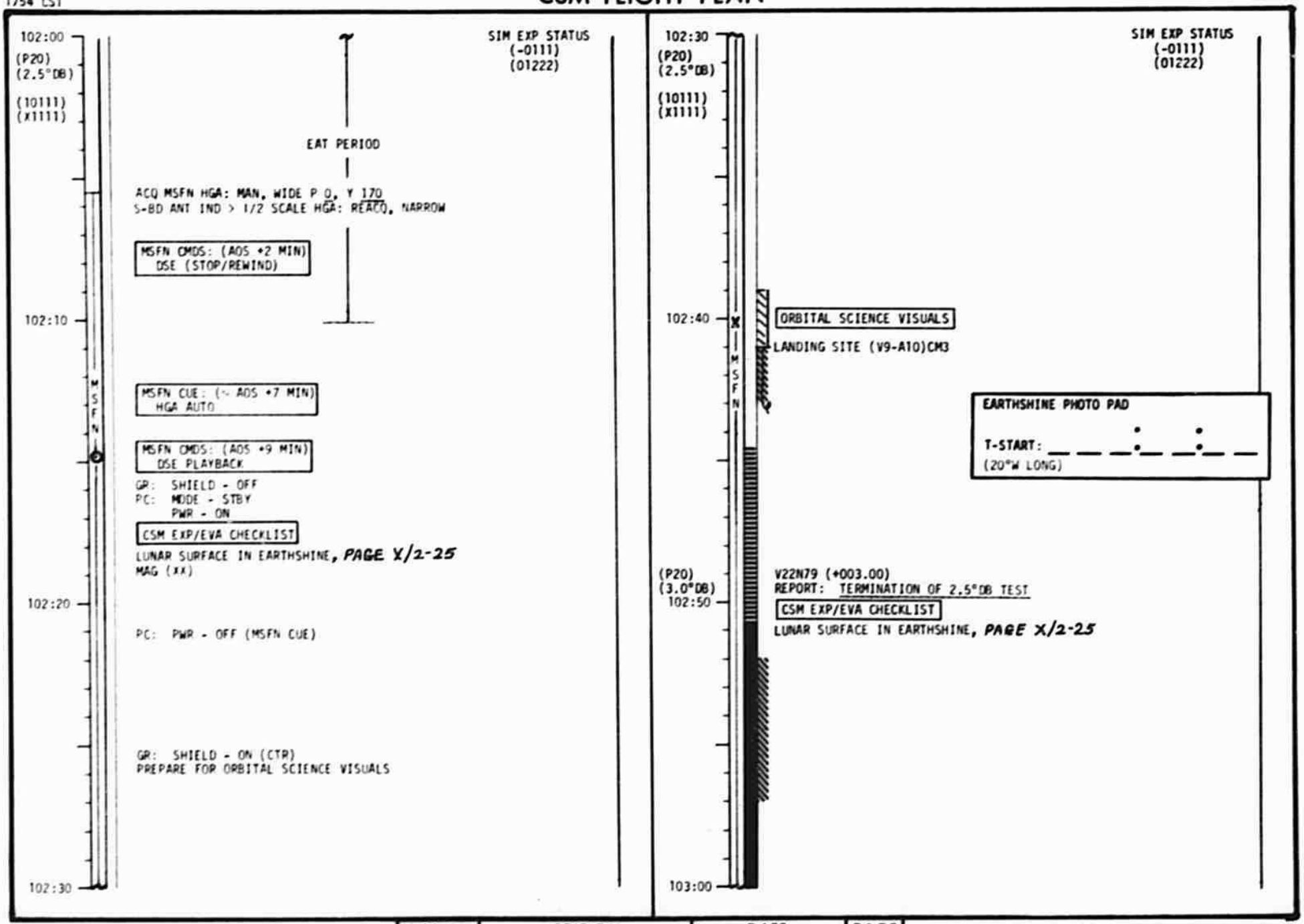


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	102:00 - 103:00	5/15	3-120

FLIGHT PLANNING BRANCH

1754 CST

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A ~~FINAL~~ (4/16)	3/27/72 ~~3/16/72~~	3-121

LM FLIGHT PLAN

MCC-H | 1854 CST

	CDR	LMP	NOTES
103:00			
	SET UP LRV	SET UP LRV	+0:40
:10	CHECK OUT LRV	LM INSPECTION & PANS	
	OFFLOAD FAR UV CAMERA DEPLOY & INITIALIZE CAMERA	LOAD LRV	+0:50
:20		MOVE TV TO LRV	+1:00
103:30	LOAD LRV		+1:10
:40	CONNECT LCRU	INGRESS LM SWITCH TO LOW POWER EGRESS LM CLOSE HATCH	CSM REV 16 +1:20
	DEPLOY FLAG	DEPLOY FLAG	
:50	ALSEP PREP	ALSEP PREP	+1:30
104:00			

TV

MSFN

TV

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	103:00 - 104:00	5/15-16	3-122

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1854 CST

103:00
(P20)
(3.0°DB)
(10111)
(x1111)

MSFN

SIM EXP STATUS
(-0111)
(01222)

MSFN CMDS: (AOS +61 MIN)
DSE REWIND

CONFIGURE CAMERA: (ORBITAL SCIENCE)
CM3/EL/250/CEX-IVL(f5.6,1/125,∞) 85 FR

MAG (NN) ___ FR #___

103:10

M6- RETR TO 8.4 FEET (2 MIN 01 SEC)

MSFN UPDATE:
MAP CAMERA PHOTO PADS (103:34)
PAN CAMERA PHOTO PAD (104:13)

MSFN CMDS: (AOS +68 MIN)
DSE RECORD

MANUALLY ROLL CW 40°

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

(10101)
(x1111)
(P20)
(0.5°DB)
103:20

V48 (10101)(x1111)
P20 OPT 5 (+X FWD SIM ATT)(103:35)
N79 (+000.50)
SET HGA P 10, Y 0 FOR AOS ACQ

M5: ION SOURCE - STBY (BEGIN 4 HOUR OUTGASSING)
~~M6 RETR TO 8.4 FEET (2 MIN 01 SEC)~~

MC/LA COVER - OPEN

103:30

COMPLIMENT PAN CAMERA TO THE NORTH

103:30
(P20)
(0.5°DB)
(10101)
(x1111)

SIM EXP STATUS
(+2121)
(01232)

MC - EXTD

MAP CAMERA PHOTO PAD
T-START: ___ ___ ___:___ ___:___ ___
T-STOP: ___ ___ ___:___ ___:___ ___
(165.0°W TO 2.6°W) (1-1/2 REVS)

LA - ON
IMAGE MTN - ON
MC - ON (T START)
IMAGE MTN - INCR (BP +4 STEPS)/ON

103:40

ORBITAL SCIENCE PHOTOS
SHARONOV (P1-A1,A2)
CM3(f5.6,1/125,∞) 63 FR

REV 16

CHANGE SHUTTER TO 1/250

103:50

CHANGE f-STOP TO f8

IMAGE MTN - INCR (BP +3 STEPS)/ON

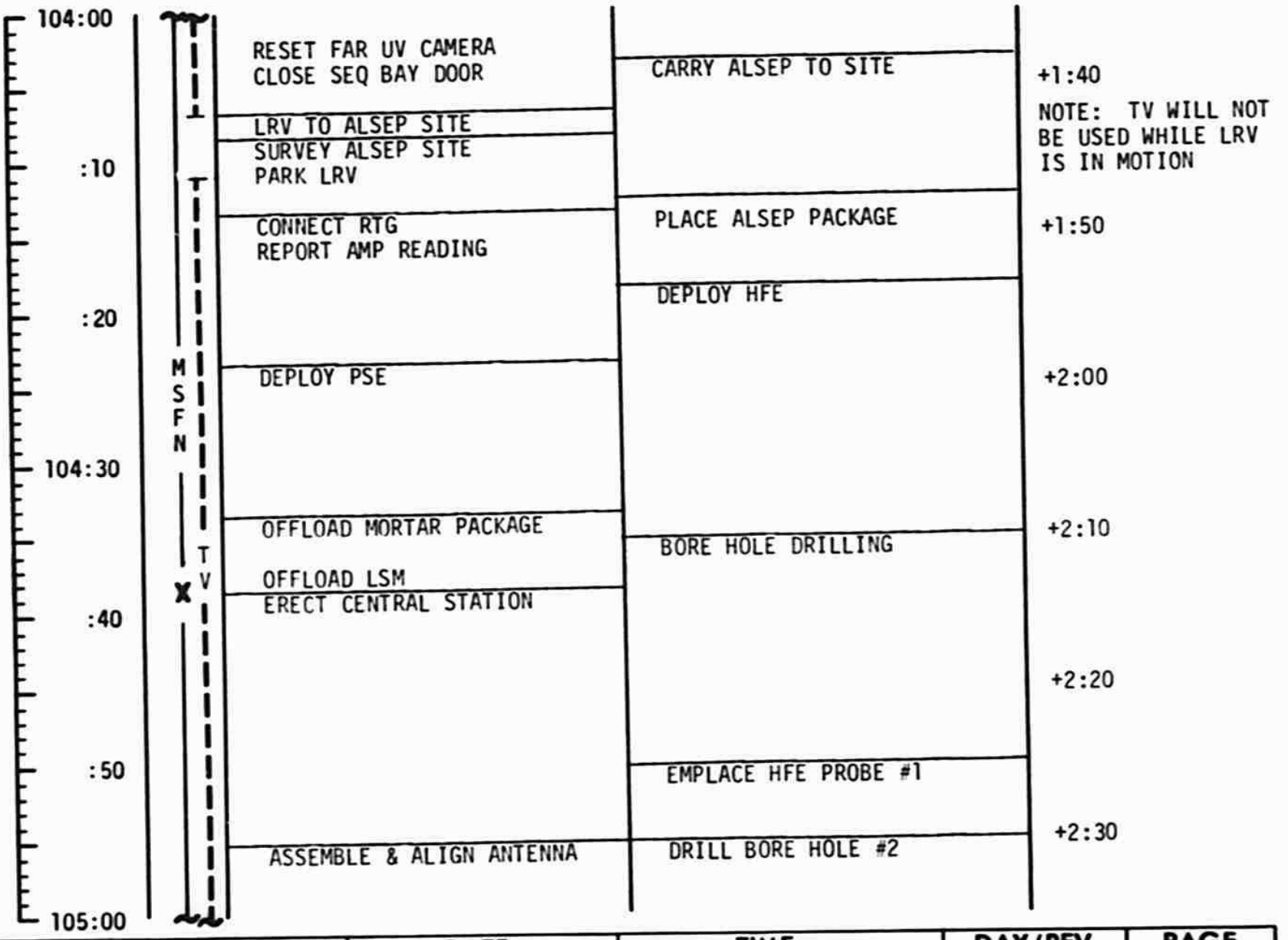
MENDELEEV (P7-A3,A4)
CM5(f11,1/250,∞) 22 FR

104:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE ~~FINAL~~ (4/16)	4/10/72 ~~3/16/72~~	3-123

LM FLIGHT PLAN

MCC-H



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	104:00 - 105:00	5/16	3-124

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1954 CST

104:00
(P20)
(0.5°DB)
(10101)
(X1111)

RECORD FR # ___

SIM EXP STATUS
(+1121)
(02232)

ACQ MSFN: MAN WIDE P 10, Y 0
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN CMDS: (AOS +2 MIN)
DSE (STOP/REWIND)

GR - RETR TO 7.5 FEET (2 MIN 26 SEC)

PC: STBY
STEREO
PWR

104:10

MSFN CUE: (~ AOS +7 MIN)
HGA AUTO

PAN CAMERA PHOTO PAD
T-START: ___ ___ ___:___ ___:___ ___
T-STOP: ___ ___ ___:___ ___:___ ___
(85.2°E TO 7.2°E)

MSFN CMDS: (AOS +9 MIN)
DSE PLAYBACK

PC - OPR (T START)

104:20

IMAGE MTN - INCR (BP +4 STEPS)/ON

MSFN UPDATE
UV PHOTO PAD (104:33)

CSM EXP/EVA CHECKLIST

LUNAR MARIA UV PHOTOGRAPHY, PAGE X/2-22
MAG (00)

104:30

104:30
(P20)
(0.5°DB)
(10101)
(X1111)

SIM EXP STATUS
(+1221)
(22232)

LUNAR MARIA UV PHOTOGRAPHY

UV PHOTO PAD
T-START: ___ ___ ___:___ ___:___ ___
(38°E)

IMAGE MTN - INCR (BP)/ON

104:40

PC - STBY (T STOP)
PC - OFF (MSFN CUE)

V48, RECORD CSM WT.

+						WT	N47

LOAD INTO DAP 80% CSM WT

+	3	1	1	4	6	WT(80%)	N47

REPORT: INITIATION OF P20 WITH REDUCED DAP WT.

104:50

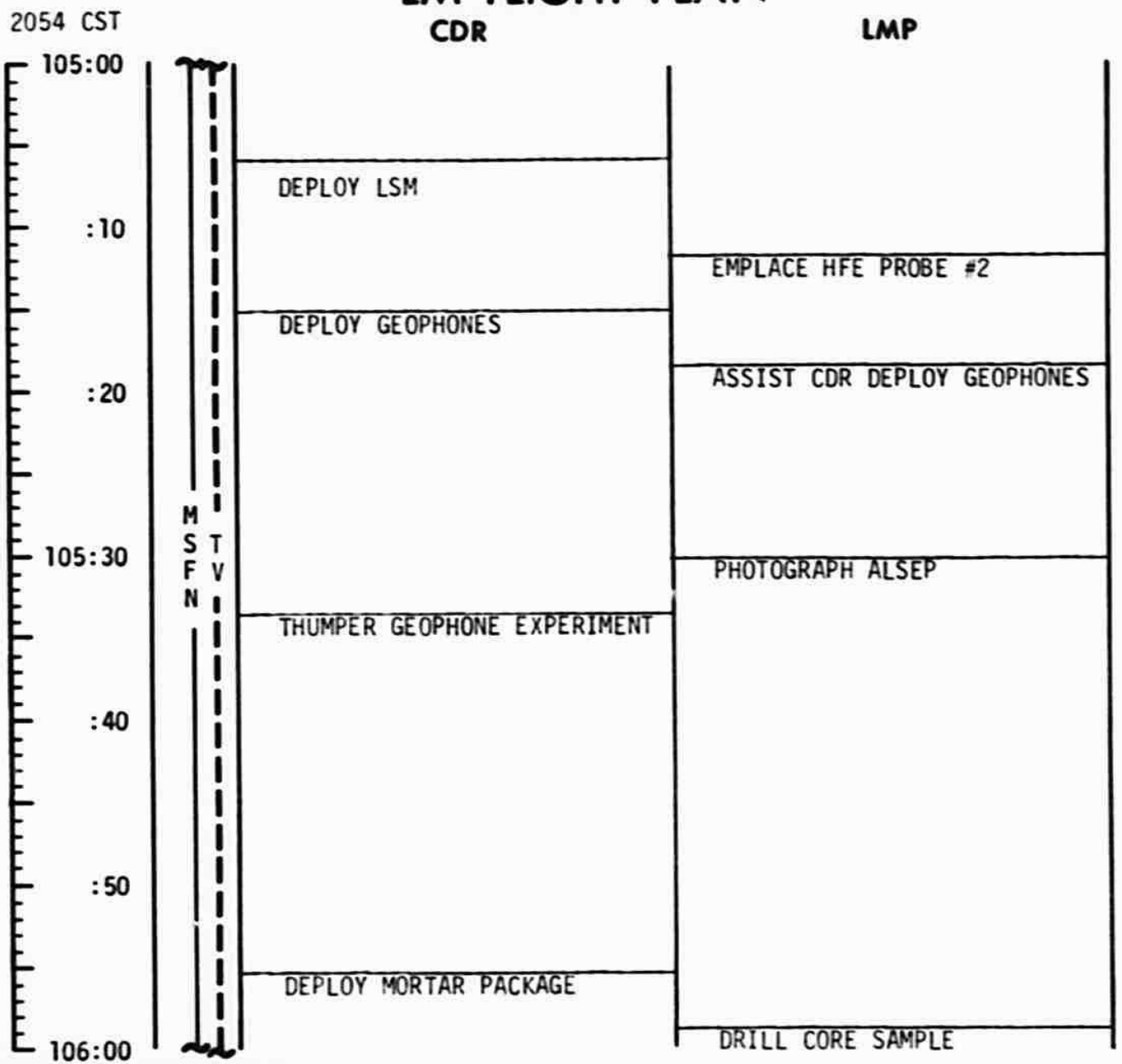
REINER & EARTHSHINE & CM0/NK/SC/PRBW (51.2, 18, ∞) MAG XX

MSFN UPDATE:
PAN CAMERA PHOTO PAD (105:43)

105:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	~~CHANGE A FINAL~~ (4/16)	3/27/72 ~~3/6/72~~	3-125

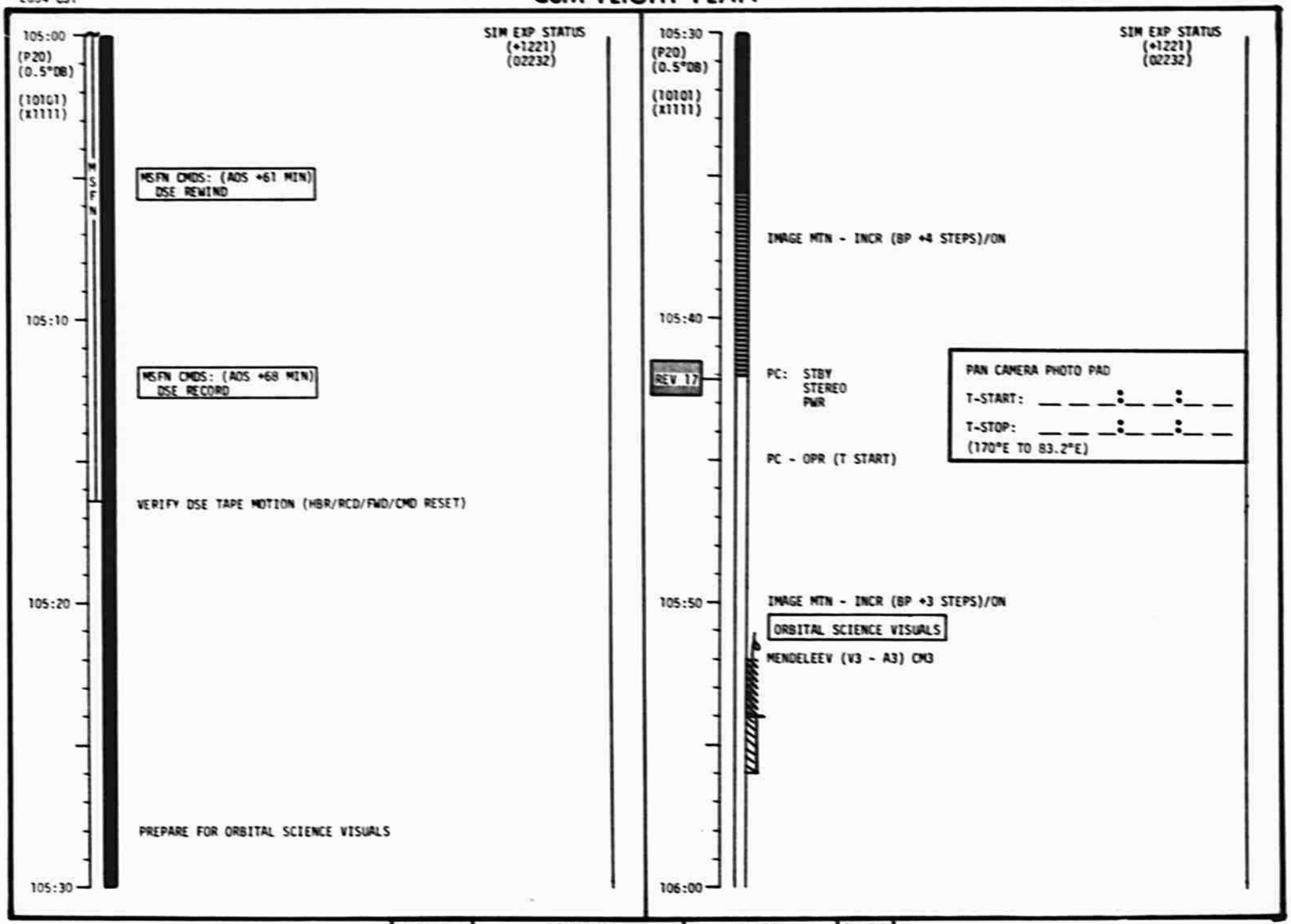
LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	105:00 - 106:00	5/16-17	3-126

FLIGHT PLANNING BRANCH

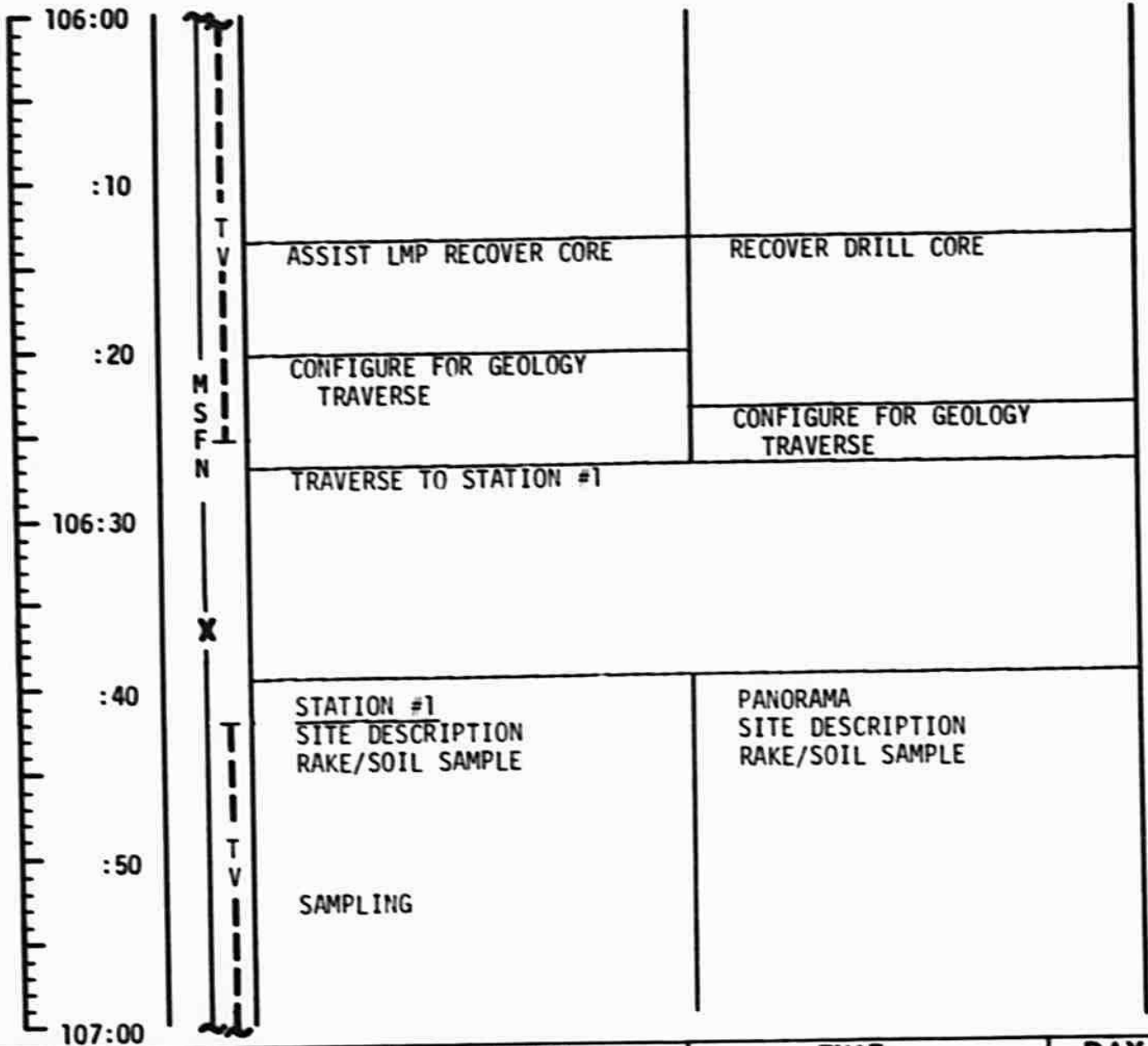
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A ~~FINAL~~ (4/16)	3/27/72 ~~3/16/72~~	3-127

LM FLIGHT PLAN

MCC-H | 2154 CST



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	106:00 - 107:00	5/17	3-128

FLIGHT PLANNING BRANCH

2154 CST

CSM FLIGHT PLAN

106:00
(P20)
(0.5°DB)
(10101)
(X1111)

SIM EXP STATUS
(+1221)
(22232)

ACQ MSFN HGA: MAN, WIDE P 10, Y 0
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN CMDS: (AOS +2 MIN)
DSE (STOP/REWIND)

MSFN CUE: (~AOS +7 MIN)
HGA AUTO

106:10

MSFN CMDS: (AOS +9 MIN)
DSE PLAYBACK

MSFN

PC - STBY (T STOP)

PC - OFF (MSFN CUE)
GR - DPLY
MS - DPLY
CONFIGURE CAMERA: (ORBITAL SCIENCE)
CM5/EL/250/CEX-IVL (f8,1/250,∞) 53 FR

MAG (PP) ___ FR #___

106:20

IMAGE MTN - INCR (BP +4 STEPS)/ON

ORBITAL SCIENCE PHOTOS

CROZIER (P12 - A8,A9)
CM5 (f8,1/250,∞) 33 FR

106:30

106:30
(P20)
(0.5°DB)
(10101)
(X1111)

SIM EXP STATUS
(+1111)
(02232)

IMAGE MTN - INCR (BP)/ON

DESCARTES (P14 - A10)
CM5 (f5.6,1/125,∞) 20 FR

X

RECORD FR # ____

106:40

MSFN

MC - OFF (T STOP)
WAIT 30 SEC
MC - STBY
IMAGE MTN - OFF

106:50

V48, LOAD DAP: INITIAL CSM WT. (104:43)
REPORT: TERMINATION OF P20 WITH REDUCED DAP WT.

GR: SHIELD - OFF

CMC MODE - FREE
P52 (OPTION 3)
(LDG SITE ORIENT)

REPORT GYRO TORQUING ANGLES

P20, CMC MODE - AUTO
GDC ALIGN

107:00

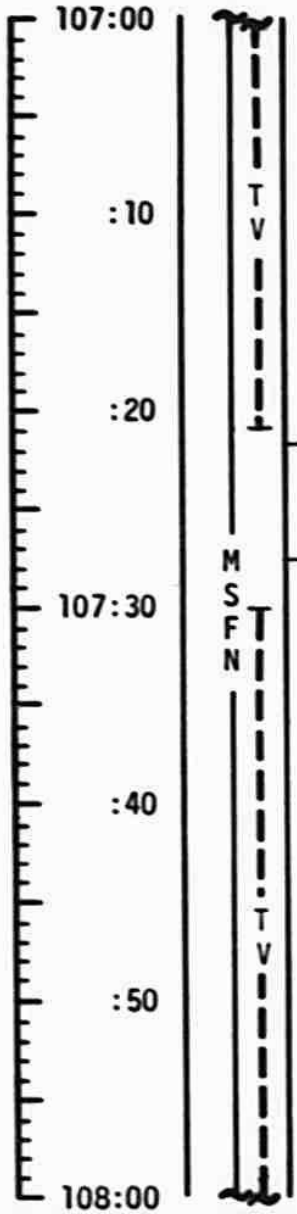
P52 IMU REALIGN

N71: __ __,__ __
N05: __ __ __,__ __
N93:
X __ __,__ __ __
Y __ __,__ __ __
Z __ __,__ __ __
GET __ __ __,__ __ __,__ __ __

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-129

LM FLIGHT PLAN

MCC-H | 2254 CST



CDR	LMP	NOTES
		+4:40
		+4:50
TRAVERSE TO STATION #2		+5:00
STATION #2 SITE DESCRIPTION LPM SITE MEASUREMENT	PANORAMA SITE DESCRIPTION 500MM PHOTOS	+5:10
	SAMPLING	CSM REV 18 +5:20
SAMPLING		+5:30

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	107:00 - 108:00	5/17-18	3-130

FLIGHT PLANNING BRANCH

2254 CST

CSM FLIGHT PLAN

107:00
(P20)
(0.5°DB)
(10101)
(x1111)

MSFN

SIM EXP STATUS
(+1111)
(03232)

MS: ION SOURCE - ON (TERMINATES 4 HOURS OUTGASSING)

MSFN CMDS: (AOS +61 MIN)
DSE REWIND

GR: SHIELD - ON (CTR)

MSFN UPDATE:
MAP CAMERA PHOTO PAD (107:48)

107:10

MSFN CMDS: (AOS +68 MIN)
DSE RECORD

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

107:20

O_2 HEATERS 1&2 - AUTO
O_2 HEATERS 3 - OFF

107:30

107:30
(P20)
(0.5°DB)
(10101)
(x1111)

SIM EXP STATUS
(+1111)
(03222)

P20 OPT 5 (40° S OBLIQUE PHOTO ATT)(107:40)
N78 (+270.00)
(+087.75)
(+180.00)
N79 (+000.50)
(182,000/082,000)
SET HGA P 10, Y 350 FOR AOS ACQ

107:40
REV 18

LA - OFF
IMAGE MTN - ON
MC - ON (T START)
IMAGE MTN - INCR (BP +3 STEPS)/ON

EAT PERIOD

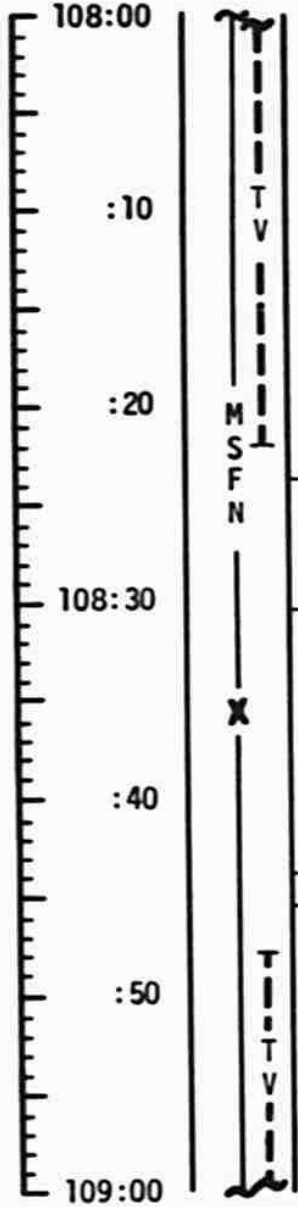
MAP CAMERA PHOTO PAD
T-START: ___ ___ ___:___ ___:___ ___
T-STOP: ___ ___ ___:___ ___:___ ___
(178.9°E TO 1.6°W)

107:50

108:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	~~FINAL~~ CHANGE A (4/16)	3/27/72 ~~3/16/72~~	3-131

LM FLIGHT PLAN



CDR	LMP	NOTES
		+5:40
		+5:50
TRAVERSE TO STATION #3		+6:00
STATION #3 GRAN PRIX ARM MORTAR PACKAGE RETRIEVE CORE	GRAN PRIX ARM MORTAR PACKAGE RETRIEVE CORE	+6:10
TRAVERSE TO LM		+6:20
EVA CLOSEOUT RESET FAR UV CAMERA	EVA CLOSEOUT DEPLOY SWC	+6:30
LOAD ETB		

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	108:00 - 109:00	5/18	3-132

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

108:00
(P20)
(0.5°DB)
(10101)
(x1111)

ACQ MSFN HGA: MAN, WIDE P 10, Y 350
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

SIM EXP STATUS
(*1111)
(04222)

MSFN CMDS: (AOS +2 MIN)
DSE (STOP/REWIND)

MSFN CUE: (~AOS +7 MIN)
HGA AUTO

MSFN CMDS: (AOS +9 MIN)
DSE PLAYBACK

108:10

M S F N

EAT PERIOD

108:20

108:30

108:30
(P20)
(0.5°DB)
(10101)
(x1111)

CONFIGURE CAMERA: (TERMINATOR PHOTOS)
CM3/EL/250/VHBW (f5.6,1/250,-) 6 FR

MAG (SS) ____, FR # ____

SIM EXP STATUS
(*1111)
(04222)

PLAN TO GET FLOOR & RIM, NOT SHADOW

TERMINATOR PHOTOS
PTOLEMAEUS (P18-A11) CM3

108:40

MC - OFF (T STOP)
WAIT 30 SEC
MC - STBY
IMAGE MTN - OFF
MC - RETR

M S F N

MC/LA COVER - CLOSE

108:50
(P20)
(3.0°DB)

P20 OPT 5 (-X FWD SIM ATT)(109:05)
N79 (+003.00)
HGA P 5, Y 170
SET HGA P 0, Y 170 FOR AOS ACQ

ONBOARD READOUT

BAT C ____
PYRO BAT A ____
PYRO BAT B ____
RCS A ____
B ____
C ____
D ____
DC IND SEL - MNA OR B

CSM SYSTEMS CHECKLIST
PRE-SLEEP CHECKLIST PAGE S/1-29
LOGIC PWR (2) - OFF
VHF AM T/R - RCV (PNL 9)
VHF AM A - DUPLEX

MSFN UPDATE:
TEI 26

MSFN UPLINK:
JET-ON MONITOR LOADS

109:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHG B~~FINAL~~ (4/16)	~~3/6/72~~ 4/7/72	3-133

LM FLIGHT PLAN

MCC-H

0054 CST

	CDR	LMP	NOTES
109:00	PHOTOGRAPH FAR UV CAMERA		+6:40
:10	PACK ETB	CLEAN EMU'S	
	PASS ETB TO LMP RESET FAR UV CAMERA	INGRESS LM	+6:50
:20	INGRESS LM		
	CLOSE HATCH, REPRESSURIZE CABIN		+7:00/END EVA-1
	POST EVA-1 SYSTEMS CONFIGURATION VERIFY EVA CB CONFIGURATION DOFF GLOVES, DOFF HELMETS AND STOW IN BAGS		
109:30	TRANSFER TO LM ECS HOSES		
	CONFIGURE AND CONNECT TO LM COMM BIOMED-LEFT		
:40	PLSS O_2 INITIAL RECHARGE		CSM REV 19
	CONNECT LM O_2 HOSE TO LMP PLSS AND FILL		
	CONNECT LM O_2 HOSE TO CDR PLSS AND FILL		
:50	DISCONNECT & STOW LM O_2 HOSE		
	PLSS/OPS DOFFING DISCONNECT OPS & RCU FROM PLSS		
110:00			

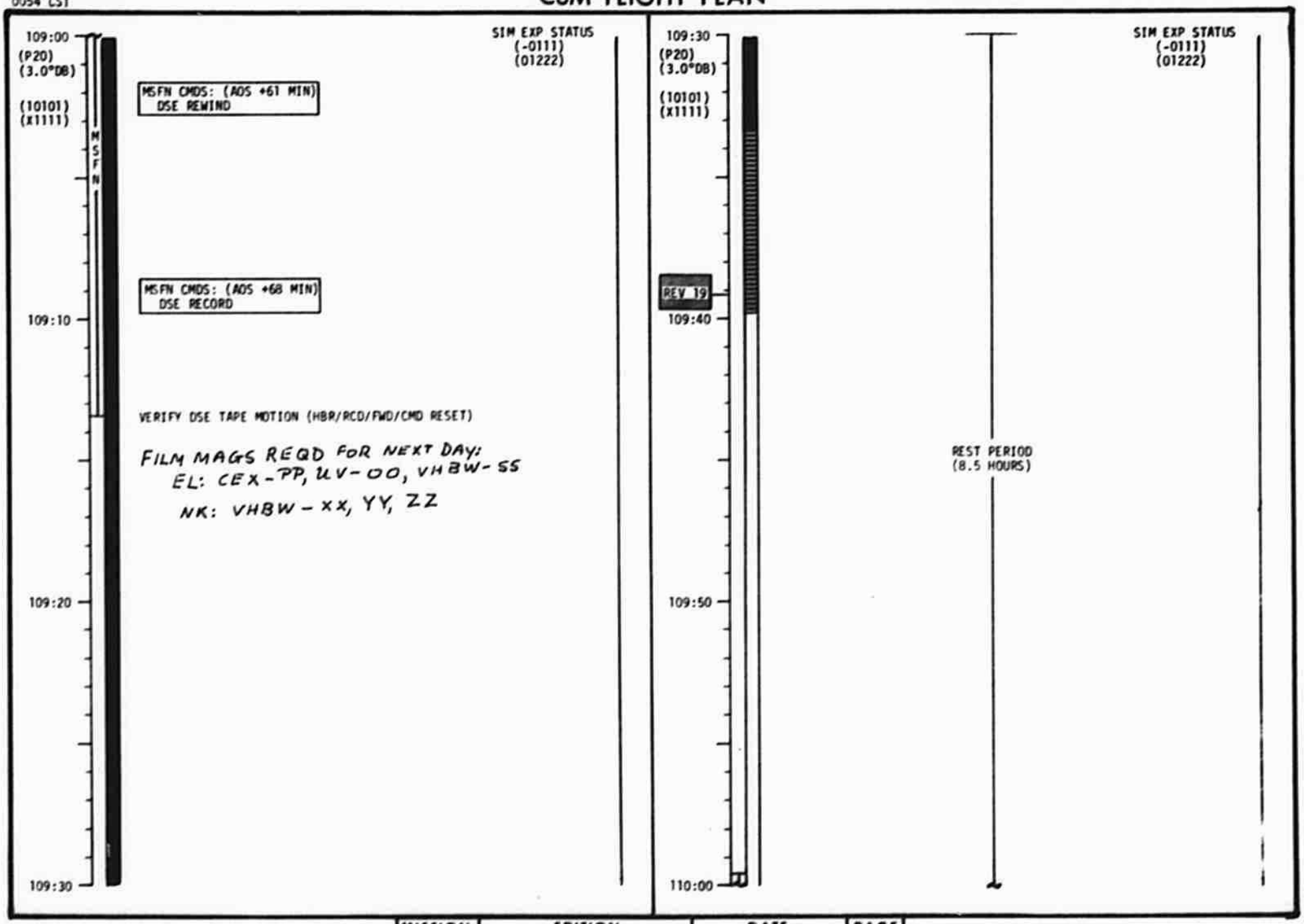
TV

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	109:00 - 110:00	5/18-19	3-134

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	Chg. B. ~~FINAL~~ (4/16)	~~3/17/72~~ 4/7/72	3-135

LM FLIGHT PLAN

MCC-H | 0154 CST | CDR | LMP | NOTES

110:00

LMP, THEN CDR DOFF PLSS/OPS
REPORT: OPS PRESSURE

:10

CHANGE PLSS LiOH CARTRIDGES & BATTERIES

:20

STOW OPS'S & PLSS'S

MSFN

POST-EVA CABIN CONFIGURATION — BATS 1&2 - ON
UNSTOW LUNAR SURFACE CHECKLIST — BAT L(LMP)-OFF,(CDR)-ON
STOW EVA-1 PREP & POST CARDS — BATS 3&4 - OFF/RESET
STOW ETB — CHECK BUS VOLTS

110:30

WEIGH SRC & COLLECTION BAGS, REPORT: WEIGHTS
STOW SCALE, SRC &
COLLECTION BAGS
VERIFY POWERDOWN CB
CONFIGURATION

:40

DOFF SUITS
CDR, THEN LMP DOFF PGA, — BIOMED - OFF
DON ICG

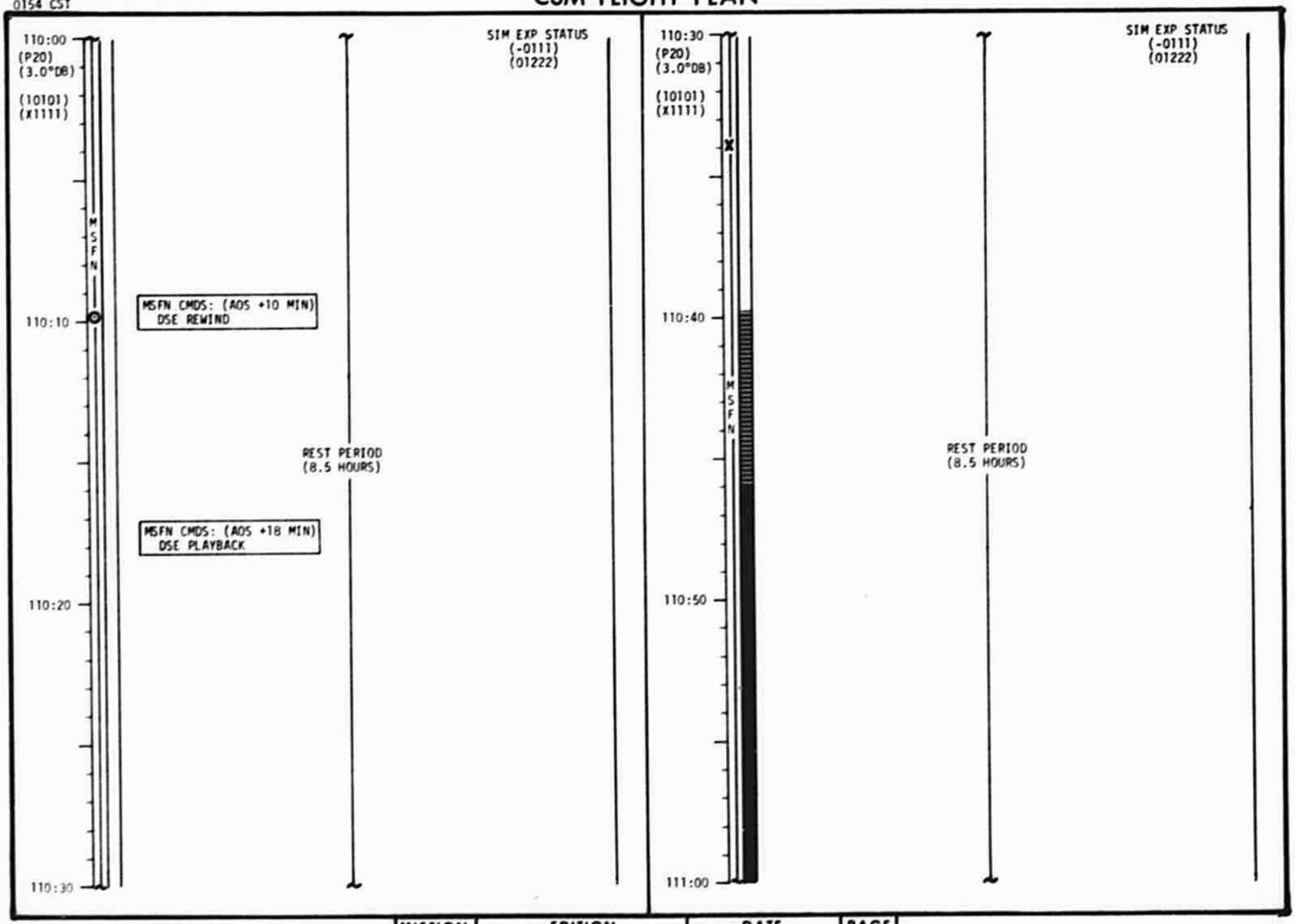
:50

111:00

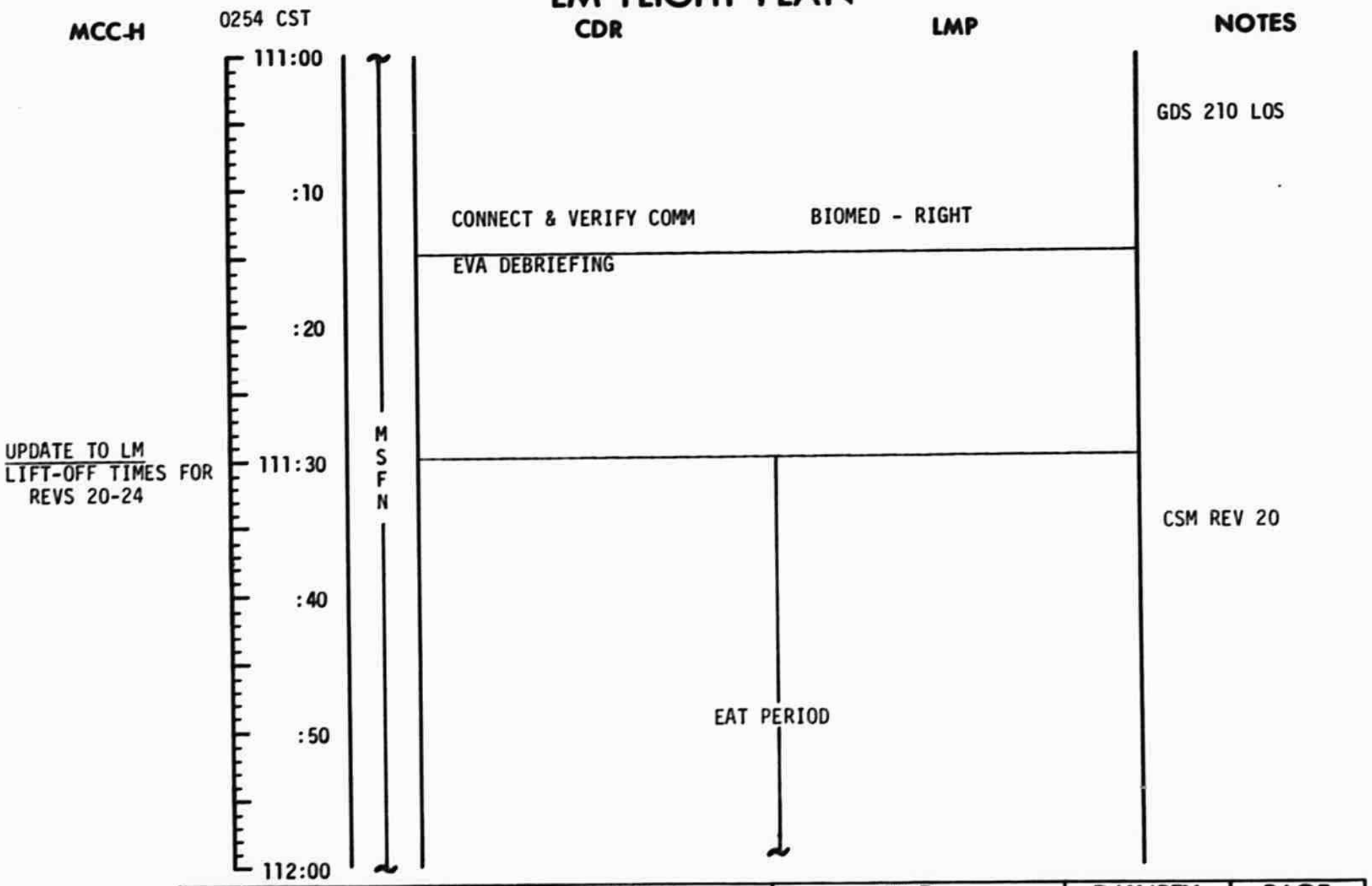
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	110:00 - 111:00	5/19	3-136

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



LM FLIGHT PLAN

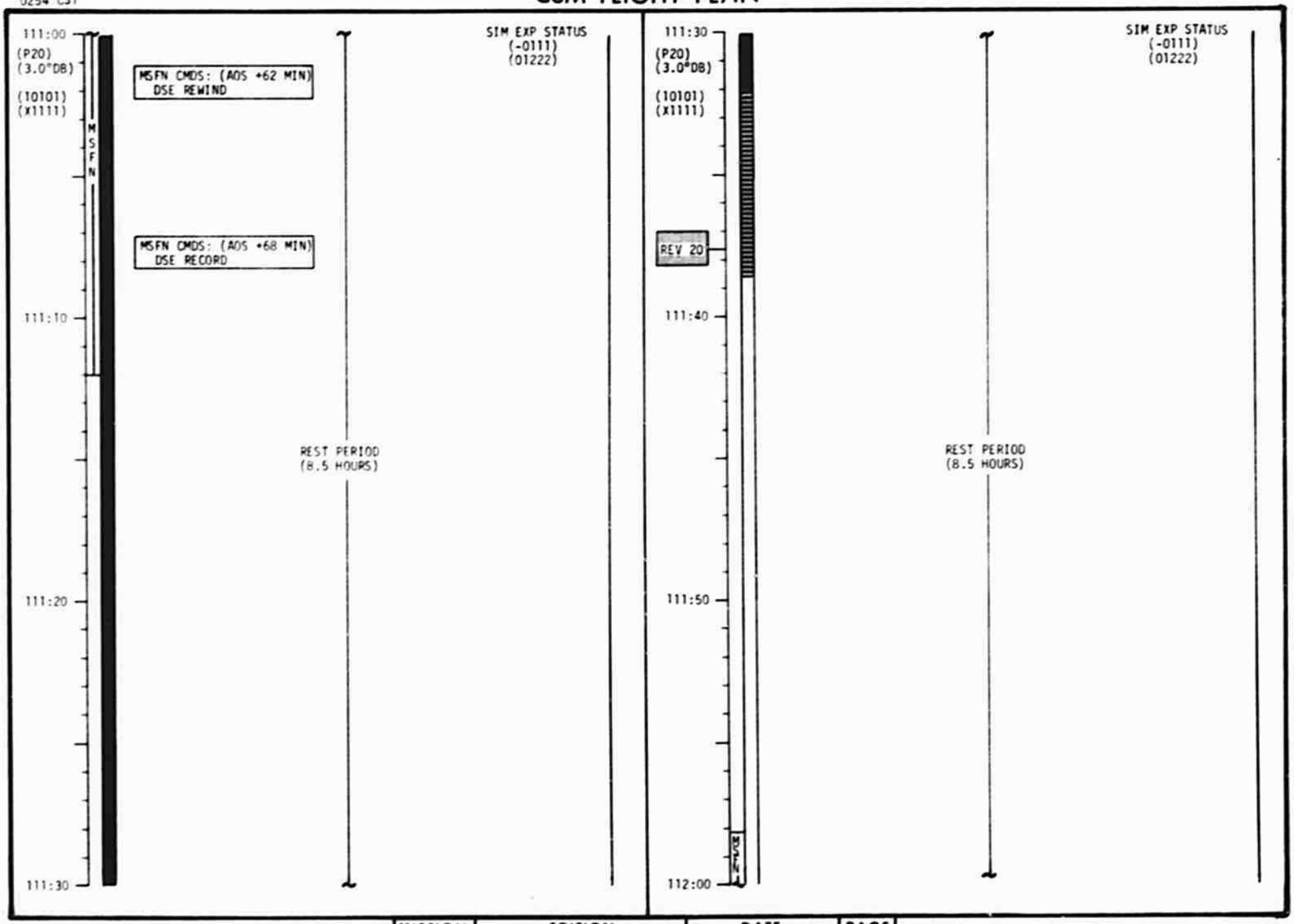


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	111:00 - 112:00	5/19-20	3-138

FLIGHT PLANNING BRANCH

0254 CST

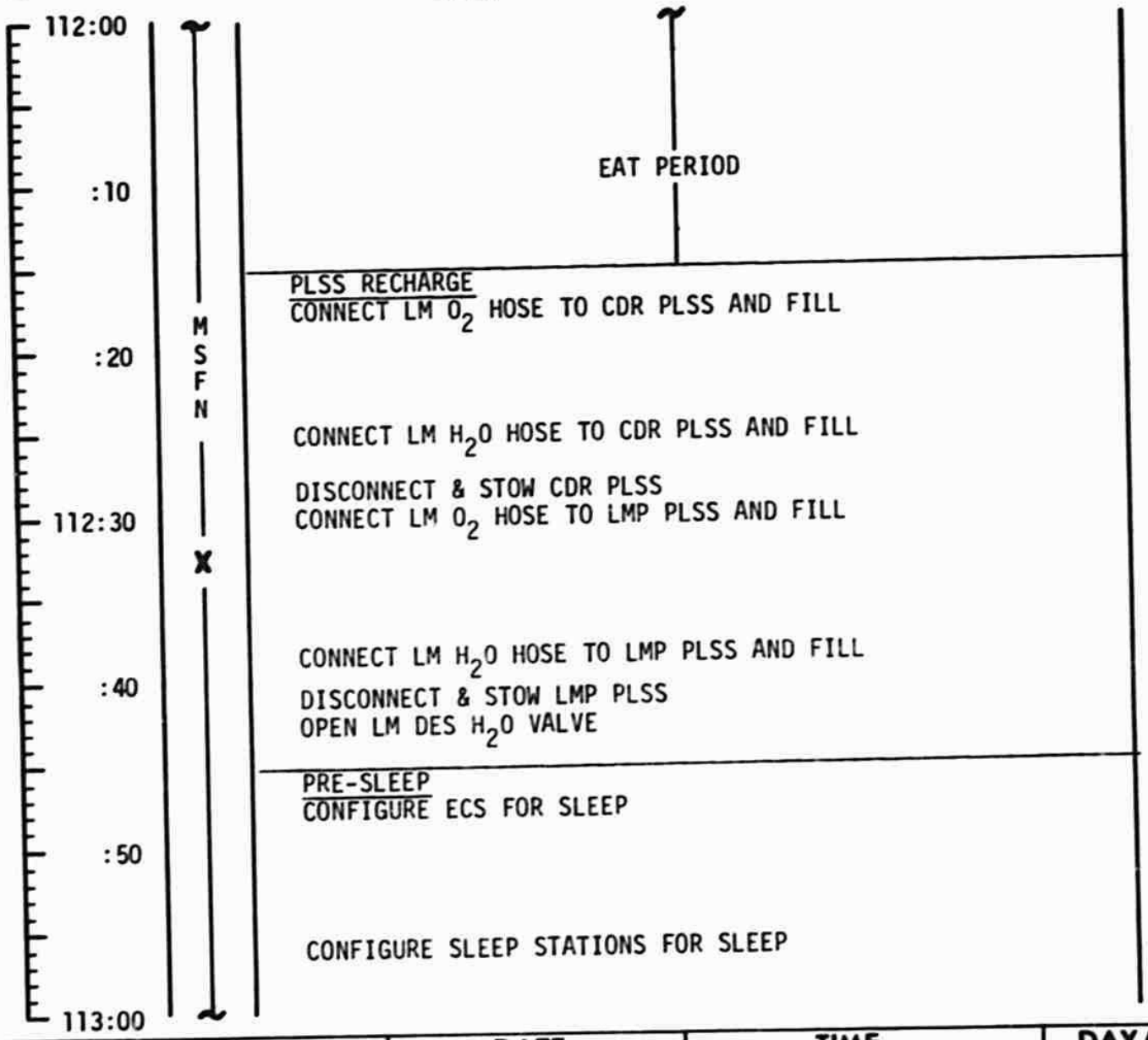
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-139

LM FLIGHT PLAN

MCC-H | 0354 CST | CDR | LMP | NOTES

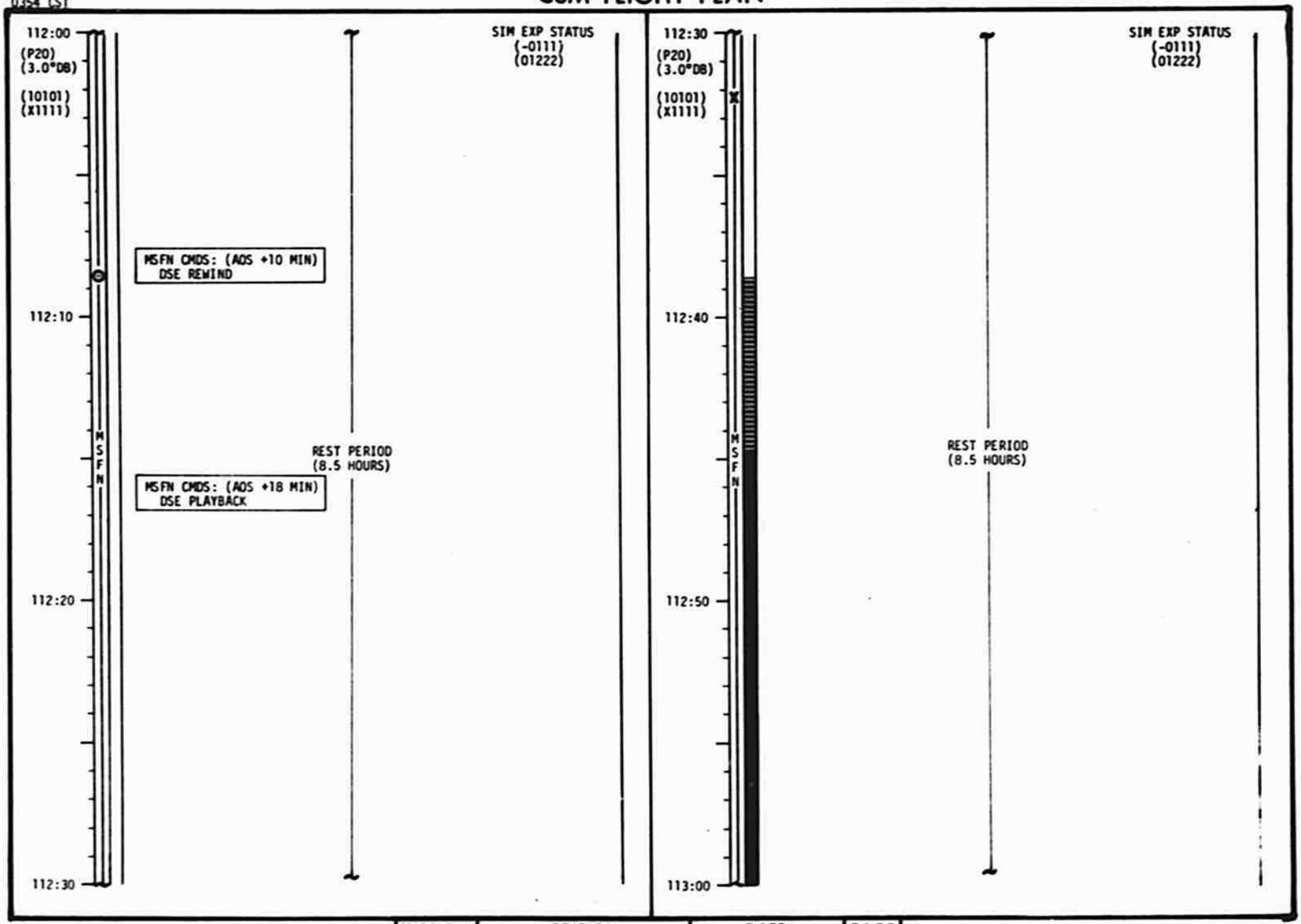


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	112:00 - 113:00	5/20	3-140

FLIGHT PLANNING BRANCH

0354 CST

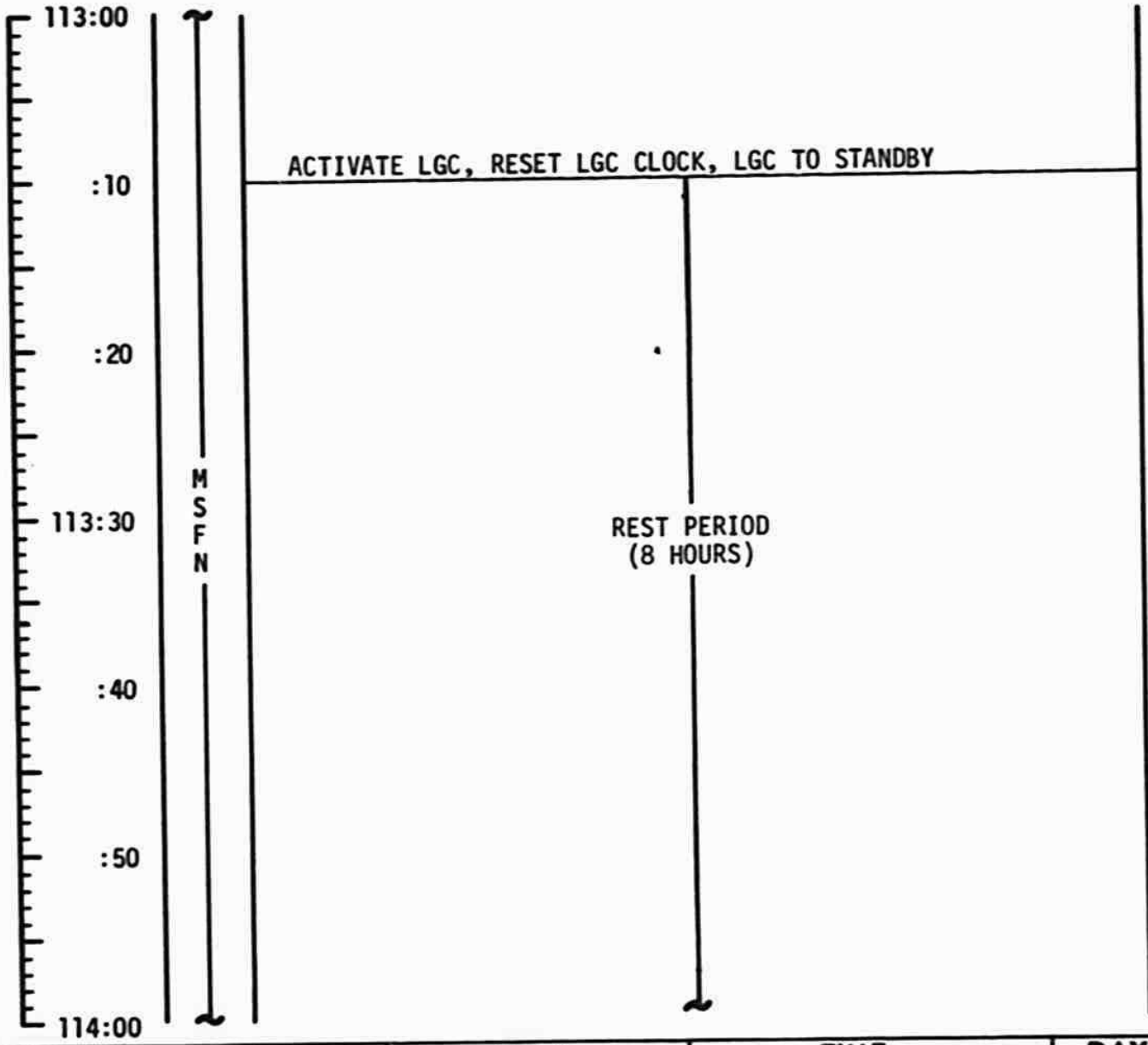
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-141

LM FLIGHT PLAN

MCC-H | 0454 CST | CDR | LMP | NOTES

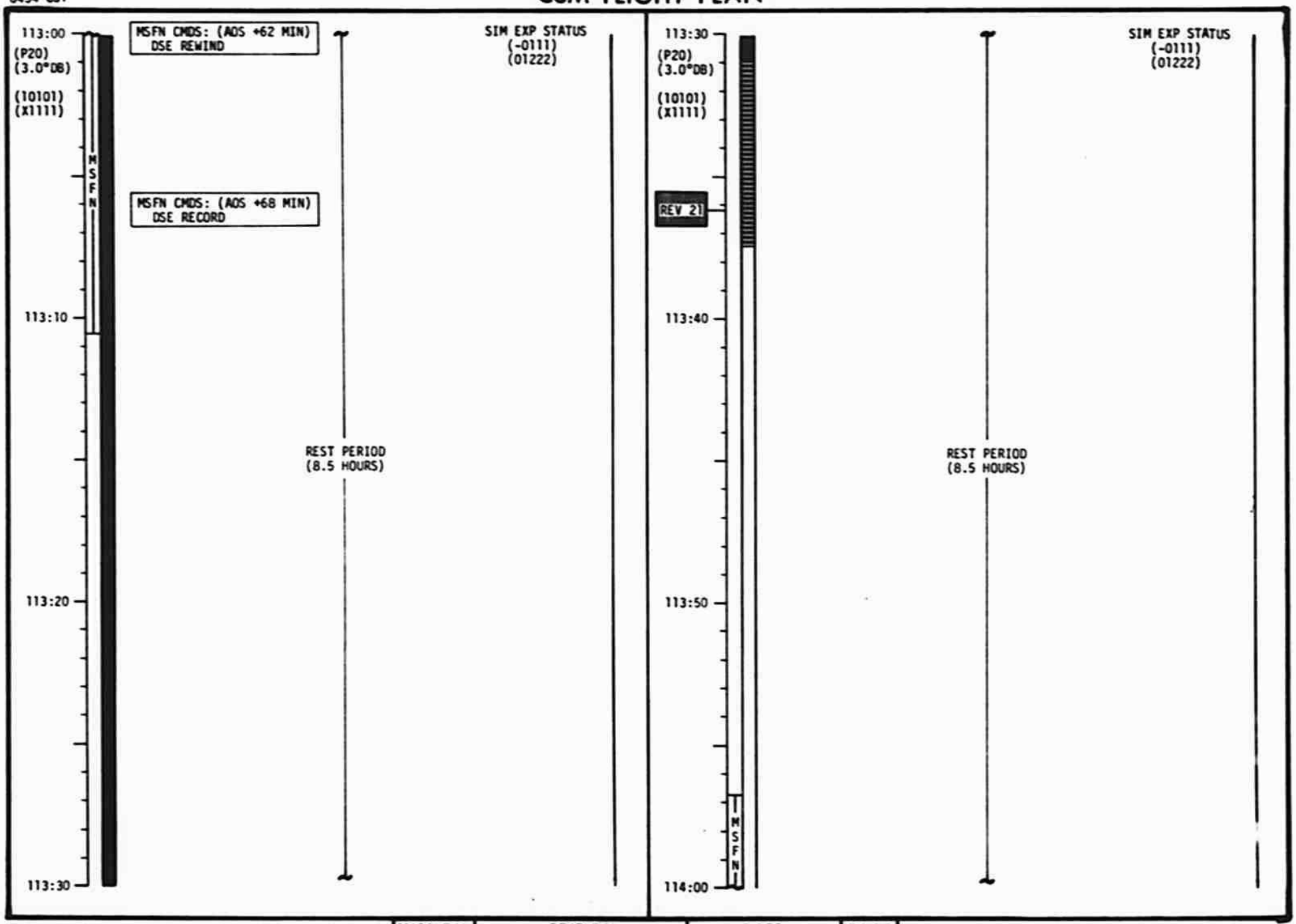


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	113:00 - 114:00	5/20-21	3-142

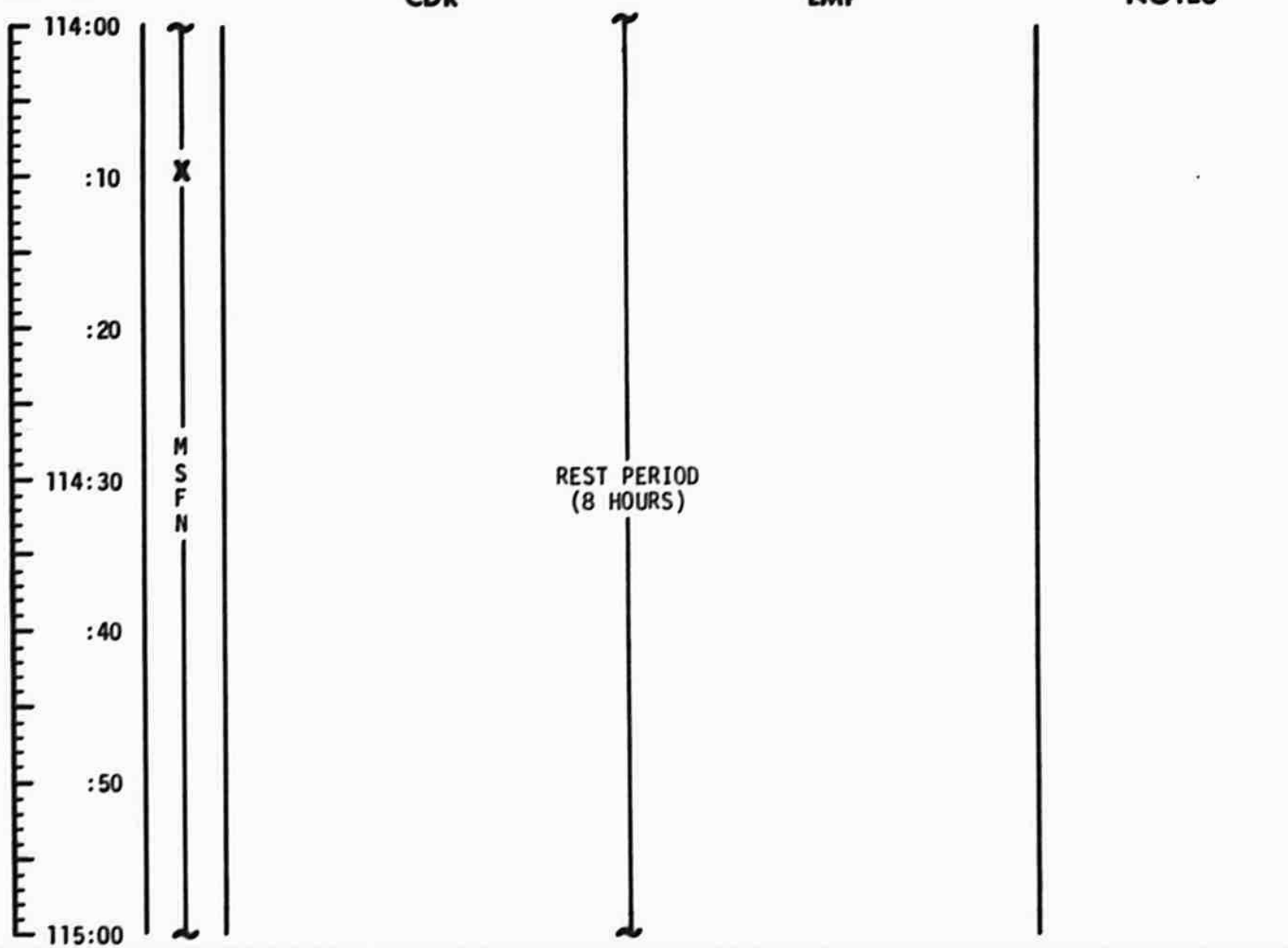
FLIGHT PLANNING BRANCH

0454 CST

CSM FLIGHT PLAN



LM FLIGHT PLAN

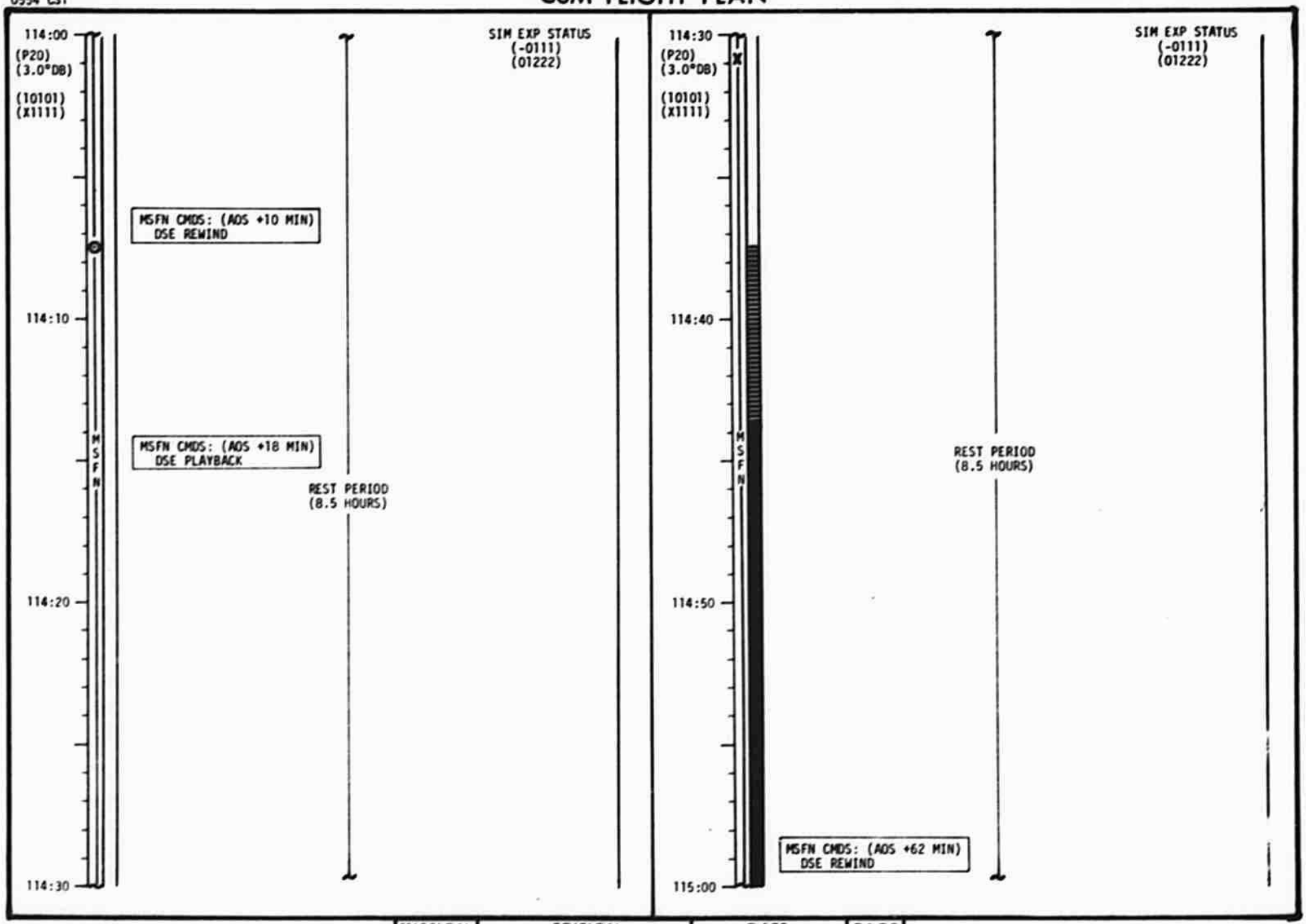


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	114:00 - 115:00	5/21	3-144

FLIGHT PLANNING BRANCH

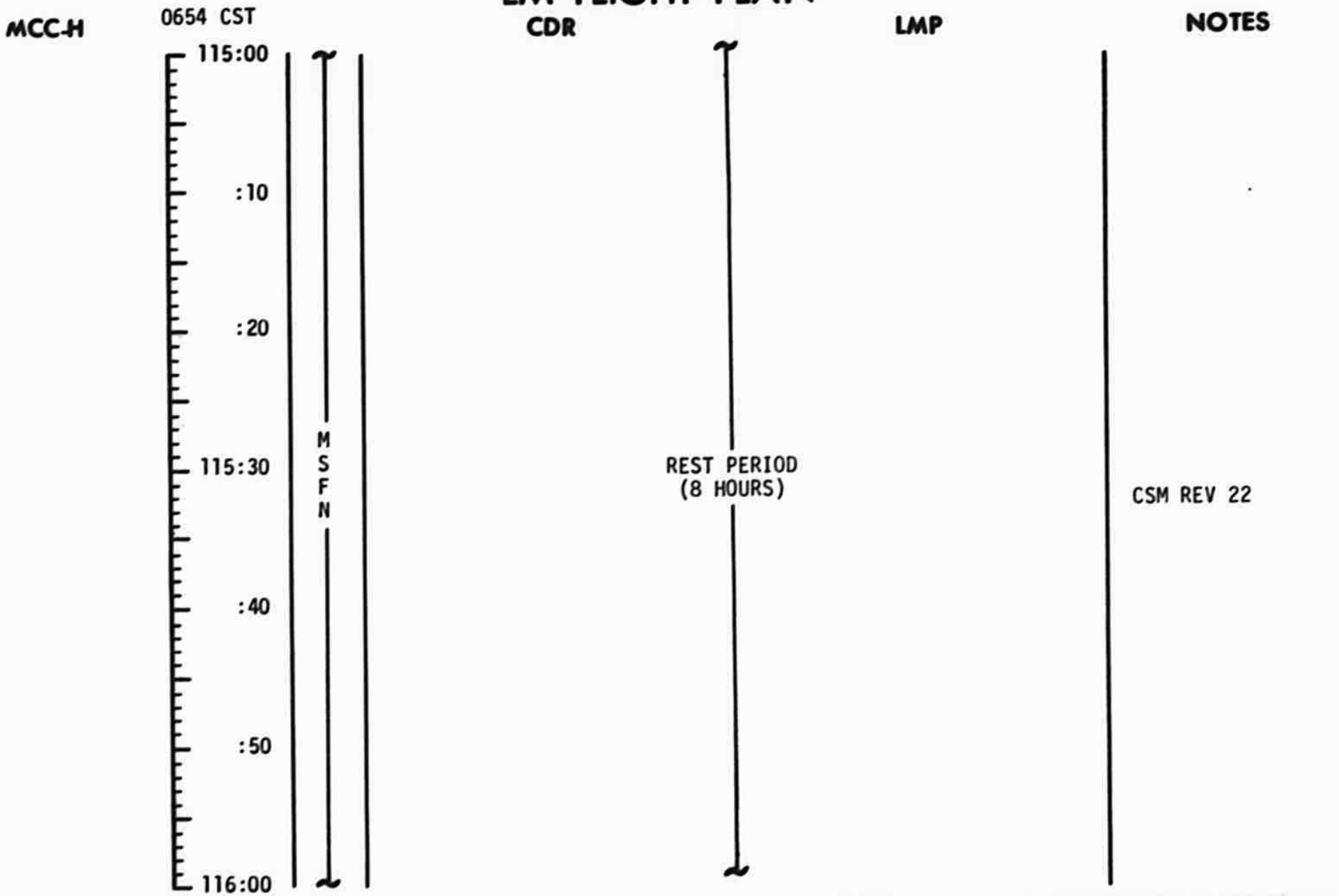
0554 CST

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-145

LM FLIGHT PLAN

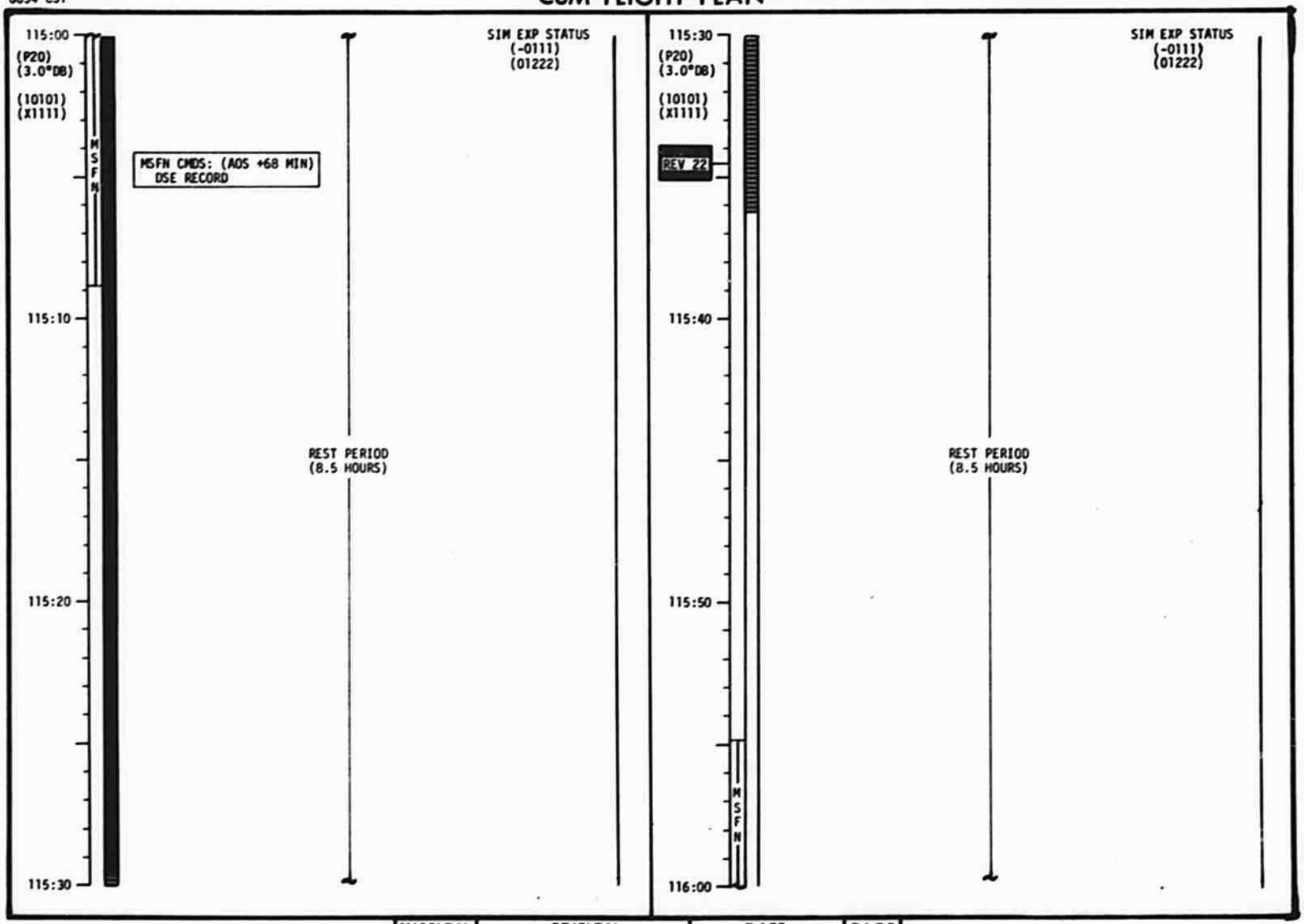


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	115:00 - 116:00	5/21-22	3-146

FLIGHT PLANNING BRANCH

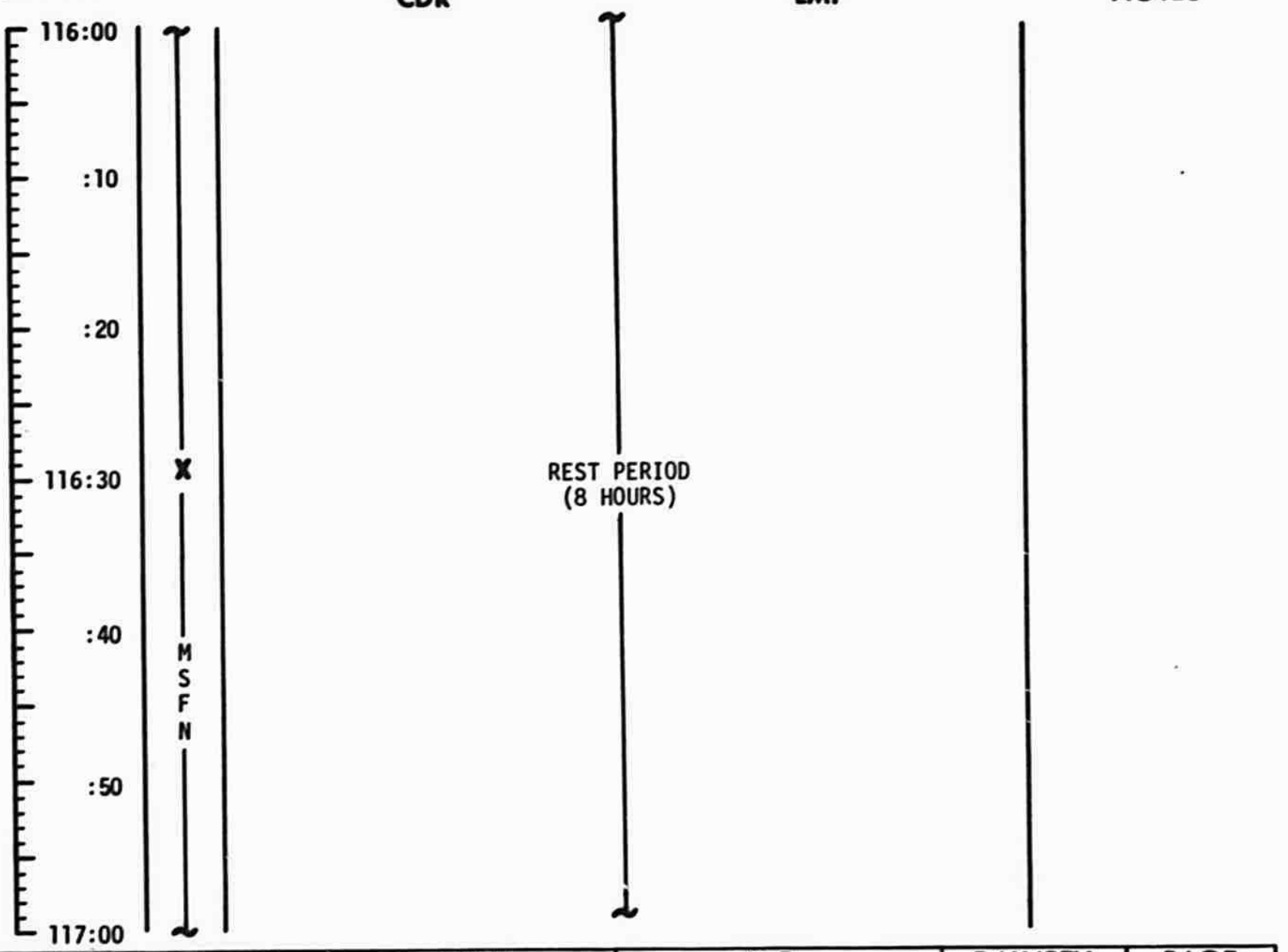
0654 CST

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-147

LM FLIGHT PLAN

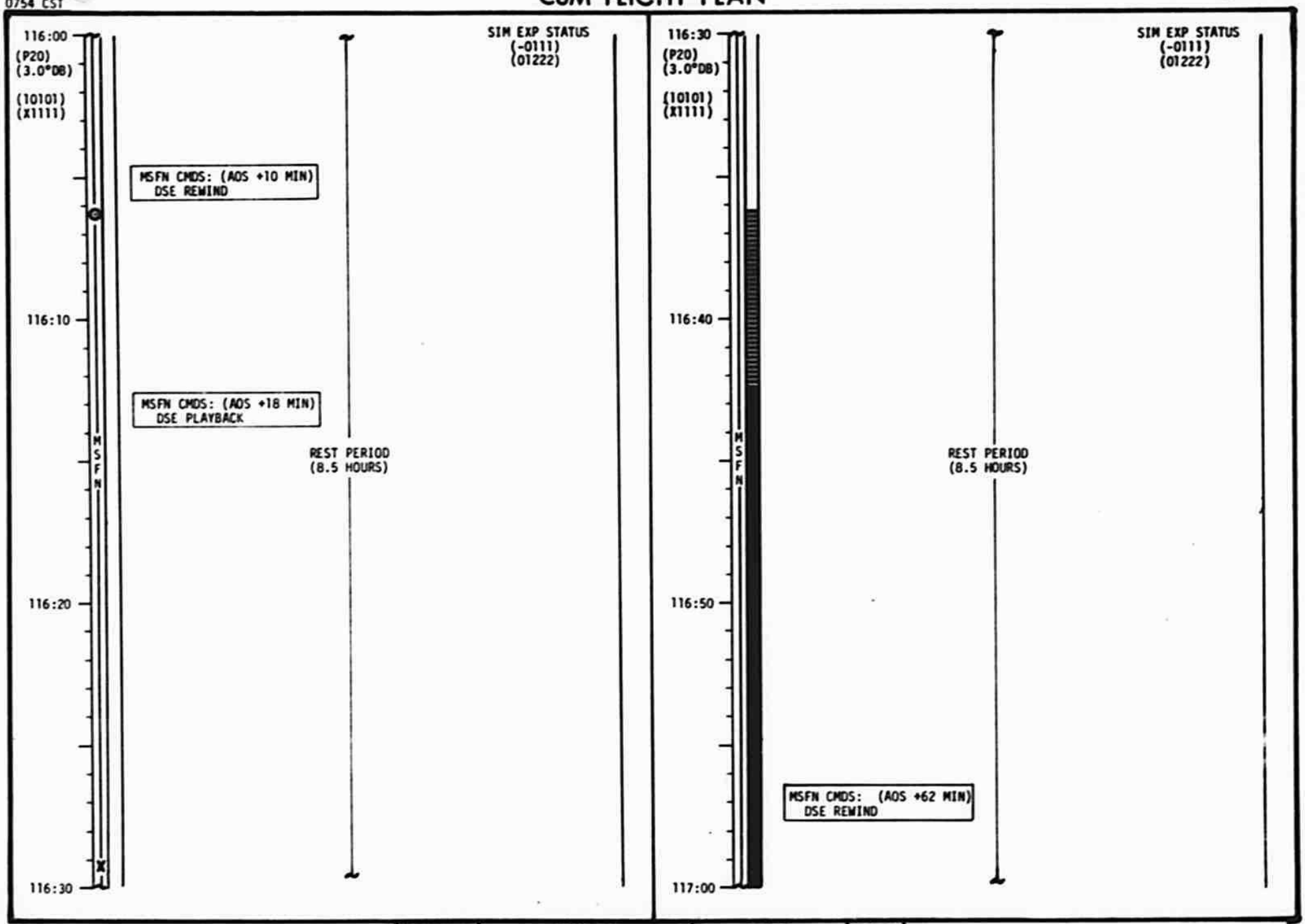


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	116:00 - 117:00	5/22	3-148

FLIGHT PLANNING BRANCH

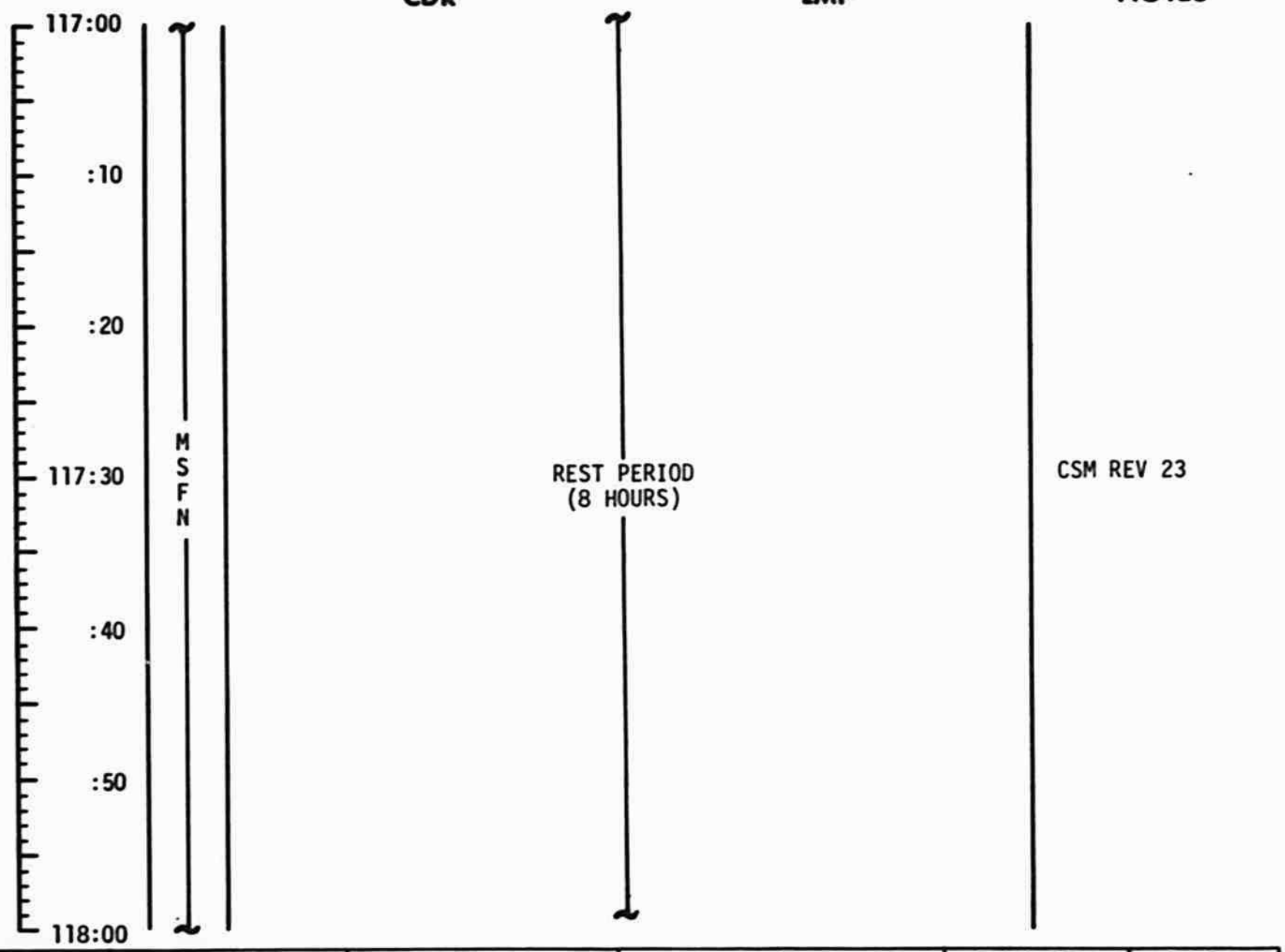
0754 CST

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-149

LM FLIGHT PLAN

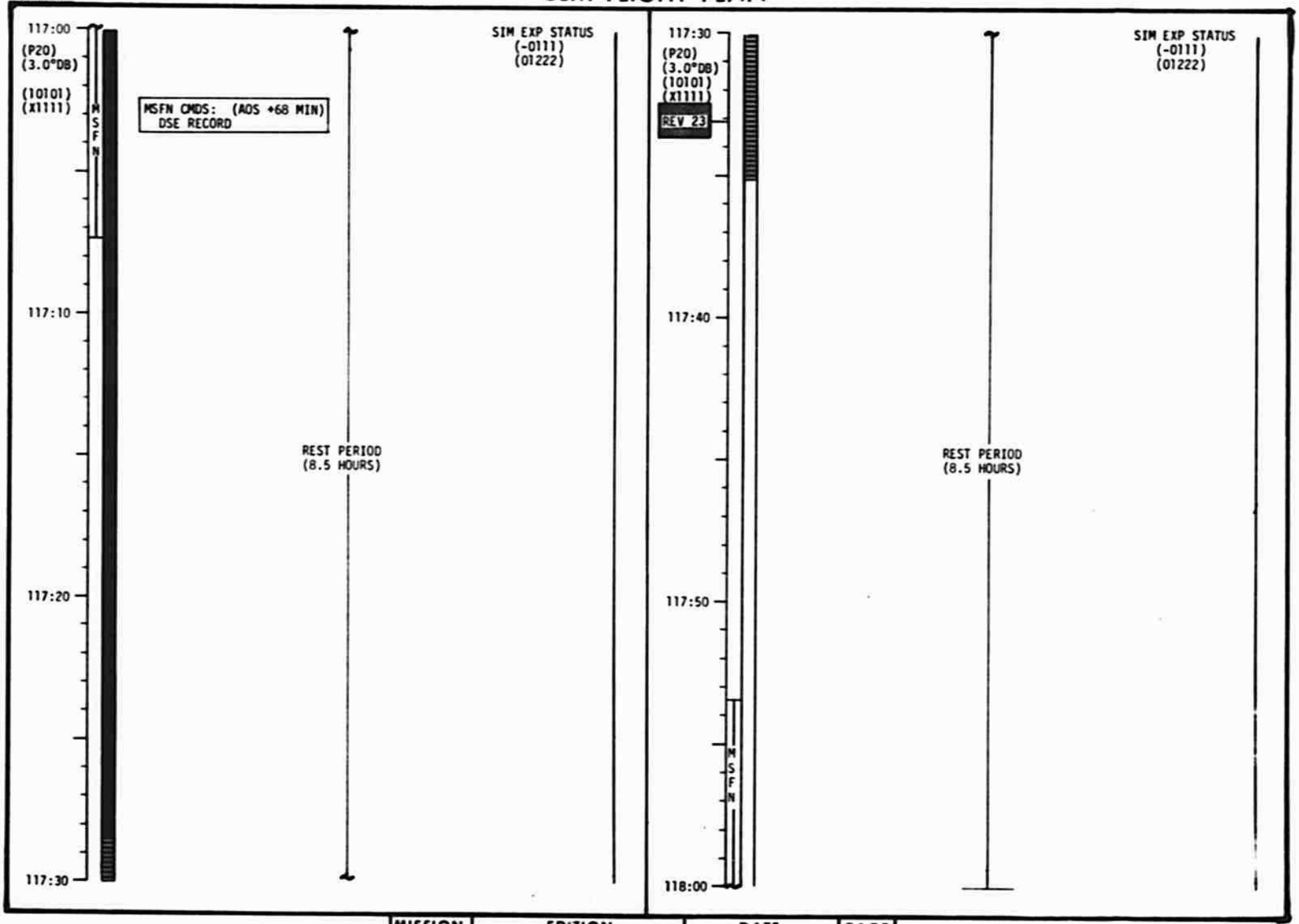


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	117:00 - 118:00	5/22-23	3-150

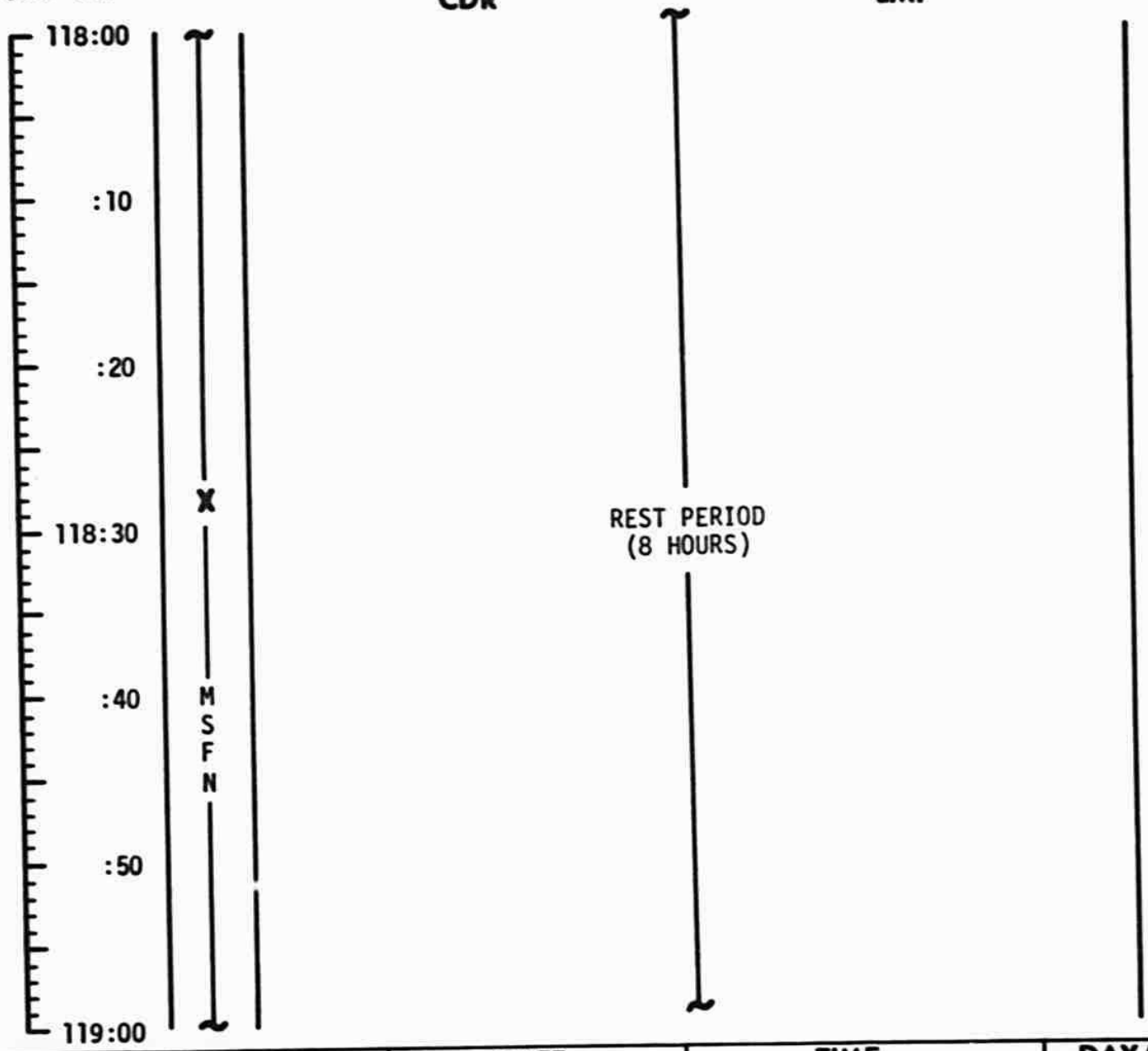
FLIGHT PLANNING BRANCH

0854 CST

CSM FLIGHT PLAN



LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	118:00 - 119:00	5/23	3-152

FLIGHT PLANNING BRANCH

0954 CST

CSM FLIGHT PLAN

118:00
(P20)
(3.0°DB)
(10101)
(X1111)

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE S/1-29
REPORT: CDR & LMP FOOD
LOGIC PWR (2) - DPLY/RETR

MSFN CMDS: (AOS +10 MIN)
DSE REWIND

MSFN UPDATE:
CONSUMABLES STATUS
FLIGHT PLAN
SIM EXP STATUS
DSE VOICE STATUS

MS: ION SOURCE - STBY (CALIBRATION DATA)
PC: MODE - STBY
PWR - ON

118:10

MSFN UPLINK:
CSM S.V.

MSFN CMDS: (AOS +18 MIN)
DSE PLAYBACK

PC: PWR - OFF (MSFN CUE)

GR: SHIELD - OFF

MS: ION SOURCE - ON

118:20

GR: SHIELD - ON (CTR)

CONFIGURE CAMERA (TERMINATOR PHOTOS)
CM3/EL/250/VHBW (f5.6,1/125,-) 6 FR

MAG (SS) ____, FR # _____

118:30

MSFN

SIM EXP STATUS
(-0111)
(01222)

118:30
(P20)
(3.0°DB)
(10101)
(X1111)

TERMINATOR PHOTOS

DAVY RILLE (P20 - B11) CM3
CRATER CHAIN INCLUDING HIGHLAND
CM3(f5.6, 1/125, ∞) 6FR
RECORD FR # ____

118:40

CMC MODE - FREE
P52 (OPTION 3)
(LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

V22N79 (+005.00)
(DAP DEADBAND TEST RUNS FROM 118:46 TO 120:42)

(P20)
(5.0°DB)

P20 - CMC MODE - AUTO
GDC ALIGN

118:50

H_2 PURGE LINE HEATERS - ON

CHARGE BATTERY B

MSFN CMDS: (AOS +61 MIN)
DSE REWIND

119:00

CONFIGURE FOR URINE DUMP

MSFN

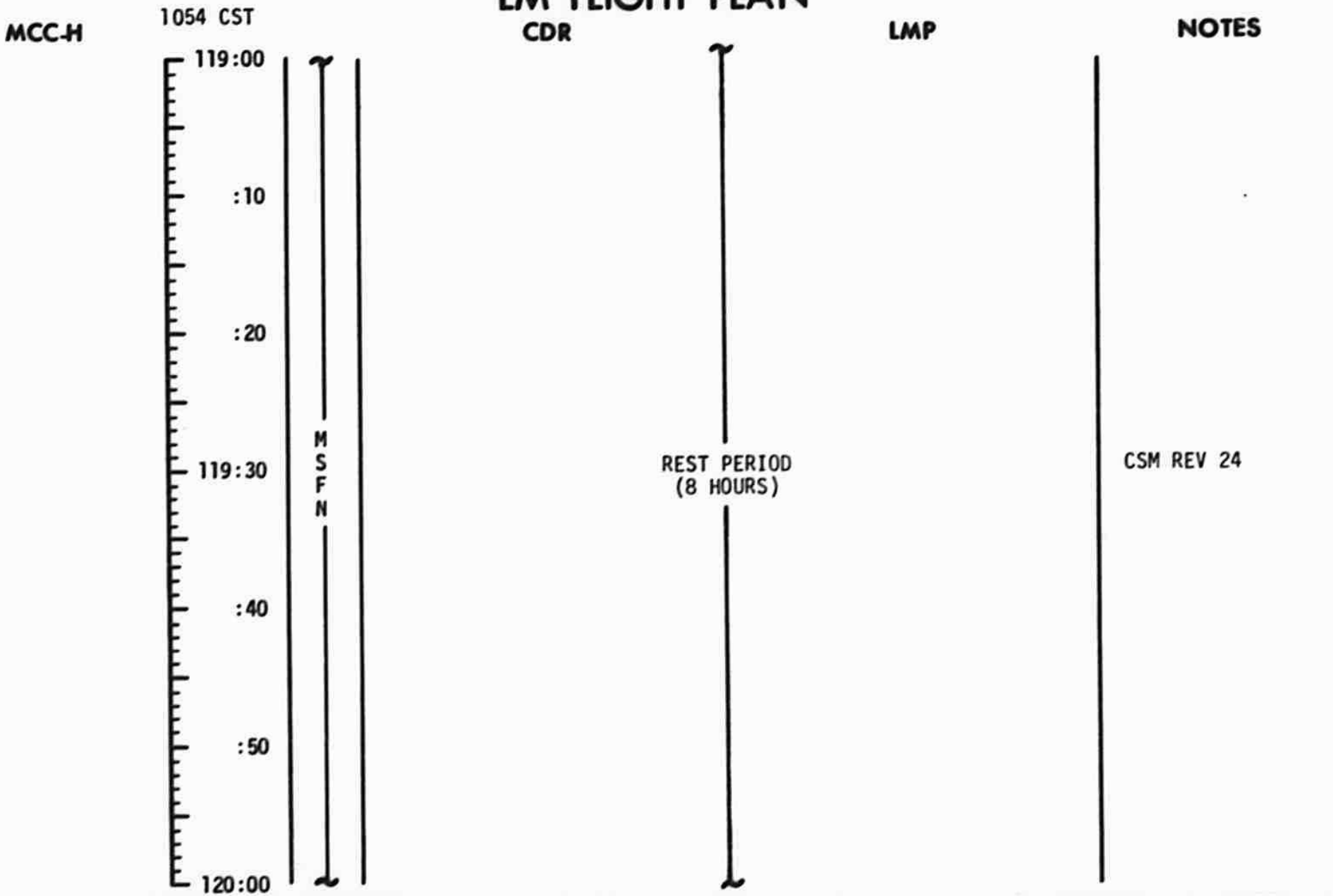
SIM EXP STATUS
(-0111)
(01222)

P52 IMU REALIGN

N71: __ __, __ __
N05: __ __ __.__ __
N93:
X __ __.__ __ __
Y __ __.__ __ __
Z __ __.__ __.__
GET __ __ __.__ __.__

MISSION	EDITION	DATE	PAGE
APOLLO 16	~~CHANGE A FINAL~~ (4/16)	3/27/72 ~~3/16/72~~	3-153

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	119:00 - 120:00	5/23-24	3-154

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1054 CST

119:00
(P20)
(5.0°DB)
(10101)
(X1111)

MSFN

MSFN CMDS: (AOS +68 MIN)
DSE RECORD

SIM EXP STATUS
(-0111)
(01222)

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

119:10

AP/XR COVER - CLOSE

H_2 & O_2 FUEL CELL PURGE
WASTE WATER DUMP
URINE DUMP

119:20

H_2 PURGE LINE HEATERS - OFF
TERMINATE WASTE WATER DUMP AT 10%

EAT PERIOD

119:30

119:30
REV 24
(P20)
(5.0°DB)
(10101)
(X1111)

MSFN

119:40

119:50

ACQ MSFN HGA: MAN, WIDE P 0, Y 170
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN CMDS: (AOS +2 MIN)
DSE (STOP/REWIND)

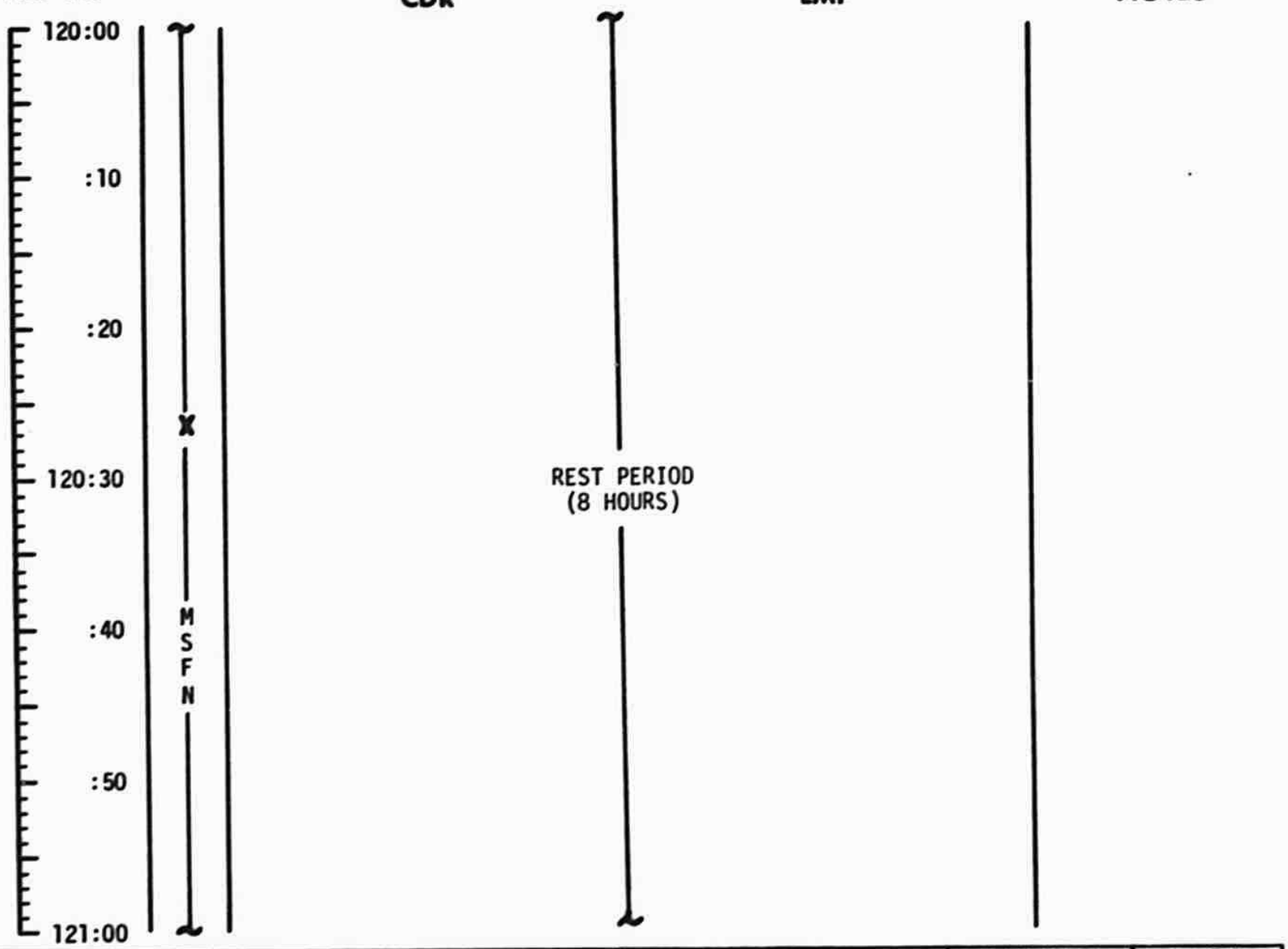
EAT PERIOD

MSFN CUE: (-AOS +7 MIN)
HGA AUTO

120:00

SIM EXP STATUS
(-0110)
(01222)

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	120:00 - 121:00	5/24	3-156

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1154 CST

120:00
(P20)
(5.0°DB)
(10101)
(X1111)

MSFN CMDS: (AOS +9 MIN)
DSE PLAYBACK

SIM EXP STATUS
(-0110)
(01222)

120:10

EAT PERIOD

AP/XR COVER - OPEN

120:20

CONFIGURE CAMERA (TERMINATOR PHOTOS)
CM3/EL/250/VHBW (f5.6,1/250,-) 6 FR

MAG (SS)____, FR # ____

120:30

120:30
(P20)
(5.0°DB)
(10101)
(X1111)

TERMINATOR PHOTOS

SIM EXP STATUS
(-0111)
(01222)

ALPHONSUS (P19-B11) CM3
CM3(f5.6, 1/250, ∞)6FR

RECORD FR # ____

L10H CANISTER CHANGE
(11 INTO A, STOW 9 IN A9)

MSFN UPDATE:
MAP CAMERA PHOTO PAD (121:36)

120:40

(10101)
(X1111)

CMC MODE - FREE
P00
CMC MODE - AUTO

CSM EXP/EVA CHECKLIST

GUM NEBULA PHOTO SEQ A, PAGE X/2-7
MAG (XX)
V49 MNVR TO GUM NEBULA POINT #1 (121:05)
(114,164,298)
MNVR TIME ~ 9 min 40 sec, NOTE: Watch for MGA

NOTE: DO NOT START PHOTO SEQUENCE UNTIL 121:05

120:50

MSFN CMDS: (AOS +61 MIN)
DSE REWIND

MSFN CMDS: (AOS +68 MIN)
DSE RECORD

121:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE B ~~FINAL~~ (4/16)	~~3/22/72~~ 3/16/72-4/7/72	3-157

LM FLIGHT PLAN

MCC-H	1254 CST	CDR	LMP	NOTES
	121:00			
		REST PERIOD (8 HOURS)		
	:10	POST SLEEP		
		STOW HAMMOCKS		
STAY/NO-STAY FOR EVA-2		CREW STATUS (FOOD, MEDICATION, SLEEP)		
	:20			
UPDATE TO LM LIFT-OFF TIMES FOR REVS 25-31		~~CHANGE LiOH CANISTER~~		
	121:30	ACTIVATE LGC, RESET LGC CLOCK, LGC TO STANDBY		CSM REV 25
		CHECK LCG'S		
		INSTALL ISS		
		PLSS O_2 TOP OFF		
	:40			
		EAT PERIOD		
	:50			
	122:00			

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16)	~~3/6/72-3/27/72~~	121:00 - 122:00	5-6/24-25	3-158

CHANGE A

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

121:00
(10101)
(x1111)
MSFN

SIM EXP STATUS
(*0111)
(01222)

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

LOAD N78 FOR MNVR AT 121:25

121:10 GUM NEBULA PHOTO SEQ A STEPS 4&5

121:20

(10102)
(x1111)

V48 (10102)
(x1111)
VERY TIGHT; MNVR TIME ~ 4 MIN 45 SEC AT 0.5 DEG/SEC
P20 OPT 5 (25° FORWARD OBLIQUE PHOTO ATT)(121:33)
N78 (+127.30)
(+045.77)
(+198.12)
N79 (+000.50)
(142,025/103,000)
SET OMNI D FOR AOS ACQ
MC/LA COVER - OPEN
MC - EXTD

(P20)
(0.5°DB)

121:30

121:30
REV 25
(P20)
(0.5°DB)
(10102)
(x1111)

SIM EXP STATUS
(*1111)
(01222)

IMAGE MTN - ON
MC - ON (T START)
IMAGE MTN - INCR (BP +3 STEPS)/ON

MAP CAMERA PHOTO PAD
T-START: ___ ___ ___:___ ___:___ ___
T-STOP: ___ ___ ___:___ ___:___ ___
(171.9°E TO 8.6° W)

121:40

(10101)
(x1111)

V48 (10101)
(x1111)

121:50

ACQ MSFN OMNI D

MSFN

122:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-159

LM FLIGHT PLAN

MCC-H | 1354 CST | CDR | LMP | NOTES

122:00

:10

EAT PERIOD

:20

EVA-2 PLANNING PERIOD
UPDATE CUFF CHECKLIST AS REQUIRED
REPACK ETB

122:30

UNSTOW EVA-2 PREP & POST CARDS
DON SUITS — BIOMED - OFF
LMP CLEAN AND LUB PGA
DOFF ICG, DON PGA,
CONNECT HOSES AND VERIFY COMM

:40

MSFN

:50

CHANGE LiOH CANISTER
CDR CLEAN & LUB PGA
DOFF ICG, DON PGA

123:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	122:00 - 123:00	6/25	3-160

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1354 CST

122:00
(P20)
(0.5°DB)
(10101)
(x1111)

ACQ MSFN HGA: MAN, WIDE P 10, Y 0
S-BD ANT IND >1/2 SCALE HGA: REACQ, NARROW

SIM EXP STATUS
(*1111)
(04222)

MSFN CMDS: (AOS +17 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

122:10

MSFN UPDATE:
ZODIACAL LIGHT PHOTO PAD (123:12)
MAP CAMERA PHOTO PAD (125:33)
TEI 32 PAD

MSFN CMDS: (AOS +25 MIN)
DSE PLAYBACK

M S F N

122:20

122:30

122:30
(P20)
(0.5°DB)
(10101)
(x1111)

MC - OFF (T STOP)
WAIT 30 SEC
MC- STBY
IMAGE MTN - OFF

SIM EXP STATUS
(*1111)
(04222)

122:40

Prepare ZODICAL LIGHT TAPE & CHECK BATTERIES

122:50

CSM EXP/EVA CHECKLIST
ZODIACAL LIGHT, PAGE X/2-14
MAG (YY)

MSFN CMDS: (AOS +66 MIN)
DSE REWIND

123:00

LM FLIGHT PLAN

MCC-H | 1454 CST | CDR | LMP | NOTES

123:00

CONNECT HOSES & VERIFY COMM

:10

:20

BIOMED - LEFT

BATS 4&3 - ON
BAT L (CDR) - OFF/RESET
CHECK BUS VOLTS

-1:30

PREP FOR EVA-2
STOW ALL LOOSE ITEMS NOT REQUIRED FOR EVA
REPORT: PRD

CSM REV 26

-1:20

123:30

MSFN

STOW LUNAR SURFACE CHECKLIST

-1:10

:40

EQUIPMENT PREP FOR EVA-2
CHECKOUT OPS
APPLY ANTI-FOG TO HELMETS
STOW HELMET BAG
STOW ETB
UNLOCK FWD HATCH HANDLE

GDS 210 AOS

-1:00

:50

124:00

-0:50

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	123:00 - 124:00	6/25-26	3-162

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1452 CST

123:00 (P20) (0.5°DB) (10101) (X1111)

MSFN

SIM EXP STATUS (*1111) (01222)

CONFIGURE DSE (LBR/RCD/FWD/CMD RESET) (AOS +73 MIN)

ZODIACAL LIGHT

123:10

ZODIACAL LIGHT PHOTO PAD(SR)

T-START: ___ ___ ___ ___ ___ ___

(SUNRISE -15 MIN)

123:20

(10101) (X1111)

P00

V49 MNVR TO BISTATIC RADAR ATT (123:42)
(221,159,000)

REV 26

123:30

123:30 (10101) (X1111)

SIM EXP STATUS (*1111) (01222)

CONFIGURE COMM FOR S-BAND AND VHF BISTATIC RADAR TEST
VHF AM T/R (3) - RCV
VHF AM A - OFF (VERIFY)
VHF AM B - DUPLEX (VERIFY)
VHF RNG - RNG (DSE VOICE USE MARGINAL)
VHF ANT - LEFT

S-BD MODE RANGING - OFF
S-BD AUX TAPE - OFF (VERIFY)
S-BD ANT - HI GAIN/MAN/WIDE
HGA P 20, Y 209
VERIFY DSE (LBR/RCD/FWD/CMD RESET)

123:40

(P20) (-0.0830) (0.5°DB)

P20 OPT 2
N78 (+270.00)
(-040.63)
N79 (-0.0830)
(+000.50)
N34 (+00123)
(+00048)
(+000.00)

START AUTO PITCH RATE (221,130/159,000) ~~(221,244/159,000)~~

NOTE: DURING BISTATIC RADAR TEST, MSFN HAS NO TLM FROM 123:59 TO 124:51 AND NO VOICE CAPABILITY

123:50

MSFN

BISTATIC RADAR TEST (S-BAND & VHF)

124:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A ~~FINAL~~ (4/16)	3/21/72 ~~3/16/72~~	3-163

LM FLIGHT PLAN

MCC-H | 1554 CST | CDR | LMP | NOTES

124:00 — -0:50

PLSS DONNING
CONFIGURE LMP PLSS
ATTACH OPS TO PLSS
LMP DON PLSS/OPS
CONNECT RCU

:10 — -0:40

CDR REPEAT PLSS DONNING

PLSS COMM CHECK
VERIFY POWERDOWN CB CONFIGURATION
CONFIGURE COMM FOR EVA, BIOMED - OFF, RECORDER - ON
COMM & TM CHECK, REPORT PLSS O_2 QUANTITY TO MCC-H
FINAL SYSTEMS PREP

:20 — -0:30

X

OPS CONNECT
LMP, THEN CDR CONNECT PLSS/OPS HOSES TO PGA

124:30 — -0:20

HELMET/GLOVE DONNING

PLSS FANS - ON
DON HELMETS & LEVA'S
VERIFY SUIT CONFIGURATION
VERIFY EVA CB CONFIGURATION
DON GLOVES
PRESS REGS A&B - EGRESS

M S F N

:40 — -0:10

PRESSURE INTEGRITY CHECK

GO/NO-GO FOR CABIN DEPRESS

CABIN DEPRESS

START WATCHES AT 3.5 PSIA

:50 — 0:00/START EVA-2

FINAL PREP FOR EVA

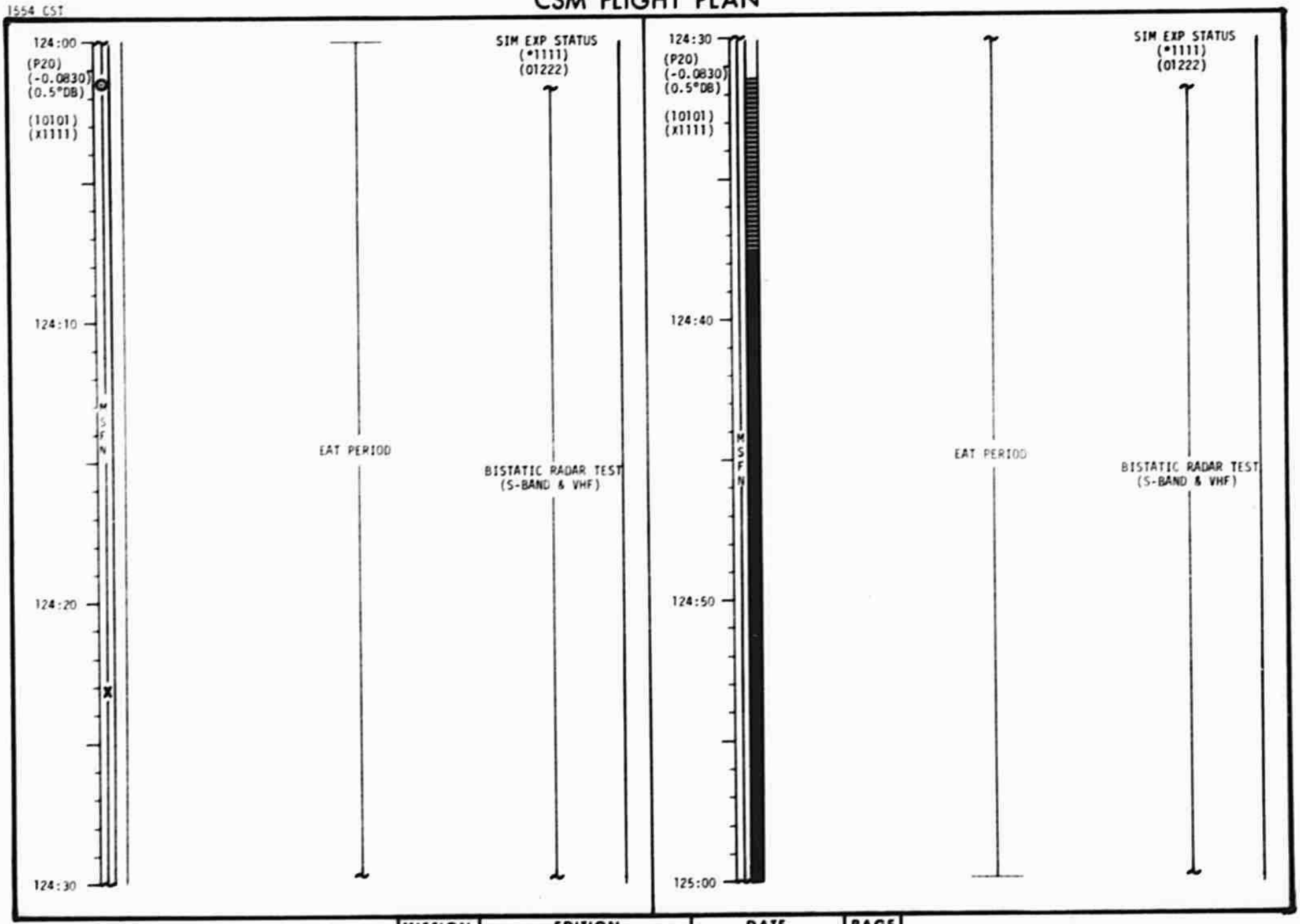
OPEN FWD HATCH
REST UNTIL COOLING SUFFICIENT, VERIFY PGA, CWEA STATUS

125:00 — +0:10

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	124:00 - 125:00	6/26	3-164

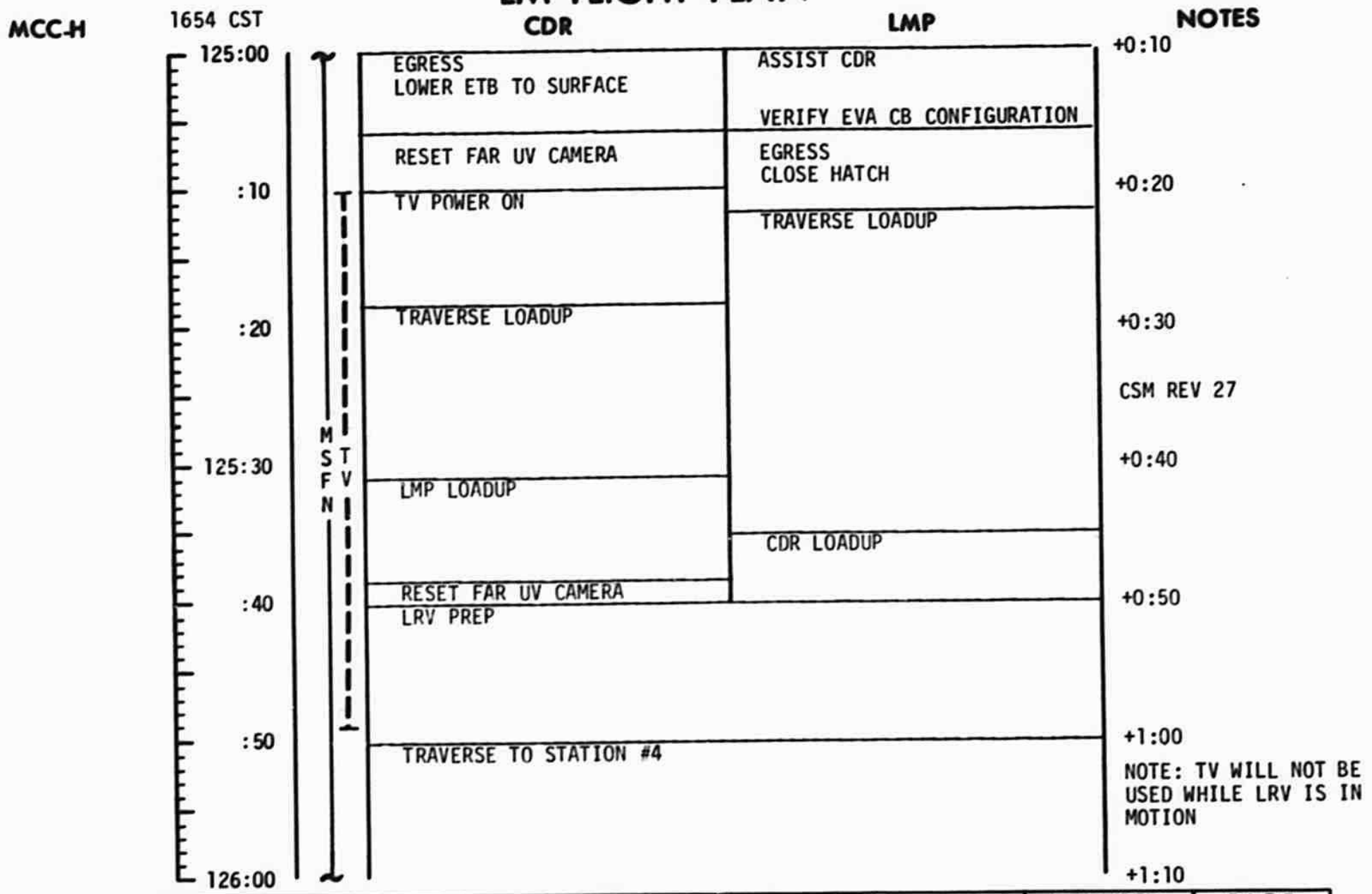
FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-165

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	125:00 - 126:00	6/26-27	3-166

FLIGHT PLANNING BRANCH

figure 6

CSM FLIGHT PLAN

1654 CST

125:00
(P20)
(-0.0830)
(0.5°DB)
(10101)
(X1111)
(10101)
(X1111)
125:10
(P20)
(0.5°DB)
125:20
REV 27
125:30

SIM EXP STATUS
(*1111)
(01222)

DISCONTINUE BISTATIC RADAR TEST
VHF RNG - OFF
VHF AM B - OFF
S-BD MODE RANGING - RANGING

P00

P52 (OPTION 3)
(LOG SITE ORIENT)

P52 IMU REALIGN

N71: __ __ , __ __
NU5: __ __ __ . __ __
N93:
X __ __ . __ __ __
Y __ __ . __ __ __
Z __ __ . __ __ __ .
GET __ __ __ . __ __ . __ __

GDC ALIGN

P20 OPT 5 (40°N OBLIQUE PHOTO ATT) (125:30)
N78 (+090.00)
(+012.25)
(+180.00)
N79 (+000.50)
(102,000/080,000)
SET OMNI D FOR AOS ACQ

CONFIGURE DSE HBR

125:30
(P20)
(0.5°DB)
(10101)
(X1111)
125:40
125:50
MSFN
126:00

IMAGE MTN - ON
MC - ON (T START)
IMAGE MTN - INCR (BP +3 STEPS)/ON

SIM EXP STATUS
(*1111)
(01222)

MAP CAMERA PHOTO PAD
T-START: __ __ __ : __ __ : __ __
T-STOP: __ __ __ : __ __ : __ __
(169.9°E TO 10.6°W)

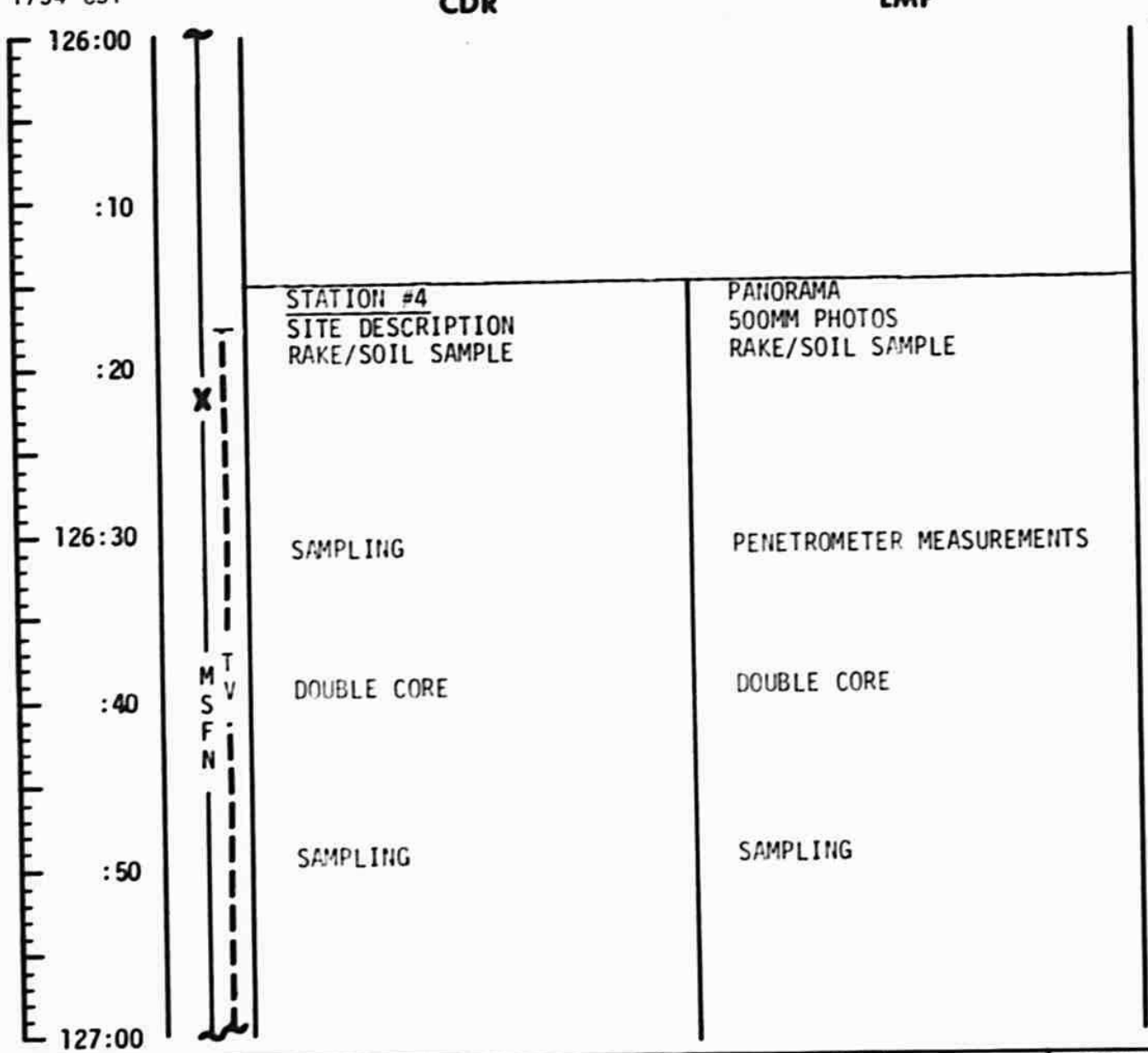
ACQ MSFN OMNI D

ACQ MSFN HGA: MAN, WIDE P 10 Y 0
S-BD ANT IND >1/2 SCALE HGA: REACQ, NARROW

MSFN CMDS: (AOS +10 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

REPORT: GYRO TORQUING ANGLES (FROM P52 AT 125:08)

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	126:00 - 127:00	6/27	3-168

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1754 CST

126:00
(P20)
(0.5°DB)
(10101)
(X1111)

MSFN UPDATE:
UV PHOTO PAD (126:20)
MAP CAMERA PHOTO PAD (127:20)
GR BOOM EXTD TIME 15 INCHES (127:18)
PAN CAMERA PHOTO PAD (128:13)

SIM EXP STATUS
(*1111)
(04222)

MSFN CMDS: (AOS +17 MIN)
DSE PLAYBACK

CSM EXP/EVA CHECKLIST

LUNAR TERRA UV PHOTOGRAPHY, PAGE X/2-21
MAG (00)

126:10

MSFN

LUNAR TERRA UV PHOTOGRAPHY (DESCARTES)

126:20

UV PHOTO PAD

T-START: _ _ _ _•_ _ _•_ _ _
(L/S - 2 MIN)

126:30

126:30
(P20)
(0.5°DB)
(10101)
(X1111)

MC - OFF (T STOP)
WAIT 30 SEC
MC - STBY
IMAGE MTN - OFF
GR: SHIELD - OFF

SIM EXP STATUS
(*1111)
(04222)

CSM EXP/EVA CHECKLIST

GEGENSCHEIN CALIBRATION, PAGE X/2-5
MAG (ZZ)
P00
V49 MNVR TO GEGENSCHEIN CALIBRATION ATT (126:58)
(297,210,000) OMNI D
NOTE: DO NOT START PHOTO SEQUENCE UNTIL 126:53

126:40
(10101)
(X1111)

GR: SHIELD - ON (CTR)

MS-RETR TO 8.4 FEET (2 MIN 01 SEC)

MSFN

126:50

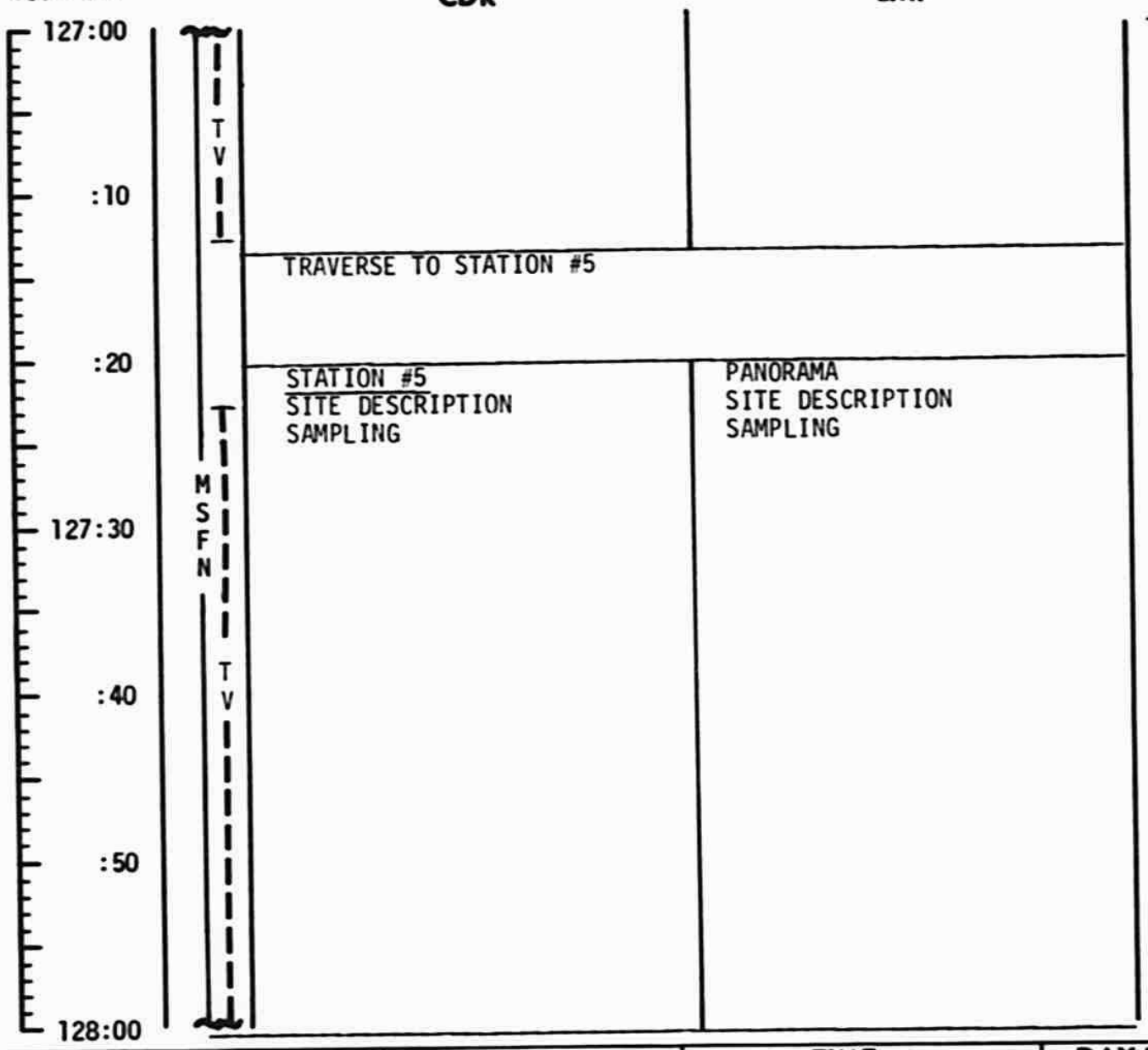
MSFN CMDS: (AOS +66 MIN)
DSE REWIND

127:00

LM FLIGHT PLAN

MCC-H

1854 CST



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	127:00 - 128:00	6/27-28	3-170

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1854 CST

127:00
(10101)
(X1111)

SIM EXP STATUS
~~(01111)~~ (01121)
(01222)

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN)

GEGENSCHEIN CALIBRATION

127:10

(P20)
(0.5°DB)

P20 OPT 5 (+X FWD SIM ATT) (127:29)
N79 (+000.50)

GR - RETR

GR - DPLY TO 15 INCHES (17 SEC)

MAP CAMERA PHOTO PAD
T-START: __ __ __:__ __:__ __
T-STOP: __ __ __:__ __:__ __
(169.9°E TO 13.6°W) (1-1/2 REVS)

127:20

REV 28

LA - ON

IMAGE MTN - ON

MC - ON (T START)
IMAGE MTN - INCR (BP +4 STEPS)/ON

127:30

127:30
(P20)
(0.5°DB)

(10101)
(X1111)

SIM EXP STATUS
(+1221)
(02222)

127:40

ACQ MSFN HGA: MAN, WIDE P 10, Y 0
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

127:50

PREPARE FOR ORBITAL SCIENCE VISUALS
KAPTEYN (V6)

MSFN

MSFN CMDS: (AOS +7 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

ORBITAL SCIENCE VISUALS AT 128:01

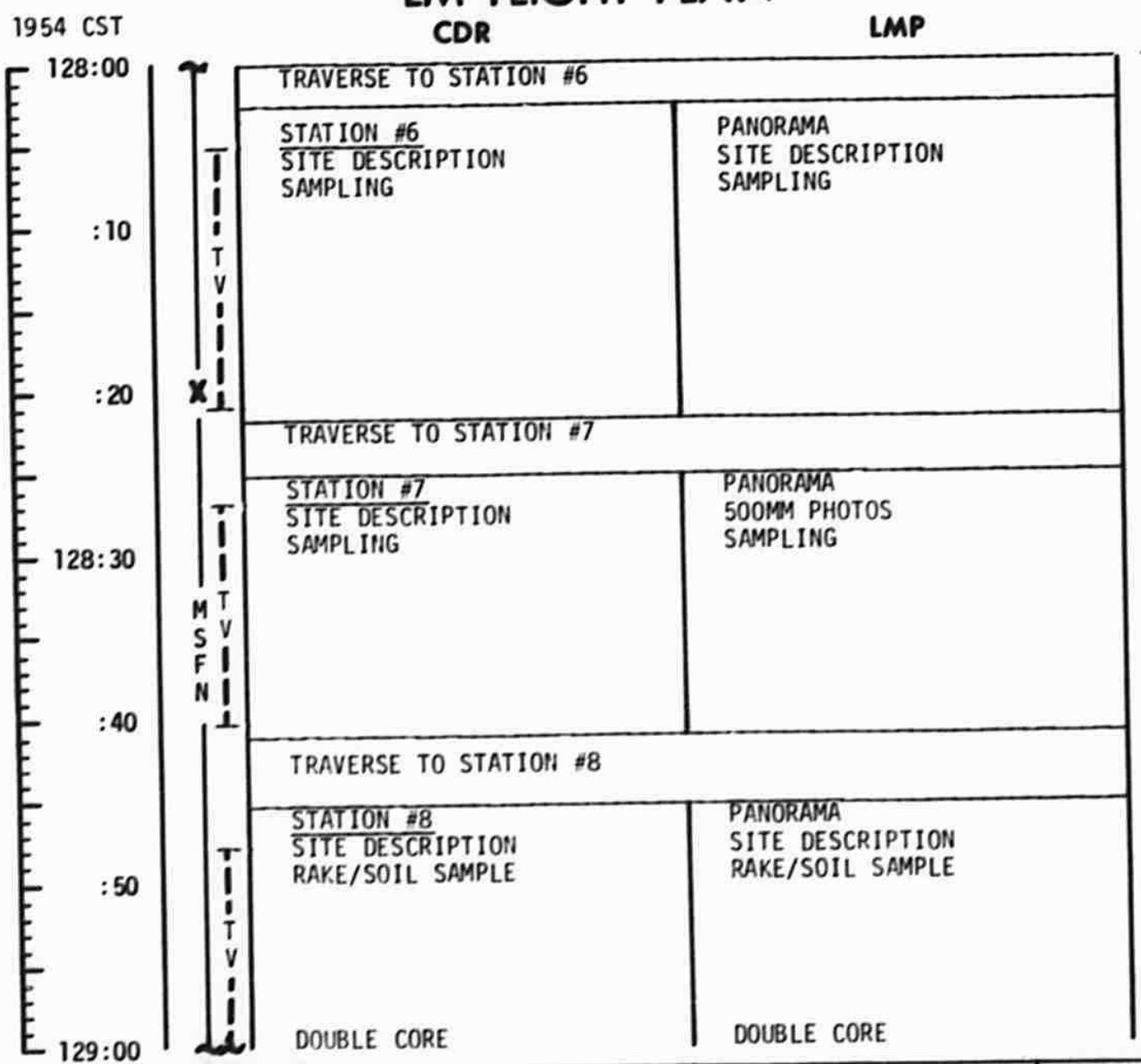
MSFN CMDS: (AOS +14 MIN)
DSE PLAYBACK

128:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	Chg. C ~~FINAL~~ (4/16)	~~2/5/72~~ 9/10/72	3-171

LM FLIGHT PLAN

MCC-H



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	128:00 - 129:00	6/28	3-172

FLIGHT PLANNING BRANCH

1954 CST

CSM FLIGHT PLAN

128:00
(P20)
(0.5°DB)
(10101)
(X1111)

KAFTEYN (V6-B7) CMS

SIM EXP STATUS
(+1221)
(02222)

CONFIGURE CAMERA (TERMINATOR PHOTOS)
CMS/EL/250/VHBW (f5.6,1/125,∞) 6 FR

MAG (SS)____, FR # ____

128:10

PAN CAMERA PHOTO PAD
T-START: __ __ __:__ __:__ __
T-STOP: __ __ __:__ __:__ __
(18.0°E TO 13.0°E)

PC: STBY
STEREO
PWR
PC - OPR (T START)

128:20

IMAGE MTN - INCR (BP)/ON

PC - STBY (T STOP)

PC - OFF (MSFN CUE)

TERMINATOR PHOTOS

GUERICKE (P21-B12) CMS
(f5.6, 1/125, ∞) 6FR

(P20)
(3.0°DB)

RECORD FR # ____
V22N79 (+003,00)
MS - DPLY
GR - DPLY

128:30

128:30
(P20)
(3.0°DB)
(10101)
(X1111)

SIM EXP STATUS
(+1111)
(02222)

128:40

CREW EXERCISE PERIOD

128:50

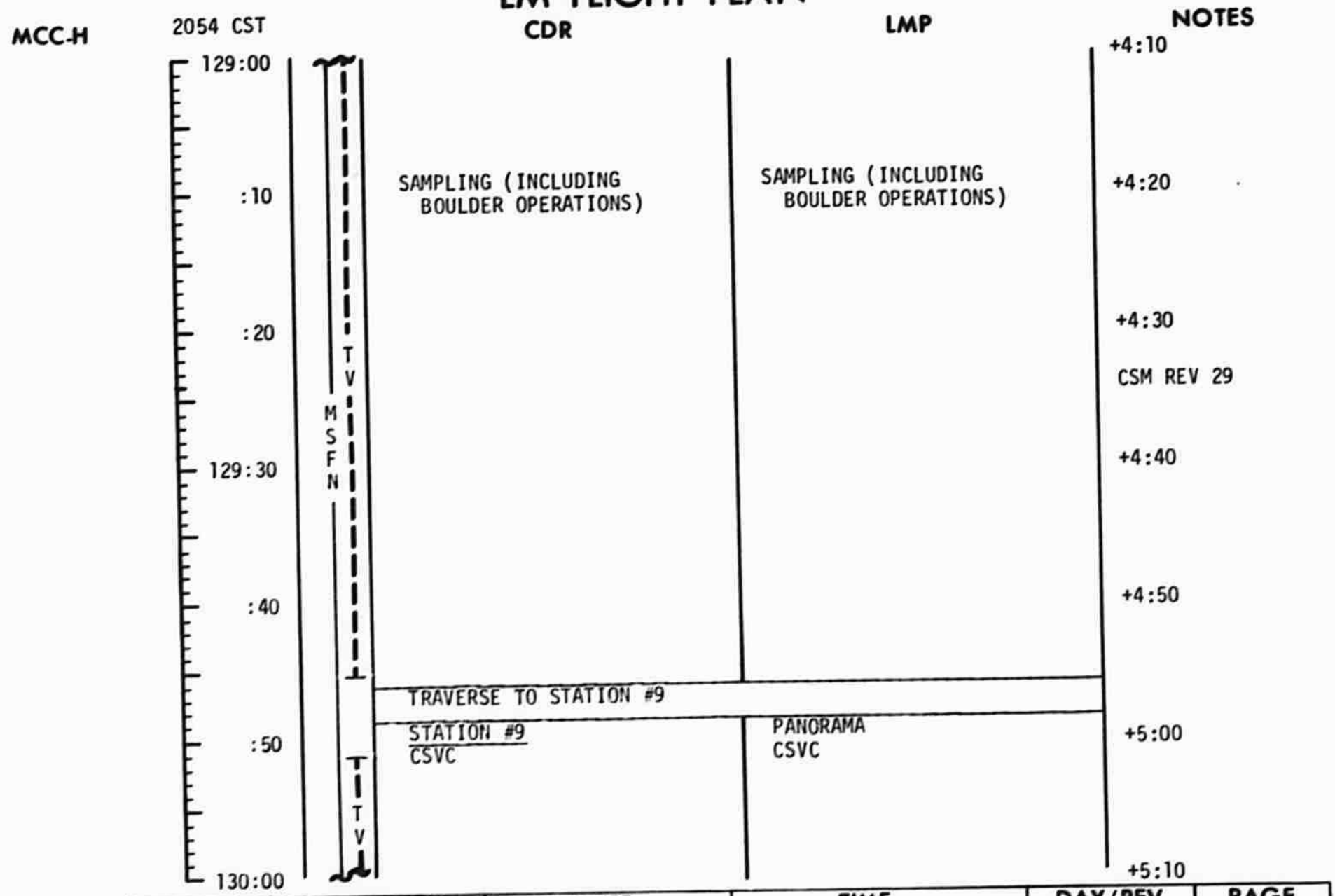
MSFN CMDS: (AOS +66 MIN)
DSE REWIND

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN)

129:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-173

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	129:00 - 130:00	6/28-29	3-174

FLIGHT PLANNING BRANCH

2054 CST

CSM FLIGHT PLAN

129:00
(P20)
(3.0°DB)
(10101)
(x1111)

SIM EXP STATUS
(+1111)
(02222)

129:10 PREPARE FOR ORBITAL SCIENCE VISUALS

129:20
(P20)
(0.5°DB)

CMC MODE - FREE
V22N79 (+000.50)
CMC MODE - AUTO

REV 29

IMAGE MTN - INCR (BP +4 STEPS)/ON
MC - OFF
WAIT 30 SEC
MC - STBY
IMAGE MTN - OFF
MC - ON

ORBITAL SCIENCE VISUALS

FARSIDE HIGHLANDS (V1-B1,B2) CM5

129:30

129:30
(P20)
(0.5°DB)
(10101)
(x1111)

SIM EXP STATUS
(+1111)
(02222)

129:40

ACQ MSFN HGA: MAN, WIDE P 10, Y 0
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

129:50

M
S
F
N

MSFN CMDS: (~AOS +7 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

CONFIGURE CAMERA (ORBITAL SCIENCE)
CM5/EL/250/CEX-IVL (f8,1/250,∞) 41 FR

MAG (PP)_____, FR # _____

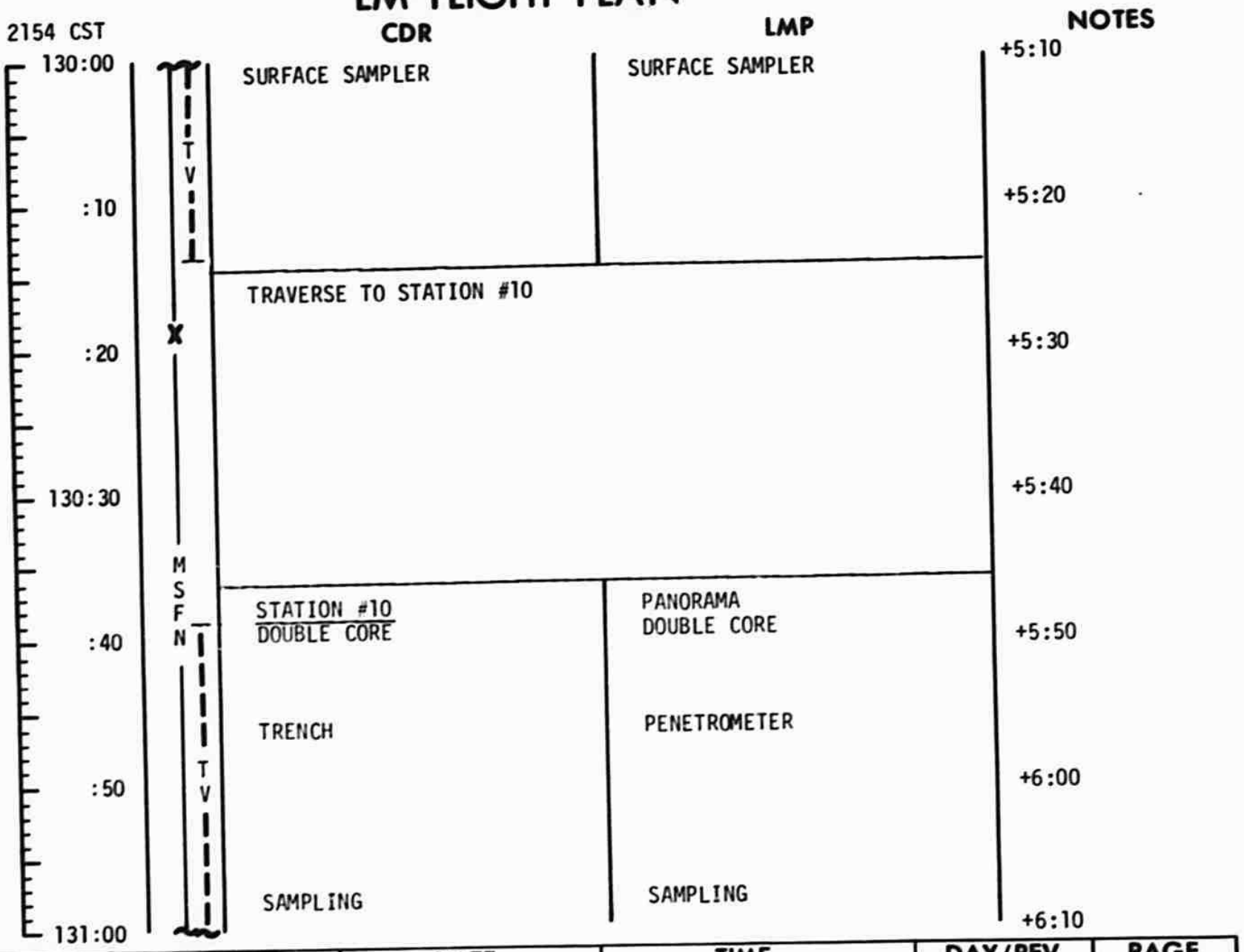
MSFN CMDS: (AOS +14 MIN)
DSE PLAYBACK

130:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A FINAL (4/16)	3/09/72 3/16/72 9/10/72	3-175

LM FLIGHT PLAN

MCC-H



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	130:00 - 131:00	6/29	3-176

FLIGHT PLANNING BRANCH

2154 CST

CSM FLIGHT PLAN

130:00
(P20)
(0.5°DB)
(10101)
(x1111)

Prepare for Photo Strip

SIM EXP STATUS
(+1111)
(02222)

CONFIGURE FOR URINE DUMP

GR: SHIELD - OFF

130:10

ORBITAL SCIENCE PHOTOS
CATHARINA (P13-89,B10)
CM5 (f8,1/250,∞) 41 FR

MSFN

130:20

RECORD FR # ____
IMAGE MTN - INCR (BP)/~~ON~~ OFF

GR: SHIELD - ON (CTR)

MC - OFF (T STOP)
WAIT 30 SEC
MC - STBY
~~IMAGE MTN - OFF~~
LA - OFF

130:30

130:30
(P20)
(0.5°DB)
(10101)
(x1111)

SIM EXP STATUS
(+1111)
(01222)

MC - RETR

AP/XR COVER - CLOSE
MC/LA COVER - CLOSE

P52 IMU REALIGN
N71: __ __, __ __
N05: __ __ __ • __ __
N93:
X __ __ • __ __ __
Y __ __ • __ __ __
Z __ __ • __ __ __ • __
GET __ __ __ • __ __ • __ __

(P20)
(3.0°DB)

V22 N79 (+003.00)

130:40

CMC MODE - FREE
P52 (OPTION 3)
(LDG SITE ORIENT)

MSFN

REPORT: GYRO TORQUING ANGLES

P20, CMC MODE - AUTO
GDC ALIGN

130:50

MSFN CMDS: (AOS +66 MIN)
DSE REWIND

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN)

WASTE WATER DUMP
URINE DUMP

131:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	Chg C ~~Final~~ (4/16)	~~3/16/72~~ 4/10/72	3-177

LM FLIGHT PLAN

MCC-H

2254 CST

	CDR	LMP	NOTES
131:00	TRENCH SAMPLES	TRENCH SAMPLES	+6:10
	TRAVERSE TO LM		
:10	PARK AND POWERDOWN LRV	DEPLOY HGA, DUST SURFACES PHOTO LRV RESET FAR UV CAMERA	+6:20
:20	UNLOAD PLSS	UNLOAD PLSS	+6:30 CSM REV 30
	PACK ETB	PACK SRC-2	
131:30	CLEAN EMU	CLEAN EMU	+6:40
	SRC-2 TRANSFER	INGRESS	
:40	LRV CONFIGURE RESET FAR UV CAMERA		+6:50
	INGRESS	RECEIVE & STOW ETB	
:50	CLOSE HATCH, REPRESS LM CABIN		+7:00/END EVA-2
	POST EVA-2 SYSTEMS CONFIGURATION VERIFY EVA CB CONFIGURATION DOFF GLOVES, DOFF HELMETS AND STOW IN BAGS		
	TRANSFER TO LM ECS HOSES		
132:00			

MSFN: TV, TV

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	131:00 - 132:00	6/29-30	3-178

FLIGHT PLANNING BRANCH

2254 CST

CSM FLIGHT PLAN

131:00
(P20)
(3.0°DB)
(10101)
(x1111)

SIM EXP STATUS
(+0110)
(01222)

MANUALLY ROLL CCW 40°

P20 OPT 5 (-X FWD SIM ATT)(131:26)
SET HGA P 0, Y 170 FOR AOS ACQ

N79(+003.00)

131:10

TERMINATE WASTE WATER DUMP AT 10±

CONFIGURE CAMERA (TERMINATOR PHOTOS)
CMS/EL/250/VHBW (f5.6,1/125,-) 6 FR

MAG (SS) ____, FR # ____

131:20

REV 30

FLOOR OR
TERMINATOR PHOTOS
SPENCER JONES (P2-BZ) CMS

RECORD FR # ____
AP/XR COVER - OPEN

131:30

131:30
(P20)
(3.0°DB)
(10101)
(x1111)

SIM EXP STATUS
(-0111)
(01222)

131:40

ACQ MSFN HGA: MAN, WIDE P 0, Y 170
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

EAT PERIOD

MSFN

131:50

MSFN CMDS: (~AOS +7 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

PC: MODE - STBY
PWR - ON

MSFN CMDS: (AOS +14 MIN)
DSE PLAYBACK

132:00

PC: PWR - OFF (MSFN CUE)

MISSION	EDITION	DATE	PAGE
APOLLO 16	~~FINAL (4/10)~~ CHANGE A	4/7/72 ~~3/6/72~~	3-179

LM FLIGHT PLAN

MCC-H | 2354 CST | CDR | LMP | NOTES

132:00

CONFIGURE AND CONNECT TO LM COMM — BIOMED - RIGHT

PLSS O_2 INITIAL RECHARGE

CONNECT LM O_2 HOSE TO LMP PLSS AND FILL

:10

CONNECT LM O_2 HOSE TO CDR PLSS AND FILL

DISCONNECT & STOW LM O_2 HOSE

:20

PLSS/OPS DOFFING

DISCONNECT OPS & RCU FROM PLSS

MSFN

132:30

LMP, THEN CDR DOFF PLSS/OPS

REPORT: OPS PRESSURE

CHANGE PLSS LiOH CARTRIDGES & BATTERIES

:40

STOW OPS'S & PLSS'S

:50

POST-EVA CABIN CONFIGURATION — BATS 2&T - OFF/RESET

UNSTOW LUNAR SURFACE CHECKLIST — BAT L (LMP) - ON

STOW EVA-2 PREP & POST CARDS — CHECK BUS VOLTS

STOW ETB

133:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	132:00 - 133:00	6/30	3-180

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

2354 CST

132:00
(P20)
(3.0°DB)
(10101)
(X1111)

132:10

132:20

132:30

SIM EXP STATUS
(-0111)
(01222)

EAT PERIOD

132:30
(P20)
(3.0°DB)
(10101)
(X1111)

132:40

132:50

133:00

MSFN UPDATE:
TEI ~~42~~ PAD
41

MSFN UPLINK:
JET-ON MONITOR LOADS

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST PAGE S/1-29
LOGIC PWR (2) - OFF
VHF AM T/R - RCV (PNL 9)
VHF AM A - DUPLEX

SIM EXP STATUS
(-0111)
(01222)

ONBOARD READOUT

BAT C _____
PYRO BAT A _____
PYRO BAT B _____
RCS A _____
B _____
C _____
D _____
DC IND SEL - MNA OR B

FILM MAGS REQD FOR NEXT DAY:
DAC: VHBW-HH, BW164-II
EL: VHBW-SS, CEX-PPE QQ, UV-OO
NK: VHBW-ZZ

MSFN CMDS: (AOS +66 MIN)
DSE REWIND

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET)(AOS +73 MIN)

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE 6 ~~FINAL~~ (4/16)	3/27/72 ~~3/16/72~~ 4/7/72	3-181

LM FLIGHT PLAN

MCC-H | 0054 CST | CDR | LMP | NOTES

133:00

WEIGH SRC & COLLECTION BAGS, REPORT: WEIGHTS
STOW SCALE, SRC, & COLLECTION BAGS
VERIFY POWERDOWN CB
CONFIGURATION

:10

DOFF SUITS
CDR, THEN LMP DOFF PGA — BIOMED - OFF
DON ICG
VERIFY COMM

:20

CSM REV 31

133:30

MSFN

BIOMED - LEFT

EVA DEBRIEFING

:40

UPDATE TO LM LIFT-OFF TIMES FOR REVS 32-36

:50

EAT PERIOD

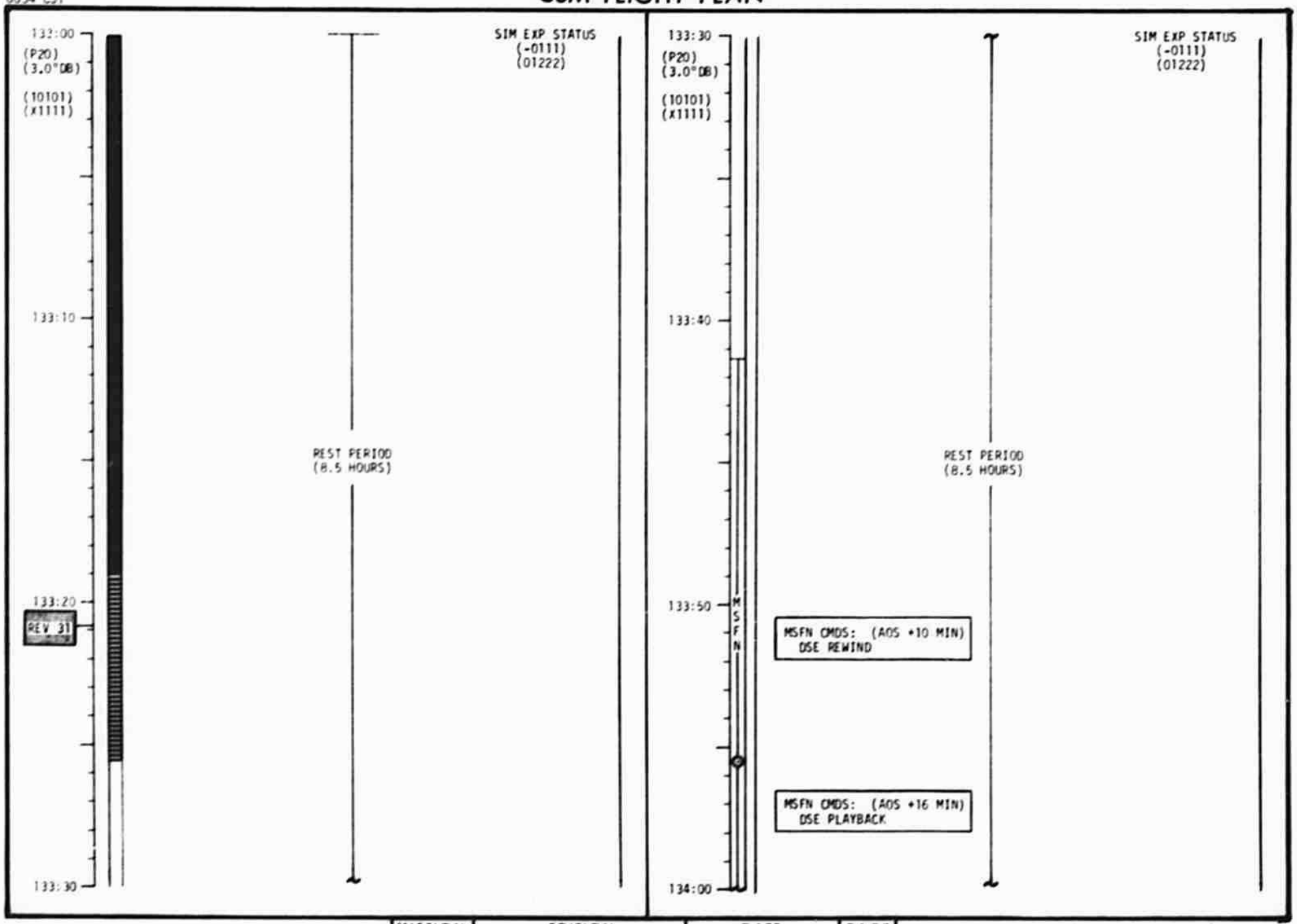
134:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	133:00 - 134:00	6/30-31	3-182

FLIGHT PLANNING BRANCH

0054 CST

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-183

LM FLIGHT PLAN

MCC-H

0154 CST

	CDR	LMP	NOTES
134:00			
:10			
:20	EAT PERIOD		
134:30			
:40	PLSS RECHARGE CONNECT LM O_2 HOSE TO CDR PLSS AND FILL		
:50	CONNECT LM H_2O HOSE TO CDR PLSS AND FILL DISCONNECT & STOW CDR PLSS CONNECT LM O_2 HOSE TO LMP PLSS AND FILL		GDS 210 LOS
135:00			

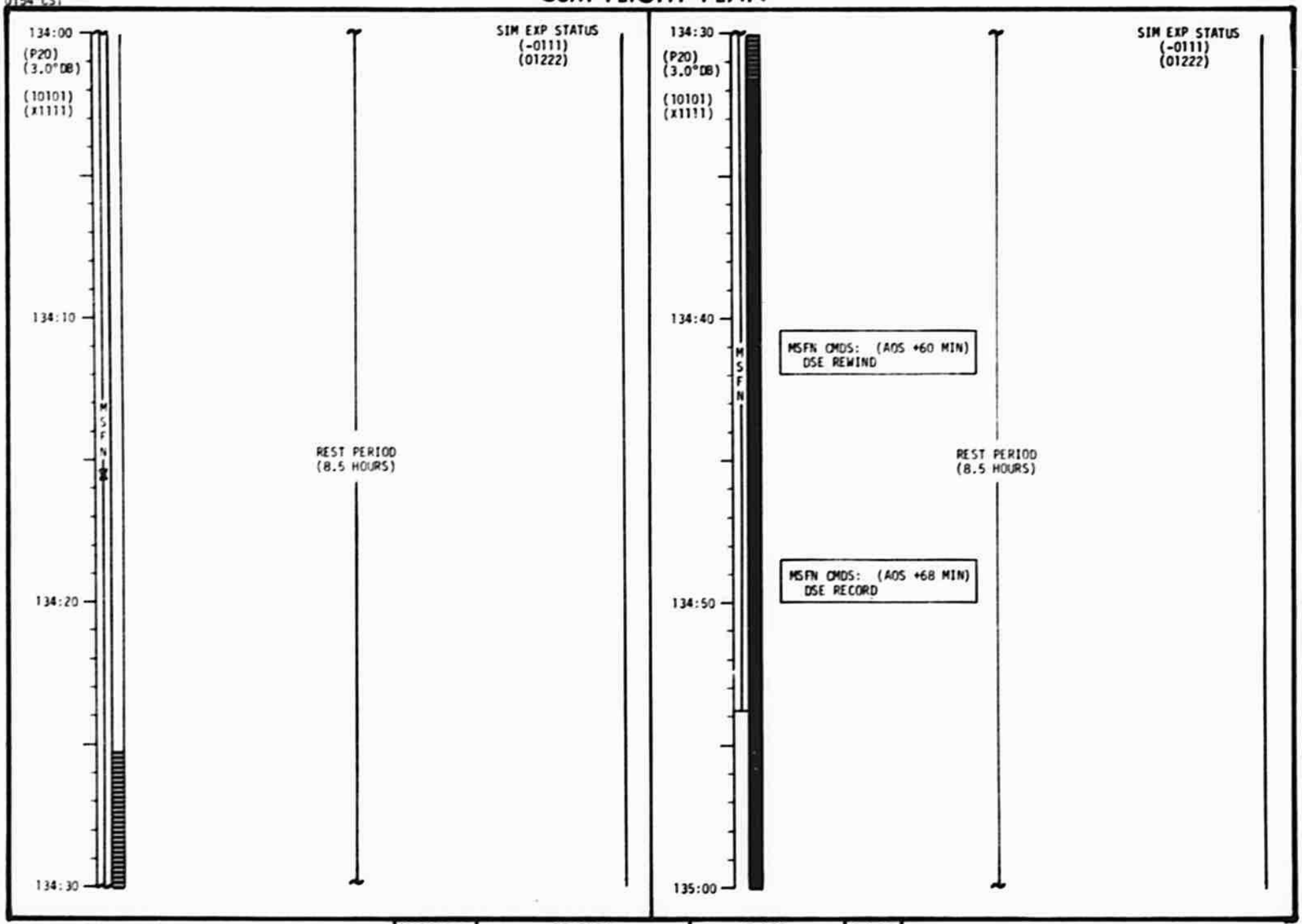
X — MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	134:00 - 135:00	6/31	3-184

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0154 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-185

LM FLIGHT PLAN

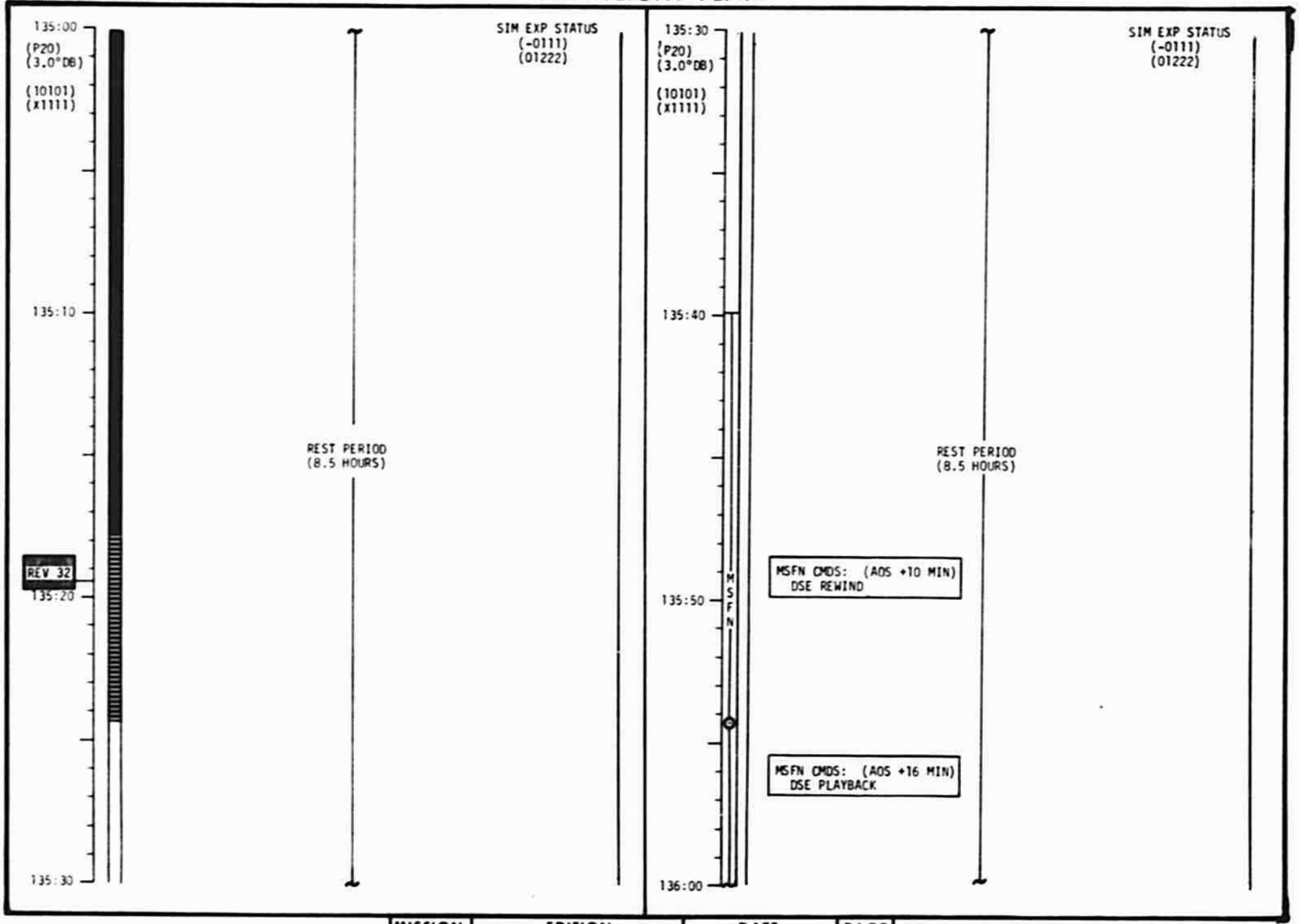
MCC-H	0254 CST	CDR	LMP	NOTES
	135:00			
		CONNECT LM H_2O HOSE TO LMP PLSS AND FILL		
		DISCONNECT & STOW LMP PLSS		
		OPEN DES H_2O VALVE		
	:10	MCC-H CONFERENCE		
				CSM REV 32
	:20			
	135:30	MSFN		
	:40			
	:50			
	136:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	135:00 - 136:00	6/31-32	3-186

FLIGHT PLANNING BRANCH

0254 CST

CSM FLIGHT PLAN



LM FLIGHT PLAN

MCC-H | 0354 CST | CDR | LMP | NOTES

136:00

MCC-H CONFERENCE (CONT)

:10

:20

PRE-SLEEP
CONFIGURE ECS FOR SLEEP

136:30

MSFN

CONFIGURE SLEEP STATIONS FOR SLEEP

:40

ACTIVATE LGC, RESET LGC CLOCK, LGC TO STANDBY

:50

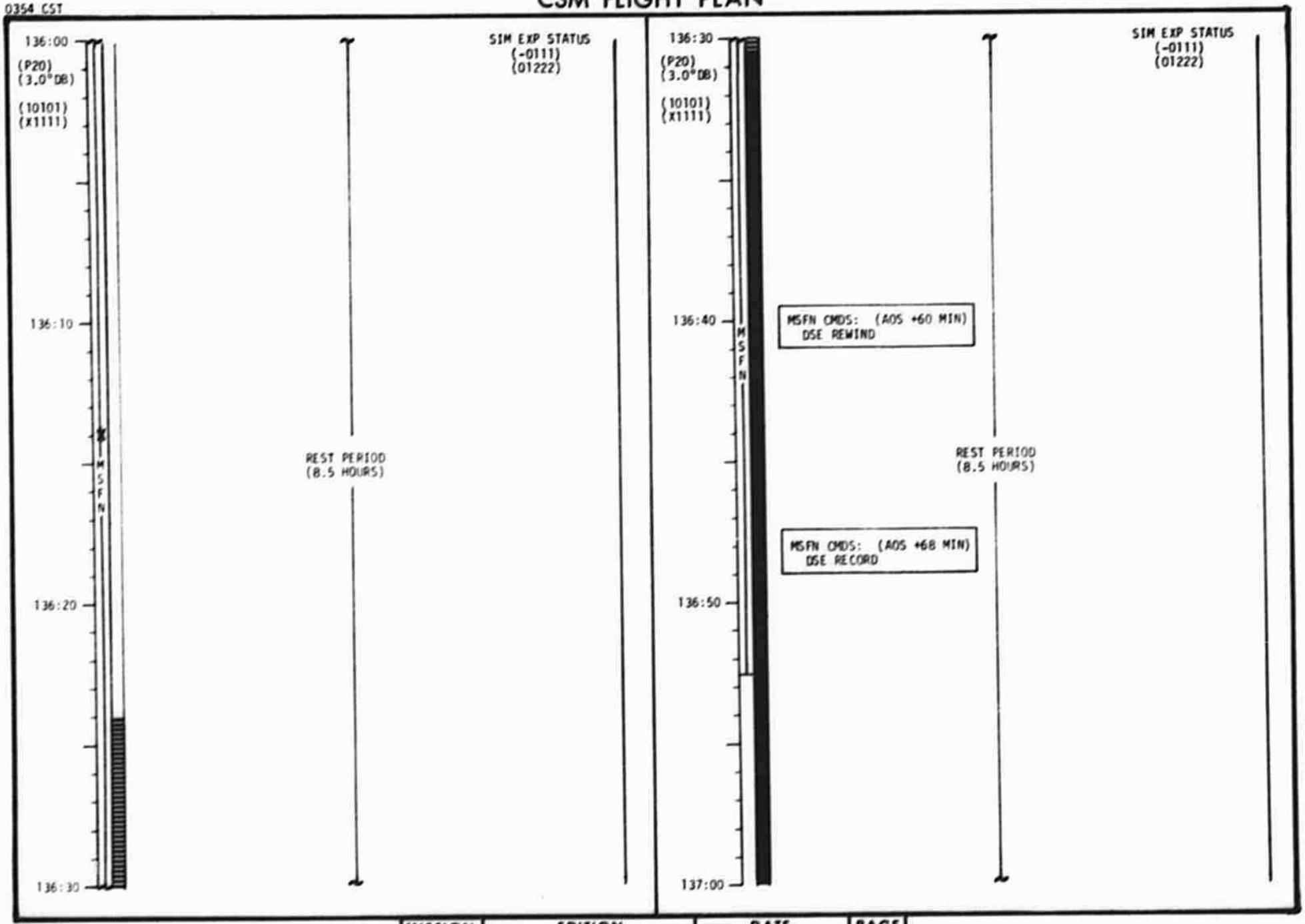
REST PERIOD
(8 HOURS)

137:00

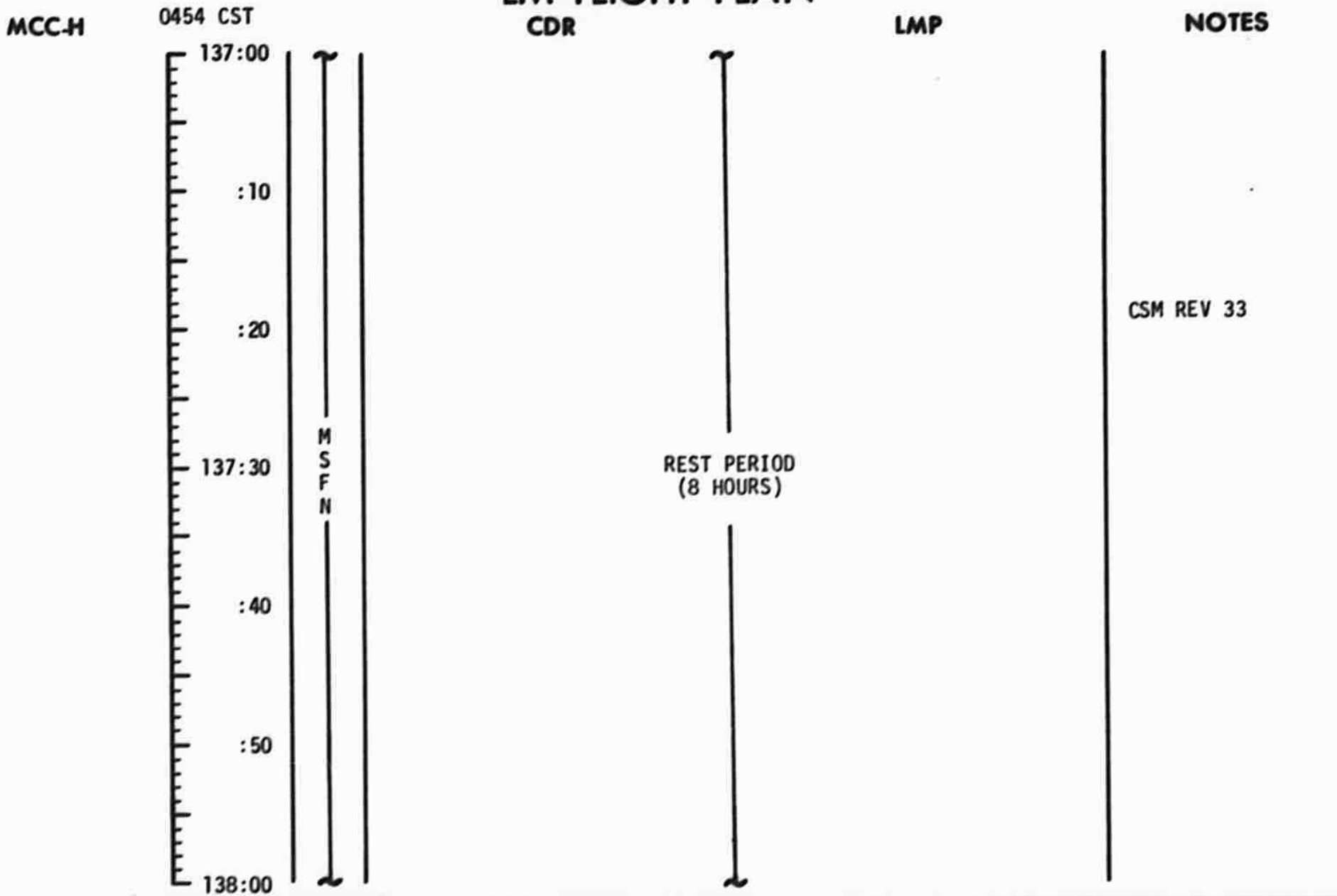
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	136:00 - 137:00	6/32	3-188

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



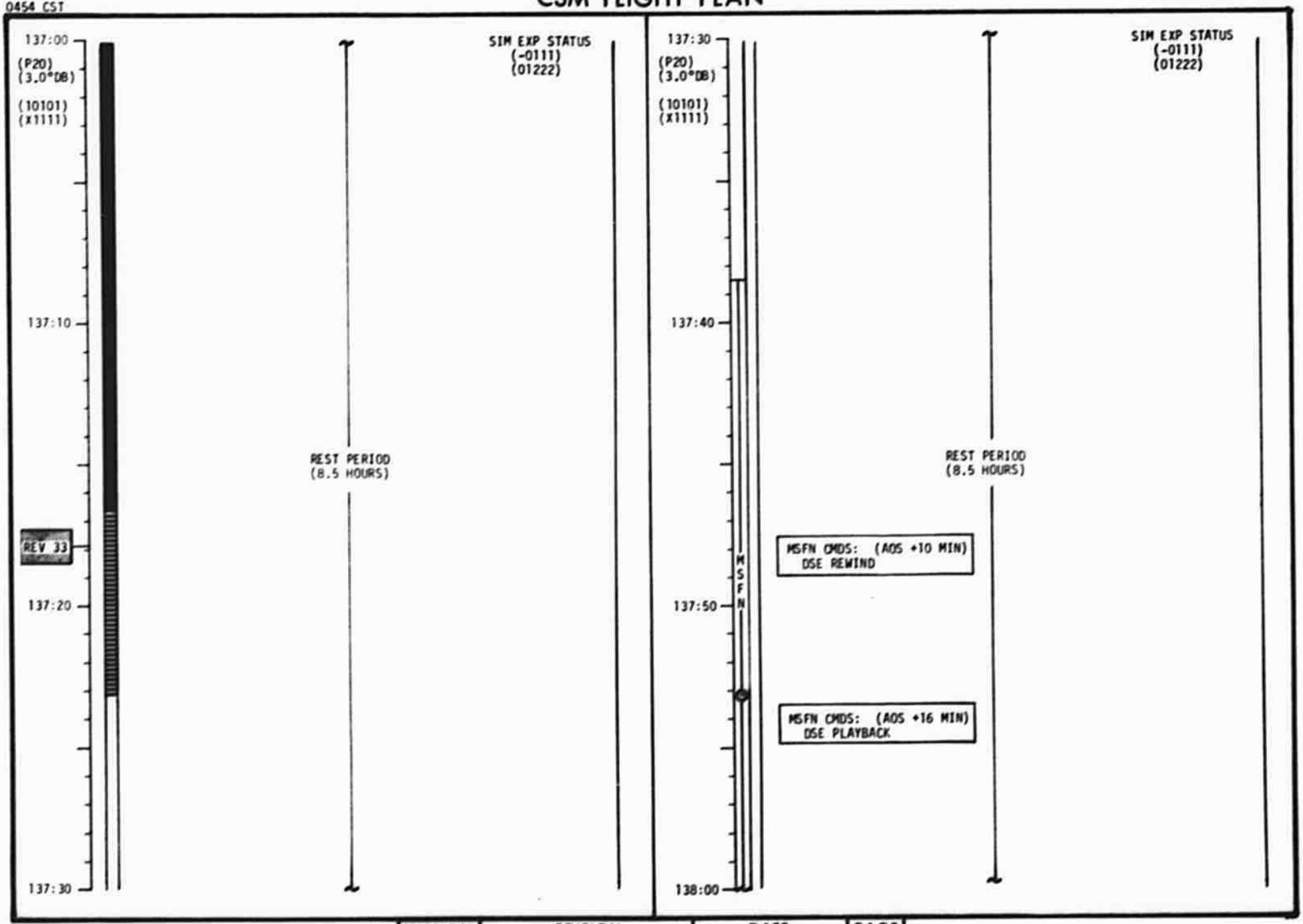
LM FLIGHT PLAN



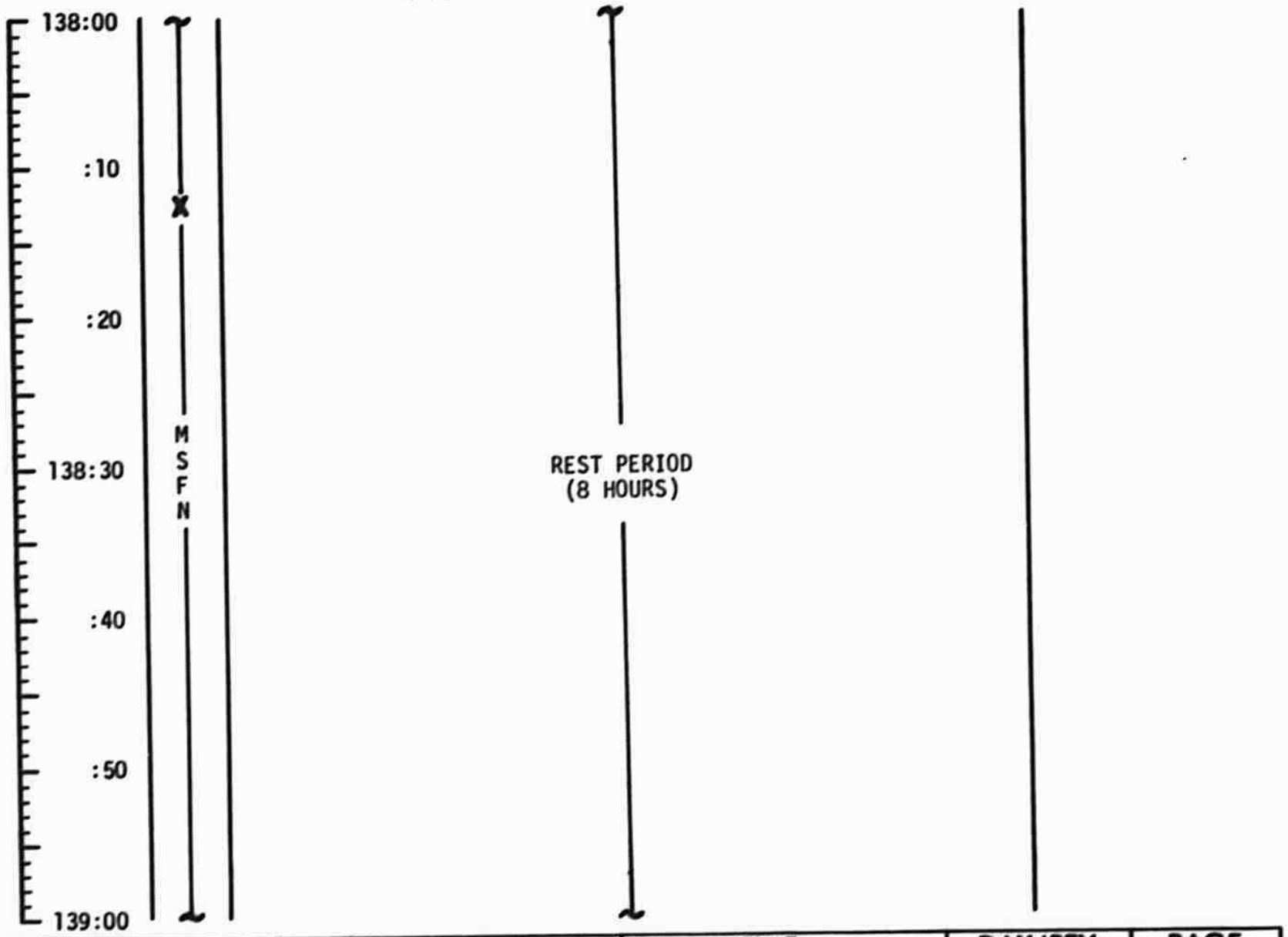
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	137:00 - 138:00	6/32-33	3-190

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



LM FLIGHT PLAN

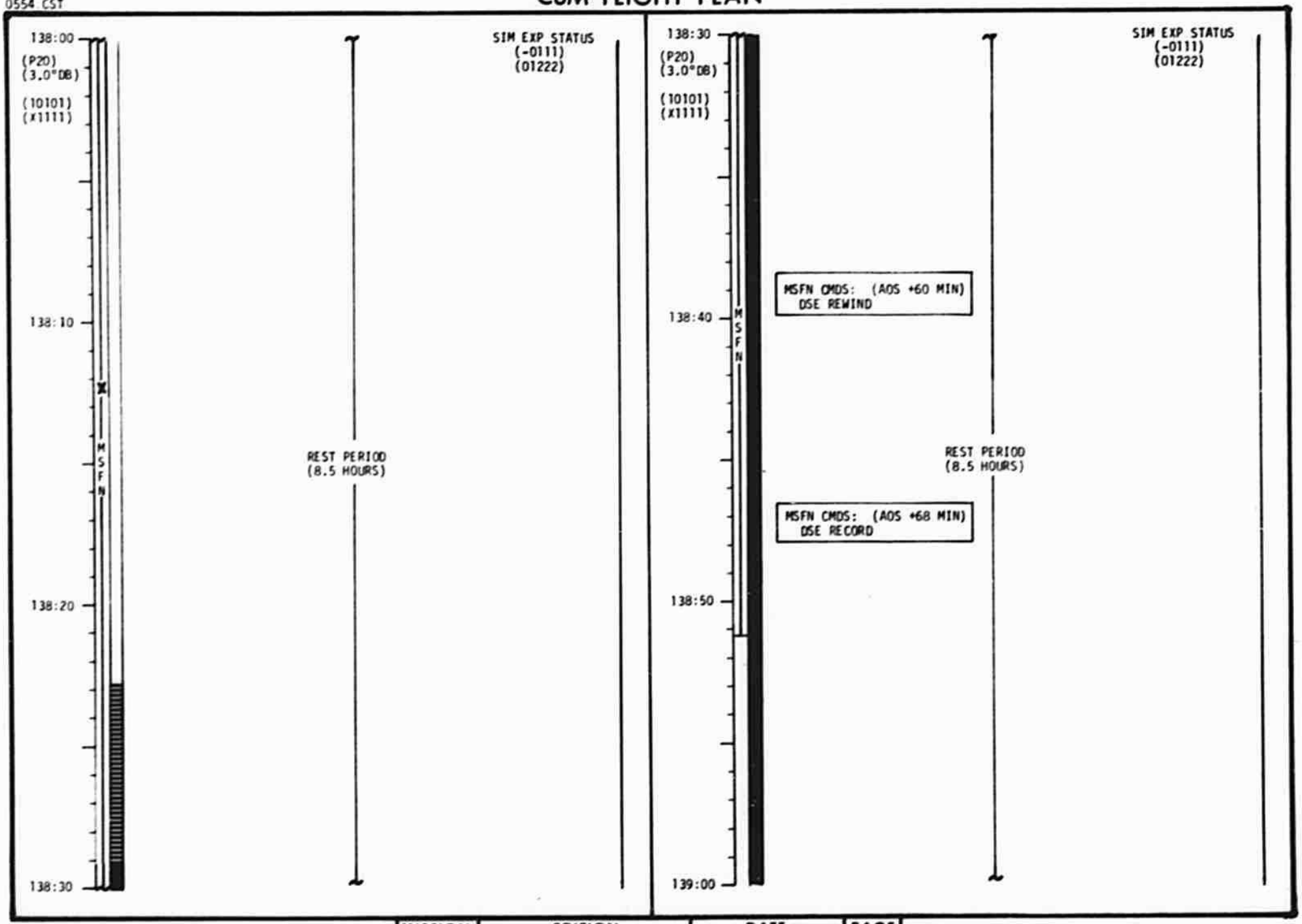


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	138:00 - 139:00	6/33	3-192

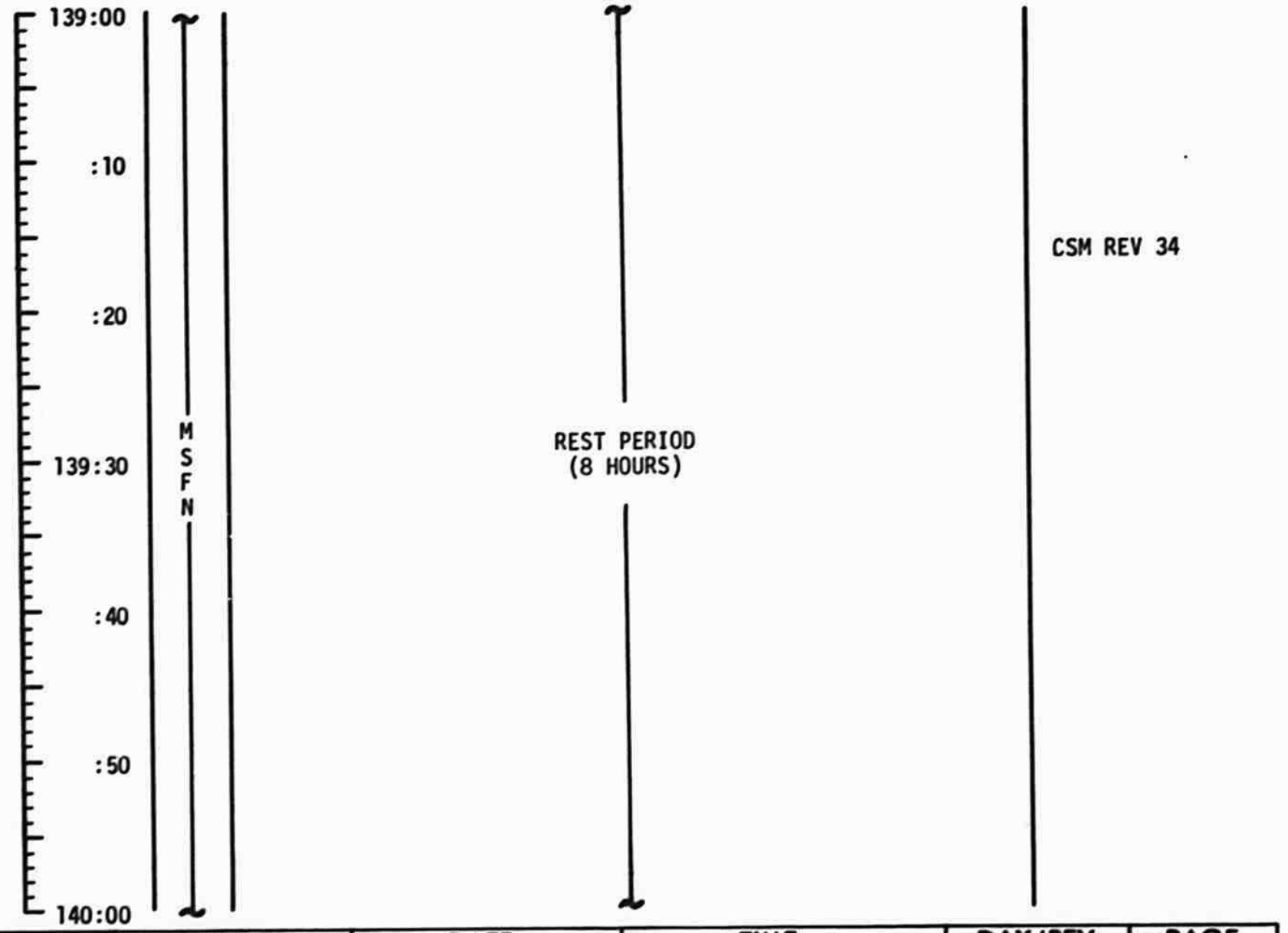
FLIGHT PLANNING BRANCH

0554 CST

CSM FLIGHT PLAN



LM FLIGHT PLAN

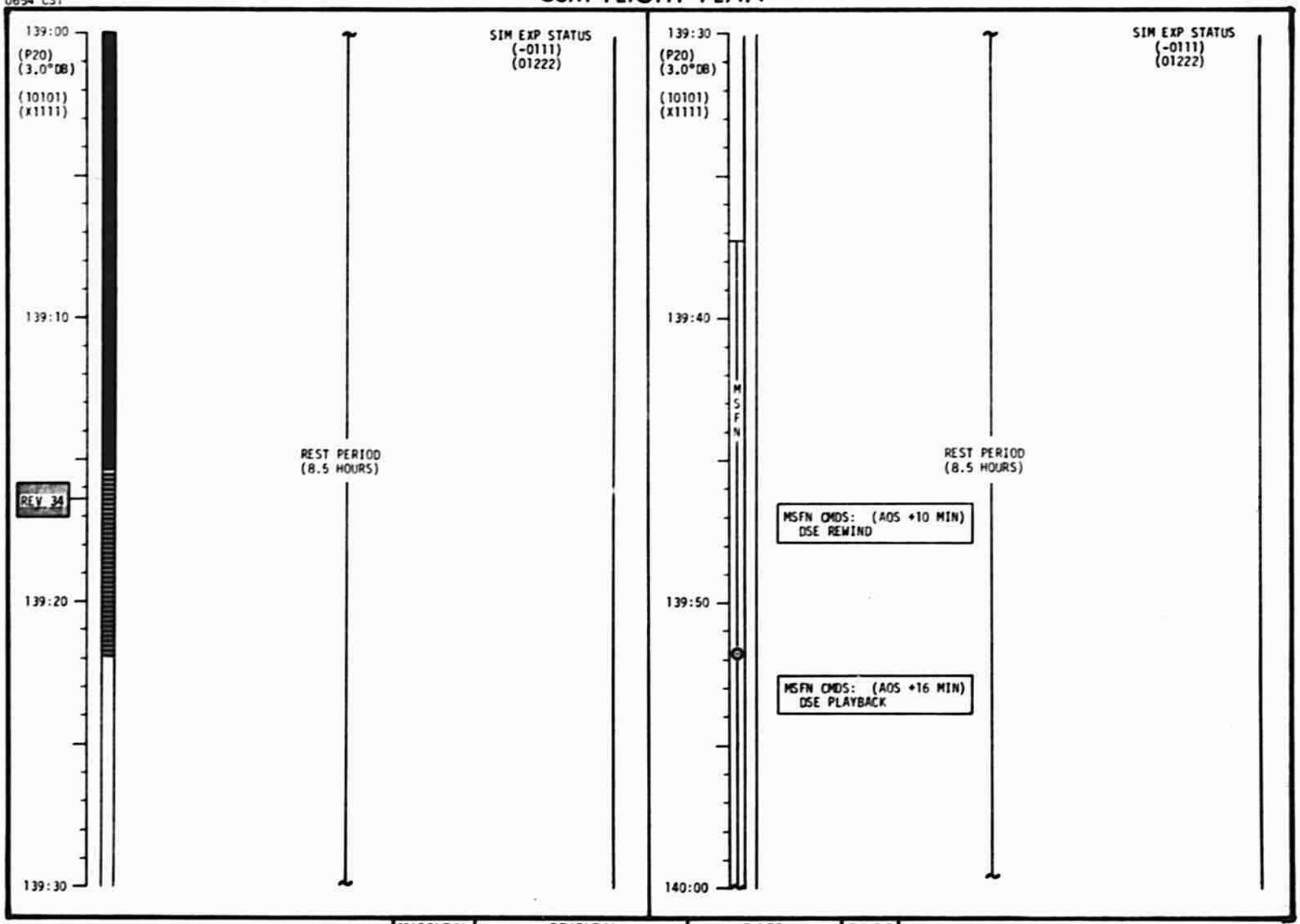


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	139:00 - 140:00	6/33-34	3-194

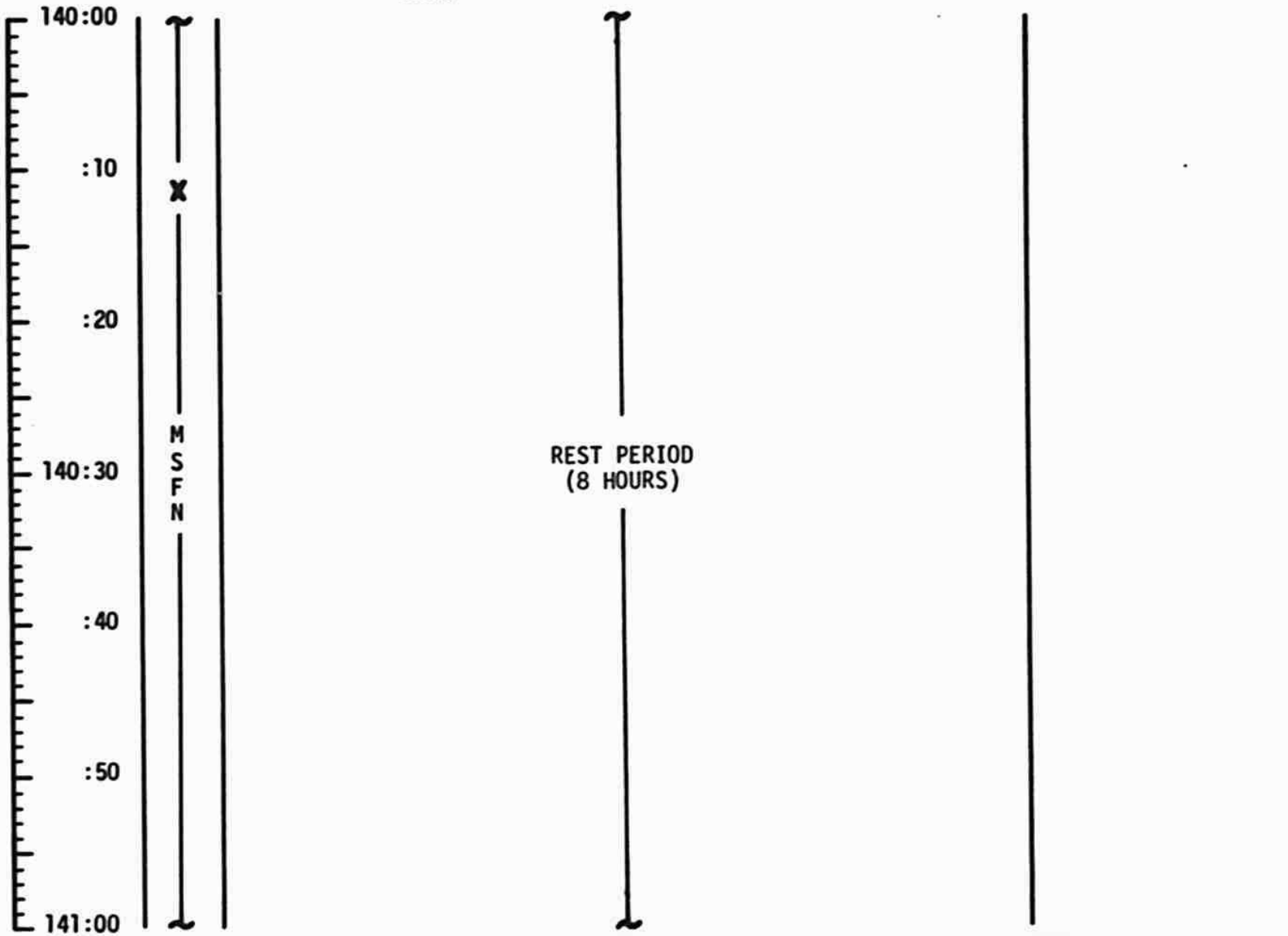
FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0654 CST



LM FLIGHT PLAN

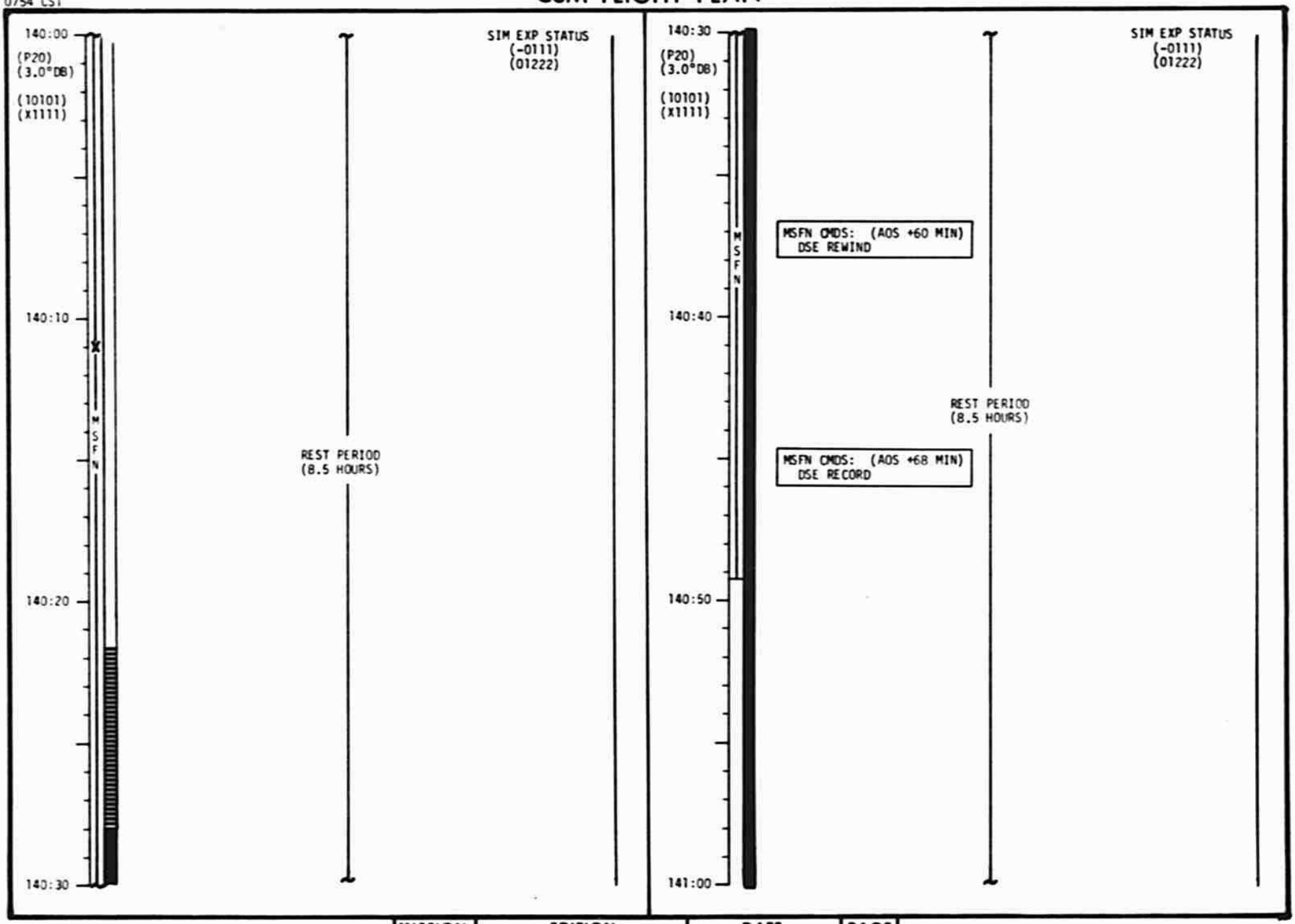


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	140:00 - 141:00	6/34	3-196

FLIGHT PLANNING BRANCH

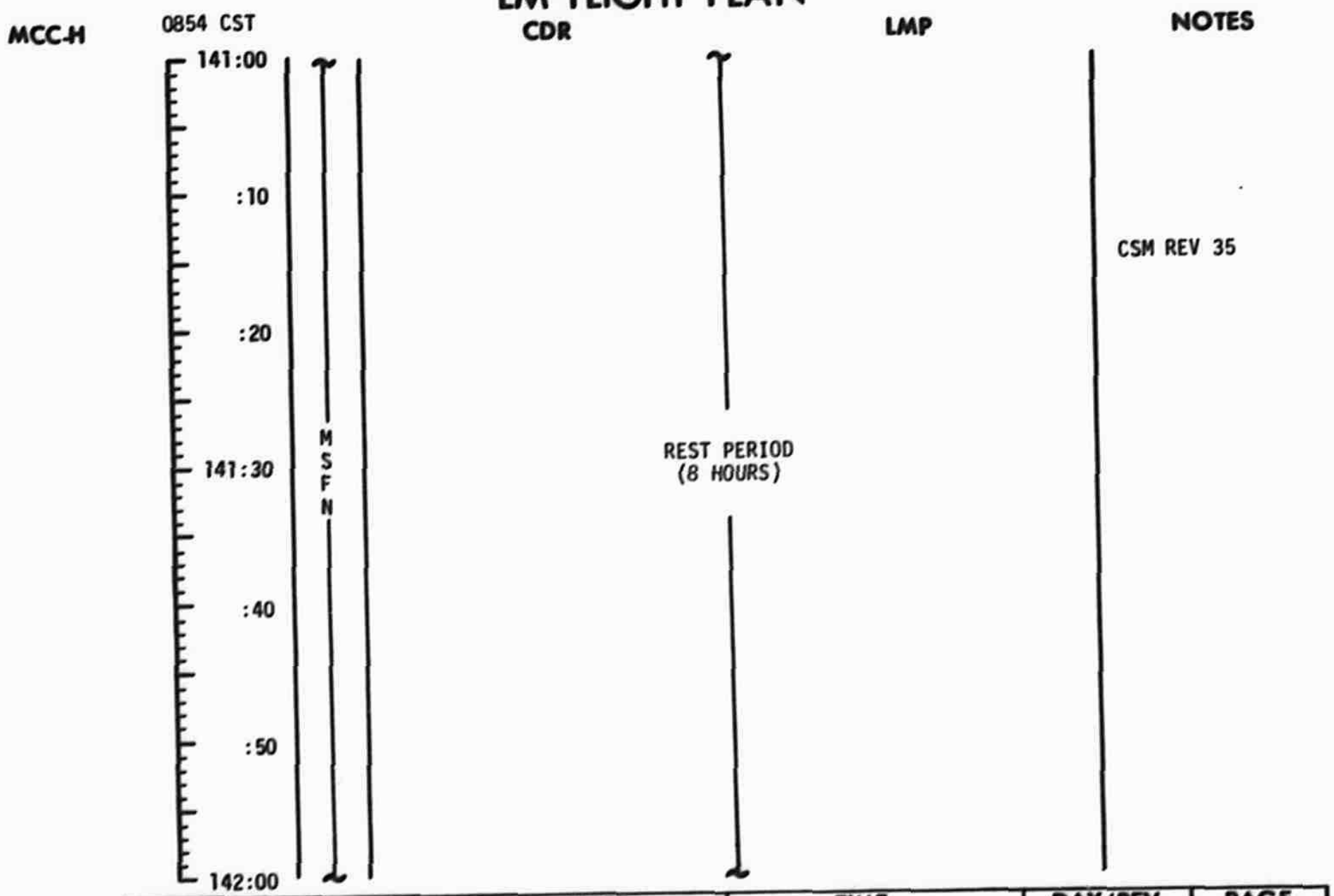
CSM FLIGHT PLAN

0754 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-197

LM FLIGHT PLAN

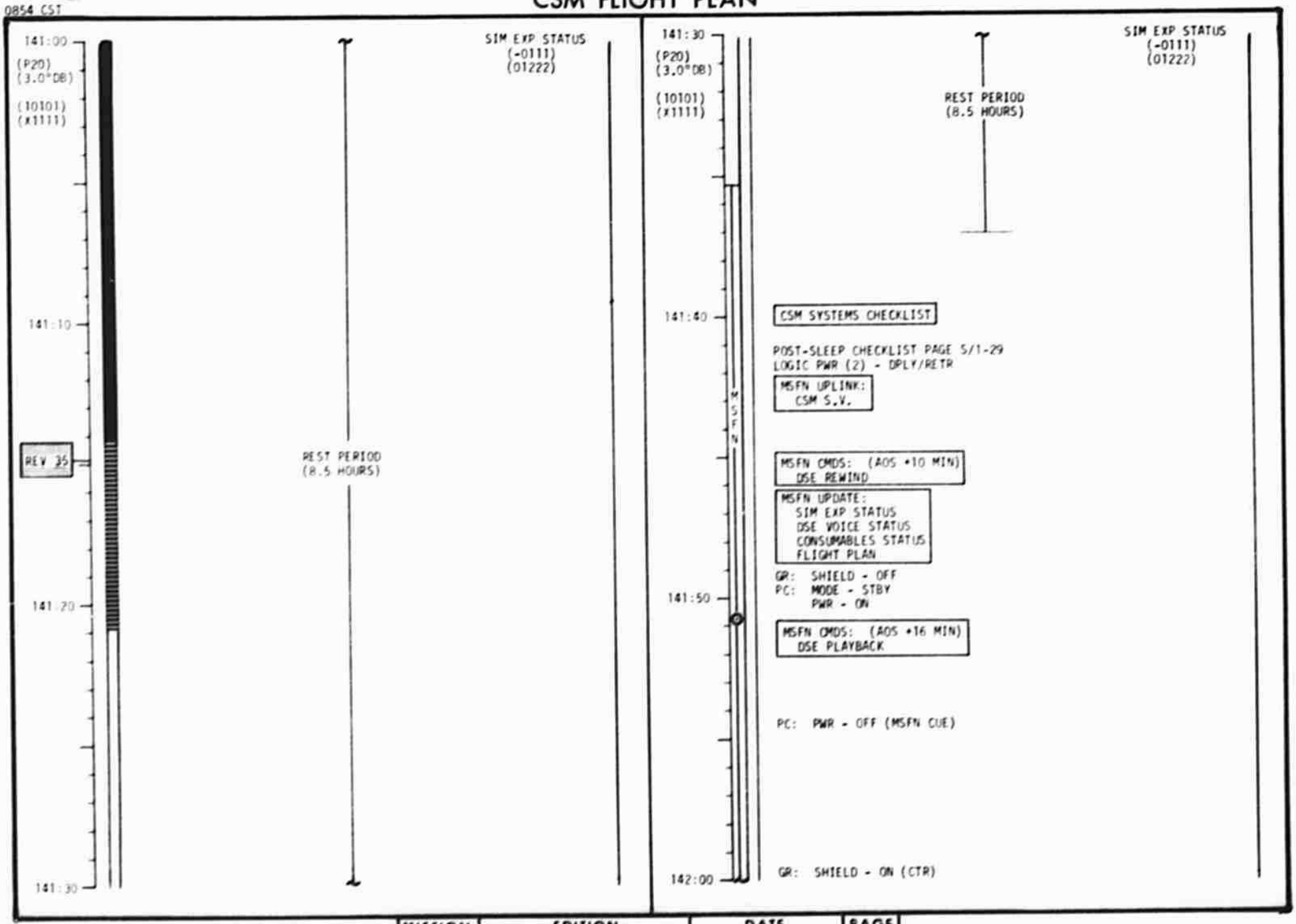


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	141:00 - 142:00	6/34-35	3-198

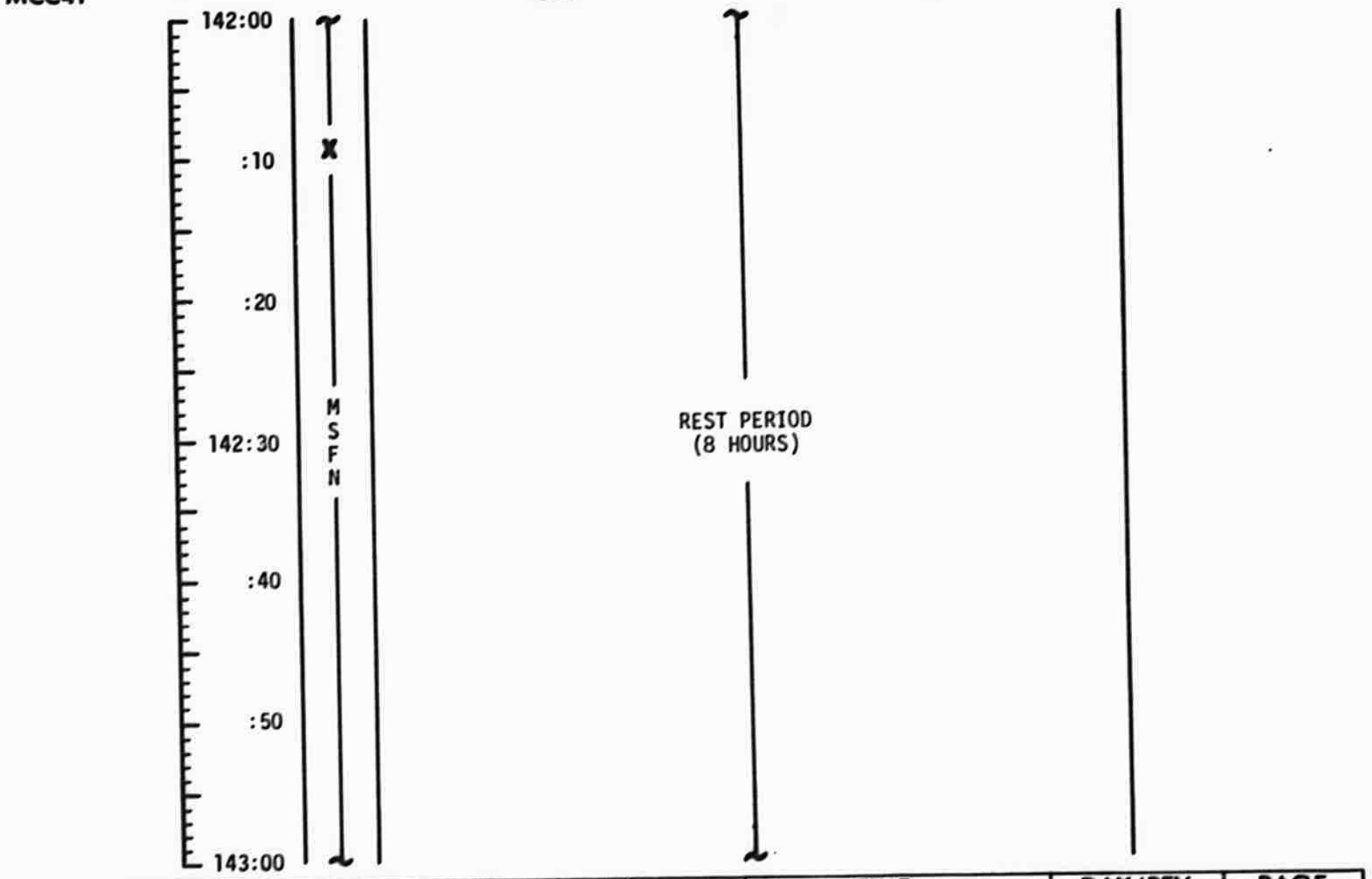
FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0854 CST



LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	142:00 - 143:00	6/35	3-200

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0954 CST

142:00
(P20)
(3.0°DB)
(10101)
(X1111)
(10101)
(X1111)
142:10
142:20
142:30

MSFN

CHARGE BATTERY A

SIM EXP STATUS
(-0111)
(01222)

CMC MODE - FREE
P00
CMC MODE - AUTO

CSM EXP/EVA CHECKLIST

GEGENSCHEIN PASS #1, PAGE X/2-1
MAG (ZZ)
V49 MNVR TO ANTI-SOLAR PT ATT (142:25)
(167,257,356) HGA P -53, Y 218

MNVR TIME ~ 14 min 50 sec

NOTE: DO NOT START PHOTO SEQUENCE UNTIL 142:30

142:30
(10101)
(X1111)
142:40
142:50
143:00

MSFN

GEGENSCHEIN PASS #1 (ANTI-SOLAR PT)

SIM EXP STATUS
(*0111)
(01222)

MSFN CMDS: (AOS +66 MIN)
DSE REWIND

V49 MNVR TO MIDWAY PT ATT (142:49)
(167,267,358) MNVR TIME ~ 1 min 00 sec

MSFN CUE:
CONFIG DSE AT PROPER TIME

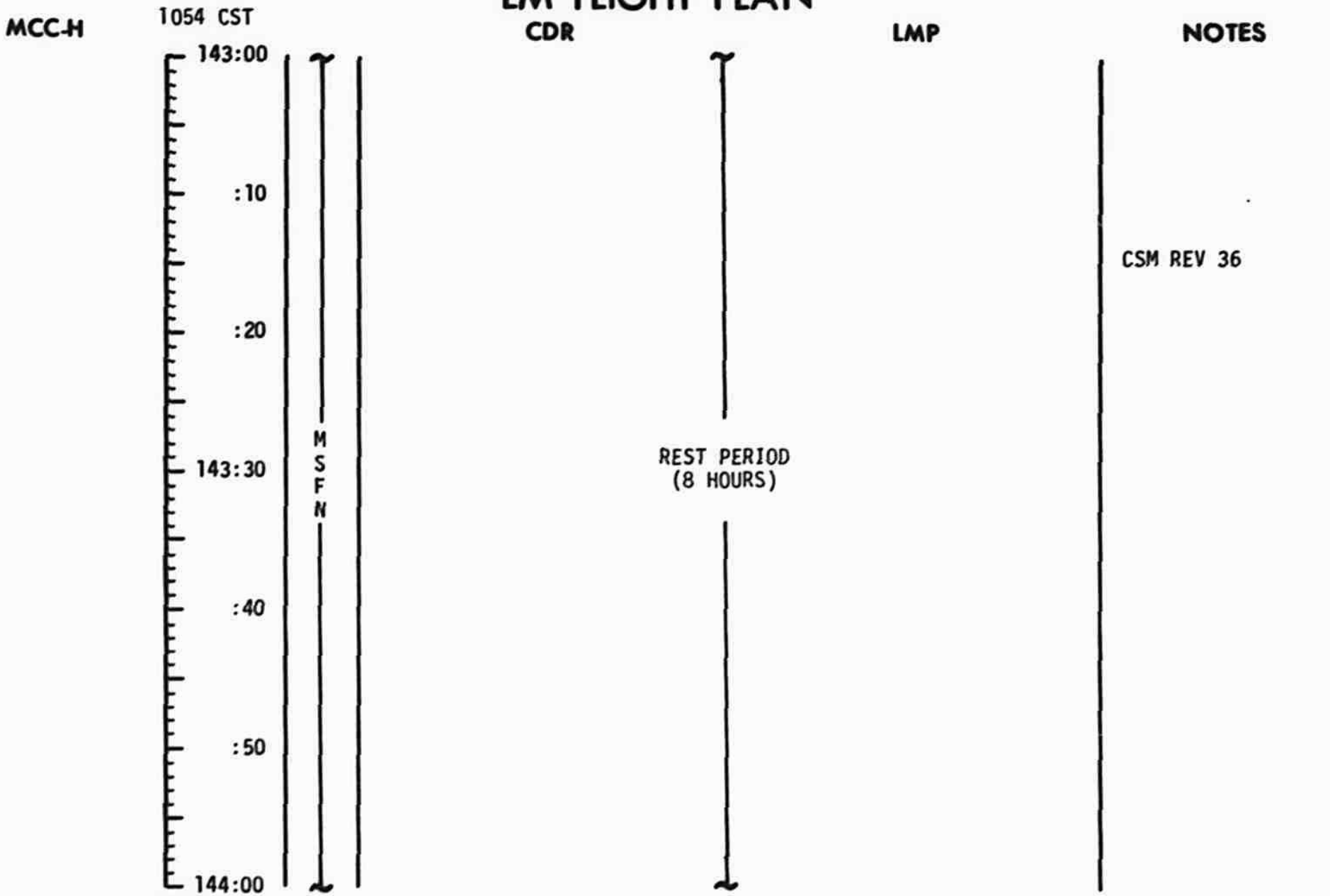
CONFIGURE DSE (HBR/RCD/FWD/CMD RESET)(AOS +73 MIN)

GEGENSCHEIN PASS #1 (MIDWAY PT)

V49 MNVR TO MOULTON PT ATT (143:03)
(167,276,359) MNVR TIME ~ 1 min 20 sec

MISSION	EDITION	DATE	PAGE
APOLLO 16	2 CHANGE #1 FINAL (4/16)	4/17/72 (PM)	3-201

LM FLIGHT PLAN

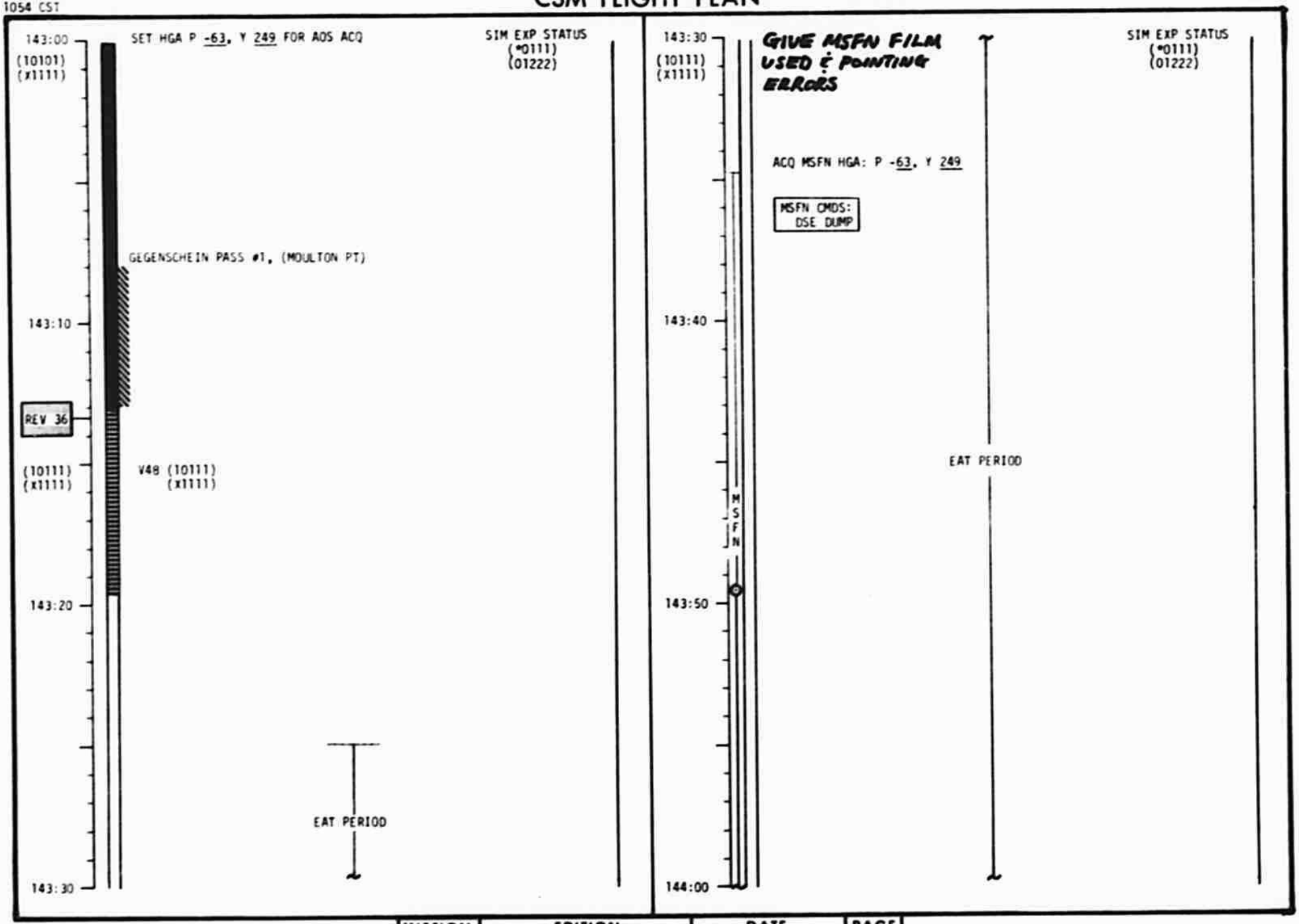


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	143:00 - 144:00	6/35-36	3-202

FLIGHT PLANNING BRANCH

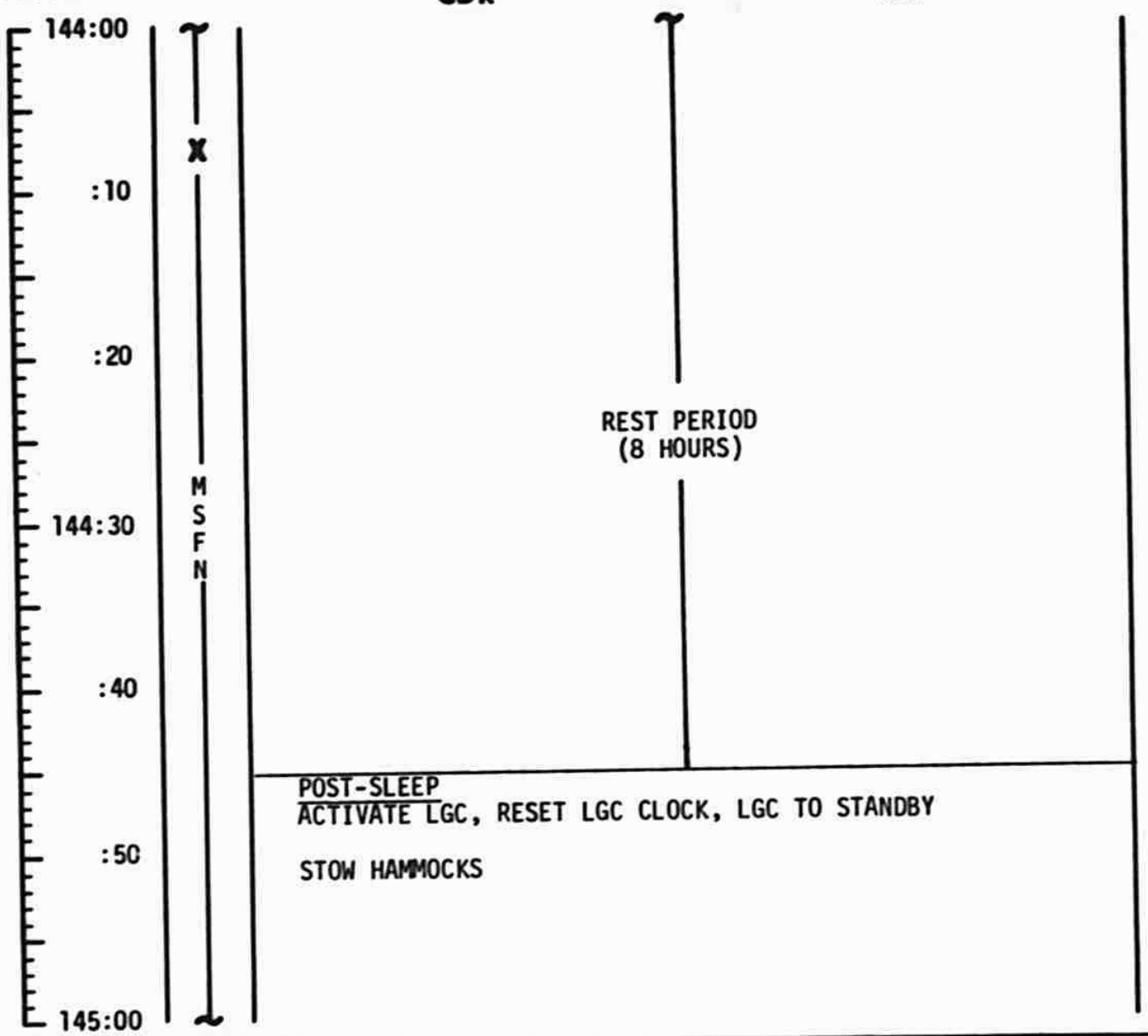
CSM FLIGHT PLAN

1054 CST



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-203

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	144:00 - 145:00	6-7/36	3-204

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1154 CST

144:00
(10111)
(X1111)

144:10

144:20

144:30

M S F N

SIM EXP STATUS
(*0111)
(01222)

EAT PERIOD

MSFN UPDATE:
MAP CAMERA PHOTO PAD (145:13)

144:30
(10111)
(X1111)

144:40

144:50

145:00

M S F N

PS2 (OPTION 3)
(LDG SITE ORIENT)

SIM EXP STATUS
(*0111)
(01222)

REPORT: GYRO TORQUING ANGLES

GDC ALIGN
V49 MNVR TO DEEP SPACE MEASUREMENT ATT (144:47)
(322,130,000)

P52 IMU REALIGN

N71: ___ ___, ___ ___
N05: ___ ___ ___•___ ___
N93:
X ___ ___•___ ___ ___
Y ___ ___•___ ___ ___
Z ___ ___•___ ___ ___•
GET ___ ___ ___•___ ___•___ ___

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN)

LiOH CANISTER CHANGE
(12 INTO B, STOW 10 IN A9)

LM FLIGHT PLAN

MCC-H	1254 CST	CDR	LMP	NOTES
UPDATE TO LM TIME OF LIFT-OFF FOR REVS 37-43	145:00	CREW STATUS (FOOD, MEDICATION, SLEEP)		
	:10	PLSS O_2 TOP OFF		CSM REV 37
	:20			
		MSFN		
	145:30	EAT PERIOD		
	:40			
	:50			
		EVA-3 PLANNING PERIOD UPDATE CUFF CHECKLIST AS REQD		
	146:00			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	145:00 - 146:00	7/36-37	3-206

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

145:00
(10101)
(x1111)

(P20)
(0.5°DB)

CYCLE CMC MODE - FREE/AUTO
V48 (10101)
(x1111)

P20 OPT 5 (40°N OBLIQUE PHOTO ATT)(145:18)
N78 (+090.00)
(+012.25)
(+180.00)
N79 (+000.50)
(102,000/081,000)

SET OMNI D FOR AOS ACQ

SIM EXP STATUS
(*0111)
(01222)

145:10

REV 37

MC/LA COVER - OPEN
MC - EXTD

MAP CAMERA PHOTO PAD
T-START: __ __ __:__ __:__ __
T-STOP: __ __ __:__ __:__ __
(159.9°E TO 20.7°W)

IMAGE MTN - ON
MC - ON (T START)
IMAGE MTN-INCR (BP +3 STEPS)/ON

145:20

CONFIGURE CAMERA: (ORBITAL SCIENCE)
CM5/EL/250/CEx-IVL (f11,1/250,-) 7 FR

MAG (PP) _____, FR # _____

145:30

145:30
(P20)
(0.5°DB)

(10101)
(x1111)

ACQ MSFN OMNI D

ORBITAL SCIENCE PHOTOS
SAENGER (P10-B5)
CM5 (f11,1/250,-) 7 FR

ROOSTER TAIL, CONVERGENT STEREO

RECORD FR # _____

ACQ MSFN HGA: MAN, WIDE P 10, Y 0
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

SIM EXP STATUS
(*1111)
(04222)

145:40

MSFN CMDS: (~AOS +11 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

PC: MODE - STBY
PWR - ON

145:50

PC: PWR - OFF (MSFN CUE)

MSFN CMDS: (AOS +18 MIN)
DSE PLAYBACK

MSFN

PREPARE FOR ORBITAL SCIENCE VISUALS

146:00

LM FLIGHT PLAN

MCC-H | 1354 CST | CDR | LMP | NOTES

146:00

REPACK ETB FOR EVA-3

X

:10

UNSTOW EVA-3 PREP & POST CARD

DON SUITS — BIOMED - OFF

LMP, THEN CDR CLEAN & LUB PGA'S, FILL DRINK
BAG, DOFF ICG, DON PGA
CONNECT HOSES AND VERIFY COMM

:20

MSFN

146:30

:40

:50

BIOMED - RIGHT
BATS 1,2 & LUNAR BAT (CDR)- ON
BATS 3,4 & LUNAR BAT (LMP)- OFF/RESET

-1:30

147:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	146:00 - 147:00	7/37	3-208

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1354 CST

146:00

(P20)
(0.5°DB)

(10101)
(x1111)

SIM EXP STATUS
(*1111)
(04222)

MSFN

ORBITAL SCIENCE VISUALS

ALPHONSUS (V10-B11) CMS

146:10

GR: SHIELD - OFF

MC - OFF (T STOP)
WAIT 30 SEC
MC - STBY
IMAGE MTN - OFF

146:20

(P20)
(3.0°DB)

P20 OPT 5 (+X FWD SIM ATT)(146:26)
N79 (+003.00)

MSFN UPDATE:
MAP CAMERA PHOTO PAD (147:17)
SOLAR CORONA PHOTO PAD (149:05)
PAN CAMERA PHOTO PAD (149:24)

GR: GAINSTEP - ON (UP) 4 STEPS(STEP 7)/SHIELD - ON (CTR)
LA - ON

146:30

146:30

(P20)
(3.0°DB)

(10101)
(x1111)

SIM EXP STATUS
(+1111)
(03222)

CONFIGURE CAMERA: (TERMINATOR PHOTOS)
CMS/EL/250/VHBW (f5.6,1/125,∞) 6 FR

MAG (SS) _____, FR # _____

MSFN

SET TIMER FOR END OF EXERCISE PERIOD

MSFN CMDS: (AOS +66 MIN)
DSE REWIND

146:40

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN)

CREW EXERCISE PERIOD

146:50

147:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-209

LM FLIGHT PLAN

MCC-H

1454 CST

CDR

LMP

NOTES

147:00

:10

:20

147:30

:40

:50

148:00

MSFN

PREP FOR EVA-3
STOW ALL LOOSE ITEMS NOT REQUIRED FOR EVA

-1:20

CSM REV 38

-1:10

EQUIPMENT PREP FOR EVA-3
CHECKOUT OPS
APPLY ANTI FOG TO HELMETS
STOW HELMET BAGS
STOW ETB
UNLOCK FWD HATCH HANDLE

-1:00

PLSS DONNING
CONFIGURE LMP PLSS
ATTACH OPS TO PLSS
CONNECT RCU

-0:50

CDR REPEAT PLSS DONNING

-0:40

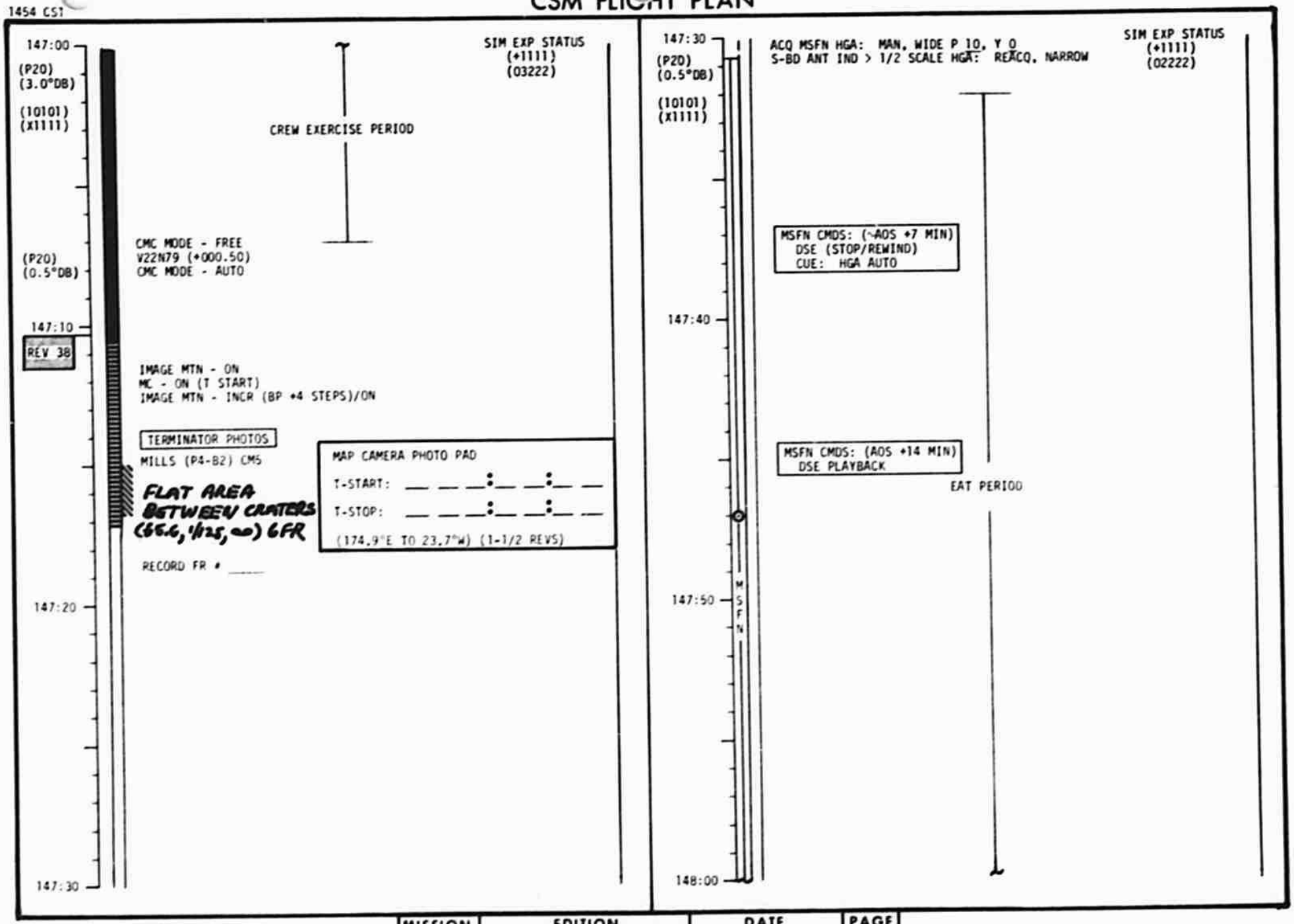
PLSS COMM CHECK
VERIFY POWERDOWN CB CONFIGURATION
CONFIGURE COMM FOR EVA, BIOMED - OFF, RECORDER - ON
COMM & TM CHECK, REPORT: PLSS O_2 QUANTITY
FINAL SYSTEMS PREP

-0:30

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	147:00 - 148:00	7/37-38	3-210

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



LM FLIGHT PLAN

MCC-H	1554 CST	CDR	LMP	NOTES
	148:00	OPS CONNECT LMP, THEN CDR CONNECT PLSS/OPS HOSES TO PGA		-0:20 GDS 210 AOS
	:10	HELMET/GLOVE DONNING PLSS FANS - ON DON HELMETS & LEVA'S VERIFY EVA CB CONFIGURATION DON GLOVES PRESS REGS A&B - EGRESS		-0:10
	:20	PRESSURE INTEGRITY CHECK		
GO/NO-GO FOR CABIN DEPRESS		CABIN DEPRESS START WATCH AT 3.5 PSIA		0:00/START EVA-3
	148:30	FINAL PREP FOR EVA PARTIALLY OPEN FWD HATCH FINAL PREP FOR EGRESS OPEN HATCH		+0:10
		EGRESS LOWER ETB TO SURFACE	ASSIST CDR VERIFY EVA CB CONFIGURATION	
	:40	RESET FAR UV CAMERA	EGRESS CLOSE HATCH	+0:20
		TV POWER ON	UNPACK ETB	NOTE: TV WILL NOT BE USED WHILE LRV IS IN MOTION
	:50			
		PLSS LOADUP	PLSS LOADUP	+0:30
	149:00			

X — MSFN — TTTV

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	148:00 - 149:00	7/38	3-212

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1554 CST

148:00
(P20)
(0.5°DB)
(10101)
(x1111)

IMAGE MTN - INCR (BP)/ON

148:10

148:20

GR: SHIELD - OFF

148:30

GR: GAINSTEP - ON (UP) 4 STEPS(STEP 3)/SHIELD - ON (CTR)
MS- RETR TO 8.4 FEET (2 MIN 01 SEC)
Obtain Sunrise Solar Corona Tape & check Batteries

EAT PERIOD

SIM EXP STATUS
(+1111)
(02222)

148:30
(P20)
(0.5°DB)
(10101)
(x1111)

148:40

MSFN CMDS: (AOS +66 MIN)
DSE REWIND

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET)(AOS +73 MIN)

148:50

CSM EXP/EVA CHECKLIST

WATCH FOR PAN CAMERA AT COMPLETION OF THE PASS

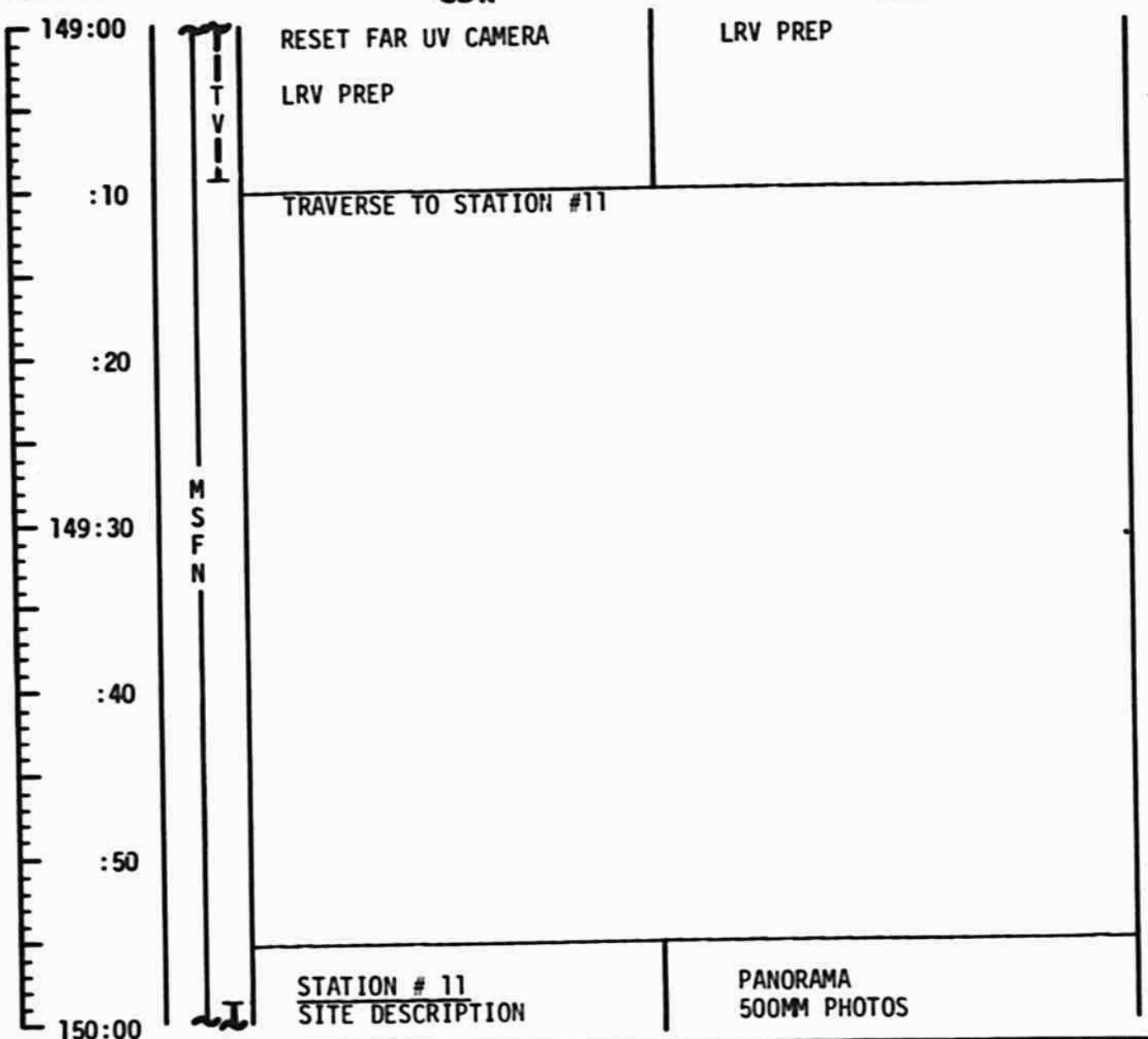
SOLAR CORONA (SUNRISE), PAGE X/2-11
MAG (HH)
MAG (SS)

149:00

SIM EXP STATUS
(+1121)
(02222)

MISSION	EDITION	DATE	PAGE
APOLLO 16	~~CHANGE FINAL~~ (4/16)	~~10/72~~ ~~3/16/72~~ (PFI)	3-213

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	149:00 - 150:00	7/38-39	3-214

FLIGHT PLANNING BRANCH

1654 CST

CSM FLIGHT PLAN

149:00
(P20)
(0.5°DB)
(10101)
(X1111)

SIM EXP STATUS
~~(+11111)~~ (+1121)
(02222)

SOLAR CORONA (SUNRISE)

SOLAR CORONA PHOTO PAD (SR)
T-START: __ __ __:__ __:__ __
SUNRISE -7 MIN

REV 39

149:10

~~MB - RETR TO 8.4 FEET (2 MIN 01 SEC)~~

GR - RETR TO 7.5 FEET (2 MIN 26 SEC)
IMAGE MTN - INCR (BP +4 STEPS)/ON

PC: STBY
STEREO
PWR
PC - OPR (T START)

149:20

Sunrise Solar Corona Cleanup
Check Surface Features with Polaroid Filter

PAN CAMERA PHOTO PAD
T-START: __ __ __:__ __:__ __
T-STOP: __ __ __:__ __:__ __
(145.2°E TO 95.2°E)

ACQ MSFN HGA: MAN, WIDE P 10, Y 0
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

149:30

149:30
(P20)
(0.5°DB)
(10101)
(X1111)

SIM EXP STATUS
(+1221)
(22222)

MSFN CMDS: (~AOS +7 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

PC - STBY (T STOP)

149:40

MSFN UPDATE:
PAN CAMERA PHOTO PAD (150:10)
UV PHOTO PAD (151:23)
LOPC-1 MNVR PAD (151:45)
TEI 53 PAD

MSFN CMDS: (AOS +14 MIN)
DSE PLAYBACK

149:50

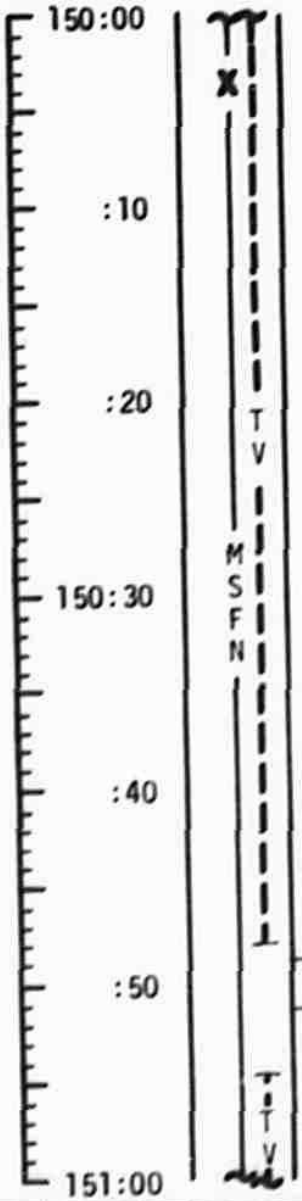
M
S
F
N

150:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	Chg C, ~~4/16~~ (4/16)	~~4/16/72~~ 4/0/72	3-215

LM FLIGHT PLAN

MCC-H



CDR	LMP	NOTES
SET UP FOR NEAR FIELD POLARIMETRIC PHOTOS	FAR FIELD POLARIMETRIC PHOTOS #1	+1:40
SAMPLING FOR NEAR FIELD POLARIMETRIC PHOTOS	NEAR FIELD POLARIMETRIC PHOTOS	+1:50
SAMPLING	SAMPLING	+2:00
PANORAMA	FAR FIELD POLARIMETRIC PHOTOS #2	+2:10
		+2:20
TRAVERSE TO STATION #12		
STATION #12 SITE DESCRIPTION	PANORAMA 500MM PHOTOS	+2:30
RAKE/SOIL SAMPLE	RAKE/SOIL SAMPLE	

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	150:00 - 151:00	7/39	3-216

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

150:00

(P20)
(0.5°DB)

(10101)
(x1111)

SIM EXP STATUS
(+1221)
(12222)

PC: STBY
STEREO
PWR (VERIFY)
PC - OPR (T START)
IMAGE MTN - INCR (BP)/ON

PAN CAMERA PHOTO PAD

T-START: ___ ___ ___ : ___ ___ : ___ ___

T-MONO: ___ ___ ___ : ___ ___ : ___ ___

T-STOP: ___ ___ ___ : ___ ___ : ___ ___

(18.0°E TO 22.7°W)

150:10

Check Surface Features with Polaroid Filter Red Haze by Lasswitz

PC - MONO (T STOP -2:00)

PC - STBY (T STOP)
MC - OFF (T STOP)
WAIT 30 SEC
MC - STBY
IMAGE MTN - OFF
PC - OFF (MSFN CUE)
MS: ION SOURCE - OFF
EXP - STBY
CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM
MC - RETR
LA - OFF
XR - STBY
GR - RETR

MSFN UPLINK:
CSM S.V.
LOPC-1 TGT LOAD
DESIRED ORIENT (LOPC-1)

MS - RETR
MC/LA COVER - CLOSE
AP/XR COVER - CLOSE
POO, ENABLE ALL JETS
V89 MNVR TO P52 ATT (150:32)
(142,250,042) HGA P -14, Y 250

CONFIGURE FOR URINE DUMP

150:30

(10101)
(x1111)

SIM EXP STATUS
(*0000)
(01214)

P52 (OPTION 3)
(LOG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

P52 (OPTION 1)
(LOPC-1 ORIENT)

MSFN CMDS: (AOS +66 MIN)
DSE REWIND

GDC ALIGN

P52 IMU REALIGN

N71: __ __ , __ __

N05: __ __ __ . __ __

N93:

X __ __ . __ __ __

Y __ __ . __ __ __

Z __ __ . __ __ __ .

GET __ __ __ . __ __ . __ __

150:40

CONFIGURE DSE (LBR/RCD/FWD/CMD RESET) (AOS +73 MIN)

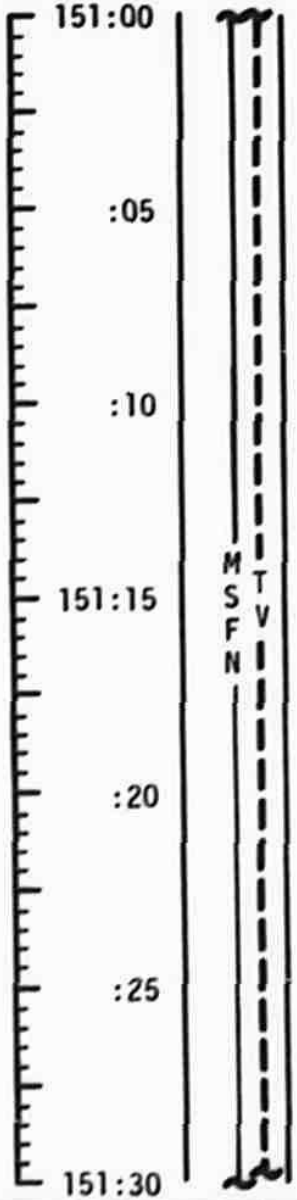
O_2 FUEL CELL PURGE
WASTE WATER DUMP
URINE DUMP

150:50

TERMINATE WASTE WATER DUMP AT 10%

151:00

LM FLIGHT PLAN



CDR	LMP	NOTES
SAMPLING	SAMPLING	
		+2:40
		CSM REV 40
		+2:50
		+3:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	151:00 - 151:30	7/39-40	3-218

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

151:00
(10101)
(x1111)

SIM EXP STATUS
(*0000)
(01214)

CSM EXP/EVA CHECKLIST

LUNAR HORIZON AND EARTH UV PHOTO, PAGE X/2-23
MAG (00)
MAG (PP)
V49 MNVR TO LUNAR HORIZON/EARTH PHOTO ATT (151:20)
(189,000,341)

SET OMNI D FOR AOS ACQ

REV 40

151:10

151:20

UV PHOTO PAD

T-START: _ _ _ _ _ _ _ _ _ _ _ _
(AOS)

ACQ MSFN OMNI D
LUNAR HORIZON AND EARTH UV PHOTO

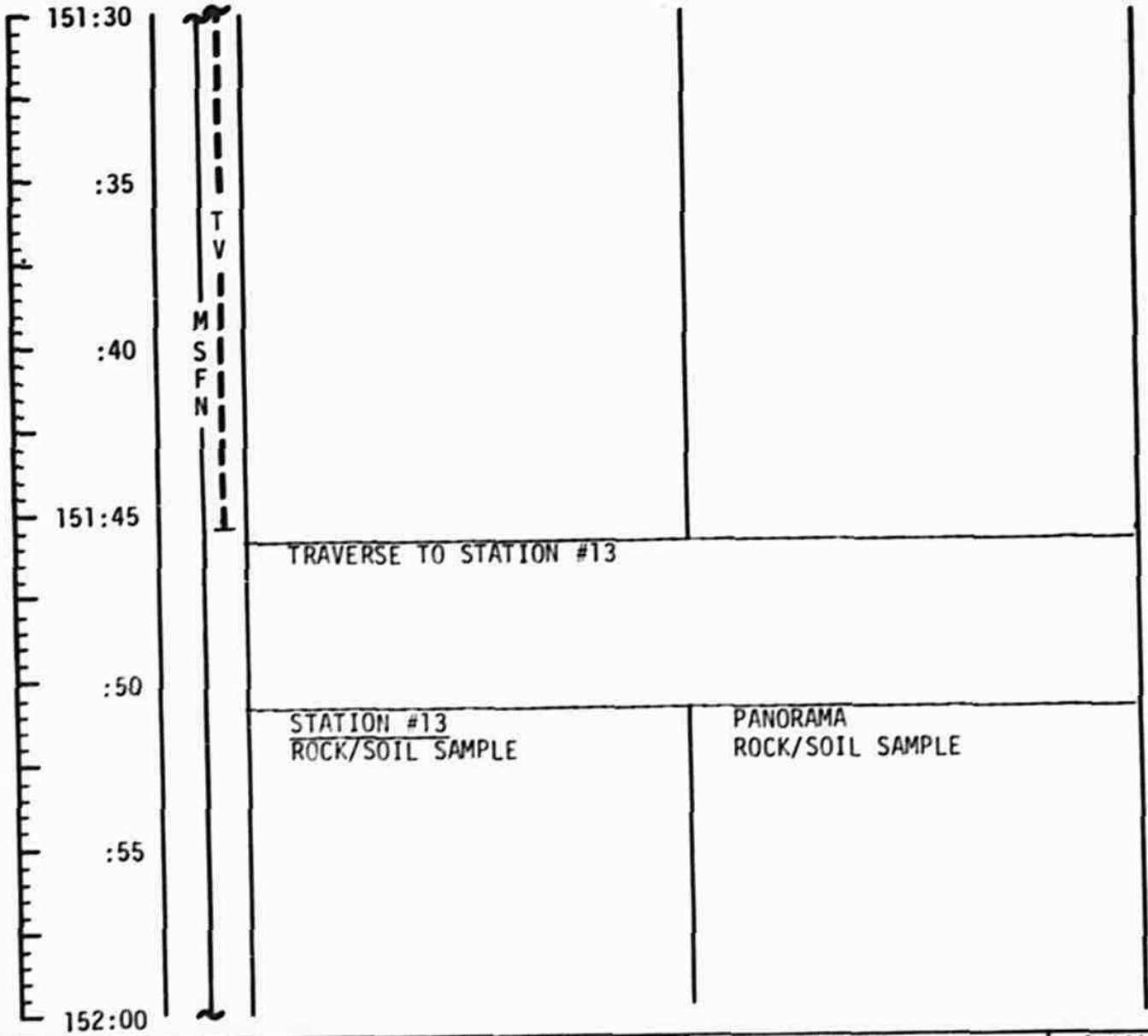
IMCTN

151:30

MISSION	EDITION	DATE	PAGE
APOLLO 16	~~CHANGE FINAL~~ (4/16)	3/27/72 ~~3/16/72~~ (MI)	3-219

LM FLIGHT PLAN

MCC-H | 1924 CST | CDR | LMP | NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	151:30 - 152:00	7/40	3-220

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

151:30
(10101)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

MSFN

P30 VERIFY LOPC-1 TIG AND ΔVs

151:40

V49 MNVR TO LOPC-1 BURN PAD ATT (151:57)
HGA P -17, Y 285

151:50

MSFN CMDS:
DSE DUMP

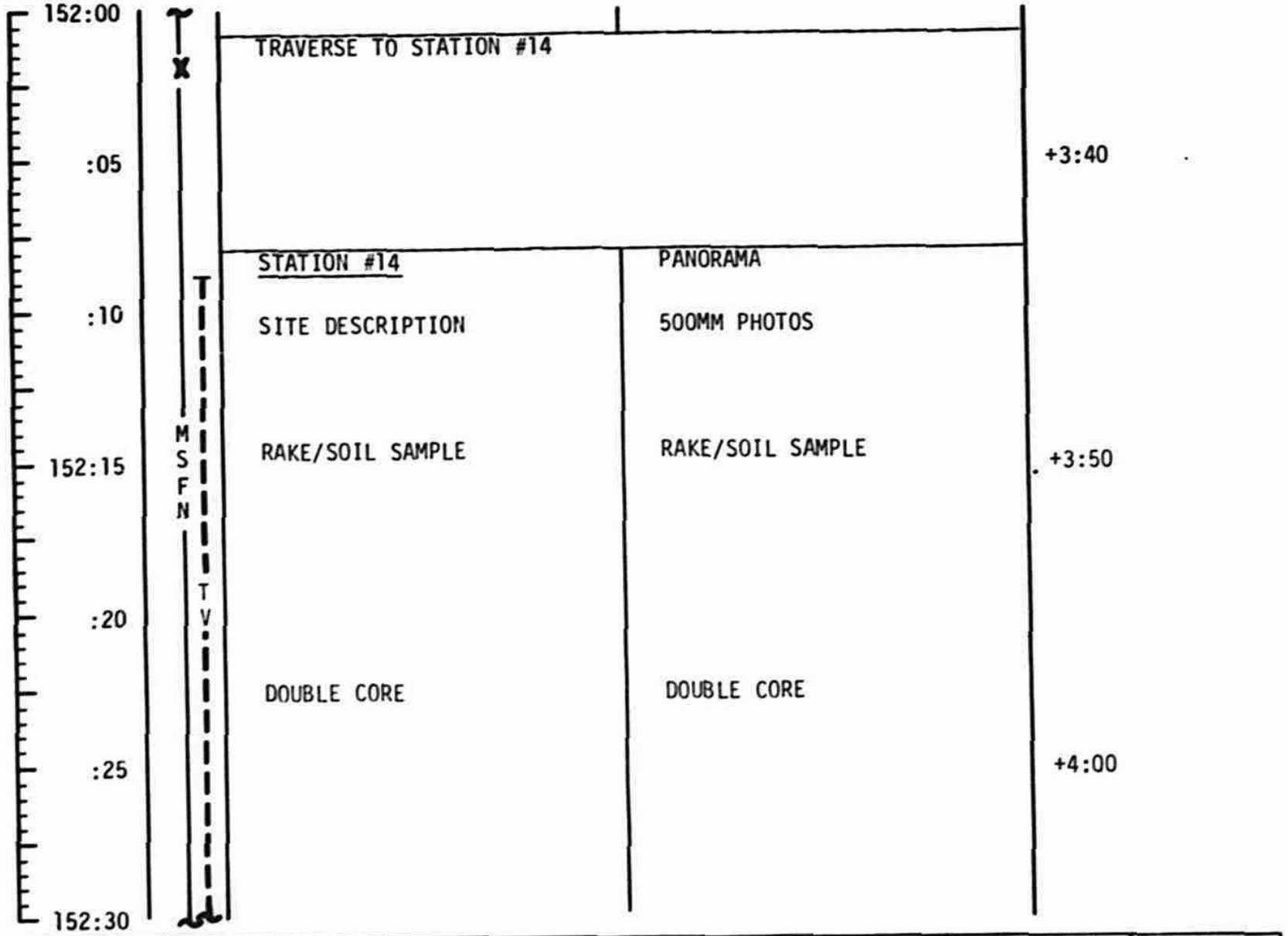
152:00

P30 MANEUVER

SET STARS	L S	O P	P S/G	C	- &	I N	PURPOSE / PROP/GUID	
	•						WT	N47
R_{ALIGN} ___ ___ ___		O	O		•		P_{TRIM}	N48
P_{ALIGN} ___ ___ ___		O	O		•		Y_{TRIM}	
Y_{ALIGN} ___ ___ ___	•	O	O				HRS	GETI
	•	O	O	O			MIN	N33
	•	O			•		SEC	
ULLAGE ___					•		ΔV_X	N81
___					•		ΔV_Y	
___					•		ΔV_Z	
___	X	X	X				R	(000)
	X	X	X				P	(000)
	X	X	X				Y	(000)
	•					•	H_A	N44
						•	H_P	
	•					•	ΔVT	
	X	X	X		•		BT	
	X					•	ΔVC	
	X	X	X	X			SxTS	
	•				•	O	SFT	
	•			•	O	O	TRN	
	X	X	X				BSS	
	X	X				•	SPA	
	X	X	X			•	SxP	

LM FLIGHT PLAN

MCC-H | 1954 CST | CDR | LMP | NOTES



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	152:00 - 152:30	7/40	3-222

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1954 CST

152:00
(10101)
(x1111)

SIM EXP STATUS
(*0000)
(01214)

PRE SPS BURN SIM PREP (CUE CARD)

SET DET COUNTING UP TO LOPC-1

152:10

SECURE EQUIPMENT FOR LOPC-1

(P40)
(0.5°/08)

P40 (TRIM)

MSFN

152:20

SXT STAR CHECK

SINGLE BANK

MSFN UPDATE:
GO/NO-GO FOR LOPC-1

LOPC-1 (000,000,000)

_____ : _____ : _____ . _____

P00

TIG: 152:28:48.1
BT: 9.1 SEC
ΔVT: 158.7 FPS
ULLAGE: 2 JET, 17 SEC
ORBIT: 62.0 X 57.3

(10101)
(x1111)

152:30

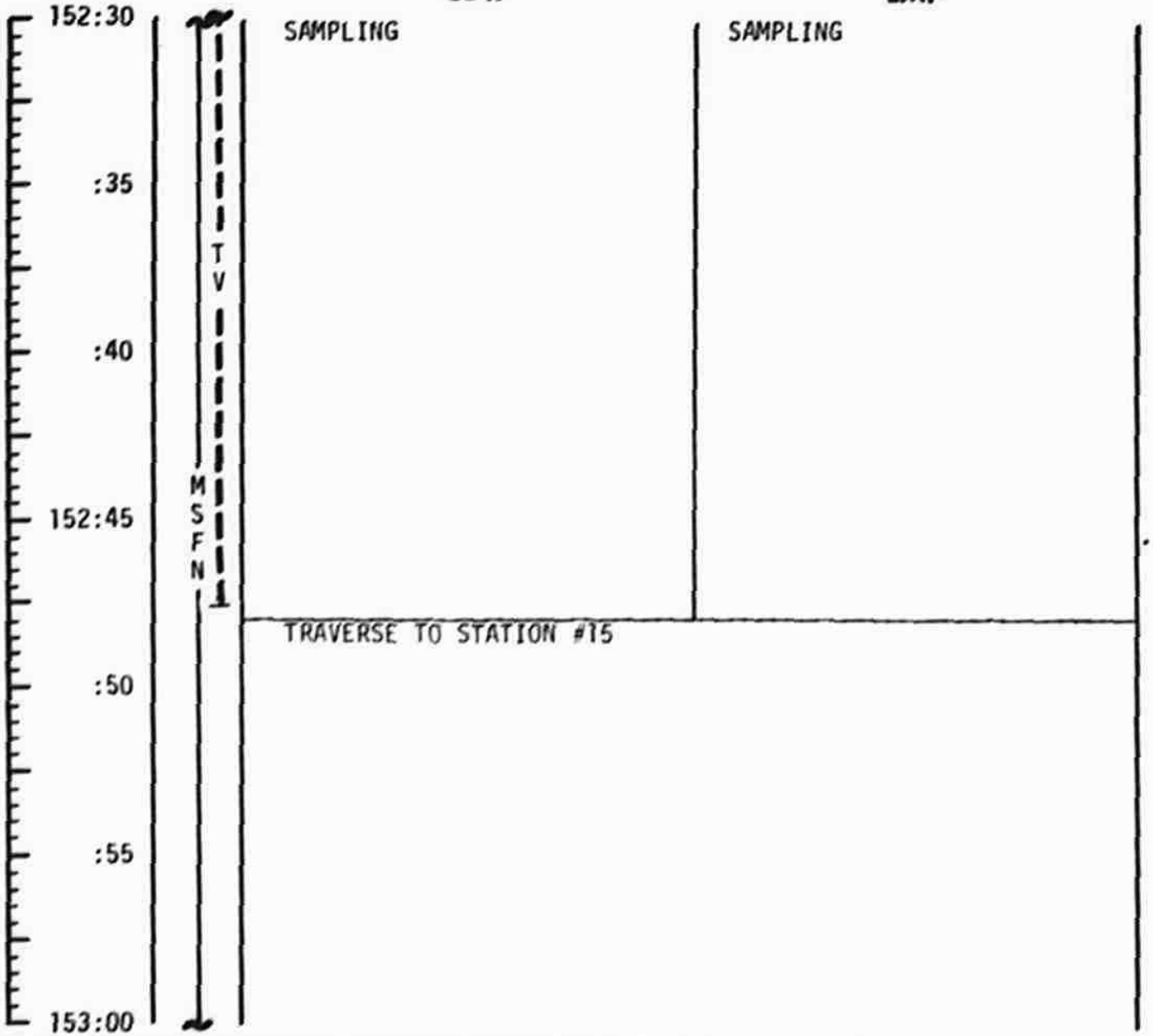
LOPC-1
BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT +1 SEC	TRIM V_{gy} TO 0.2 FPS IF $-V_{gy}$ ROLL 90° CCW AND USE -Z THRUSTERS

BURN STATUS REPORT

X	X					ΔTIG
X	X					BT
						V_{gx}
	TRIM					
X	X	X				R
X	X	X				P
X	X	X				Y
						V_{gx}
						V_{gy}
						V_{gz}
						ΔV_c
X						FUEL
X						Ox
X						UNBAL

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	152:30 - 153:00	7/40	3-224

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

152:30
(10101)
(XIIII)

MSFN

MSFN CMDS:
DSE DUMP
REPORT: BURN STATUS

SIM EXP STATUS
(*0000)
(31000)

MSFN UPLINK:
DESIRED ORIENT (LIFT-OFF)

INHIBIT ALL JETS EXCEPT - A1 & C2 OR D1 & B2, A3, C4, B3, D4
V49 MNVR TO P52 ATT (152:48)
(219,315,015)

MSFN CMDS:
DSE RECORD

152:40

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

POST SPS BURN SIM PREP (CUE CARD)

AP/XR COVER - OPEN
XR - ON
MS - OPLY
GR - OPLY

MS: EXP - ON
ION SOURCE - STBY

P52 (OPTION 1)
(LIFT-OFF ORIENT)

152:50

(P20)
(3.0°DB)

GDC ALIGN
P20 OPT 5 (-X FWD SIM ATT)(153:00)
N79 (+003.00)
SET HGA P 0, Y 170 FOR AOS ACQ

CONFIGURE CAMERA: (MASS SPECT BOOM PHOTOS)
CMS/DAC/16/BW164-BRKT,MIR(T5.6,1/250,∞) 1 fps (76t)

MAG (II)____, MAG I ____
UTILITY PWR - ON

153:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-225

LM FLIGHT PLAN

MCC-H

2054 CST

	CDR	LMP	NOTES
153:00	STATION #15 LPM MEASUREMENT	PANORAMA ROCK/SOIL SAMPLE	+4:40 CSM REV 41
:10	TRAVERSE TO STATION #16		+4:50
:20	STATION #16 LPM MEASUREMENT	PANORAMA ROCK/SOIL SAMPLE	+5:00
153:30	TRAVERSE TO STATION #17		
:40	STATION #17 SITE DESCRIPTION RAKE/SOIL SAMPLE	PANORAMA SITE DESCRIPTION RAKE/SOIL SAMPLE	+5:10
:50	LPM MEASUREMENT	SAMPLING	+5:20
154:00	SAMPLING		+5:30

MSFN — TV — XL

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	153:00 - 154:00	7/40-41	3-226

FLIGHT PLANNING BRANCH

2054 CST

CSM FLIGHT PLAN

153:00
(P20)
(3.0°DB)
(10101)
(X1111)

REV 41

153:10

153:20

153:30

MSFN

ASSEMBLE CAMERA,LENS,MIRROR AND MAGAZINE ON SPECIAL WINDOW 5 BRACKET (ROTATE LENS 180°)
VERIFY TOP SURFACE OF MIRROR IS PARALLEL TO TOP SURFACE OF CAMERA
REMOVE CM5 WINDOW COVER
MOUNT DAC CARDBOARD SHADE
REPOSITION SIDE WINDOW MIRROR
MOUNT BRACKET ASSEMBLY TO SC
DAC - ON

MS: ION SOURCE - ON

ACQ MSFN HGA: MAN, WIDE P 0, Y 170
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN CMDS: (AOS +2 MIN)
DSE (STOP/REWIND)

SIM EXP STATUS
(-0111)
(01232)

MASS SPECT
BOOM PHOTOS

153:30
(P20)
(3.0°DB)
(10101)
(X1111)

153:40

153:50

154:00

MSFN

MSFN CUE: (~AOS +7 MIN)
HGA AUTO

MSFN CMDS: (AOS +9 MIN)
DSE PLAYBACK

MSFN UPLINK:
RLS UPDATE (IF REQD)

MSFN UPDATE:
REFSMMAT 00 TIME

PC: MODE - STBY
PWR - ON
GR: SHIELD - OFF

PC: PWR - OFF (MSFN CUE)

CONFIGURE CAMERA: (TERMINATOR PHOTOS)
CM3/EL/250/VHBW (f5.6,1/125,-) 6 FR

MAG (SS) ____, FR # ____

GR: SHIELD - ON (CTR)
PREPARE FOR ORBITAL SCIENCE VISUALS

LANDING SITE (V4)

ORBITAL SCIENCE VISUALS AT 154:00

SIM EXP STATUS
(-0111)
(01222)

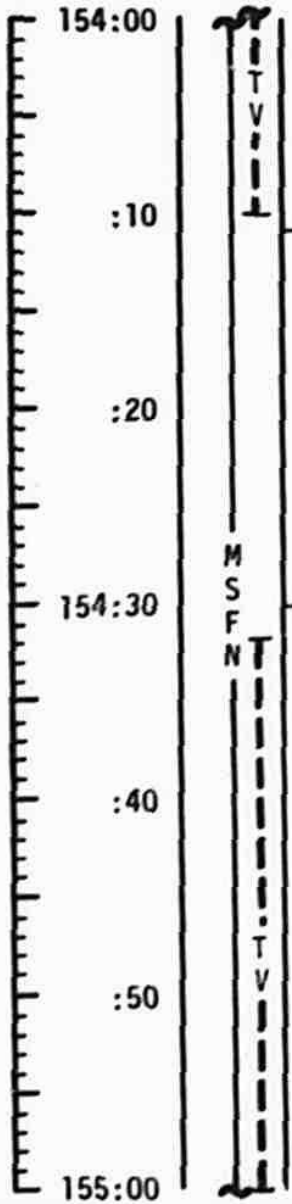
REFSMMAT 00 TIME

+	0	0				HRS
+	0	0	0			MIN
+	0					SEC

MASS SPECT
BOOM PHOTOS

LM FLIGHT PLAN

MCC-H | 2154 CST



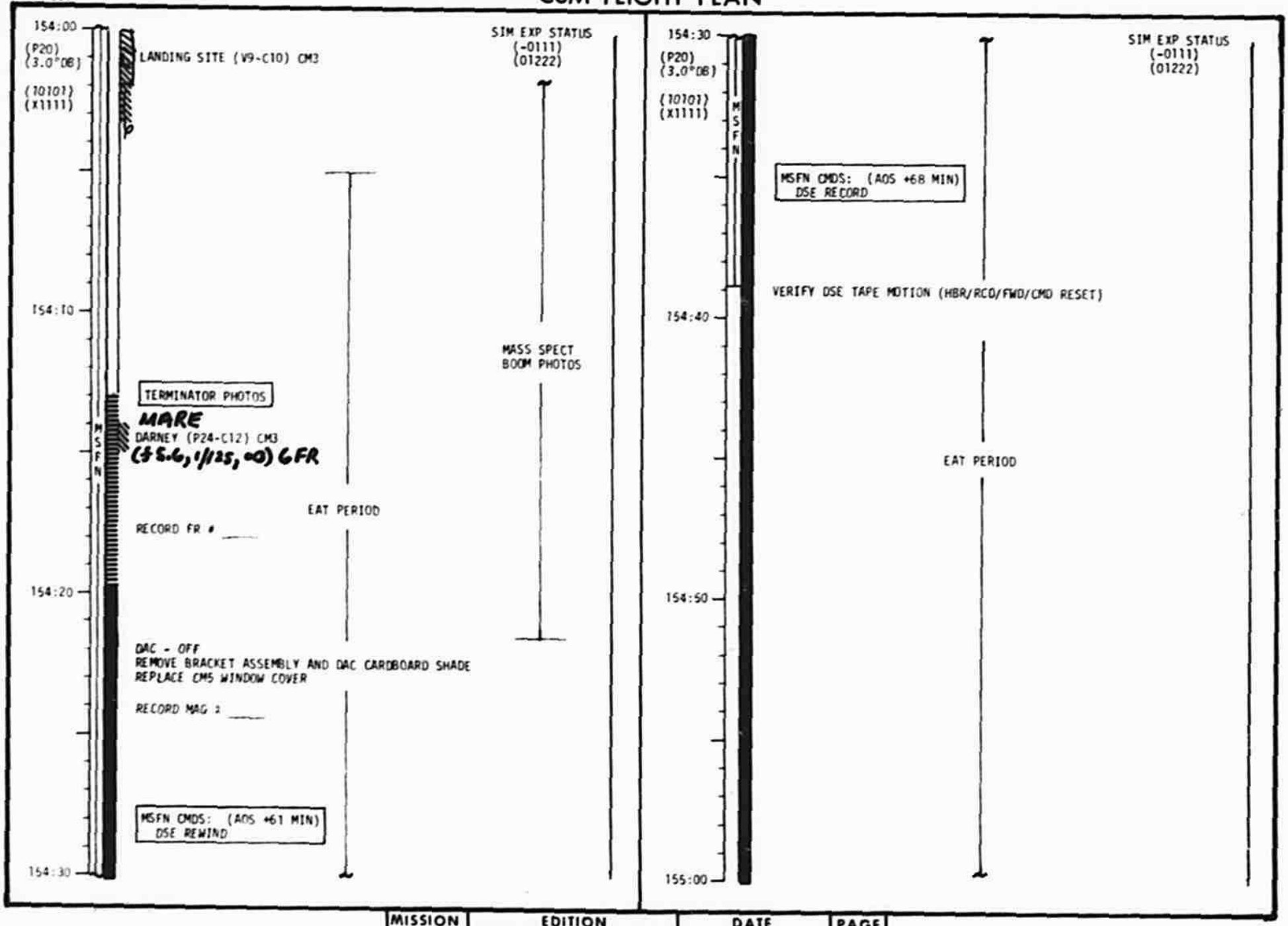
CDR	LMP	NOTES
		+5:40
TRAVERSE TO LM		+5:50
		+6:00
PARK LRV	READOUT ALL LRV DISPLAYS	
	DEPLOY HGA FOR TV	+6:10
RESET FAR UV CAMERA UNLOAD PLSS	UNLOAD PLSS	
STOW COSMIC RAY EXPERIMENT	PACK ETB	+6:20
		+6:30

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	154:00 - 155:00	7/41	3-228

FLIGHT PLANNING BRANCH

2154 CST

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	~~CHANGE RELEASE~~ (4/16)	3/27/72 ~~3/16/72~~ (P69)	3-229

LM FLIGHT PLAN

MCC-H

2254 CST

	CDR	LMP	NOTES
155:00	LRV GRAN PRIX	FILM GRAN PRIX	CSM REV 42
	PARK & CONFIGURE LRV FOR MCC-H CONTROL	RETRIEVE SWC	+6:40
:10			
	CLEAN EMU'S RESET FAR UV CAMERA TRANSFER ETB INGRESS LM	CLEAN EMU'S INGRESS LM TRANSFER ETB TRACK LIGHT TEST	+6:50
:20			
	CLOSE HATCH, REPRESSURIZE CABIN		+7:00/END EVA-3
	POST EVA-3 SYSTEMS CONFIGURATION		
155:30	VERIFY EVA CB CONFIGURATION DOFF GLOVES, STOW ON COMM PANELS TRANSFER TO LM ECS HOSES CONNECT TO LM COMM		
		BIOMED - LEFT	
:40	PLSS/OPS DOFFING DISCONNECT OPS & RCU FROM PLSS		
:50	LMP, THEN CDR DOFF PLSS/OPS REPORT: OPS PRESSURE		
	STOW OPS'S		
156:00			

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	3/27/72 ~~3/6/72~~ (PCR)	155:00 - 156:00	7/41-42	3-230

FLIGHT PLANNING BRANCH

2254 CST

CSM FLIGHT PLAN

155:00
(P20)
(3.0°DB)
(10101)
(X1111)
REV 42

EAT PERIOD

SIM EXP STATUS
(-0111)
(01222)

CONFIGURE CAMERA: (ORBITAL SCIENCE)
CM5/EL/250/CEX-IVL (f5.6,1/250,-) 80 FR

MAG (QQ) ____, FR # ____

155:10

ORBITAL SCIENCE PHOTOS

KOHLSCHUETTER (PS-C2,C3)
CM5 (f5.6,1/250,-) 80 FR

CHANGE TO f8

155:20

RECORD FR # ____

ACQ MSFN HGA: MAN, WIDE P 0, Y 170
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN CMDS: (AOS +2 MIN)
DSE (STOP/REWIND)

MSFN

155:30

155:30
(P20)
(3.0°DB)
(10101)
(X1111)

CSM SYSTEMS CHECKLIST
PRE-SLEEP CHECKLIST PAGE S/1-29
LOGIC PWR (2) - OFF

SIM EXP STATUS
(-0111)
(01222)

MSFN CMDS: (AOS +9 MIN)
DSE PLAYBACK

VHF AM T/R - RCV (PNL 9)
VHF AM A - DUPLEX

ONBOARD READOUT

BAT C	____
PYRO BAT A	____
PYRO BAT B	____
RCS A	____
B	____
C	____
D	____

DC IND SEL - MNA OR B

155:40

MSFN UPLINK:
JET-ON MONITOR LOADS

MSFN

155:50

X

156:00

FILM MAGS REQD FOR NEXT DAY:
DAC: CEX-BBEDD
EL: VHBW-SS, CEX-QQ
NK: VHBW-ZZ

MISSION	EDITION	DATE	PAGE
APOLLO 16	Chg #C ~~FINAL~~ (4/16)	4/10/72 ~~4/13/72~~	3-231

LM FLIGHT PLAN

MCC-H | 2354 CST | CDR | LMP | NOTES

156:00

PREP FOR EQUIPMENT JETTISON

UNSTOW SCALE
WEIGH BSLSS ROCK BAG & COLLECTION BAGS, REPORT: WEIGHTS
WEIGH ISA
STOW SCALE & BAGS
UNLOCK FWD HATCH HANDLE
REMOVE ISS
WRAP & TIE LUNAR BOOTS, ARMRESTS, RCU'S, YO-YO'S
POSITION PLSS'S FOR JETTISON
DON EV GLOVES
AUDIO MODE - VOX

:10

:20

PRESSURE INTEGRITY CHECK

GO/NO-GO FOR DEPRESS

CABIN DEPRESS FOR JETTISON

MSFN

156:30

EQUIPMENT JETTISON

CABIN REPRESS

VERIFY CABIN PRESS STABLE
DOFF HELMETS & GLOVES
AUDIO MODE - ICS/PTT

BATS 3 & 4 - ON
LUNAR BAT - OFF/RESET
CHECK BUS VOLTS

:40

POST EVA CABIN CLEANUP

DOFF SUITS

BIOMED - OFF

CDR DOFF PGA
DON ICG
CONNECT AND VERIFY COMM

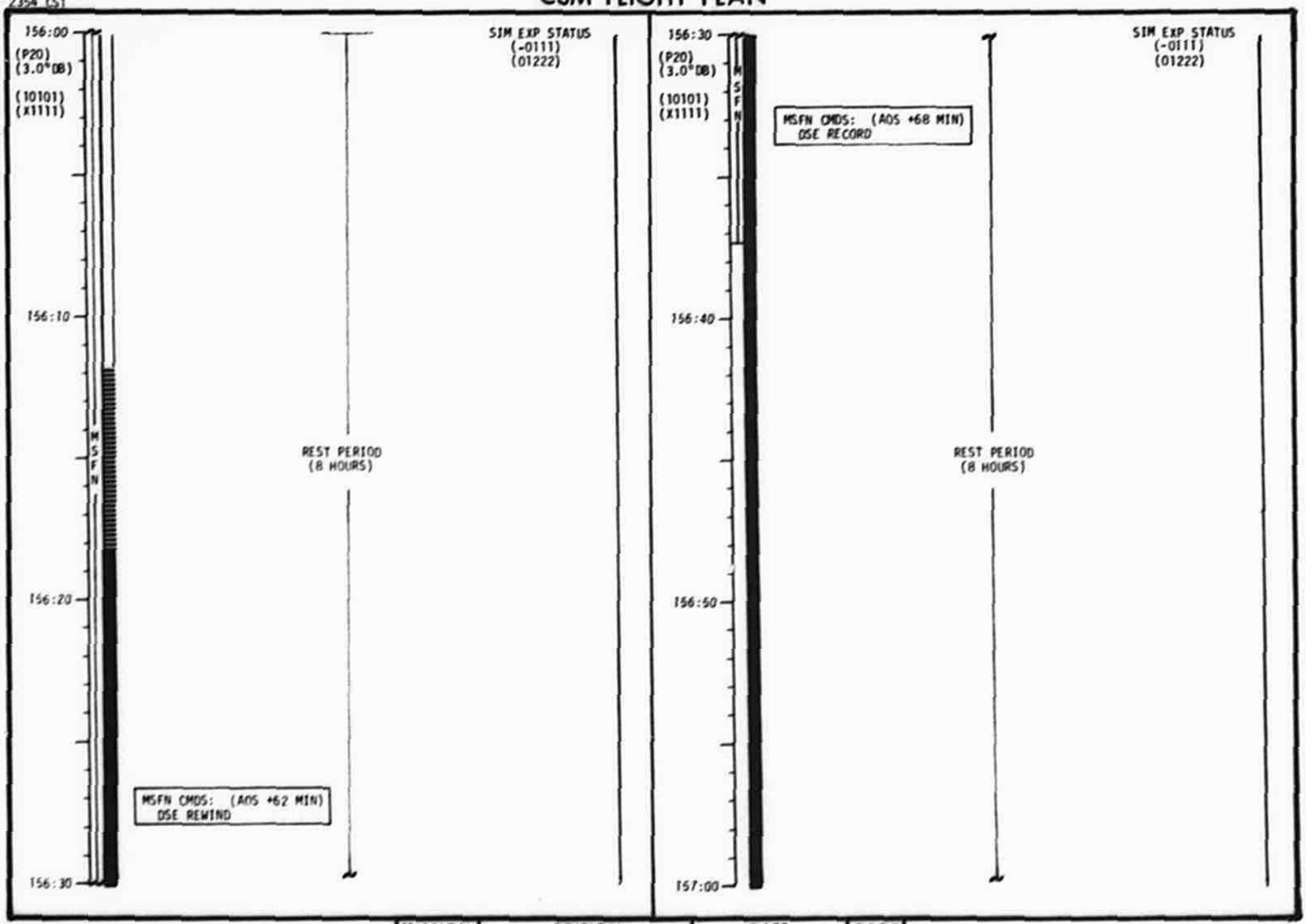
:50

157:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	156:00 - 157:00	7/42	3-232

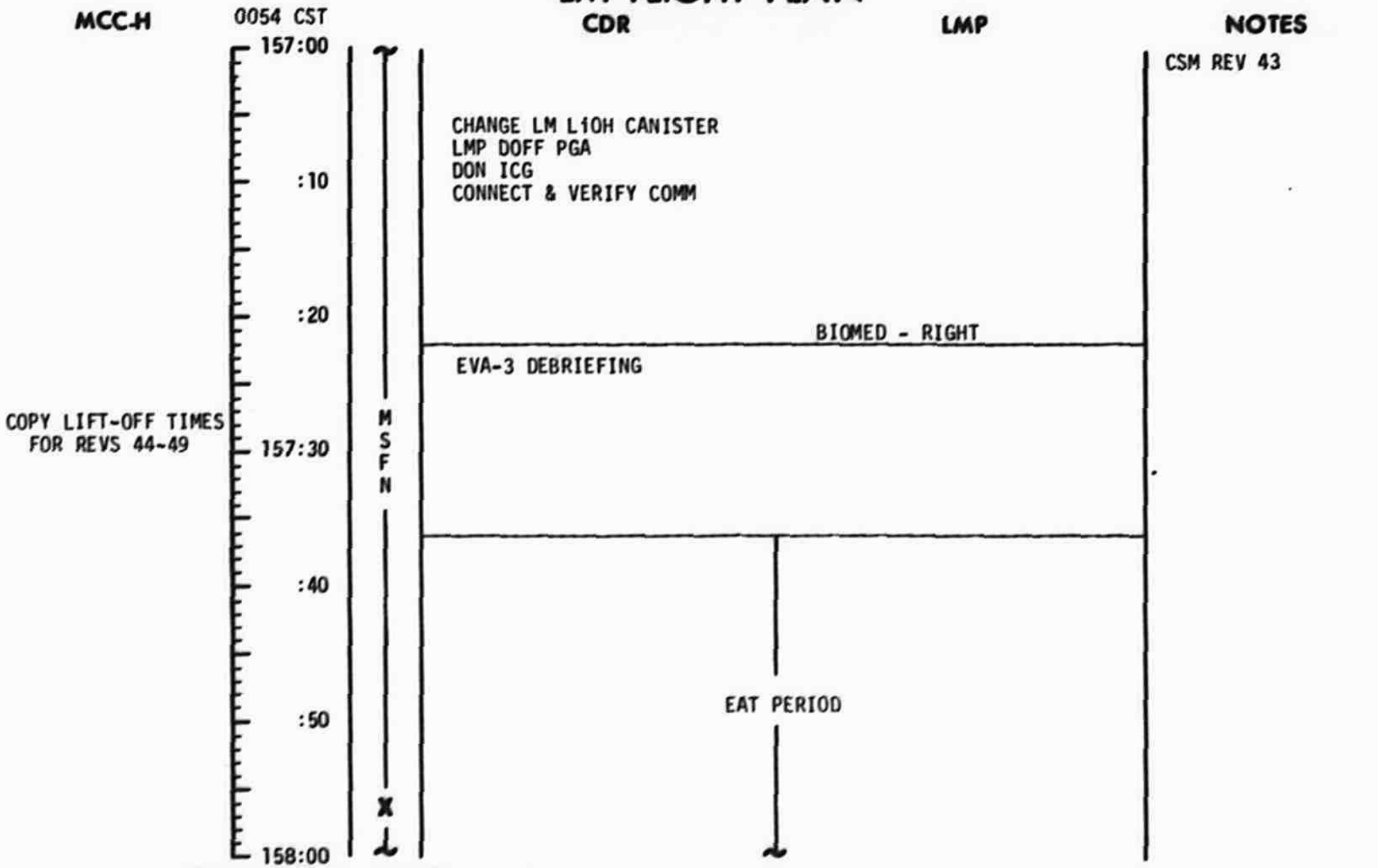
FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-233

LM FLIGHT PLAN

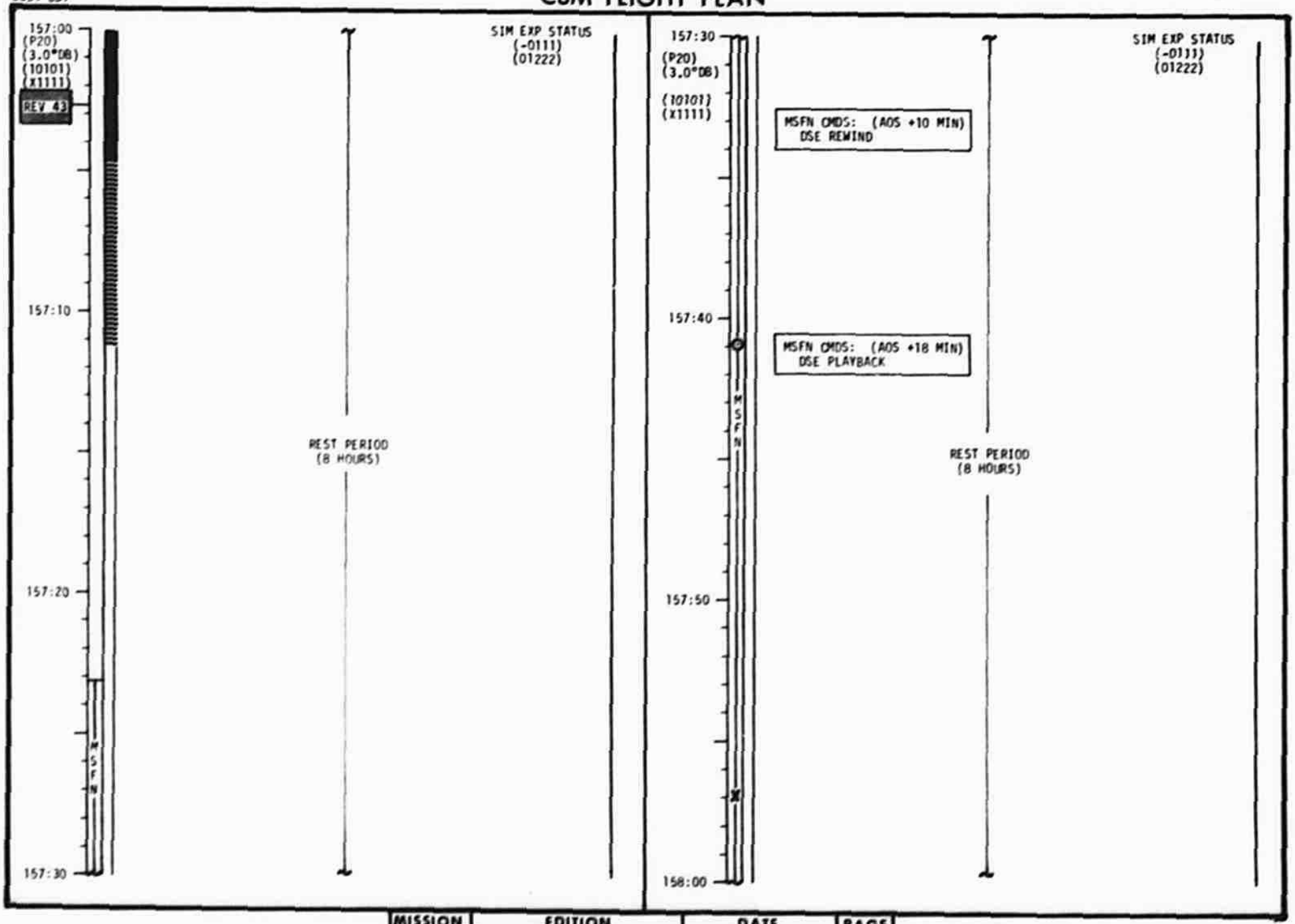


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	157:00 - 158:00	7/42-43	3-234

FLIGHT PLANNING BRANCH

0054 CST

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-235

LM FLIGHT PLAN

MCC-H | 0154 CST | CDR | LMP | NOTES

158:00

:10

EAT PERIOD

:20

M S F N

158:30

PRE-SLEEP

EMPTY ETB, STOW AGAINST HATCH
STOW CUFF CHECKLIST
STOW PURGE VALVES
STOW COLLECTION BAGS
UNSTOW SCALE, WEIGH ISA, REPORT: WEIGHT, STOW SCALE
CONFIGURE ECS FOR SLEEP
UNSTOW AND CONFIGURE SLEEP RESTRAINTS

:40

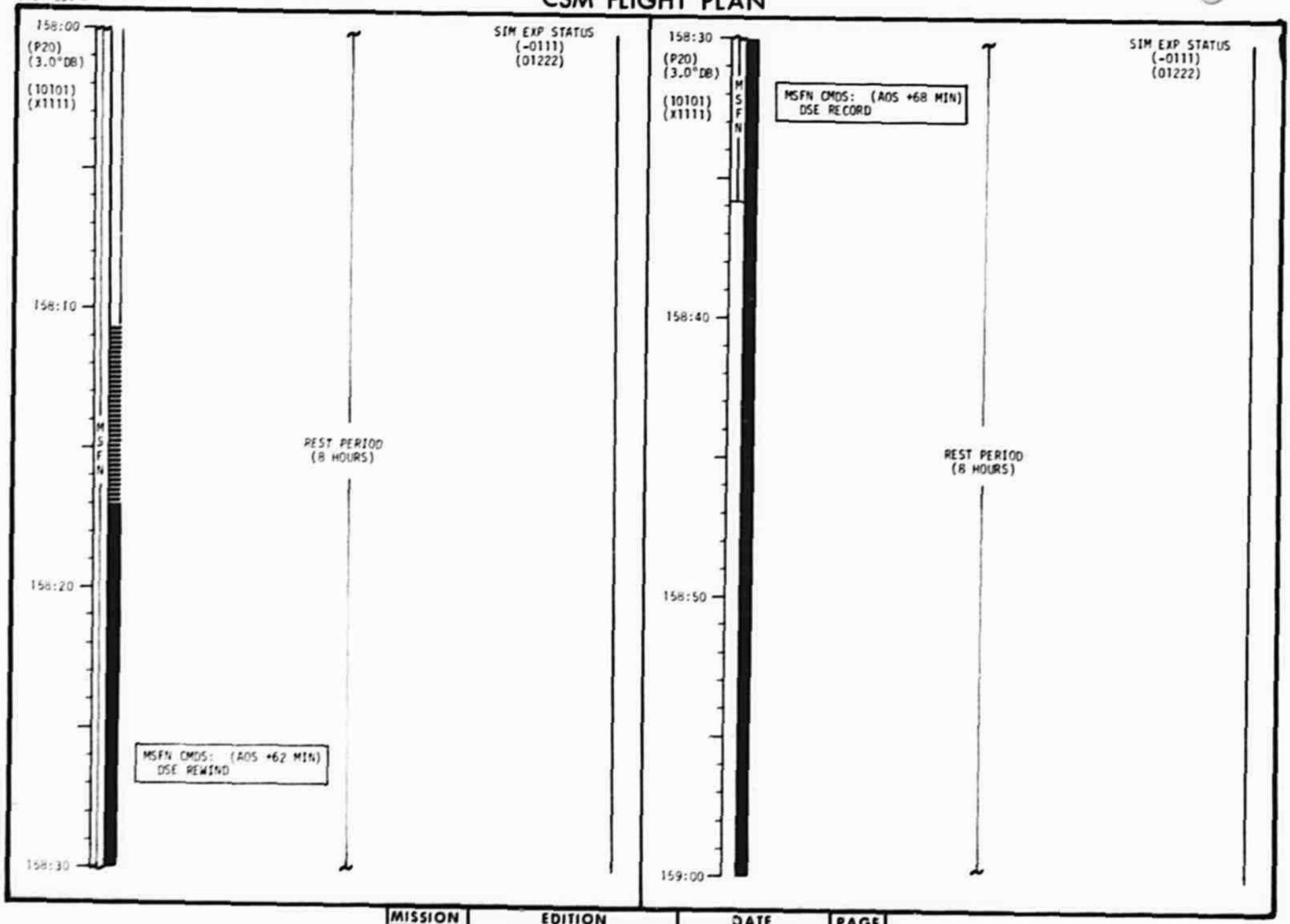
:50

159:00

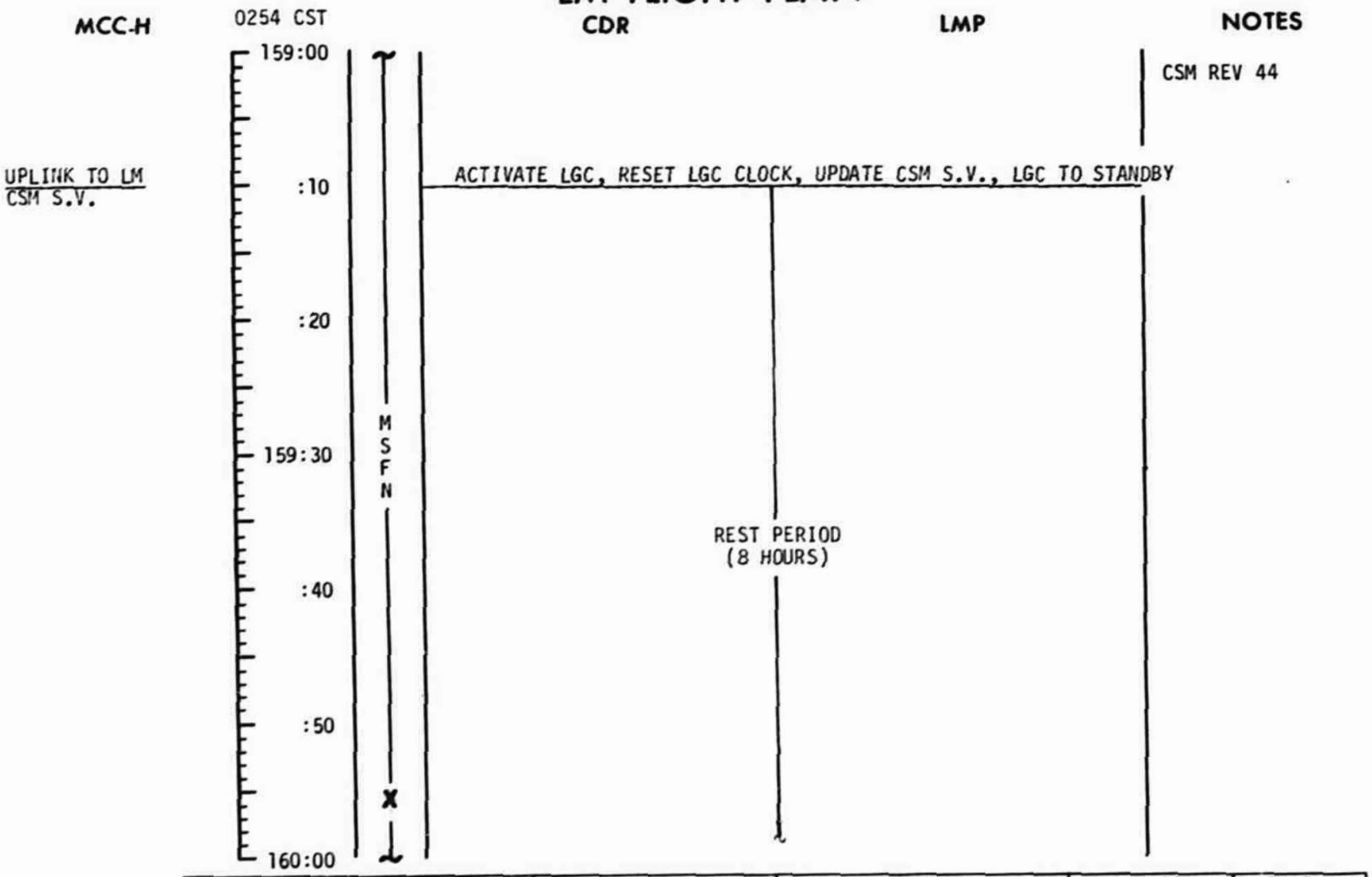
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	158:00 - 159:00	7/43	3-236

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



LM FLIGHT PLAN

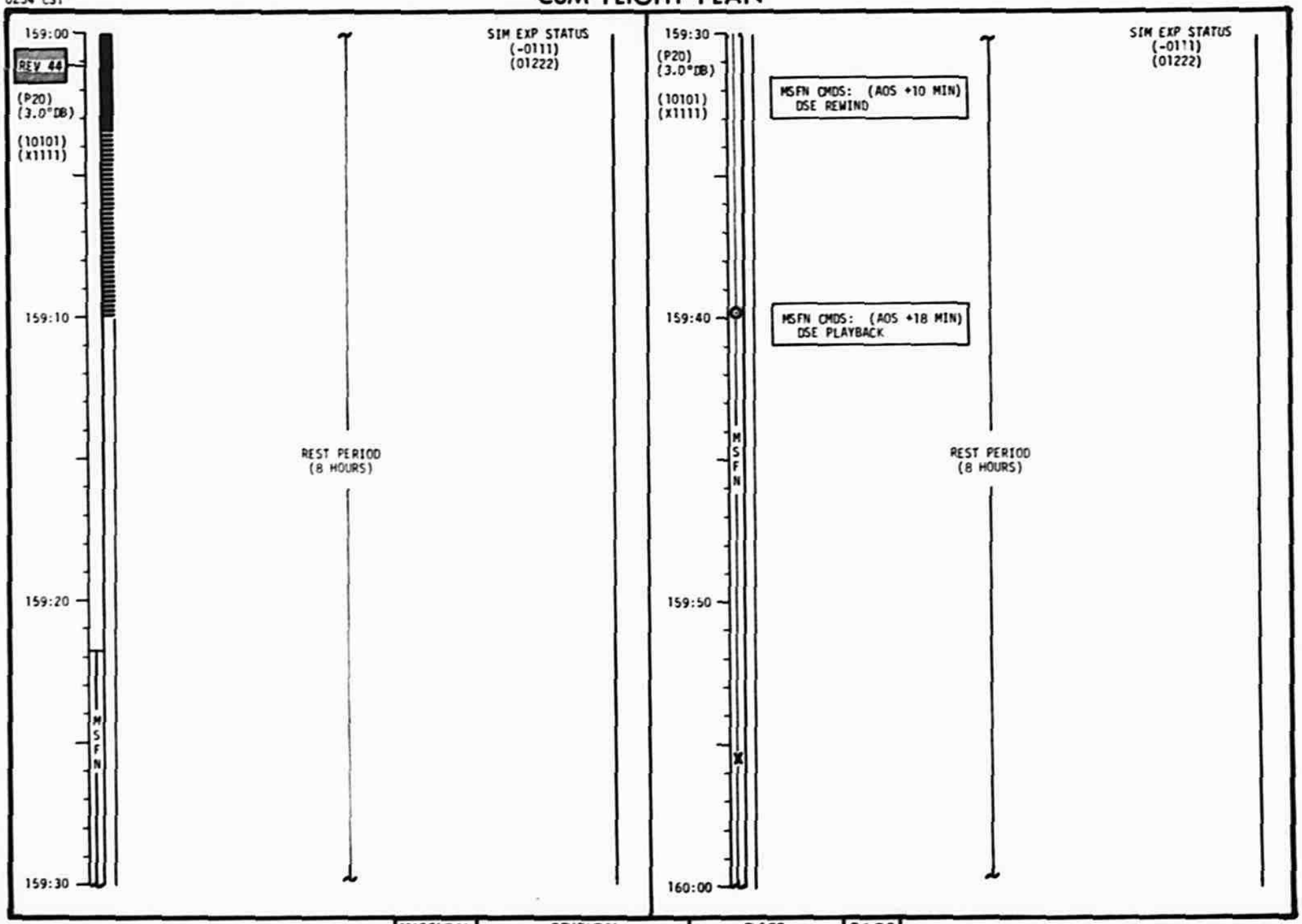


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	159:00 - 160:00	7/43-44	3-238

FLIGHT PLANNING BRANCH

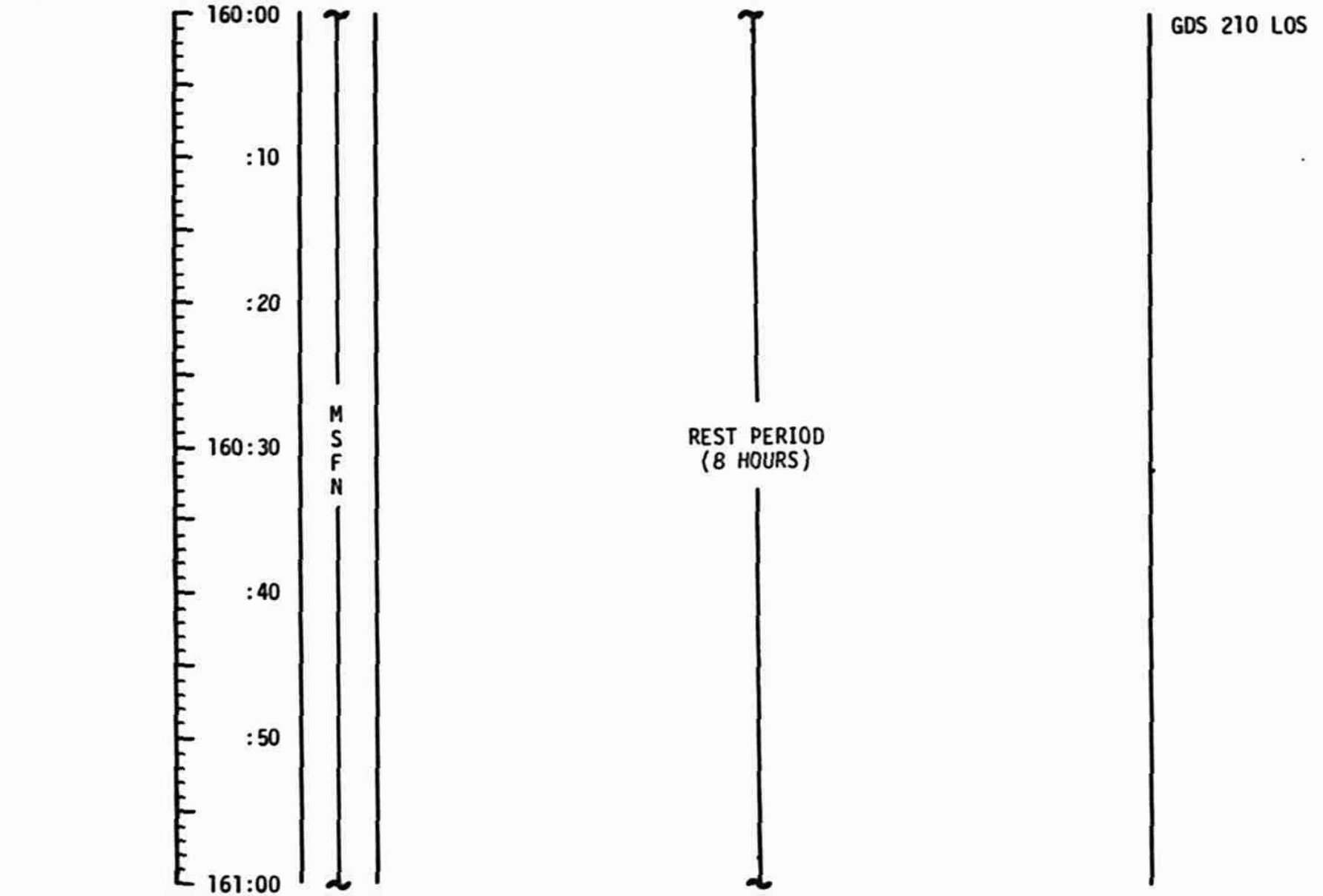
0254 CST

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-239

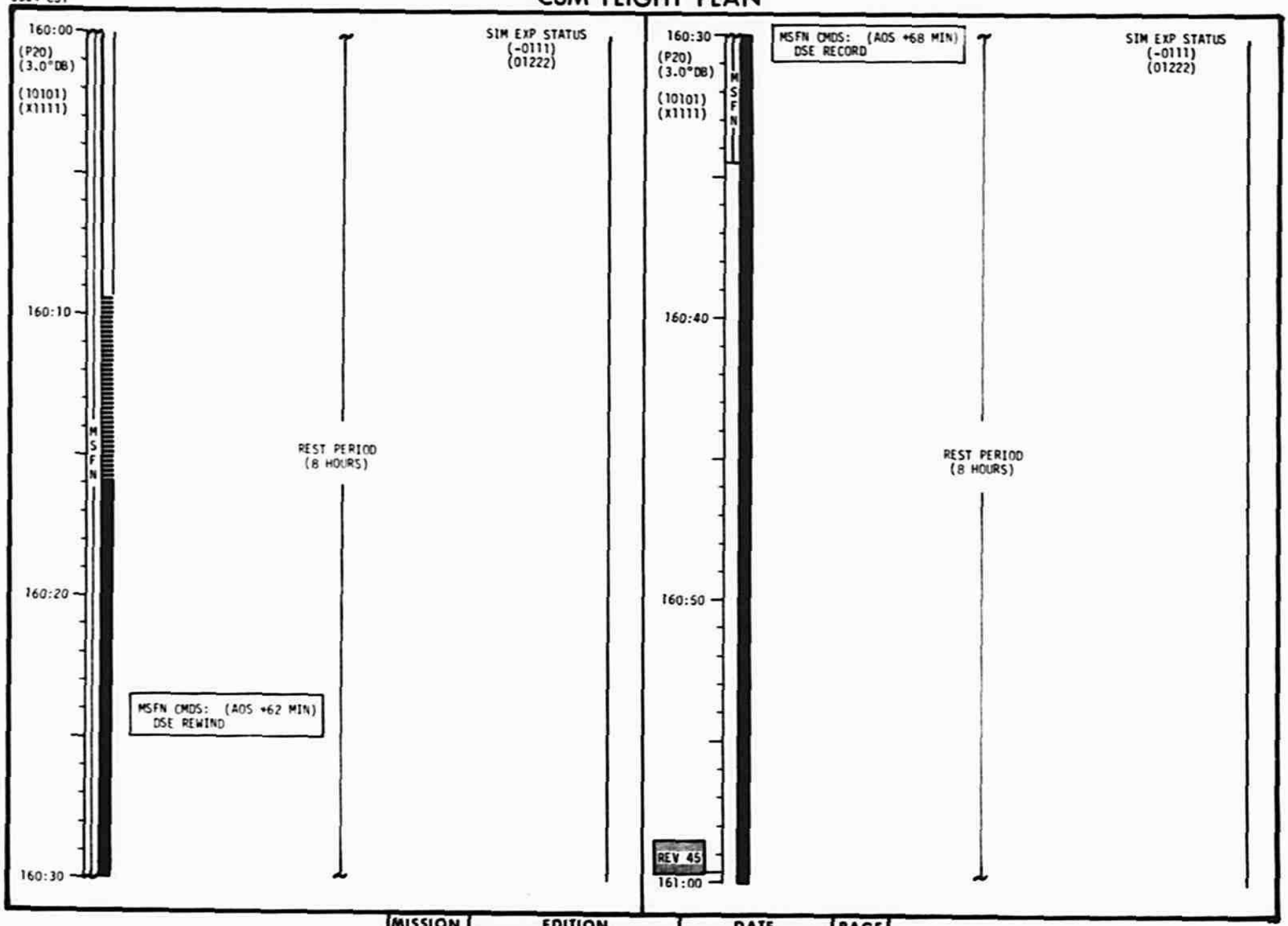
LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	160:00 - 161:00	7/44-45	3-240

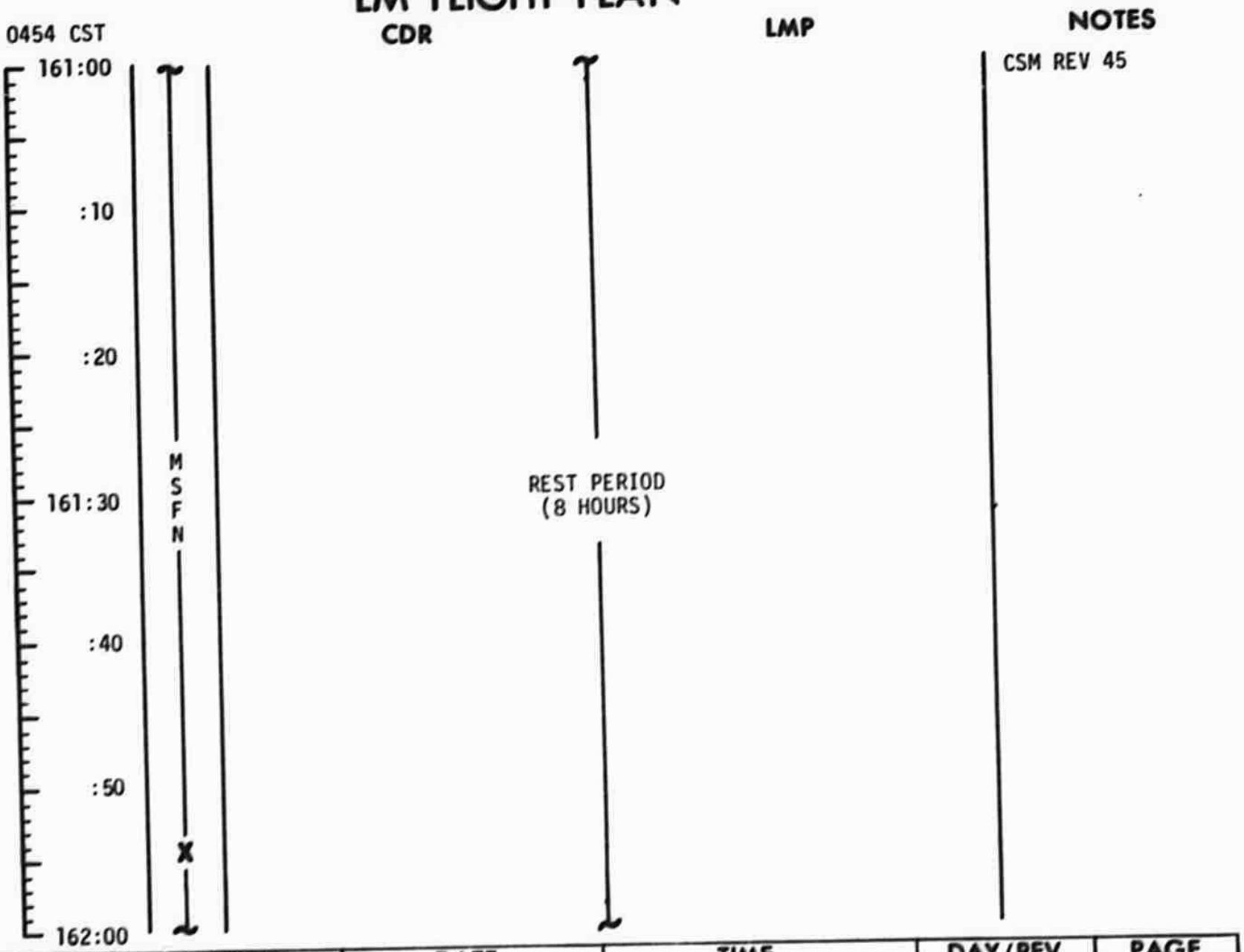
FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-241

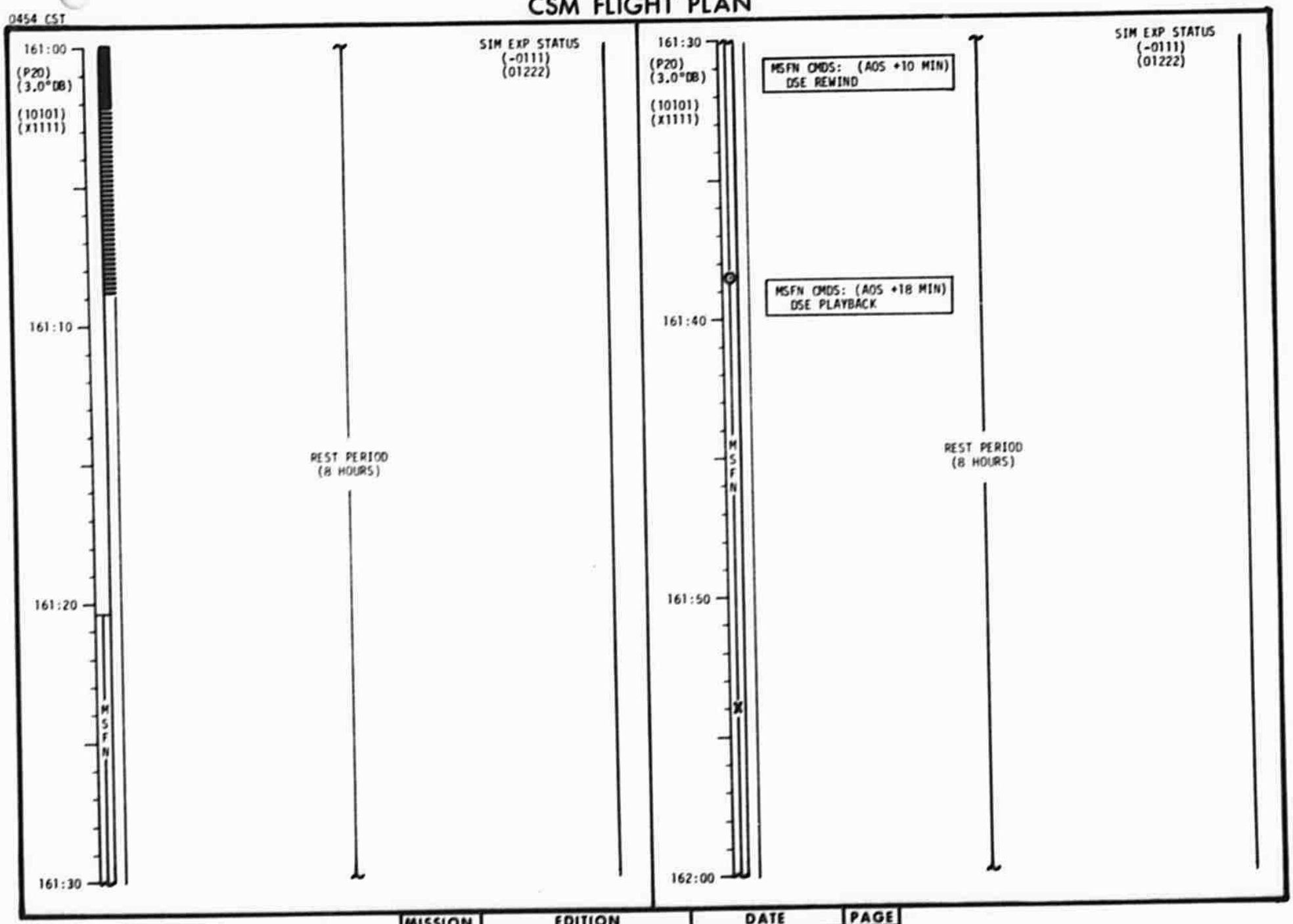
LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	161:00 - 162:00	7/45	3-242

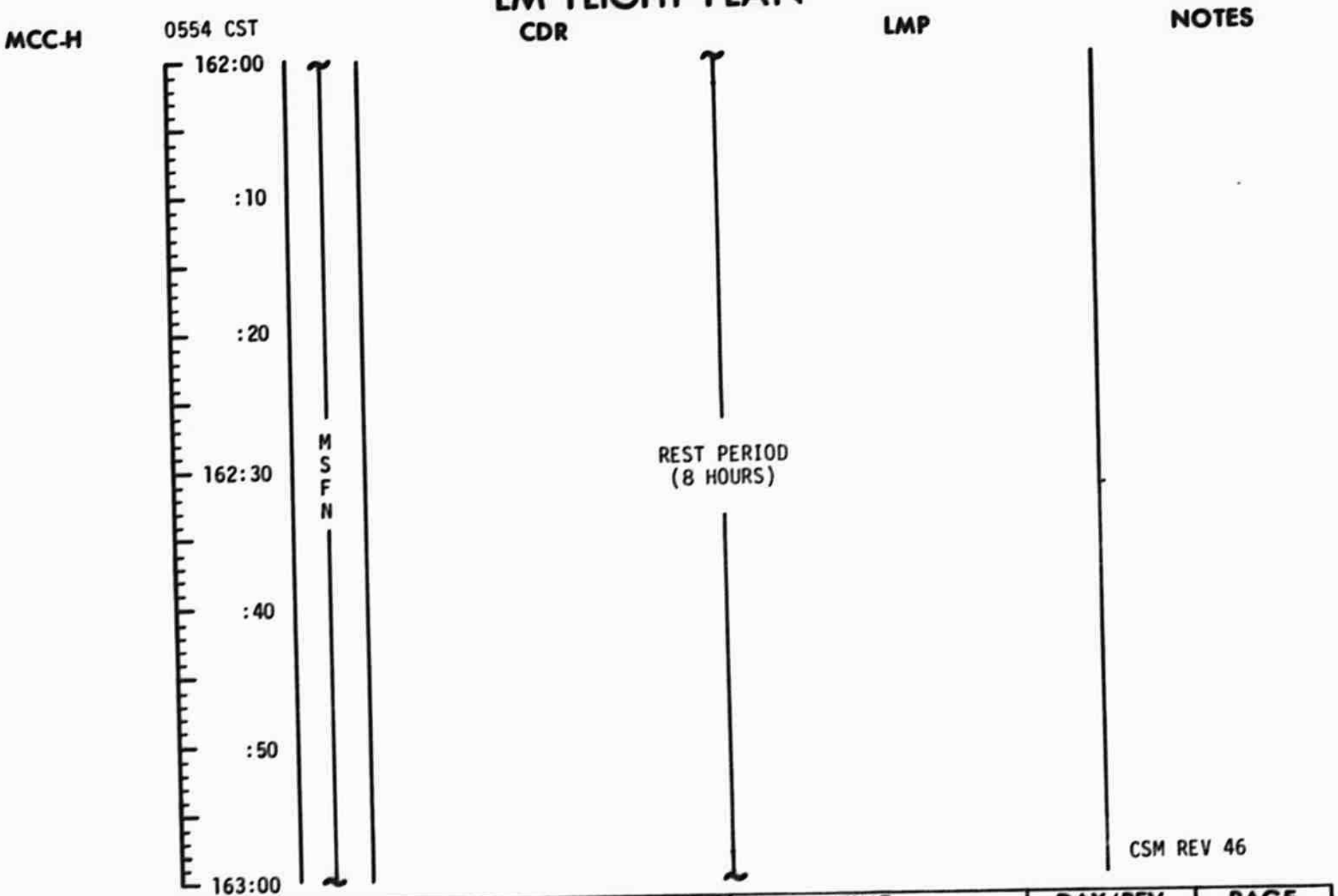
FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-243

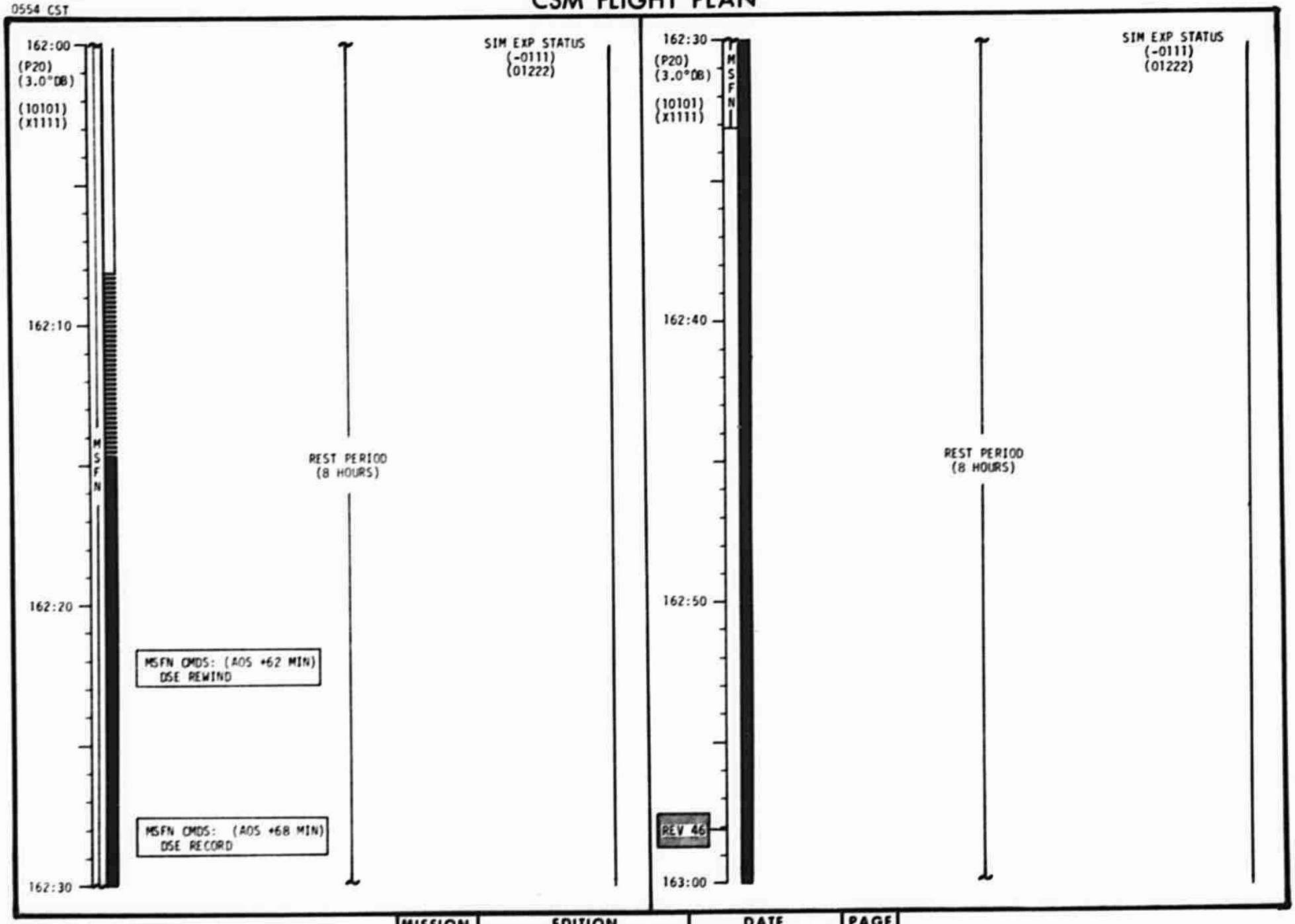
LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	162:00 - 163:00	7/45-46	3-244

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

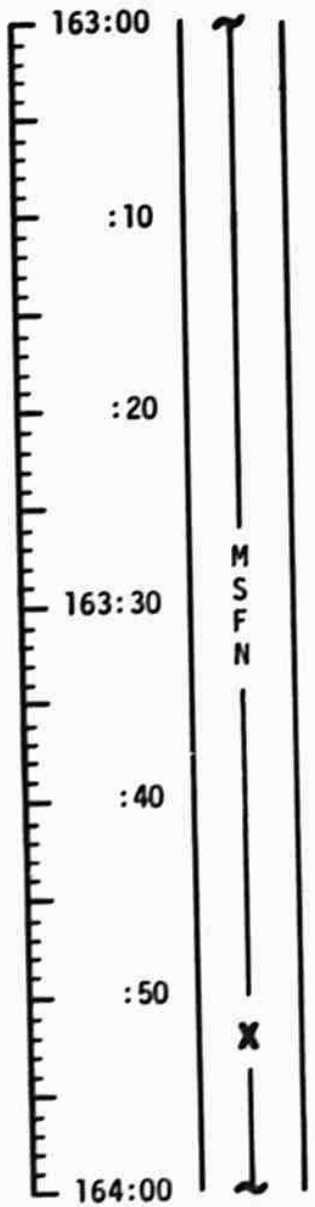


MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-245

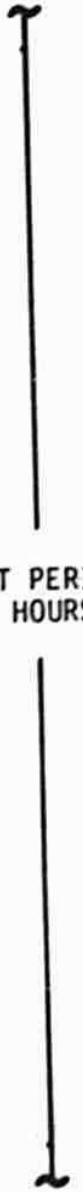
LM FLIGHT PLAN

MCC-H

0654 CST



CDR



LMP

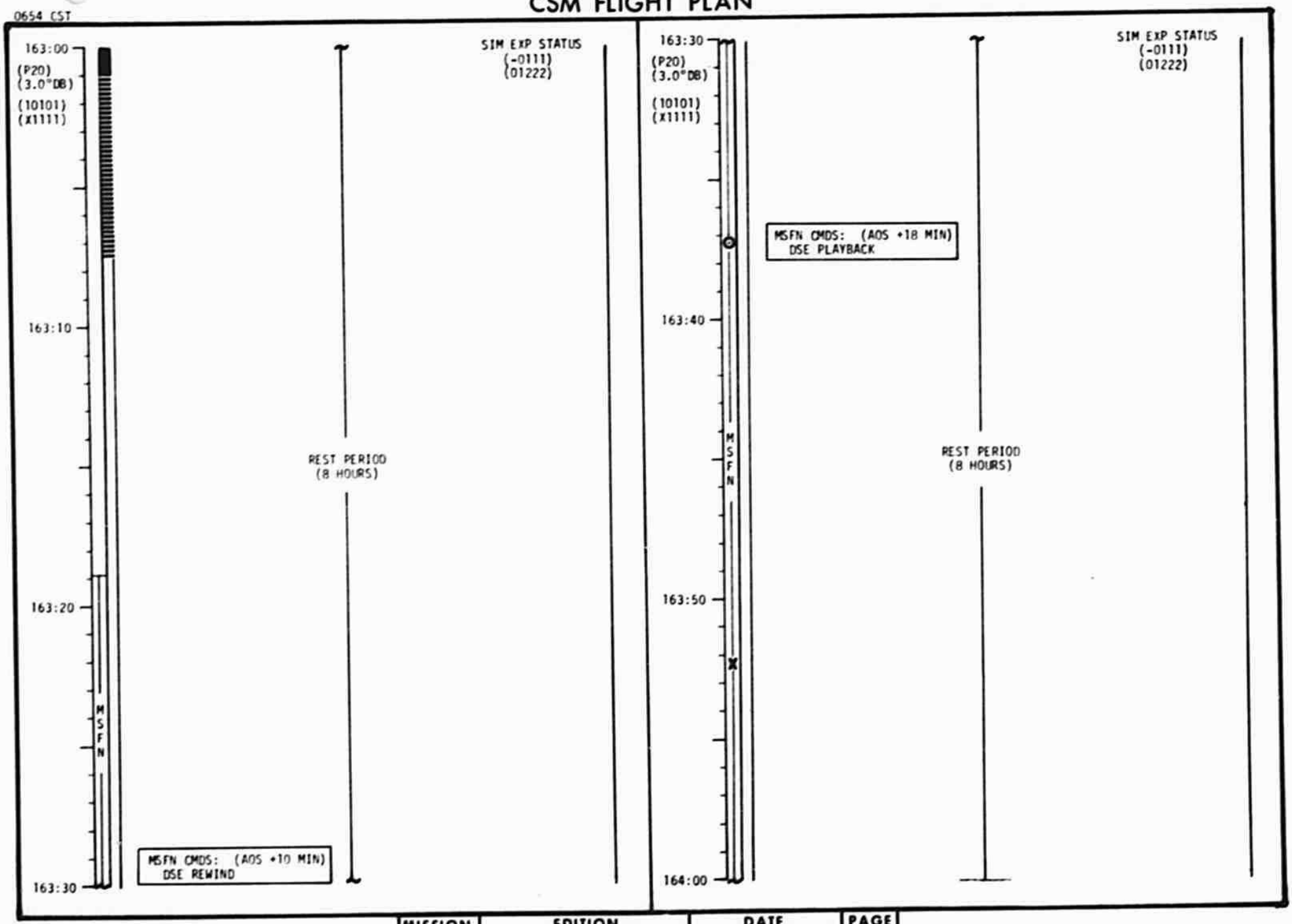


NOTES

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	163:00 - 164:00	7/46	3-246

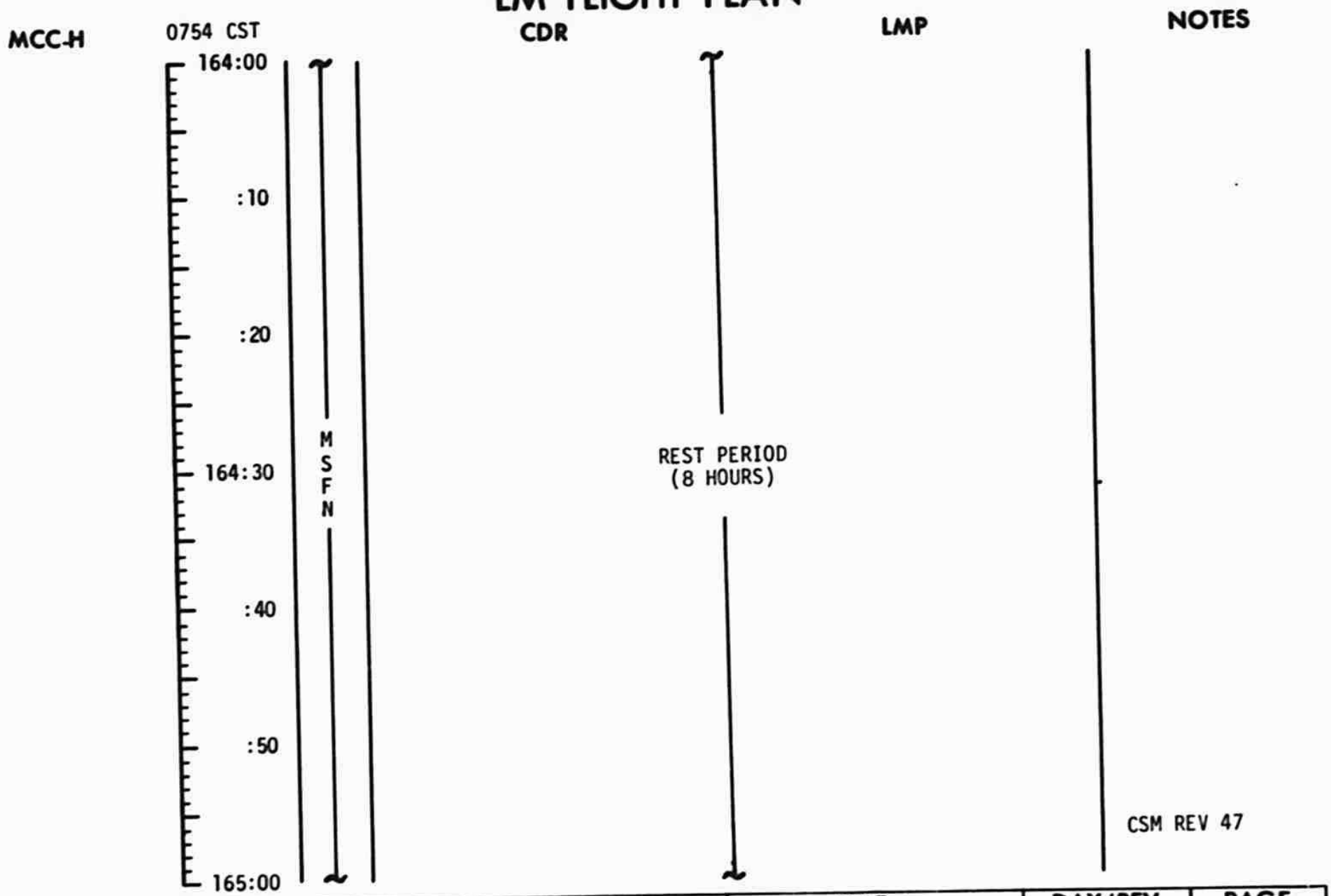
FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-247

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	164:00 - 165:00	7/46-47	3-248

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

0754 CST

164:00
(P20)
(3.0°DB)
(10101)
(x1111)

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE S/1-29
LOGIC PWR (2) - DPLY/RETR
GR: SHIELD - OFF

MSFN UPDATE
CONSUMABLES STATUS
MAP CAMERA PHOTO PAD (165:04)
FLIGHT PLAN
SIM EXP STATUS
DSE VOICE STATUS

MSFN UPLINK
CSM S.V.

SIM EXP STATUS
(-0111)
(01222)

P52 IMU REALIGN

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

164:10

GR: SHIELD - ON (CTR)

MSFN

CMC MODE - FREE
P52 (OPTION 3)
(LIFT-OFF ORIENT)

REPORT: GYRO TORQUING ANGLES

164:20

P20, CMC MODE - AUTO
GDC ALIGN

MSFN CMDS: (AOS +62 MIN)
DSE REWIND

MSFN CMDS: (AOS +68 MIN)
DSE RECORD

164:30

164:30
(P20)
(3.0°DB)
(10101)
(x1111)

SIM EXP STATUS
(-0111)
(01222)

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

MANUALLY ROLL CW 40°

164:40
(P20)
(0.5°DB)

P20 OPT 5 (+X FWD SIM BAY ATT)(165:00)
N79 (+000.50)
SET HGA P 10, Y 0 FOR AOS ACQ

164:50

CONFIGURE CAMERA: (TERMINATOR PHOTOS)
CMS/EL/250/VHBW (f5.6,1/125,-) 6 FR

MAG (SS) ____, FR # ____

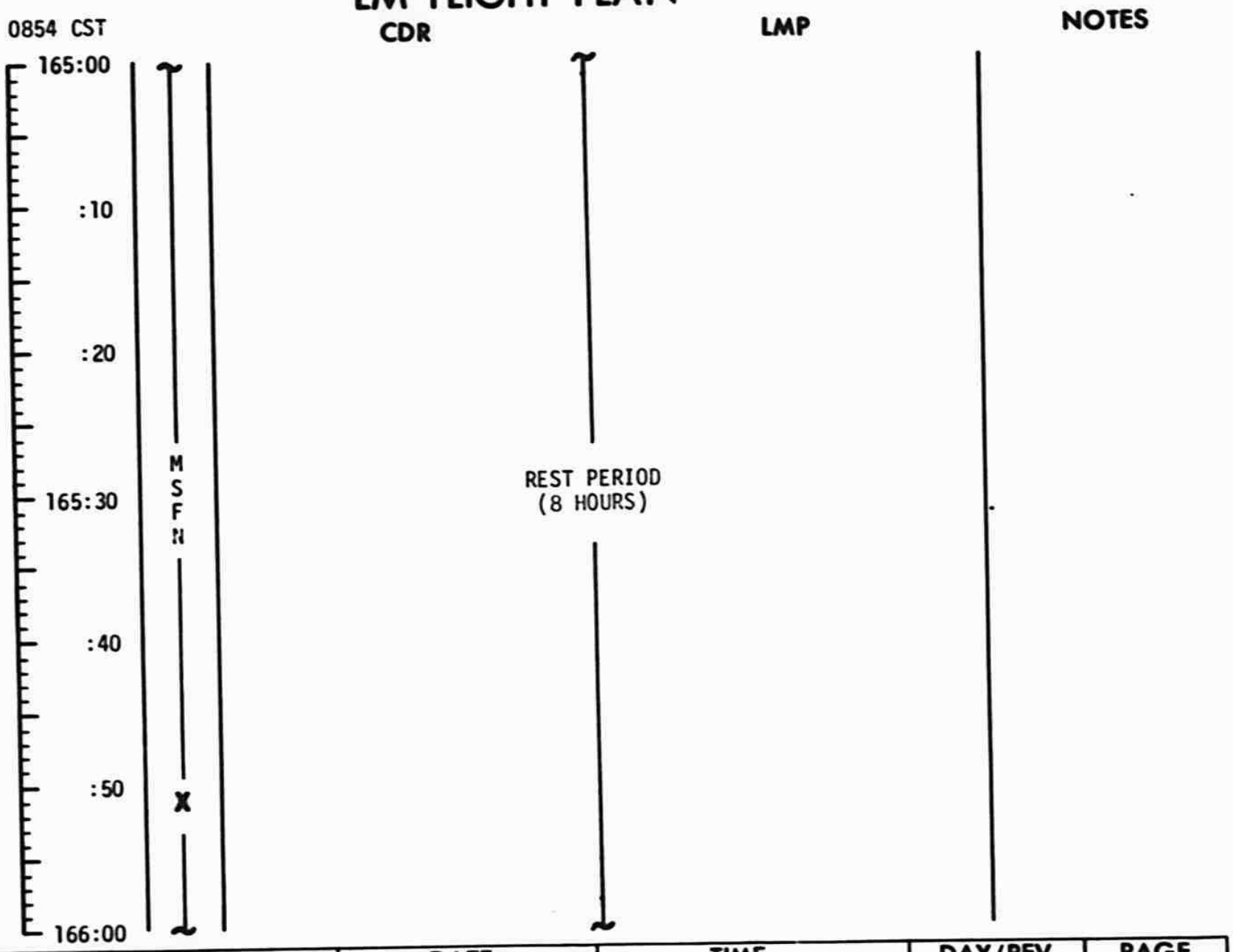
REV 47

MC/LA COVER - OPEN
MC - EXTD

165:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-249

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	165:00 - 166:00	7/47	3-250

FLIGHT PLANNING BRANCH

0854 CST

CSM FLIGHT PLAN

165:00
(P20)
(0.5°DB)
(10101)
(X1111)

LA - ON
IMAGE MTN - ON
MC - ON (T START)
IMAGE MTN - INCR (BP)/ON

SIM EXP STATUS
(+1111)
(01222)

TERMINATOR PHOTOS
(86.6, 1/125, f8) CFR
ST JOHN (P6-C3) CMS

MAP CAMERA PHOTO PAD
T-START: ___ ___:___ ___:___ ___
T-STOP: ___ ___:___ ___:___ ___
(165.9°E TO 148.8°E)(1 REV)

RECORD FR # ____

165:10

IMAGE MTN - INCR (BP +4 STEPS)/ON

ACQ MSFN HGA: MAN, WIDE P 10, Y 0
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

PREPARE FOR ORBITAL SCIENCE VISUALS

MSFN CMDS: (AOS +2 MIN)
DSE (STOP/REWIND)

165:20

MSFN

MSFN CUE: (~ AOS +7 MIN)
HGA AUTO

MSFN CMDS: (AOS +9 MIN)
DSE PLAYBACK

MSFN UPDATE:
MS RETR TIMES (20,15,10 & 5 FEET)

165:30

165:30
(P20)
(0.5°DB)
(10101)
(X1111)

PC: MODE - STBY
PWR - ON
MS - RETR TO 20 FEET (38 SEC)

SIM EXP STATUS
(+1111)
(02222)

PC: PWR - OFF (MSFN CUE)
MS - RETR TO 15 FEET (36 SEC)

ORBITAL SCIENCE VISUALS

COLOMBO HIGHLANDS (V7-C8,C9) CMS

165:40

MSFN

165:50

IMAGE MTN - INCR (BP)/ON
MS - RETR TO 10 FEET (36 SEC)

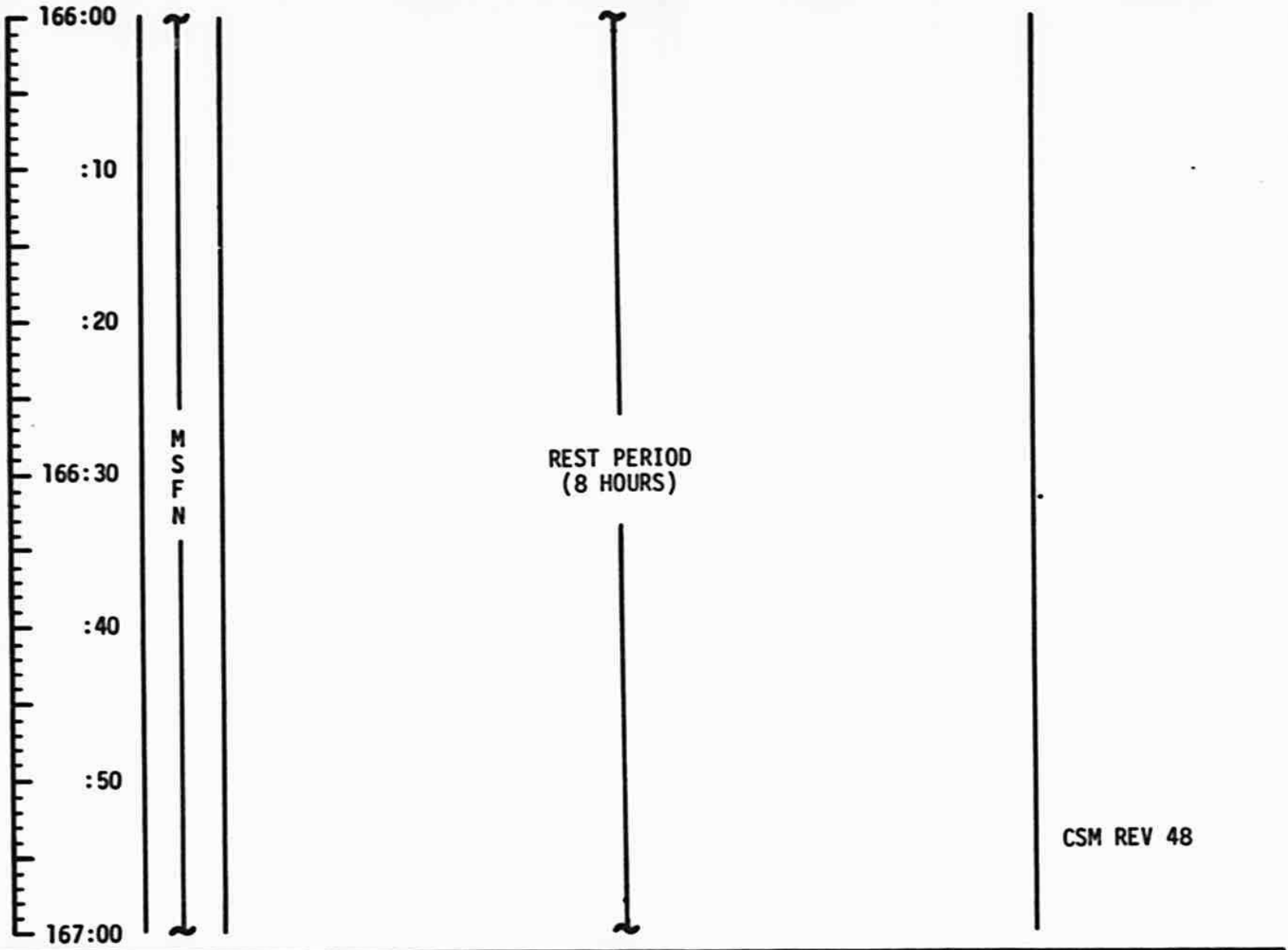
MS - RETR TO 5 FEET (36 SEC)

166:00

MS - DPLY

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-251

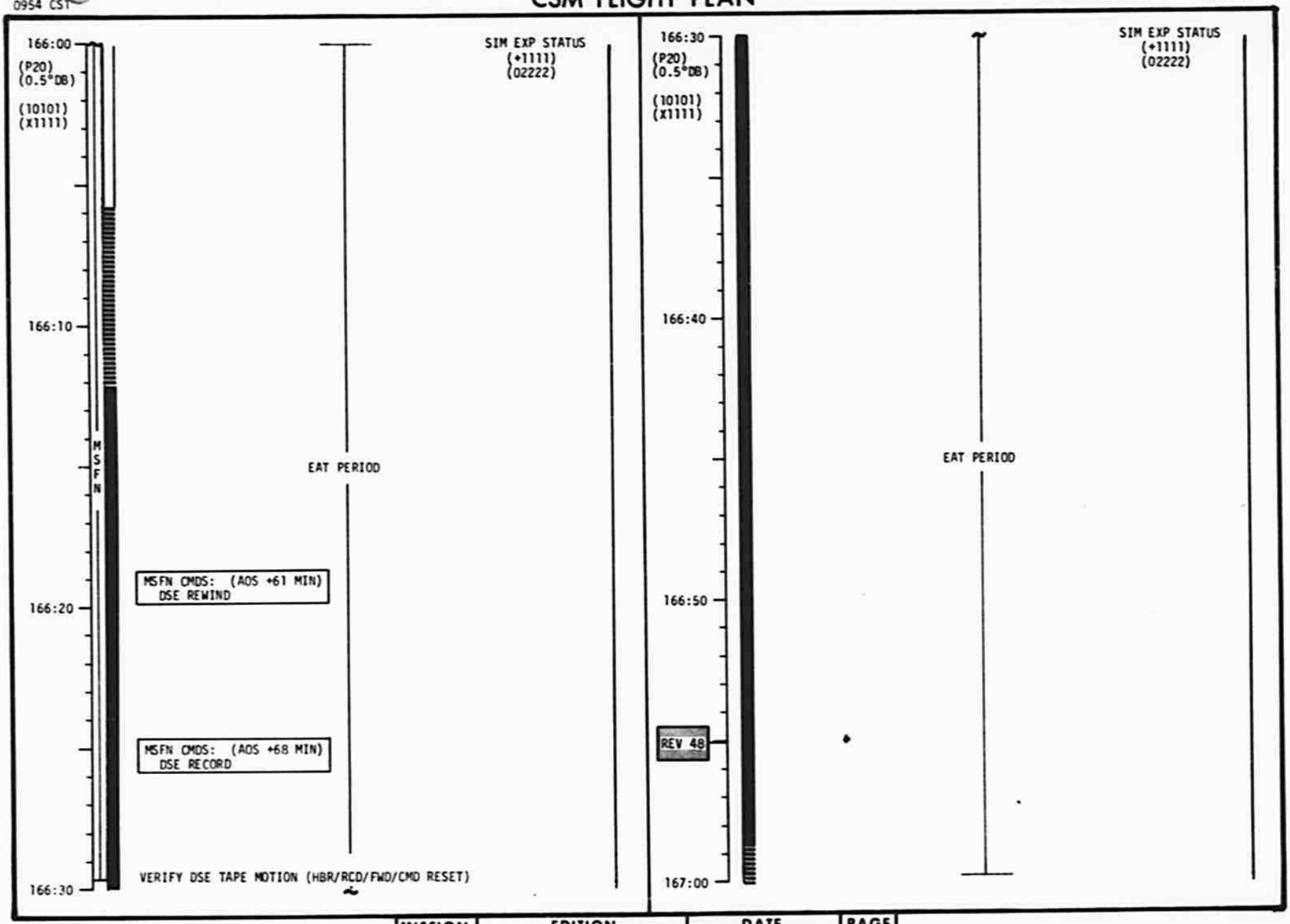
LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	166:00 - 167:00	7/47-48	3-252

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN



LM FLIGHT PLAN

MCC-H	1054 CST	CDR	LMP	NOTES
	167:00		REST PERIOD (8 HOURS)	
	:10	POST-SLEEP RR OPR HTRS - ON AOT HTR - ON		
STAY/NO STAY FOR FINAL JETTISON	:20	STOW HAMMOCKS AND SLEEP RESTRAINTS		
	167:30	CREW STATUS REPORT (FOOD, MEDICATION, SLEEP)		
UPDATE TO LM P57 LIFT-OFF TIME P22 ACQ TIME UPLINK TO LM CSM S.V. (L/O) RLS	:40 (22112)	PGNS TURN ON & SELF TEST E-MEMORY DUMP P57 LUNAR SURFACE ALIGN OPTION 4 LANDING SITE A/T 3 - GRAVITY AND CELESTIAL BODY, PLUS 4 STARS (LIFT-OFF ORIENT)		-4:00
	:50			
	168:00			

MSFN

X

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	167:00 - 168:00	7-8/48	3-254

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

167:00
(P20)
(0.5°DB)
(10101)
(X1111)

SIM EXP STATUS
(+1111)
(02222)

MC - OFF (T STOP)
WAIT 30 SEC
MC - STBY
IMAGE MTN - OFF
LA - OFF
MC - RETR
XR - STBY
MS: ION SOURCE - OFF
EXP - STBY
CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM

167:10
MC/LA COVER - CLOSE
AP/XR COVER - CLOSE
GR - RETR
MS - RETR

LOGIC PWR (2) - OFF
ENABLE ALL JETS (BEFORE AOS)

ACQ MSFN HGA: MAN, WIDE P 10, Y 0
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN CMDS: (AOS +2 MIN)
DSE (STOP/REWIND)

167:20

MSFN CUE: (~ AOS +7 MIN)
HGA AUTO

(11111)
(X1111)

V48 (11111)
(X1111)

MSFN CMDS: (AOS +9 MIN)
DSE PLAYBACK

MSFN UPLINK:
CSM S.V.

LiOH CANISTER CHANGE
(13 INTO A, STOW 11 IN A9)

167:30

167:30
(P20)
(0.5°DB)
(11111)
(X1111)

MSFN UPDATE:
P24 LOMK TRACK (F-1,16-3)
(169:15 & 169:45)

SIM EXP STATUS
(+0000)
(01214)

PREPARE FOR ORBITAL SCIENCE VISUALS

167:40

MSFN

ORBITAL SCIENCE VISUALS

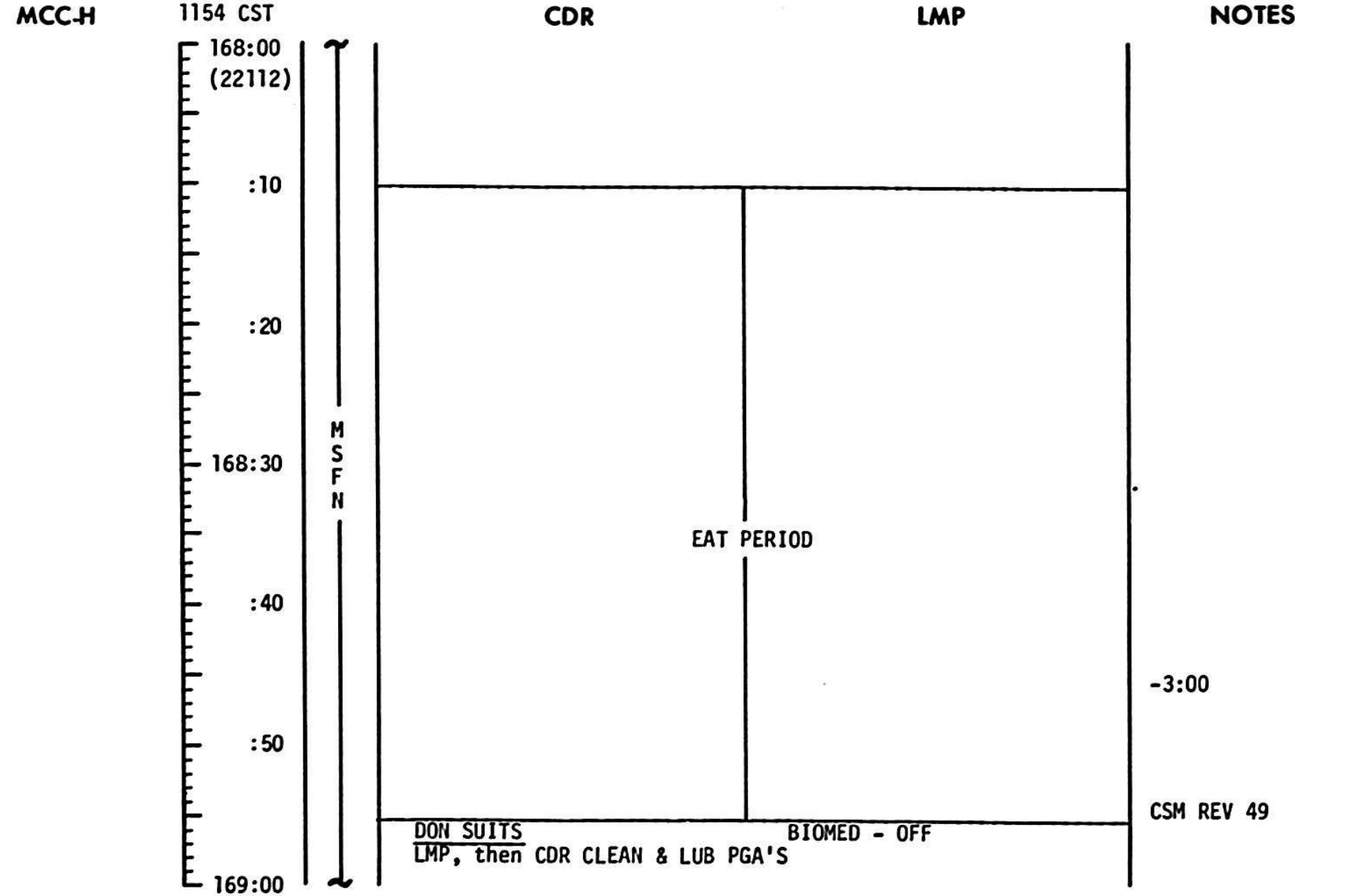
LANDING SITE (V9-C10) CMS

167:50

168:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-255

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	168:00 - 169:00	8/48-49	3-256

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

168:00
(P20)
(0.5°DB)
(11111)
(X1111)

SIM EXP STATUS
(+0000)
(01214)

MSFN

CREW EXERCISE PERIOD

MSFN CMDS: (AOS +61 MIN)
DSE REWIND
DATA SYS - OFF

168:10

168:20

MSFN CMDS: (AOS +68 MIN)
DSE RECORD

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

168:30

168:30
(P20)
(0.5°DB)
(11111)
(X1111)

SIM EXP STATUS
(+0000)
(01214)

PREPARATIONS FOR TRANSFER

INSTALL (1) TSB ON LH LEB & (1) ON RH LEB
REMOVE ROPE BAG FROM DECON BAGS ON TOP OF A2
STOW ROPE IN RH TSB
REMOVE DECON BAG STRAPS FROM TOP OF A2 & HANG ON L3
REMOVE (2) JETTISON BAGS, (1) VACUUM BAG AND VACUUM CABLE FROM A2
STOW EMPTY JETT. BAG, VACUUM BAG & CABLE IN LH TSB
PLACE REMAINING JETT. BAG ON A2 AND LOAD WITH THE FOLLOWING:
- LiOH CANS & PARTITIONS FROM A9 (CANISTER 14 IS UNUSED)
- WASTE FOOD BAGS FROM A7
- FECAL BAG (12 PACK) FROM A7
- ELECTROPHORESIS IN BAG FROM A6
- HELMET SHIELD FROM PGA BAG
- USED CWG'S-4 FROM A8
- USED ICG-1 FROM U2
- USED TISSUES, TOWELS AND MISCELLANEOUS WASTE

REMOVE CWG-(3) FROM A8 - STOW IN RH TSB AND VACUUM BRUSH FROM SIDE OF A8
UNSTOW AND ASSEMBLE:
- VACUUM BRUSH - VACUUM CLEANER (SIDE A6)
- POWER CABLE (LH-TSB) AND VACUUM BAG (LH-TSB)

CONNECT CABLE TO VACUUM AND TO PANEL 201
STOW ASSEMBLED VACUUM BETWEEN F2 AND MDC
REMOVE CDR & LMP COVERALLS, AND HSB (3) FROM U2
INSTALL COVERALLS IN RH TSB
INSTALL HSB'S IN LH TSB
REMOVE SPRINGS & CLIPS FROM CLOSEOUT CURTAIN AND INSTALL
REMOVE B5 & B6 CLOSEOUT CURTAIN AND STOW IN RH TSB
REMOVE R12 FROM GIRTH SHELF & STOW
OPEN BOTTOM & TOP OF PGA BAG

168:40

168:50

CMC MODE - FREE
P20 OPT 5 (LDMK TRK ATT)(169:15)
N78 (+000.00)
(-068.00)
(+000.00)
N79 (+000.50)
(000,338/346,000) OMNI C
CMC MODE - AUTO

REV 49

CONFIGURE CAMERA: (LDMK TRK)
CM/DAC/SXT/CEX (EXP PAD) 1 fps (7.6% MAG)

MAG (BB) _____, MAG % _____
UTILITY POWER - ON

169:00

LM FLIGHT PLAN

MCC-H	1254 CST	CDR	LMP	NOTES
	169:00 (22112)	DOFF ICG, DON PGA CONNECT HOSES VERIFY COMM		
	:05			
	:10			
	169:15	MSFN		
	:20			
	:25			
	169:30			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	169:00 - 169:30	8/49	3-258

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

169:00
(P20)
(0.5°DB)
(11111)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

RNDZ XPNDR ACTIVATION AND SELF TEST (DECAL)

113 VALUES A ~2.8
B ~2.2 SELF TEST
C ~0.3 UNLOCKED
~4.9 LOCKED

RNDZ XPNDR - HTR

169:10

ACQ MSFN OMNI C

P24 (L/S LDMK F-1)
OPT ZERO - OFF
OPT MODE - CMC

0:00 T1(HORIZON)DET - RESET/START

169:20

MSFN

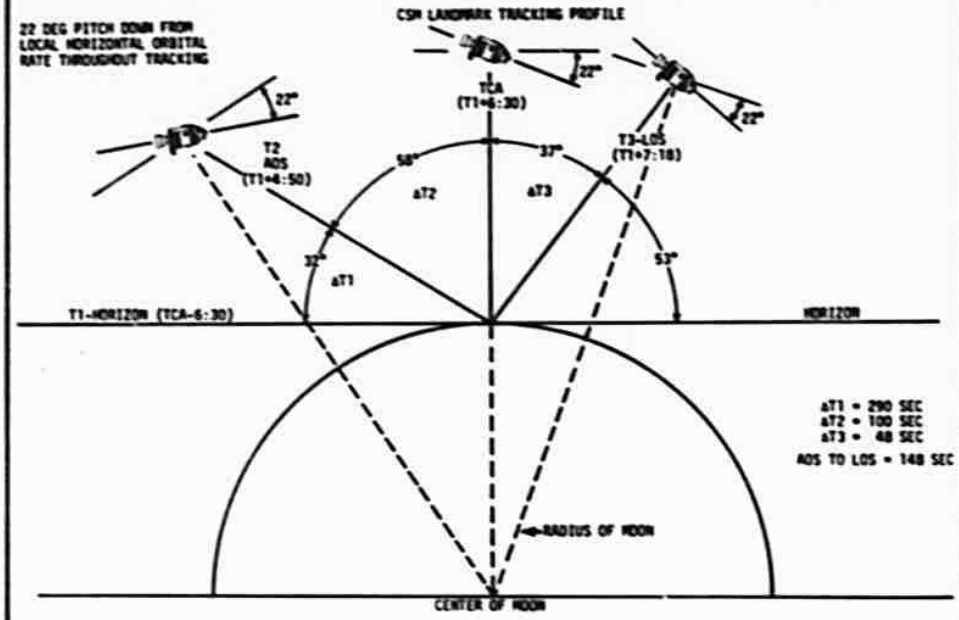
3:50 - DAC - ON

4:50 - T2(LDMK ACQ) OPT MODE - MAN, TAKE MARKS 10 SEC APART

6:30 - TCA
7:18 - T3(LDMK LOSS) DAC - OFF

CONFIGURE FOR VHF COMM CHECK WITH LM
VHF AM B - DUPLEX
VHF AM - T/R (PANEL 9)
MODE - VOX
VHF ANT - RIGHT
RNDZ XPNDR - PWR

169:30



P24 LDMK TRACKING

TGT: F-1 (1/250)

T_1 — — — — — — —
T_2 — — — — — — —
TCA — — — — — — —
T_3 — — — — — — —

R ____ °P ____ °Y ____ ° (T2 ACQ)

N or S NM ___ / SA ___ TA ___ (T2 ACQ)

N89
LAT +01.872
LONG/2 +44.127
ALT 000.00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-259

LM FLIGHT PLAN

MCC-H	1324 CST	CDR	LMP	NOTES
	169:30 (22112)			
	:35	RR - ON P22 LUNAR SURFACE NAV		
	:40		BIOMED - LEFT	
		VHF VOICE CHECK		
UPDATE TO LM ASCENT PADS CSI PAD LM DAP WTS	169:45	RR - OFF TERMINATE P22		-2:00
	:50	PREP FOR EQUIP JETT #2 REPORT: PRD STOW HELMET BAG IN JETT BAG TIE JETT BAG UNLOCK FWD HATCH HANDLE		
	:55	HELMET GLOVE DONNING DON HELMETS & LEVA'S VERIFY SUIT CONFIGURATION AUDIO MODE - VOX DON EV GLOVES		
	170:00			

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	169:30 - 170:00	8/49	3-260

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

169:30
(P20)
(0.5°DB)
(11111)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

P24 (L/S LDMK 16-3)
OPT ZERO - OFF
OPT MODE - CMC

169:40

0:00 T1(HORIZON)DET - RESET/START

VHF COMM CHECK WITH LM

M S F N

3:50 - DAC - ON

4:50 - T2(LDMK ACQ) OPT MODE - MAN, TAKE MARKS 10 SEC APART

6:30 - TCA
7:18 - T3(LDMK LOSS) DAC - OFF

(11111)
(X1111)

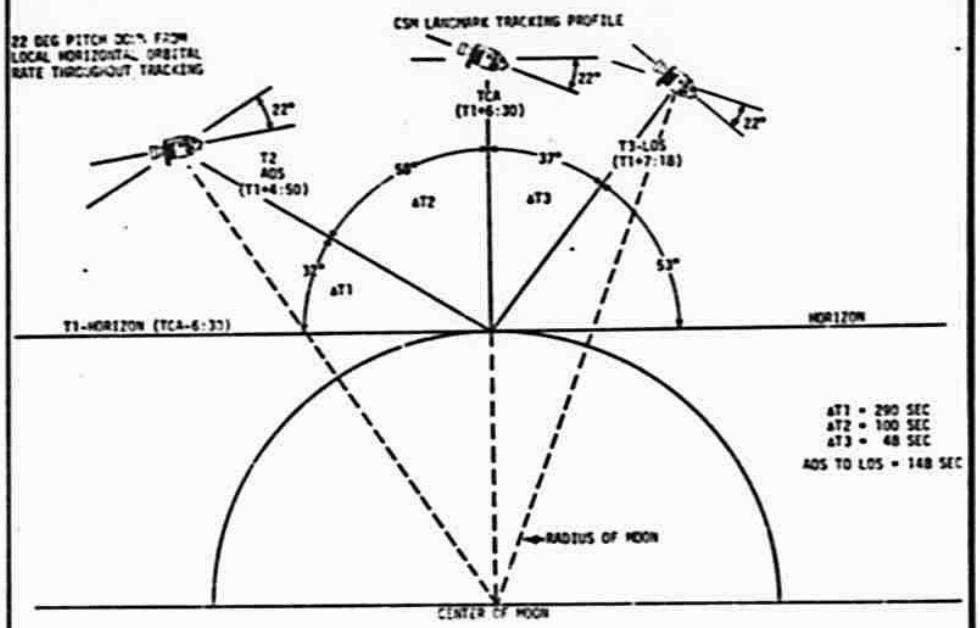
P00

169:50

VHF AM B - OFF (CTR)
MODE - INTERCOM/PTT
RNDZ XPNDR - HTR

CYCLE CMC MODE - FREE/AUTO
(11102)
(X1111)
V48 (11102)
(X1111)
V49 MNVR TO P52/COAS CAL ATT (170:00)
(180,258,357) HGA P -76, Y 258

170:00



P24 LDMK TRACKING
TGT: 16-3 (1/250)

T_1 — — — — — — —
T_2 — — — — — — —
TCA — — — — — — —
T_3 — — — — — — —
R ____ °P ____ °Y ____ ° (T2 ACQ)
N or S NM ___ / SA ___ TA ___ (T2 ACQ)
N89
LAT -09.000
LONG/2 +07.745
ALT -000.14

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-261

LM FLIGHT PLAN

MCC-H	1354 CST	CDR	LMP	NOTES
	170:00 (22112)			
	:05	PRESSURE INTEGRITY CHECK		
GO/NO-GO FOR DEPRESS	:10	CABIN DEPRESS FOR JETTISON OVHD OR FWD DUMP VALVE - OPEN, THEN AUTO AT 3.5 PSIA DUMP VALVE - OPEN, VERIFY SUIT PRESS		
	170:15	HATCH OPENING JETTISON JETT BAG CLOSE & LOCK FWD HATCH		
		CABIN REPRESS CABIN REPRESS - AUTO VERIFY CABIN PRESS STABLE DOFF HELMETS & GLOVES AUDIO MODE - ICS/PTT		
	:20	CABIN CLEANUP FOR LAUNCH SECURE OPS ON FLOOR STOW LEVA BAGS & SECURE INSTALL ISA SECURE UTILITY LIGHTS		
	:25	STOW ALL EVA DATA IN FLIGHT DATA FILE		
	170:30			-1:15

M S F N

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	170:00 - 170:30	8/49-50	3-262

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1354 CST

170:00
(11102)
(x1111)

MSFN UPLINK:
LM S.V. (INS +5)
CSM S.V. (L/O)
RESET SURFACE FLAG

SIM EXP STATUS
(*0000)
(01214)

MSFN UPDATE:
CONSUMABLES STATUS
CSM S.V. (L/O)
LM S.V. (INS +5)
ASCENT PADS AND CSM WEIGHT COPY AT 171:10

MSFN CMDS:
DSE DUMP

CONFIGURE FOR URINE DUMP

H_2 PURGE LINE HEATERS - ON

170:10

P52 (OPTION 3)
(LIFT-OFF ORIENT)
REPORT: GYRO TORQUING ANGLES

P52 IMU REALIGN

N71:__ __,__ __

N05:__ __ __.__ __

N93:

X __ __.__ __ __

Y __ __.__ __ __

Z __ __.__ __ __.

GET __ __ __.__ __.__ __

MSFN

P52 (COAS CALIB)
USE STAR NO. 33

COAS CALIB - N92

SHAFT: __ __ __.__ __

TRUN: __ __.__ __ __

170:20

POO
GDC ALIGN

CONFIGURE CAMERAS: (DOCKING)
CM2/DAC/18/CEX-BRKT,MIR (T8,1/250,-) 6 fps (40% MAG)

MAG (BB)____, MAG % ____
UTILITY PWR - ON

MSFN CMDS:
DSE RECORD

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

MSFN ENABLES MSFN S-BAND RELAY

H_2 AND O_2 FUEL CELL PURGE
WASTE WATER DUMP
URINE DUMP

170:30

P27 UPDATE										
PURP		CSM (L/O) V				LM (INS +5) V				
GET		: :				: :				
304	01	INDEX				INDEX				
	02									
	03									
	04									
	05									
	06									
	07									
	10									
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	20									
	21									
	22									
	23									
	24									

LM FLIGHT PLAN

MCC-H

1424 CST

	CDR	LMP	NOTES
170:30 (22112)	VERIFY GUIDANCE CONFIGURATION		-1:15
	CONFIGURE CB'S FOR L/O PREP	CONFIGURE CB'S FOR L/O PREP	
:35		AGS STATUS - OPERATE	
:40	CONFIGURE RR		
	V63 RR SELF TEST (IF REQD)	AGS GYRO CALIBRATION	
170:45			-1:00
		LOAD AGS ASCENT TARGETING	
:50		LGC CLOCK SYNC	
	RATE GYRO TEST	CONFIGURE COMM	CSM REV 50
:55			-0:50
(12102)	V48 (12102) RCS CHECKOUT		
171:00			

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	170:30 - 171:00	8/49-50	3-264

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1424 CST

170:30
(11102)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

CM/EL/80/CEX (f8,1/250,FOCUS) 10 FR

MAG (QQ)_____, FR # _____

CM4/TV-BRKT
(f44,PEAK,=,150MM)

TERMINATE WASTE WATER DUMP AT 10%

H_2 PURGE LINE HTRS - OFF

DON PGA WITHOUT HELMET AND GLOVES

STOW RESCUE BOOK & a/c ckl

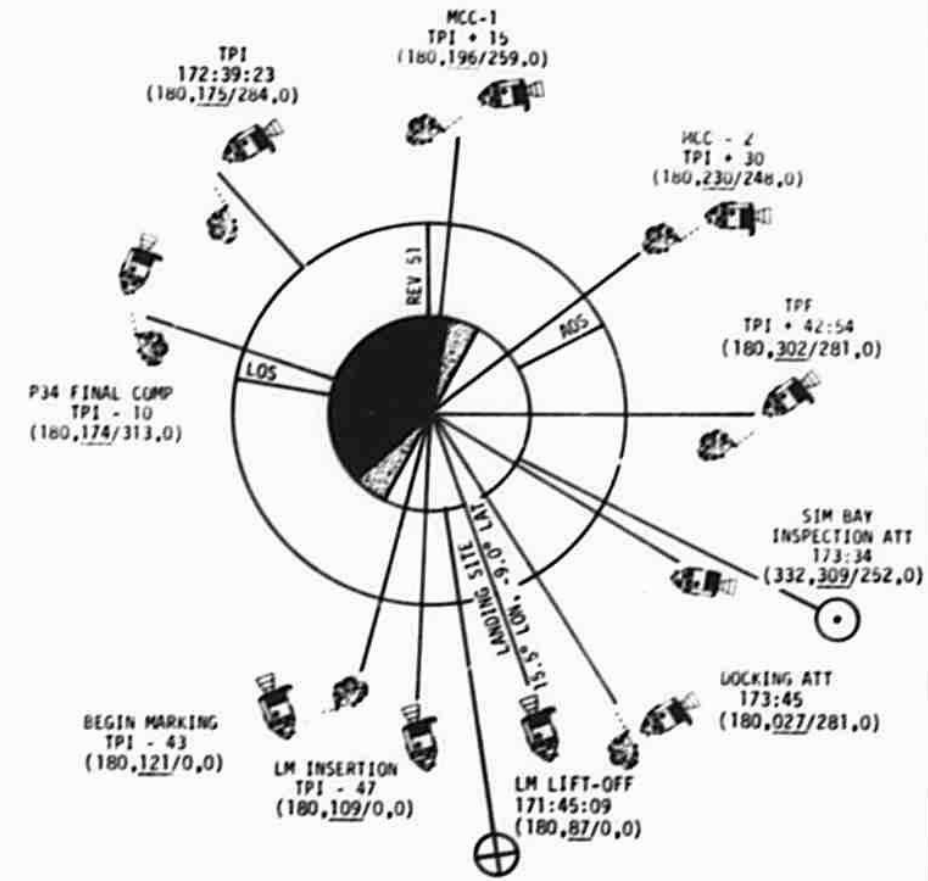
170:40

170:50

REV 50

EAT PERIOD

171:00



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE REPRINT (4/16)	3/27/72 2/16/72 (KS)	3-265

LM FLIGHT PLAN

MCC-H	1454 CST	CDR	LMP	NOTES
UPLINK TO LM ZERO POS/NEG CELLS CSM S.V. (L/O) (IF REQ) RLS (IF REQ)	171:00 (12102)	P57 LUNAR SURFACE ALIGN OPTION 4 LANDING SITE A/T 3 - GRAVITY AND CELESTIAL BODY (LIFT-OFF)		-0:40
	:05		LOAD AGS 047,053 BATS 5&6-ON, 1&3-OFF/RESET SET CAMERA: LM3/DAC	
UPDATE TO LM AGS K-FACTOR AGS 047 & 053 LGC GYRO COMP (IF REQ) PIPA BIAS (IF REQ)	:10	POSTION RR ANT		
		LOAD DAP, LM WT P12 POWER ASCENT		
	171:15		AGS LUNAR ALIGN	-0:30
		PRELAUNCH SWITCH CHECKS	PRELAUNCH SWITCH CHECKS	
	:20	DON HELMET & GLOVES	DON HELMET & GLOVES	
	:25			-0:20
			V47 SET AGS BIAS LIFT-OFF COMM, RECORDER-ON	
	171:30			

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	171:00 - 171:30	8/50	3-266

FLIGHT PLANNING BRANCH

1454 CST

CSM FLIGHT PLAN

171:00
(11102)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

EAT PERIOD

171:10

ACQ MSFN HGA P -76, Y 258

MSFN CMDS:
DSE DUMP

PRESSURIZE CABIN TO 5.5 PSIA

VHF AM T/R - OFF (PNL 9)
VHF AM B - DUPLEX
VHF AM A - OFF (CTR) (VERIFY)
VHF RANGING - ON (UP)(DSE VOICE USE MARGINAL)
VHF ANT - RIGHT (VERIFY)
EXT LIGHTS RUN/EVA - ON (UP)
EXT LIGHTS RNDZ - RNDZ
RNDZ XPNDR - PWR

MSFN

171:20

LOAD CSM AND LM WT

V49 MNVR TO P20 ATT (171:30)
(180,0,0) HGA P 7, Y 346

171:30

IF VHF VOICE REQ:
VHF AM T/R-T/R (PNL 9)

DIRECT ASCENT RNDZ PAD								UPDATE (IF REQ)						
GETI LIFT-OFF	HRS	+	0	0				+	0	0				
	MIN	+	0	0	0			+	0	0	0			
	SEC	+	0					+	0					
GETI	HRS	+	0	0				+	0	0				
TPI	MIN	+	0	0	0			+	0	0	0			
N37	SEC	+	0					+	0					

CSM WT	+						
LM WT	+	0	5	9	0	0	

COELLIPTIC RNDZ PAD								UPDATE (IF REQ)						
GETI LIFT-OFF	HRS	+	0	0				+	0	0				
	MIN	+	0	0	0			+	0	0	0			
	SEC	+	0					+	0					
GETI	HRS	+	0	0				+	0	0				
CSI	MIN	+	0	0	0			+	0	0	0			
N11	SEC	+	0					+	0					
GETI	HRS	+	0	0				+	0	0				
TPI	MIN	+	0	0	0			+	0	0	0			
N37	SEC	+	0					+	0					

LM FLIGHT PLAN

MCC-H	1524 CST	CDR	LMP	NOTES
GUIDANCE RECOMMENDATION FOR ASCENT	171:30 (12102)		BAT 2, 4 - OFF/RESET DES BATS - DEAD FACE	
		VERIFY CB STATUS	VERIFY CB STATUS	
	:35	APS PRESSURIZATION		-0:10
GO/NO-GO FOR LIFT-OFF				
	:40	CHECK APS BURN CARD	CHECK APS,RCS,EPS,ECS	
		LM TIMELINE BOOK		
				TIG: 171:45:08.6 BT: 7MIN 14.3SEC ΔVT: 6047.9 FPS ULLAGE: NONE ORBIT: 45.0x9.0 NM
	171:45	LM LUNAR LIFT-OFF	DAC - ON	
	:50		DAC - OFF	
		LUNAR ORBIT INSERTION		171:52:22.9
UPDATE TO LM TWEAK OR BAILOUT INSTRUCTION (IF REQD)		TRIM X RESIDUALS TO <2 FPS		
	:55	P20 RENDEZVOUS NAVIGATION	TWEAK BURN (IF REQD)	173:55
		P34 TARGET TPI RENDEZVOUS RADAR TRACKING	EXTERIOR LTG - TRACK BAILOUT BURN (IF REQD)	173:57
	172:00			

MSFN: M S F N — STV: S T V — X

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	171:30 - 172:00	8/50	3-268

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

171:30
(11102)
(X1111)

GDC ALIGN

SIM EXP STATUS
(*0000)
(01214)

PRE-SPS BURN SIM PREP (CUE CARD)

MSFN UPDATE:
GO/NO-GO FOR LM LIFT-OFF

171:40

MSFN

LM LIFT-OFF
: : .
171:45:08.6

P34 (BYPASS MNVR)
V88; CMC MODE - HOLD
SET N79 = +005.00

171:50

VHF RNG-RESET

LM INSERTION
: : .
171:52:22.9

-47
156.29
-449.5

-43

V87
VERIFY VHF VOICE

123.67
-412.8
172:00

CONTINGENCY MARKING SCHEDULES

EVENT	SXT FROZEN (USABLE)*				TRACKER LIGHT FAILURE				SXT FAILURE (UNUSABLE)				VHF FAILURE			
	VHF	SXT	COAS	WRI	VHF	SXT	COAS	WRI	VHF	SXT	COAS	WRI	VHF	SXT	COAS	WRI
P34 -50																
INSERTION								AUTO				AUTO				AUTO
-40																
-30								V83								
-20																
FINAL COMP -10																
TPI 0 P35				AUTO												
+10																
FINAL COMP																
MCC-1 P35				AUTO								V83				
+20																
FINAL COMP																
MCC-2 +30																

PRIM MSFN UPLINK: LM S.V. P34

*(1) SXT MARKS ARE TAKEN BY MANEUVERING SPACECRAFT
(2) TO USE COAS VARIANCE (MUST BE DONE PRIOR TO EACH MARKING PERIOD)
V25 N7E, 76E, 20000E, 0E
V21 N1E, 301E, 37777E

171:55:23(INS+3) TWEAK
171:57:23(INS+5) LM B/O
172:04:23(INS+12) CSM B/O

P34 INPUT			
37	LM GETI-TPI		
55	INTEG OPT +00000	ELEVATION ↓ +000.00	TRANSFER ↓ +130.00

LM FLIGHT PLAN

MCC-H	1554 CST	CDR	LMP	NOTES
	172:00 (12102) (12012)	V48 (12012) & LM WT		
	:05		~~EXTERIOR LTG - TRACK~~	
	:10			
	172:15 MSFN			
	:20			
	:25		CONFIGURE S-BD FOR LOS PCM - HI	
	172:30			

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	3/27/72 ~~3/6/72~~ (PI)	172:00 - 172:30	8/50	3-270

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

172:00
(11102)
(x1111)
-38
123.67
-412.8

IF UPLINK REQ:
P00
MSFN UPLINK:
LM S.V.
P34

VERIFY LM TRACKER LT-ON

SIM EXP STATUS
(*0000)
(31000)

BEFORE STEADY STATE
PRE-TPI: N49 > (+00200,+00120) REJECT/REPEAT
POST-TPI:N49 > (+00080,+00050) REJECT/REPEAT
AFTER STEADY STATE
ANYTIME: N49 > (+00030,+00020) REJECT/REPEAT

172:10

CMC MODE - AUTO

MSFN

71.72
-279.7

172:20

MSFN CMDS:
DSE RECORD

VHF AM T/R-T/R (PNL 9)

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

MSFN DISABLES MSFN S-BAND RELAY

41.46
-133.7
-10
172:30

P34 FINAL COMP

P30 MANEUVER

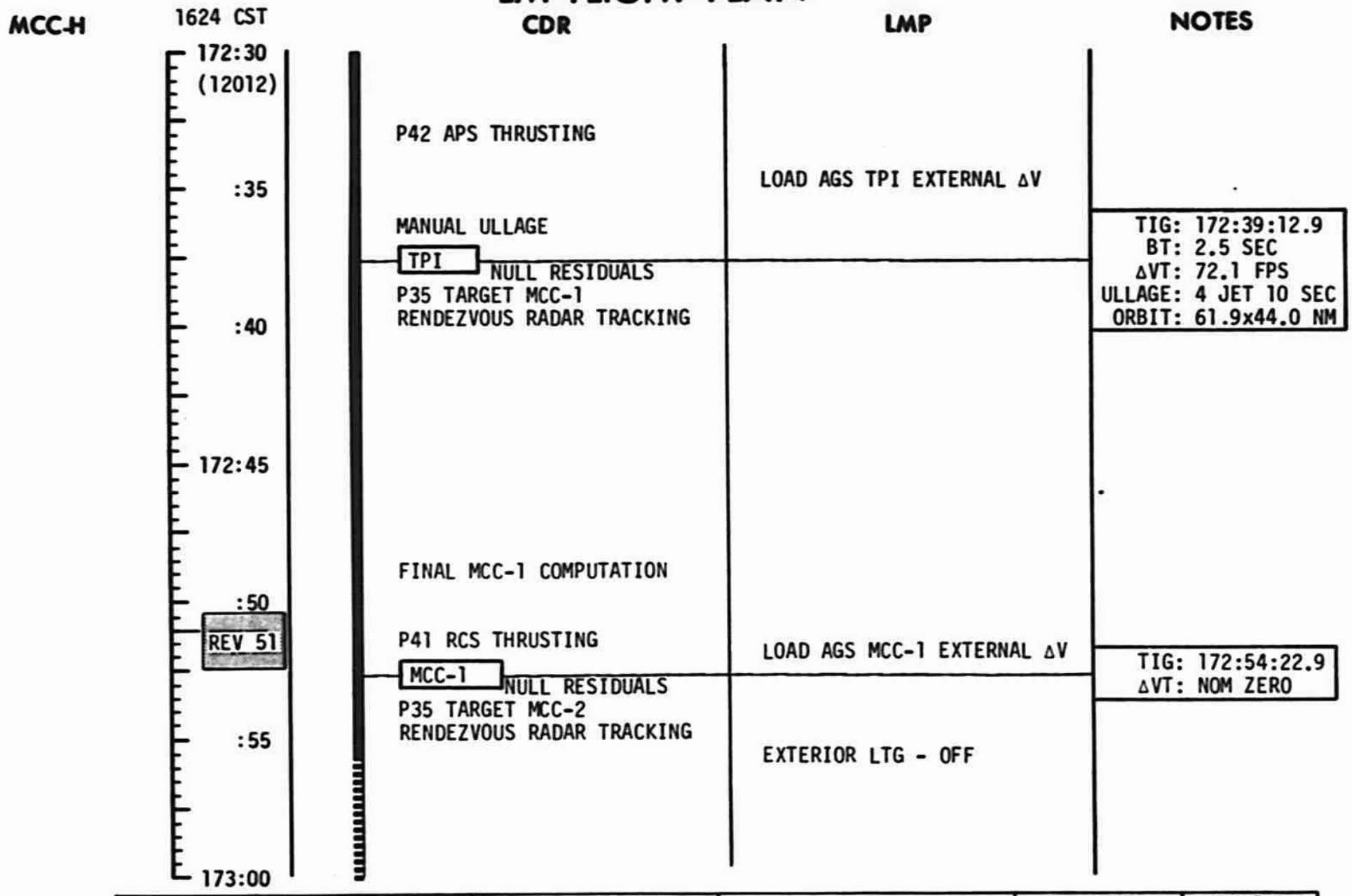
N/A SET STARS	C/S	S/P	M/S	B/G	/ &	O/N	PURPOSE / PROP/GUID	
	+			N	/	A	WT	N47
R_{ALIGN} N / A		0	0	N	/	A	P_{TRIM}	N48
P_{ALIGN} N / A		0	0	N	/	A	Y_{TRIM}	
Y_{ALIGN} N / A	+	0	0				HRS	GETI
	+	0	0	0			MIN	N33
	+	0					SEC	
ULLAGE							ΔV_X	N81
4 JET, 11 SEC							ΔV_Y	
							ΔV_Z	
	X	X	X				R	
	X	X	X				P	
	X	X	X				Y	
ΔVC	+			N	/	A	H_A	N44
				N	/	A	H_P	

*IF LM BAILOUT REQ:
* COPY P76 DATA FROM LM
*
*33 : : .
*84 . . .
*GO TO RESCUE BOOK PG 4

*IF CSM BAILOUT REQ:
*
*MSFN UPDATE:
* CSM BAILOUT P30 PAD
*P30
*P40; SET UP EMS
*SPS BURN CUE CARD
*CSM BAILOUT BURN
*GO TO RESCUE BOOK PG 4

P34 RECYCLE			
55	INTEG OPT +00000	ELEVATION °	TRANSFER ° +130.00
58	PERILUNE ALT	TPI ΔV	TPF ΔV
81	TPI ΔV-LV		
84	LM TPI ΔV-LV		

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	172:30 - 173:00	8/50-51	3-272

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1624 CST

172:30
(11102)
(x1111)
-8
41.46
-133.7
-6

CYCLE CMC MODE - FREE/AUTO
P40 (22°)(180,153/284,0)

SIM EXP STATUS
(*0000)
(31000)

COMPARISON LIMITS: VGX=3, VGY=7, VGZ=9
(LM VGX + 1.0, LM VGZ -2.0)
PRIORITIES: LGC,AGS,CMC
VHF/RR COMPARISON LIMIT:

$$\Delta R = \frac{R}{100} + 0.5 \ (\Delta R \geq 1.0) NM$$

COMPARE SOLUTIONS
SPS CHECKLIST

TPI

172:39:22.9
LM +71.5,+0.2,+9.4
CSM -71.7,-0.2,-6.8
180,175/284,0

0
172:40

P76

P35(TRIM)(180,176/278,0)

+3

25.06
-123.2

172:50

REV 51

+12

P35 FINAL COMP

CYCLE CMC MODE - FREE/AUTO
P41

MCC-1

172:54:22.9
LM +0.0,+0.0,+0.0
CSM +1.0,+0.0,+0.0
180,196/259,0

+15

P76

P35 (TRIM)(180,197/254,0)

+18

10.04
-75.8
173:00

GROUND TPI FOR LM

						ΔV_X
						ΔV_Y
						ΔV_Z

P34 FINAL COMP				
	55	INTEG OPT +00000	ELEVATION °	TRANSFER ° +130.00
	58	PERILUNE ALT	TPI ΔV	TPF ΔV
	81	TPI ΔV-LV		
	84	LM TPI ΔV-LV		
P76	84	LM TPI ΔV-LV		

P35 FINAL COMP				
	81	MCC1 ΔV-LV		
	84	LM MCC1 ΔV-LV		
P76	84	LM MCC1 ΔV-LV		

IF CSM ACTIVE & N58 TPF ΔV >55 FPS
GO TO PRE-BRAKING SPS BURN PROCEDURES
(SEE RESCUE BOOK PG 38)

LM FLIGHT PLAN

MCC-H

1654 CST	CDR	LMP	NOTES
173:00 (12012)			
	FINAL MCC-2 COMPUTATION		
:05	P41 RCS THRUSTING	LOAD AGS MCC-1 EXTERNAL ΔV	
	MCC-2 NULL RESIDUALS		TIG: 173:09:22.9 ΔVT: NOM ZERO
:10			
	TPI BURN REPORT	CONFIGURE COMM FOR AOS	
173:15 (11002)	V48 (11002)		
	P47 THRUST MONITOR		TIG: 173:18:25 to 173:24:27 TOTAL ΔV: 33.4 FPS ORBIT: 59.8x59.3 NM
:20	BRAKING		
:25	COAS TO OVHD WINDOW		
173:30			

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	173:00 - 173:30	8/51	3-274

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

173:00
(11102)
(x1111)
10.04
-75.8

SIM EXP STATUS
(*0000)
(31000)

+27

P35 FINAL COMP

CYCLE CMC MODE - FREE/AUTO
P41
MCC-2 : : .

173:09:22.9
LM +0.0,+0.0,+0.0
CSM +0.0,+0.0,-3.0
180,230/248,0)

+30
173:10

P76

P79;P00;V49(180,281,0)

ACQ MSFN HGA: P -64, Y 324 (TRACK - REACQ)
MSFN CMDS:
DSE DUMP
PERFORM PRE-DOCK CHECKLIST

2.32
-34.8

IF CSM ACTIVE:
P47 AT R=1.25 NM
SEC PRPLNT FUEL PRESS (4) - OPEN
V83E
N83E
KEY REL

MSFN

UTILITY PWR - ON (VERIFY)
TV - ON
DAC - ON
173:20
LM PHOTOS WITH DAC/TV
TPF
T : : .

173:22:16.5
LM 30.9 (TOTAL)
CSM 32.7 (TOTAL)
180,302/281,0

EMS MODE - STBY
EMS FUNC - OFF
EXT LIGHT RNDZ - OFF

LM STATION KEEP

DAC/TV - OFF

V49 MNVR TO SIM BAY INSPECTION ATTITUDE (173:34)
(332,252,0) OMNI D

173:30

P35 FINAL COMP			
81	MCC2 ΔV-LV		
84	LM MCC2 ΔV-LV		
P76 84	LM MCC2 ΔV-LV		

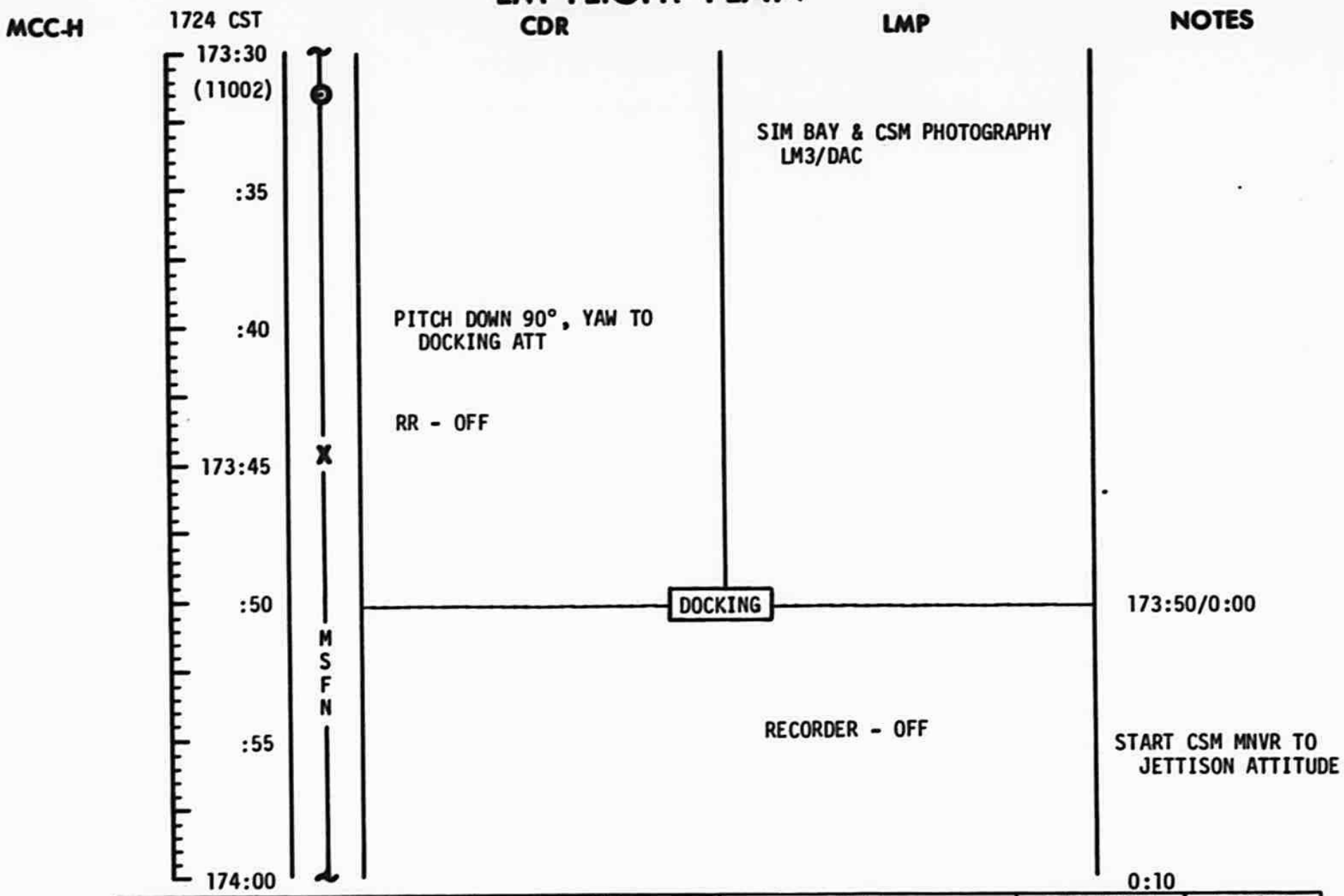
PRE-DOCK CHECKLIST

MAN ATT (3) RATE CMD (VERIFY)
LIMIT CYCLE - OFF (VERIFY)
ATT DB - MIN
RATE - LOW (VERIFY)
TRANS CONTR PWR - ON (UP)
ROT CONTR PWR DIRECT (BOTH) - MNA/MNB
SC CONT - CMC (VERIFY)
AUTO RCS SEL (16) - MNA/MNB
CB DOCK PROBE (2) - CLOSED
PROBE RETRACT (2) - OFF (VERIFY)
PROBE EXTD/REL - RETRACT
PROBE EXTD/REL TB (2) - GRAY (VERIFY)
(IF TB NOT GRAY, GO TO PG S/2-13,E)
CB SECS LOGIC (2) - CLOSED (VERIFY)
CB SECS ARM (2) - CLOSED
EXT LIGHTS RUN/EVA - ON (UP) (VERIFY)
COAS PWR - ON (UP) (VERIFY)

BRAKING GATES

R,NM	R,FPS	RETICLE ANG,DEG	R,FT
1.50	45	.08	9000
1.00	30	.13	6000
.50	20	.26	3000
.25	10	.54	1500
.08	5	1.60	500
.05		2.70	300
.03		4.00	200
.02		8.50	100

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	173:30 - 174:00	8/51	3-276

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

173:30
(11102)
(x1111)

SIM EXP STATUS
(*0000)
(31000)

PERFORM 360° ROLL AT 2°/SEC

MSFN

173:40

V49 MNVR TO DOCKING ATT (173:45)
(180,281,0) ACQ MSFN HGA P -64, Y 324

CUE MSFN FOR LOGIC ARM
SECS LOGIC (BOTH) - ON (UP)
MSFN GO FOR PYRO ARM
SECS PYRO ARM (2) - ON (UP)

X

P47
DAC/TV - ON

T TRANSLATE TO CAPTURE LATCH
V PERFORM DOCKING CHECKLIST
DOCKING
: : .

173:50

173:50:00

DAC/TV - OFF
P00
V48 (61111)
(x1111)
CMC MODE - AUTO

(61111)
(x1111)

RECORD MAG t _____

RECORD EL FR # _____

RNDZ XPNDR - OFF

V49 MNVR TO LM JETT ATT (174:10)
(350,034,020) HGA P -38, Y 350

174:00

POST - SPS BURN SIM PREP (CUE CARD)

DOCKING CHECKLIST

AT CAPTURE

PROBE EXTD/REL TB (2) - BP (VERIFY)
(IF TB NOT BP, GO TO PG S/2-11, A)
REPORT CAPTURE TO LM
SC CONT - CMC (VERIFY)
CMC MODE - FREE
ALLOW PROBE TO DAMP SC MOTION (10 SEC)
WHEN WITHIN +3° OF DOCKING ATTITUDE
PROBE RETRACT SEC - 1 (PRIM - 2 IF REQD)

AT DOCK LATCH

PROBE EXTD/REL TB (2) - GRAY

AT HARD DOCK

SECS PYRO ARM (2) - SAFE
SECS LOGIC (BOTH) - OFF
CB SECS ARM (2) - OPEN
CB DOCK PROBE (2) - OPEN
THC - LOCKED
RHC - LOCKED
BMAG MODE (3) - RATE 2 (VERIFY)
PROBE EXTD/REL - OFF
PROBE RETRACT (2) - OFF
EXT LIGHTS (2) - OFF
COAS PWR - OFF
AUTO RCS SEL: ROLL (4) - OFF
TRANS CONTR PWR - OFF
ROT CONTR PWR DIRECT (BOTH) - OFF
VHF RANGING - OFF

LM FLIGHT PLAN

MCC-H

1754 CST	CDR	LMP	NOTES
174:00 (11002)	PREP FOR TRANSFER		0:10
	VERIFY TUNNEL PRESSURIZED FROM CSM		
	OVHD DUMP VALVE - OPEN		
	DOFF HELMETS & GLOVES		
	WHEN TUNNEL/LM PRESSURES EQUAL, OVHD DUMP VALVE - AUTO		
:10	VERIFY PRESS REGS A&B - EGRESS		0:20
	VERIFY JETT ATT		
	CONFIGURE S-BAND FOR JETTISON		
	OPEN HATCH		
	RECEIVE FROM CMP:		
	PROBE		
:20	DROGUE		0:30
	VACUUM CLEANER		
	LM TO CM TRANSFER LIST		
	VACUUM PGA'S	TAPE RECORDER OFF	
	DISCONNECT DSEA & PLACE IN PURSE		
174:30	TRANSFER PURSE & RECEIVE DECONTAMINATION BAGS & JETT BAGS FROM CMP		0:40
	UNSTOW, VACUUM, WET WIPE AND TRANSFER:		
:40	16MM & 70MM FILM BAGS		0:50
	OPS		
	FLIGHT DATA FILE		
	LUNAR SURFACE EXPERIMENTS, EQUIPMENT AND SAMPLES		
REV 52			
:50			1:00
175:00			1:10

MSFN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	174:00 - 175:00		3-278

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1754 CST

174:00 (61111) (X1111)

STOW OPTICS

SIM EXP STATUS (*0000) (01214)

PREPARE COUCHES: CDR - 0°, CMP - 0°, LMP - 180°

REMOVE PROBE STRAPS (RS)

CDR - VERIFY FWD DUMP VLV - AUTO
CABIN FANS - ON (UP)

CM/LM PRESSURE EQUALIZATION (LOD)(DECAL)

MSFN

174:10

TUNNEL LIGHTS - ON (UP)
TUNNEL HATCH REMOVAL (DECAL)

VERIFY DOCKING LATCHES ENGAGED (AT LEAST 3, 120° APART)

PROBE REMOVAL (CM SIDE)(DECAL)

DROGUE REMOVAL (DECAL)

TRANSFER TO CDR AT HIS REQUEST:
- PROBE
- DROGUE
- VACUUM CLEANER (ASSEMBLED)
- LM TO CM TRANSFER LIST

174:20

MSFN CMDS:
DSE RECORD

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

174:30

174:30 (61111) (X1111)

RECEIVE LEVA BAGS

SIM EXP STATUS (*0000) (01214)

TRANSFER TO CDR:
DECONTAMINATION BAGS

174:40

RECEIVE ITEMS FROM LM AND STOW
(LM TO CM TRANSFER LIST)

REV 52

174:50

175:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-279

LM FLIGHT PLAN

MCC-H	1854 CST	CDR	LMP	NOTES
	175:00 (11002)			1:10
	:10			1:20
	:20			1:30
		UNSTOW SRC'S, VACUUM & TRANSFER TO CSM		
	175:30			1:40
		M S F N		
	:40	RECEIVE B5 & B6 FROM CMP AND STOW IN SRC RACK		1:50
		TRANSFER VACUUM CLEANER TO CSM		
UPLINK TO LM LM S.V. (TIG-10) P30 TARGET LOAD P99 LM DEORBIT	:50			2:00
UPDATE TO LM DAP LOAD (WTS) DEORBIT BURN PAD	176:00			2:10

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	175:00 - 176:00		3-280

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

1854 CST

175:00
(61111)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

ACQ MSFN HGA: P -38, Y 350

175:10

MSFN CMDS:
DSE DUMP

MSFN

175:20

175:30

175:30
(61111)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

MSFN

175:40

TRANSFER B5, B6 CONTAINERS TO LM

175:50

MSFN UPDATE:
DAP LOAD-UPDATE WEIGHTS
LM JETTISON PAD (176:12)

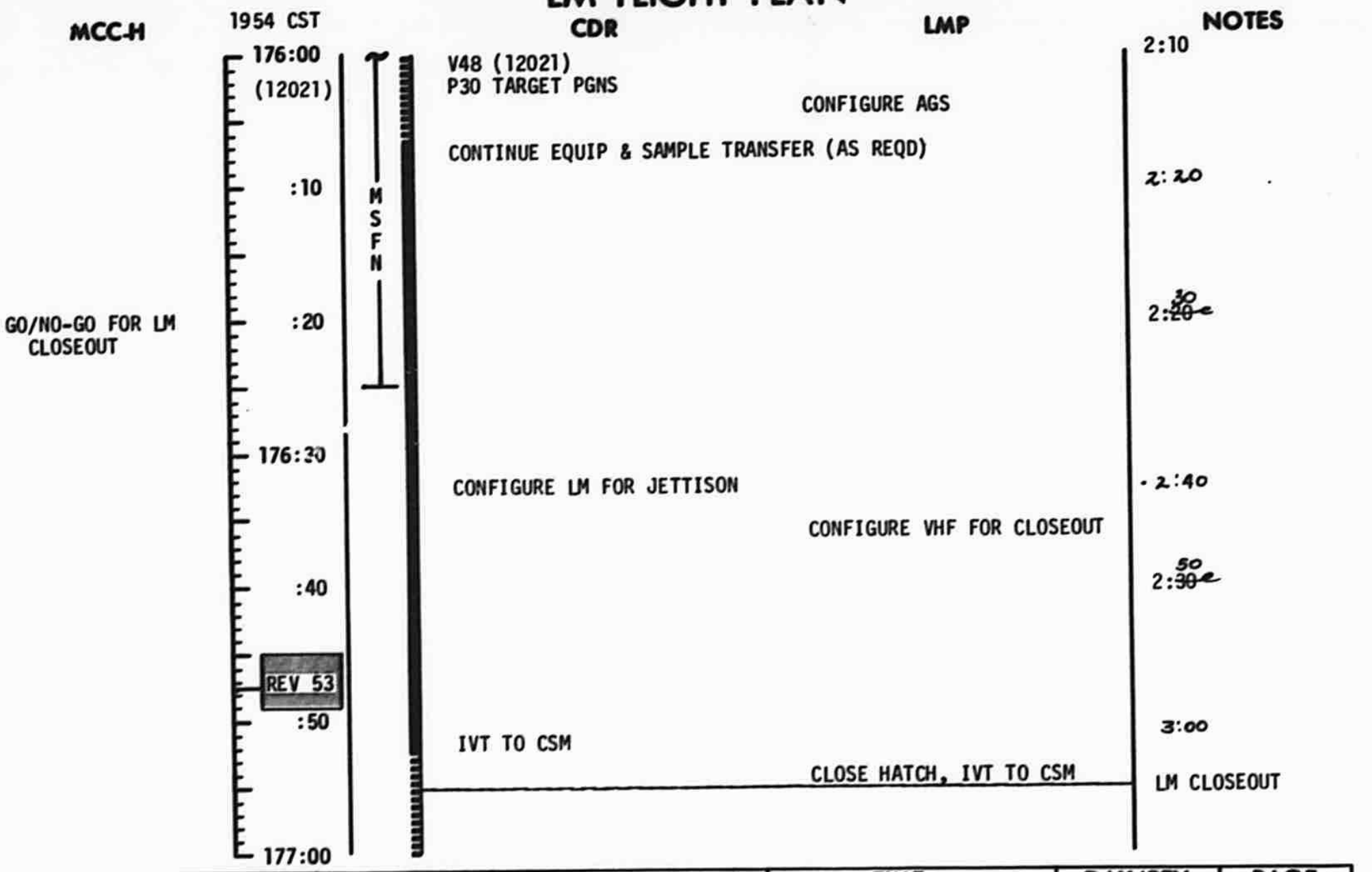
V48 LOAD CSM & LM WEIGHTS

CSM WT	+						
LM WT	+						

176:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-281

LM FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	3/27/72 ~~3/6/72~~ (PAI)	176:00 - 177:00	8/52-53	3-282

FLIGHT PLANNING BRANCH

CSM FLIGHT PLAN

176:00
(61111)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

MSFN UPLINK:
CSM S.V. (CSM SEP -10)
LM S.V. (TIG LM DEORBIT -10)

MSFN

(61101)
(X1111)

CYCLE CMC MODE - FREE/AUTO
V48 (61101)
(X1111)
V49 MNVR TO LM JETTISON PAD ATT (176:12)
HGA P -38, Y 350
CONTINUE EQUIP & SAMPLE TRANSFER

176:10

LM JETTISON PAD						
+	0	0				HRS
+	0	0	0			MIN
+	0			.		SEC
X	X	X				R (350)N22
X	X	X				P (034)
X	X	X				Y (020)

MSFN CMDS:
DSE RECORD

176:20

MSFN UPDATE:
GO/NO-GO FOR LM CLOSEOUT

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

176:30

176:30
(61101)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

176:40

TRANSFER CM JETTISON ITEMS TO LM

WARNING

NO URINE/FECES
ALL OPENED FOOD MUST
BE TREATED AND
STORED IN BETA BAG

REV 53

176:50

VHF AM B - OFF (CTR)

CONFIGURE CAMERA FOR LM JETTISON PHOTOS
CM2/DAC/18/CEX-BRKT,MIR (T8,1/250,7) 12 fps (50% MAG)

MAG (DD) _____, MAG % _____
UTILITY PWR - ON

LMP - CLOSE LM HATCH
DIRECT O_2 VLV - CLOSED (CW)
HATCH INSTALLATION (DECAL)

HATCH INTEGRITY CHECK (DECAL)

177:00

CSM FLIGHT PLAN

SIM EXP STATUS
(*0000)
(01214)

177:00
(61101)
(X1111)

ACQ MSFN HGA: P -38, Y 350

MSFN OMDS:
DSE DUMP
DATA SYS - ON

177:10

P30, N33: LM JETTISON TIG +5 MIN
N81 (+2.0,+0.0,+0.0)

LM PWR - OFF (VERIFY)
cb SECS ARM (2) - CLOSE
CUE MSFN FOR LOGIC ARM

SECS LOGIC (2) - ON (UP)

DON HELMETS & GLOVES

MSFN

REPORT: LM/CM ΔP
SUIT CKT INTEGRITY CHECK (DECAL)

177:20

LOAD ΔV IN EMS TO +100.0
CHECK NULL BIAS
GDC ALIGN

MSFN UPDATE:
GO/NO-GO FOR PYRO ARM

PRE-JETTISON CHECKLIST
V48 (10101)
(X1111)
(10101)
(X1111)

SECS PYRO ARM (2) - ARM

P47 (JETT -1 MIN)
EMS MODE - NORMAL (JETT -30 SECS)
DAC - ON (JETT -25 SECS)

177:30

PRE-JETTISON CHECKLIST
BMAG MODE (3) - ATT 1/RATE 2
ATT DB - MIN
~~SCS RATE - LGC~~ SC CONT - SCS
EMS FUNC - ΔV
THC PWR - ON
RHC PWR DIR - MNA/MNB
THC - ARMED
RHC - ARMED
cb CSM/LM FINAL SEP (2) - CLOSE

CSM FLIGHT PLAN

177:30
(10101)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

LM JETTISON
____:____:____.____

177:31:15
(350,090/034,020)

POO
DAC - OFF
PRE-SEPARATION CHECKLIST
EMS MODE - NORMAL (SEP -30 SECS)

CSM SEPARATION
____:____:____.____

TIG: 177:36:15 BT: 13.2 SECS ΔVT: 2 FPS ORBIT: 61.7 x 59.5 NM

POO HOLD FOR MSFN

EMS FUNC - OFF
THC PWR - OFF
RHC PWR DIR - OFF
THC LOCKED
RHC LOCKED
ROLL (4) - OFF

177:40

MSFN UPDATE:
MAP CAM PHOTO PAD (178:55)
PAN CAM PHOTO PAD (179:11)
TEI 62 PAD

DOFF PGA'S, HELMETS & GLOVES
ZIP SUITS & INSTALL ELECTRICAL COVERS PRIOR TO STOWING (PGA BAG)
CDR & LMP PGA ELECTRICAL COVERS ~~(IN-PURGE)~~
CDR & LMP INSTALL LCG PLUGS ~~(PURGE)~~
INSTALL NECK RING COVERS ~~(CDR'S & LMP'S IN-PURGE)~~
STOW UCTAS (PGA BAG)
TRANSFER PRD'S TO CWG'S
CDR & CMP DOFF BIOMED HARNESS

MSFN UPLINK:
CSM S.V. & V66

V44 (SET LUNAR SURFACE FLAG)

177:50

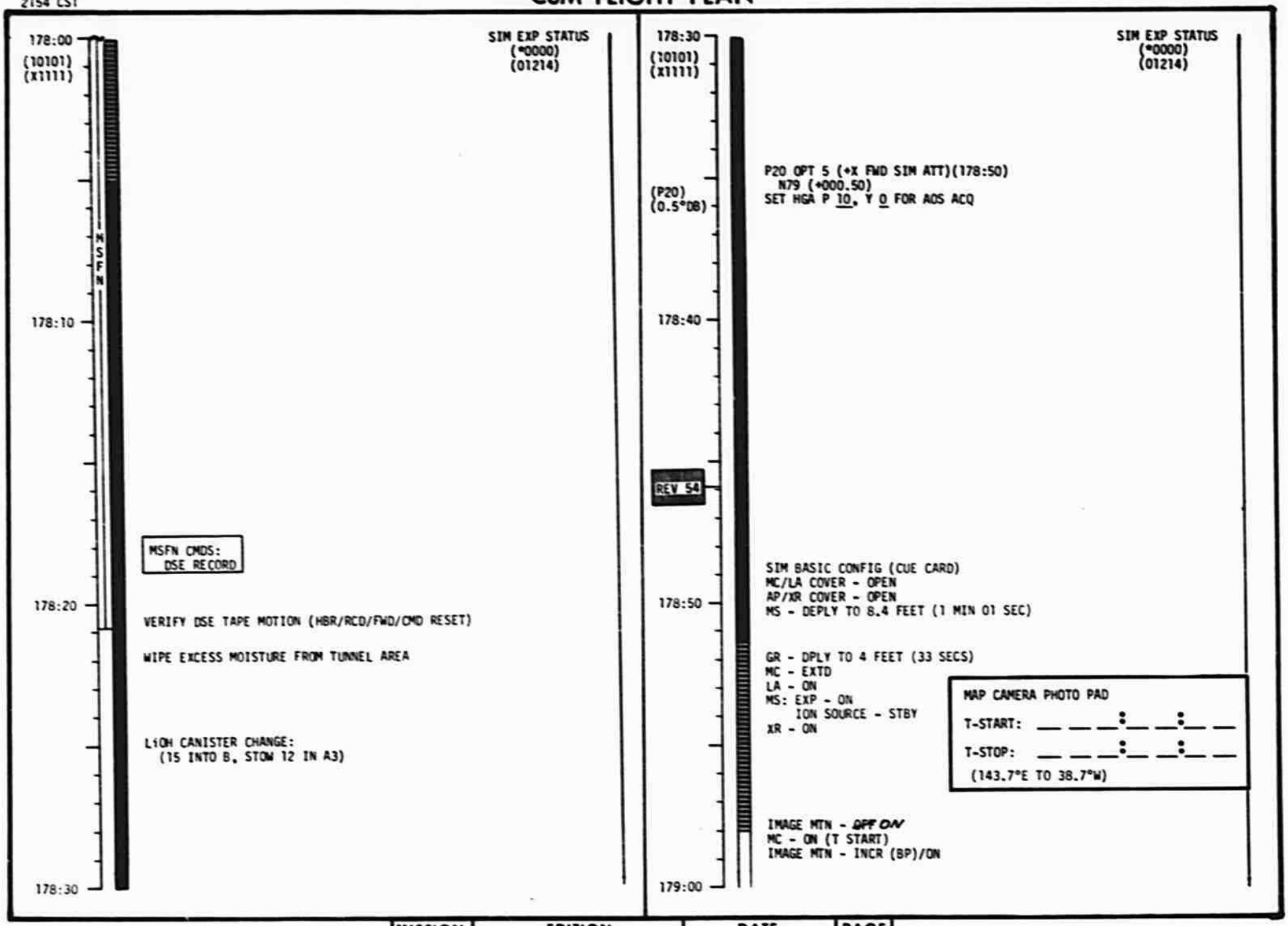
VENT HATCH N_2

178:00

M S F N

PRE-SEPARATION CHECKLIST
EMS MODE - STBY
SC CONT - CMC
BMAG MODE (3) - RATE 2
P41 (BYPASS MNVR)
AUTO RCS SEL (16) - MNA/MNB
SECS PYRO ARM (2) - SAFE
SECS LOGIC (2) - OFF
cb SECS ARM (2) - OPEN
cb CSM/LM FINAL SEP (2) - OPEN

CSM FLIGHT PLAN



CSM FLIGHT PLAN

2254 CST

179:00
(P20)
(0.5°DB)
(10101)
(X1111)

SIM EXP STATUS
(+1221)
(02232)

ACQ MSFN HGA: MAN, WIDE P 10, Y 0
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN CMDS: (AOS +2 MIN)
DSE (STOP/REWIND)

179:10

PC: STBY
STEREO
PWR

PAN CAMERA PHOTO PAD
T-START: ___:___:___
T-STOP: ___:___:___
(97.2°E TO ~~93.2°E~~ 59.2°E)

PC - OPR (T START)

MSFN CUE: (~AOS +7 MIN)
HGA AUTO

EAT PERIOD

MSFN CMDS: (AOS +9 MIN)
DSE PLAYBACK

MSFN UPDATE:
PAN CAMERA PHOTO PAD (179:21)

LM DEORBIT BURN
TIG: 179:16:29
BT: 1 MIN 35.6 SECS
ΔV: 229.6 FPS

179:20

PAN CAMERA PHOTO PAD
T-START: ___:___:___
T-STOP: ___:___:___
(LM IMPACT± 14 MIN 30 SEC

PC - STBY (T STOP)
PC - OFF (MSFN CUE)

179:30

179:30
(P20)
(0.5°DB)
(10101)
(X1111)

P20 OPT 6 (LM IMPACT ATT) (179:35)
N78 (+36.58)
(+041.60)
(+202.81)
N79 (+000.50)
(142, 033/324, 000)

PC: STBY
MONO
PWR
V/A OVRD - LO ALT

PC - OPR (T START)

179:40

PC - STBY (T STOP)
W/A OVRD - OFF
PC - OFF (MSFN CUE)
P20 OPT 5 (+X FWD SIM ATT) (179:47)
N79 (+000.50)

LM LUNAR IMPACT
GET: 179:39:29
LAT: 9.50°S
LONG: 14.98°E

GR: SHIELD - OFF
IMAGE MTN - INCR (BP +4 STEPS)/ON

EAT PERIOD

179:50

GR: SHIELD - ON (CTR)

MC - OFF (T STOP)
WAIT 30 SECS
MC - STBY
IMAGE MTN - OFF
LA - OFF

180:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	Chg.C. ~~FINAL~~ (4/16)	~~3/6/72~~ 4/10/72	3-287

CSM FLIGHT PLAN

2354 CST

180:00
(P20)
(0.5°DB)
(10101)
(X1111)

MSFN

MC - RETR
MS: ION SOURCE - ON
GR - DPLY
MS - DPLY
MC/LA COVER - CLOSE

SIM EXP STATUS
(+1221)
(01232)

P52 IMU REALIGN

N71: ___ ___, ___ ___
N05: ___ ___ ___•___ ___
N93:
X ___ ___•___ ___ ___
Y ___ ___•___ ___ ___
Z ___ ___•___ ___ ___•
GET ___ ___ ___•___ ___•___ ___

MSFN CMDS: (AOS +61 MIN)
DSE REWIND

180:10

CMC MODE - FREE
PS2 (OPTION 3)
(LIFT OFF ORIENT)

REPORT: GYRO TORQUING ANGLES

P20, CMC MODE - AUTO
GDC ALIGN

MSFN CMDS: (AOS +68 MIN)
DSE RECORD

CSM EXP/EVA CHECKLIST

GUM NEBULA PHOTO SEQ A, P66 X/2-7
MAG (ZZ)
P00; V49 MNVR TO GUM NEBULA PT. 3 (180:24)
(126,159,302)
VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

(10101)
(X1111)
180:20

180:30

180:30
(10101)
(X1111)

SIM EXP STATUS
(*0111)
(01222)

GUM NEBULA PHOTO SEQ A, STEPS 4 & 5

180:40

REV 55

180:50
(P20)
(3.0°DB)

P20 OPT 5 (-X FWD SIM ATT)(181:05)
N79 (+003.00)
SET HGA P 0, Y 170 FOR AOS ACQ

181:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	Change A FINAL (4/16)	3/27/72 3/6/72 (PAI)	3-288

CSM FLIGHT PLAN

181:00
(P20)
(3.0°DB)
(10101)
(X1111)

SIM EXP STATUS
(-0111)
(01222)

ACQ MSFN HGA: MAN, WIDE P 0, Y 170
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN CMDS: (AOS +2 MIN)
DSE (STOP/REWIND)

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST PAGE S/1-29
LOGIC PWR (2) - OFF

MSFN UPLINK:
JET-ON MONITOR LOADS

MSFN CMDS: (AOS +9 MIN)
DSE PLAYBACK

ONBOARD READOUT

BAT C _____
PYRO BAT A _____
PYRO BAT B _____
RCS A _____
B _____
C _____
D _____

DC IND SEL - MNA OR B

181:10

181:20

FILM MAGS REQD FOR NEXT DAY:
DAC: VHBW-HH
EL: CEX-QQ, VHBW-SSÉTT
NK: VHBW-ZZ

181:30

181:30
(P20)
(3.0°DB)
(10101)
(X1111)

SIM EXP STATUS
(-0111)
(01222)

181:40

181:50

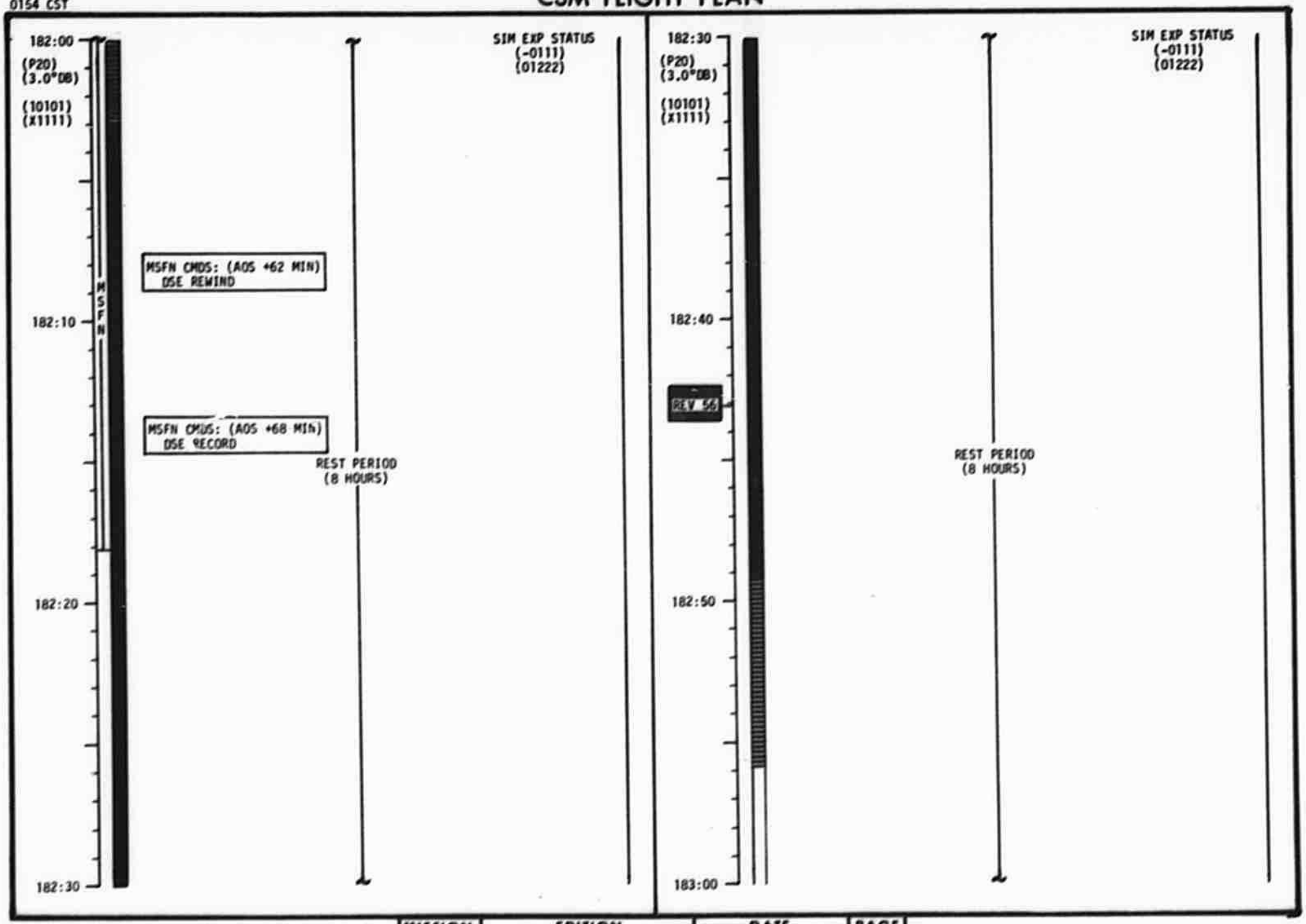
REST PERIOD
(8 HOURS)

182:00

MSFN

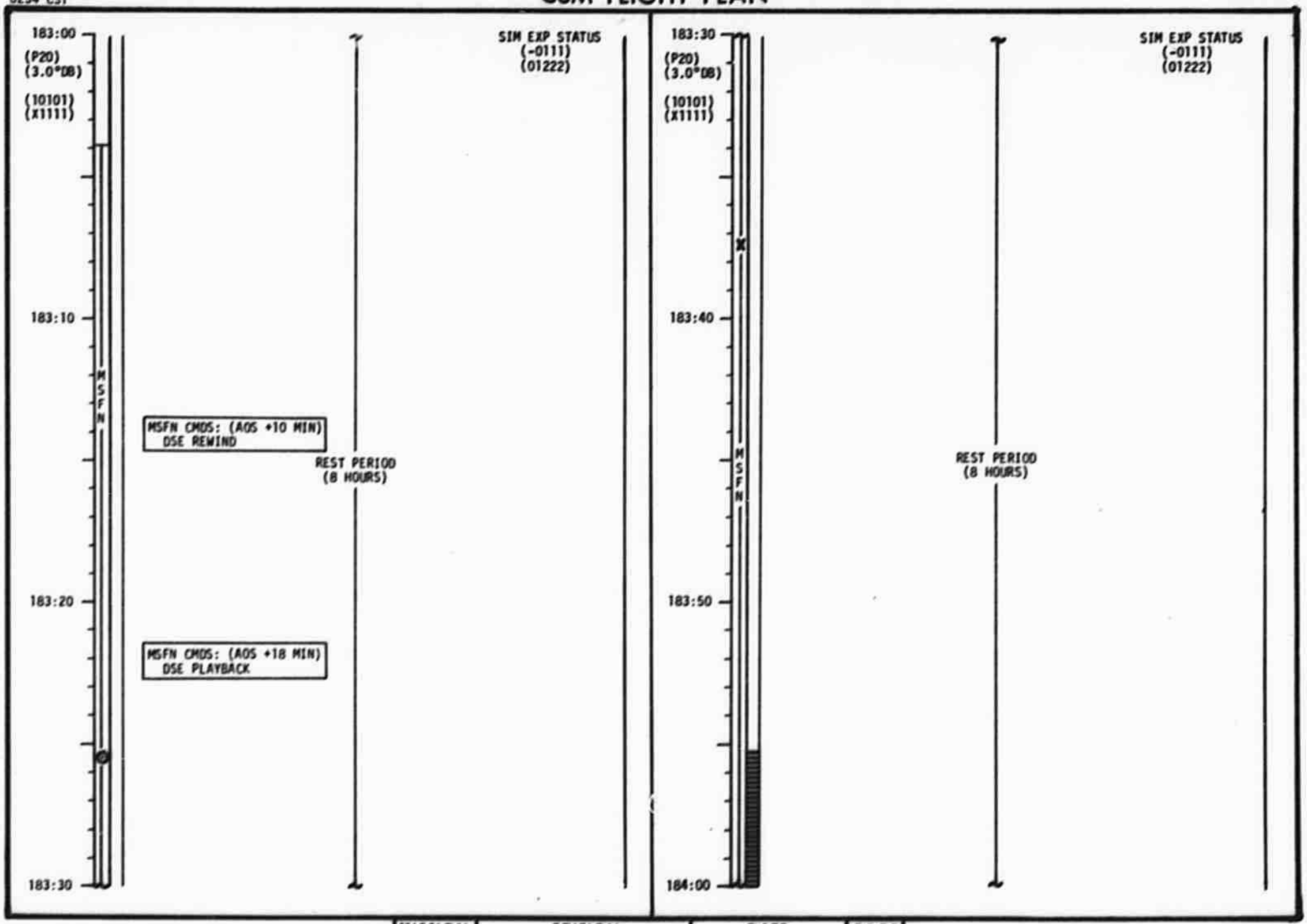
MISSION	EDITION	DATE	PAGE
APOLLO 16	Cy. B. ~~FINAL~~ (4/16)	~~2/6/72~~ 4/11/72	3-289

CSM FLIGHT PLAN



0254 CST

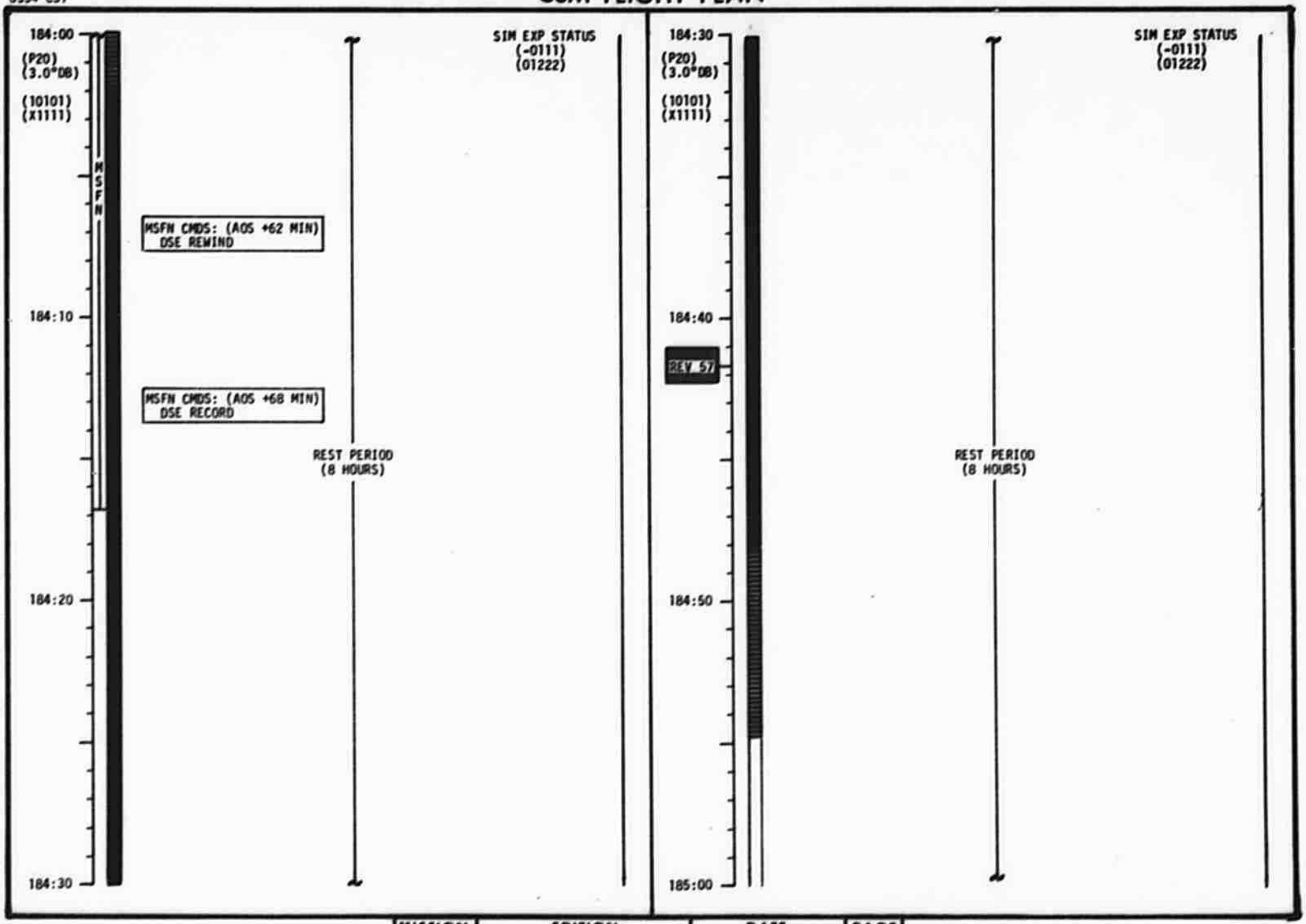
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-291

0354 CST

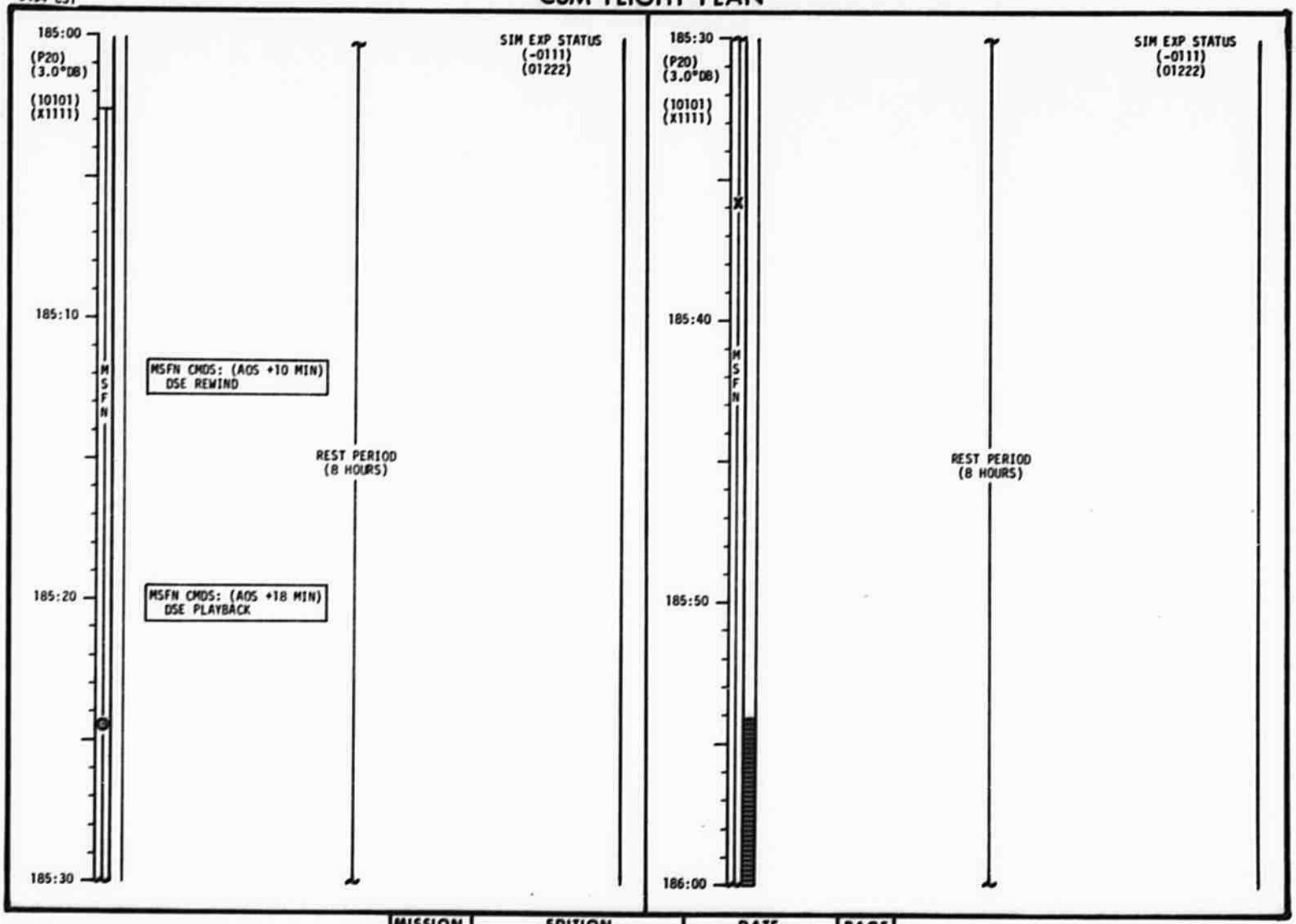
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-292

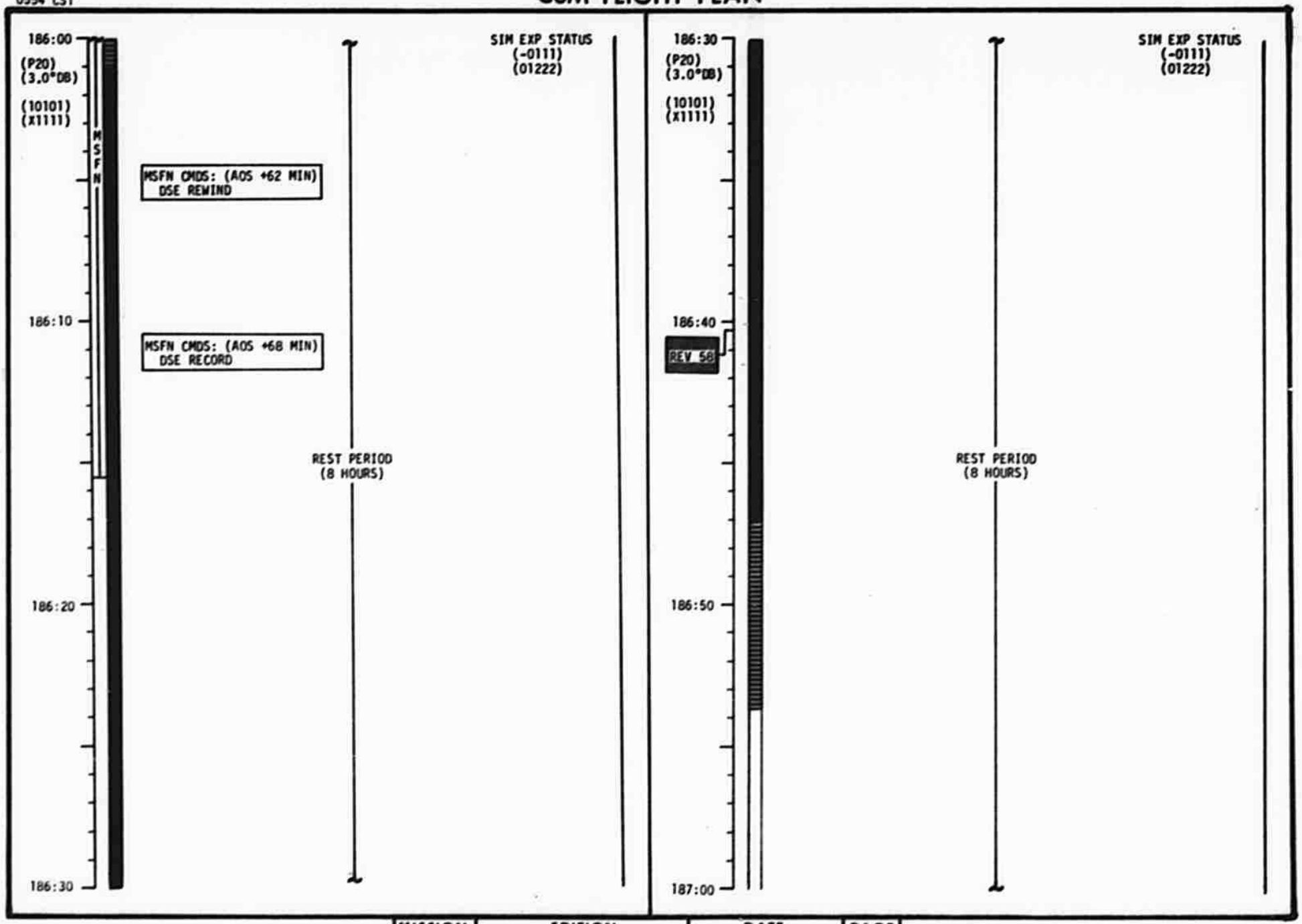
0454 CST

CSM FLIGHT PLAN



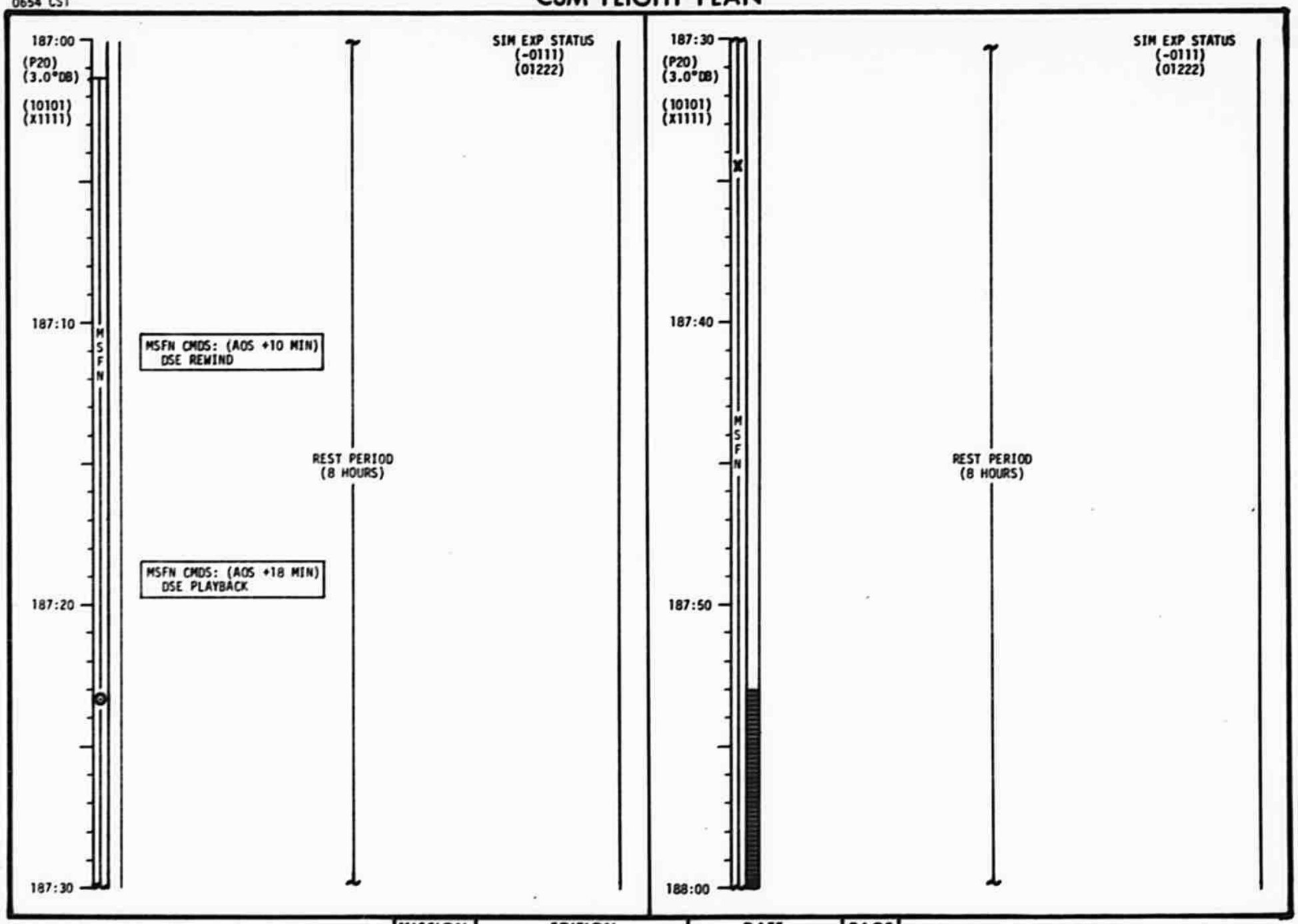
0554 CST

CSM FLIGHT PLAN



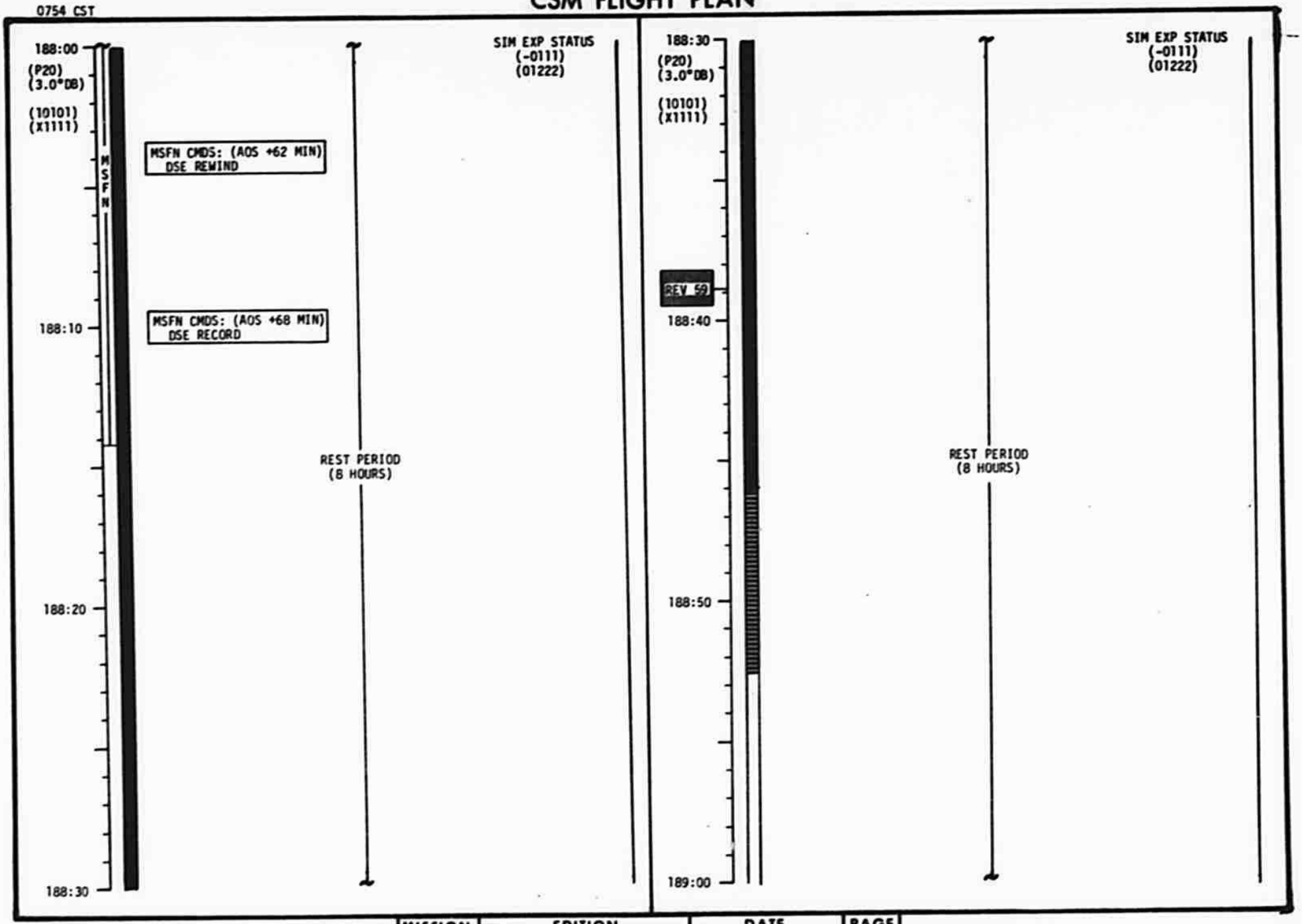
0654 CST

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-295

CSM FLIGHT PLAN



CSM FLIGHT PLAN

0854 CST

189:00
(P20)
(3.0°DB)
(10101)
(X1111)

MSFN

189:10

MSFN CMDS: (AOS +10 MIN)
DSE REWIND

REST PERIOD
(8 HOURS)

MSFN CMDS: (AOS +18 MIN)
DSE PLAYBACK

189:20

189:30

SIM EXP STATUS
(-0111)
(01222)

189:30
(P20)
(3.0°DB)
(10101)
(X1111)

MSFN

189:40

(P20)
(0.5°DB)

189:50

190:00

CSM SYSTEMS CHECKLIST
POST-SLEEP CHECKLIST PAGE S/1-29
LOGIC PWR (2) - DPLY/RETR
MANUALLY ROLL CW 40°

SIM EXP STATUS
(-0111)
(01222)

P20 OPT 5 (+X FWD SIM ATT)(189:51)
N79 (+000.50)
HGA P -23, Y 222

MSFN UPDATE:
MAP CAMERA PHOTO PAD

MAP CAMERA PHOTO PAD
T-START: ___:___:___
T-STOP: ___:___:___
(42.8°W TO 44.8°W)(1 REV)

MC/LA COVER - OPEN
MC - EXTD

GR: SHIELD - OFF

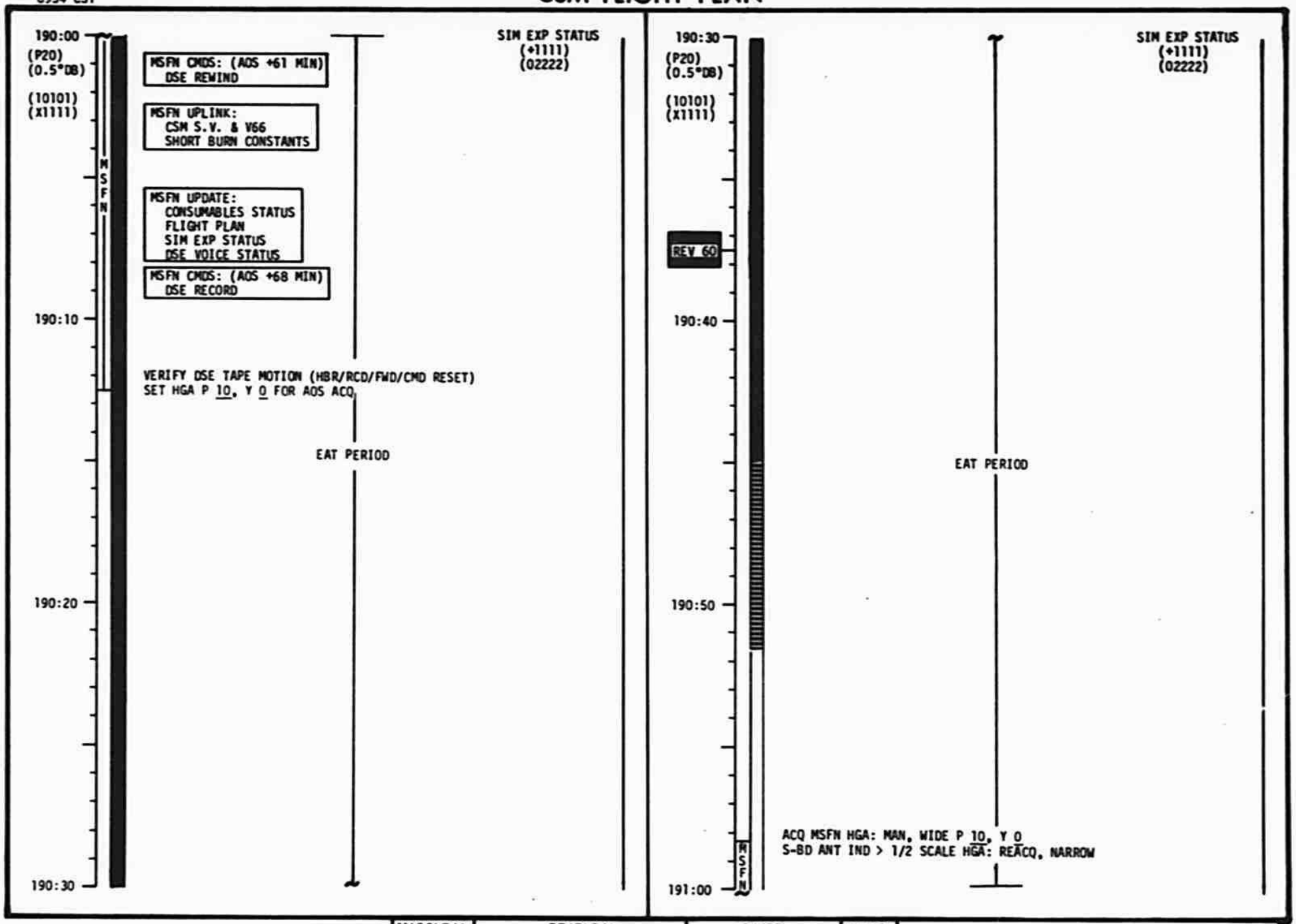
LA - ON
IMAGE MTN - ON
MC - ON (T START)
IMAGE MTN - INCR (BP)/ON

GR: SHIELD - ON (CTR)
LiOH CANISTER CHANGE
(16 INTO A, STOW 13 IN A3)

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-297

0954 CST

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-298

CSM FLIGHT PLAN

191:00
(P20)
(0.5°DB)
(10101)
(X1111)

SIM EXP STATUS
(+1111)
(02222)

MSFN CMDS: (AOS +2 MIN)
DSE (STOP/REWIND)

CDR DON BIOMED HARNESS

LMP DOFF BIOMED HARNESS

MSFN CUE: (AOS +7 MIN)
HGA AUTO

MSFN CMDS: (AOS +9 MIN)
DSE PLAYBACK

PREPARE FOR ORBITAL SCIENCE VISUALS

191:10

CONFIGURE CAMERA: (ORBITAL SCIENCE)
CM4/EL/250/CEX-IVL (f5.6,1/125,-) 37 FR

MAG (QQ) ____, FR # ___

MSFN UPLINK:
LIFT-OFF TIME (IF REQD)
LOPC-2 TGT LOAD
DESIRED ORIENT (LOPC-2)

MSFN UPDATE: 192:15
LOPC-2 PAD (~~193:45~~)
TEI 65 PAD

T EPHEM UPDATE

OID	LOAD B
03	— — — — —
04	— — — — —
05	— — — — —

191:20

SYNCHRONIZE MISSION TIMER
TO CMC CLOCK (IF REQD)
VOSNOIE, 1706E (T EPHEM VERIFICATION
BY MSFN; COPY ON MSFN CUE FROM DSKY)

PC: MODE - STBY
PWR - ON

NOTE: LIFT-OFF TIME WILL BE UPDATED IF THE TIME OF REV 66 MERIDIAN CROSSING DIFFERS MORE THAN + 2 MIN FROM 202:29:12.6

PC: PWR - OFF (MSFN CUE)
O_2 HEATERS 3 - AUTO
O_2 HEATERS 1&2 - OFF

ORBITAL SCIENCE VISUALS
LANDING SITE (V9 - C10) CM5

191:30

191:30
(P20)
(0.5°DB)
(10101)
(X1111)

SIM EXP STATUS
(+1111)
(02222)

MS: ION SOURCE - OFF
EXP - STBY
CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM
GR - RETR

IMAGE MTN - INCR (BP +4 STEPS)/ON

MS - RETR

ORBITAL SCIENCE PHOTOS

191:40

PARRY (P22-C12,C13)
CM4 (f5.6,1/125,-) 37 FR

SIM B IMPACT & TECTONIC MOVEMENT

RECORD FR # ____

191:50

(10101)
(X1111)

MC - OFF (T STOP)
POO
V49 MNVR TO P52 ATT (192:03)
(178,330,316) HGA P -28, Y 299
MC - STBY
IMAGE MTN - OFF
LA - OFF
XR - STBY
MC - RETR

AP/XR COVER - CLOSE
MC/LA COVER - CLOSE
ENABLE ALL JETS

192:00

CSM FLIGHT PLAN

1154 CST

192:00
(10101)
(X1111)

MSFN

MSFN CMDS: (AOS +61 MIN)
DSE REWIND

SIM EXP STATUS
(*0000)
(01214)

P52 IMU REALIGN

N71: __ __, __ __
N05: __ __ __, __ __
N93:
X __ __, __ __ __
Y __ __, __ __ __
Z __ __, __, __ __,
GET __ __ __, __ __, __ __

P52 (OPTION 3)
(LDG SITE ORIENT)

REPORT: GYRO TORQUING ANGLES

MSFN CMDS: (AOS +68 MIN)
DSE RECORD

P52 (OPTION 1)
(LOPC-2 ORIENT)

192:10

GDC ALIGN
VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

P30 VERIFY LOPC-2 TIG AND ΔV'S
CONFIGURE FOR URINE DUMP
V49 MNVR TO LOPC-2 BURN PAD ATT (192:23)
SET HGA P -28, Y 254 FOR AOS ACQ

192:20

SXT STAR CHECK

O_2 FUEL CELL PURGE
WASTE WATER DUMP
URINE DUMP

192:30

P30 MANEUVER

SET STARS	L S	O P	P S	C G	- &	2 N	PURPOSE / PROP/GUID	
	+						WT	N47
R_{ALIGN} ___ ___ ___		O	O				P_{TRIM}	N48
P_{ALIGN} ___ ___ ___		O	O				Y_{TRIM}	
Y_{ALIGN} ___ ___ ___	+	O	O				HRS	GETI
	+	O	O	O			MIN	N33
	+	O					SEC	
ULLAGE ___							ΔV_X	N81
___							ΔV_Y	
___							ΔV_Z	
___	X	X	X				R	(000)
	X	X	X				P	(000)
	X	X	X				Y	(000)
	+						H_A	N44
							H_P	
	+						ΔVT	
HORIZON/WINDOW ___	X	X	X				BT	
___	X						ΔVC	
___	X	X	X	X			SXTS	
___	+					O	SFT	
	+				O	O	TRN	
	X	X	X				BSS	
	X	X					SPA	
	X	X	X				SXP	

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-300

CSM FLIGHT PLAN

1224 CST

192:30
(10101)
(x1111)

SIM EXP STATUS
(*0000)
(01214)

REV 61

TERMINATE WASTE WATER DUMP AT 10%

192:40

192:50

SET DET COUNTING UP TO LOPC-2
SECURE EQUIPMENT FOR LOPC-2
PRE-SPS BURN SIM PREP (CUE CARD)

ACQ MSFN HGA: P -28, Y 254

MSFN CMDS:
DSE DUMP

193:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-301

CSM FLIGHT PLAN

193:00
(10101)
(X1111)
(P40)
(0.5°DB)

SIM EXP STATUS
(*0000)
(31000)

P40 (TRIM)

LOPC-2 BURN TABLE			
P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	±10° TERMINATE	BT + 1 SEC	TRIM V_{gx} to 0.2 FPS IF $-V_{gx}$ ROLL 90° CCW AND USE -Z THRUSTERS

193:10

MSFN UPDATE:
GO/NO-GO FOR LOPC-2

LOPC-2 (000,000,000)

_____:____:____.____

TIG: 193:13:46
BT: 15.8 SECS
ΔVT: 282.5 FPS
ULLAGE: 2 JET, 16 SECS
ORBIT: 62.9 x 57.9

(10101)
(X1111)

P00
V66 SET CSM S.V. INTO LM S.V.
REPORT: BURN STATUS

MSFN UPLINK:
DESIRED ORIENT (LIFT-OFF)

V49 MNVR TO P52 ATT (193:27)
(052,324,036) HGA P -65, Y 182

193:20

MSFN CMDS:
DSE DUMP

POST-SPS BURN SIM PREP (CUE CARD)
P52 (OPTION 1)
(GYRO TORQUE)

BURN STATUS REPORT

	±TIG
	BT
	V_{gx}
TRIM	
	R
	P
	Y
	V_{gx}
	V_{gy}
	V_{gz}
	ΔV_c
	FUEL
	OX
	UNBAL

193:30

193:30
(10101)
(X1111)

SIM EXP STATUS
(*0000)
(01214)

GDC ALIGN
INHIBIT ALL JETS EXCEPT: A1&C2 OR B2&D1,A3,C4,B3,D4

AP/XR COVER - OPEN
GR - DPLY
MS - DPLY
XR - ON
MS: EXP - ON
ION SOURCE - STBY

(P20)
(3.0°DB)
P20 OPT 5 (-X FWD SIM ATT)(193:48)
N79 (+003.00)
HGA P -46, Y 345

193:40

CONFIGURE CAMERA: (TERMINATOR PHOTOS)
CM5/EL/250/VHBW (f5.6,1/125,-) 6 FR

MAG (SS) ____ FR # ____

CHARGE BATTERY B

TERMINATOR PHOTOS

193:50

LETRONNE (P25-D13) CM5

RIDGE IN MARE

194:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-302

CSM FLIGHT PLAN

194:00
(P20)
(3.0°DB)
(10101)
(X1111)
MSFN

CMC MODE - FREE
P52 (OPTION 3)
(LIFT-OFF ORIENT)

SIM EXP STATUS
(-0111)
(01232)

REPORT: GYRO TORQUING ANGLES

P20; CMC MODE - AUTO
GDC ALIGN

MS: ION SOURCE - ON

MSFN CMDS:
DSE RECORD

194:10

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)
SET HGA P 0, Y 170 FOR AOS ACQ

P52 IMU REALIGN

N71: — — , — —
N05: — — — • — —
N93:
X — — — • — — —
Y — — — • — — —
Z — — — • — — — •
GET — — — • — — • — —

194:20

EAT PERIOD

194:30

194:30
(P20)
(3.0°DB)
(10101)
(X1111)

REV 62

194:40

GR: SHIELD - OFF

EAT PERIOD

SIM EXP STATUS
(-0111)
(01222)

194:50

GR: SHIELD - ON (CTR)
ACQ MSFN HGA: MAN, WIDE P 0, Y 170
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN

195:00

CSM FLIGHT PLAN

1454 CST

195:00
(P20)
(3.0°DB)
(10101)
(X1111)

MSFN CMDS: (~AOS +7 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

EAT PERIOD

MSFN CMDS: (AOS +14 MIN)
DSE PLAYBACK

195:10

PC: MODE - STBY
PWR - ON

195:20

PC: PWR - OFF (MSFN CUE)

195:30

MSFN

SIM EXP STATUS
(-0111)
(01222)

195:30
(P20)
(3.0°DB)
(10101)
(X1111)

MSFN UPDATE:
SOLAR CORONA PHOTO PAD
MS RETR TIME (12 FEET) (196:39)

CSM EXP/EVA CHECKLIST

SOLAR CORONA (SUNSET), PAGE X/2-9
MAG (SS)
MAG (HH)

195:40

SOLAR CORONA PHOTO PAD (SS)
T-START: _ _ _ _ _ _ _ _ _ _ _ _
SUNSET -5 MIN

SOLAR CORONA (SUNSET)

195:50

196:00

MSFN

SIM EXP STATUS
(-0111)
(01222)

MISSION	EDITION	DATE	PAGE
APOLLO 16	~~CHANGE~~ FINAL (4/16)	21/7/72 16/6/72 (MI)	3-304

CSM FLIGHT PLAN

1554 CST

196:00
(P20)
(3.0°DB)
(10101)
(X1111)
(10102)
(X1111)
196:10
196:20
196:30

MSFN

SIM EXP STATUS
(-0111)
(01222)

MSFN CMDS: (AOS +66 MIN)
DSE REWIND

V48 (10102)
(X1111)
CMC MODE - FREE
P00
CMC MODE - AUTO
V49 MNVR TO GUM NEBULA POINT #2 (196:13)
(245,230,307)
CONFIGURE DSE (HBR/RCD/FWD/CMD RESET)(AOS +73 MIN)

CSM EXP/EVA CHECKLIST

GUM NEBULA PHOTO SEQ B, ~~P46-E~~ P42-9
MAG(ZZ)

GUM NEBULA PHOTO SEQ B, STEPS 4 & 5

196:30
(10102)
(X1111)
REV 63
(P20)
(3.0°DB)
196:40
196:50
197:00

MSFN

SIM EXP STATUS
(-0111)
(01222)

P20 OPT 5 (-X FWD SIM ATT) 196:48
N79 (+003.00)
SET HGA P 0°, Y 170 FOR AOS ACQ

MS - RETR TO 12 FEET (1 MIN 35 SEC)

CONFIGURE CAMERA: (TERMINATOR PHOTOS)
CM3/EL/250/VHBW (f5.6,1/125,∞) 6 FR
MAG (SS) ___ FR # ___

TERMINATOR PHOTOS

VETCHINKIN (P8-D4) CM3

PLAINS TO THE SOUTH

RECORD FR # ___
PREPARE FOR ORBITAL SCIENCE VISUALS

ACQ MSFN HGA: MAN, WIDE P 0, Y 170
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MISSION	EDITION	DATE	PAGE
APOLLO 16	~~CHANGE~~ B FINAL (4/16)	4/7/72 ~~4/6/72~~ (P1)	3-305

1654 CST

CSM FLIGHT PLAN

197:00
(P20)
(3.0°DB)
(10102)
(X1111)

MSFN CMDS: (~ AOS +7 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

ORBITAL SCIENCE VISUALS
GODDARD (V5-D6) CMS

SIM EXP STATUS
(-0121)
(01222)

MSFN

MSFN CMDS: (AOS +14 MIN)
DSE PLAYBACK

197:10

MSFN UPDATE:
SOLAR CORONA PHOTO PAD (197:38)
MAP CAMERA PHOTO PAD (198:41)
PAN CAMERA PHOTO PAD (199:15)

197:20

197:30

197:30
(P20)
(3.0°DB)
(10102)
(X1111)

SIM EXP STATUS
(-0121)
(01222)

MSFN

CSM EXP/EVA CHECKLIST

SOLAR CORONA (SUNSET), PAGE X/2-9
MAG (SS)
MAG (HH)

SOLAR CORONA PHOTO PAD (SS)
T-START: ___ ___ ___ • ___ ___ • ___ ___
SUNSET -5 MIN

197:40

SOLAR CORONA (SUNSET)

197:50

198:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE #2 FINAL (4/16)	~~3/27/72~~ 3/27/72	3-306

CSM FLIGHT PLAN

198:00
(P20)
(3.0°DB)
(10102)
(x1111)
MSFN

MSFN CMDS: (AOS +66 MIN)
DSE REWIND

SIM EXP STATUS
(-0121)
(01222)

CMC MODE - FREE
P00
CMC MODE - AUTO

V49 MNVR TO DEEP SPACE MEASUREMENT/P52 ATT (198:10)
(322,155,003)

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET)(AOS +73 MIN)

198:10

PHOTO "VH8W" EACH JET
MIN IMPULSE – TAPE SOONDS TOO.

198:20

PREPARE FOR ORBITAL SCIENCE VISUALS

198:30

198:30
(10102)
(x1111)

REV 64

P52 (OPTION 3)
(LIFT-OFF ORIENT)

SIM EXP STATUS
(*0121)
(01222)

P52 IMU REALIGN

N71: ___ ___,___ ___
N05: ___ ___ ___.___ ___
N93:
X ___ ___.___ ___ ___
Y ___ ___.___ ___ ___
Z ___ ___.___ ___ ___.
GET ___ ___ ___.___ ___.___ ___

GDC ALIGN
P20 OPT 5 (+X FWD SIM ATT)(198:45)
N79 (+000.50)
SET HGA P 10, Y 0 FOR AOS ACQ

(P20)
(0.5°DB)

198:40

MC/LA COVER - OPEN
MC - EXTD
LA - ON
IMAGE MTN - ON
MS - RETR TO 8.4 FEET (26 SECS)

MAP CAMERA PHOTO PAD
T-START: ___ ___ ___:___ ___:___ ___
T-STOP: ___ ___ ___:___ ___:___ ___
(133.8°E TO 49.7°W) (1-1/2 REVS)

MC - ON (T START)
IMAGE MTN - INCR (BP)/ON
ORBITAL SCIENCE VISUALS

KING (V4-D4) CM3

198:50

ACQ MSFN HGA: MAN, WIDE P 10, Y 0
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

MSFN

MSFN CMDS: (~ AOS +7 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

199:00

CSM FLIGHT PLAN

199:00
(P20)
(0.5°DB)
(10102)
(X1111)

REPORT: GYRO TORQUING ANGLES
(FROM P52 AT 198:33)
PREPARE FOR ORBITAL SCIENCE VISUALS

SIM EXP STATUS
(+1121)
(02222)

MSFN CMDS: (AOS +14 MIN)
DSE PLAYBACK

MSFN UPDATE:
SOLAR CORONA PHOTO PAD (200:33)
MS RETR TO 5 FEET (200:40)
PAN CAMERA PHOTO PAD (200:41)

199:10

GR - RETR TO 7.5 FEET (2 MIN 26 SEC)

PAN CAMERA PHOTO PAD
T-START: ___ ___ ___:___ ___:___ ___
T-STOP: ___ ___ ___:___ ___:___ ___
(45.2°E TO 37.2°W)

PC: STBY
STEREO
PWR

PC - OPR (T START)

ORBITAL SCIENCE VISUALS

ISIDORUS/CAPELLA (V8-D9) CM3

199:20

199:30

199:30
(P20)
(0.5°DB)
(10102)
(X1111)

GR: SHIELD - OFF

IMAGE MTN - INCR (BP +4 STEPS)/ON

SIM EXP STATUS
(+1221)
(22222)

199:40

GR: SHIELD - ON (CTR)

PC - STBY (T STOP)

PC - OFF (MSFN CUE)

199:50

MSFN CMDS: (AOS +66 MIN)
DSE REWIND

200:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-308

CSM FLIGHT PLAN

200:00
(P20)
(0.5°DB)
(10102)
(X1111)
MSFN

SIM EXP STATUS
(+1221)
(02222)

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET)(AOS +73 MIN)

200:10

CSM EXP/EVA CHECKLIST

SOLAR CORONA (SUNRISE) PAGE X/2-11
MAG (TT)
MAG (HH)

200:20

200:30

200:30
REV 65
(P20)
(0.5°DB)
(10102)
(X1111)

SIM EXP STATUS
(+1221)
(02222)

SOLAR CORONA (SUNRISE)

SOLAR CORONA PHOTO PAD (SR)
T-START: __ __ __ : __ __ : __ __
SUNRISE -7 MIN

200:40

IMAGE MTN - INCR (BP)/ON
MS - RETR TO 5 FEET (24 SECS)

PAN CAMERA PHOTO PAD
T-START: __ __ __ : __ __ : __ __
T-~~STEREO~~: __ __ __ : __ __ : __ __
T-STOP: __ __ __ : __ __ : __ __
(131.6°E TO 43.2°E)

PC: STBY
MONO
PWR

PC - OPR (T START)

PC - STEREO (T START +2:00 MIN)

200:50

ACQ MSFN HGA: MAN, WIDE P 10, Y 0
S-BD ANT IND > 1/? SCALE HGA: REACQ, NARROW

MSFN

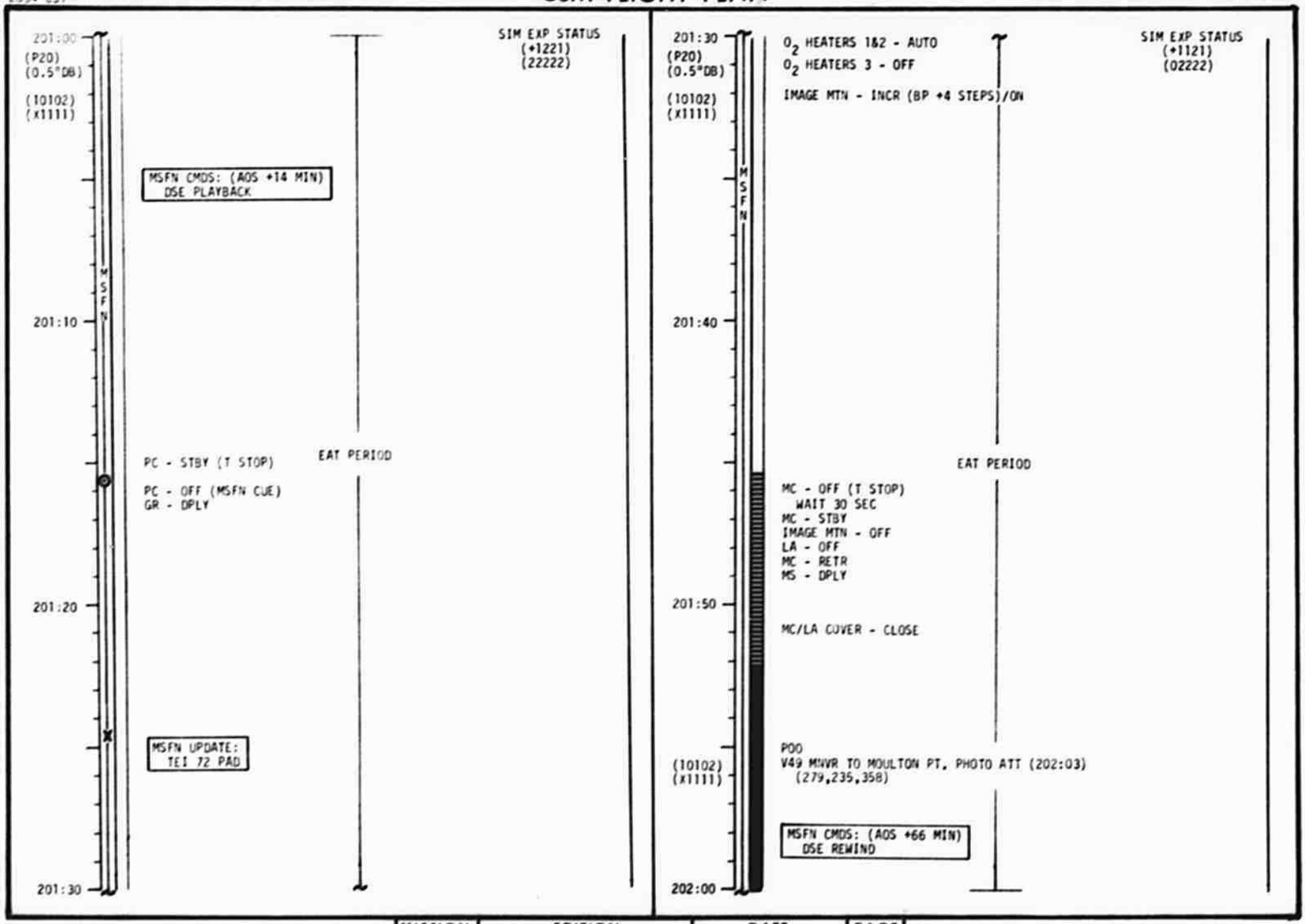
CMP DON BIOMED HARNESS
CDR DOFF BIOMED HARNESS

MSFN CMDS: (~ AOS +7 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

201:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE F (4/16)	~~3/27/72~~ 4/7/72	3-309

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	3-310

CSM FLIGHT PLAN

2154 CST

202:00
(10102)
(X1111)

MSFN

LiOH CANISTER CHANGE:
(17 INTO B, STOW 15 IN A3)

CSM EXP/EVA CHECKLIST

GEGENSCHEIN PASS #2, PAGE X/2-3
MAG (ZZ)

CONFIGURE DSE (LBR/RCD/FWD/CMD RESET) (AOS +73 MIN)

SIM EXP STATUS
(+0111)
(01222)

GEGENSCHEIN PASS #2 (MOULTON PT)

202:10

V49 MNVR TO ANTI-SOLAR PT. PHOTO ATT (202:15)
(279,225,356)

202:20

GEGENSCHEIN PASS #2 (ANTI-SOLAR PT)

REV 66

202:30

202:30
(10102)
(X1111)

SIM EXP STATUS
(+0111)
(01222)

V49 MNVR TO BISTATIC RADAR ATT (202:43)
(242,242,000)

CONFIGURE COMM FOR S-BAND AND VHF BISTATIC RADAR TEST
- VHF AM T/R (3) - RCV (VERIFY)
- VHF AM A - OFF (VERIFY)
- VHF AM B - DUPLEX (VERIFY)
- VHF RNG - RNG (DSE VOICE USE MARGINAL)
- VHF ANT - RIGHT
- S-BD MODE RANGING - OFF
- S-BD AUX TAPE - OFF (VERIFY)
- S-BD ANT - HI GAIN/MAN/WIDE
  HGA P -21, Y 150
- VERIFY DSE (LBR/RCD/FWD/CMD RESET)

P20 OPT 2
- N78 (+270.00)
  (-065.25)
- N79 (-0.0830)
  (+000.50) LOAD DURING MNVR
- N34 (+00202)
  (+00048)
  (+000.00)

START AUTO PITCH RATE (242,208/242,000)

202:40

(P20)
(-0.0830)
(0.5°/B)

202:50

MSFN

NOTE:
DURING BISTATIC RADAR TEST, MSFN HAS NO TLM FROM 203:00 TO 203:27 AND NO VOICE CAPABILITY S-BD & VHF RUN CONCURRENTLY UNTIL 203:27, VHF CONTINUES UNTIL 211:49

BISTATIC RADAR TEST (S-BD & VHF)

203:00

CSM FLIGHT PLAN

2254 CST

203:00
(P20)
(-0.0830)
(0.5°DB)
(10102)
(X1111)

Do Presleep Checklist
Except:
1. Comm Config.
2. No Talking to Ground
3. Cycle H_2 Fans
4. E Memory Dump

MSFN

203:10

203:20

(P20)
(3.0°DB)
203:30

DISCONTINUE S-BD BISTATIC RADAR TEST
S-BD MODE RANGING - RANGING
HGA P 0, Y 317
P20 OPT 5 (-X FWD SIM ATT)(203:35)
N79 (+003.00)
SET HGA P 0, Y 170 FOR AOS ACQ

SIM EXP STATUS
(*0111)
(01222)

BISTATIC
RADAR TEST
(S-BD & VHF)

BISTATIC
RADAR TEST
(VHF)

203:30
(P20)
(3.0°DB)
(10102)
(X1111)

(10101)
(X1111)

MSFN

203:40

203:50

204:00

CSM SYSTEMS CHECKLIST
PRE-SLEEP CHECKLIST PAGE S/1-29
EXCEPT VHF
LOGIC PWR (2) - OFF

MSFN CMDS:
DSE DUMP

V48 (10101)
(X1111)

MSFN UPLINK:
JET-ON MONITOR LOADS

PCM BIT RATE - HIGH

FILM MAGS REQD FOR NEXT DAY:
EL: CEX-PP, NN E RR, LV-00
NK: VH8W-X

REST PERIOD
(7.8 HOURS)

MSFN CMDS: (AOS +68 MIN)
DSE RECORD

SIM EXP STATUS
(-0111)
(01222)

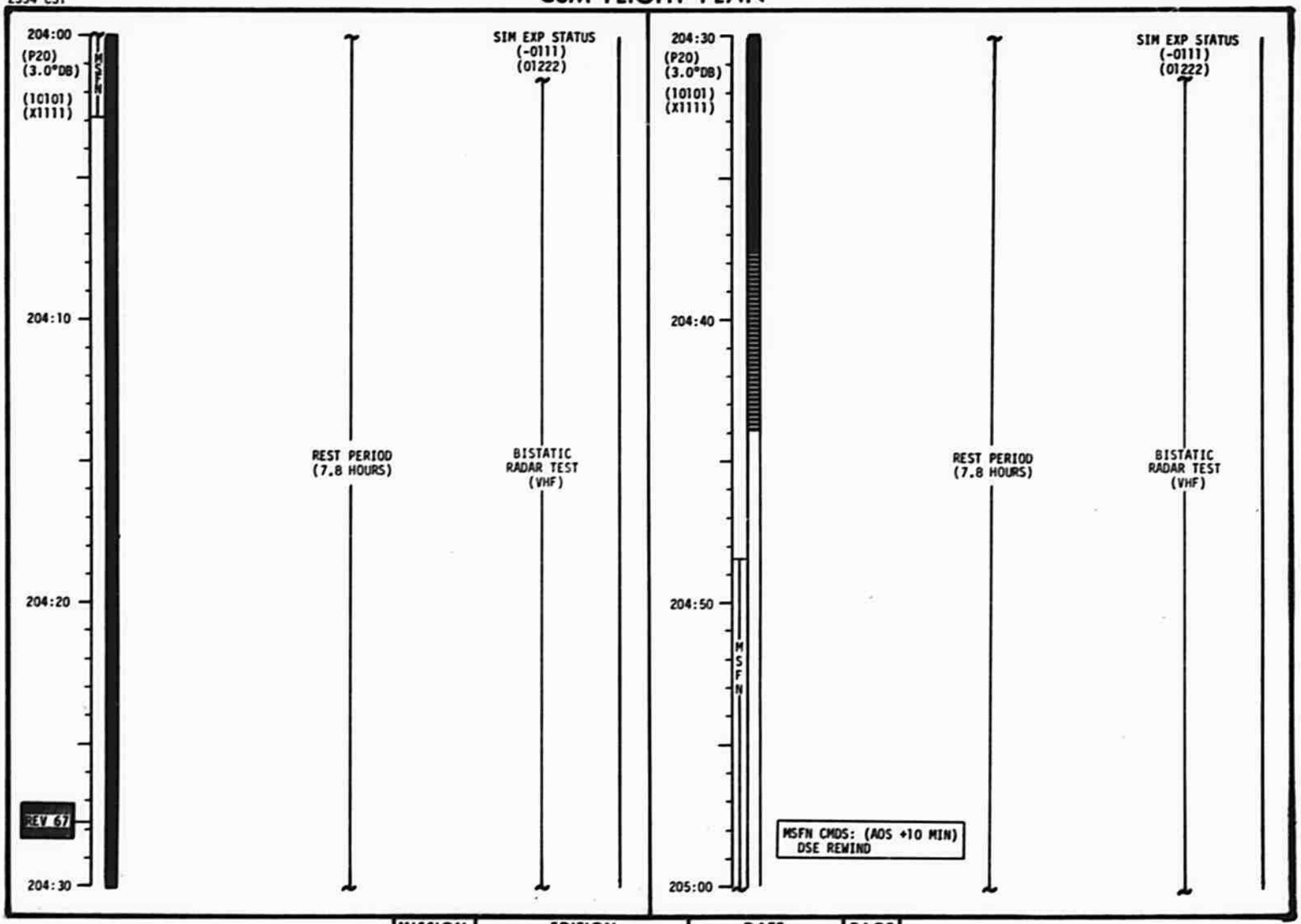
ONBOARD READOUT
BAT C
PYRO BAT A
PYRO BAT B
RCS A
B
C
D
DC IND SEL - MNA OR B

BISTATIC
RADAR TEST
(VHF)

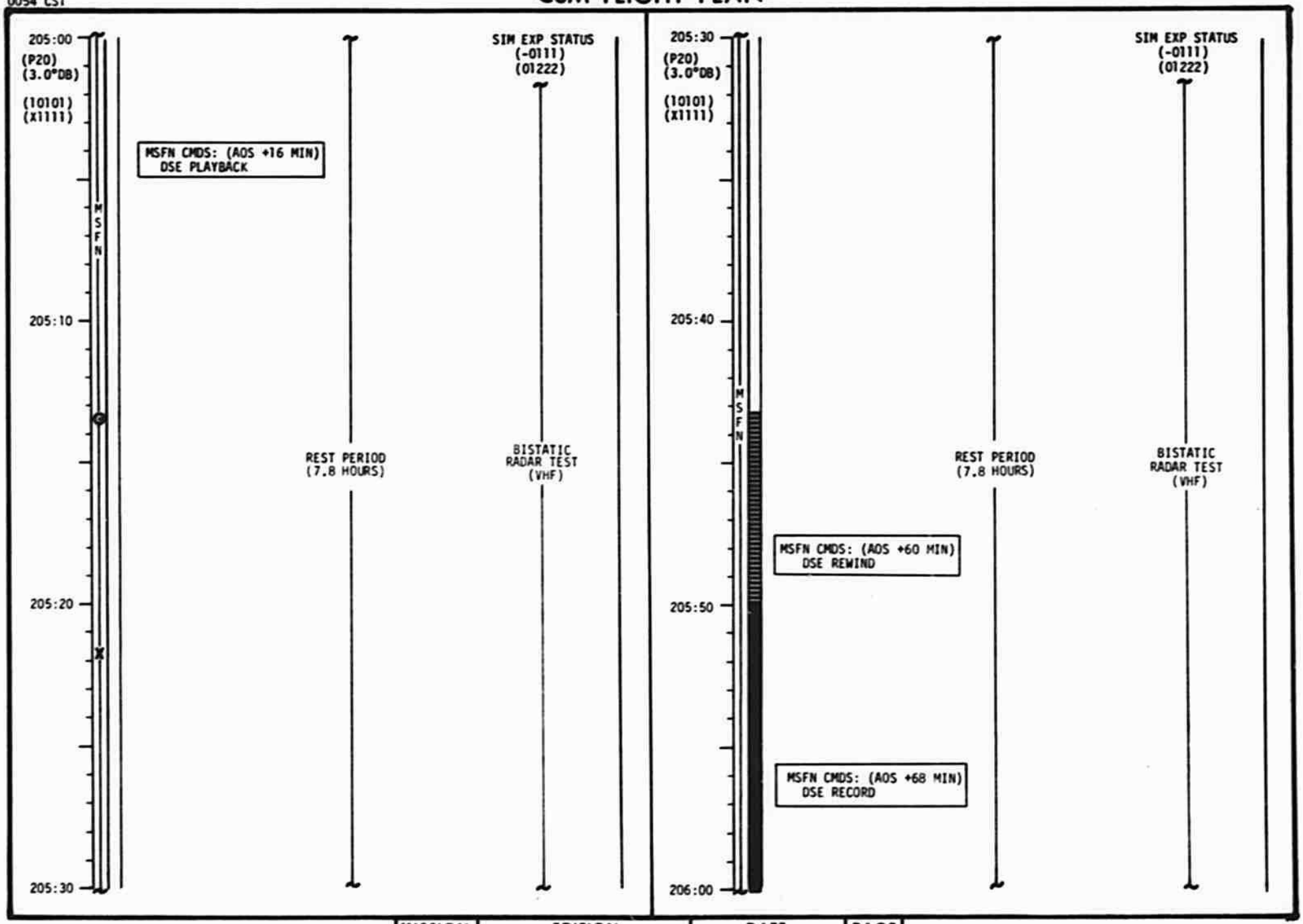
MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE F (4/16)	~~3/27/72~~ 4/7/72	3-312

2354 CST

CSM FLIGHT PLAN



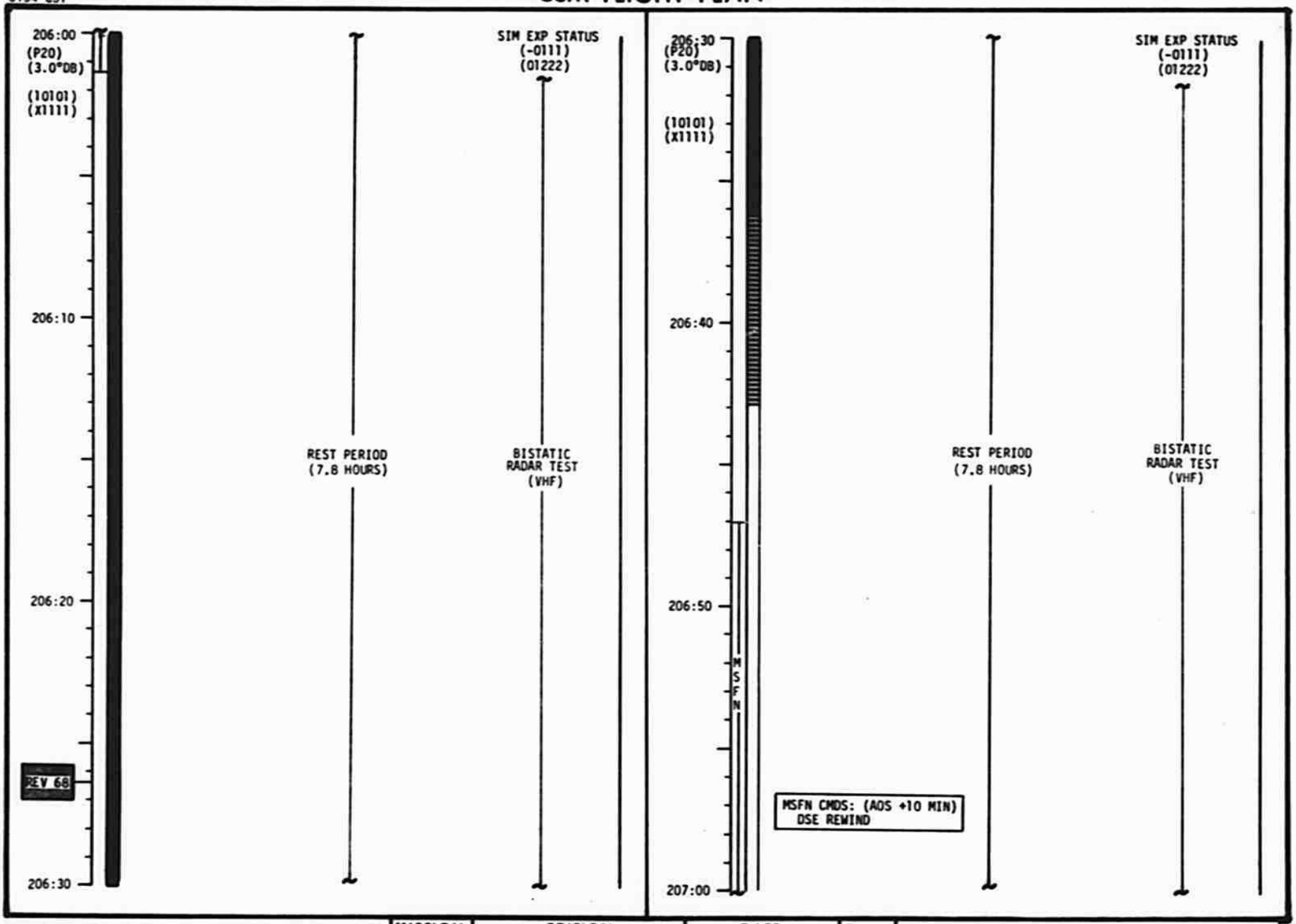
CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-314

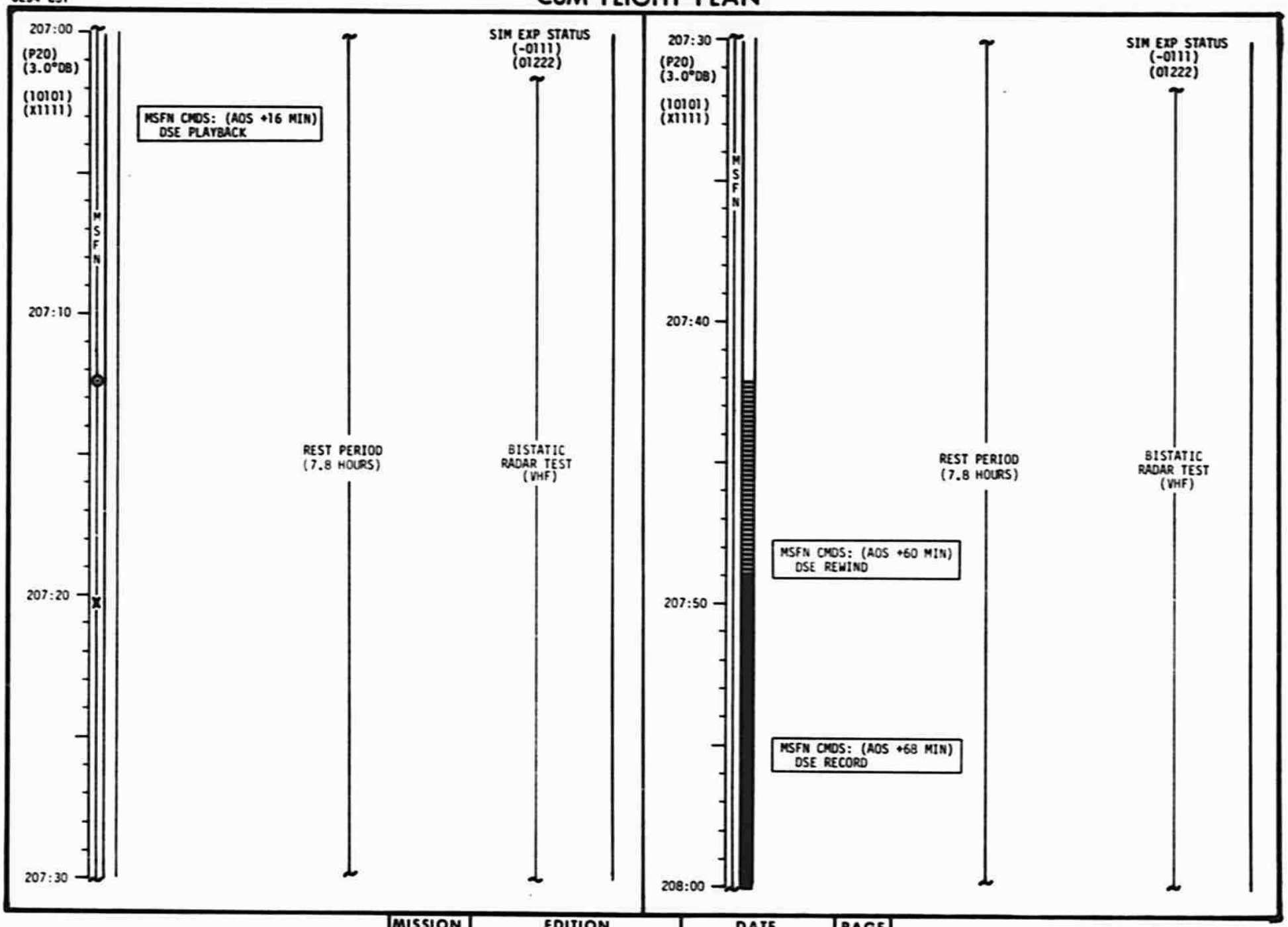
0154 CST

CSM FLIGHT PLAN



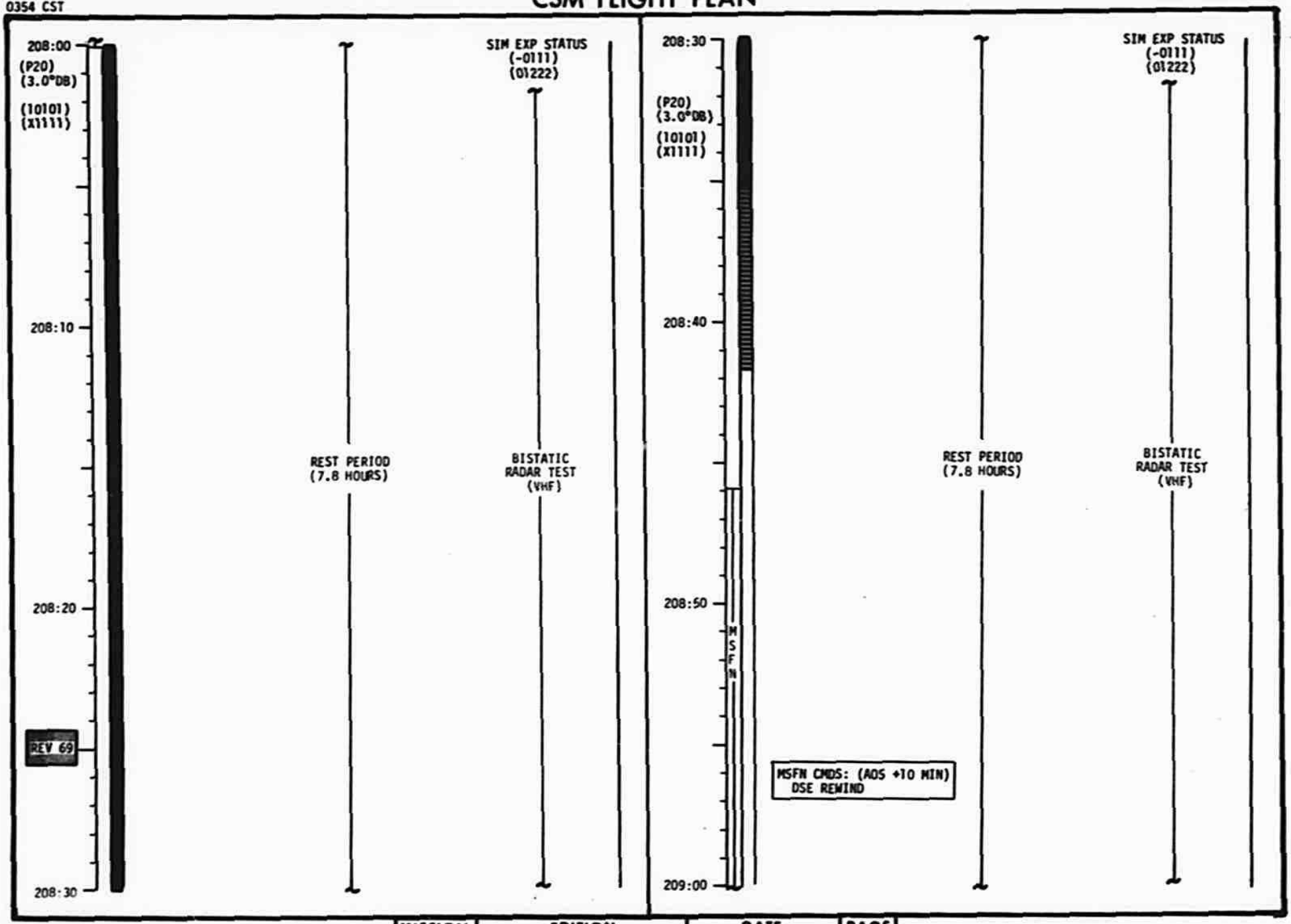
MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-315

CSM FLIGHT PLAN



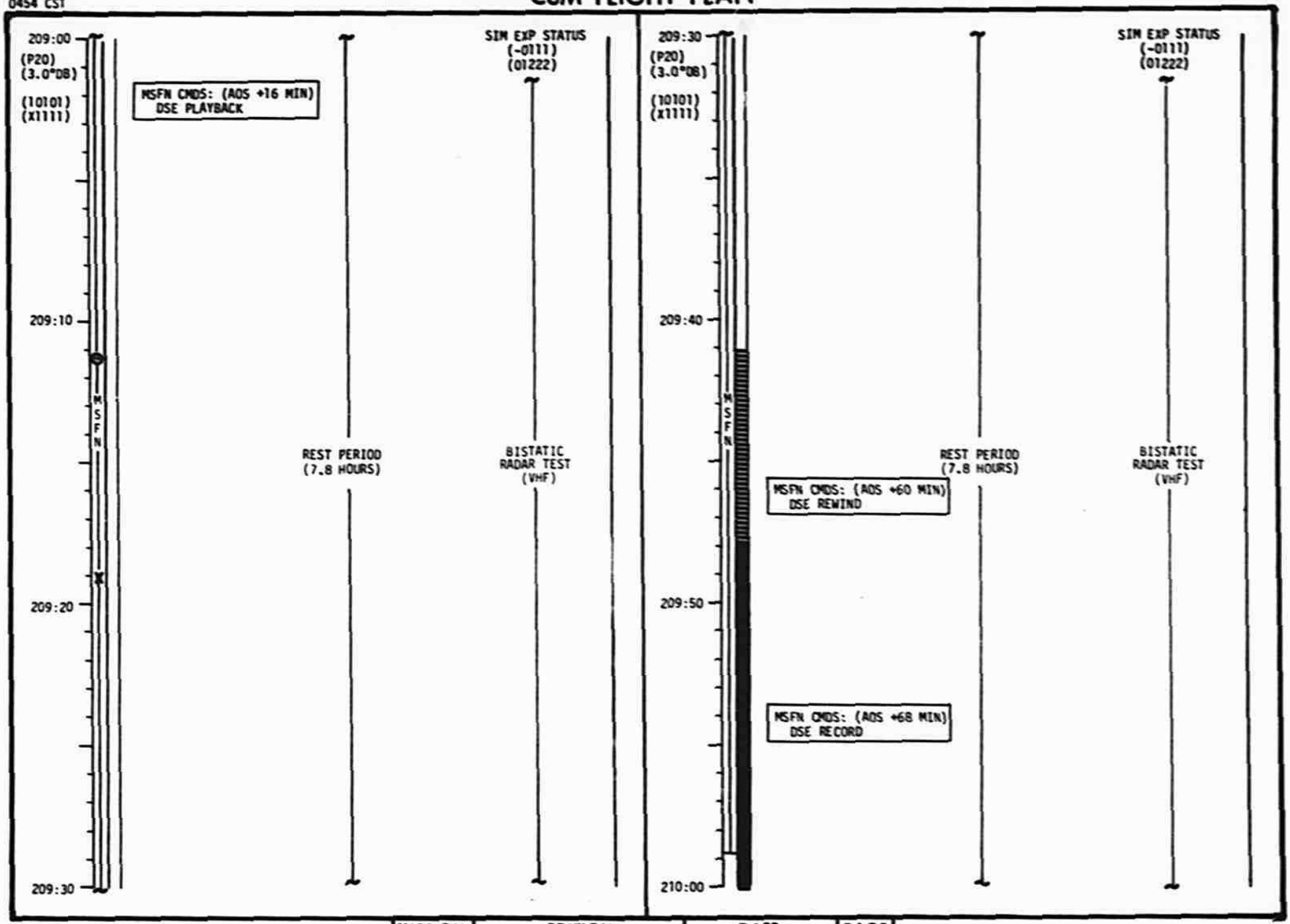
MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-316

CSM FLIGHT PLAN



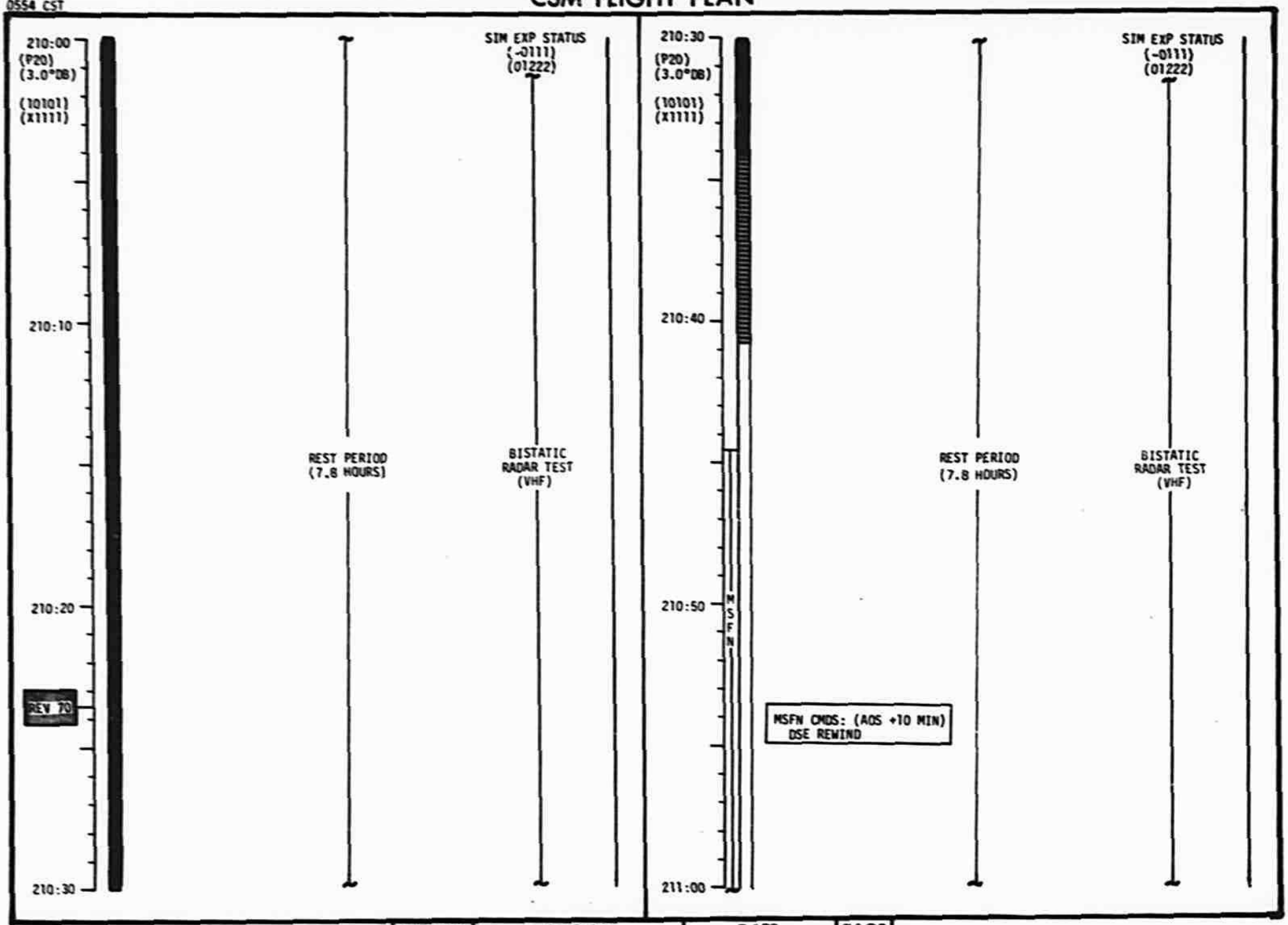
0454 CST

CSM FLIGHT PLAN

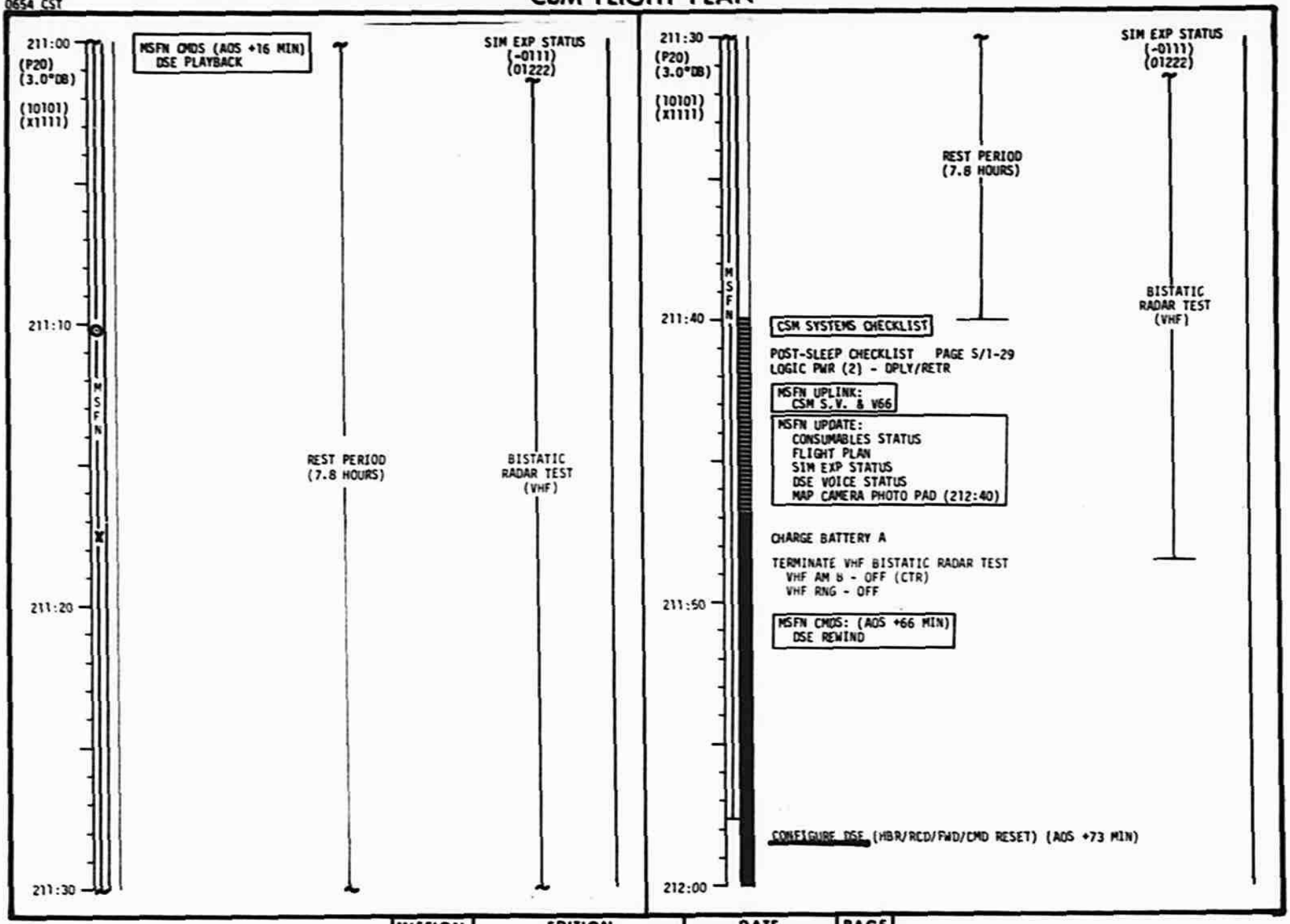


CSM FLIGHT PLAN

0554 CST



CSM FLIGHT PLAN



CSM FLIGHT PLAN

0754 CST

212:00 (P20) (3.0°DB) (10101) (X1111)

GR: SHIELD - OFF

SIM EXP STATUS (-0111) (01222)

212:10

GR: SHIELD - ON (CTR)
CMC MODE - FREE
P52 (OPTION 3)
(LIFT-OFF ORIENT)

P52 INU REALIGN

N71: __ __,__ __
N05: __ __ __•__ __
N93:
X __ __•__ __ __
Y __ __•__ __ __
Z __ __•__ __ __•
GET __ __ __•__ __•__ __

(P20) (0.5°DB)

GDC ALIGN
P20 OPT 5 (40° SOUTH OBLIQUE PHOTO ATT)(212:37)
N78 (+270.00)
(+087.75)
(+180.00)
N79 (+000.50)
(185,000/052,359)
CMC MODE - AUTO
SET HGA P 15, Y 340 FOR AOS ACQ
PLAN THE PHOTO PASS

212:20

REV 71

212:30

LMP DON BIOMED HARNESS
CMP DOFF BIOMED HARNESS

212:30 (P20) (0.5°DB) (10101) (X1111)

CONFIGURE CAMERA: (ORBITAL SCIENCE)
CM1/EL/250/CEX-IVL (f5.6,1/125,-) 45 FR
MAG (PP) ____ FR # ____
MC/LA COVER - OPEN
MC - EXTD

MAG (NN) ____ FR # ____
TEMP STOW MAG (NN)

SIM EXP STATUS (-0111) (01222)

ORBITAL SCIENCE PHOTOS
FLEMING (P9-D4,D5)
CM1 (f5.6,1/125,-) 45 FR

IMAGE MTN - ON
MC - ON (1 START)
CHANGE SHUTTER TO 1/250
IMAGE MTN - INCR (BP)/ON
(BP+3 STOP)

MAP CAMERA PHOTO PAD
T-START: __ __ __:__ __:__ __
T-STOP: __ __ __:__ __:__ __
(126.7°E TO 55.8°W)

212:40

ACQ MSFN HGA: MAN, WIDE P 15, Y 340
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

RECORD FR # ____
CHANGE TO MAG (NN)

MSFN CMDS: (~ AOS +4 MIN)
DSE (STOP/REWIND)
CUE: HGA AUTO

~~IMAGE MTN - INCR (BP +1 STEP)/ON~~

212:50

AL-BIRUNI (P11-D6,D7)
CM1 (f8, 1/250, ∞) 33 FR SWIRLS CRATER, SWIRLS

RECORD FR # ____

MSFN CMDS: (AOS +11 MIN)
DSE PLAYBACK

REPORT: GYRO TORQUING ANGLES
(FROM P52 AT 212:11)

MSFN UPDATE:
TEI 74 PAD

213:00

MSFN

MISSION	EDITION	DATE	PAGE
APOLLO 16	Chg C. ~~FINAL~~ (4/16)	~~3/17/72~~ 4/10/72	3-321

CSM FLIGHT PLAN

0854 CST

213:00
(P20)
(0.5°DB)
(10101)
(x1111)

~~IMAGE MTN - INCR (DP)/ON~~

SIM EXP STATUS
(•1111)
(04222)

PC: MODE - STBY
PWR - ON

213:10

PC: PWR - OFF (MSFN CUE)

EAT PERIOD

213:20

~~IMAGE MTN - INCR (DP +4 STEPS)/ON~~

213:30

213:30
(P20)
(0.5°DB)
(10101)
(x1111)

SIM EXP STATUS
(•1111)
(04222)

213:40

MC - OFF (T STOP)
WAIT 30 SECS
MC - STBY
IMAGE MTN - OFF
~~MC - RETR~~

~~MC/LA COVER - CLOSE~~

EAT PERIOD

(10102)
(x1111)

V48 (10102)(x1111)

CSM EXP/EVA CHECKLIST

GALACTIC PHOTO SEQ 1, PAGE X/2-6
MAG (X)
POO; V49 MNVR TO GALACTIC PHOTO ATTITUDE (213:55)
(098,177,050) OMNI D

MSFN CMDS: (AOS +66 MIN)
DSE REWIND

213:50

NOTE: DO NOT START PHOTO SEQUENCE UNTIL 213:56

CONFIGURE DSE (HBR/RCD/FWD/CMD RESET) (AOS +73 MIN)

214:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	~~ORIGINAL~~ (4/16)	~~4/16/72~~ 3/16/72C (PM)	3-322

CHANGE KEC

CSM FLIGHT PLAN

214:00
(10102)
(X1111)

GALACTIC PHOTO SEQ 1

SIM EXP STATUS
~~(+01111)(X1111)~~
(01222)

214:10

SKYLAB CONTAMINATION ORBIT SEQUENCE, PAGE X/2-26
MAG (X)
V49 MNVR TO SKYLAB CONTAMINATION PHOTO ATT (214:24)
(302,071,310) MNVR TIME ~ 5MIN 45SEC

STUDY THE PHOTO TRG & CONFIGURE THE EL
LOAD N78 ~~[illegible]~~ FOR MNVR AT 214:40
NOTE: DO NOT START PHOTO SEQUENCE
UNTIL 214:29

214:20
REV 72

SKYLAB CONTAMINATION ORBIT SEQUENCE

214:30

214:30
(10102)
(X1111)

SIM EXP STATUS
~~(+01111)(X1111)~~
(01222)

(P20)
(0.5°DB)

P20 OPT 5 (10° SOUTH OBLIQUE PHOTO ATT) (214:39) MNVR TIME
N78 (+090.00) ~7MIN 47 SEC
(+062.25)
(+180.00)
N79 (+000.50)
(154,000/~~039~~,358)
ACQ MSFN ~~[illegible]~~ HGA: P-62, Y 283
~~S-BD ANT IND > 1/2 SCALE, HGA: REACQ, NARROW~~

214:40

CONFIGURE CAMERA: (ORBITAL SCIENCE)
CMS/EL/250/CEX-IVL ~~[illegible]~~ (5 11, 1/250,00) 136 FR
MAG (~~NN~~ RR) ____ FR # ____

~~ORBITAL SCIENCE PHOTOS~~
~~AL BIRUNI (P11-D6,07)~~
~~CMI (f8,1/250,-) 35 FR~~ ~~[illegible]~~ GRATER, SUNRISE

M
S
F
N

214:50

MSFN CMDS: (AOS +9 MIN)
DSE (STOP/REWIND)
~~CWE: HGA AUTO~~

~~RECORD FR #~~
~~CHANGE TO MAG (RR)~~

MSFN UPDATE:
MAP CAMERA PHOTO PAD (215:30)
PAN CAMERA PHOTO PAD (215:35)
SHAPE MNVR PAD (216:15)

MSFN CMDS: (AOS +17 MIN)
DSE PLAYBACK

215:00

CSM FLIGHT PLAN

1054 CST

215:00
(P20)
(0.5°DB)
(10102)
(X1111)

LiOH CANISTER CHANGE
(18 INTO A, STOW 16 IN A3)

SIM EXP STATUS
~~(*01111)(X////)~~
(01222)

MSFN UPLINK:
SHAPE TGT LOAD
CSM S.V. & V66

215:10

DESCARTES (P15-D10,D11)
CM5 (f11,1/250,-) 20 FR

VOGEL/LASSELL (P17-D11,D12)
CM5 (f8,1/250,-) 44 FR
MS: ION SOURCE - OFF
EXP - STBY
CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM
GR - RETR
~~MC/LA COVER - OPEN~~

215:20

~~MC - CMTD~~

MS - RETR
PC: STBY
STEREO
PWR
LA - ON
BULLIALDUS/GASSENDI (P23-D12,D13)
CM5 (f5.6,1/250,-) 62 FR

IMAGE MTN - ON

CHANGE SHUTTER TO 1/125

215:30

215:30
(P20)
(0.5°DB)
(10102)
(X1111)

SIM EXP STATUS
(*1001)
(13212)

MC - ON (T START)
PC - ON (T START)
IMAGE MTN - INCR (BP +4 STEPS)/ON

HANSTEEN (P26-D14)
CM3(f5.6,1/125,-)10 FR

MAP CAMERA PHOTO PAD
T-START: __ __ __:__ __:__ __
T-STOP: __ __ __:__ __:__ __
(35.8°W TO 56.8°W)

PC - STBY (T STOP)
MC - OFF (T STOP)
WAIT 30 SECS
MC - STBY
IMAGE MTN - OFF
LA - OFF
MC - RETR
XR - STBY
PC - OFF (MSFN CUE)
MC/LA COVER - CLOSE
AP/XR COVER - CLOSE
RECORD FR # ____

PAN CAMERA PHOTO PAD
T-START: __ __ __:__ __:__ __
T-STOP: __ __ __:__ __:__ __
(35.8°W TO 55.8°W)

215:40

MSFN CMDS:
DSE REWIND

H_2 PURGE LINE HEATERS - ON

CONFIGURE FOR URINE DUMP

215:50

MSFN CMDS:
DSE RECORD

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

216:00

CMC MODE - FREE

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE #5 (4/16)	~~3/27/72~~ 4/10/72	3-324

216:00
(P20)
(0.5°/08)
(10102)
(X1111)

P52 (OPTION 3)
(LIFT-OFF ORIENT)

SIM EXP STATUS
(*0000)
(01214)

P52 IMU REALIGN

N71: ___ ___ ___ ___

N05: ___ ___ ___ ___ ___

N93:

X ___ ___ ___ ___ ___

Y ___ ___ ___ ___ ___

Z ___ ___ ___ ___ ___

GET ___ ___ ___ ___ ___

P20; CMC MODE - AUTO
GDC ALIGN

H_2 & O_2 FUEL CELL PURGE
WASTE WATER DUMP
URINE DUMP

216:10

P30; VERIFY SHAPE BURN TIG
AND ΔV'S

H_2 PURGE LINE HEATERS - OFF

TERMINATE WASTE WATER DUMP AT 10%

REV 73

216:20

ENABLE ALL JETS
P00; V49 MNVR TO SHAPE BURN PAD ATT (216:28)
SET HGA P -42, Y 24 FOR AOS ACQ

(10102)
(X1111)

216:30

P30 MANEUVER

SET STARS	S	H	A	P	E		PURPOSE	
	S	P	S/G		&	N	PROP/GUID	
	+						WT	N47
R_{ALIGN} ___ ___ ___		O	O				P_{TRIM}	N48
P_{ALIGN} ___ ___ ___		O	O				Y_{TRIM}	
Y_{ALIGN} ___ ___ ___	+	O	O				HRS	GETI
	+	O	O	O			MIN	N33
	+	O					SEC	
ULLAGE ___							ΔV_X	N81
							ΔV_Y	
							ΔV_Z	
	X	X	X				R	(003)
	X	X	X				P	(058)
	X	X	X				Y	(357)
	+						H_A	N44
							H_P	
	+						ΔVT	
HORIZON/WINDOW ___	X	X	X				BT	
	X						ΔVC	
	X	X	X	X			SXTS	
	+					O	SFT	
	+				O	O	TRN	
	X	X	X				BSS	
	X	X					SPA	
	X	X	X				SXP	

CSM FLIGHT PLAN

1224 CST

216:30
(10102)
(x1111)

PRE-SPS BURN SIM PREP (CUE CARD)

SIM EXP STATUS
(*0000)
(01214)

V45 (RESET LUNAR SURFACE FLAG)

SET DET COUNTING UP TO SHAPE BURN

(P40)
(0.5°DB)

P40 (TRIM)

216:40

ACQ MSFN HGA: P -42, Y 24
REPORT: GYRO TORQUING ANGLES
(FROM P52 AT 216:00)

MSFN

CSM SHAPE TABLE			
P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
10°/SEC TERMINATE	+10° TERMINATE	BT +1 SEC	TRIM X,Y, AND Z TO ±0.2 FPS. IF (-) V_{gy} OR (+) V_{gz} ROLL AND USE -Z THRUSTERS

MSFN UPDATE:
GO/NO-GO FOR CSM SHAPE

CSM SHAPE (003,050/058,357)

TIG: 216:49:12
BT: 02.2 SECS
ΔVT: 38.0 FPS
ULLAGE: 2 JET 17 SEC
ORBIT: 85 x 55 NM

216:50
(10102)
(x1111)

POO
V66 SET CSM S.V. INTO LM S.V.
REPORT: BURN STATUS

MSFN [illegible]:
DSE DUMP

POST-SPS BURN SIM PREP (CUE CARD)

217:00

BURN STATUS REPORT

X	X					ΔTIG
X	X					BT
						V_{gx}
TRIM						
X	X	X				R
X	X	X				P
X	X	X				Y
						V_{gx}
						V_{gy}
						V_{gz}
						ΔV_c
X						FUEL
X						Ox
X						UNBAL

CSM FLIGHT PLAN

1254 CST

217:00
(10102)
(X1111)

MSFN

SIM EXP STATUS
(*0000)
(01214)

MSFN UPDATE:
SUBSAT LAUNCH PAD (217:38)

MSFN UPLINK:
LM S.V. (CSM S.V. & SUBSAT LAUNCH ΔV)

The Subsat State Vector is Actually Uplinked

217:10

217:20

217:30

217:30
(10102)
(X1111)

MSFN

SIM EXP STATUS
(*0000)
(01214)

SUBSAT LAUNCH PAD
GET: ___ ___ ___:___ ___:___ ___
R (088), P (247), Y (000)

217:40

CSM EXP/EVA CHECKLIST

V49 MNVR TO SUBSAT LAUNCH PAD ATT (217:47)
HGA P 15, Y 232
SUBSAT LAUNCH PROCEDURES, PAGE X/1-8

217:50

MSFN CMDS:
DSE RECORD

MSFN UPDATE:
GO/NO-GO FOR SUBSAT LAUNCH

VERIFY DSE TAPE MOTION (HBR/RCD/FWD/CMD RESET)

218:00

CSM FLIGHT PLAN

218:00
(10102)
(x1111)

SIM EXP STATUS
(*0000)
(01214)

SUBSAT LAUNCH 218:02:08
(ΔVx = +1.04, ΔVY = +4.13, ΔVZ = -0.11)

CONFIGURE DSE (LBR/RCD/FWD/CMD RESET)

218:10
(10101)
(x1111)
(P20)
(3.0°DB)

V48 (10101)(X1111)
P20 OPT 4 (SUBSAT TRACKING) (218:27)
N78 (+000.00)
(-035.00)
(+015.00)
N79 (+003.00)
(304,170/253,055)
SET OMNI IA FOR AOS ACQ

REV 74

218:20

218:30

218:30
(P20)
(3.0°DB)
(10101)
(x1111)

SIM EXP STATUS
(*0000)
(01214)

TAKE SXT MARKS - 1/MIN

218:40

ACQ MSFN OMNI IA
REPORT: SUBSAT LAUNCH

MSFN

218:50

ACQ MSFN HGA: MAN, WIDE P-15, Y 145
S-BD ANT IND > 1/2 SCALE HGA: REACQ, NARROW

219:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	CHANGE B (4/16)	~~3/27/72~~ 4/7/72	3-328

CSM FLIGHT PLAN

1454 CST

219:00
(P20)
(3.0°DB)
(10101)
(X1111)

MSFN CUE: (~AOS+20MIN)
HGA AUTO

MSFN CMDS:
DSE DUMPS

Photos of Opportunity/TV

SIM EXP STATUS
(*0000)
(01214)

219:10

MSFN

219:20

MSFN UPDATE:
PRELIM TEI 75 PAD

219:30

219:30
(P20)
(3.0°DB)
(10101)
(X1111)

~~MSFN CMDS:
DSE DUMP~~

SIM EXP STATUS
(*0000)
(01214)

MSFN

219:40

(10101)
(X1111)

219:50

MSFN UPLINK:
DESIRED ORIENT (TEI)

CMC MODE - FREE
P00
CMC MODE - AUTO
V49 MNVR TO P52 ATT (220:05)
(224,096,012)
SET HGA P 34, Y 284 FOR AOS ACQ

MSFN CMDS:
DSE RECORD

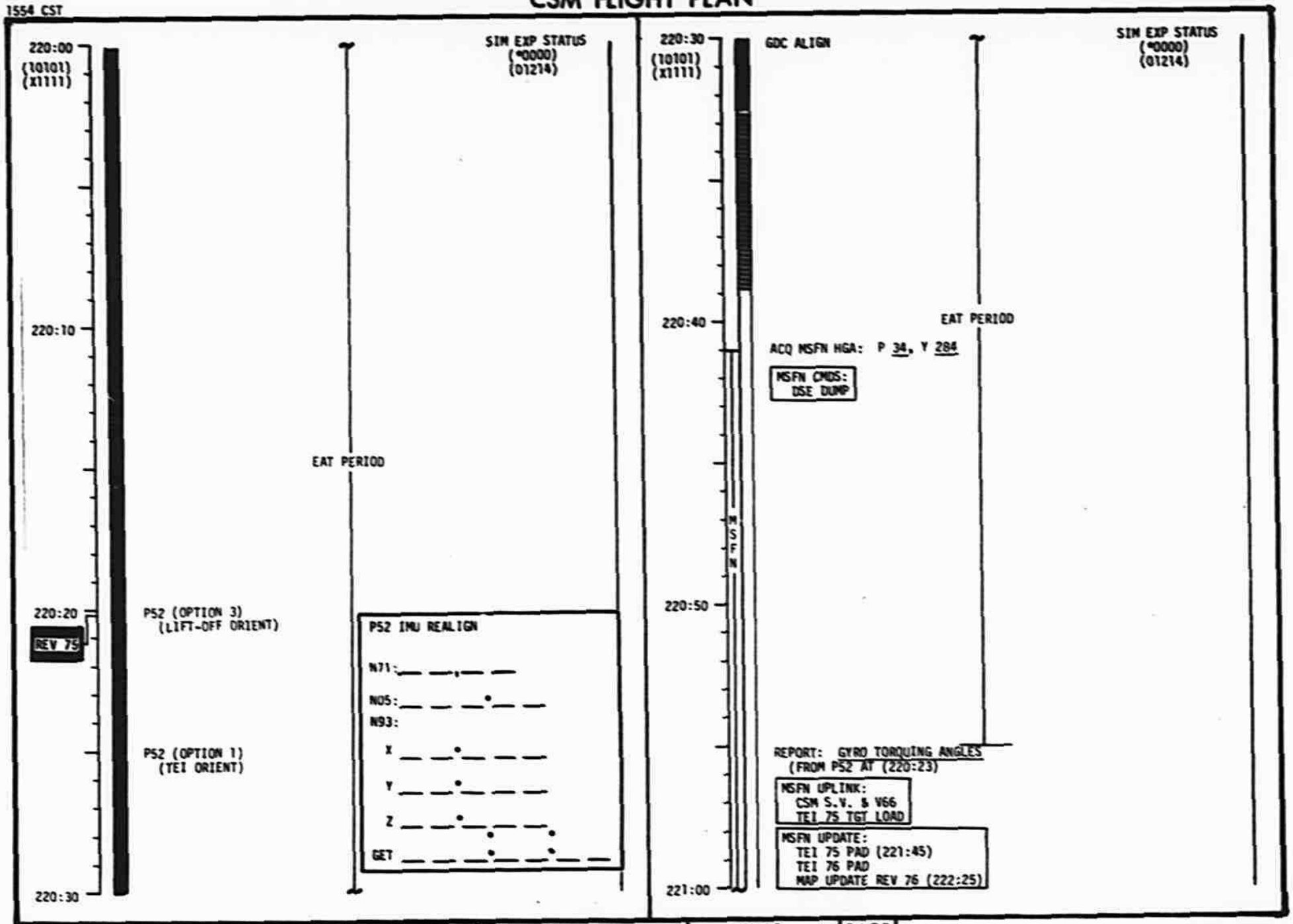
VERIFY DSE TAPE MOTION
(LBR/RCD/FWD/CMD RESET)

EAT PERIOD

220:00

MISSION	EDITION	DATE	PAGE
APOLLO 16	C/B. ~~FINAL~~ (4/16)	~~3/6/72~~ 4/7/72	3-329

CSM FLIGHT PLAN



MISSION	EDITION	DATE	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	3-330

CSM FLIGHT PLAN

1654 CST

221:00
(10101)
(X1111)

MSFN

SIM EXP STATUS
(*0000)
(01214)

CSM SYSTEMS CHECKLIST

221:10

CONTAMINATION CONTROL S/1-19
CREW OPTION

C&WS OPERATIONAL CHECKS S/1-20

CM RCS MONITORING CHECK S/1-1

SM RCS MONITORING CHECK S/1-1

221:20

SPS MONITORING CHECK S/1-1

221:30

CSM FLIGHT PLAN

221:30
(10101)
(X1111)

P30; VERIFY TEI TIG AND ΔV'S

V49 MNVR TO TEI PAD BURN ATT (221:45)
OMNI C

SIM EXP STATUS
(*0000)
(01214)

MSFN

221:40

MSFN UPDATE:
GO/NO-GO FOR TEI

221:50

SXT STAR CHECK

(P40)
(0.5°DB)

P40 (TRIM)

MSFN CMDS:
DSE RECORD

VERIFY DSE TAPE MOTION (LBR/RCD/FWD/CMD RESET)

222:00

P30 MANEUVER

SET STARS	T S	E P	I S/G		&	N	PURPOSE / PROP/GUID
	•						WT N47
R_{ALIGN} ___ ___ ___		O	O	•			P_{TRIM} N48
P_{ALIGN} ___ ___ ___		O	O	•			Y_{TRIM}
Y_{ALIGN} ___ ___ ___	•	O	O				HRS GETI
	•	O	O	O			MIN N33
	•	O			•		SEC
ULLAGE ___					•		ΔV_X NB1
___					•		ΔV_Y
___					•		ΔV_Z
___	X	X	X				R (180)
	X	X	X				P (000)
	X	X	X				Y (000)
	•				•		H_A N44
					•		H_P
	•				•		ΔVT
HORIZON/WINDOW ___	X	X	X	•			BT
___	X				•		ΔVC
___	X	X	X	X			SXTS
___	•			•		O	SFT
	•			•	O	O	TRN
	X	X	X				BSS
	X	X			•		SPA
	X	X	X		•		SXP
OTHER ___		O		•			LAT N61
___				•			LONG
___	•				•		RTGO EMS
	•						V10
			•	•			GET 0.05G

1754 CST

222:00
(P40)
(0.5°DB)
(10101)
(x1111)

PRE-SPS BURN SIM PREP (CUE CARD)

SIM EXP STATUS
(*0000)
(01214)

SCS RELIGHT IF ΔVC >50 OR >5SEC
DO NOT TRIM SCS BURN
IF BURN INTERRUPTED DO NOT TRIM
~RCS ΔV PRE TEI ~120 fps
POST TEI ~160 fps
FOR NOMINAL TEI MODE II STARTS
~ΔV_M =1700fps ~80SEC
SCS CUTOFF = BT +2

222:10

TEI BURN TABLE

P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME UNDERBURN	SHUTDOWN TIME OVERBURN	RESIDUALS
10°/SEC COMPLETE	±10° COMPLETE	FOR G&N C/O >3 SEC EARLY & ΔV_c >+50 FPS SWITCH TO SCS AUTO & RESTART SPS	BT +2 SEC & ΔV_c = -40 FPS	TRIM X AND Z AXES TO 0.2 FPS. IF (+) V_{gz} ROLL 90° CW USE (+)Y THRUSTERS

SINGLE BANK BURN TIME
* 2 MIN 36 SEC *

222:20
REV 76

TEI (180,000,000)
___:___:___.___

TIG: 222:20:33
BT: 2 MIN 30.5 SECS
ΔVT: 3212.2 FPS
ULLAGE: 2 JET,17 SEC
ORBIT: N/A

(10101)
(x1111)

P00
V66 SET CSM S.V. INTO LM S.V.
P20 OPT 5 (PC & MC PHOTO ATT)(222:30)
N78 (+090.00)
(+052.25)
(+140.00)
N79 (+000.50)
(135,320,314) OMNI C

(P20)
(0.5°DB)

POST SPS BURN SIM PREP (CUE CARD)

222:30

BURN STATUS REPORT

X X	ΔTIG
X X	BT
	V_{gx}
TRIM	
X X X	R
X X X	P
X X X	Y
	V_{gx}
	V_{gy}
	V_{gz}
	ΔV_c
X	FUEL
X	OX
X	UNBAL

MAP UPDATE REV 76

LOS: ___ ___ ___ ___ ___ ___
180°: ___ ___ ___ ___ ___ ___
AOS WITH TEI: ___ ___ ___ ___ ___ ___
AOS WITHOUT TEI: ___ ___ ___ ___ ___ ___

CSM FLIGHT PLAN

222:30
(P20)
(0.5"DB)

SIM EXP STATUS
(*0000)
(01214)

ACQ MSFN OMNI C
INHIBIT ALL JETS EXCEPT: A1&C2 OR B2&D1,A3,C4,B3,D4
PCM BIT RATE - HIGH
MC/LA COVER OPEN
MC - EXTD
PC - STBY
MON
PWR
MC - ON
PC - OPR
IMAGE MTN - INCR (BP +3 STEPS)/OFF (FOR RATE CONTROL)

REPORT: BURN STATUS

ACQ MSFN HGA P -45, Y 320
S-BD ANT IND - 1/2 SCALE, HGA: REACQ, NARROW

MSFN UPLINK:
DESIRED ORIENT (PTC)

222:40
V48 (11101)
(X1111)

(11101)
(X1111)

MSFN CMDS:
DSE DUMP

GP - DPLY
MS - DPLY

MS: EXP - ON
IDM SOURCE - STBY

222:50

PC - OFF
MC - STBY
MC - RETR

USE NOMINAL TURNOFF PROCEDURE

NOTE: PC AND MC FILM SHOULD BE EXPENDED AT THIS TIME, CUE MSFN FOR STOP TIMES.

POO: V49 MNVR TO MOON UV PHOTO/P52 ATT (223:06)
(197,173,064) HGA P -82, Y 305

MC/LA COVER - CLOSE

223:00

FLIGHT PLAN

MCC-H

1854 CST

223:00
(11101)
(X1111)
:10
:20
223:30
:40
:50
224:00

MSFN

CSM EXP/EVA CHECKLIST

MOON UV PHOTOGRAPHY, PAGE X/2-19
MAG (00)
MAG (RR)

V49 MNVR TO THERMAL ATTITUDE (223:30)
(214,200,299) HGA P -67, Y 63

MS: ION SOURCE - ON
XR - ON
LIMIT CYCLE - ON
ATT DEADBAND - MIN
RATE - LOW
BMAG (3) - ATT 1/RATE 2
SCS CONT - SCS
P52 (OPTION 3)
(TEI ORIENT)

STARS ___, ___
SA ___, ___
TA ___, ___

REPORT: GYRO TORQUING ANGLES
P52 (OPTION 1)
(PTC ORIENT)
GDC ALIGN
SC CONT - CMC
BMAG (3) - RATE 2

CDR DON BIOMED HARNESS
LMP DOFF BIOMED HARNESS

NOTES

SIM EXP STATUS
(*0110)
(01234)

P52 IMU REALIGN
N71: __ __,__ __
N05: __ __ __.__ __
N93:
X __ __.__ __ __
Y __ __.__ __ __
Z __ __.__ __ __
GET __ __ __:__ __:__ __

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	223:00 - 224:00	10/TEC	3-335

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

UPDATE TO CSM
MS BOOM RETR
TIMES (20,15,10 & 5 FEET)

1954 CST

224:00
(11101)
(X1111)
:10
:20
224:30
:40
:50
225:00

MSFN

LiOH CANISTER CHANGE
(19 INTO B, STOW 17 IN A4)

V49 MNVR TO X-RAY POINTING (SCO X-1) ATT (224:30)
(332,280,000) HGA P 1, Y 261

AP/XR COVER - OPEN
MS - RETR TO 20 FEET (38 SEC)

SCO
X-1

MS - RETR TO 15 FEET (36 SEC)

NOTES

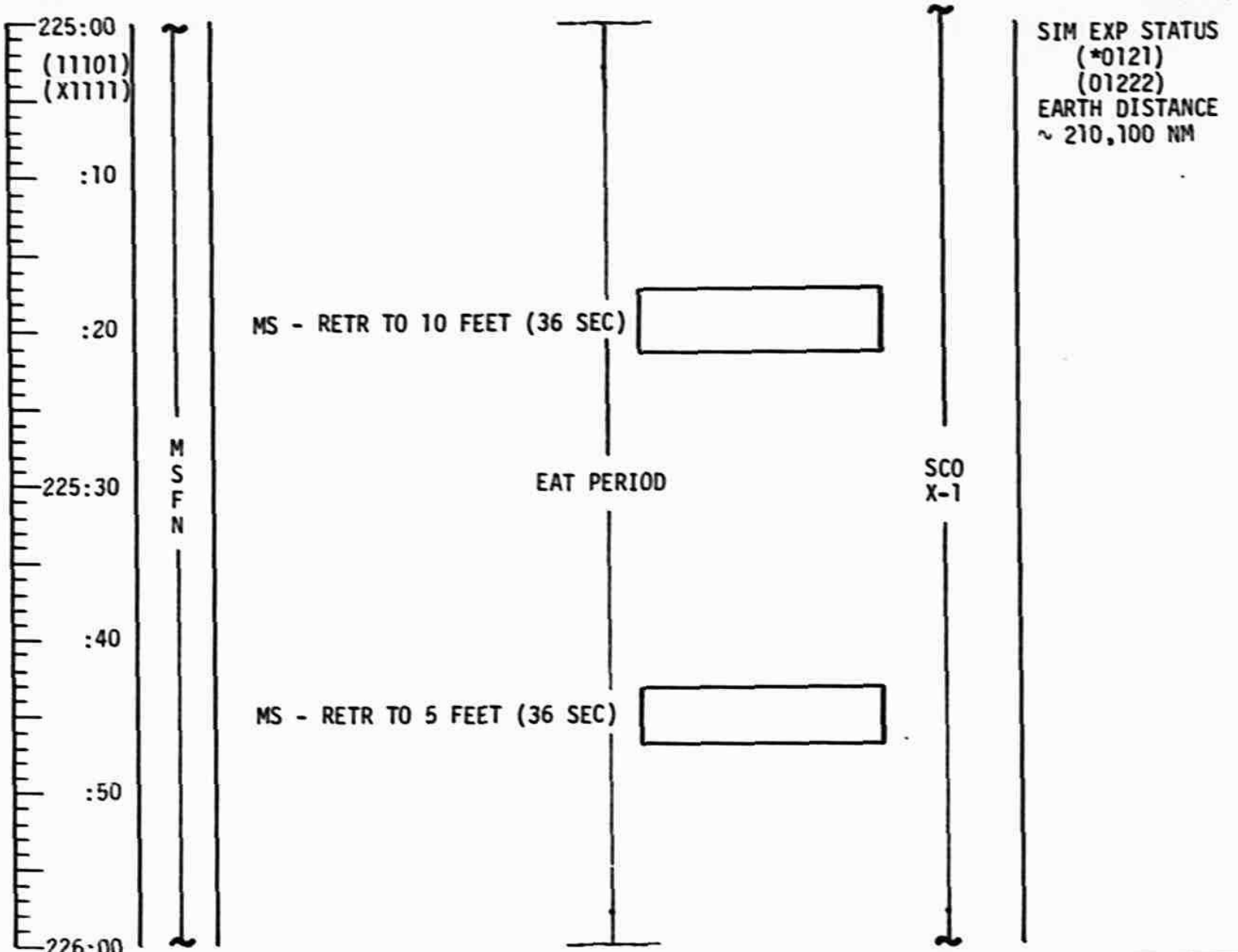
SIM EXP STATUS
(*0111)
(01222)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	223:00 - 224:00	10/TEC	3-336

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	223:00 - 224:00	10/TEC	3-337

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2154 CST

NOTES

226:00
(11101)
(X1111)

SIM EXP STATUS
(*0121)
(01222)

:10

MS - DPLY
PRE-EVA HOUSEKEEPING

SCO
X-1

:20

UPLINK TO CSM
CSM S.V. & V66

GR: SHIELD - OFF

M
S
F
N

226:30

XR - STBY
AP/XR COVER - CLOSE

:40

CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2
COMM: HGA REACQ MODE P -40, Y 90
V49 MNVR TO PTC ATTITUDE
(N20,270,000)
P20 OPT 2, X-AXIS
N78 (0,0,0)
N79 (-0.4200, +000.50)
N34 (0,0,0)

:50

QUAD D, A3, AND C4 WILL BE USED FOR PTC RATE DAMPING, B2 & D2 FOR PTC SPINUP

PTC

DAP LOAD STATUS
(11101)(X1111)

227:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	226:00 - 227:00	10/TEC	3-338

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2254 CST

227:00

:10

:20

227:30

:40

:50

228:00

MSFN

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST PAGE S/1-29
COMM - HGA

GR: SHIELD - ON (CTR)
LOGIC PWR (2) - OFF

FILM MAGS REQD FOR NEXT DAY:
DAC: CEX-FF
EL: VHBW-TT
NK: VHBW-X

REST PERIOD
(8.5 HOURS)

PTC

NOTES

SIM EXP STATUS
(*0110)
(01124)

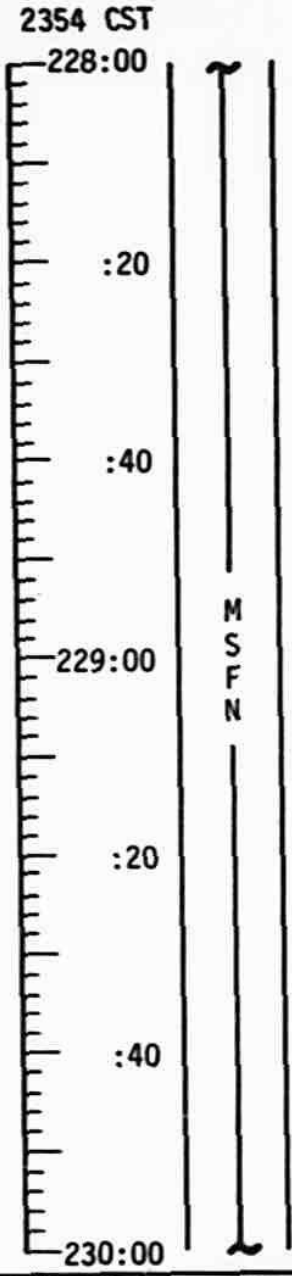
DAP LOAD STATUS
(11101)(X1111)

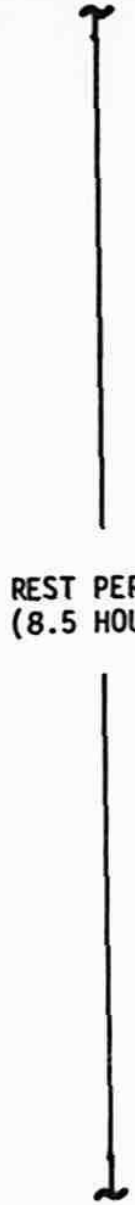
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~49 0. FINAL~~ (4/16)	~~3/6/72 4/7/72~~	227:00 - 228:00	10/TEC	3-339

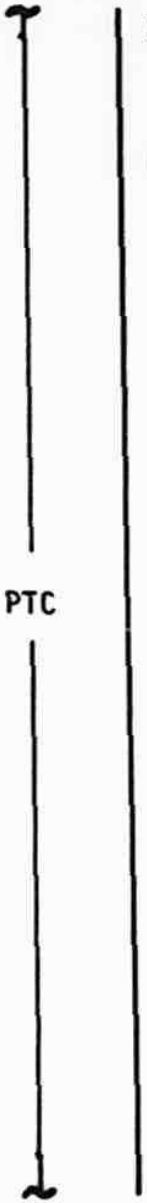
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H







NOTES

SIM EXP STATUS
(*0110)
(01224)

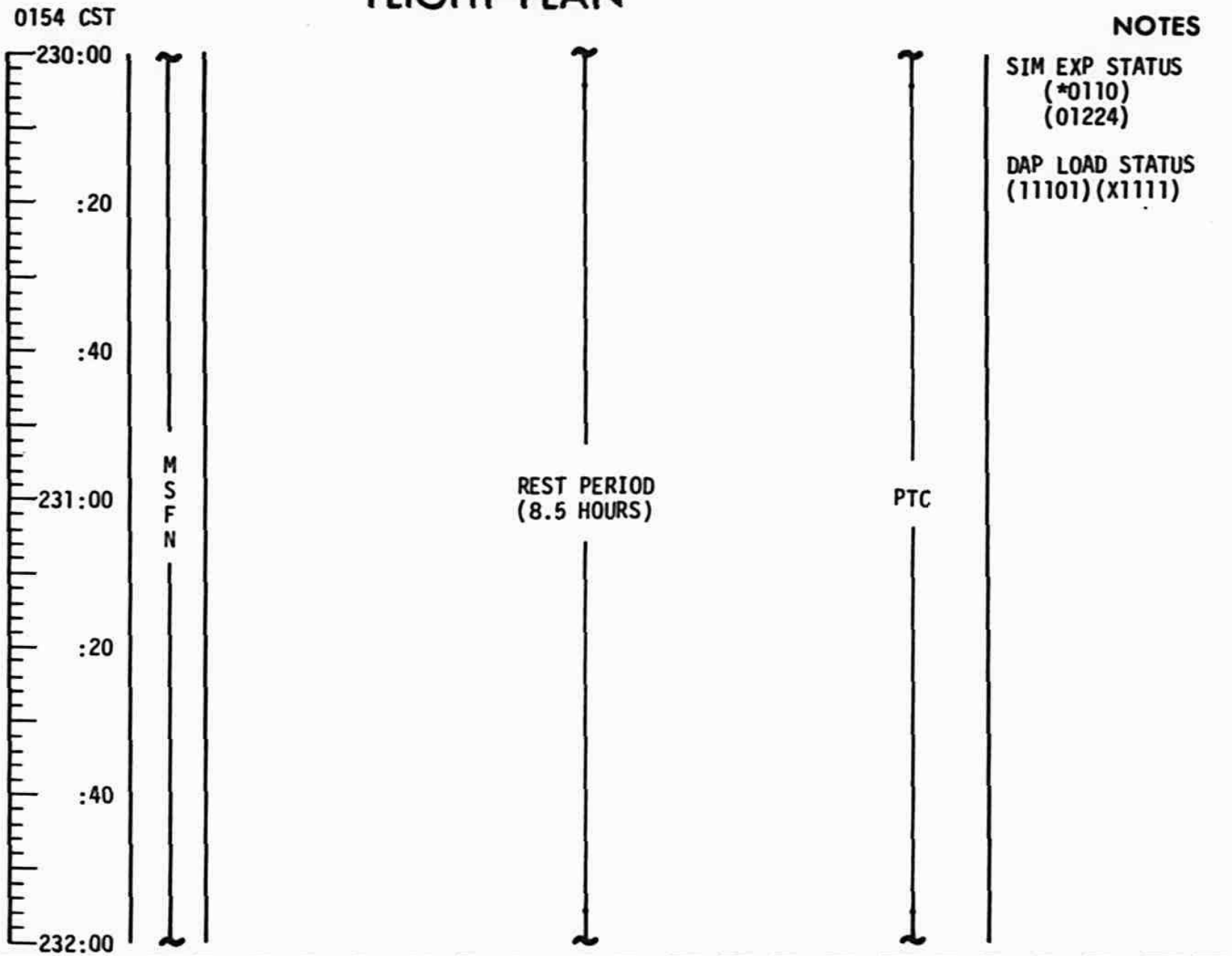
DAP LOAD STATUS
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	228:00 - 230:00	10/TEC	3-340

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

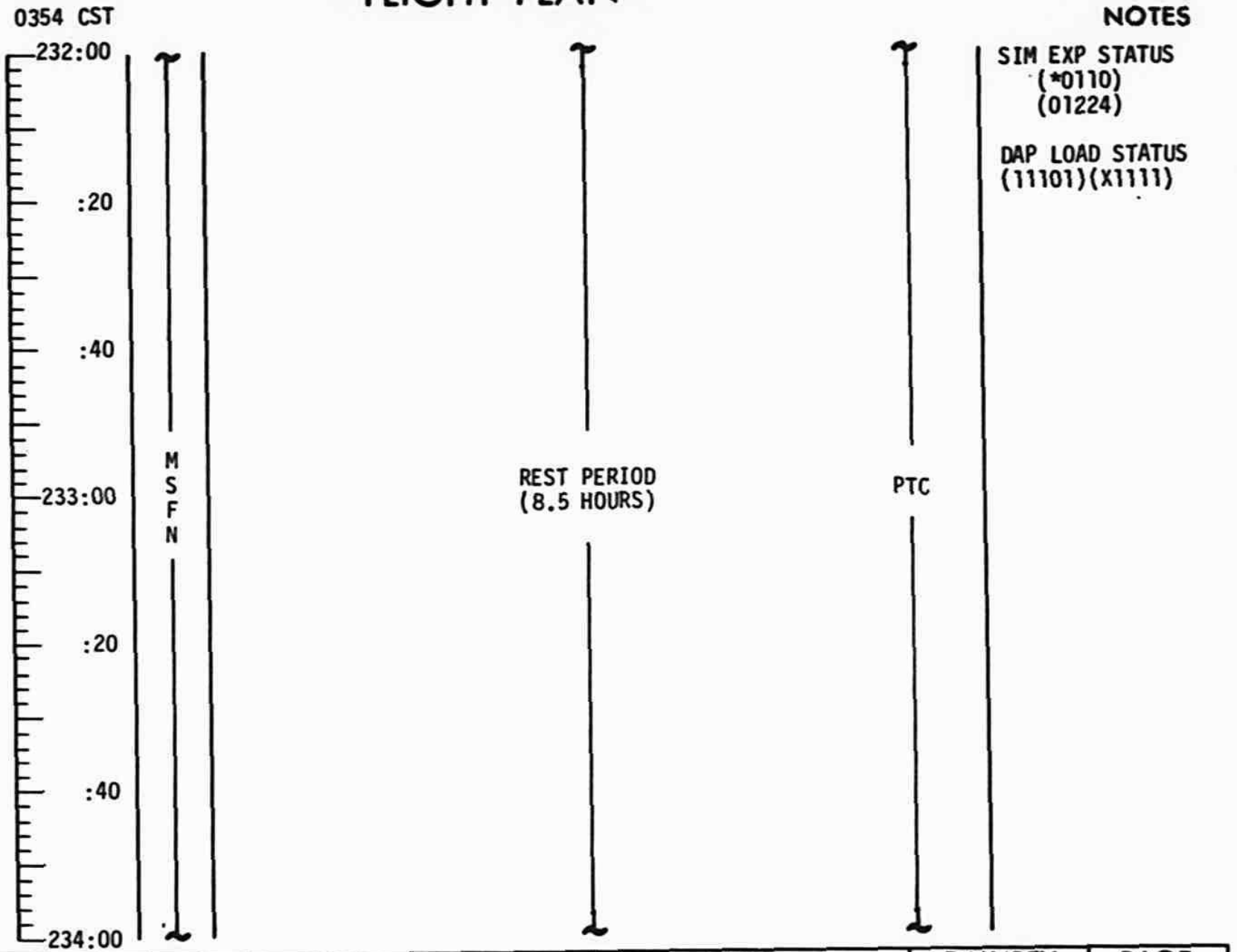


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	230:00 - 232:00	10/TEC	3-341

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

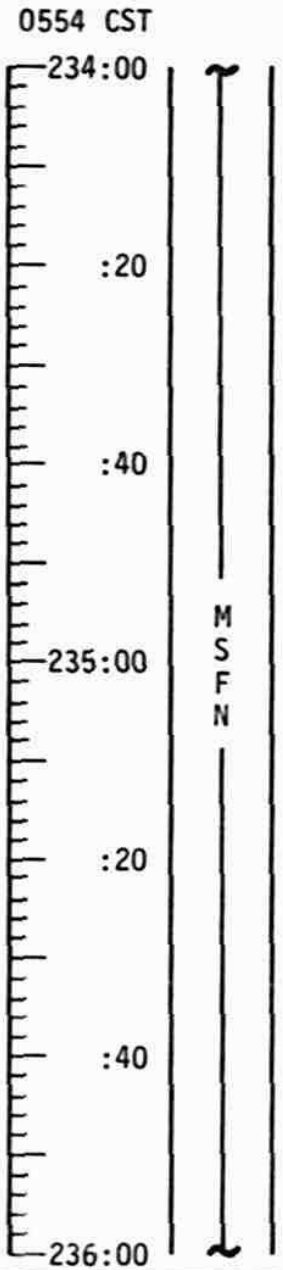


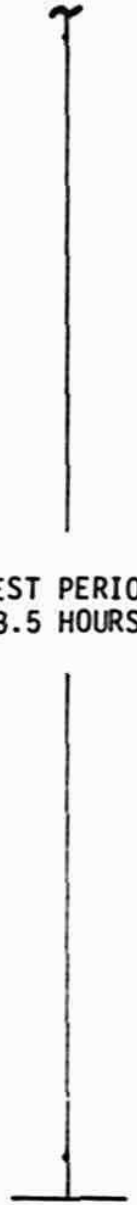
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	232:00 - 234:00	10/TEC	3-342

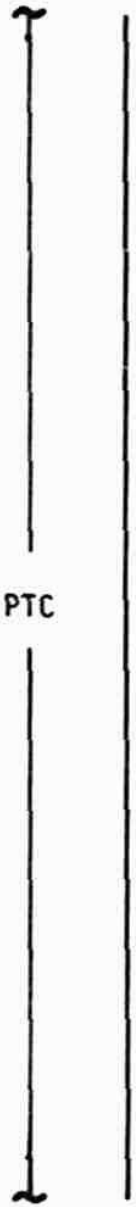
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H







NOTES

SIM EXP STATUS
(*0110)
(01224)

DAP LOAD STATUS
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	234:00 - 236:00	10/TEC	3-343

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0754 CST

UPDATE TO CSM
CONSUMABLES STATUS
FLIGHT PLAN
SIM EXP STATUS
DSE VOICE STATUS

236:00

:10

:20

236:30

:40

:50

237:00

MSFN

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE S/1-29
LOGIC PWR (2) - DPLY/RETR
GR - RETR

PTC

CSM G&C CHECKLIST

EXIT G&N PTC USING SIM BAY JET CONFIGURATION
PAGE G/8-3

V49 MNVR TO THERMAL ATTITUDE (237:00)
(145,213,340) HGA P -15, Y 50 REACQ, NARROW

EAT PERIOD

GR: SHIELD - OFF

NOTES

SIM EXP STATUS
(*0110)
(01224)

DAP LOAD STATUS
(11101)(X1111)

EARTH DISTANCE
~ 187,800 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	236:00 - 237:00	10-11/TEC	3-344

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0854 CST

UPDATE TO CSM
GR BOOM DPLY
TIME (2 FEET)

237:00
(11101)
(X1111)

:10

UPDATE TO CSM
GO/NO-GO FOR MCC-5

:20

GR: DPLY 2 FEET (21 SEC)

EAT PERIOD

GR: SHIELD - ON (CTR)

M
S
F
N

237:30

P52 (OPTION 3)
(PTC ORIENT)

REPORT: GYRO TORQUING ANGLES
GDC ALIGN

:40

(11101)
(X1111)

:50

CSM EXP/EVA CHECKLIST

CORONA WINDOW CALIBRATION, PAGE X/2-13
V49 MNVR TO CORONA WINDOW CAL ATT (238:03)
(089,359,004) HGA P -57, Y 191
MAG (TT)

CAN DO MNVR EARLIER

238:00

NOTES

SIM EXP STATUS
(*0010)
(01124)

P52 IMU REALIGN	
N71:	__ __,__ __
N05:	__ __ __.__ __
N93:	
X	__ __.__ __ __
Y	__ __.__ __ __
Z	__ __.__ __ __
GET	__ __ __:__ __:__ __

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	237:00 - 238:00	11/TEC	3-345

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0954 CST

NOTES

UPLINK TO CSM
CSM S.V. & V66
MCC-5 TGT LOAD
(IF REQUIRED)
UPDATE TO CSM
MCC-5 MNVR PAD
(IF REQUIRED)

238:00
(11101)
(X1111)

V49 MNVR TO SKYLAB CONTAMINATION PHOTO ATT (238:18)
(043,229,004) HGA P -66, Y 296
MAG (X)
SKYLAB CONTAMINATION SEQ A, PAGE X/2-28

SIM EXP STATUS
(*0210)
(01224)

:10

:20

CONFIGURE FOR URINE DUMP
VERIFY REPRESS PKG O_2 PRESSURE-865-~~905~~ 935 PSI

238:30

MSFN

MS: ION SOURCE - OFF
EXP - STBY
CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM
GR - RETR
MS - RETR
*P30 EXTERNAL ΔV
*V49 MNVR TO PAD BURN ATTITUDE

*PERFORM IF MCC-5 IS REQUIRED

:40

LiOH CANISTER CHANGE
(20 INTO A, STOW 18 IN A4)

:50

*SXT STAR CHECK

239:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE ~~A~~ B (4/16)	~~3/27/72~~ 4/7/72	238:00 - 239:00	11/TEC	3-346

FLIGHT PLANNING BRANCH

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FLIGHT PLAN

MCC-5
BURN TABLE

MANEUVER	P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
CORRIDOR CONTROL	10°/SEC COMPLETE	+10° COMPLETE	BT + 1 SEC AND $V_C = 0$	TRIM X AXIS ONLY TO 0.2 FPS
IP CONTROL	10°/SEC TERMINATE	+10° TERMINATE	BT + 1 SEC AND $V_C = 0$	TRIM X & Z AXIS TO 0.2 FPS

FLIGHT PLAN

MCC-H

1054 CST

239:00
(11101)
(X1111)

:10

:20

TEI +17 HR

239:30

:40

:50

240:00

MSFN

O_2 FUEL CELL PURGE
WASTE WATER DUMP
URINE DUMP

PRE-SPS BURN SIM PREP (CUE CARD) EXCEPT PC REMAINS OFF
ENABLE ALL JETS
*P40 SPS THRUSTING OR
*P41 RCS THRUSTING

SET UP TAPE FOR RCS SOUNDS DURING MCC - IF NO MCC-5 TRY 270:00 DURING CONTAMINATION FIRING

MCC-5

TIG: 239:21
BT: NOM ZERO
ΔVT: NOM ZERO
ULLAGE: NOM ZERO

*V66 SET CSM S.V. INTO LM S.V.
*REPORT: BURN STATUS
MC - OFF
V49 MNVR TO THERMAL ATTITUDE (239:40)
(145,213,340) HGA P -15, Y 50 REACQ, NARROW

CHARGE BATTERY B

CSM EXP/EVA CHECKLIST

CM EVA PREP PAGE X/3-1
CABIN PREP FOR EVA

NOTES

SIM EXP STATUS
(*0000)
(01214)

*PERFORM IF MCC-5 IS REQUIRED

BURN STATUS REPORT

X	X		•			ΔTIG
X	X		•			BT
					•	V_{gx}
		TRIM				
X	X	X				R
X	X	X				P
X	X	X				Y
					•	V_{gx}
					•	V_{gy}
					•	V_{gz}
					•	ΔV_c
X	X	X				FUEL
X	X	X				OX
X	X	X				UNBAL

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	239:00 - 240:00	11/TEC	3-349

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1154 CST

240:00
(11101)
(X1111)
:10
:20
240:30
:40
:50
241:00

MSFN

TV AND DAC PREP
MAG (FF)

EVA EQUIPMENT PREP

PGA DONNING
CMP & LMP DON BIOMED HARNESSES

NOTES

SIM EXP STATUS
(*0000)
(00000)
EARTH DISTANCE
~ 181,400

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	240:00 - 241:00	11/TEC	3-350

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1254 CST

NOTES

SIM EXP STATUS
(*0000)
(00000)

241:00
(11101)
(X1111)

V49 MNVR TO EVA ATT (241:15)
(039,043,038) HGA P -1, Y 221

PRESS GAGE STATIC CHECK

:10

COMM CHECK
S-BAND AUX TV - TV
V48 (10101)(10011)
LOAD MEED ATT (072,051,037) IN N22
SYSTEMS PREP FOR DEPRESS
INHIBIT ALL JETS EXCEPT:
C1, C2, C3, C4, D3, & D4 AT CONCLUSION OF MNVR
O_2 HEATERS 1, 2 & 3 (3) - AUTO

(10101)
(10011)

MSFN CMDS:
DATA SYS-OFF

:20

MSFN

241:30

CMP EVA EQUIP DONNING

OPS DONNING

:40

CDR/LMP INTEGRITY CHECK

CMP HELMET/GLOVE DONNING
EVA WARNING TONE CHECK
CMP INTEGRITY CHECK

:50

UPDATE TO CSM
GO/NO-GO FOR
CABIN DEPRESS

CABIN DEPRESS
GO/NO-GO FOR CABIN DEPRESS

HATCH OPENING

TV

242:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	241:00 - 242:00	11/TEC	3-351

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1354 CST

242:00
(10101)
(10011)
:10
:20
242:30
:40
:50
243:00

M S T
F V
N

EVA OPERATIONS

CMP EGRESS

INSTALL TV/DAC, ADJUST

RETRIEVE PAN CAMERA CASSETTE

REST
RETRIEVE MAPPING CAMERA CASSETTE

REST

REMOVE TV/DAC & INGRESS
V49 MNVR TO MEED ATT (242:44)
(072,051,037) HGA P -24, Y 220
DEPLOY MEED ON POLE
ACTIVATE EXP, GIVE MARK

DEACTIVATE EXP, GIVE MARK

REMOVE MEED AND POLE

NOTES

SIM EXP STATUS
(*0000)
(00000)

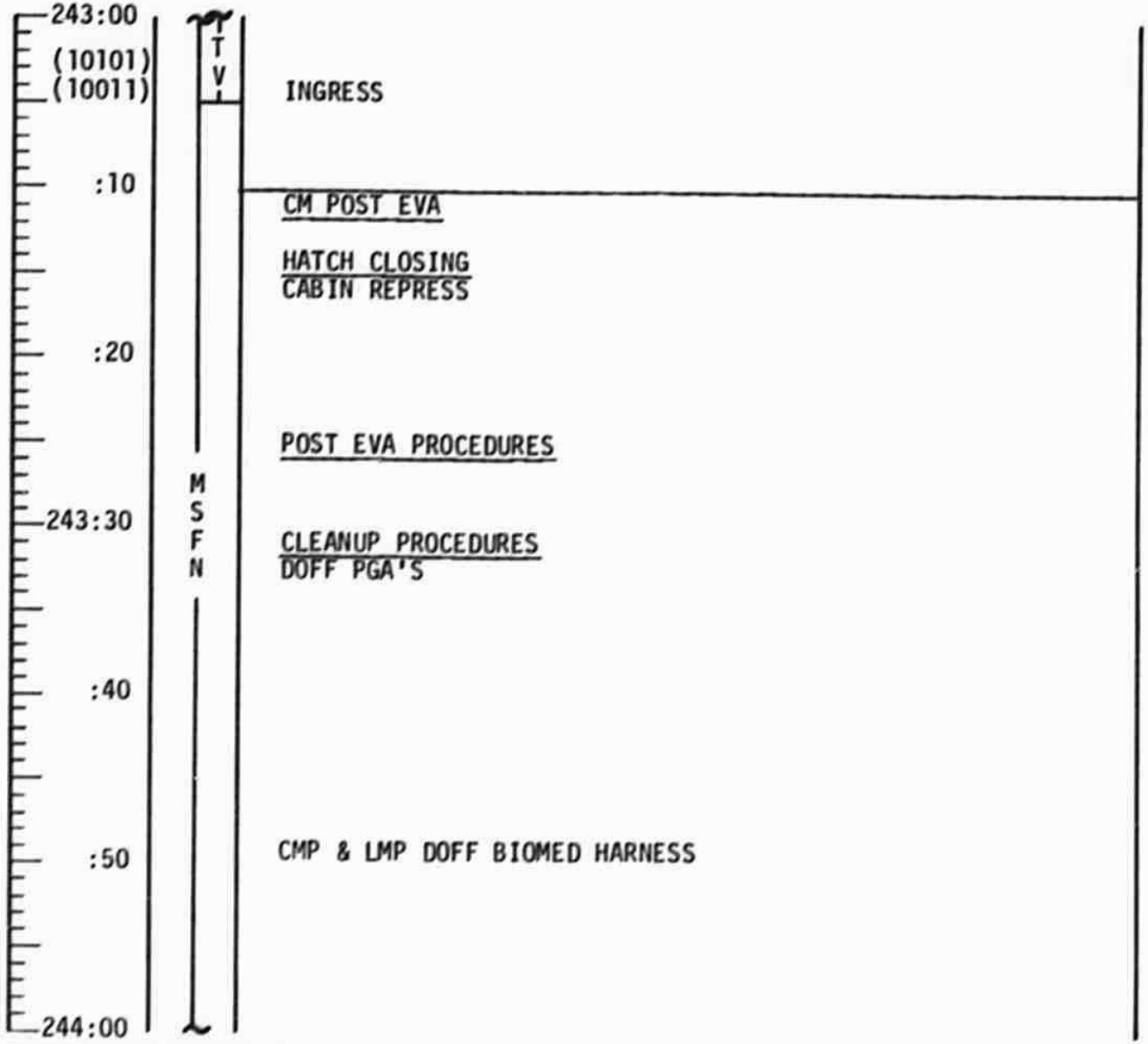
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	242:00 - 243:00	11/TEC	3-352

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1454 CST



NOTES

SIM EXP STATUS
(*0000)
(00000)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	243:00 - 244:00	11/TEC	3-353

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1554 CST

244:00
(10101)
(10011)
(11101)
(X1111)
:10
:20
244:30
:40
:50
245:00

MSFN

ENABLE ALL JETS
V48 (11101)(X1111)
V49 MNVR TO THERMAL ATT (244:22)
(175,283,340) OMNI D
STOW EQUIPMENT

MSFN CMDS:
DATA SYS-ON

NOTES

SIM EXP STATUS
(*0000)
(00000)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	244:00 - 245:00	11/TEC	3-354

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1654 CST

245:00
(11101)
(X1111)
:10
:20
245:30
:40
:50
246:00

MSFN

O_2 HEATERS 3 - OFF
SIM BASIC CONFIG (CUE CARD)
EXCEPT: MC - OFF
PC - OFF
SELF TEST - OFF
SM/AC PWR - OFF
XR - ON
GR: SHIELD - ON (VERIFY)
MS - DPLY
MS: EXP - ON
ION SOURCE - STBY

V49 MNVR TO X-RAY POINTING/THERMAL (CYG X-1) ATT (245:35)
(278,295,310) OMNI ~~X~~C

AP/XR COVER - OPEN

CSM EXP/EVA CHECKLIST

GAS/WATER SEPARATOR, PAGE X/2-42

EAT PERIOD

CYG X-1

MSFN CMD:
DSE RECORD HBR

NOTES

SIM EXP STATUS
(*0000)
(00000)

EARTH DISTANCE
~ 168,274 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE ~~K~~B(4/16)	~~3/27/72 4/7/72~~	245:00 - 246:00	11/TEC	3-355

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1754 CST

246:00
(11101)
(X1111)

:10

UPDATE TO CSM
GR BOOM DPLY
TIME (4 FEET)

:20

246:30

MSFN CMDS:
DSE STOP/REWIND

:40

MSFN CMDS:
DSE DUMP

:50

247:00

MSFN

MS: ION SOURCE - ON

GR - DPLY TO 4 FEET (33 SEC)

EAT PERIOD

V49 MNVR TO X-RAY POINTING (CYG X-1) ATT (246:45)
(175,133,032) HGA P -22, Y 98

CYG
X-1

CYG
X-1

NOTES

SIM EXP STATUS
(*0011)
(00232)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	246:00 - 247:00	11/TEC	3-356

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1854 CST

247:00
(11101)
(X1111)
:10
:20
247:30
:40
:50
248:00

MSFN

CYG
X-1

NOTES

SIM EXP STATUS
(*0211)
(00222)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	247:00 - 248:00	11/TEC	3-357

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1954 CST

248:00
(11101)
(X1111)

:10

:20

248:30

:40

:50

249:00

MSFN

CYG
X-1

V49 MNVR TO X-RAY POINTING SCO X-1 ATT (249:00)
(332,280,000) HGA P 0, Y 258

NOTES

SIM EXP STATUS
(*0211)
(00222)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	248:00 - 249:00	11/TEC	3-358

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2054 CST

UPDATE TO CSM
GR BOOM DPLY
TIME (8 FEET)

249:00
(11101)
(X1111)
:10
:20
249:30
:40
:50
250:00

MSFN

GR: SHIELD - OFF

GR - RETR then DPLY TO 8 FEET (57 SEC)

GR: SHIELD - ON (CTR)

NOTES

SIM EXP STATUS
(*0211)
(00222)

SCO
X-1

EARTH DISTANCE
~ 156,631

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	249:00 - 250:00	11/TEC	3-359

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2154 CST

250:00
(11101)
(X1111)
:10
:20
250:30
:40
:50
251:00

MSFN

P52 (OPTION 3)
(PTC ORIENT)

REPORT: GYRO TORQUING ANGLES
GDC ALIGN

CSM SYSTEMS CHECKLIST

CONTAMINATION CONTROL PAGE S/1-19

EAT PERIOD

SCO
X-1

NOTES

SIM EXP STATUS
(*0211)
(00222)

P52 IMU REALIGN	
N71:	__ __.__ __
N05:	__ __ __.__ __
N93:	
X	__ __.__ __ __
Y	__ __.__ __ __
Z	__ __.__ __ __
GET	__ __ __:__ __:__ __

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	250:00 - 251:00	11/TEC	3-360

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2254 CST

251:00
(11101)
(X1111)
:10
:20
251:30
:40
:50
252:00

MSFN

EAT PERIOD

SCO
X-1

PTC

XR - STBY
AP/XR COVER - CLOSE
CSM G&C CHECKLIST
PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2)
COMM: HGA REACQ MODE P -40, Y 90
V49 MNVR TO PTC ATTITUDE
(N20,270,000)
P20 OPT 2, X-AXIS
N78 (0,0,0)
N79 (-0.4200, +000.50)
N34 (0,0,0)
GR RETR then DPLY TO 6 FEET (45 SEC)
GR: GAINSTEP - ON (UP) 4 STEPS (STEP 7)/SHIELD-ON (CTR)

QUAD D, A3, AND C4 WILL BE USED FOR PTC RATE DAMPING, B2 & D2 FOR PTC SPINUP

UPDATE TO CSM
GR BOOM DPLY
TIME (6 FEET)

CDR DOFF BIOMED HARNESS
LMP DON BIOMED HARNESS
LiOH CANISTER CHANGE
(21 INTO B, STOW 19 INTO A4)

NOTES

SIM EXP STATUS
(*0211)
(00222)

DAP LOAD STATUS
(11101)(X1111)

EARTH DISTANCE
~ 151,800 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	251:00 - 252:00	11/TEC	3-361

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2354 CST

252:00

:20

:40

253:00

:20

:40

254:00

UPLINK TO CSM
CSM S.V. & V66

MSFN

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST PAGE S/1-29
COMM - HGA
LOGIC PWR (2) - OFF
FILM MAGS REQD FOR NEXT DAY:
DAC: VH8W - HH & MM
EL: VH8W - TT
NK: VH8W - X

REST PERIOD
(8 HOURS)

PTC

NOTES

SIM EXP STATUS
(*0210)
(00224)

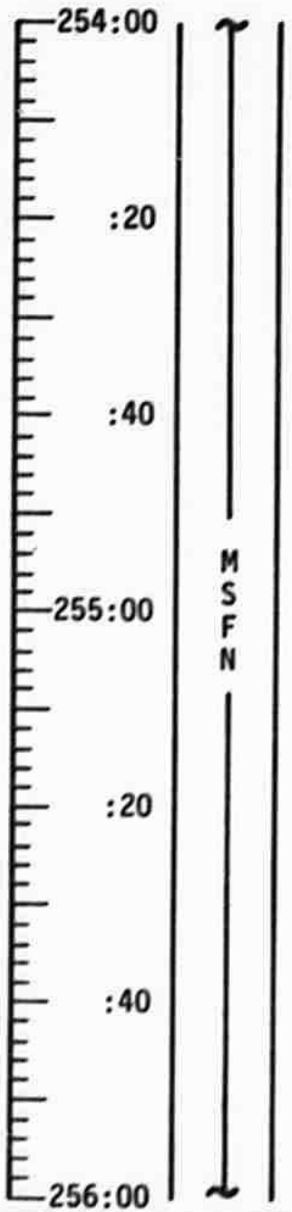
DAP LOAD STATUS
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) chg 8.	~~3/6/72~~ 4/7/72	252:00 - 254:00	11/TEC	3-362

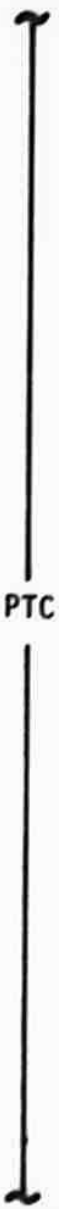
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H







NOTES

SIM EXP STATUS
(*0210)
(00224)

DAP LOAD STATUS
(11101)(X1111)

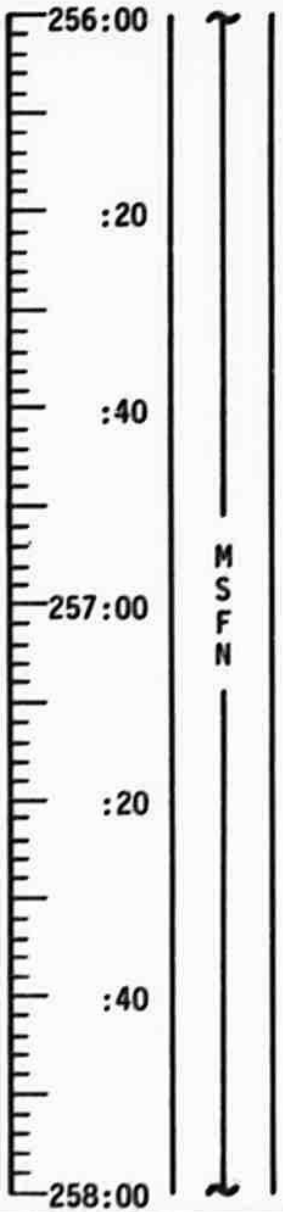
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	254:00 - 256:00	11/TEC	3-363

FLIGHT PLANNING BRANCH

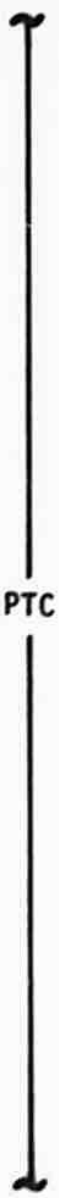
FLIGHT PLAN

MCC-H

0354 CST







NOTES

SIM EXP STATUS
(*0210)
(00224)

DAP LOAD STATUS
(11101)(X1111)

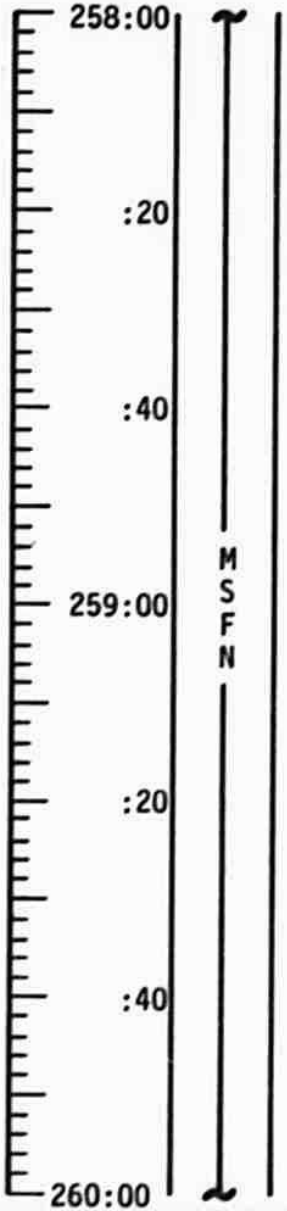
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	256:00 - 258:00	11/TEC	3-364

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0554 CST



MSFN

REST PERIOD
(8 HOURS)

PTC

NOTES

SIM EXP STATUS
(*0210)
(00224)

DAP LOAD STATUS
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	258:00 - 260:00	11/TEC	3-365

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0754 CST

260:00

:10

:20

260:30

:40

:50

261:00

MSFN

REST PERIOD
(8 HOURS)

PTC

UPDATE TO CSM
CONSUMABLES STATUS
FLIGHT PLAN
SIM EXP STATUS
DSE VOICE STATUS

CSM SYSTEMS CHECKLIST

POST - SLEEP CHECKLIST PAGE S/1-29

CMP DON BIOMED - HARNESS
LMP DOFF BIOMED - HARNESS
GR: SHIELD - OFF

CSM G&C CHECKLIST

EXIT G&N PTC USING SIM BAY JET CONFIGURATION PAGE G/8-3
PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2
COMM: HGA REACQ MODE P -40, Y 90
V49 MNVR TO SUPER GAL AUX PTC ATT
(N20,189,031)
P20 OPT 2, X-AXIS
N78 (0,0,0)
N79 (-0.4200, +000.50)
N34 (0,0,0)
LOGIC PWR (2) - DPLY/RETR
GR: SHIELD - ON (CTR)

QUAD D, A3, AND C4 WILL BE USED FOR PTC RATE DAMPING, B2 & D2 FOR PTC SPINUP

SUPER GAL AUX PTC

NOTES

SIM EXP STATUS
(*0210)
(00224)

DAP LOAD STATUS
(11101)(X1111)

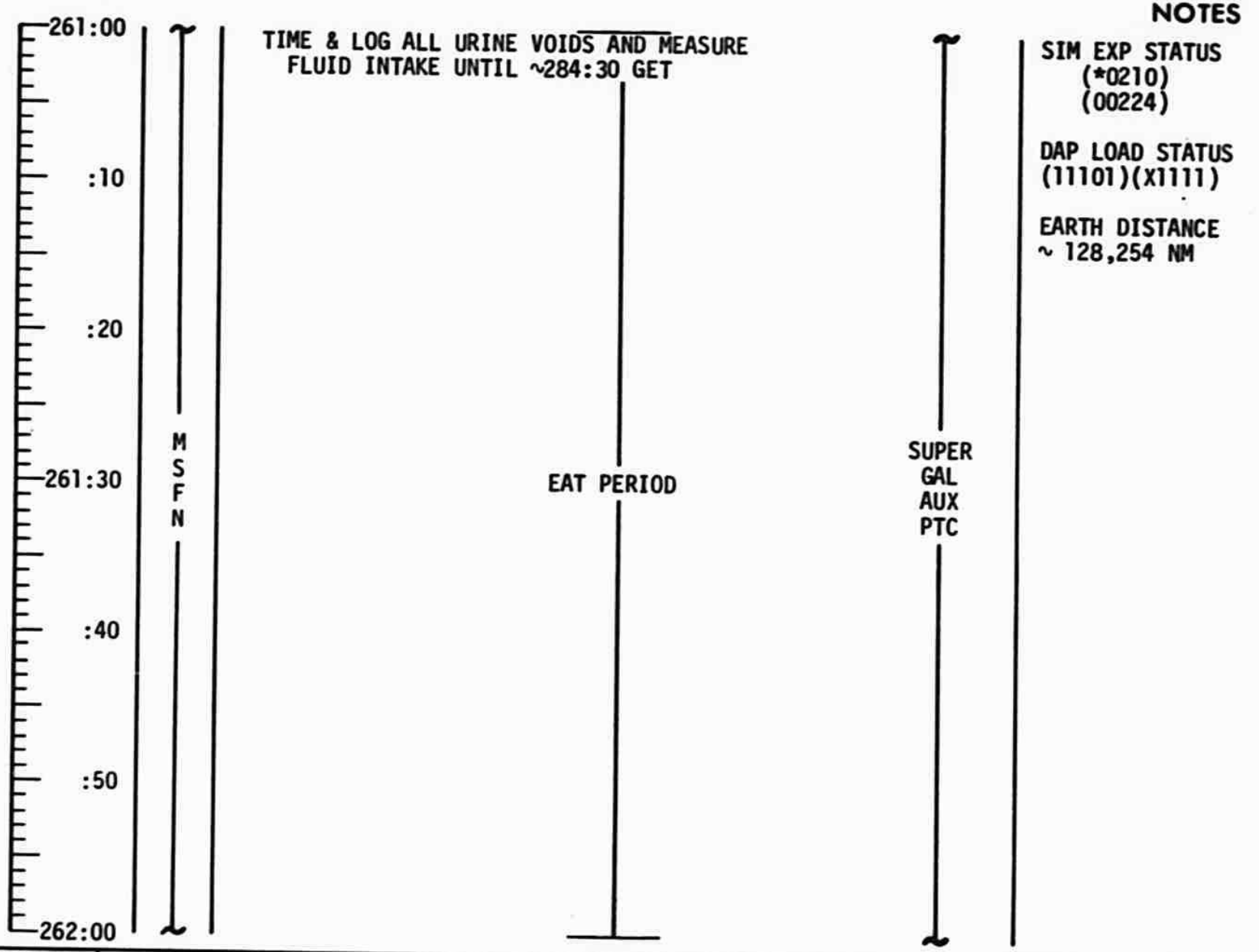
ONLY 5 MIN OF RATE DAMPING REQD

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	260:00 - 261:00	11-12/TEC	3-366

FLIGHT PLANNING BRANCH

MCC-H

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	261:00 - 262:00	12/TEC	3-367

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0954 CST

262:00

:10

:20

262:30

:40

:50

263:00

MSFN CMDS: DSE RECORD

M S F N

EVALUATE TRANSMISSION OF SXT, SCT, & WINDOWS WITH SPOTMETER ON SUN

P52 (OPTION 3)
(PTC ORIENT)

REPORT: GYRO TORQUING ANGLES

GDC ALIGN

CSM EXP/EVA CHECKLIST

ALFMED, PAGE X/2-38
LIGHT FLASH PHENOMENON OBSERVATION
DON EYESHIELDS

LIGHT FLASH OBS

SUPER GAL AUX PTC

NOTES

SIM EXP STATUS
(*0210)
(00224)

DAP LOAD STATUS
(11101)(X1111)

P52 IMU REALIGN
N71: __ __,__ __
N05: __ __ __.__ __
N93:
X __ __.__ __ __
Y __ __.__ __ __
Z __ __.__ __ __
GET __ __ __:__ __:__ __

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	3/27/72 ~~3/6/72~~ (P41)	262:00 - 263:00	12/TEC	3-368

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1054 CST

263:00

:10

:20

263:30

:40

:50

264:00

MSFN

LIGHT FLASH OBS

SUPER GAL AUX PTC

NOTES

SIM EXP STATUS
(*0210)
(00224)

DAP LOAD STATUS
(11101)(X1111)

MSFN CMDS:
DSE STOP/REWIND

CSM G&C CHECKLIST

EXIT G&N PTC USING SIM BAY JET CONFIGURATION PAGE G/8-3

EARTH DISTANCE
~ 119,681 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	~~3/27/72~~ ~~3/6/72~~ (P/I)	263:00 - 264:00	12/TEC	3-369

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1154 CST

264:00

:10

:20

264:30

:40

:50

265:00

MSFN

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2
COMM HGA REACQ MODE P -40, Y 90
V49 MNVR TO ECLIPTIC AUX PTC ATTITUDE
(N20,128,042)
P20 OPT 2, X-AXIS
N78 (0,0,0)
N79 (-0.4200, +000.50)
N34 (0,0,0)
CONFIGURE FOR URINE DUMP

QUAD D, A3, AND C4 WILL BE USED FOR PTC RATE DAMPING, B2 & D2 FOR PTC SPINUP

LiOH CANISTER CHANGE
(22 INTO A, STOW 20 IN A4)

H_2 PURGE LINE HEATER - ON

PURGE O_2 FUEL CELL 1

MS - RETR TO 12 FEET (1 MIN 35 SEC)
PURGE O_2 FUEL CELL 2

MS - RETR TO 6 FEET (43 SEC)
PURGE O_2 FUEL CELL 3

MS - DPLY
H_2 FUEL CELL PURGE

URINE DUMP
WASTE WATER DUMP TO PERCENTAGE SPECIFIED BY MSFN

H_2 PURGE LINE HEATER - OFF

ECLIPTIC AUX PTC

UPDATE TO CSM
WASTE WATER
DUMP LEVEL
MS RETR TIME
(12 & 6 FEET)

NOTES

SIM EXP STATUS
(*0210)
(00224)

DAP LOAD STATUS
(11101)(X1111)

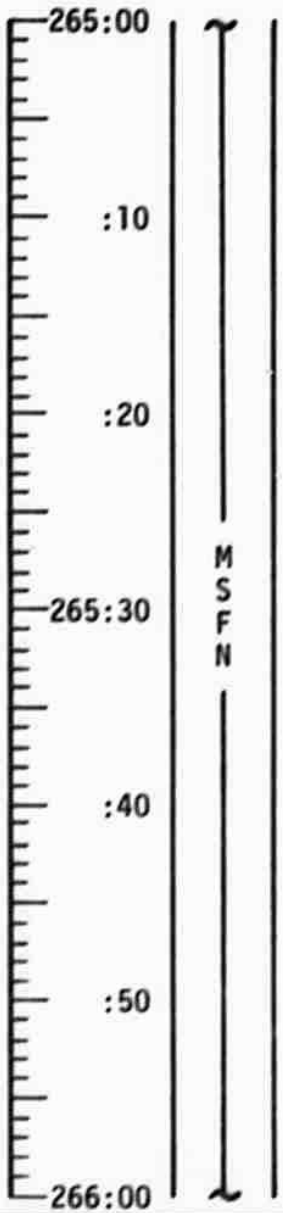
ONLY 5 MIN OF RATE DAMPING REQUIRED

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	264:00 - 265:00	12/TEC	3-370

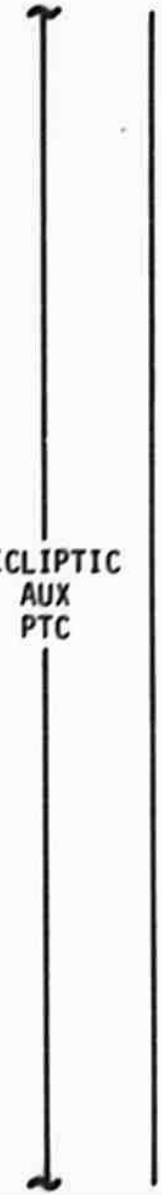
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H







NOTES

SIM EXP STATUS
(*0210)
(00224)

DAP LOAD STATUS
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	265:00 - 266:00	12/TEC	3-371

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1354 CST

266:00

:10

:20

266:30

:40

:50

(11101)
(X1111)
267:00

MSFN

GR SHIELD - OFF

CREW EXERCISE PERIOD

GR - GAINSTEP - ON (UP) 4 STEPS (STEP 3)/SHIELD - ON (CTR)

XR - ON

CSM G&C CHECKLIST

EXIT G&N PTC USING SIM BAY JET CONFIGURATION PAGE G/8-3

ECLIPTIC
AUX
PTC

NOTES

SIM EXP STATUS
(*0210)
(00224)

DAP LOAD STATUS
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	266:00 - 267:00	12/TEC	3-372

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1454 CST

267:00
(11101)
(X1111)
:10
:20
267:30
:40
:50
268:00

MSFN CMDS:
DSE DUMP

MSFN

V49 MNVR TO X-RAY POINTING ATT (SCO X-1)(267:15)
(332,280,000) HGA P 1, Y 261

AP/XR COVER OPEN

EAT PERIOD

SCO
X-1

NOTES

SIM EXP STATUS
(*0210)
(00222)

IF MCC-6 IS REQUIRED:
UPLINK TGT LOAD
UPDATE MNVR PAD

EARTH DISTANCE
~ 107,534 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	~~3/27/72~~ ~~3/6/72~~ c (PKI)	267:00 - 268:00	12/TEC	3-373

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1554 CST

268:00
(11101)
(X1111)

UPDATE TO CSM
ENTRY PAD

UPLINK TO CSM
CSM S.V. & V66

:10

:20

EI -22 HR

268:30

:40

:50

269:00

MSFN

GR: GAINSTEP - ON (UP) 4 STEPS (STEP 7)/SHIELD-ON (CTR)
P52 (OPTION 3)
(PTC ORIENT)

MS - RETR

REPORT: GYRO TORQUING ANGLES
GDC ALIGN

CHARGE BATTERY A

MS - DPLY

SCO
X-1

NOTES

SIM EXP STATUS
(*0211)
(00222)

IF MCC-6 REQUIRED,
PERFORM AT 268:23

P52 IMU REALIGN
N71: __ __,__ __
N05: __ __ __.__ __
N93:
X __ __.__ __ __
Y __ __.__ __ __
Z __ __.__ __ __
GET __ __ __:__ __:__ __

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	268:00 - 269:00	12/TEC	3-374

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1654 CST

NOTES

SIM EXP STATUS
(*0211)
(00222)

269:00
(11101)
(X1111)

:10

ENTRY CHECKLIST

EMS ENTRY CHECK PAGE E/1-3

SCO
X-1

UPDATE TO CSM
MS BOOM RETR
TIME (15 FEET)

:20

GR: SHIELD - OFF

AP/XR COVER - CLOSE
XR - STBY
V49 MNVR TO THERMAL ATT (269:40)
(175,283,340) OMNI D

MSFN

269:30

GR: SHIELD - ON (CTR)

:40

MS - RETR TO 15 FEET (1 MIN 14 SEC)

:50

MSFN CMDS:
DSE RECORD HBR

ENABLE ALL JETS
P47 ← MAN ATT (3) - ACCEL CMD

270:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	269:00 - 270:00	12/TEC	3-375

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1754 CST

NOTES

270:00
(11101)
(X1111)

TRANSLATE -Y FOR ≤1 SEC (FIRES RCS JETS C1 & A2)
P00
WAIT 5 MINS
YAW LEFT FOR ≤1 SEC (FIRES RCS JETS B4 & D4)
INHIBIT ALL JETS EXCEPT A1&C2 OR D1&B2,A3,C4,B3,D4

SIM EXP STATUS
(*0220)
(00224)

:10

TIME CALIBRATION ON TAPE RECORDER

CMC MODE - FREE
MAN ATT(2) - RATE CMD
CMC MODE - AUTO

:20

MSFN

270:30

MS: ION SOURCE - STBY

MS: ION SOURCE - ON
MS - DPLY

:40

CSM EXP/EVA CHECKLIST

SKYLAB CONTAMINATION SEQ B, PAGE X/2-29
MAG (X)
V49 MNVR TO SKYLAB CONTAMINATION ATT (271:00)
(042,229,004) HGA P -72, Y 304

:50

MSFN CMDS:
DSE DUMP

271:00

MC/LA COVER - OPEN

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	270:00 - 271:00	12/TEC	3-376

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1854 CST

271:00
(11101)
(X1111)

SKYLAB CONTAMINATION SEQ B

:10

V49 MNVR SKYLAB CONTAMINATION ATT (271:31)
(161,076,039) HGA P -50, Y 139

:20

MSFN

271:30

SKYLAB CONTAMINATION SEQ B

:40

SKYLAB CONTAMINATION (DUMP SEQ), PAGE X/2-31
V49 MNVR TO SKYLAB CONTAMINATION (DUMP SEQ)(272:02)
(141,127,001) HGA P -51, Y 43
MAG (TT)
MAG (HH)
MAG (MM)

:50

272:00

NOTES

SIM EXP STATUS
(*2210)
(00224)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~(4/16) CHANGE A	3/27/72 ~~3/6/72~~ (PI)	271:00 - 272:00	12/TEC	3-377

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1954 CST

272:00
(11101)
(X1111)

:10

:20

272:30

:40

:50

273:00

MSFN

MC/LA COVER - CLOSE

SKYLAB CONTAMINATION (DUMP SEQ)

V49 MNVR TO SKYLAB DUMP OBSERVAITON ATT (272:17)
(086,080,034) HGA P -43, Y 239

SKYLAB CONTAMINATION (DUMP SEQ)

NOTES

SIM EXP STATUS
(*2210)
(00224)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	272:00 - 273:00	12/TEC	3-378

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2054 CST

NOTES

273:00
(11101)
(X1111)

XR - ON
START ON ENTRY STOWAGE

SIM EXP STATUS
(*0210)
(00224)

:10

GR: SHIELD - OFF
V49 MNVR TO X-RAY POINTING/THERMAL ATTITUDE (CYG X-1)(273:30)
(278,295,310) OMNI ~~B~~ C

:20

MSFN CMD:
DSE RECORD HBR

273:30

AP/XR COVER - OPEN
GR: SHIELD - ON (CTR)

MSFN

:40

CDR DON BIOMED HARNESS
CMP DOFF BIOMED HARNESS

CYG X-1

CM RCS INJECTOR TEMP

5C	_____	5D	_____
6A	_____	6B	_____
6C	_____	6D	_____

:50

REPORT: CM RCS INJECTOR VALVE TEMPS
(SYS TEST METER 5C, 5D, 6A, 6B, 6C, 6D)

LiOH CANISTER CHANGE
(23 INTO B, STOW 21 IN A5)

274:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE ~~A~~ B (4/16)	~~3/27/72~~ 4/7/72	273:00 - 274:00	12/TEC	3-379

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2154 CST

274:00
(11101)
(X1111)
:10
:20
274:30
:40
:50
275:00

MSFN

V49 MNVR TO X-RAY POINTING (CYG X-1) ATT (274:30)
(178,127,039) HGA P -22, Y 98

CYG X-1

EAT PERIOD

CYG X-1

NOTES

SIM EXP STATUS
(*0211)
(00222)
EARTH DISTANCE
~ 87,373 NM

MSFN CMD:
DSE DUMP

UPLINK TO CSM:
CSM S.V. & V66

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	274:00 - 275:00	12/TEC	3-380

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2254 CST

NOTES

275:00
(11101)
(X1111)

:10

:20

:30

:40

:50

276:00

MSFN

EAT PERIOD

CYG X-1

SIM EXP STATUS
(*0211)
(00222)

CSM SYSTEMS CHECKLIST

PRE-SLEEP CHECKLIST PAGE S/1-29
COMM - HGA
LOGIC PWR (2) - OFF
FILM MAGS REQD FOR NEXT DAY:
DAC: CEX-GG
EL: UV- 00, CEX-RR

CSM G&C CHECKLIST

PASSIVE THERMAL CONTROL (G&N) PAGE G/8-2
COMM: HGA REACQ MODE P -40, Y 90
V49 MNVR TO SUPER GAL PTC ATTITUDE
(N20,043,335)
P20 OPT. 2, X-AXIS
N78 (0,0,0)
N79 (-0.4200, +000.50)
N34 (0,0,0)

QUAD D,A3, AND C4 WILL BE USED FOR PTC RATE DAMPING, B2&D2 FOR PTC SPINUP

SUPER GAL PTC

DAP LOAD STATUS
(11101)(X1111)

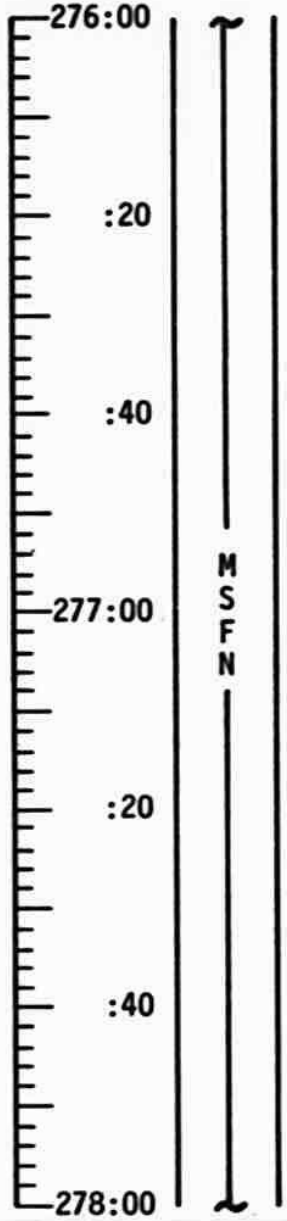
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~Cfg B FINAL~~ (4/16)	~~3/6/72~~ 4/7/72	275:00 - 276:00	12/TEC	3-381

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

2354 CST



MSFN

REST PERIOD
(8 HOURS)

SUPER
GAL
PTC

NOTES

SIM EXP STATUS
(*0211)
(00222)

DAP LOAD STATUS
(11101)(X1111)

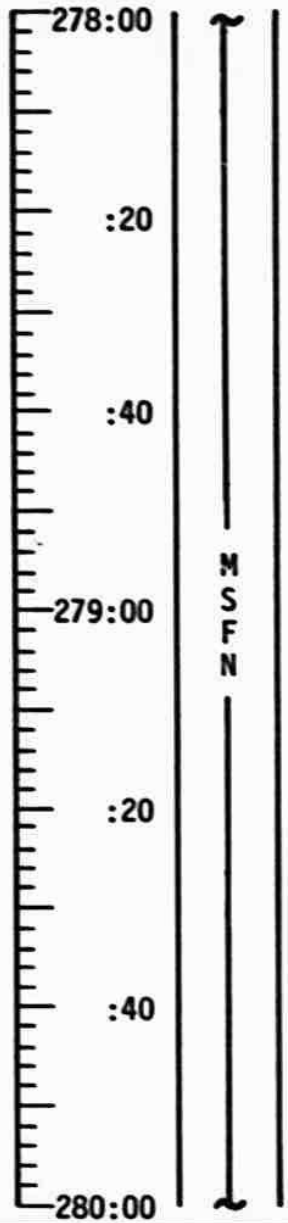
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	276:00 - 278:00	12/TEC	3-382

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0154 CST







NOTES

SIM EXP STATUS
(*0211)
(00222)

DAP LOAD STATUS
(11101)(X1111)

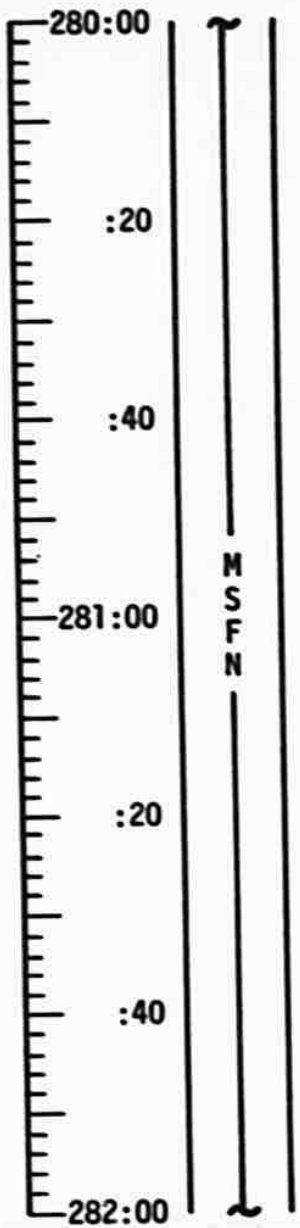
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	278:00 - 280:00	12/TEC	3-383

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0354 CST







NOTES

SIM EXP STATUS
(*0211)
(00222)

DAP LOAD STATUS
(11101)(X1111)

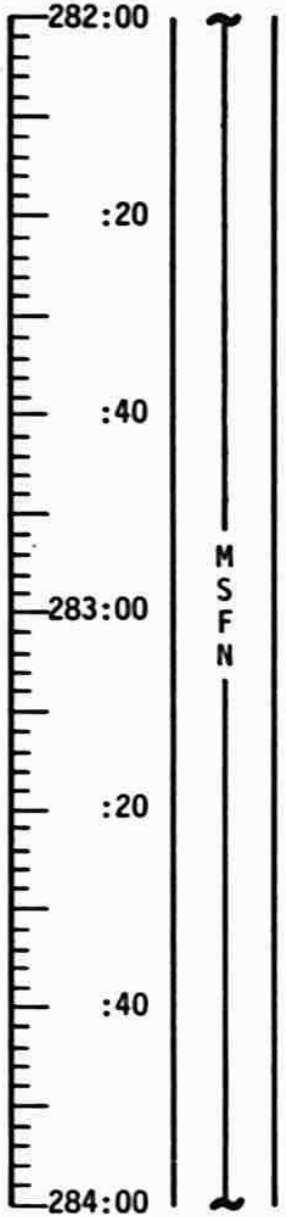
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	280:00 - 282:00	12/TEC	3-384

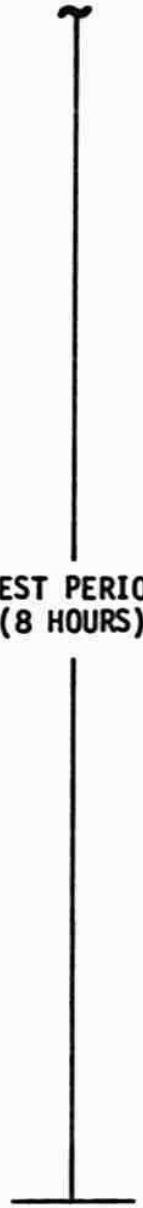
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0554 CST







NOTES

SIM EXP STATUS
(*0211)
(00222)

DAP LOAD STATUS
(11101)(X1111)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	282:00 - 284:00	12-13/TEC	3-385

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0754 CST

UPDATE TO CSM
CONSUMABLES STATUS
FLIGHT PLAN
MS BOOM RETR
TIME (15 FEET)

EI -6 HR

MSFN CMDS:
DSG RECORD MBR

284:00
:10
:20
284:30
(11102)
(01111)
:40
:50
285:00

MSFN

CSM SYSTEMS CHECKLIST

POST-SLEEP CHECKLIST PAGE S/1-29
LOGIC PWR (2) - DPLY/RETR

MS - RETR TO 15 FEET (1 MIN 14 SEC)
REPORT: CM INJECTOR VALVE TEMPS
(SYS TEST METER 5C,5D,6A,6B,6C,6D)

CMP & LMP DON BIOMED HARNESS

LiOH CANISTER CHANGE
(24 INTO A, STOW 22 IN A5)
UPDATE STOWAGE LIST & TAPE TO LEB
V48 (11102)(01111)

CSM G&N CHECKLIST

EXIT G&N PTC (COUPLED JETS) PAGE G/8-3
V49 MNVR TO GAL ANTI CENTER POINT ATT (284:45)
(339,084,359) OMNI C

TERMINATE TIMING VOIDS AND MEASURING FLUID INTAKE

EAT PERIOD

SUPER GAL PTC

GAL ANTI CENTER POINT

NOTES

SIM EXP STATUS
(*0211)
(00222)

DAP LOAD STATUS
(11101)(X1111)

CM RCS INJECTOR TEMP

5C	_____	5D	_____
6A	_____	6B	_____
6C	_____	6D	_____

EARTH DISTANCE
~39,600 NM

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16) CHANGE A	~~3/22/72~~ (P41)	284:00 - 285:00	13/TEC	3-386

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0854 CST

285:00
(11102)
(01111)

:10

:20

EI -5 HR

285:30

:40

MSFN CMDS:
DSE STOP/REWIND

:50

UPDATE TO CSM
GO/NO-GO FOR MCC-7
MCC-7 MNVR PAD
ENTRY PAD

UPLINK TO CSM
CSM S.V. & V66
MCC-7 TGT LOAD
DESIRED ORIENT
(ENTRY)

286:00

MSFN

EAT PERIOD

GR: SHIELD - OFF
MS: ION SOURCE - OFF
EXP - OFF
CAUTION: WAIT 5 MIN BEFORE RETRACTING BOOM
XR - OFF
AP - OFF
AP/XR COVER - CLOSE
MS - RETR
GR - RETR
GR - OFF
V49 MNVR TO P52 ATTITUDE (286:00)
(157,134,040) HGA P -37, Y 80
LOGIC PWR (2) - OFF

CSM ENTRY CHECKLIST PAGE E/1-1

GAL
ANTI
CENTER
POINT

NOTES

SIM EXP STATUS
(*0221)
(00222)

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	285:00 - 286:00	13/TEC	3-387

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

0954 CST

NOTES

MSFN CMDS:
DSE DUMP

EI -4 HR

286:00 (11102) (01111)
:10
:20
:40
:50
287:00

MSFN

LIMIT CYCLE - ON
ATT DEADBAND - MIN
RATE - LOW
BMAG (3) - ATT 1/RATE 2
SC CONT - SCS
P52 (OPTION 3)
(PTC ORIENT)
REPORT: GYRO TORQUING ANGLES
P52 (OPTION 1)
(ENTRY ORIENT)
GDC ALIGN
SC CONT - CMC
BMAG (3) - RATE 2
ECS CKS
EPS CKS
SPS CK
RCS CKS
C&W SYS CK

286:30

*P30 EXTERNAL ΔV
*V49 MNVR TO PAD BURN ATT

DATA SYS - OFF

STARS _____, _____
SA _____, _____
TA _____, _____

P52 IMU REALIGN
N71: __ __,__ __
N05: __ __ __.__ __
N93:
X __ __.__ __ __
Y __ __.__ __ __
Z __ __.__ __ __
GET __ __ __:__ __:__ __

*PERFORMED IF MCC-7 IS REQUIRED

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	286:00 - 287:00	13/TEC	3-388

FLIGHT PLANNING BRANCH

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FLIGHT PLAN

MCC-7
BURN TABLE

MANEUVER	P OR Y RATES	ATT DEVIATION	SHUTDOWN TIME	RESIDUALS
CORRIDOR CONTROL	10°/SEC COMPLETE	+10° COMPLETE	BT + 1 SEC AND $C_C = 0$	TRIM X AXIS ONLY TO 0.2 FPS

FLIGHT PLAN

MCC-H

1054 CST

287:00 (11102) (01111)

:10

:20

287:30

:40

:50

288:00

MSFN

*SXT STAR CHECK

*P40 SPS THRUSTING OR
*P41 RCS THRUSTING

MCC-7

TIG: 287:23
BT: NOM ZERO
ΔVT: NOM ZERO
ULLAGE: NOM ZERO

*V66 SET CSM S.V. INTO LM S.V.
*REPORT: BURN STATUS

CSM EXP/EVA CHECKLIST

V49 MNVR TO EARTH UV PHOTO ATT (287:50)
(299,338,001) OMNI D
EARTH UV PHOTOGRAPHY SEQ B, PAGE 1/2-17
MAG (00)
MAG (RR)

LOOK FOR NOCTILUCENT CLOUDS

NOTES

*PERFORMED IF MCC-7 IS REQUIRED

BURN STATUS REPORT

X	X	☐	● ●	ΔTIG
X	X		● ●	BT
☐			●	V_{gx}
		TRIM		
X	X	X		R
X	X	X		P
X	X	X		Y
☐			●	V_{gx}
☐			●	V_{gy}
☐			●	V_{gz}
☐			●	ΔV_c
X	X	X		FUEL
X	X	X		OX
X	X	X		UNBAL

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	~~FINAL~~ (4/16)	3/27/72 ~~3/6/72~~ (P1)	287:00 - 288:00	13/TEC	3-391

CHANGE A

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1154 CST

288:00
(11102)
(01111)

:10

REMOVE AND STOW CABIN FAN FILTER (U2)

STOW FLIGHT PLAN

CSM ENTRY CHECKLIST

EI -2 HR
UPDATE TO CSM
GO/NO-GO FOR PYRO
ARM SEQUENCE

:20

LOGIC SEQUENCE CHECK PAGE E/1-2
GO/NO-GO FOR PYRO ARM (CUE MSFN)

MSFN

288:30

:40

P52 (OPTION 3) PAGE E/1-2
(ENTRY ORIENT)

:50

REPORT: GYRO TORQUING ANGLES
GDC ALIGN PAGE E/1-3

289:00

NOTES

EARTH DISTANCE
~20,900 NM

P52 IMU REALIGN
N71: __ __,__ __
N05: __ __ __.__ __
N93:
X __ __.__ __ __
Y __ __.__ __ __
Z __ __.__ __ __
GET __ __ __:__ __:__ __

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	288:00 - 289:00	13/TEC	3-392

FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1254 CST

NOTES

289:00
(11102)
(01111)

V49 MNVR TO HORIZON CHECK ATTITUDE
BORESIGHT & SXT STAR CHECK

EMS ENTRY CHECK PAGE E/1-3
PRI AND SEC WATER EVAP ACTIVATION PAGE E/1-4
CONFIGURE CAMERA EQUIP FOR FIREBALL AND CHUTES PHOTOS
CM RCS PREHEAT (IF REQD)
FINAL STOWAGE PAGE E/1-5

:10

:20

EI -1 HR

CONFIGURE FOR VHF A SIMPLEX VOICE CHECK

M
S
F
N

289:30

VHF - A SIMPLEX
COMM CHECK
UPDATE TO CSM
GO/NO-GO FOR
PYRO ARM
ENTRY PAD
RECOVERY PAD

TERMINATE RCS PREHEAT PAGE E/1-5
CM RCS ACTIVATION PAGE E/1-6
GO/NO-GO FOR PYRO ARM (CUE MSFN)
LOGIC ON
CONFIGURE DSE: (STOP/CMD RESET/REWIND)
SET DET (UP, TO EI) PAGE E/2-1
EMS INITIALIZATION

:40

UPLINK TO CSM
CSM S.V. & V66

RSI ALIGNMENT
CM RCS CHECK

:50

EI -30 MIN

CONFIGURE DSE: (HBR/RCD/FWD/CMD RESET)

290:00

SEPARATION CHECKLIST PAGE E/2-2

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	289:00 - 290:00	13/TEC	3-393

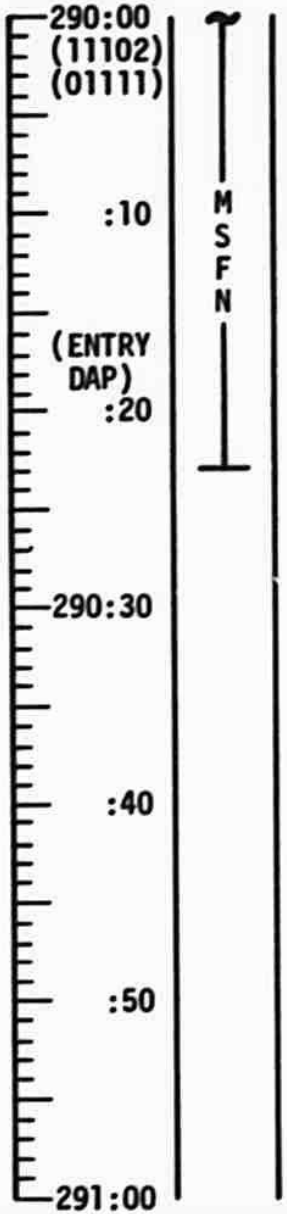
FLIGHT PLANNING BRANCH

FLIGHT PLAN

MCC-H

1354 CST

NOTES



P61 ENTRY PREP PAGE E/2-2
P62 CM/SM SEP & PRE-ENTRY MNVR
SECS PYRO ARM

CM/SM SEP 290:07

EI 290:22:45

SPLASHDOWN 290:36:03

TRAJECTORY EVENTS	TIME FROM 400K FT MIN:SEC
400K FT (GET 290:22:45)	00:00
ENTRY S-BAND BLACKOUT	00:17
0.05G	00:28
KA-INITIATE CONSTANT DRAG	00:52
RDOT = -700 FPS	01:18
PEAK G	01:22
SUBCIRCULAR VELOCITY	02:02
P64 TO P67	02:06
EXIT S-BAND BLACKOUT	03:33
GUIDANCE TERMINATION	06:50
DROGUE DEPLOYMENT	07:49
MAIN DEPLOYMENT	08:31
SPLASHDOWN	13:18

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	290:00 - 291:00	13/TEC-EI	3-394

FLIGHT PLANNING BRANCH

SECTION 4 - CONSUMABLES

Mission profile dependent
3/1/72 Basic

THE SPS ANALYSIS ASSUMPTIONS

FOR THE SPS PROPELLANT ANALYSIS

1. All spacecraft weights and the sequential consumables losses were taken from the Spacecraft Operational Data Book, Amendment 114.

2. The engine I_{sp} assumed for this analysis is 314.9 seconds.

3. The 3σ dispersions are the RSS of the penalties imposed on the SPS margin by 3σ dispersions in propellant loading, mixture ratio, engine I_{sp}, maneuver ΔV, spacecraft weight, and consumable weight losses.

4. The CSM/LM weights for the J-missions have increased to an extent that, for some launch dates, the S-IVB will not have sufficient propellant reserves to compensate for a 3σ engine. Thus, in order to have a combined 3σ confidence level for the S-IVB and SPS, the S-IVB ΔV deficit is covered in the SPS propellant budget.

5. The ground rule for a contingency allowance is to budget for either an LM rescue or for a maneuver to avoid adverse weather conditions at entry, whichever produces the least SPS margin. The ΔV for the LM rescue allowance and the weather avoidance allowance is 600 ft/sec and 300 ft/sec, respectively. For this mission, the weather avoidance allowance produces the least SPS margin.

Mission profile dependent
3/1/72 Basic

APOLLO 16 SPS PROPELLANT SUMMARY

[APRIL 16, 1972, LAUNCH DATE; 72° LAUNCH AZIMUTH]

Item	Required, lb	Remaining, lb
Expected loading		40 796.0
Trapped and unavailable	441.4	40 354.6
Outage	59.8	40 294.8
Unbalance meter	100.0	40 194.8
Available for ΔV		40 194.8
Required for ΔV		
LOI (2807.0 fps)	24 788.4	15 406.4
DOI (206.1 fps)	1 576.6	13 829.8
CIRC (99.6 fps)	396.9	13 432.9
LOPC-1 (158.7 fps)	613.2	12 819.7
LOPC-2 (282.5 fps)	1 064.7	11 755.0
SHAPE (40.0 fps)	160.5	11 594.5
TEI (3212.2 fps)	9 999.2	1 595.3
Nominal remaining		1 595.3
Dispersions		
TLMC (23 fps)	262.2	1 333.1
-3σ performance	363.6	969.5
S-IVB ΔV deficit	0.0	969.5
Margin above 3σ		969.5
Available for contingencies*		969.5

*969.5 lb is equivalent to 365 fps end-of-mission reserve.

3/27/72

Mission profile dependent

12/7/71 Basic

Ground Rules and Assumptions

1. Following transposition and docking, the S-IVB performs the evasive maneuver.

2. Two midcourse corrections (translunar) are executed as SPS burns with one MCC followed by an RCS trim.

3. One midcourse correction (transearth) is executed as an RCS burn of 5 fps.

4. Quad management is to be determined during the mission.

5. Single jet RCS control during SIM exps.

6. Couple jet RCS control during SIM off periods (major burns).

7. All maneuvering at low rate (0.2°/sec) both docked and undocked.

8. Attitude hold deadband during SIM photography and major burns - 0.5°.

9. Attitude hold deadband at other times - 3.0° (except for 2° deadband test).

10. Lunar orbit usage	SIM photography	1.0 lb/hr
	Rest periods	0.1 lb/hr
	Other	0.5 lb/hr

11. Nominal ullages.

12. Redlines have been defined by the Flight Control Division as an aid in assuring that mission rules are not violated during the mission. They are subject to review during the mission as mission phases are completed and systems capabilities are evaluated. In the event the rescue redline is violated prior to rendezvous, lunar orbit photography activities can be curtailed to conserve propellant. The lunar orbit redline includes a nominal transearth coast phase (with all navigational sightings) plus a 3 sigma G&N TEI cutoff error MCC. If a rescue is required and the lunar orbit redline is violated prior to the nominal TEI, TEI can be performed early and navigational sighting activity curtailed during the transearth phase. The rescue redline is based on the minimized activity during the transearth phase.

3/27/72

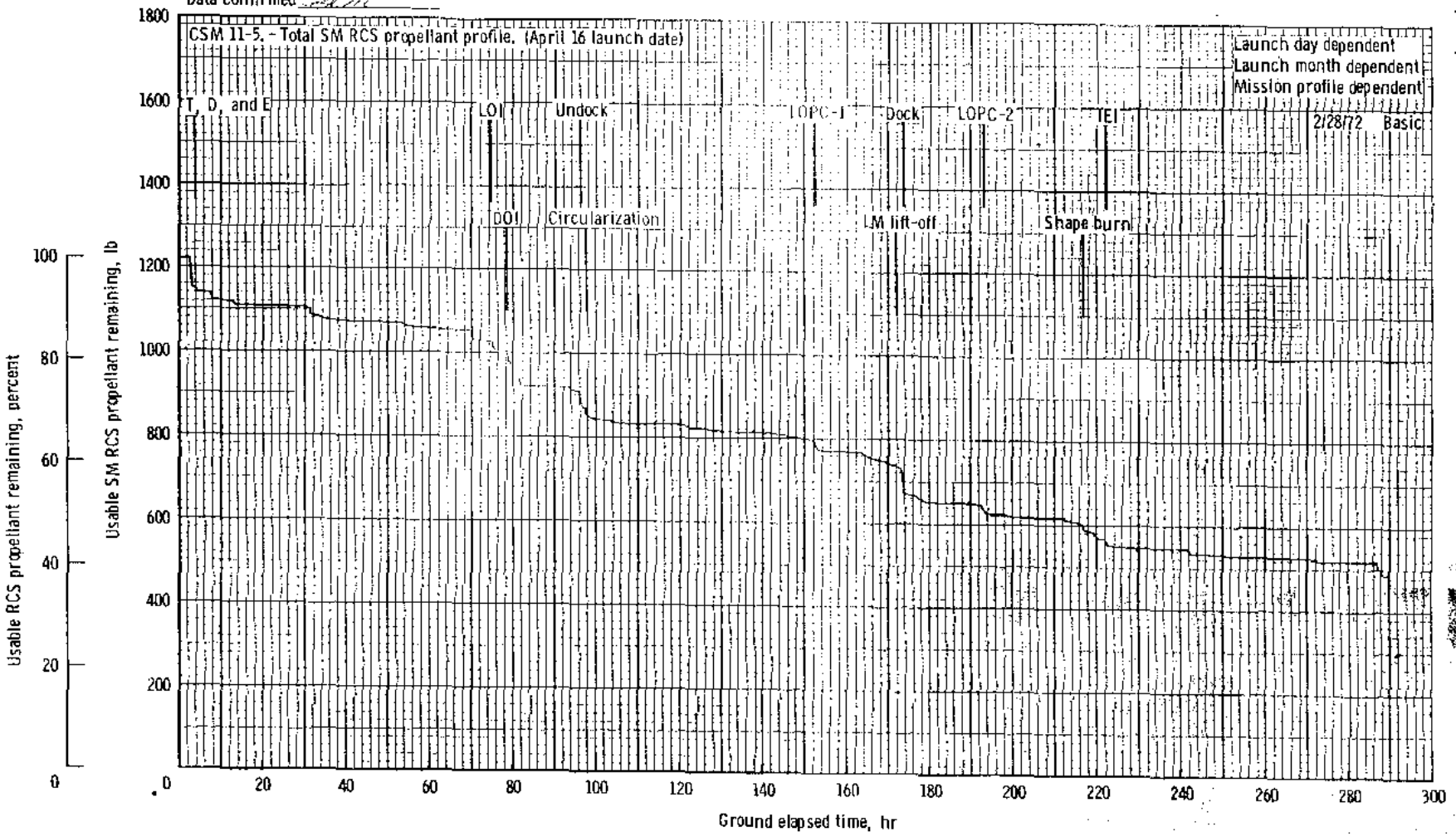
Mission profile dependent
3/1/72 Basic

APOLLO 16 SM RCS ANALYSIS

Item	Required, lb	Remaining, lb
Expected loading	- -	1342.4
Initial outage M/R	15.6	- -
Total trapped	26.4	- -
Gaging inaccuracy*	80.4	- -
Deliverable		1220.0
Nominal usage		
Translunar coast	200	- -
Lunar orbit	468	- -
Transearth coast	92	- -
Total	760	- -
Nominal remaining usable		460.0

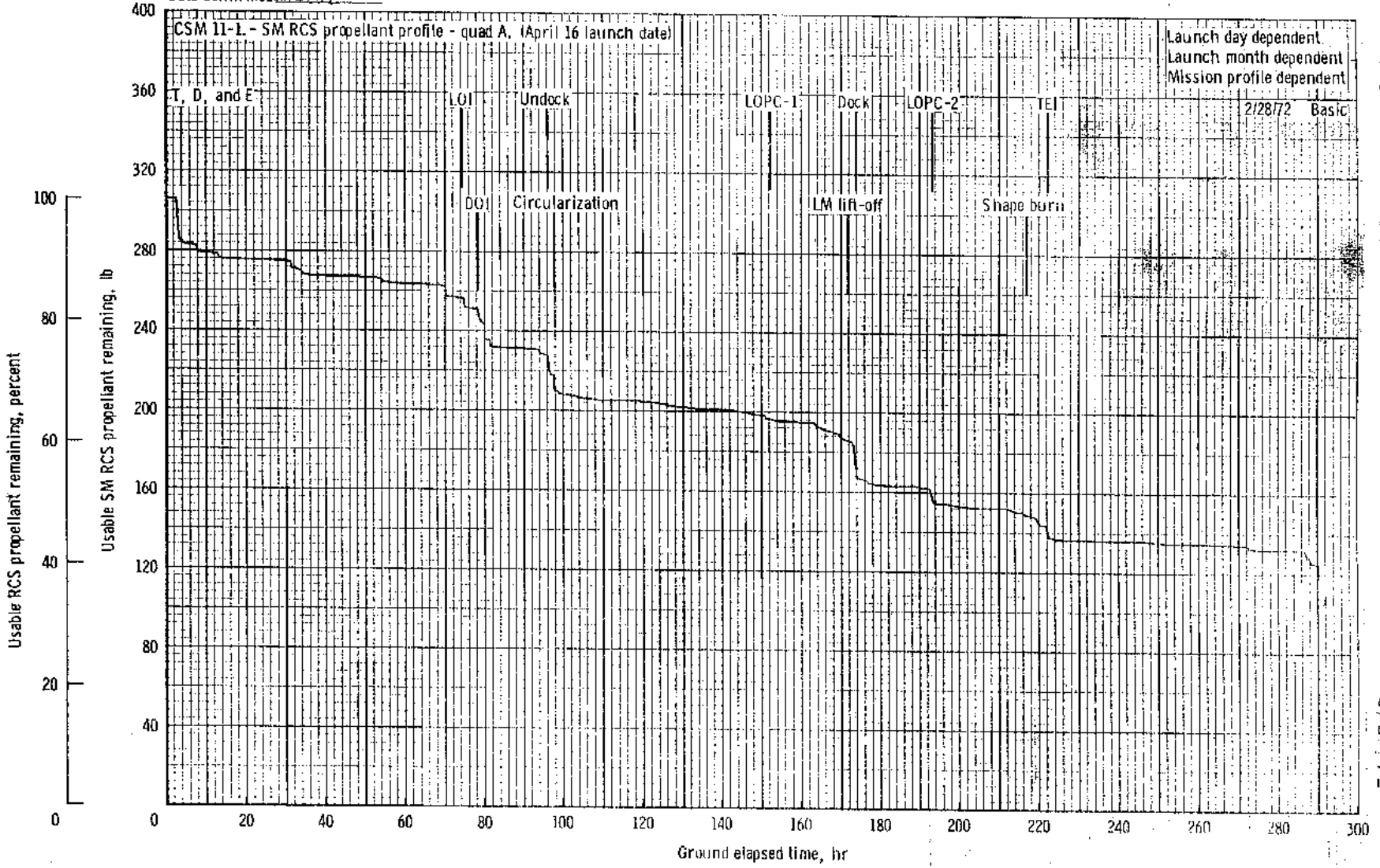
*This gaging inaccuracy allows for a 6 percent of total loaded uncertainty. The final consumables analysis will show an increase in deliverable propellant of 22 lb. See Volume I of the SODB for a discussion on gaging inaccuracies.

Mayfield/SMB/MPAD (for Flight Plan, CSM Systems Data)
Data source: Flight Plan Book
Data confirmed: [illegible]



Total SM RCS propellant usage profile.

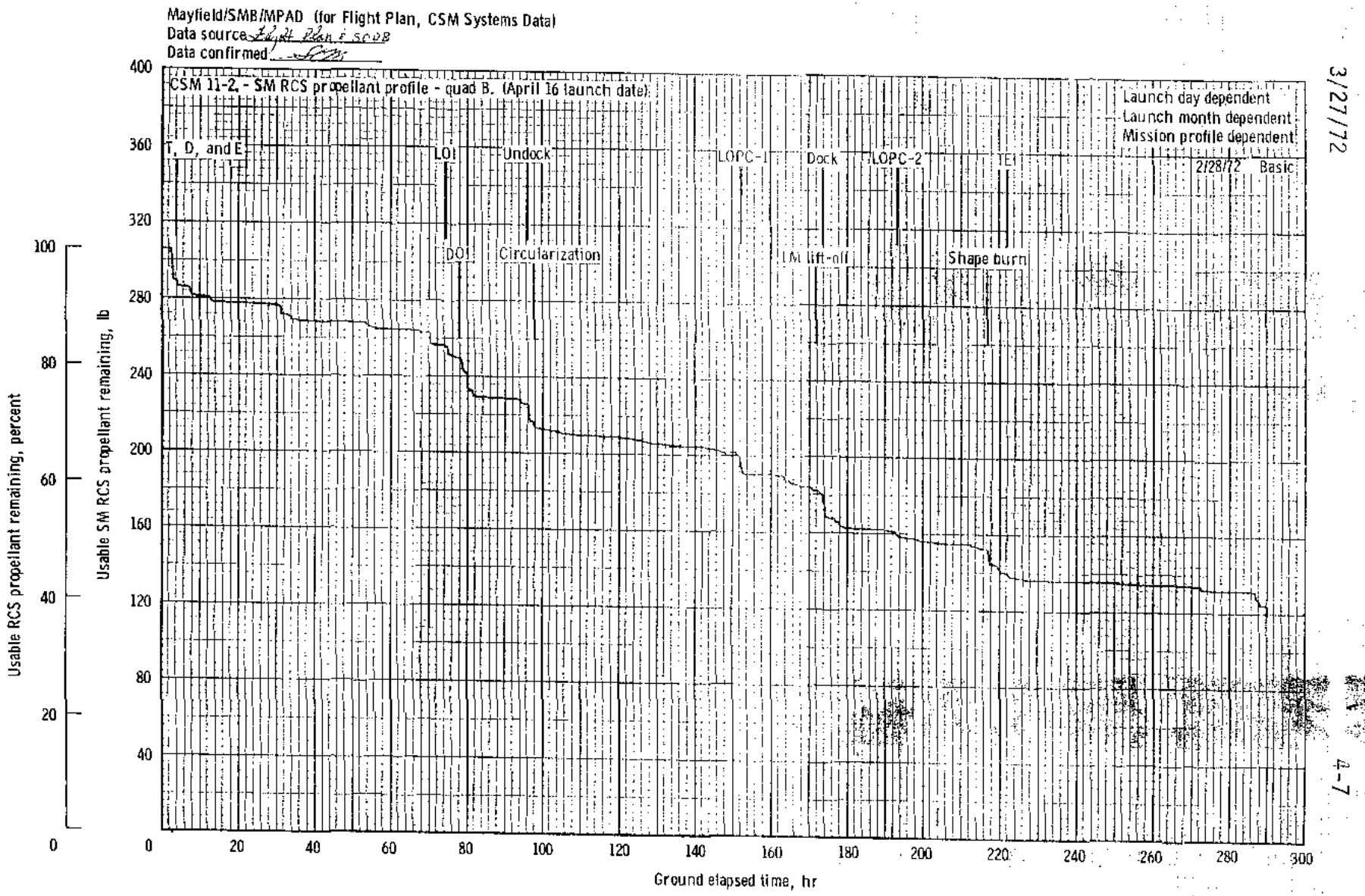
Mayfield/SMB/MPAD (for Flight Plan, CSM Systems Data)
Data source Flight Plan 4 SCIB
Data confirmed



SM RCS propellant profile - quad A.

4-6

3/2/72

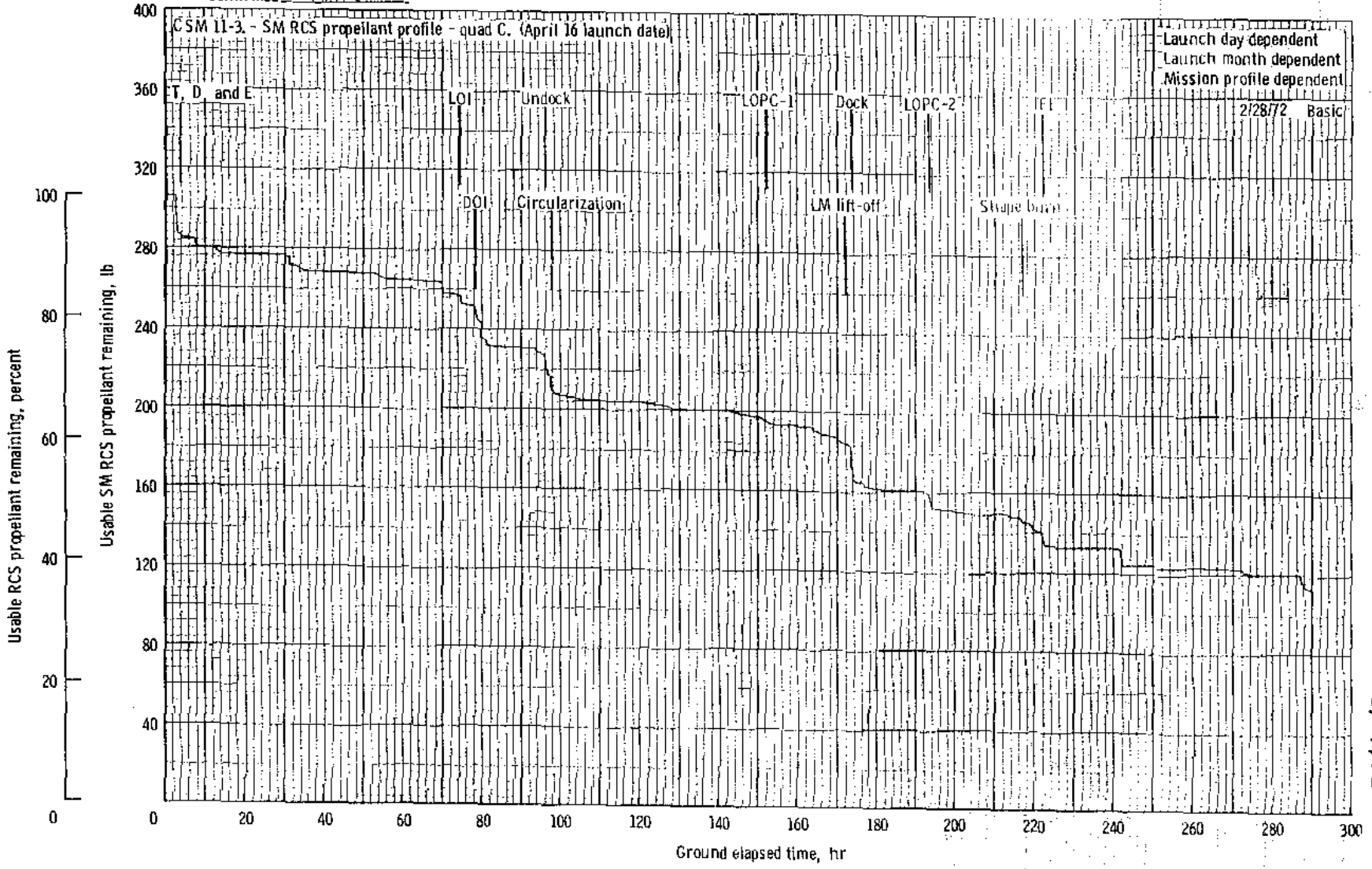


SM RCS propellant profile - quad B.

3/27/72

4-7

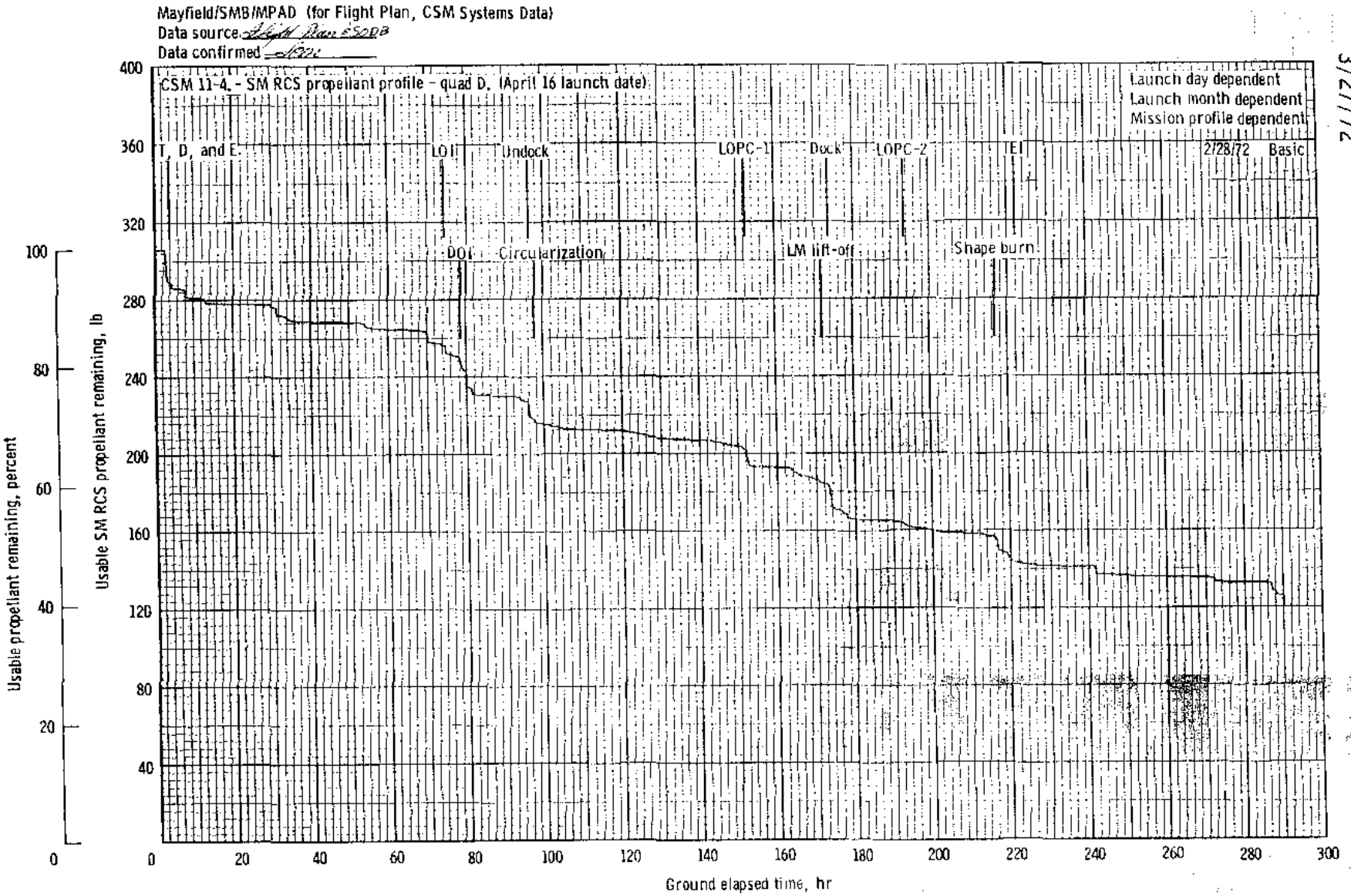
Mayfield/SMB/MPAD (for Flight Plan, CSM Systems Data)
Data source Flight Plan, SODB
Data confirmed April



SM RCS propellant profile - quad C.

4-8

3/27/72



SM RCS propellant profile - quad D.

3/27/72

4-9

Mission profile dependent
3/8/72 Basic

CM RCS PROPELLANT SUMMARY

Item	Propellant required, lb	Propellant remaining, lb
Loaded	--	233.2
Trapped	36.4	196.8
Available for mission planning . . .	--	196.8
Nominal usage*	59.3	137.5
Nominal remaining	--	137.5

*CM RCS propellant usage is for dual ring operation with DAP control

Mission profile dependent
12/13/71 Basic

GROUND RULES AND ASSUMPTIONS FOR THE CSM CRYOGENICS

1. Three O_2 and H_2 tanks are available.

2. Fuel cell purging is included in the EPS requirements.

3. No cryogenic venting was assumed in flight.

4. The EPS hydrogen consumption rate ($\dot{H}_2$) (lb/hr) = 0.00257 × I_{fc} when I_{fc} is the total fuel cell current.

5. The EPS oxygen consumption rate ($\dot{O}_2$) (lb/hr) = 7.936 × $\dot{H}_2$.

6. No allowance for the SM enhancement battery is assumed.

Mission profile dependent
3/1/72 Basic

7. The following tank depletion schedules are being used:

CRYO MANAGEMENT SCHEDULE

GET (hrs:min)	Tank numbers				
	Oxygen htrs[a]		H_2 tank 1, 2 htrs, tank 3 fan		
	Auto	Off	Auto	Manual	Off
0:00	1, 2	3	1, 2	3	
3:12	1, 2, 3				
4:12	1, 2	3			
14:30	3	1, 2	1, 2, 3		
23:06			3		1, 2
31:30	1, 2, 3				
32:42	3	1, 2			
[a]70:00	1, 2	3	1, 2		3
93:48	3	1,2			
107:24	1, 2	3			
191:30	3	1, 2			
201:30	1, 2	3			
241:54	1, 2, 3				
243:18	1, 2	3			

[a]Switch to 100-watt heaters in O_2 tanks 1, 2, and 3 at this time.

The CSM consumables summary (table 5-I) shows that a significant H_2 and O_2 margin exists at the end of the mission. This is reflected in the H_2 and O_2 usage profiles shown in figures 5-1 and 5-2. However, these curves do not include dispersions.

In summary, the nominal mission requirements can be satisfied with the existent consumables.

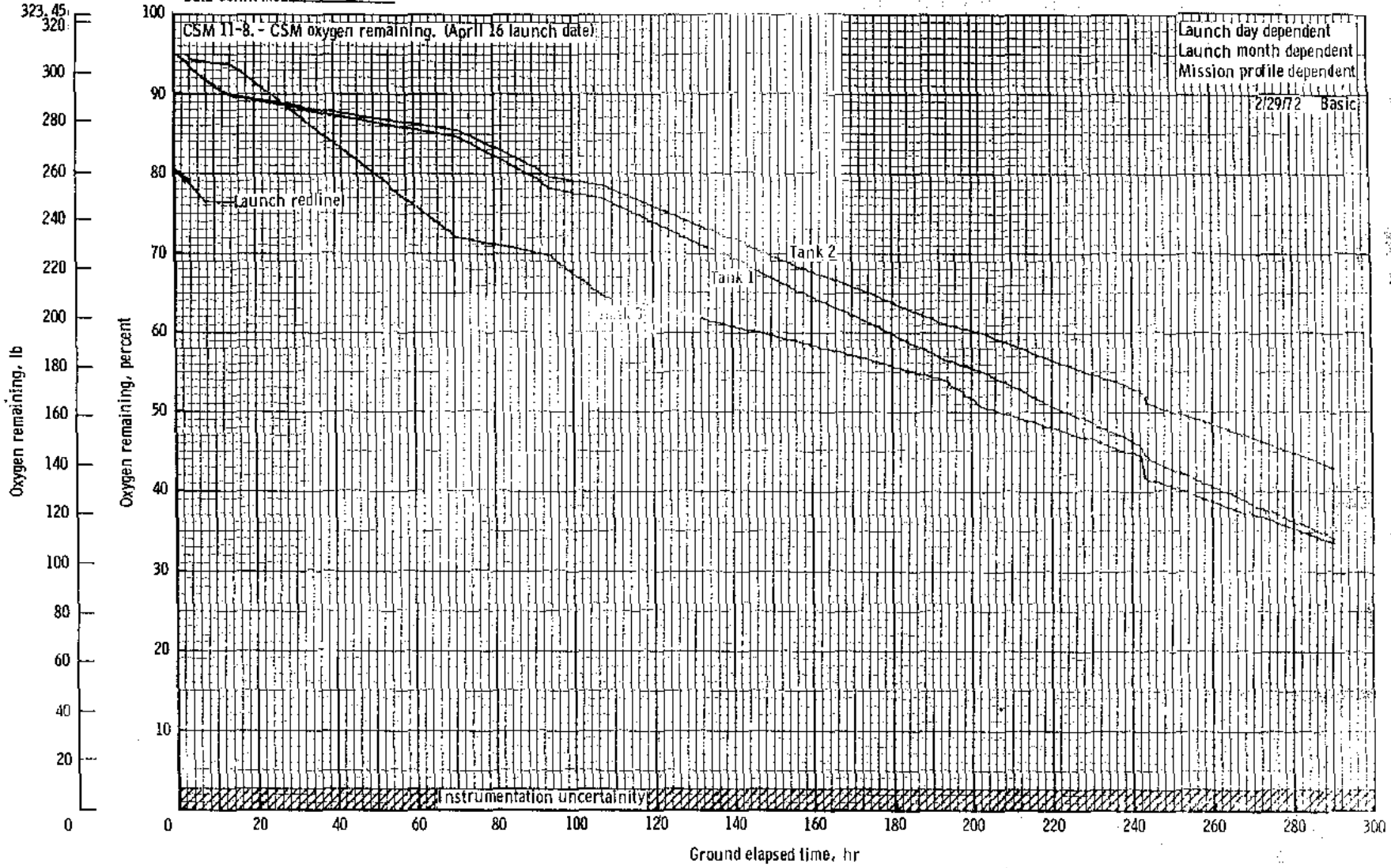
Mission profile dependent
3/1/72 Basic

APOLLO 16 CRYOGENIC SUMMARY

	H_2 lbs	O_2 lbs
PLANNING ALLOWANCE		
TOTAL LOADED	87.9	990.3
LESS RESIDUAL	3.5	19.8
LESS INSTRUMENTATION ERROR	2.3	26.0
AVAILABLE FOR MISSION PLANNING	82.1	944.5
PRELAUNCH REQUIREMENT*	3.8	48.3
FLIGHT REQUIREMENT		
EPS (INCLUDING FUEL CELL PURGE)	59.3	470.9
ECS (INCLUDING CABIN PURGE + EVA)	--	83.7
LM PRESSURIZATION	--	11.1
	59.3	565.7
NOMINAL RESERVES		
EPS UNCERTAINTY (2.5%)	1.5	11.8
ECS UNCERTAINTY (.08 #/HR)	--	23.2
	1.5	35.0
TOTAL REQUIREMENT	64.6	649.0
MARGIN T = 0 (FILL/LAUNCH)	17.5	295.5

*Supplied by KSC.

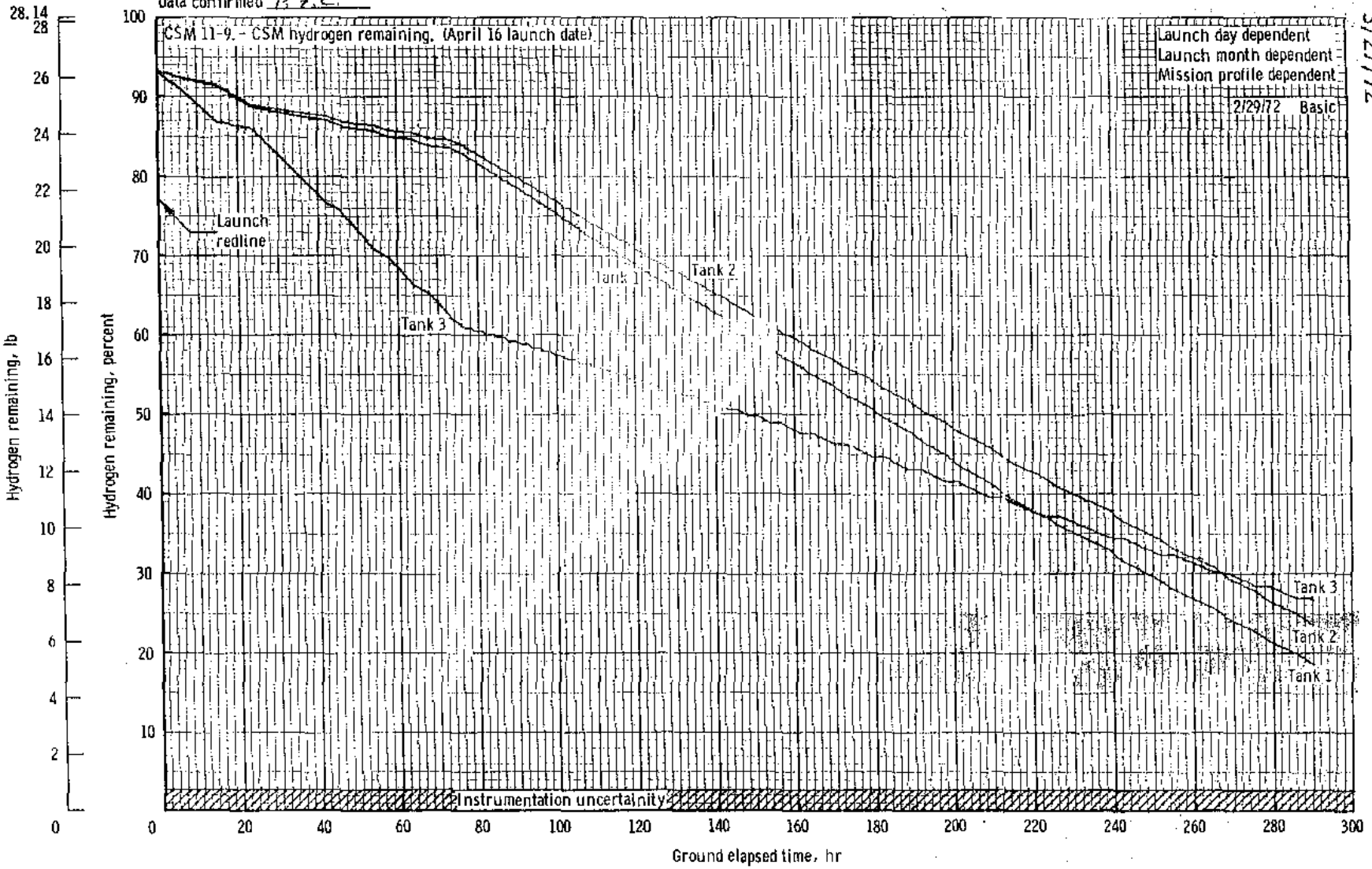
Cantin/SMB/MPAD (for Flight Plan)
Data source SOB, 7 OF Pln
Data confirmed A. J. C.



CSM oxygen remaining.

3/27/72

Cantin/SMB/MPAD (for Flight Plan)
Data source SODB, 7th. Plan
Data confirmed R.T.C.



CSM hydrogen remaining.

3/27/72

4-15

Mission profile dependent
3/1/72 Basic

ASSUMPTIONS FOR THE DPS ANALYSIS

The propellant loading is based on the optimization of the fuel and oxidizer balance that was computed from the LM-11 engine data. The ΔV requirements were coordinated with the Landing Analysis Branch. The ΔV requirement for lunar descent differs from that in the operational trajectory because of differences in the inert vehicle weight.

The 3σ dispersions represent total propellant cost based on 3σ uncertainties in propellant loading, trapped propellant, specific impulse, ΔV, separation weight, non-ΔV consumables weight, mixture ratio, and physical location of the low level sensor.

A flying time of 2 minutes and 30 seconds below low gate will be called a nominal requirement.

The following data were used:

a. The separation weight is 36 624.4 $\pm$ 39.3 pounds.

b. Integrated average I_{sp} is 305.9 $\pm$ 1.8 seconds.

c. Mixture ratio is 1.595 $\pm$ .012.

d. Non-ΔV consumables from separation to PDI are 90.5 pounds.

Mission profile dependent
3/1/72 Basic

DPS PROPELLANT SUMMARY

Item	Total propellant, lb	Hover time, sec
Loaded	19 559.1	--
Trapped and unavailable	-124.7	--
Outage	-16.6	--
Available for ΔV	19 417.8	--
Required for ΔV (150-sec flying time from low gate, ΔV = 7057.7 fps)	-18 726.1	--
Remaining	691.6	74
Dispersion (-3σ)	-278.9	--
Pad	412.7	44
Operational allowances		
Low-level (5 sec, 26.5 fps)	-47.3	--
Abort reserve (20 sec, 106 fps)	-187.9	--
Margin (hover time before abort decision point)	180.5	19

3/27/72

Mission profile dependent
3/1/72 Basic

ASSUMPTIONS FOR THE APS ANALYSIS

The propellant loading is based on the optimization of the fuel and oxidizer balance that was computed from the LM-11 engine data. The ΔV requirements were coordinated with the Landing Analysis Branch. The ΔV requirement for the lunar ascent differs from that in the Operational Trajectory because of differences in the inert vehicle weight.

The APS analysis accounts for an APS TPI, engine valve-pair malfunction, and balanced couples. A touchdown abort was not considered because the nominal lift-off weight is heavier than the abort weight. The following data were used.

a. I_{sp} = 309.5 $\pm$ 3.5 seconds.

b. Mixture ratio = 1.597 $\pm$ .027.

c. Lift-off weight = 10 892.2 $\pm$ 38.7 pounds.

Mission profile dependent
5/1/72 Basic

APS PROPELLANT SUMMARY

Item	Total propellant, lb
Loaded	5242.5
Trapped and unavailable	-51.9
Outage	-11.9
Available for ΔV	5178.7
Required for Ascent (6048.1 fps)	-4958.9
Remaining	219.8
Required for APS TPI[a] (52.8 fps)	-31.4
Remaining	188.4
Dispersions (-3σ)	-67.6
Pad	120.8
Operational allowances	
Engine valve-pair malfunction (ΔMR = +.01 or -.018)	-20.9
Balanced couples on	-41.4
Half-degree out of plane (18 fps)	-10.7
Margin	47.9

[a]The total TPI ΔV is 74.8 fps. It is assumed that 22 fps is obtained by a 10-sec, 4-jet ullage.

Mission profile dependent
12/7/71 Basic

ASSUMPTIONS AND GROUND RULES FOR THE LM RCS ANALYSIS

1. Data for the LM RCS engine performance and propellant requirements were obtained from the SODB, Volume II, and from postflight analyses of Apollo 9-15 missions.

2. The analysis assumes an insertion trim or RCS tweak burn (nominally zero) of 30 fps.

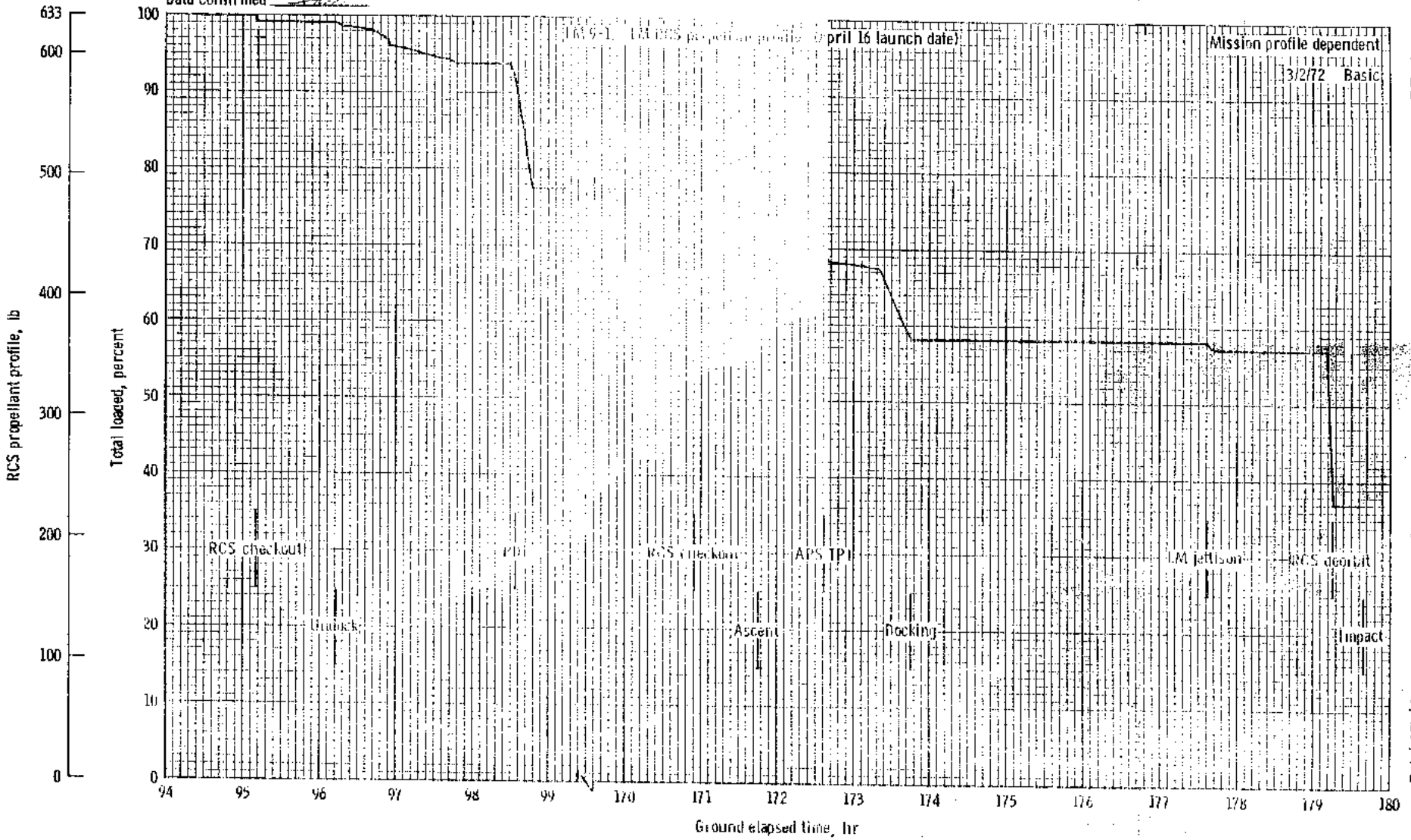
3. It is assumed there will be a 10-fps RCS trim following the APS TPI maneuver.

Mission profile dependent
3/1/72 Basic

LM RCS PROPELLANT LOADING AND USAGE SUMMARY

Item	Required, lb	Remaining, lb
Loaded		631.2
Trapped	38.0	593.2
Gaging inaccuracy and loading tolerance	43.5	549.7
Mixture ratio uncertainty	17.0	532.7
Usable		532.7
Nominal usage through lunar landing	141.6	391.1
Nominal usage from landing through docking	123.7	267.4
Nominal usage from docking through impact	138.7	128.7
Usable propellant remaining		128.7

Mayfield/SMB/MPAD (for LM Systems)
Data source
Data confirmed



LM RCS propellant profile.

3/27/72

Mission profile dependent
11/24/71 Basic

ASSUMPTIONS FOR THE LM EPS ANALYSIS

a. Energy available from the descent batteries is 2075 A-h and from the ascent batteries is 592 A-h.

b. Energy unusables caused by lack of continuous MSFN coverage for the descent and ascent stages are zero.

c. Energy unusables caused by TM inaccuracies for the descent and ascent stages were 72 and 17 A-h, respectively. The new descent battery current measurement uncertainty of 0.5 amperes per battery was used.

d. Energy unusables caused by checklist deviations (dispersion) for the descent and ascent stages were 33 and 6 A-h, respectively. This dispersion is obtained by calculating 2 percent of the energy used.

e. No energy was budgeted for the PGNCS power uncertainty.

f. In accordance with the Flight Plan, the PGNCS was in standby mode from surface powerdown until 2.83 hours before powerup.

g. The RCS heaters were assumed to have a 100 percent duty cycle for 15 minutes after initial activation and then to decrease to a 7 percent duty cycle until undocking. From undocking until lunar surface powerdown, the heaters were assumed to cycle at 0 percent, but, from surface powerdown until lunar lift-off, the duty cycle was assumed to be 4.5 percent.

h. The MESA heater power requirements were established by GAEC thermal analysis. From circuit breaker activation to touchdown the heater was assumed to be on 35 percent of the time in the low mode (two 25 watt heaters). From touchdown to the start of the open thermal blanket period of EVA-1 the duty cycle was 20 percent in the high mode (six 25 watt heaters). The duty cycle was 55 percent (high mode) during the open blanket period. At the end of the open blanket period the duty cycle decreased to 29 percent. At the start of EVA-2 the MESA heaters were turned off for the remainder of the mission.

i. The invertor was operated throughout the mission.

j. The CDR and LMP forward window heaters were assumed not to be needed.

Mission profile dependent
11/24/71 Basic

ASSUMPTIONS FOR THE LM EPS ANALYSIS - Concluded

k. TV power is supplied by the LM during the first hour of EVA-1. For the remainder of EVA-1 and the other EVA's, the TV will be powered by the lunar communications relay unit (LCRU).

l. The liquid cooled garment pump was operated before each EVA for 17 minutes.

m. The S-band power amplifier was cycled as dictated by the time line.

n. The portable utility lights were assumed to be off throughout the mission.

o. In accordance with the Flight Plan, the floodlights were turned off at surface power down, and on again at power up. The overhead and forward floodlights were not used.

p. The short (M=1) rendezvous was considered nominal.

q. At the beginning of the analysis, it was assumed that a total of 10 A-h had been used from the descent batteries between the period starting 30 minutes before launch and ending at the conclusion of transposition and docking.

Mission profile dependent
11/24/71 Basic

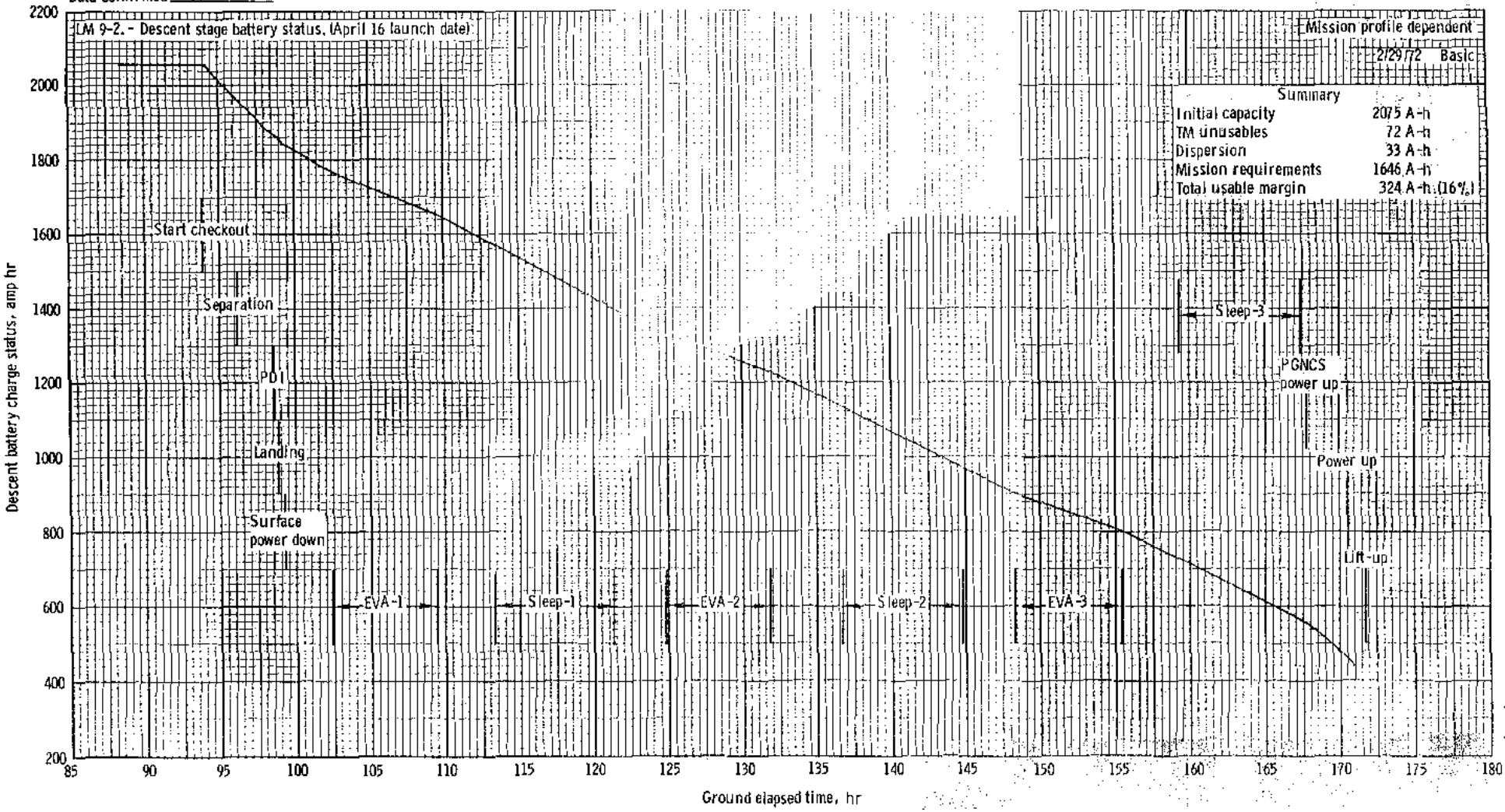
DESCENT STAGE EPS SUMMARY

Item	A-h required	A-h remaining
Initial capacity	--	2075
Total unusables	105	1970
Required through touchdown	214	1756
Required for surface stay	1432	324
Total usable margin	--	324

ASCENT STAGE EPS SUMMARY

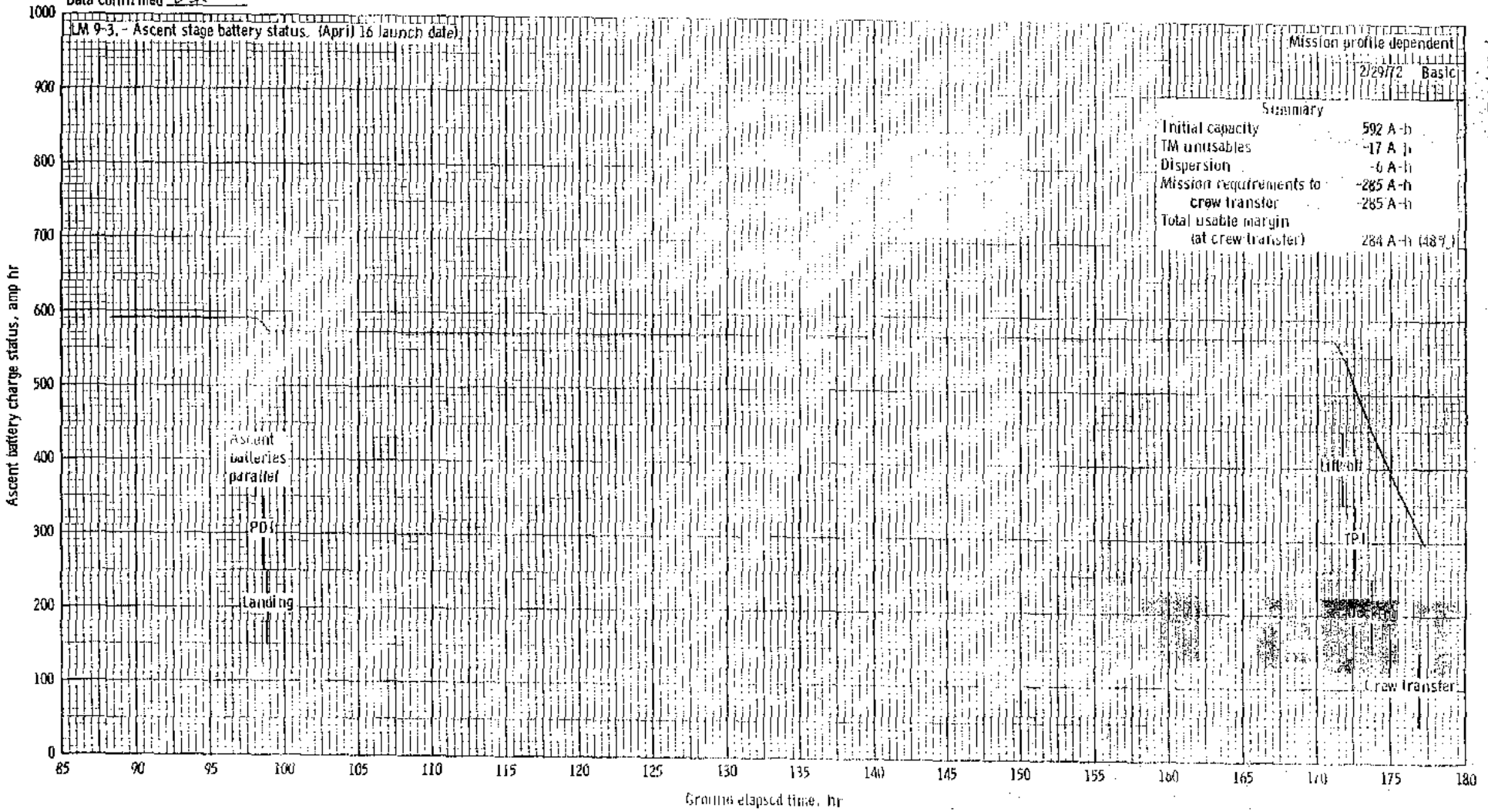
Item	A-h required	A-h remaining
Initial capacity	--	592
Total unusables	23	569
Required through docking	145	424
Required from docking through crew transfer	140	284
Total usable margin	387	284

Ritchey/SMB/MPAD (for LM Systems)
Data source Lunar Flight Plan
Data confirmed VSR



Apollo 16 descent electrical energy remaining.

Ritchey/SMB/MPAD (for LM Systems)
Data source Luban Flight Plan
Data confirmed USE

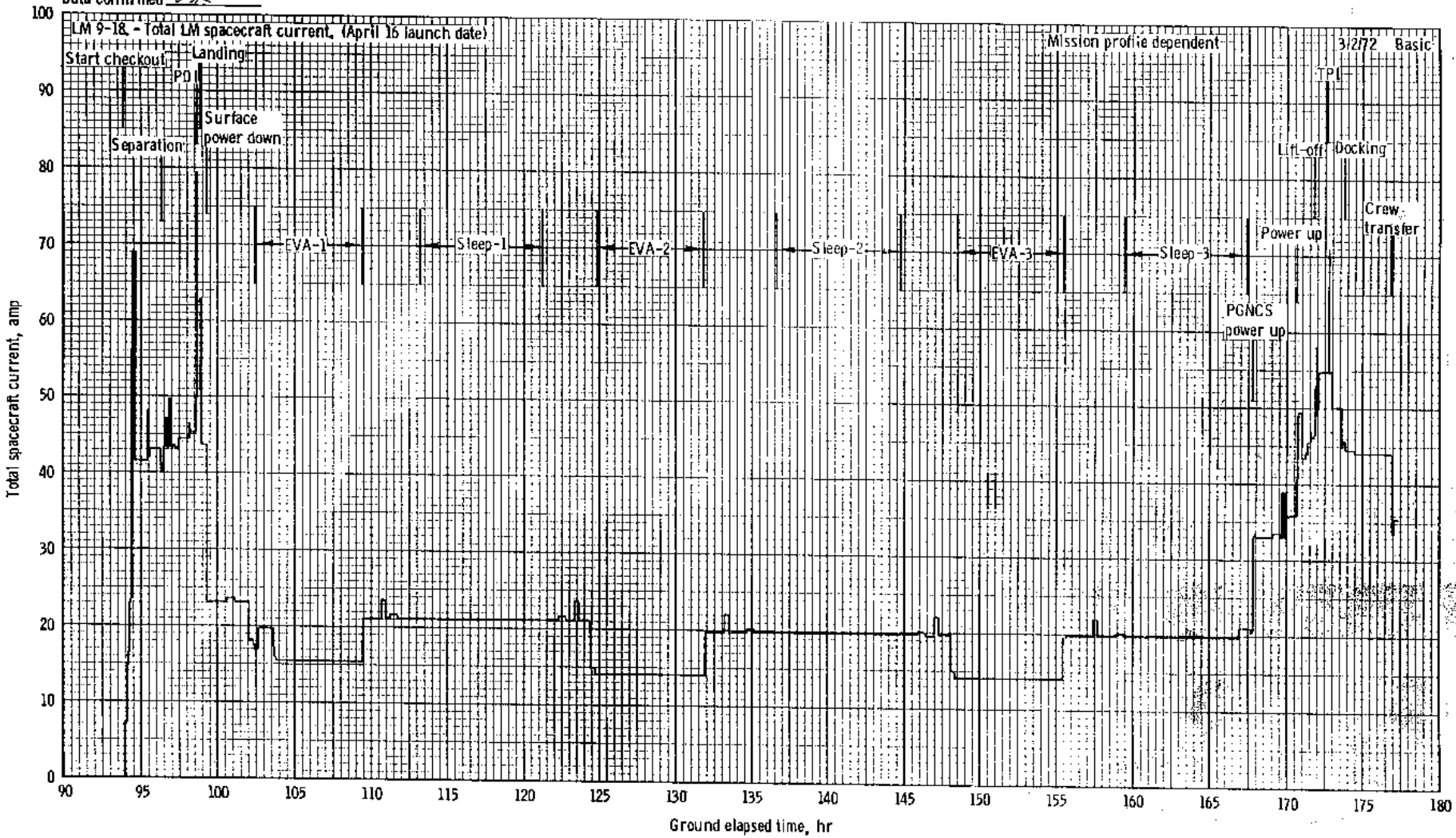


Apollo 16 ascent electrical energy remaining.

3/27/72

4-27

Ritchey/SMB/MPAD (for LM Systems)
Data source Lunar Flight Plan
Data confirmed USR



Apollo 16 total LM spacecraft current,

Mission profile dependent
12/7/71 Basic

LM ECS Assumptions

a. The oxygen analyses were calculated using a cabin leak rate of 0.06 lb/hr based on previous Apollo postflight analyses.

b. Metabolic rates were varied using the final flight plan and table 4.3-II of SODB Vol. II.

c. Metabolic oxygen consumed was calculated by $(1.643 \times 10^{-4} \times$ lb/Btu) (metabolic rate, Btu/hr).

d. The cabin regulator check and the suit integrity check were assumed to require 0.5 pound of oxygen.

e. The cabin was pressurized five times with 5.5 pounds required for each pressurization except the last one which required 5.8 pounds.

f. The dispersion in the oxygen profile was calculated as 5 percent of the nominal oxygen requirement.

g. The PLSS refills required 47.2 pounds of water and 5.4 pounds of oxygen.

h. The sublimator fill required 2.23 pounds.

i. The drink bags required 12.0 pounds of water.

j. Water lost through crew micturition was 0.11 lb/hr per man.

k. Water required for thermal control was calculated by dividing the total spacecraft heat load by 1040 Btu/lb.

l. The dispersion in the water profile was calculated as 5 percent of the nominal usage.

m. The descent oxygen tanks were loaded to 2610.0 psi at 70.0°F.

3/27/72

Mission profile dependent
12/7/71 Basic

LM ECS SUMMARY

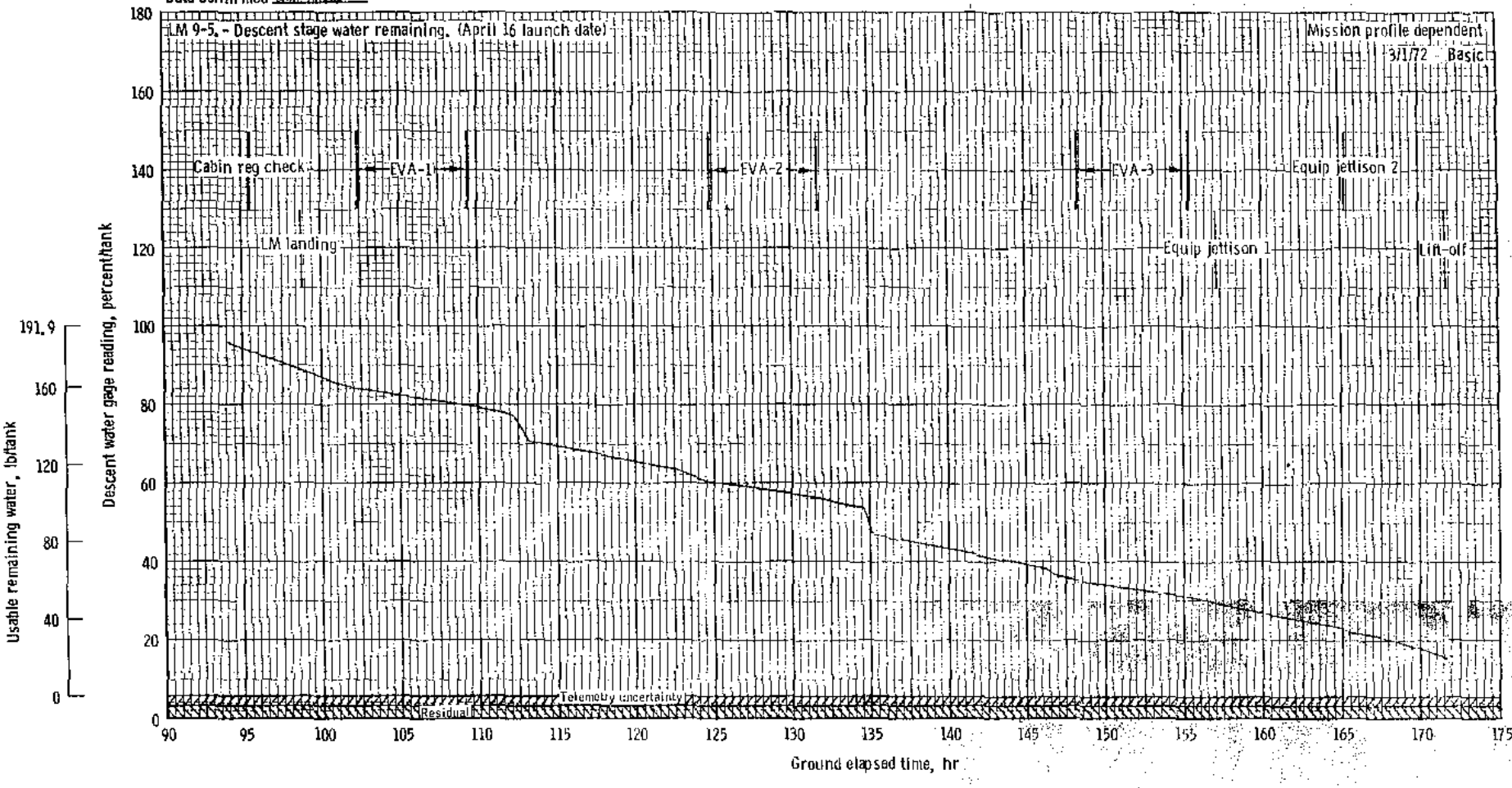
(a) Water

Description	Descent, lb	Ascent, lb
Loaded	406.0	85.0
Sampling	11.0	0
Residual	13.3	1.7
Telemetry uncertainty	8.9	7.5
Loading uncertainty	3.0	1.8
Available for mission	369.8	74.0
Required to lunar landing	32.2	0
Required to lunar lift-off	298.6	0
Required to LM/CSM docking	0	16.4
Required to LM close-out	0	16.2
Required to lunar impact	0	9.6
Remaining in tanks	39.0	31.8
Dispersion	16.5	2.1
Margin	22.5	29.7

(b) Oxygen

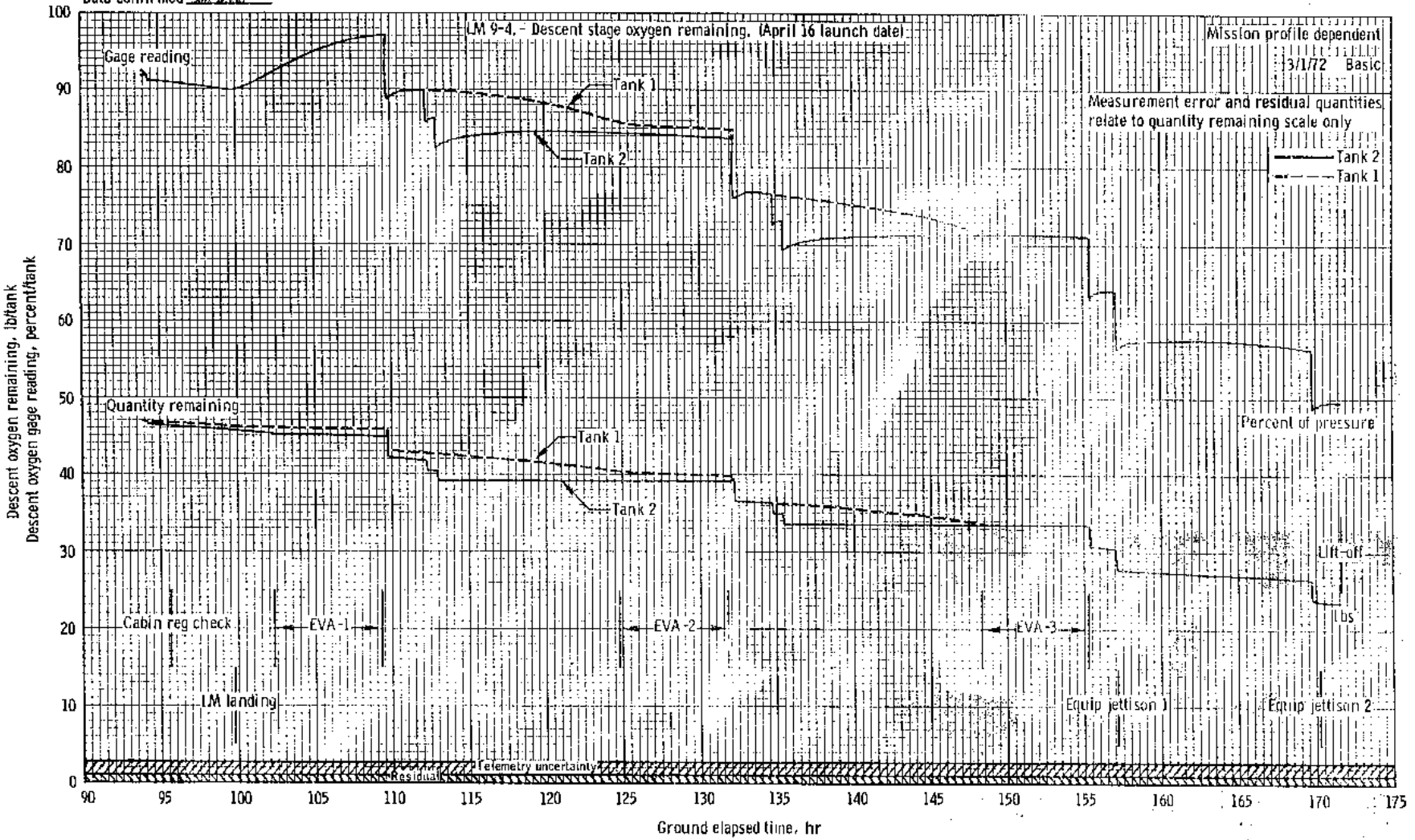
Description	Descent, lb	Ascent 1, lb	Ascent 2, lb
Loaded	93.8	2.4	2.4
Residual	1.6	0.1	0.1
Loading uncertainty	1.7	0.1	0.1
Available for mission	90.5	2.2	2.2
Required to lunar landing	1.7	0	0
Required to lunar lift-off	45.1	0	0
Required to LM/CSM docking	0	0.5	0
Required to LM close-out	0	0.1	0
Remaining in tank	43.7	1.6	2.2
Dispersion	2.3	0.1	0
Margin	41.4	1.5	2.2

Swalin/SMB/MPAD (for LM Systems)
Data source Flight Plan & Supp
Data confirmed Jim Smith



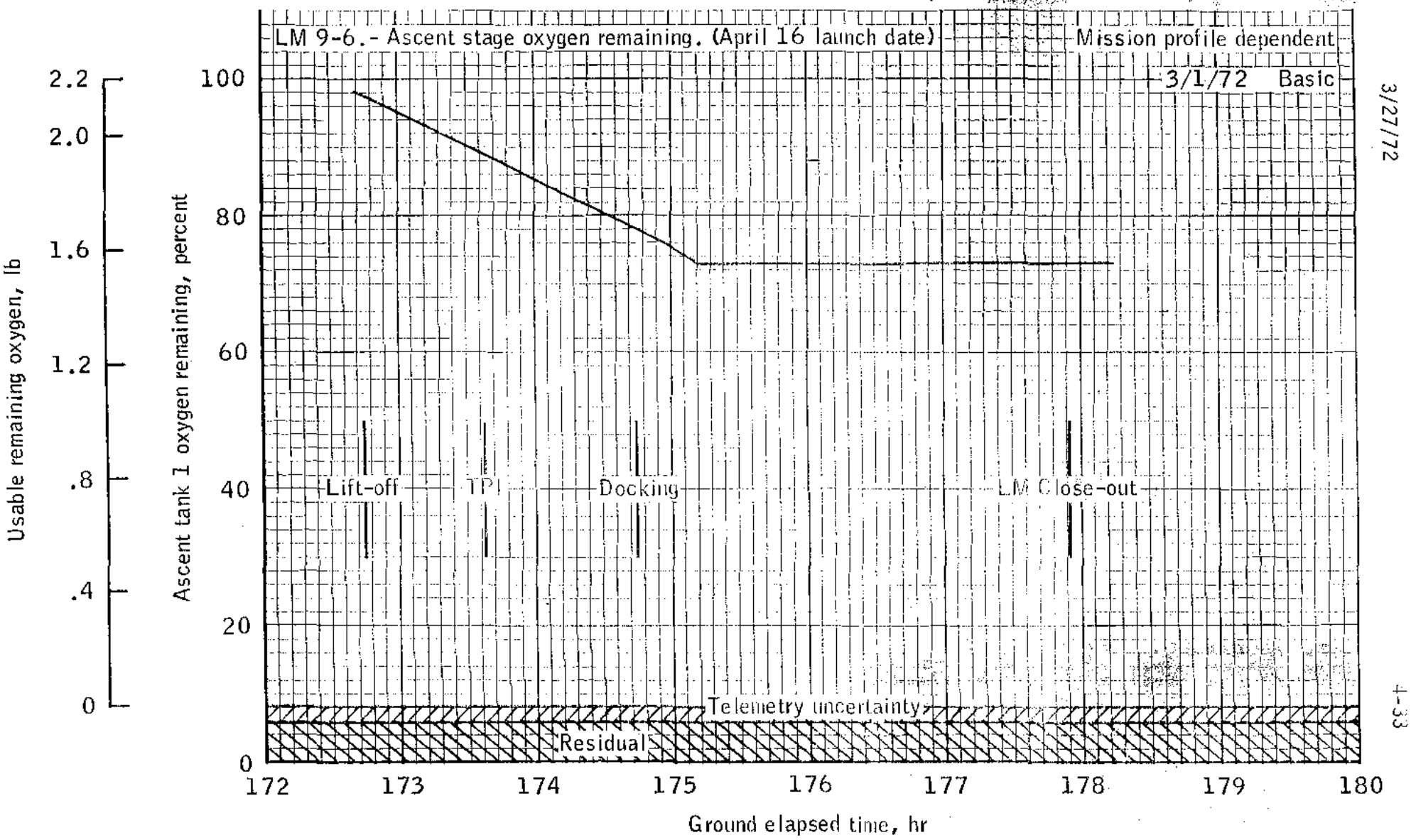
Descent stage water remaining.

Swaltn/SMB/MPAD (for LM Systems)
Data source Flight Plan & Supp
Data confirmed Bat Lvl



Descent stage oxygen remaining,

3/27/72



Ascent tank 1 oxygen remaining.

Mission profile dependent
3/3/72 Basic

ASSUMPTIONS FOR THE LRV EPS ANALYSIS

a. The energy available from each of the two batteries is 121 A-h.

b. No unusables or uncertainties are considered in the budget. There is no way to establish a prediction uncertainty at this time.

c. Slopes were derived from the Apollo 16 landing site form line map.

d. Terrain types and stop times were derived from the traverse data package.

e. The MSFC soil model L-3 was used.

f. The vehicle speed was 8 km/hr except where mobility conditions dictated lower speeds.

g. The traction drive system was off during stops longer than 5 minutes.

h. The navigation and caution systems were operated throughout each traverse.

i. Electrical power required by the LCRU during EVA-1 and EVA-2 was supplied by LRV batteries. While driving, the LCRU was in the PM1/WB mode. During all station stops (EVA-1 and -2), except station 3, the LCRU mode of operation was FM/TV.

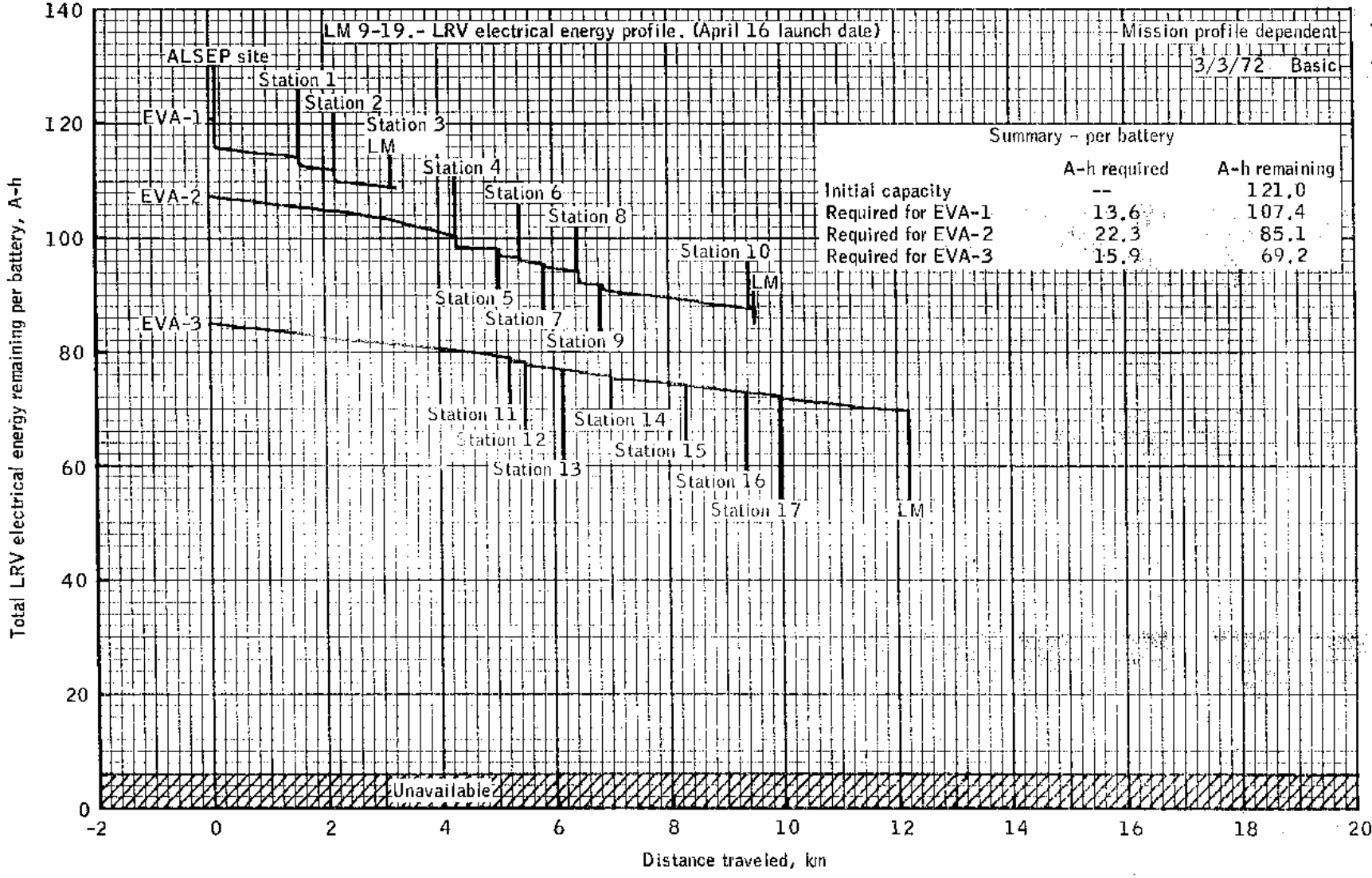
j. The vehicle weight was 1470 pounds.

k. A wander factor of 1.1 is included in the analysis.

l. The distance traveled is the map or straight line distance between points.

m. Clean battery radiators were assumed for all cool-down periods.

Ritchey/SMB/MPAD (for LM Systems)
Data source Traverse Plan 17 FEB 72
Data confirmed USR



LRV electrical energy profile.

FLIGHT PLAN

CSM

00:00 LIFT-OFF APRIL 16, 1972

P52, OPT 3

01:00

TLI PREP

02:00

TLI 2:34

S-IVB MNVR TO SEP ATT 2:54
CSM/S-IVB SEP 3:04
DOCK 3:14

03:00

TV

MSFN

04:00

CSM/LM EJECTION 3:59

S-IVB APS EVASIVE BURN 4:22
DOFF PGA'S
S-IVB LOX DUMP 4:43

05:00

P52, OPT 3, OPT 1

06:00

CSM

06:00

EAT

07:00

UV PHOTOS

08:00

LM ENTRY

MSFN

09:00

10:00

P23 CISLUNAR
NAV (4 STARS)

11:00

P52, OPT 3
O_2 FC PURGE
WASTE H_2O DUMP

CREW EXERCISE

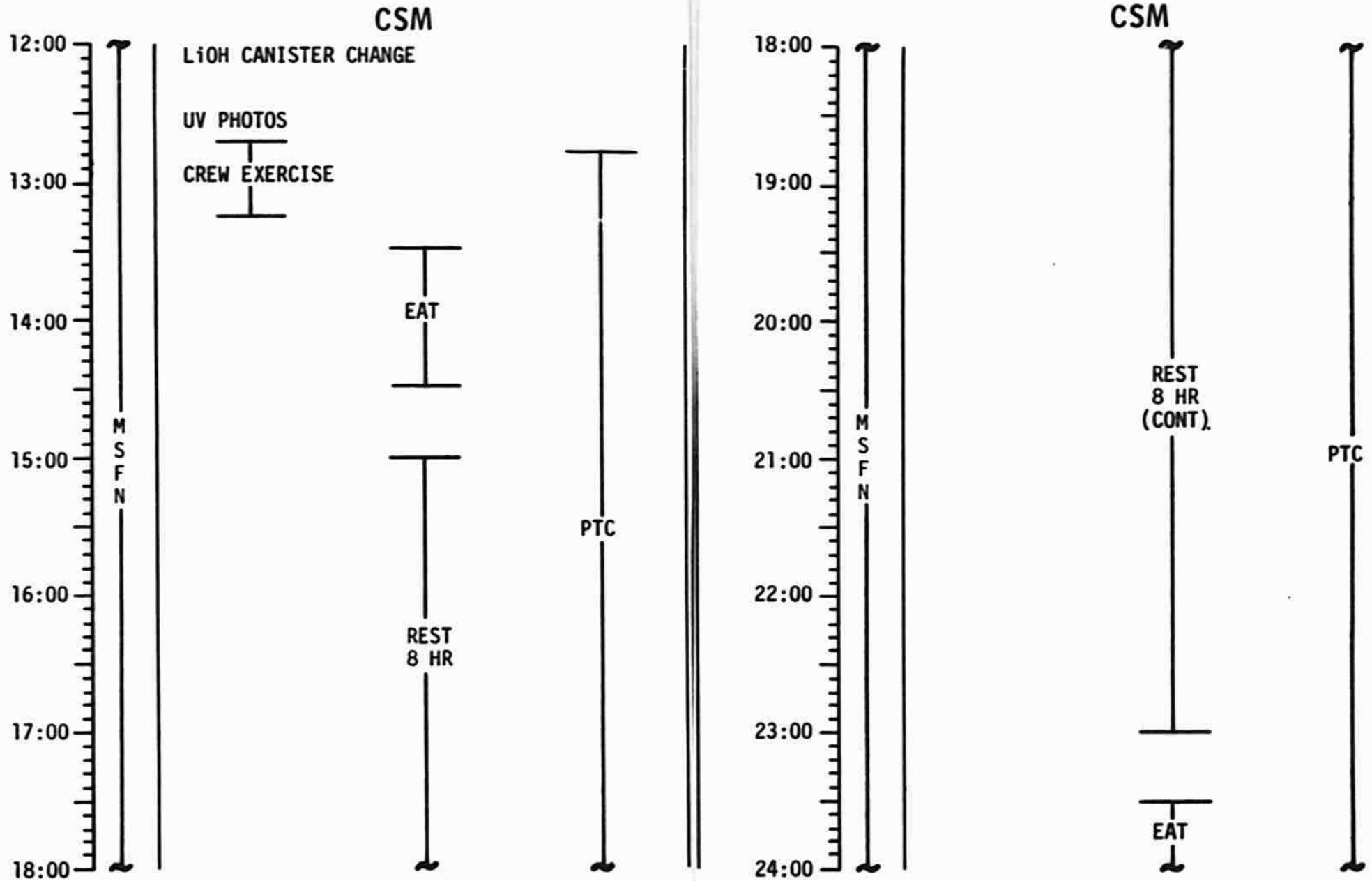
12:00

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	00:00 - 12:00	1/EO-TLC	5-1

1

2

FLIGHT PLAN

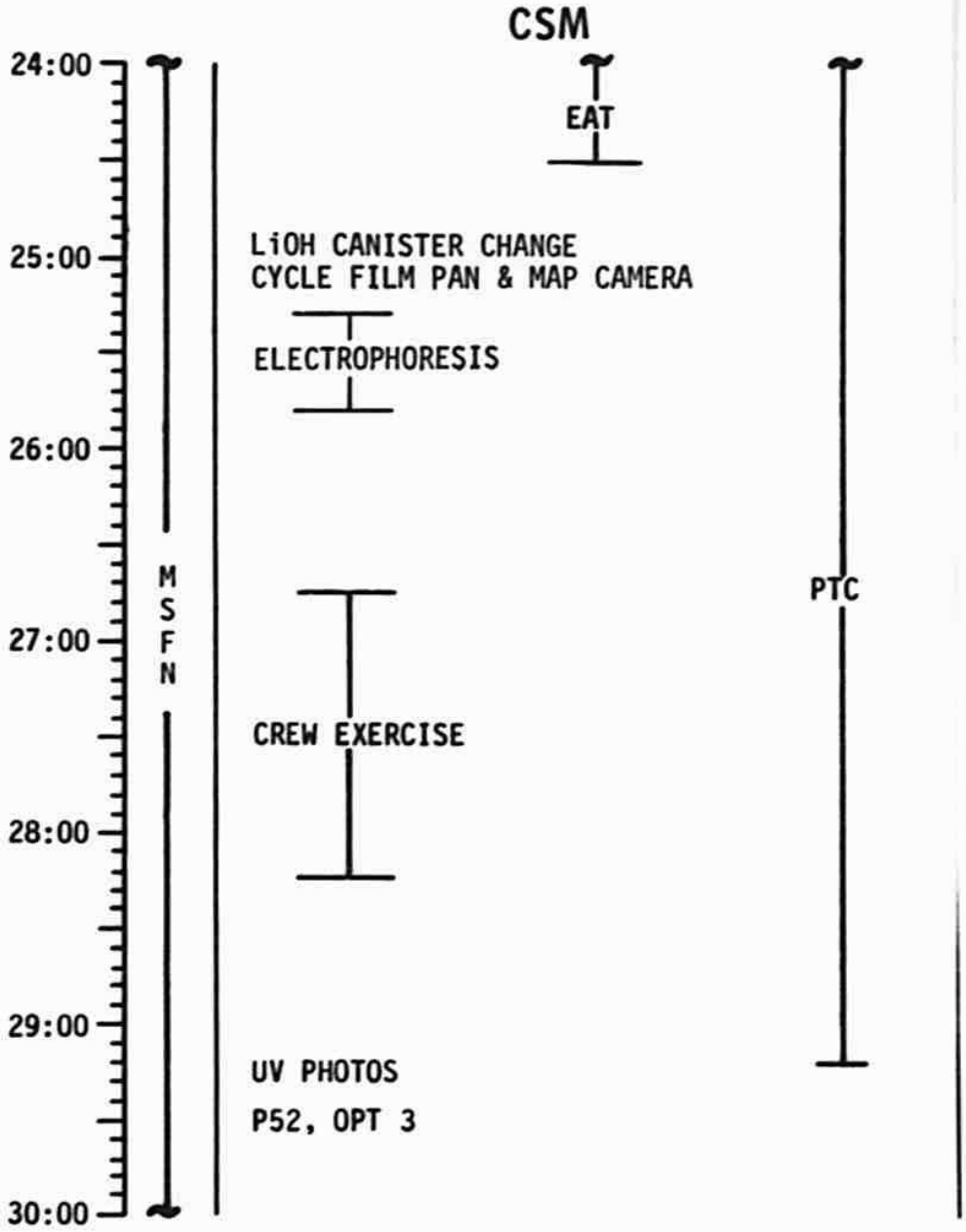


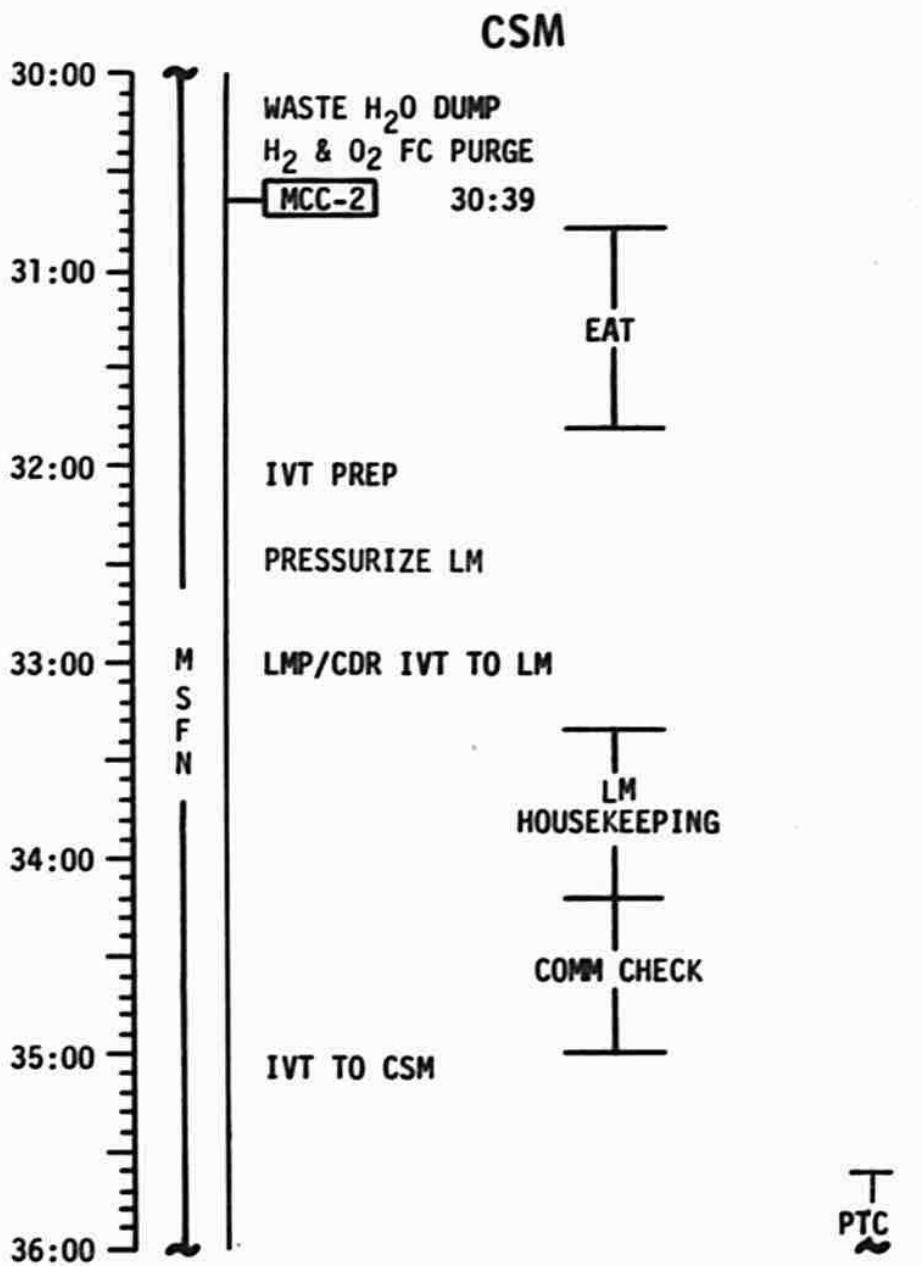
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	12:00 - 24:00	1-2/TLC	5-2

3

4

FLIGHT PLAN





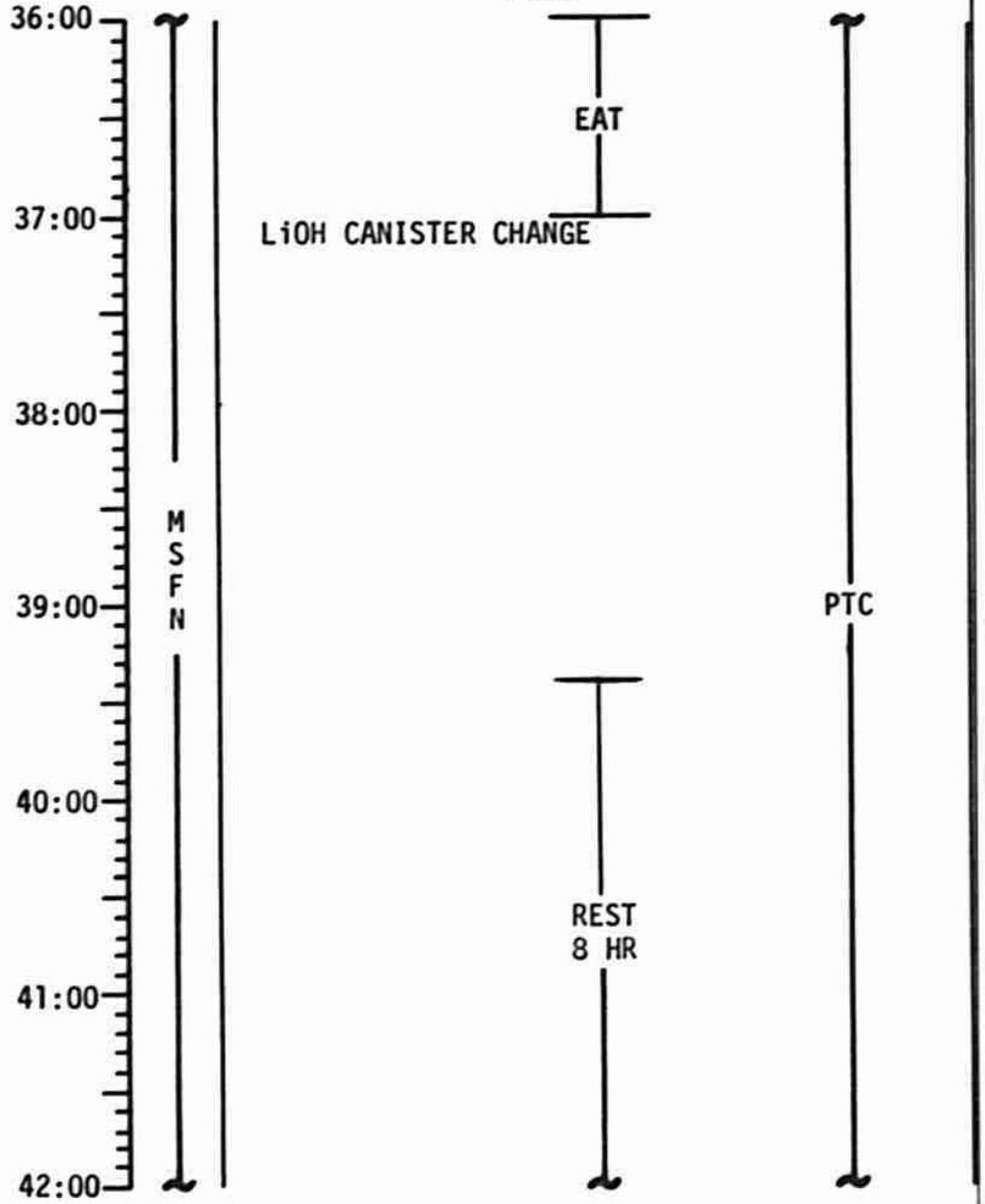
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	24:00 - 36:00	2/TLC	5-3

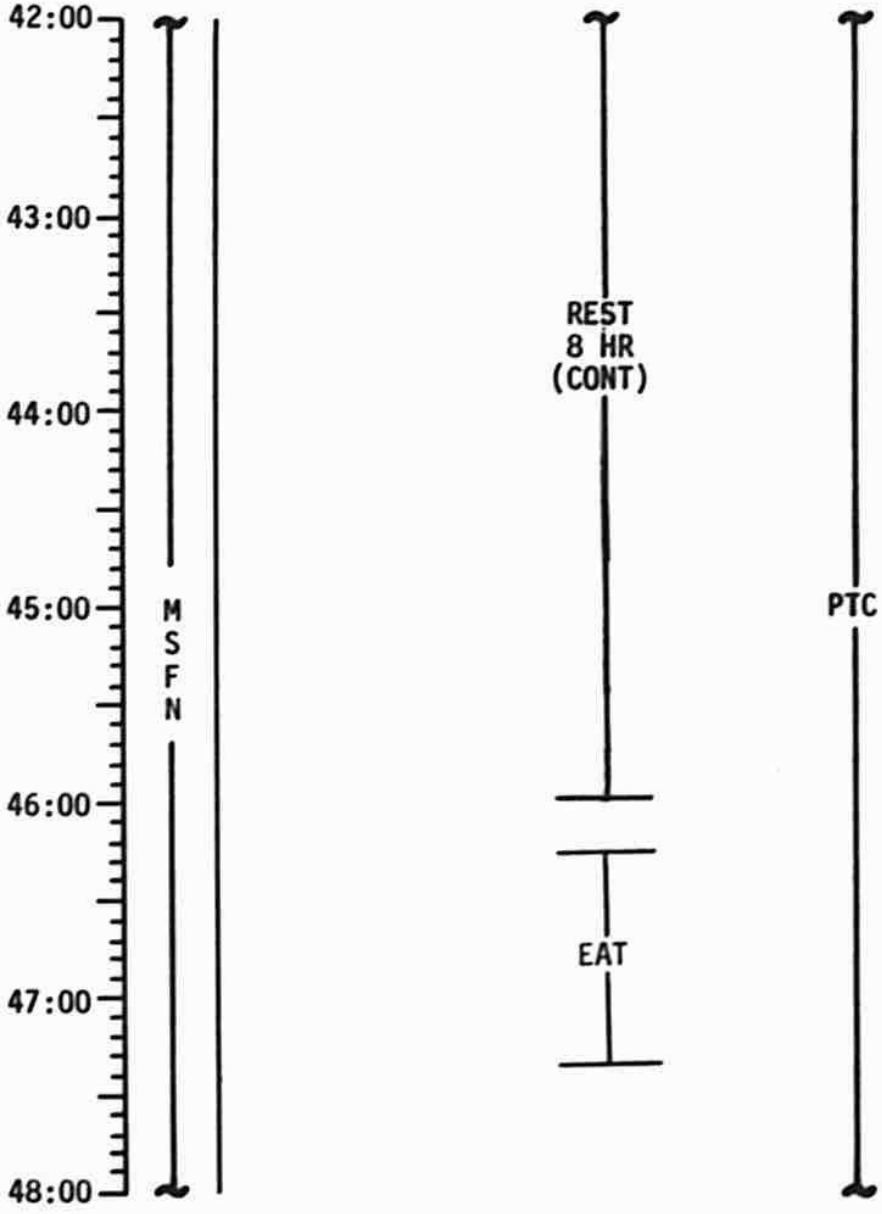
MSC Form 1057 OT (Mar 69) FLIGHT PLANNING BRANCH

5

6

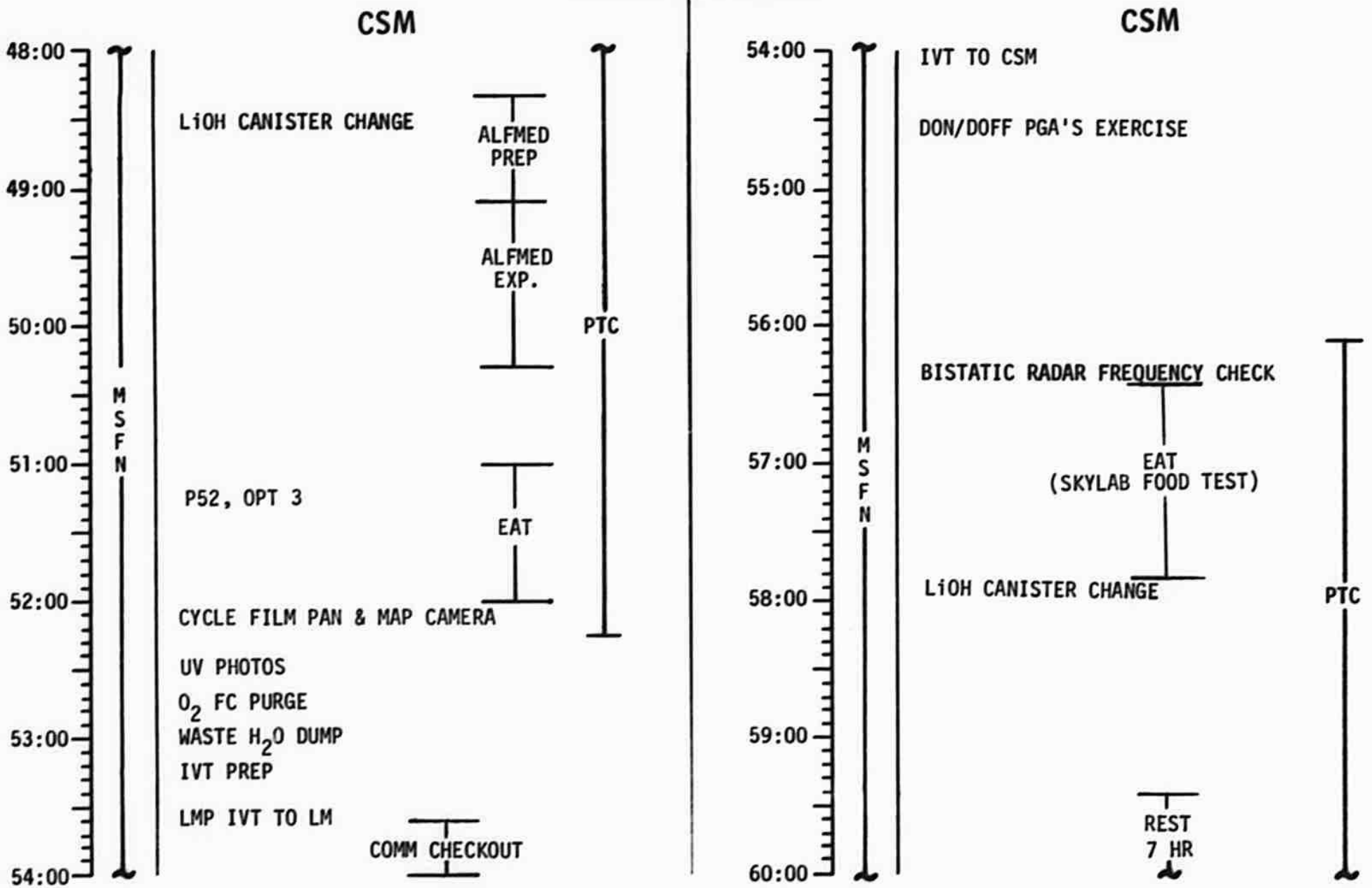
FLIGHT PLAN





MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	36:00 - 48:00	2-3/TLC.	5-4

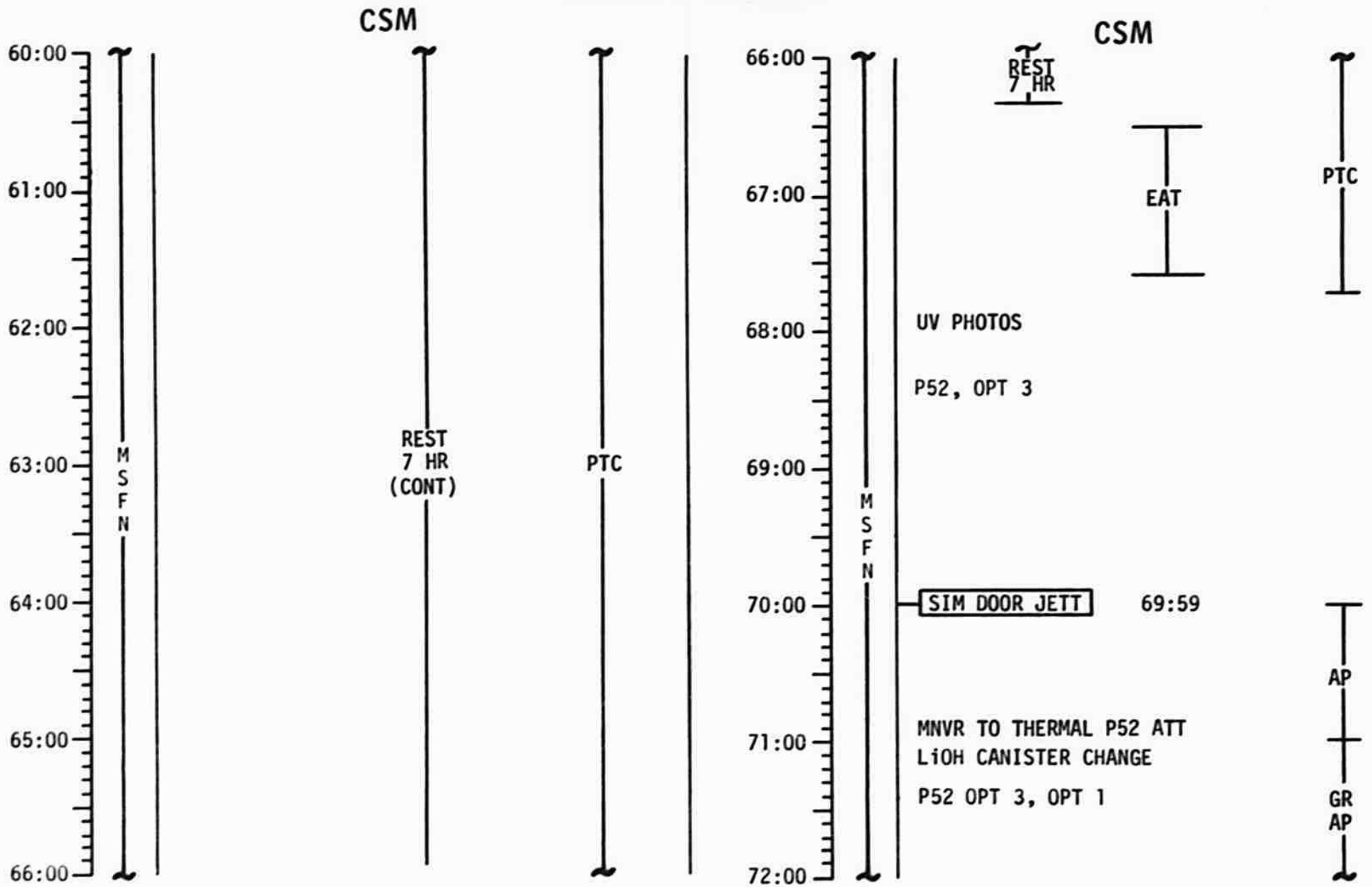
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	48:00 - 60:00	3/TLC	5-5

MSC Form 1057 OT (Mar 69) FLIGHT PLANNING BRANCH

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	60:00 - 72:00	3-4/TLC	5-6

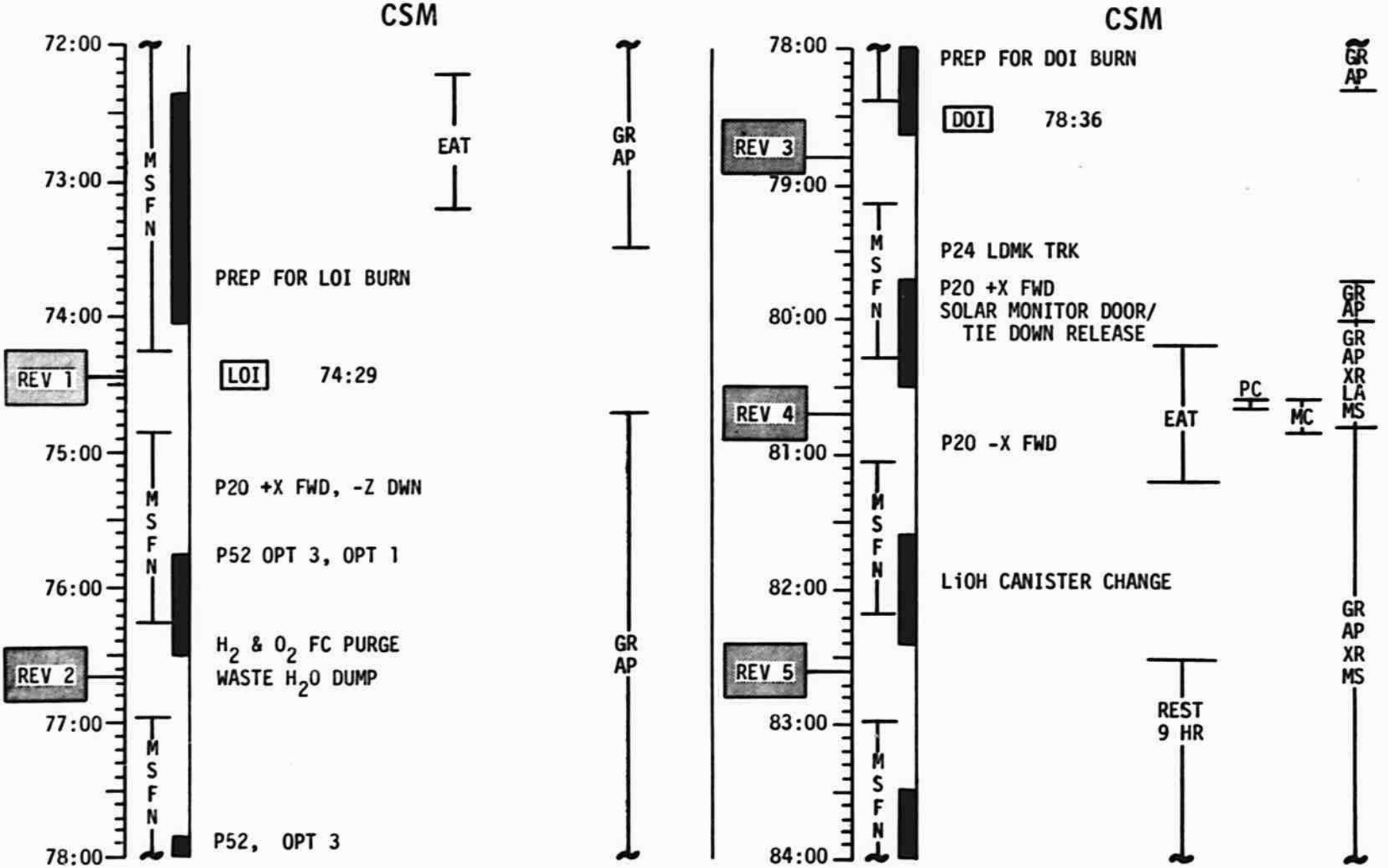
11

12

MSC Form 1057 PT (Mar 69)

FLIGHT PLANNING BRANCH

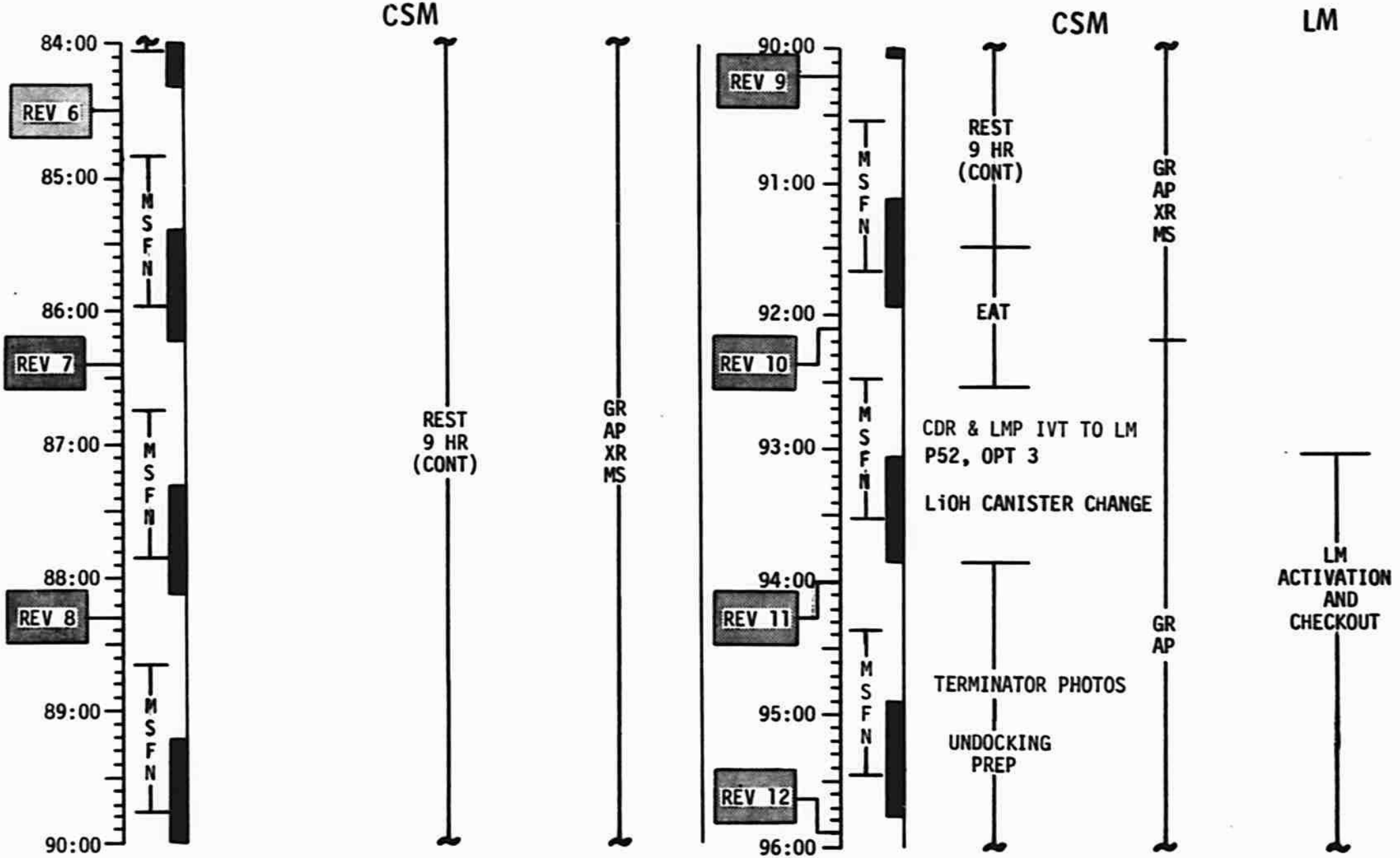
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	72:00 - 84:00	4/1-5	5-7

MSC Form 1057 CT (Mar 66) FLIGHT PLANNING BRANCH

FLIGHT PLAN



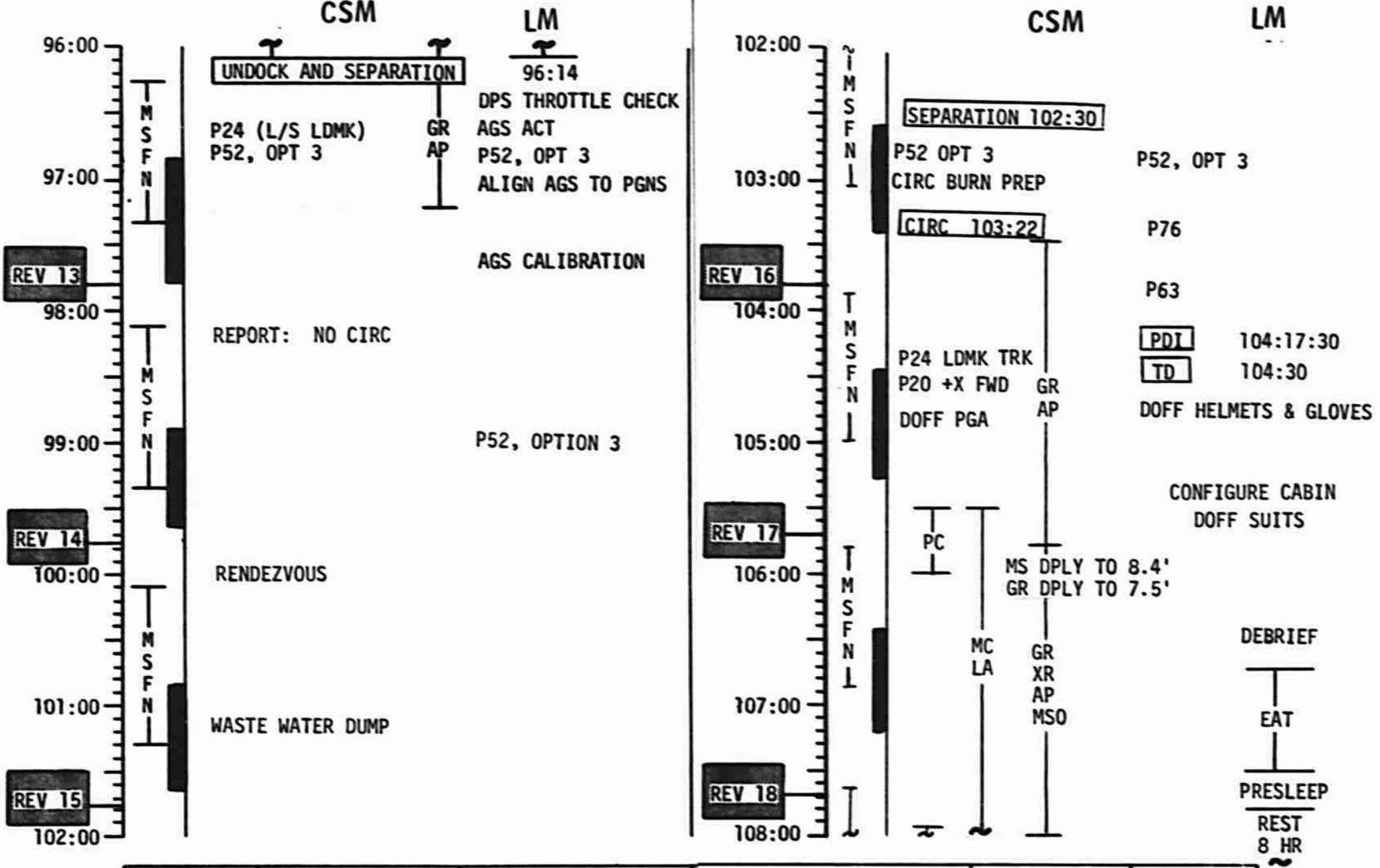
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	84:00 - 96:00	5/6-12	5-8

15

16

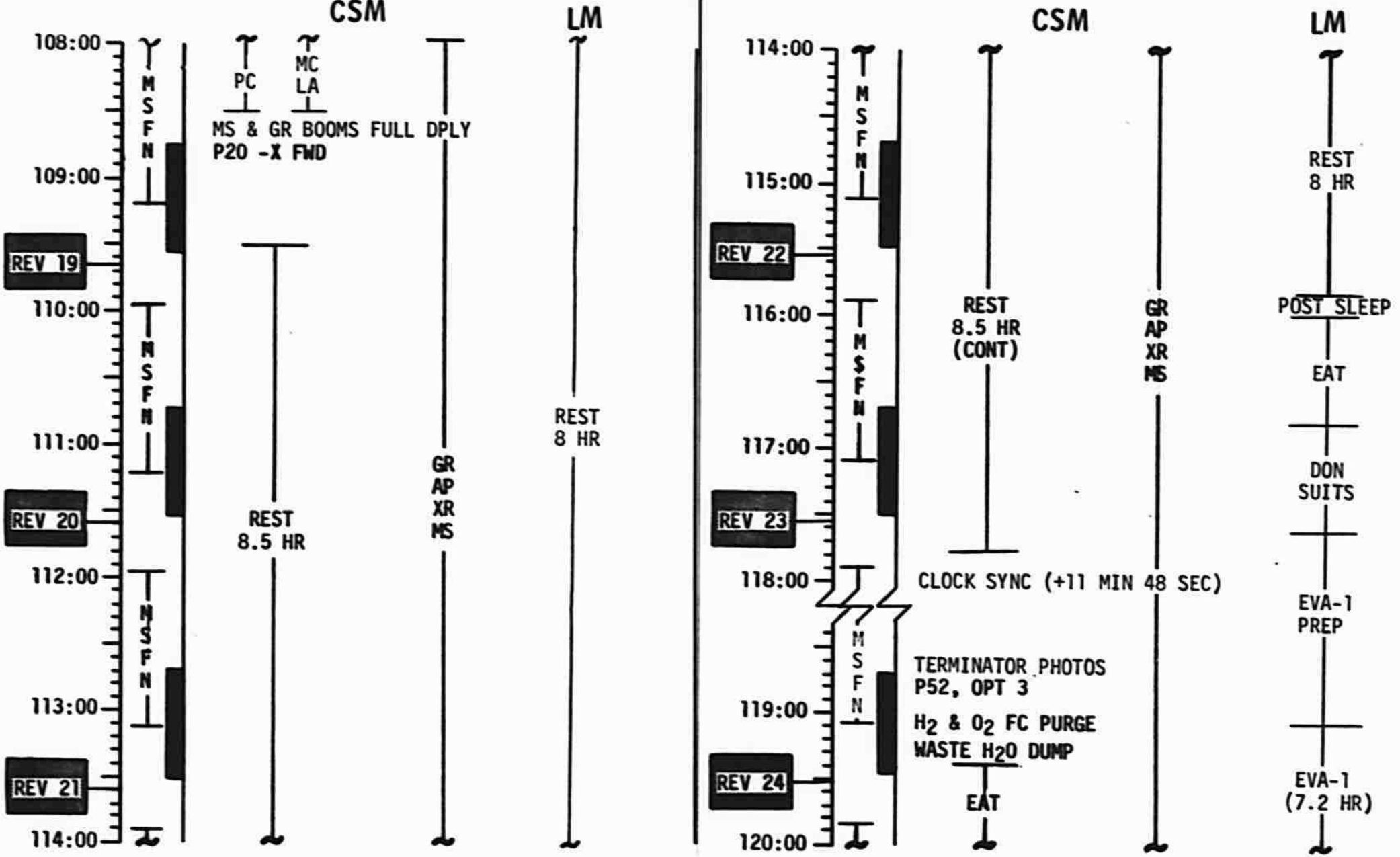
MSC Form 1057 OT (Mar 69) FLIGHT PLANNING BRANCH

FLIGHT PLAN



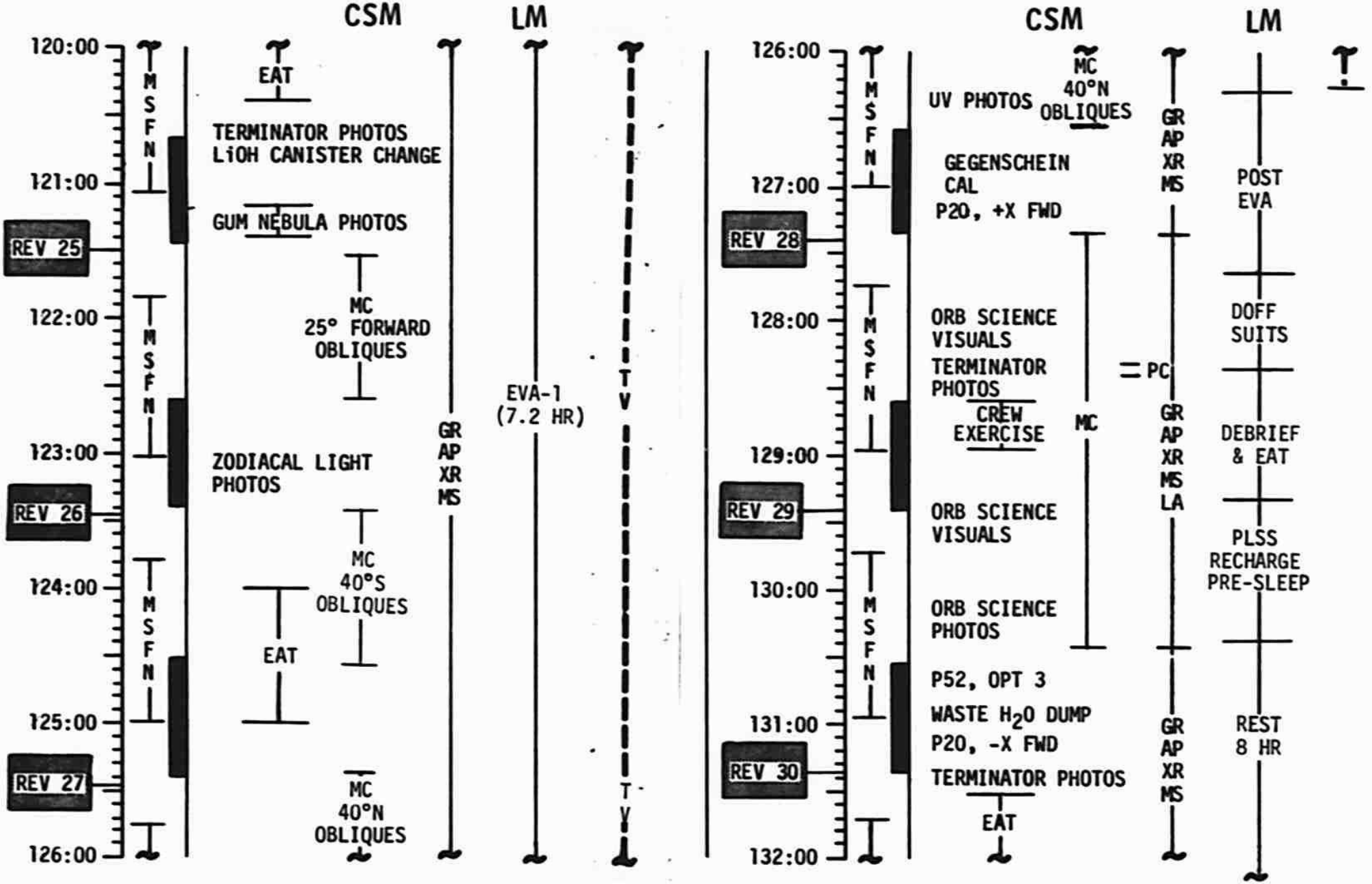
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	96:00 - 108:00	5/12-18	5-9

FLIGHT PLAN



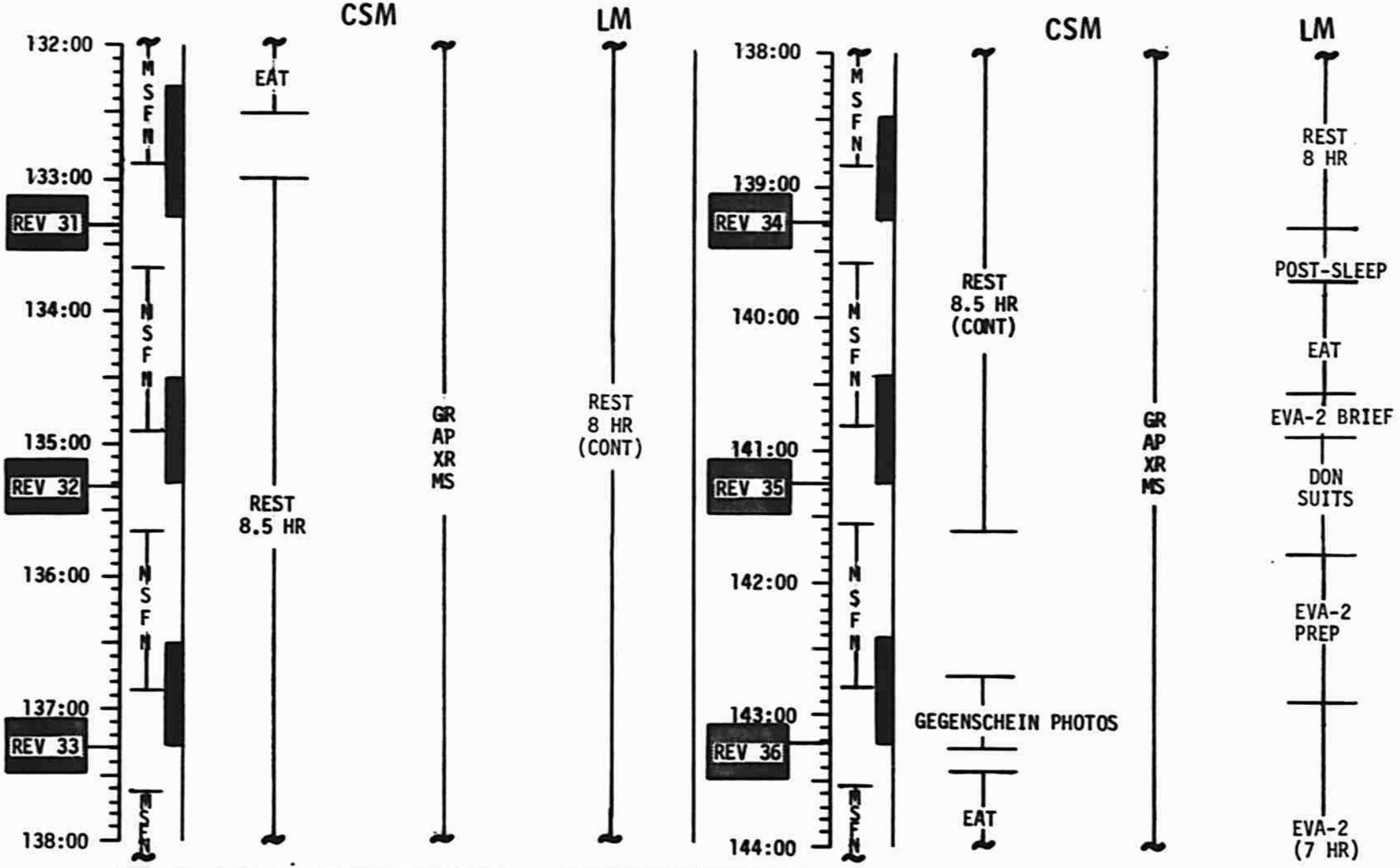
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	108:00 - 120:00	5-6/18-24	5-10

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	120:00 - 132:00	6/24-30	5-11

FLIGHT PLAN



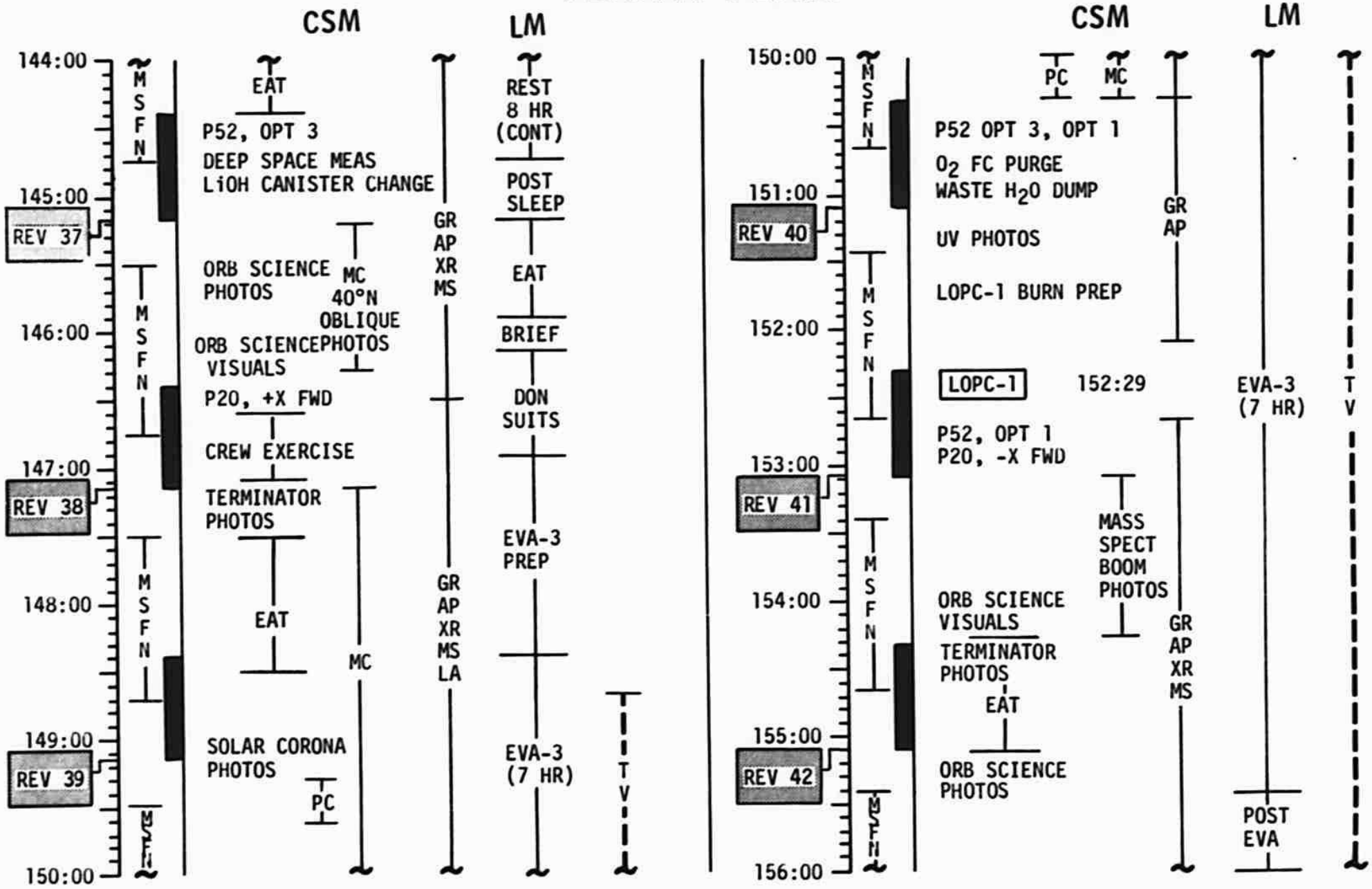
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	132:00 - 144:00	6-7/30-36	5-12

23

24

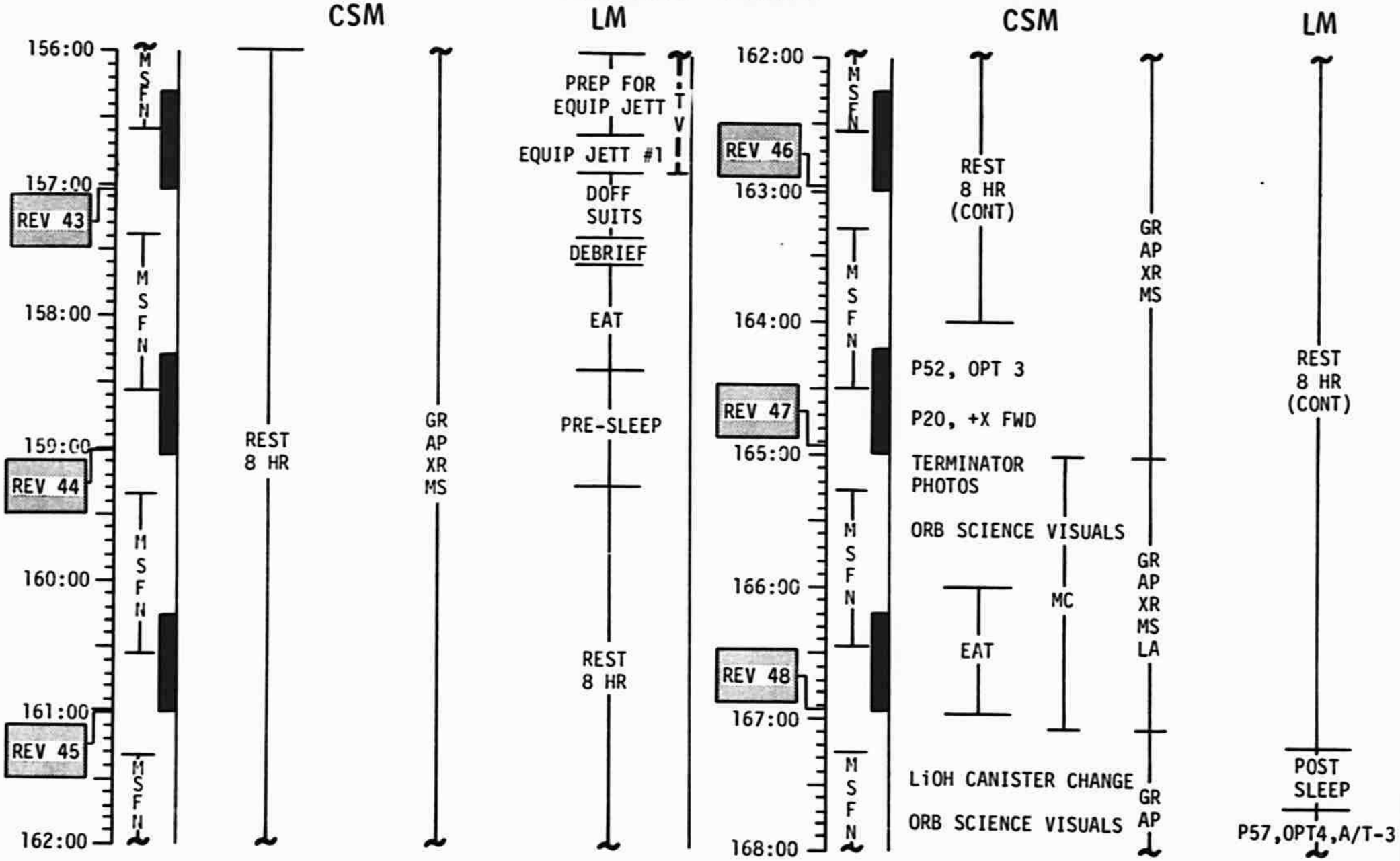
MSC Form 1057 OT (Mar 69) FLIGHT PLANNING BRANCH

FLIGHT PLAN



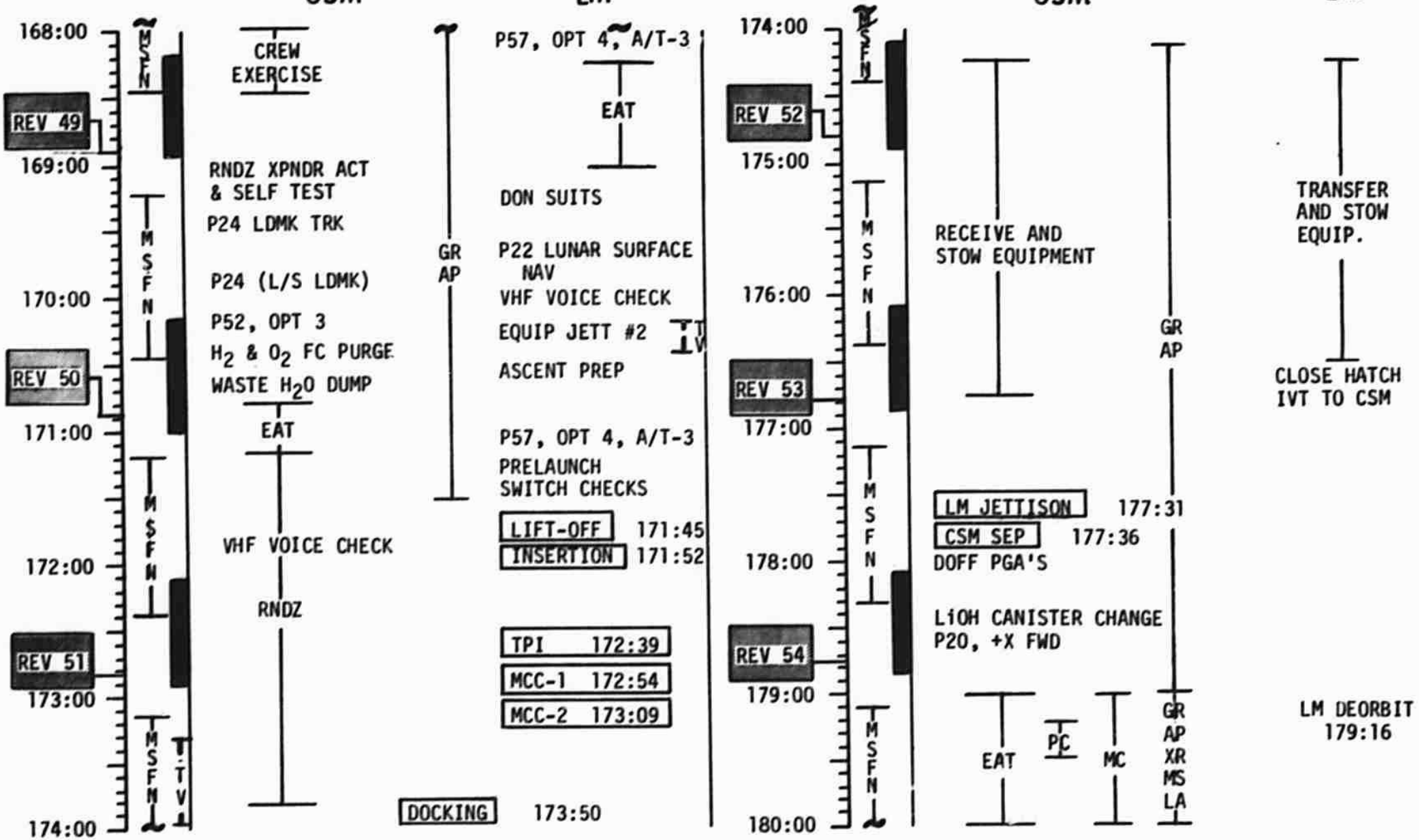
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	144:00 - 156:00	7/36-42	5-13

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	156:00 - 168:00	8/42-48	5-14

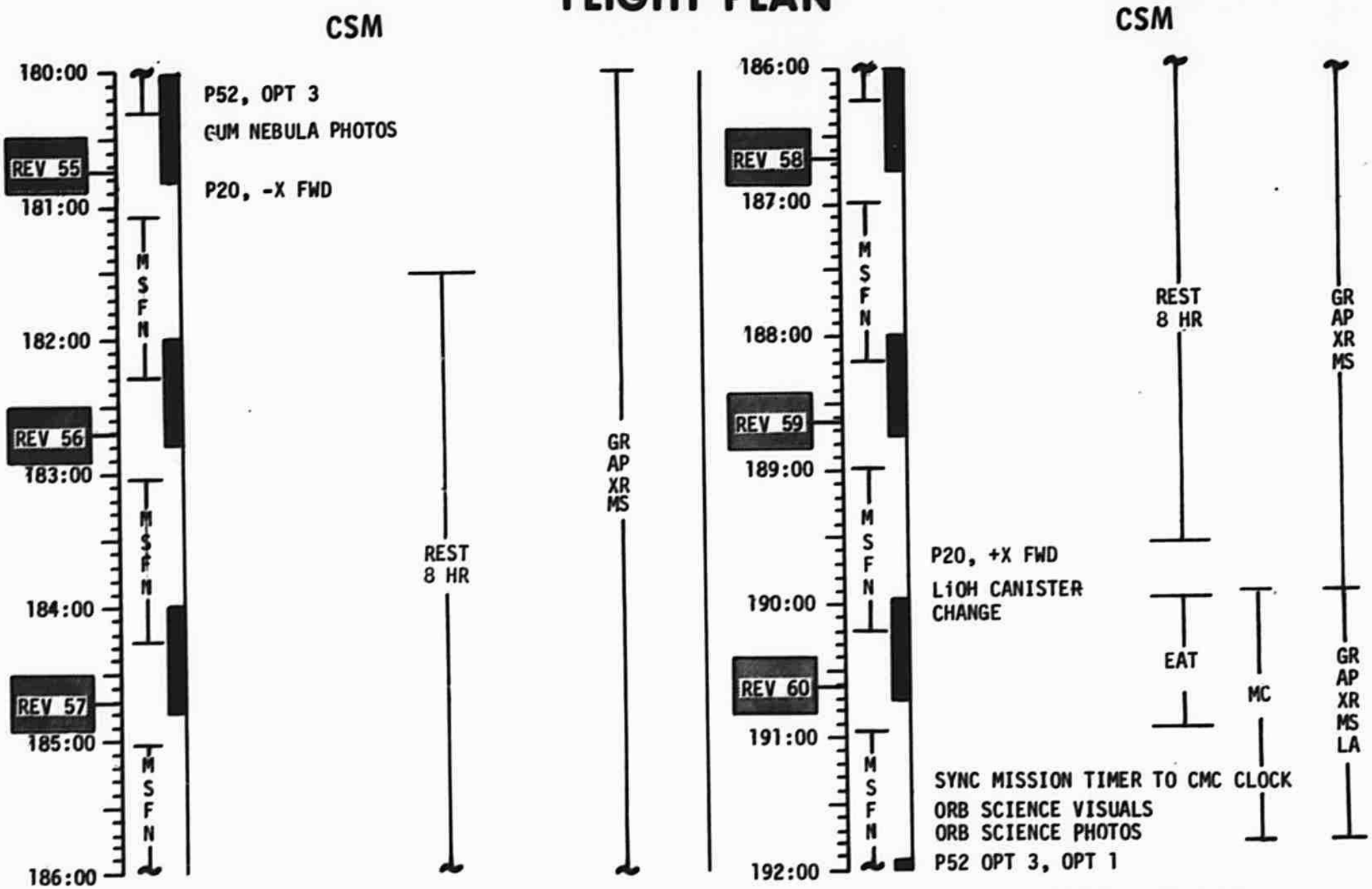
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	168:00 - 180:00	8/48-54	5-15

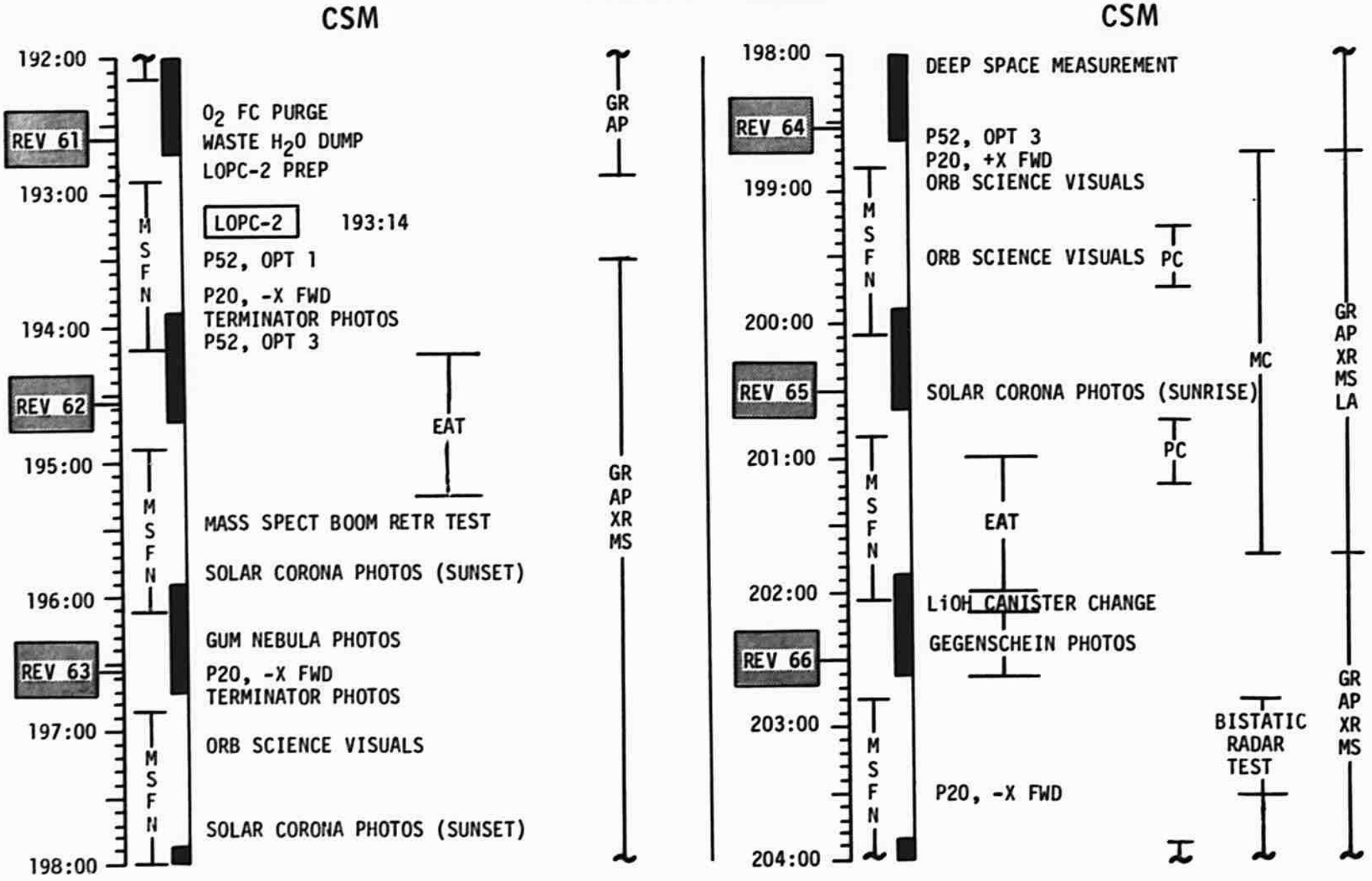
MSC Form 1057 OT (Mar 69) FLIGHT PLANNING BRANCH

FLIGHT PLAN



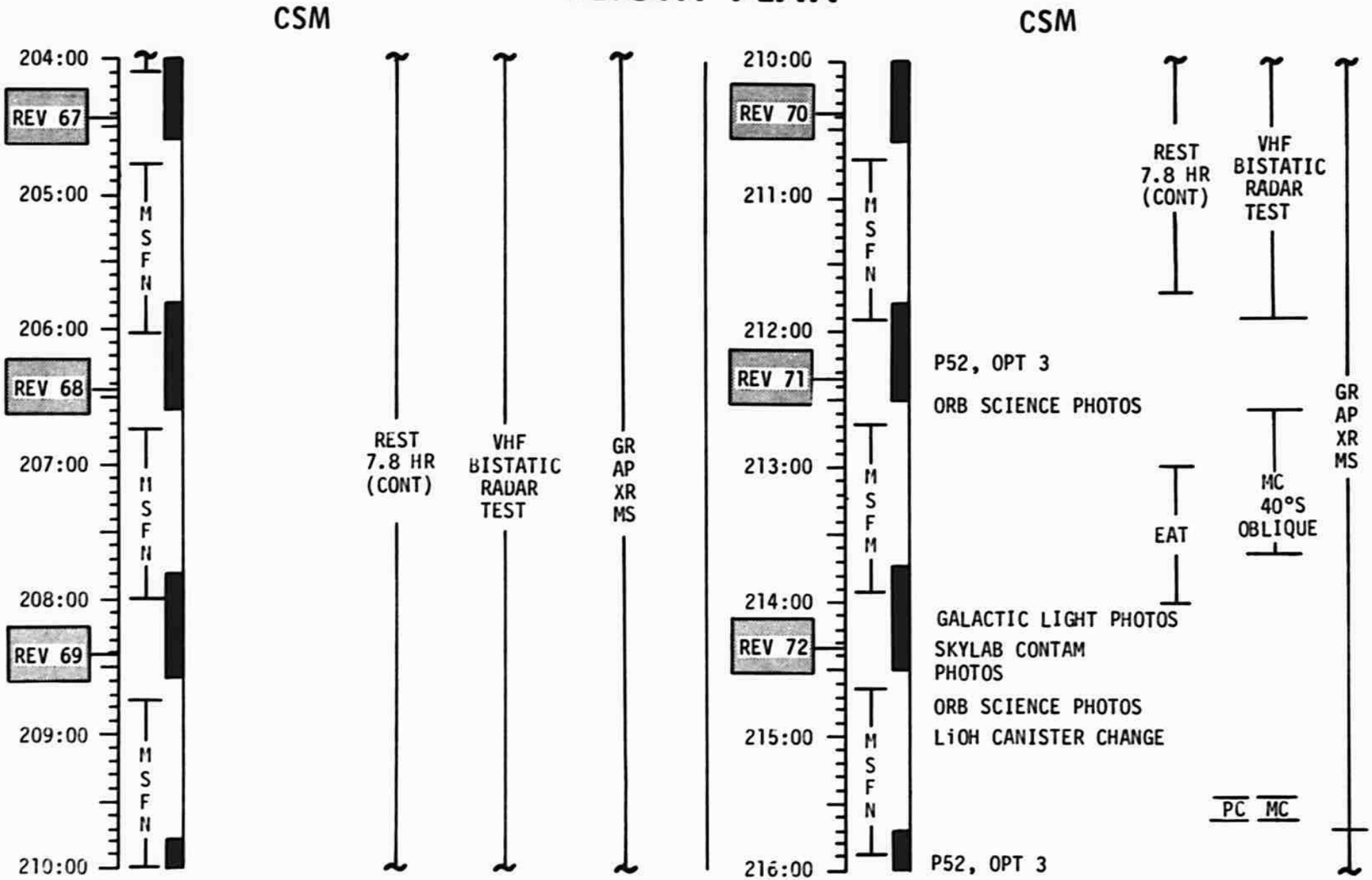
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	180:00 - 192:00	8-9/54-60	5-16

FLIGHT PLAN



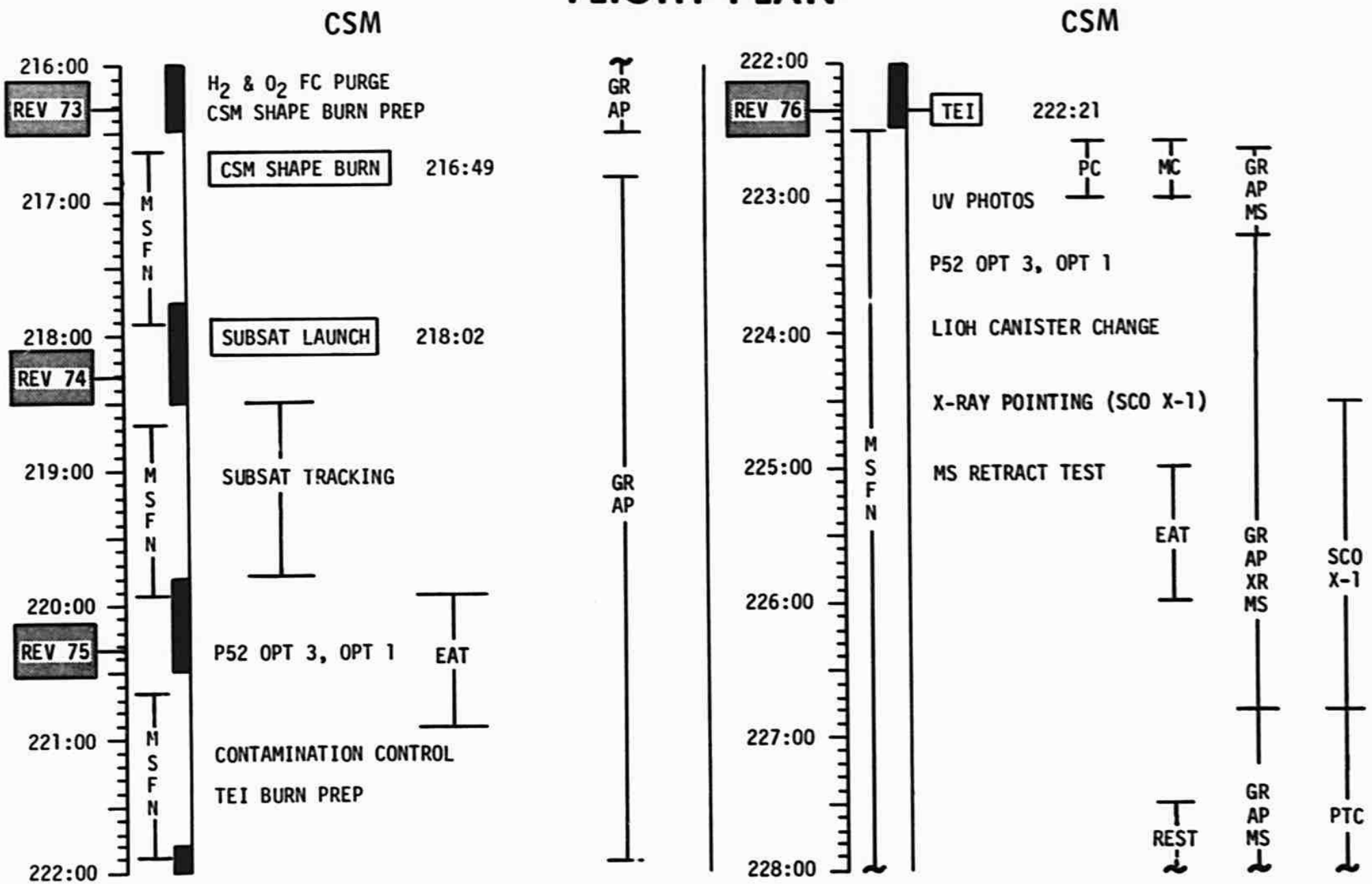
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	192:00 - 204:00	9/60-66	5-17

FLIGHT PLAN



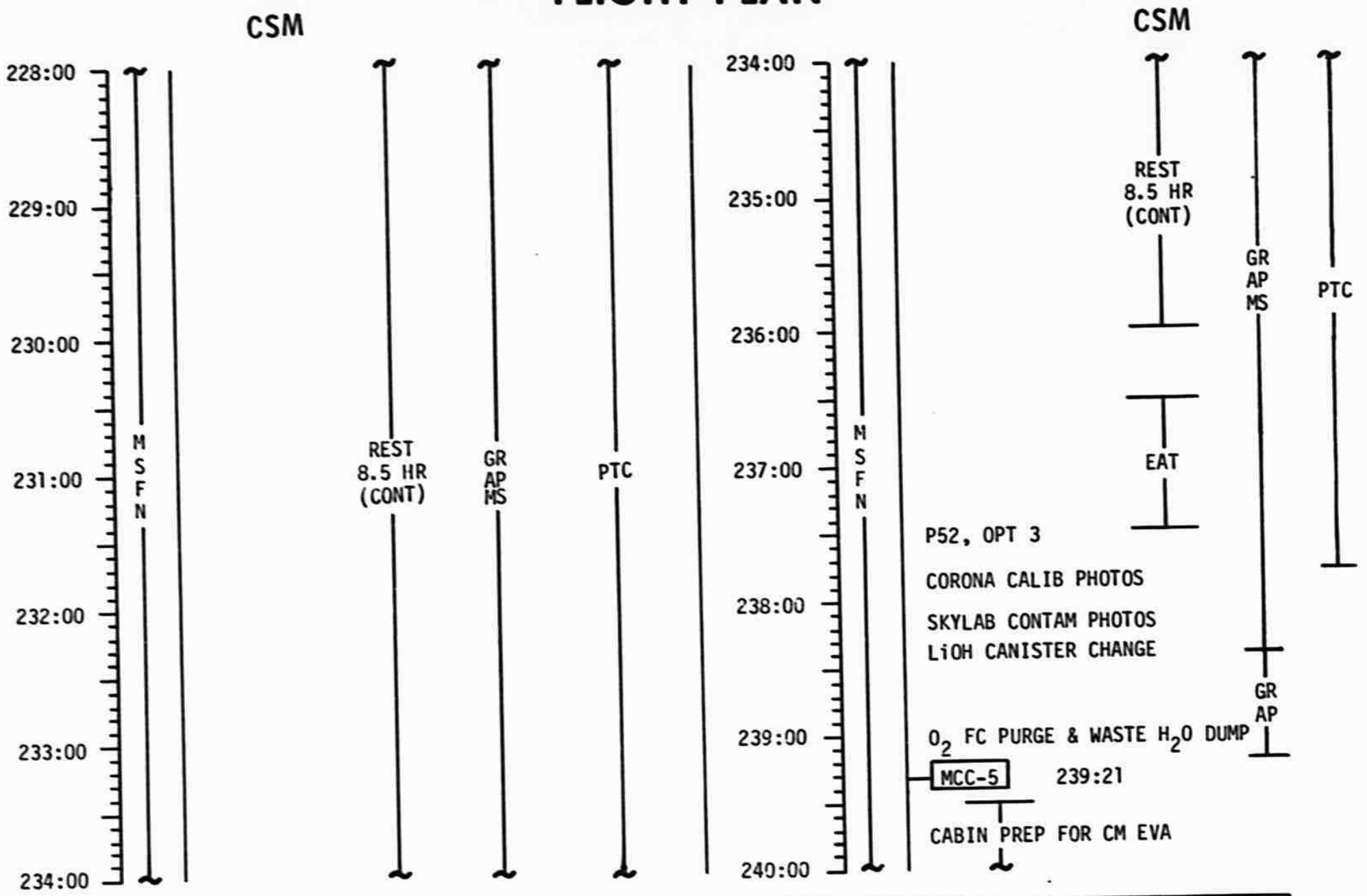
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	204:00 - 216:00	10/67-72	5-18

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	216:00 - 228:00	10/72-TEC	5-19

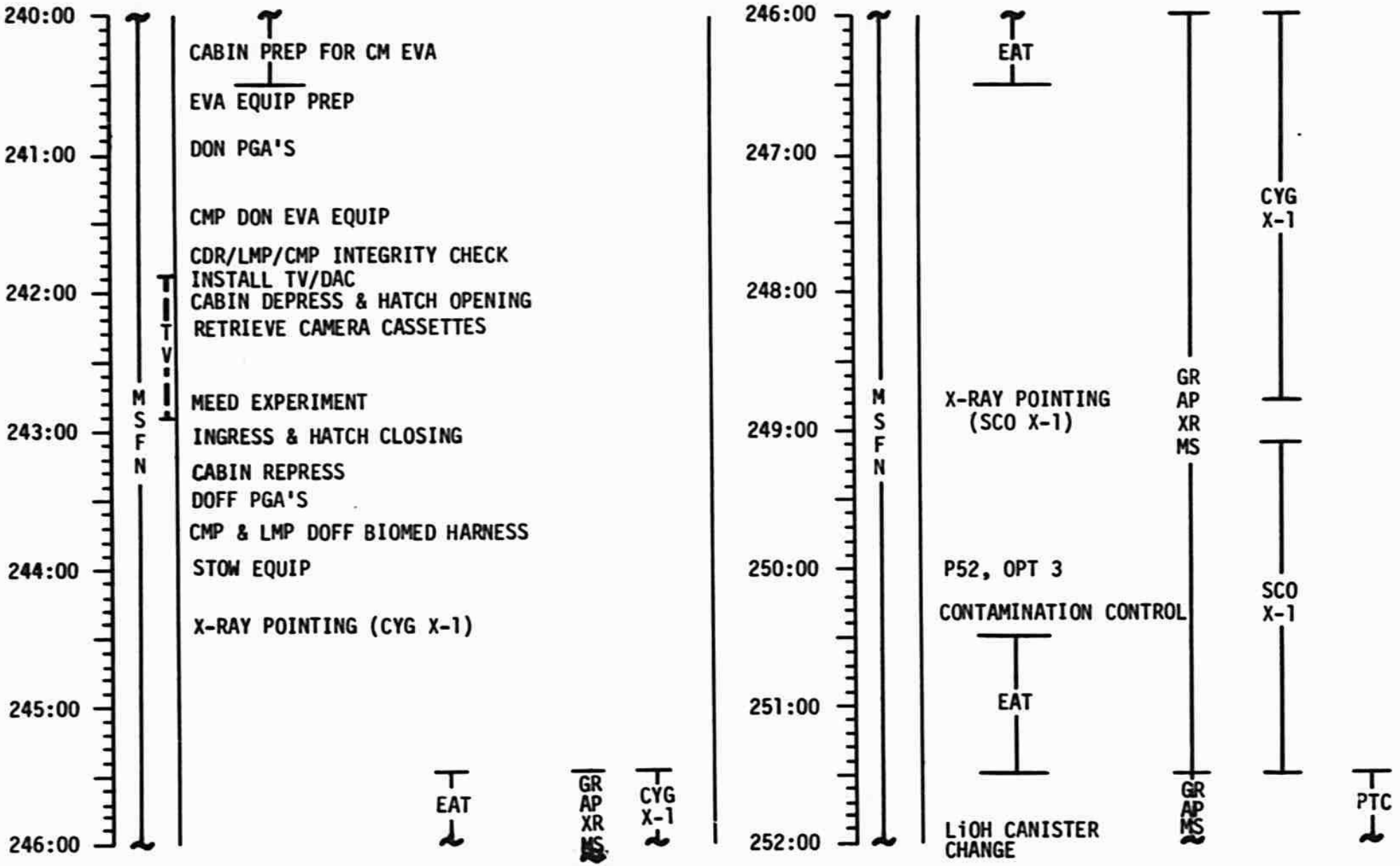
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	228:00 - 240:00	11/TEC	5-20

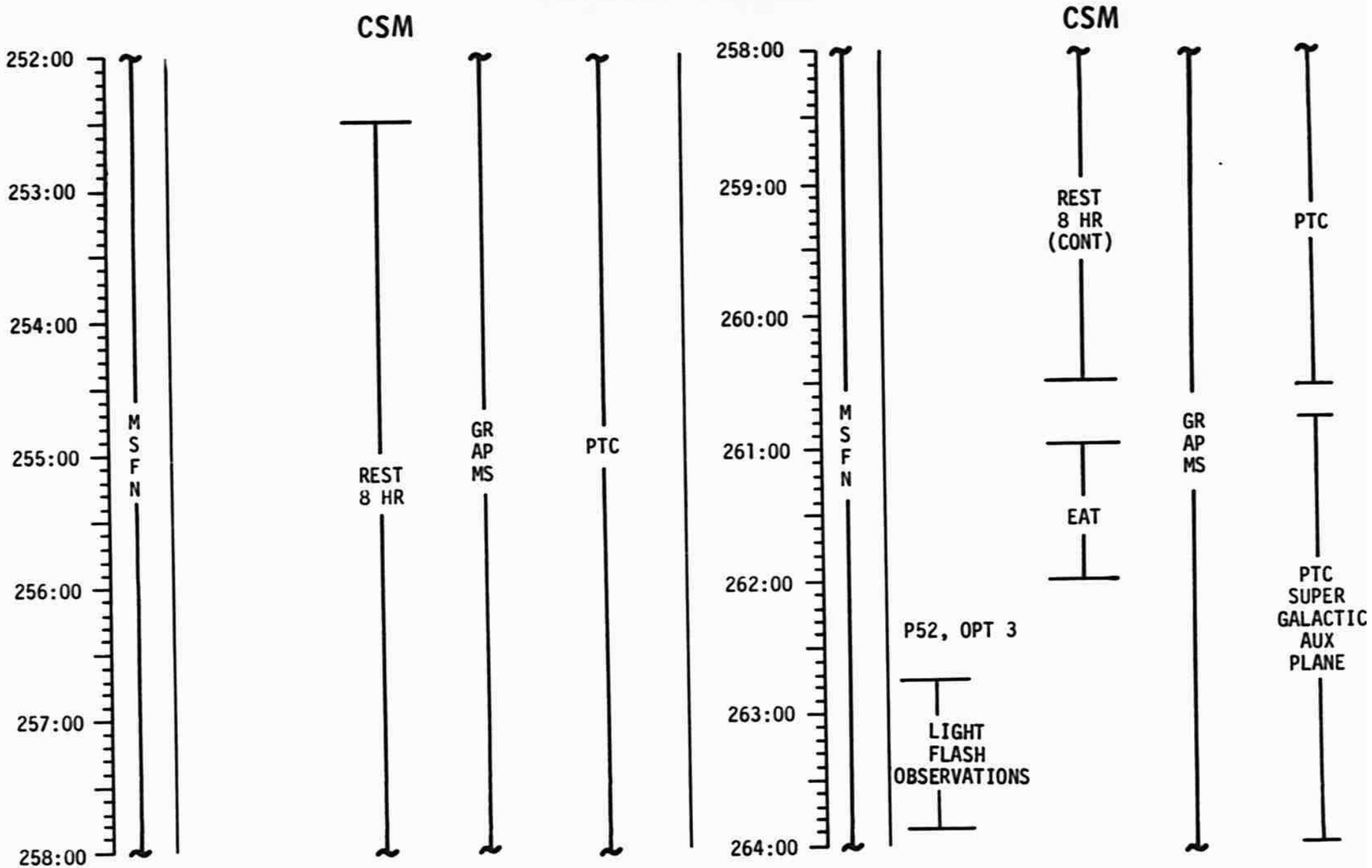
FLIGHT PLANNING BRANCH

FLIGHT PLAN



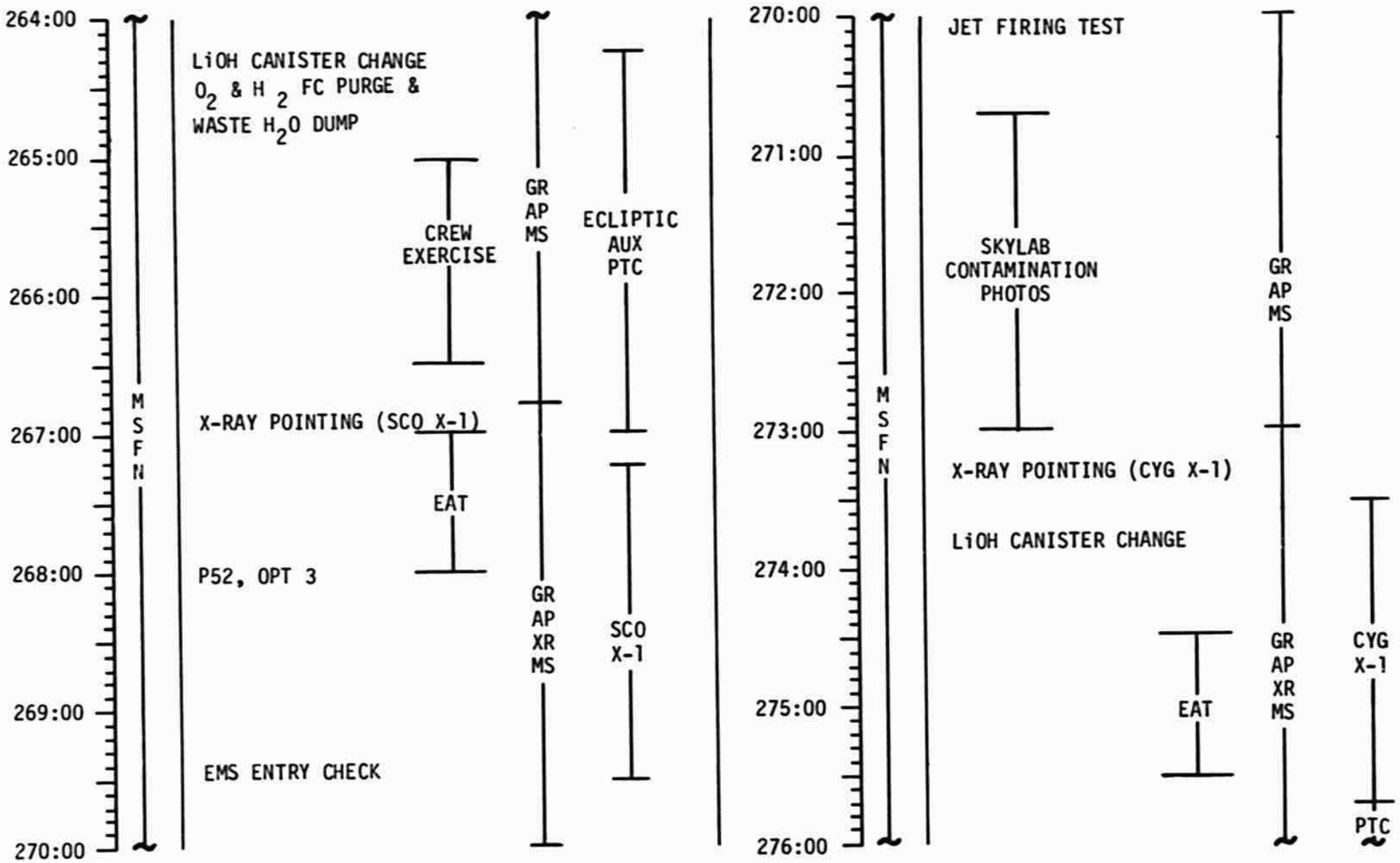
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	240:00 - 252:00	11/TEC	5-21

FLIGHT PLAN



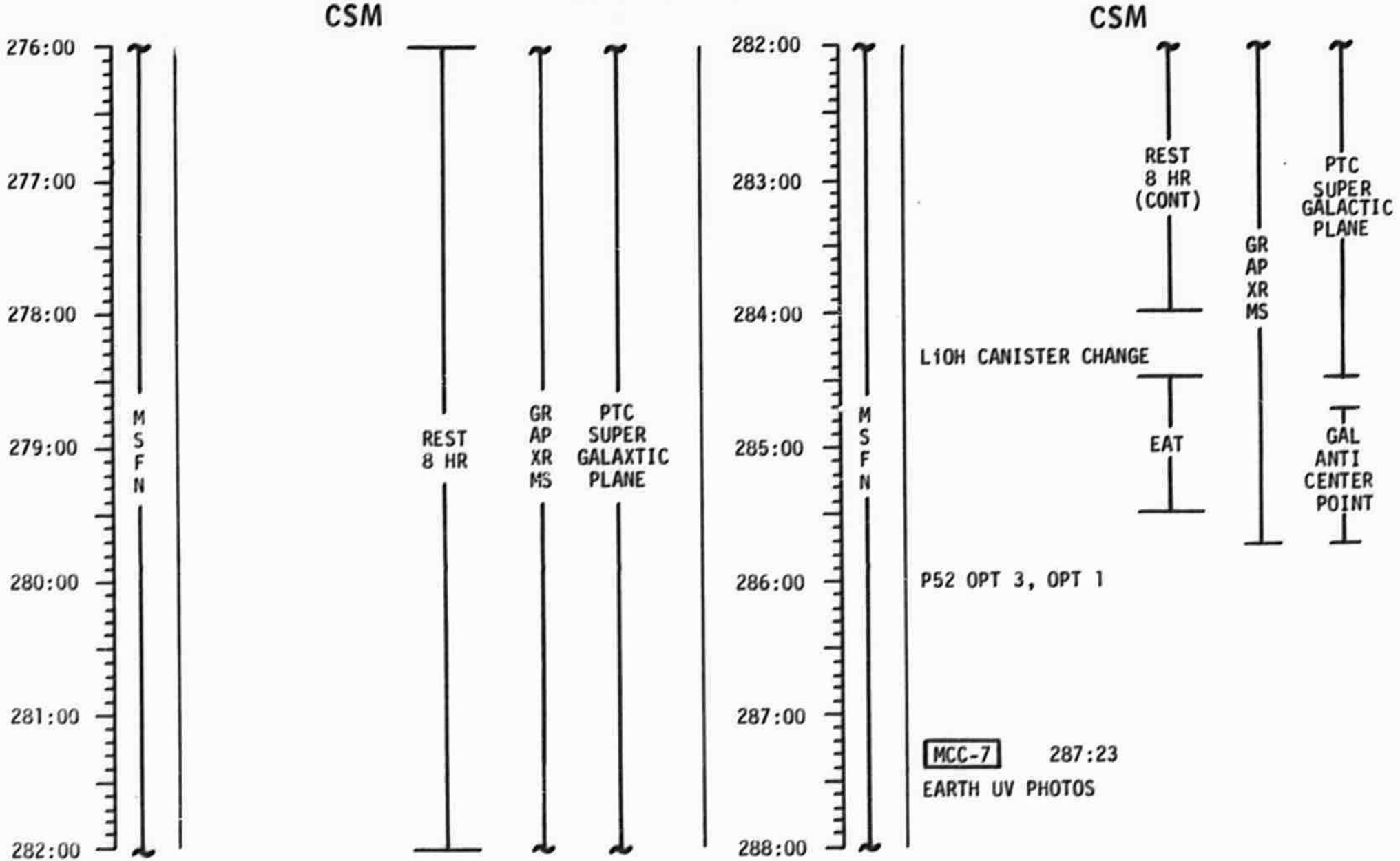
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	252:00 - 264:00	11-12/TEC	5-22

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	264:00 - 276:00	12/TEC	5-23

FLIGHT PLAN

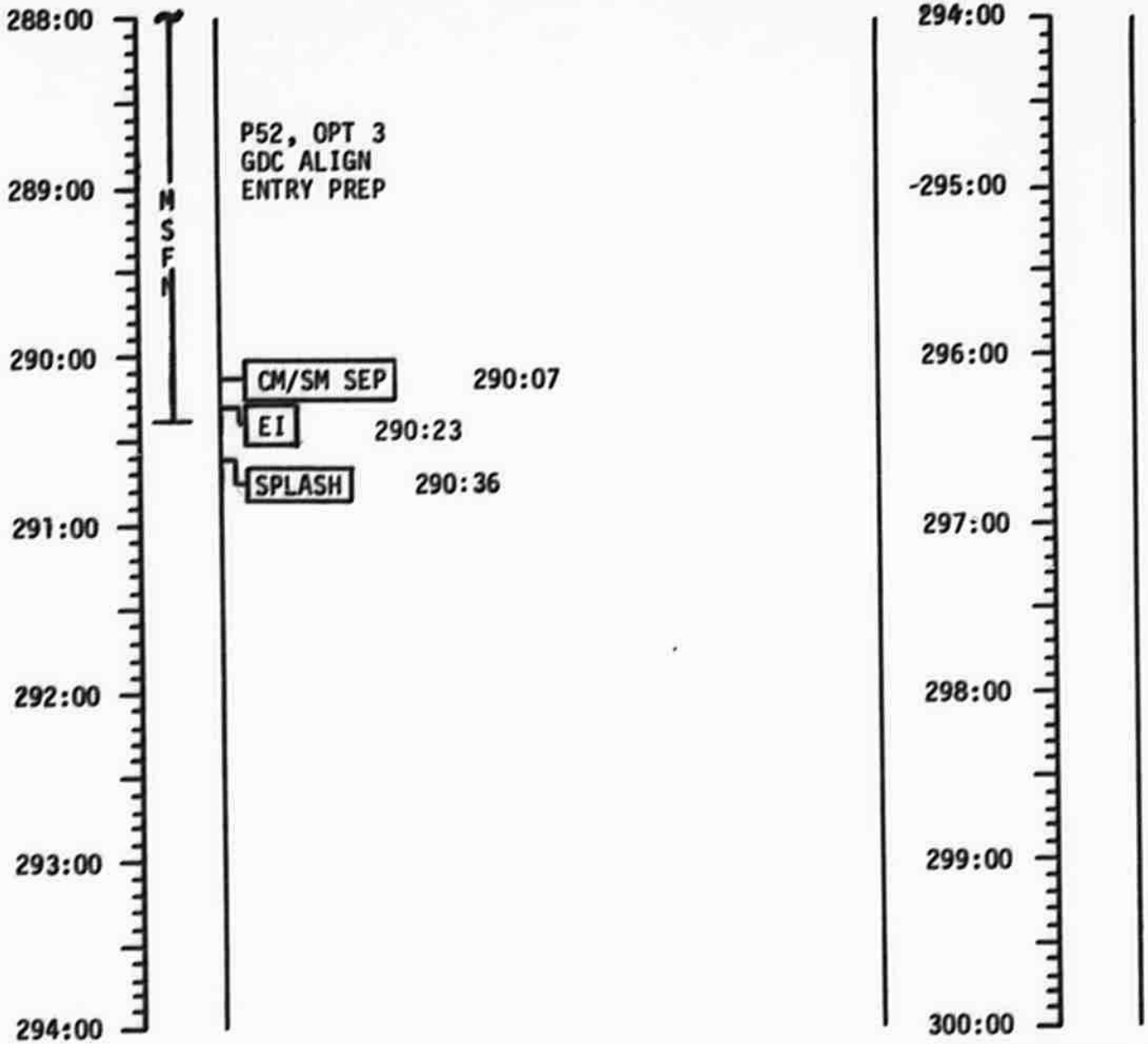


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	276:00 - 288:00	13/TEC	5-24

FLIGHT PLANNING BRANCH

FLIGHT PLAN

CSM



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	FINAL (4/16)	3/6/72	288:00 - 300:00	13/TEC-ENTRY	5-25

EARTH ORBIT ALTERNATE MISSION

Assumptions

1) A SAFE insertion orbit has been achieved by the S-IVB.
2) A systems failure has resulted in a NO/GO for TLI.

Constraints

1) Maintain SM-RCS deorbit capability.
2) Photography over U.S.
3) LM to be jettisoned for water impact.

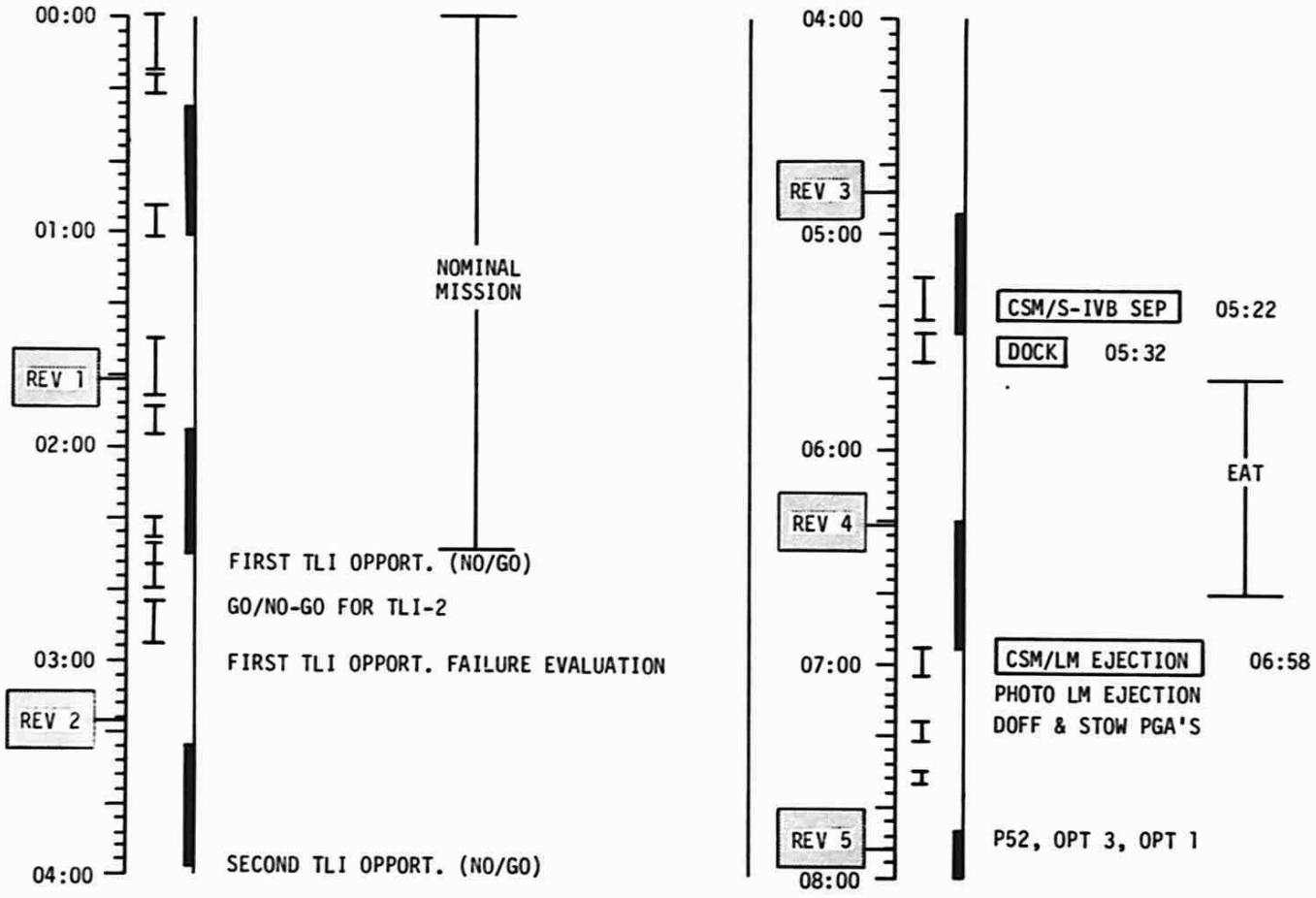
Sequence of Events

This alternate mission is initiated by a systems failure which will not allow TLI. The alternate mission timeline is entered at the nominal time of TLI and allows for a failure checkout period followed by a possible second TLI opportunity. If the second TLI is not performed, the CSM executes T.D.&E and prepares the LM for an ocean impact. The CSM executes five SPS burns to position itself for photographic coverage over the U.S. with an inclination of forty-five degrees. All the sim bay experiments are activated, the sub-satellite is jettisoned, and an EVA is planned to retrieve the film canisters. The mission is open-ended but for flight planning purposes, a six and one-half day mission is planned.

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EARTH ALTERNATE

FLIGHT PLAN

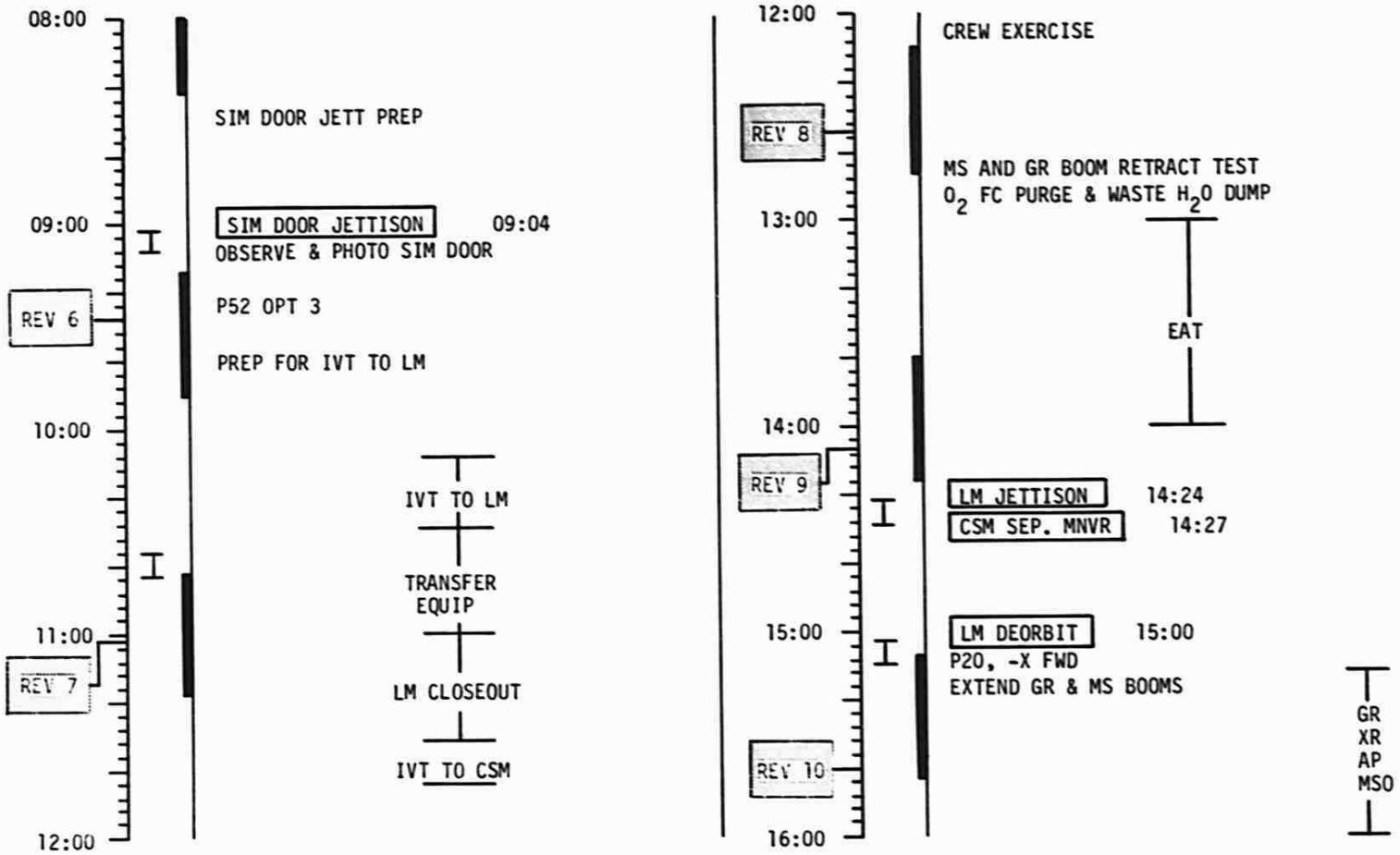


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	00:00 - 08:00	1/1-5	6-3

MSC Form 1477 OT (Mar 66) FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

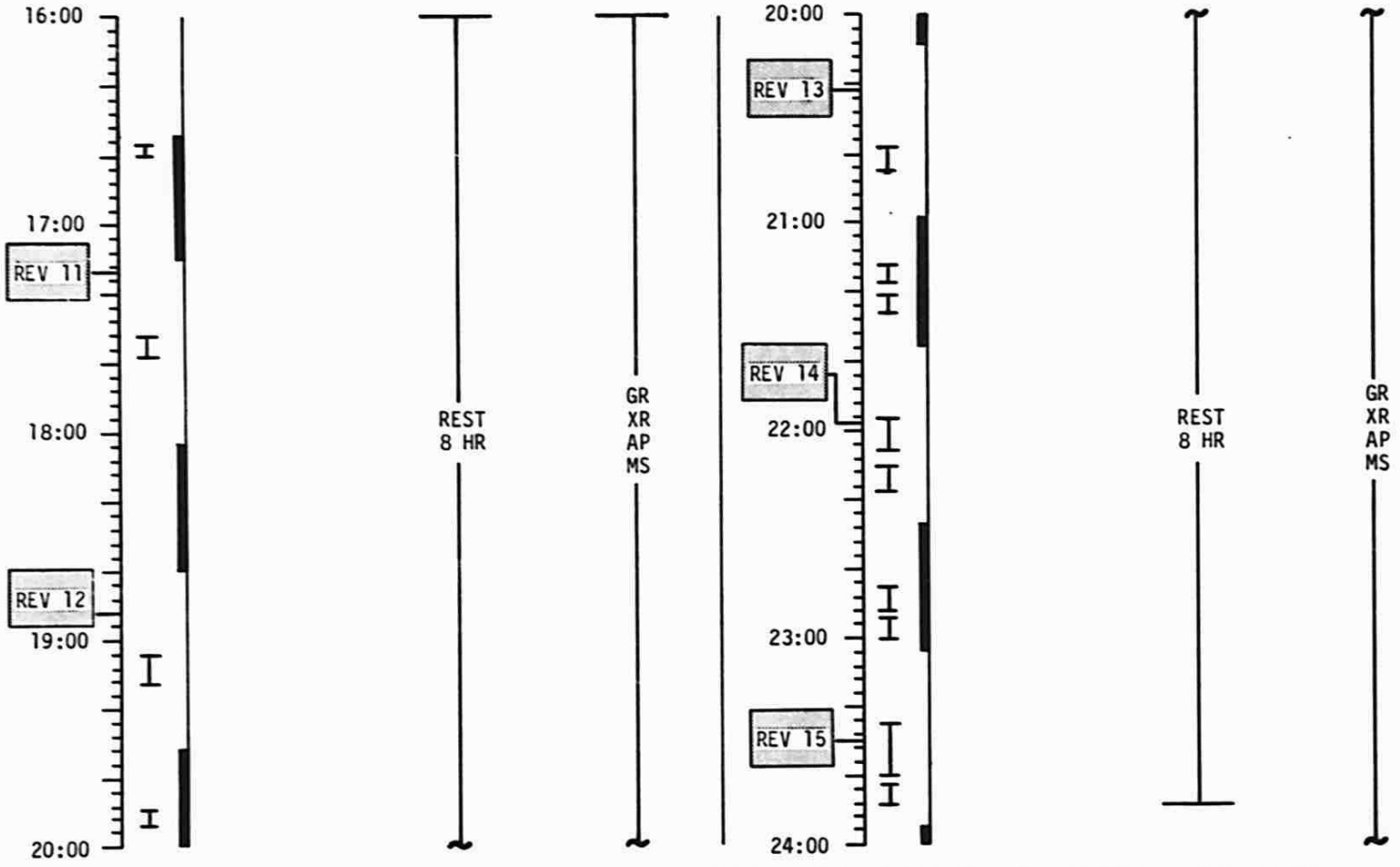


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	08:00 - 16:00	1/5-10	6-4

FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

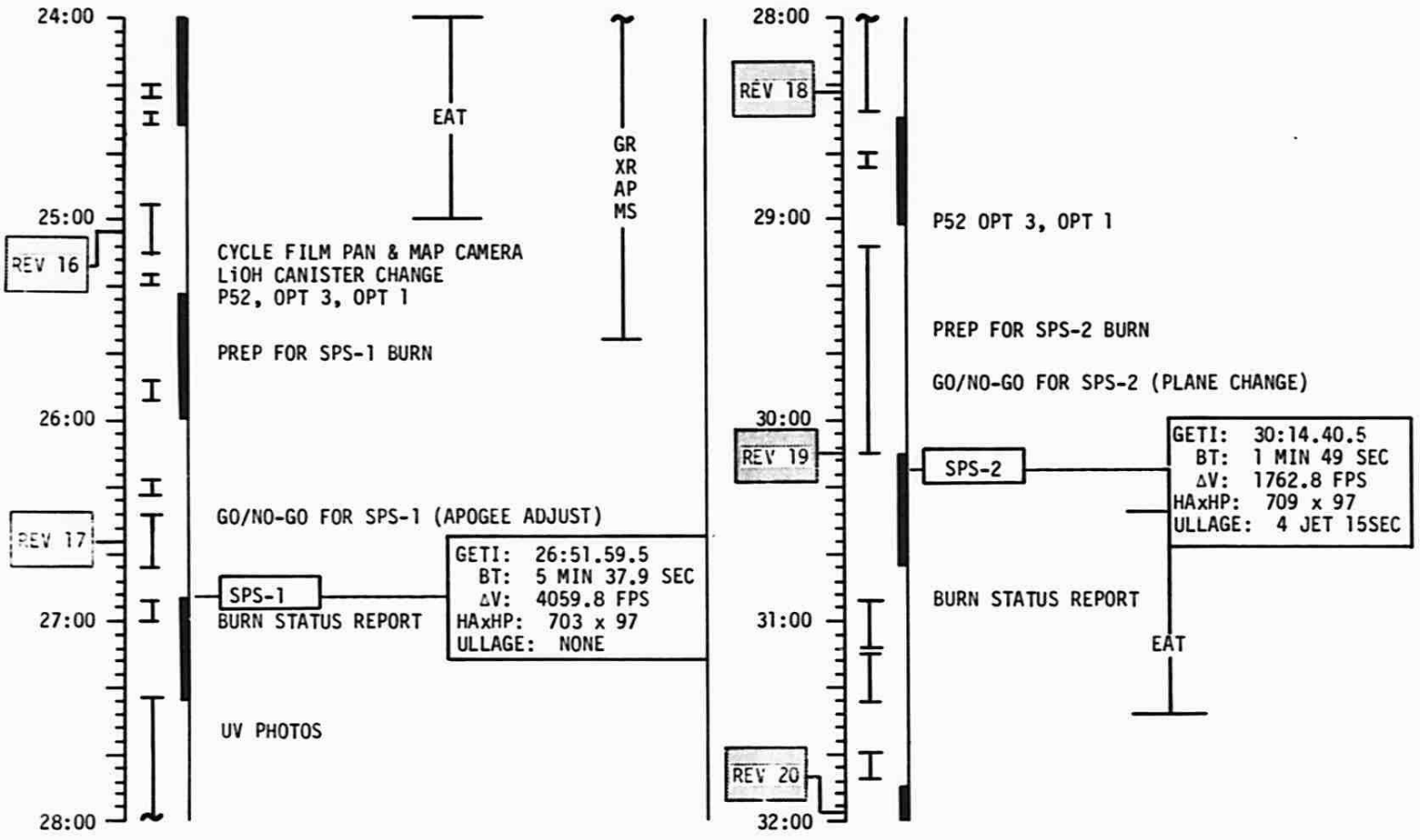


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	16:00 - 24:00	1/10-15	6-5

MSC Form 1577 OT (Mar 69) FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

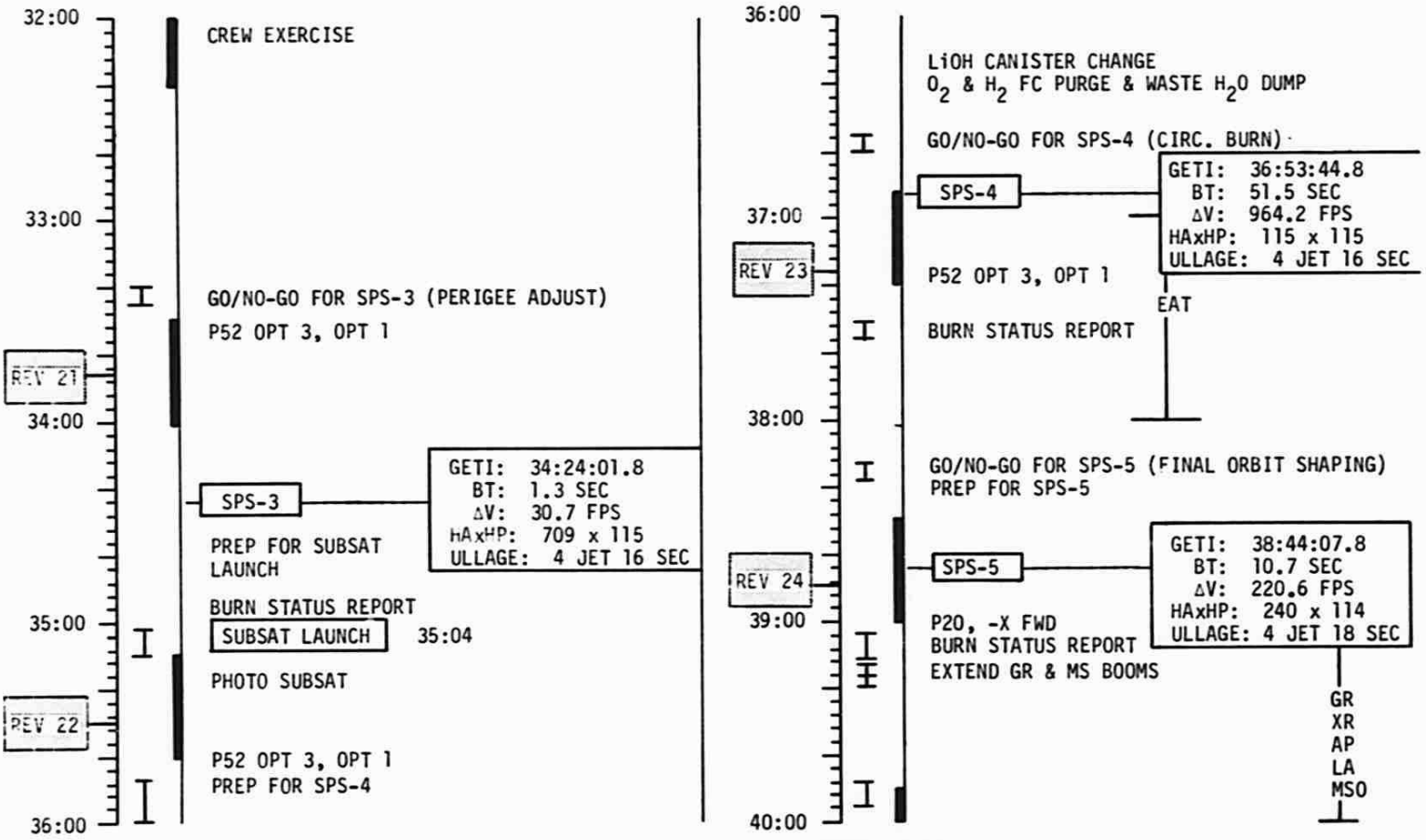


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	24:00 - 32:00	2/15-20	6-6

FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

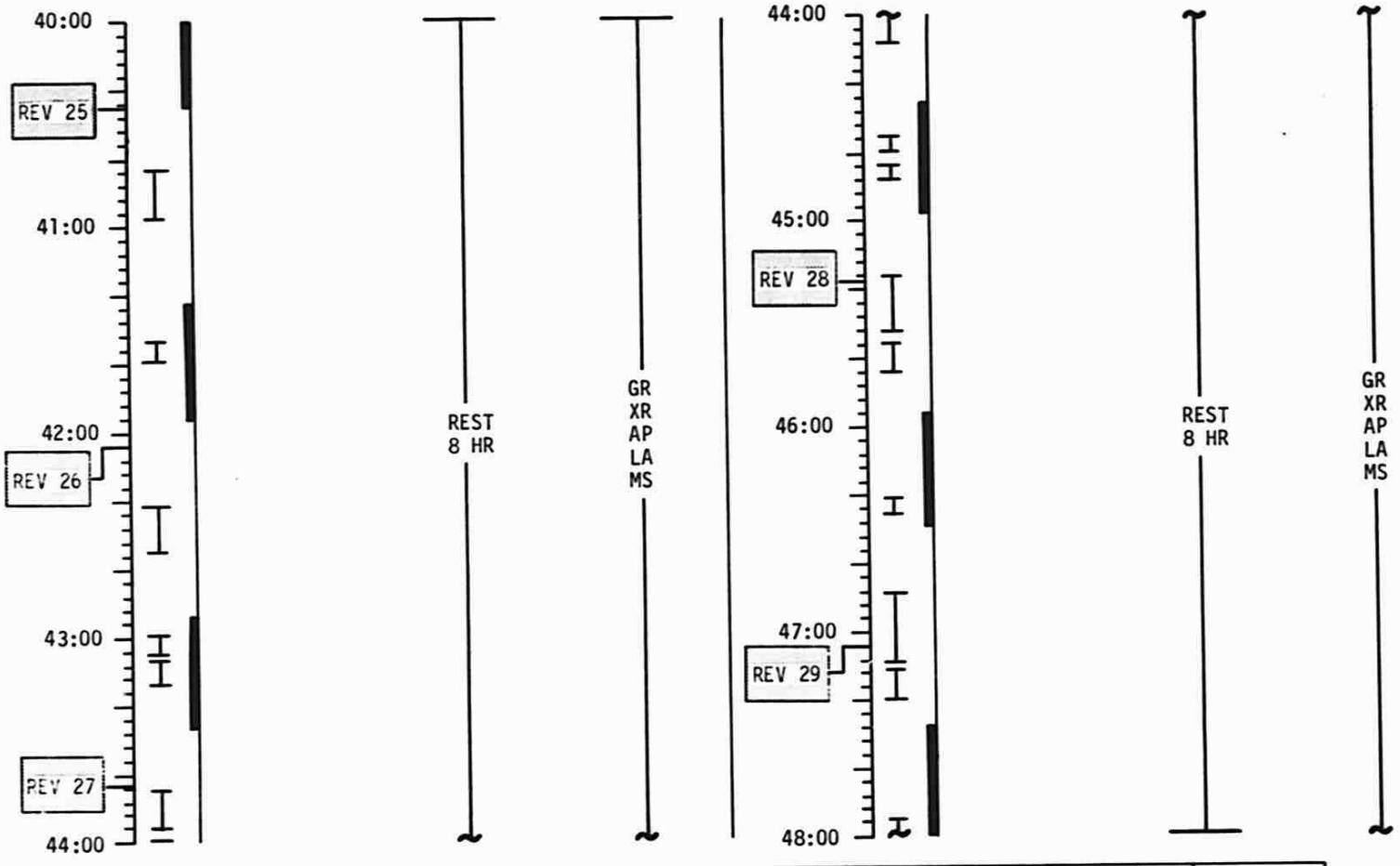


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	32:00 - 40:00	2/20-24	6-7

FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

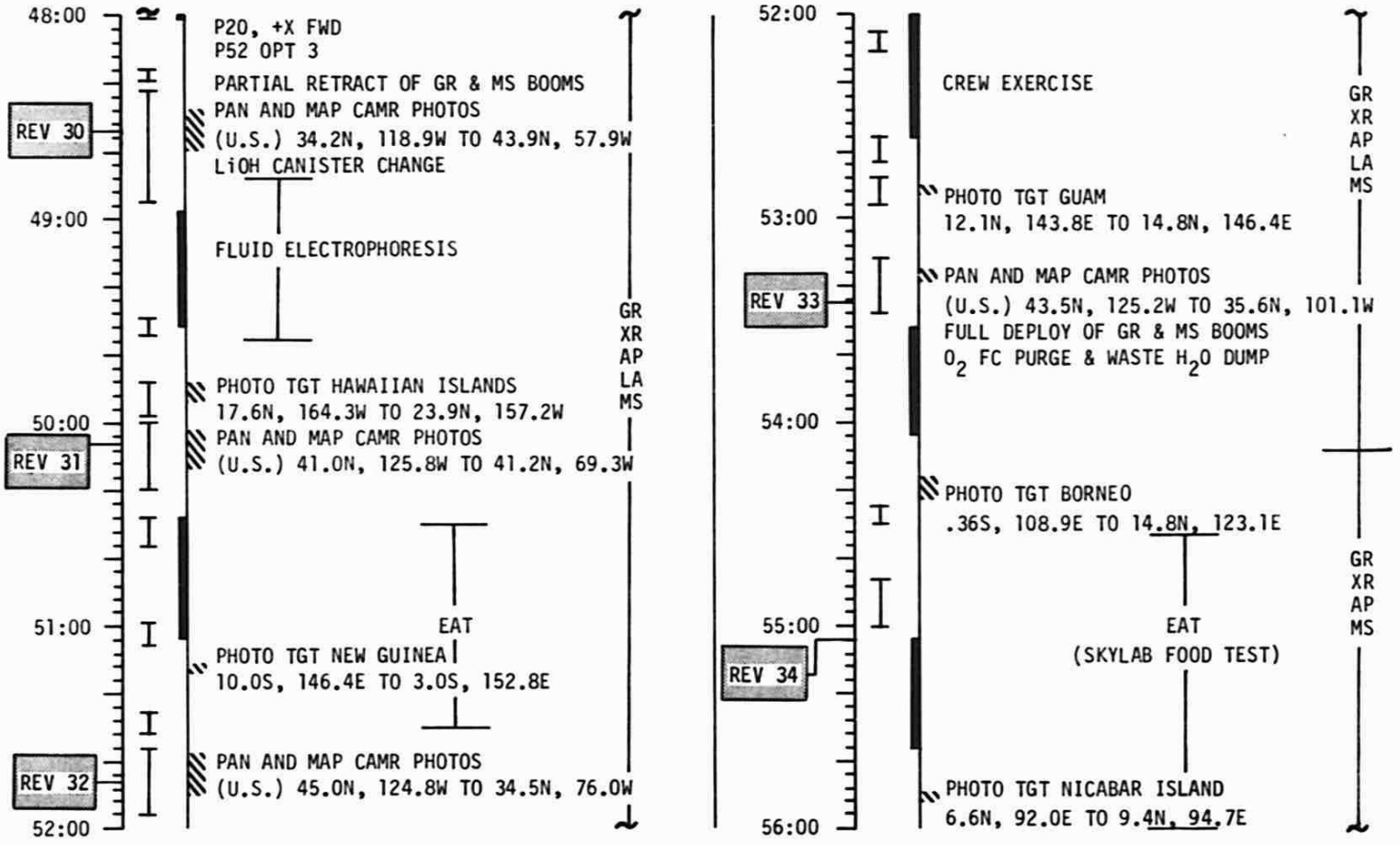


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	40:00 - 48:00	2/24-29	6-8

FLIGHT P NING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

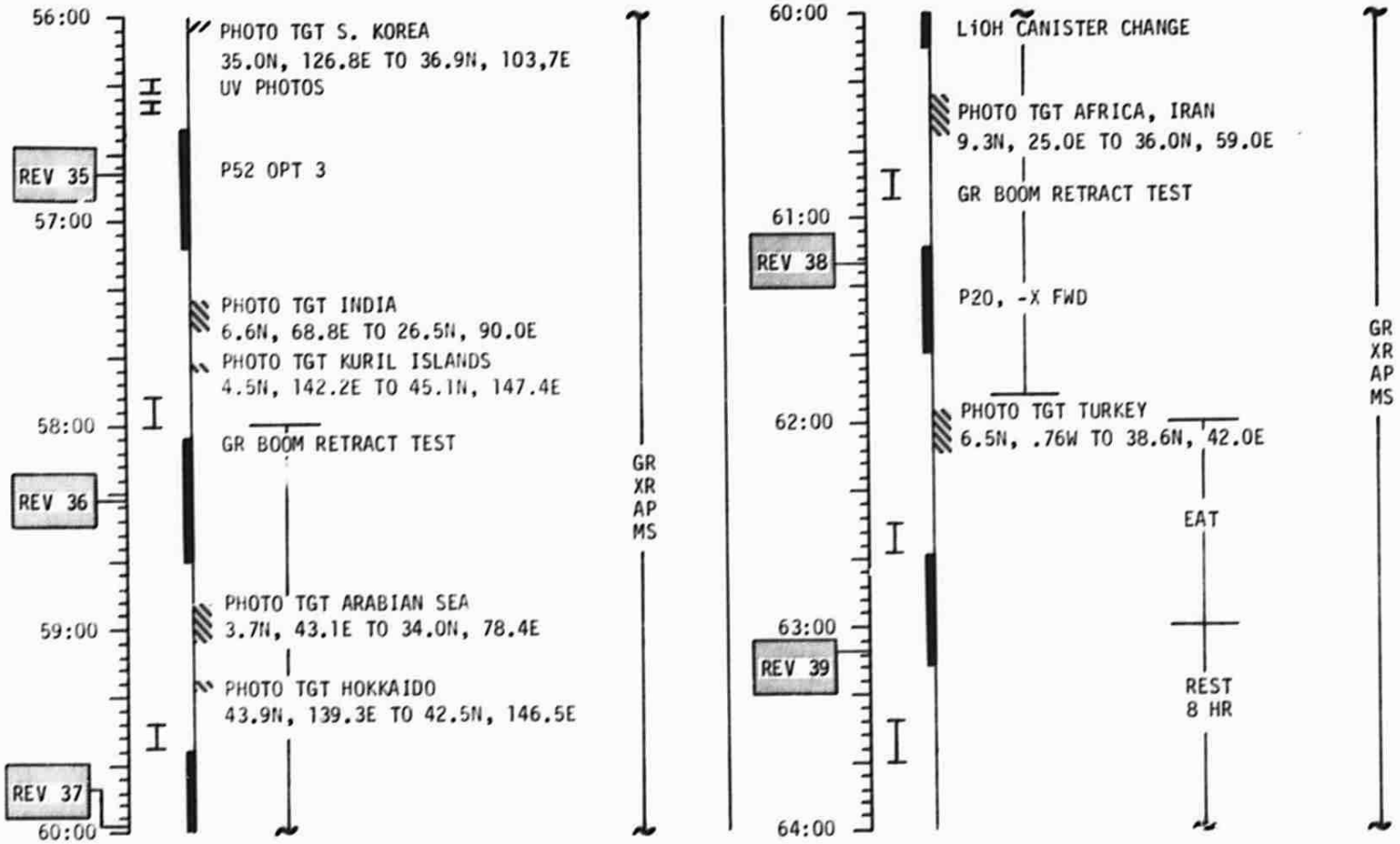


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	48:00 - 56:00	2/29-34	6-9

MSC Form [illegible] OT (Mar 68) FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

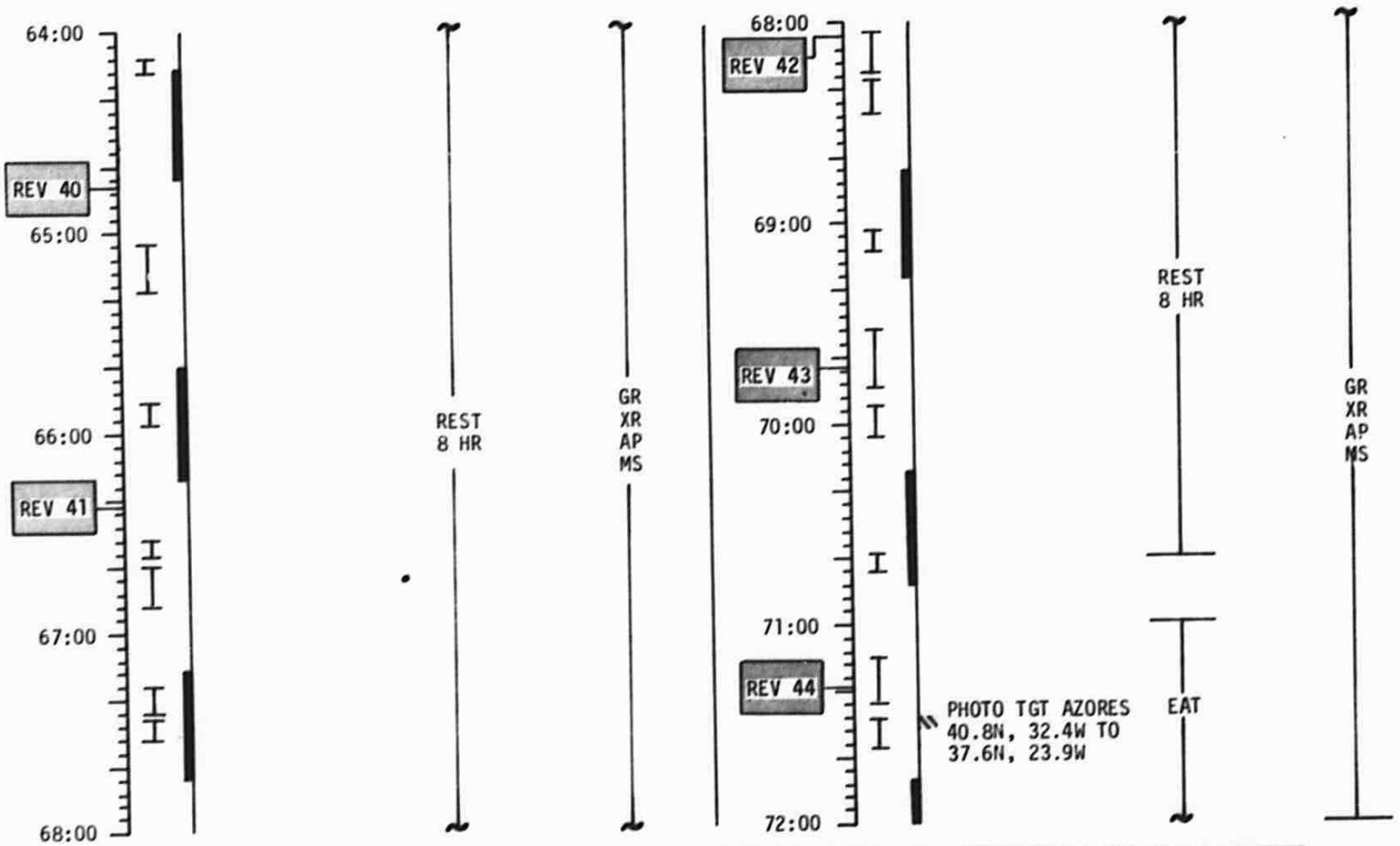


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	56:00 - 64:00	2/34-39	6-10

FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

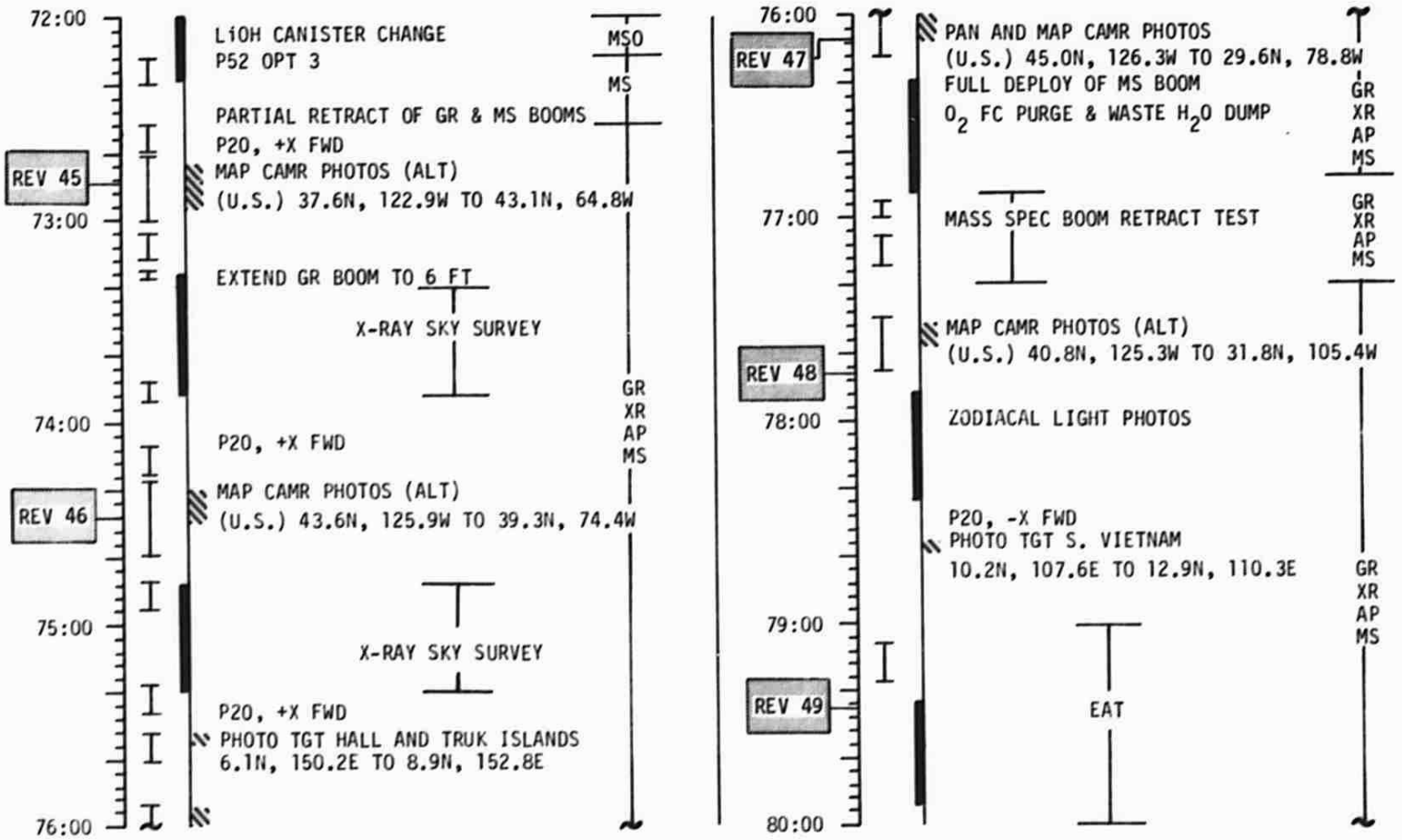


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	64:00 - 72:00	2/39-44	6-11

FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

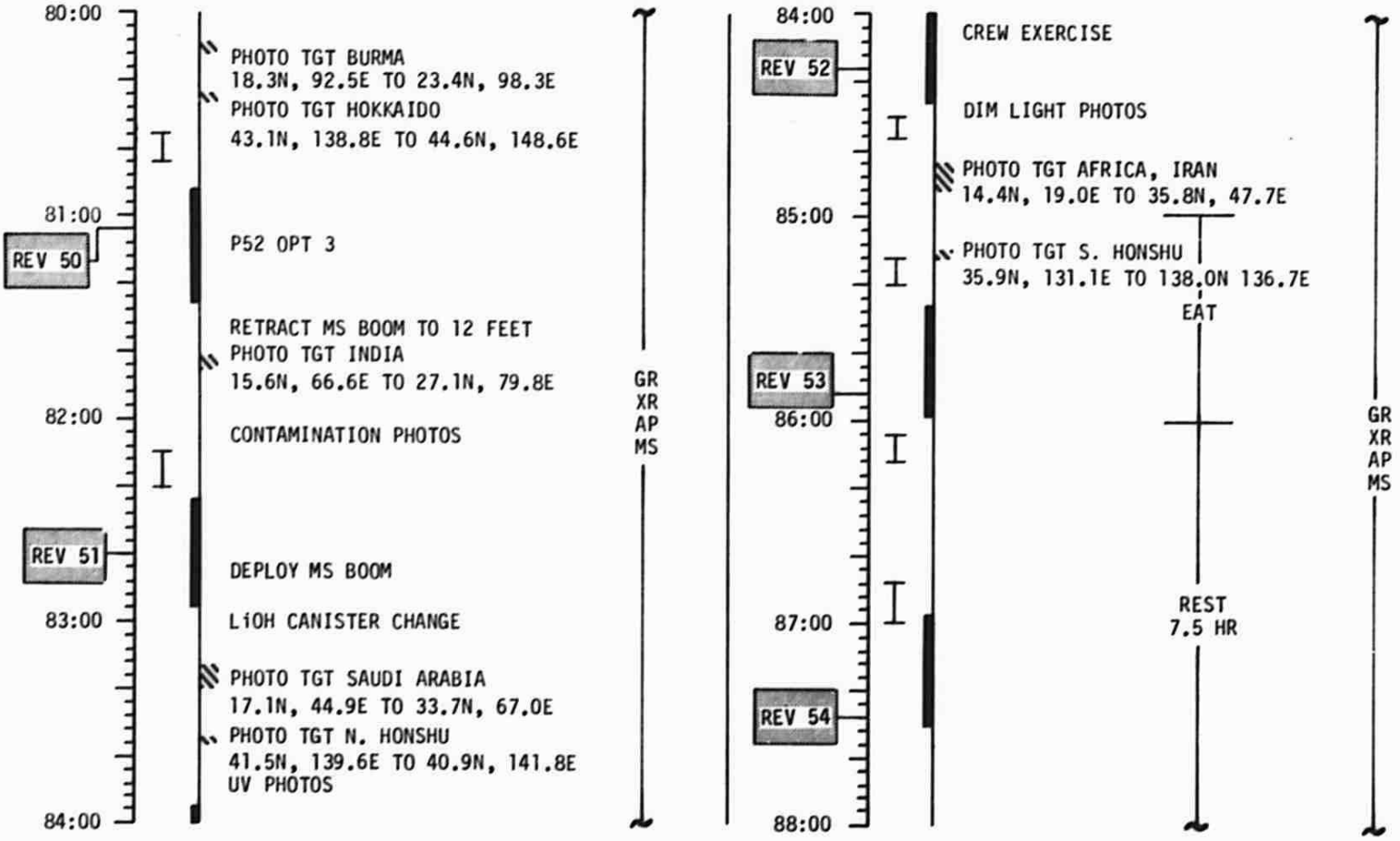


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	72:00 - 80:00	3/44-49	6-12

FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

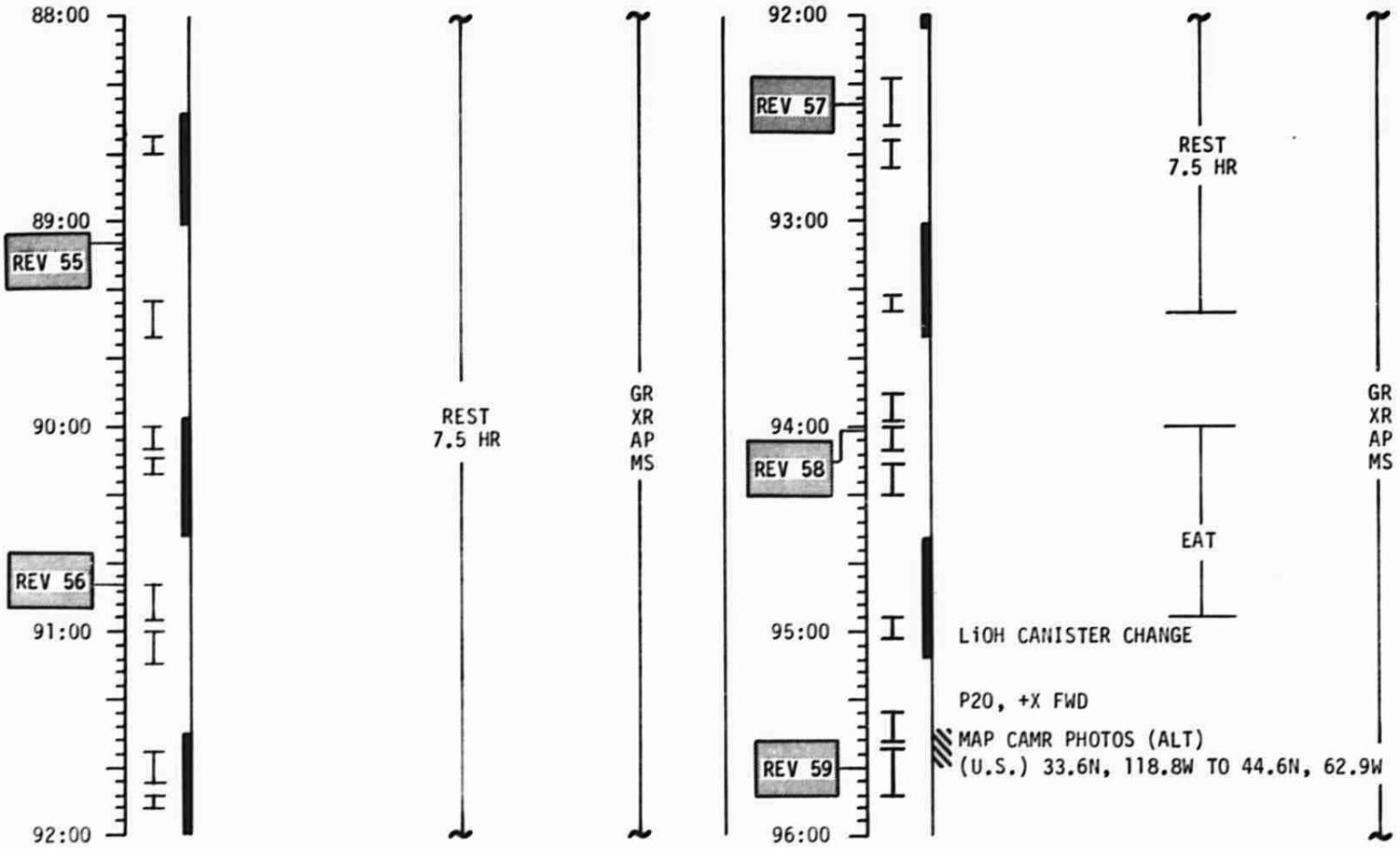


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	80:00 - 88:00	3/49-54	6-13

MSC Form 1077 OT (Mar 69) FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

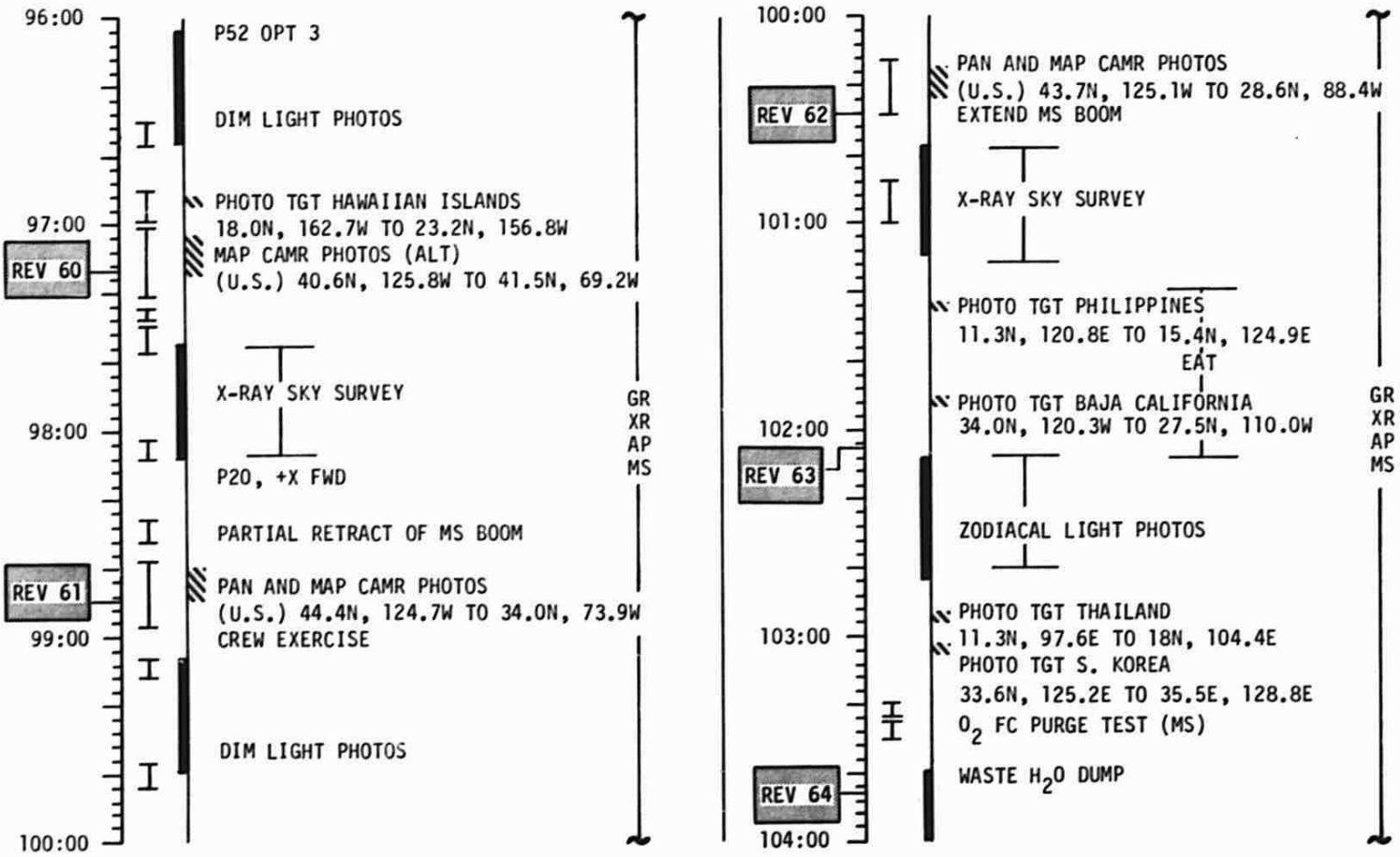


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	88:00 - 96:00	3-4/54-59	6-14

FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

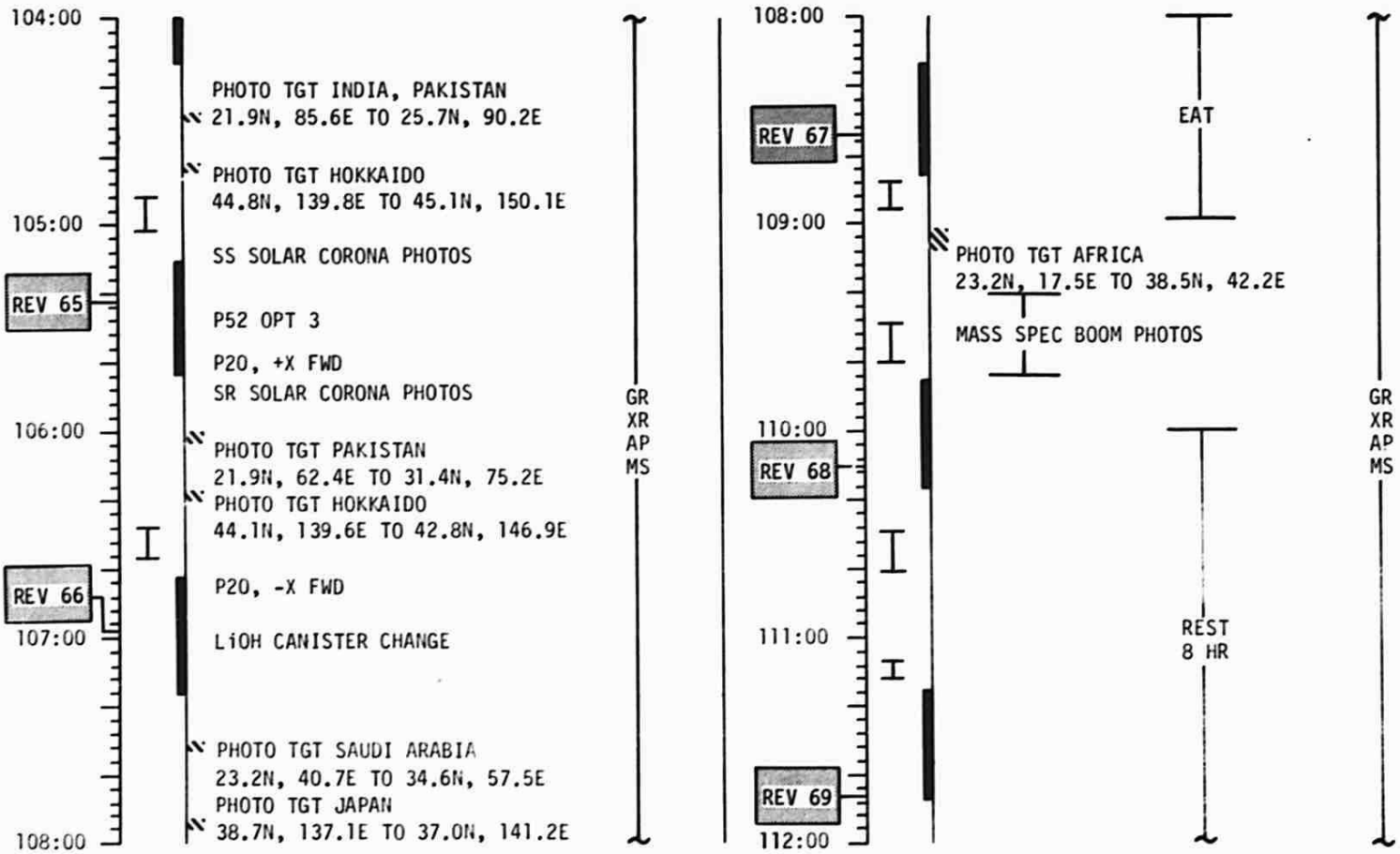


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	96:00 - 104:00	4/59-64	6-15

FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

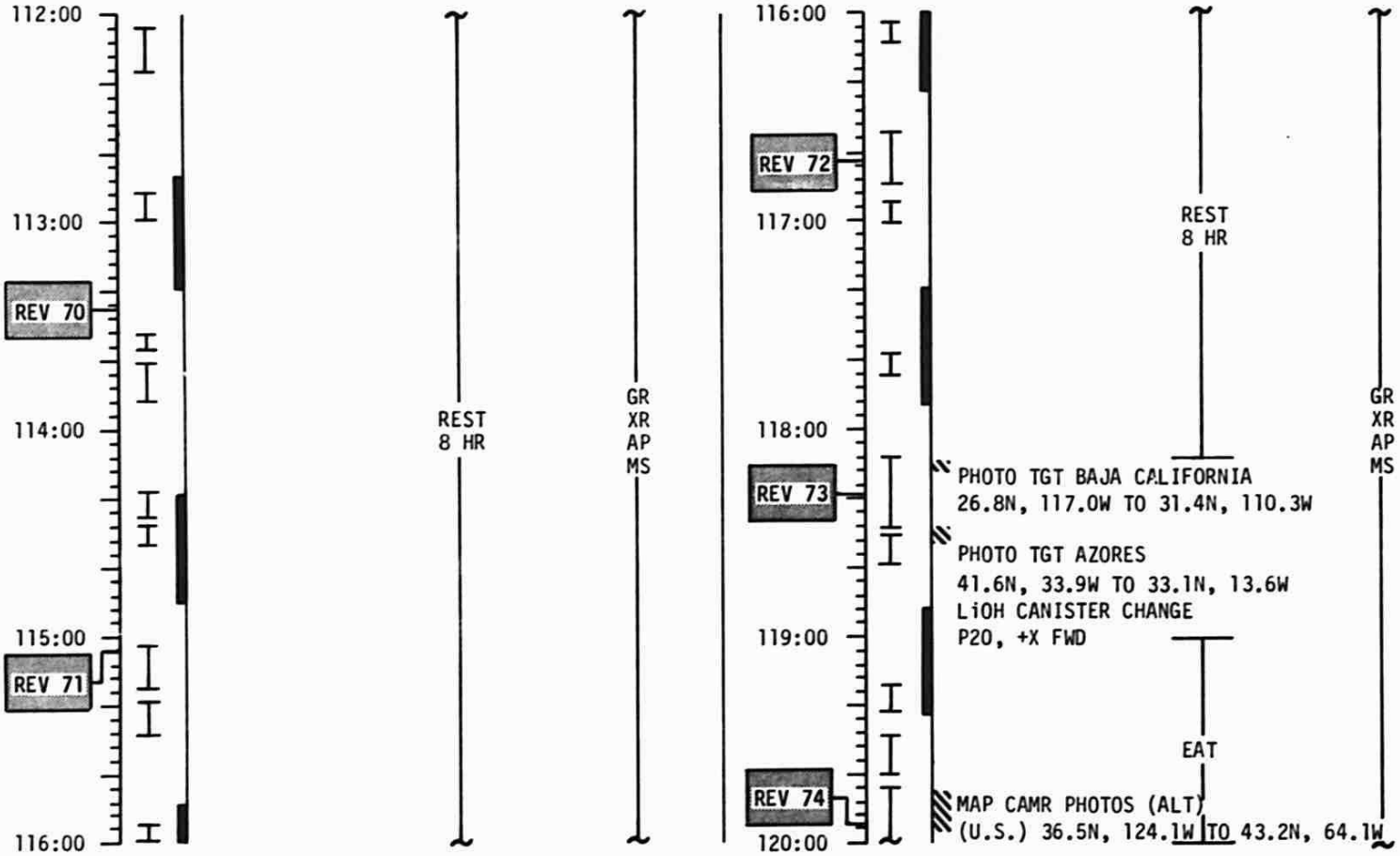


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	104:00 - 112:00	4/64-69	6-16

FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

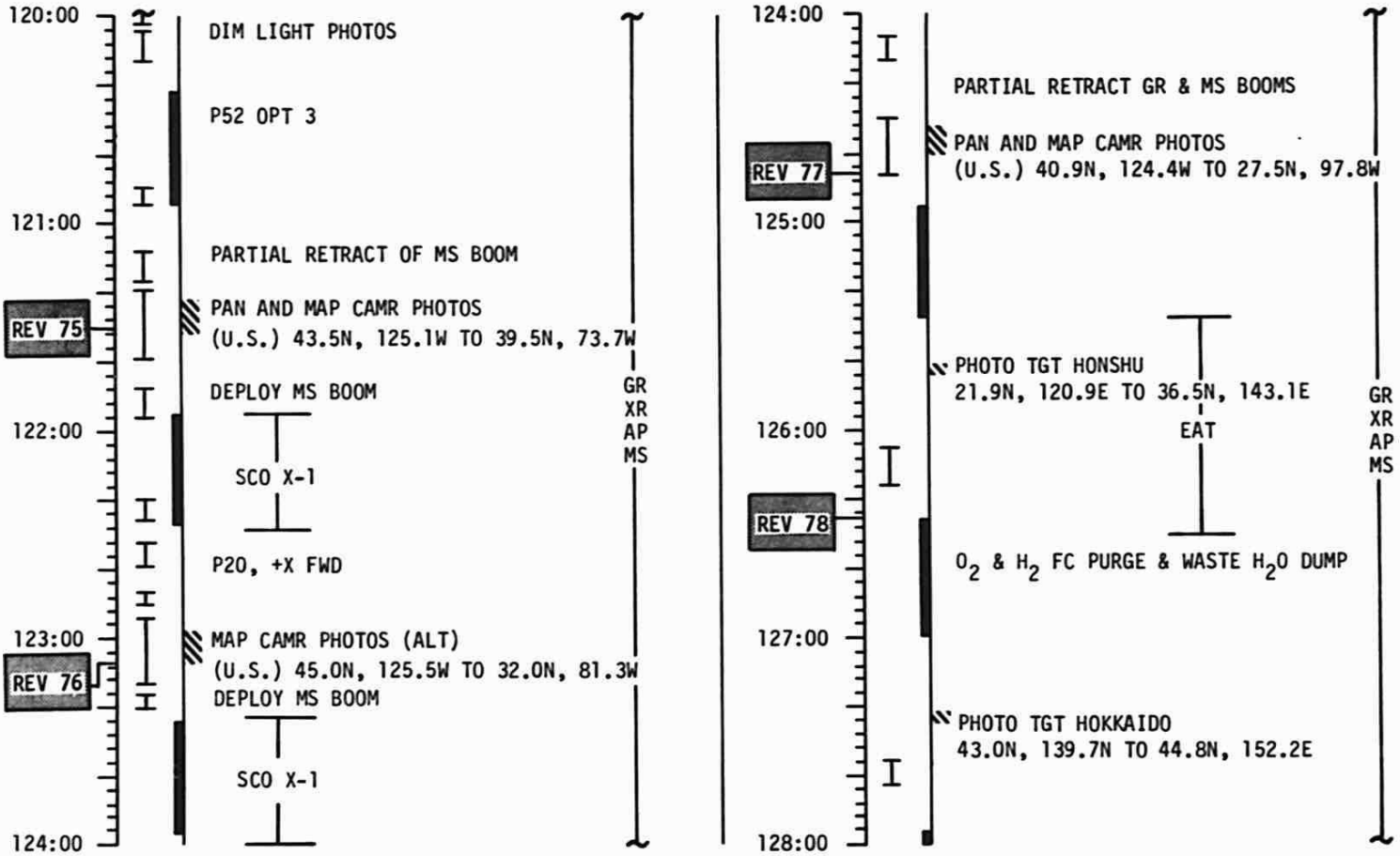


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	112:00 - 120:00	4-5/69-74	6-17

FLIGHT PLANNING BRANCH

EARTH ALTERNATE

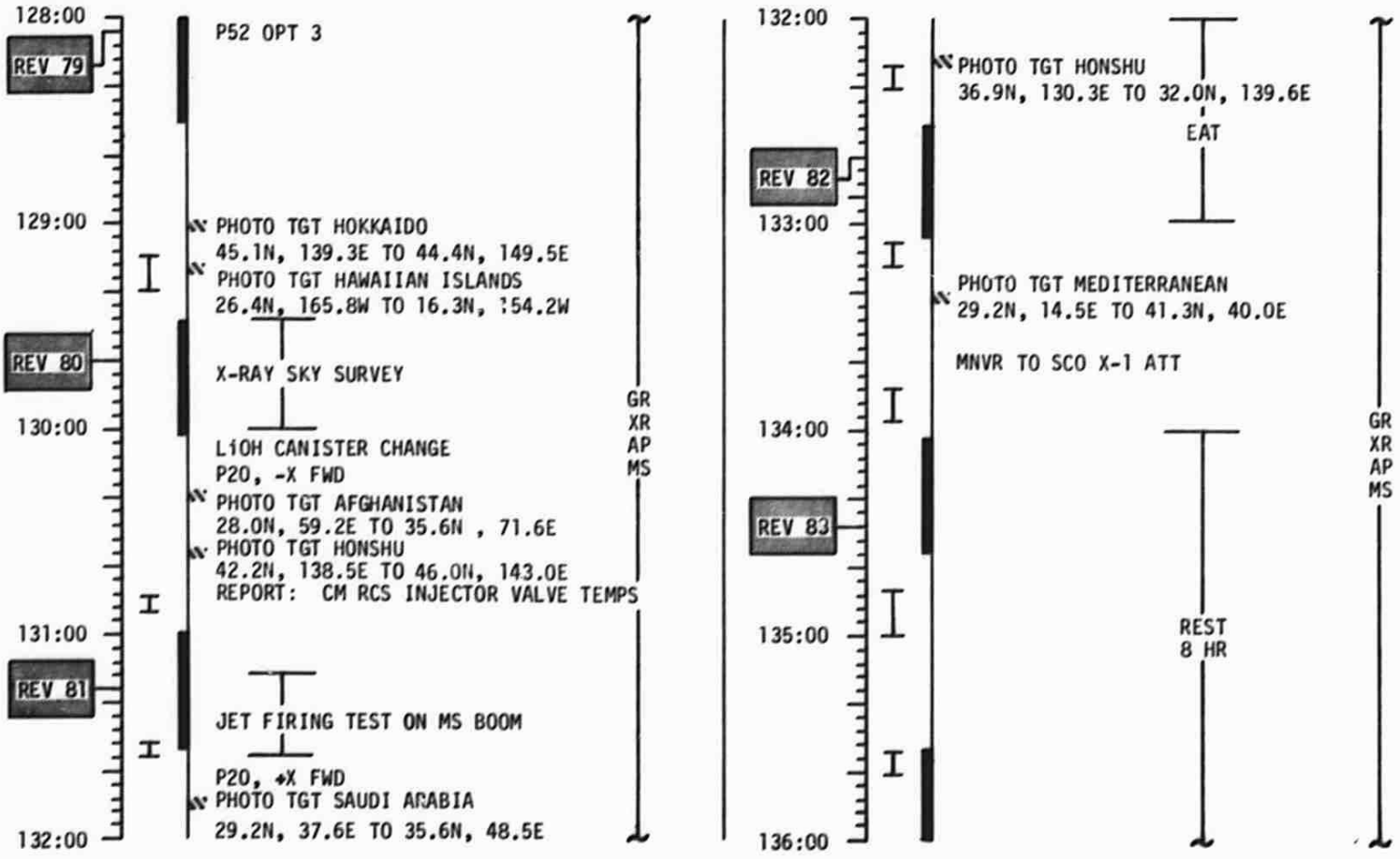
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	120:00 - 128:00	5/74-78	6-18

FLIGHT PLANNING BRANCH

FLIGHT PLAN

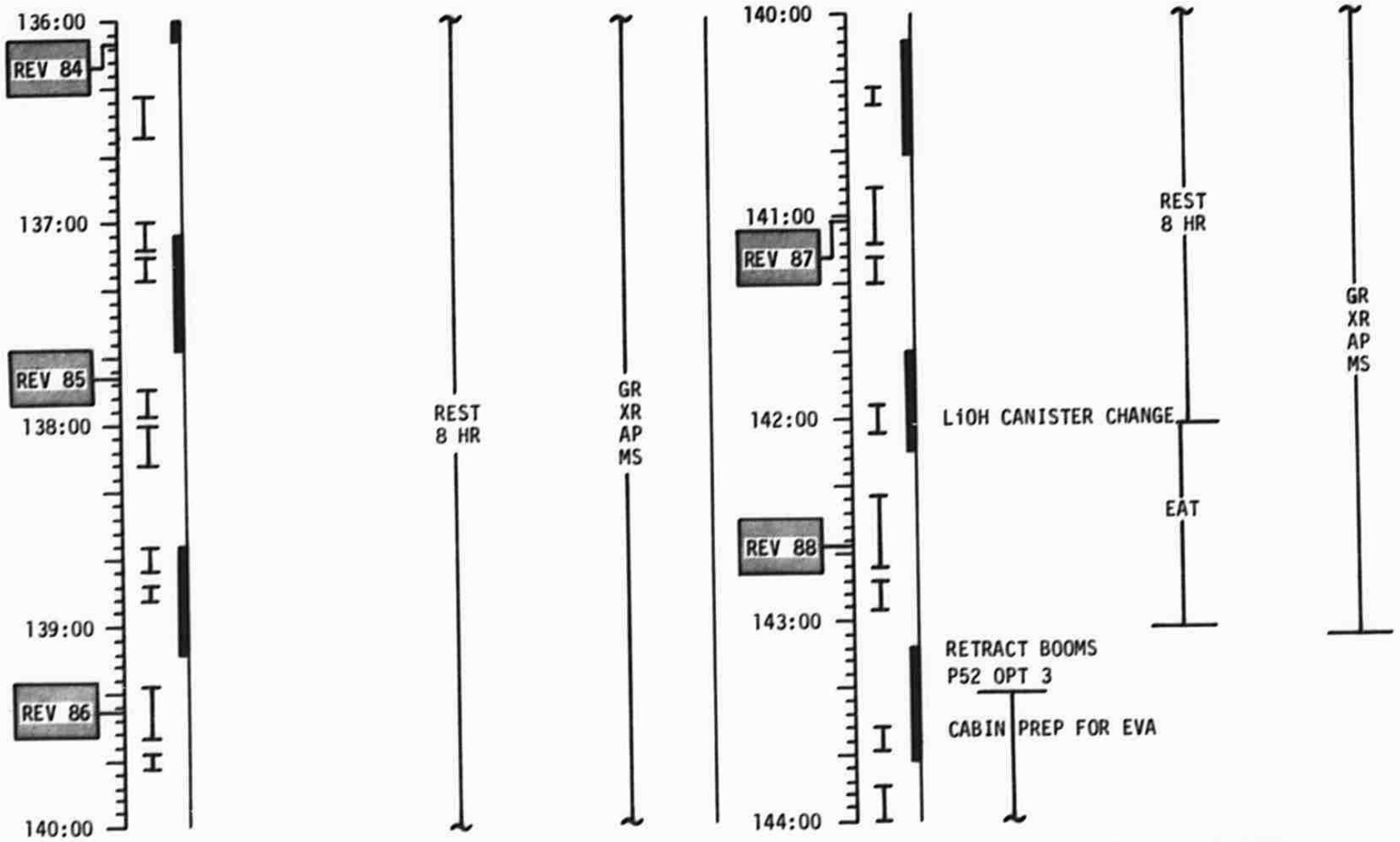


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	128:00 - 136:00	5/78-83	6-19

MSC Form 1057 OT (Mar 69) FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN

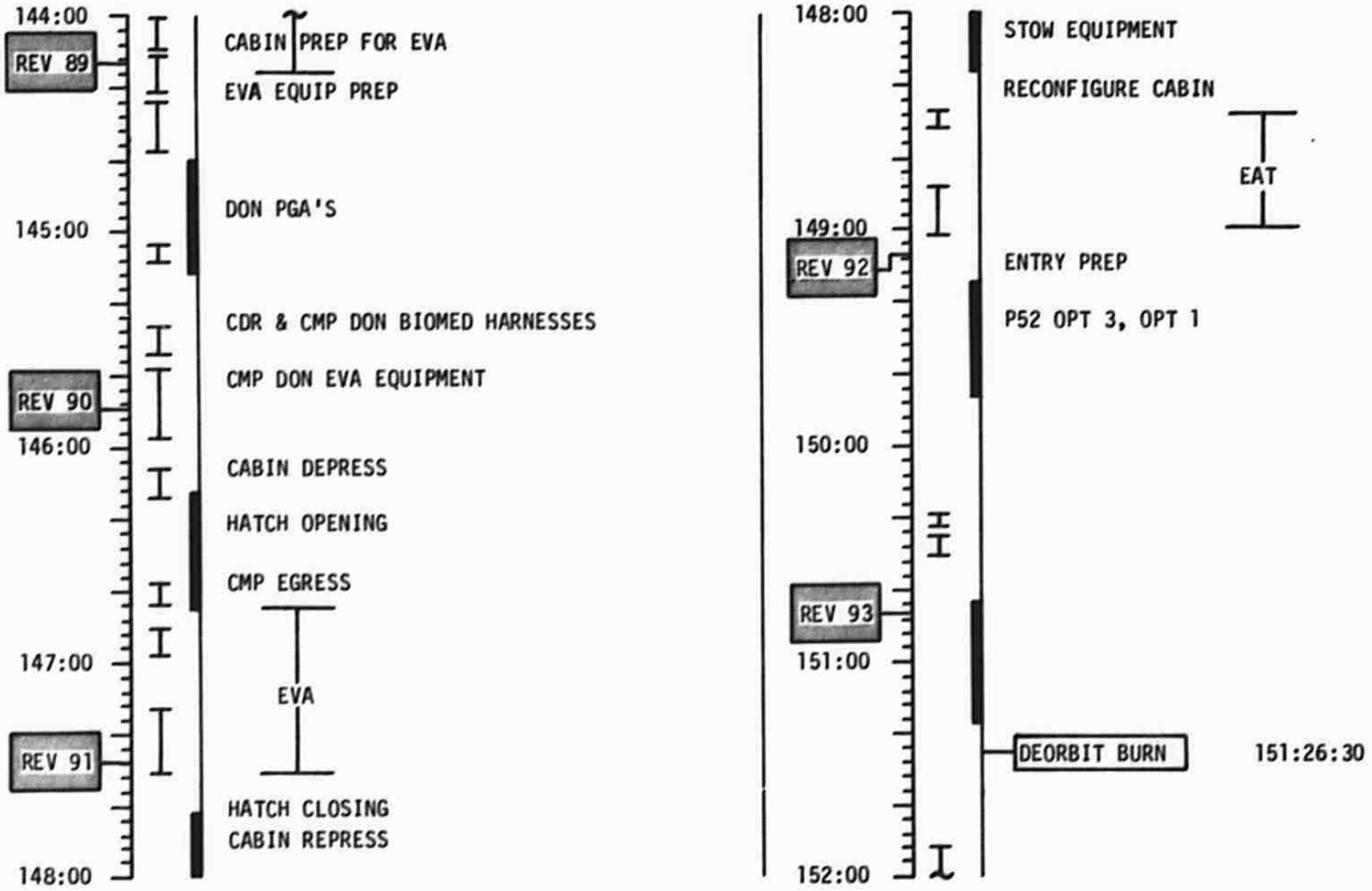


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	136:00 - 144:00	5-6/83-88	6-20

FLIGHT PLANNING BRANCH

EARTH ALTERNATE

FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	144:00 - 152:00	6/88-93	6-21

MSC Form 1677 OT (Mar 69) FLIGHT PLANNING BRANCH

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CSM ONLY ALTERNATE MISSION

Assumptions

1) A nominal TLI Burn has been achieved by the S-IVB.
2) A systems failure during T.D.&E or a LM Jettison during TLC has resulted in a CSM-Only Alternate Mission.

Constraints

1) SPS midcourse burn to return to a free return trajectory.
2) Adherence to the nominal flight plan as much as possible.
3) Maximize inclination in lunar orbit within SPS limits.
4) Maintain any rev TEI Capability.
5) Obtain sim bay experiments data.

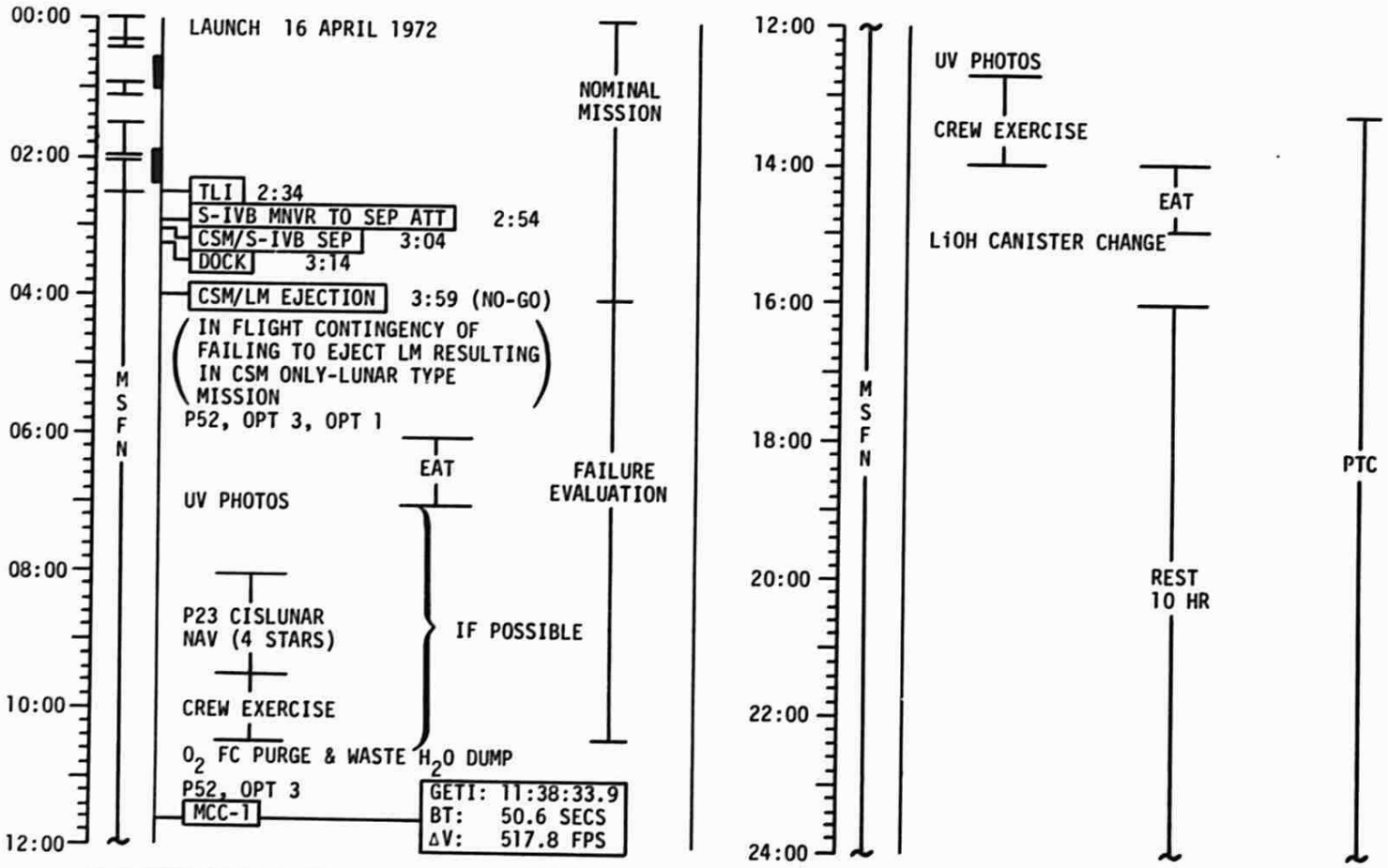
Sequence of Events

This alternate mission is initiated by a failure to eject the LM at T.D.&E or a LM Jettison during TLC. An SPS midcourse will be performed to return to a free return trajectory. The CSM will perform an LOI and Circularization Burn sequence with an inclination of approximately twenty degrees. Six days are planned in lunar orbit operating all the sim bay equipment and expending all the pan and mapping camera film. The shaping burn, sub-satellite jettison, and the TEI burn will follow a sequence similar to the nominal mission.

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CSM ONLY ALTERNATE

FLIGHT PLAN

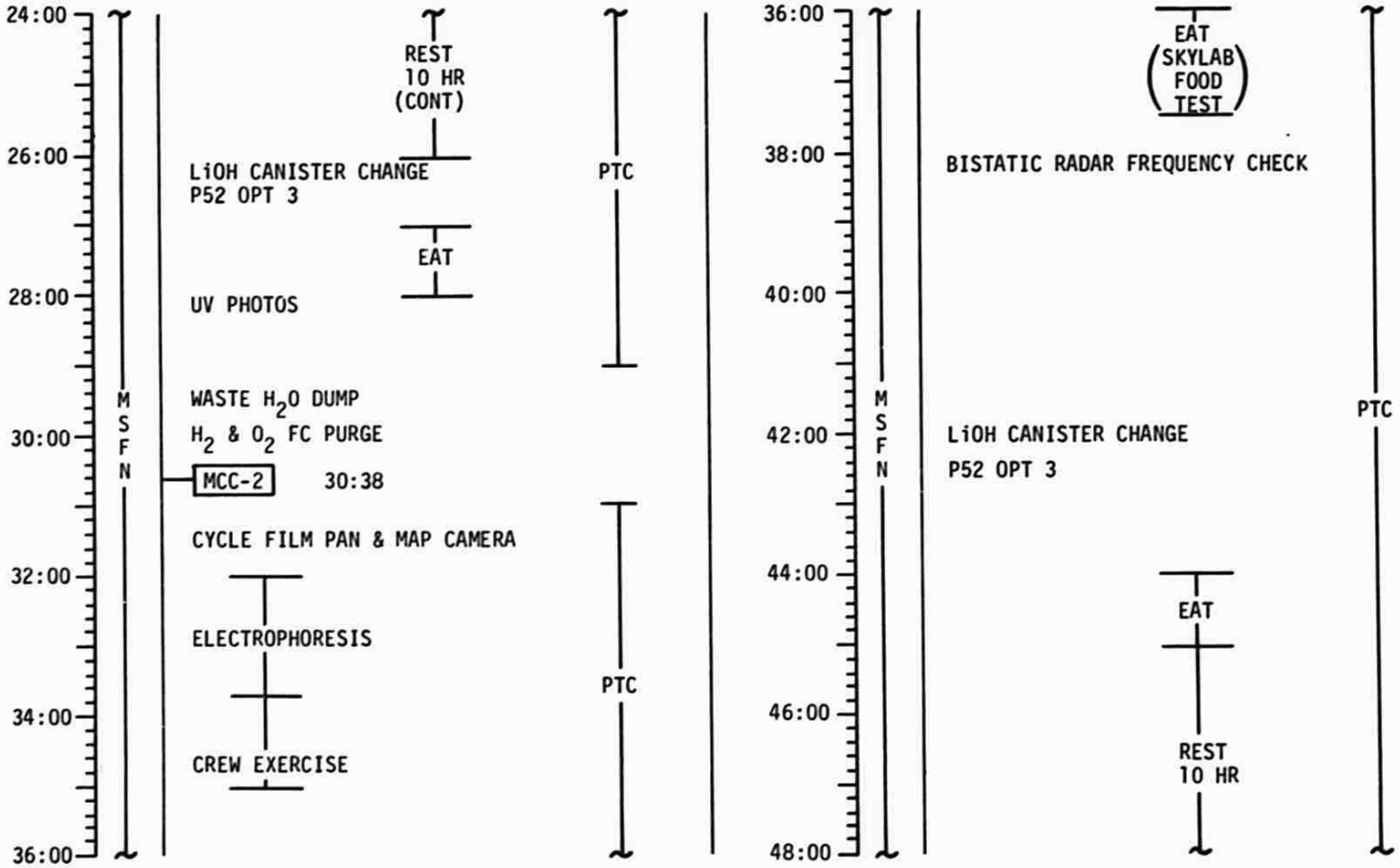


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	00:00 - 24:00	1/TLC	6-25

FLIGHT PLANNING BRANCH

CSM ONLY ALTERNATE

FLIGHT PLAN

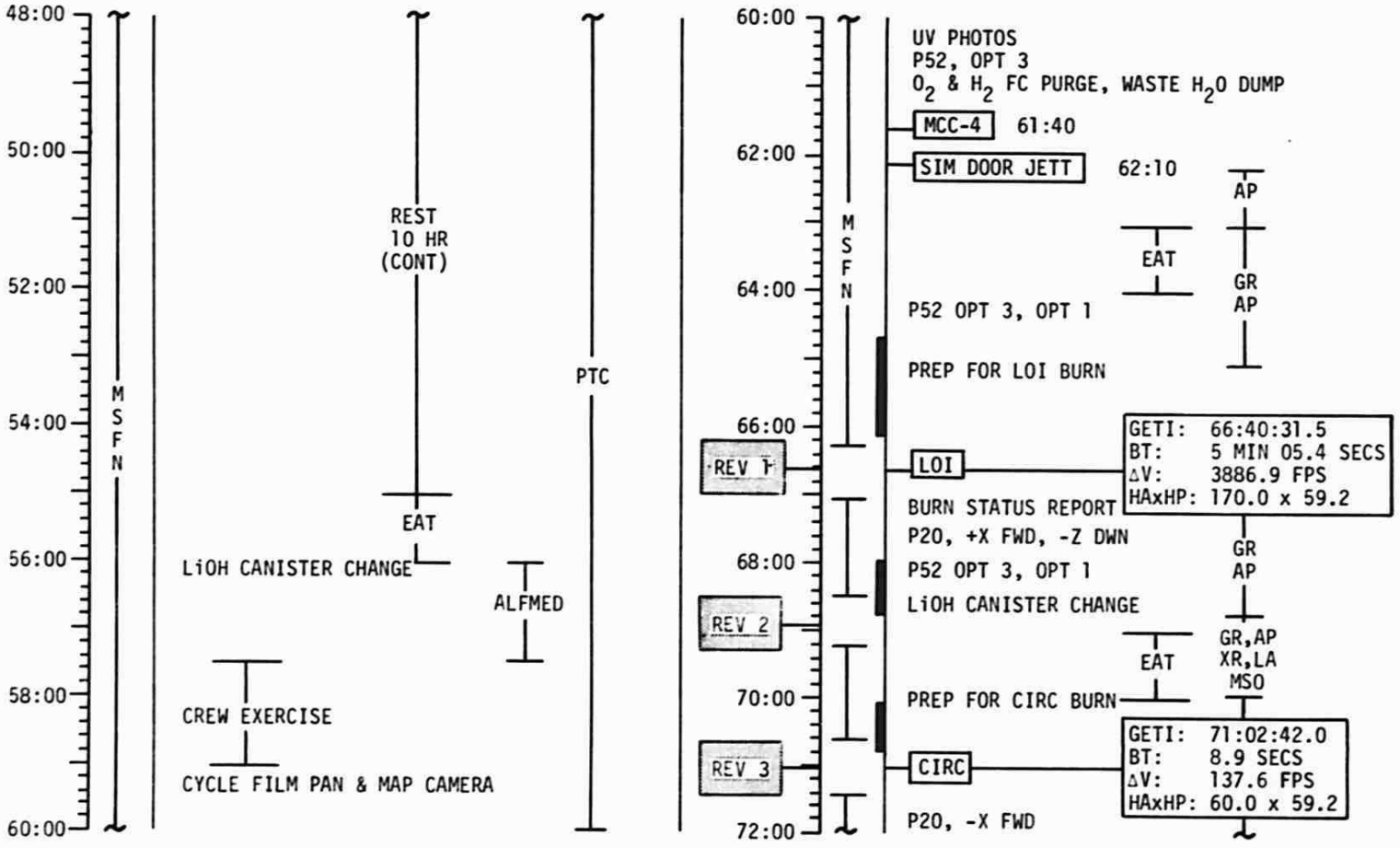


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	24:00 - 48:00	2/TLC	6-26

FLIGHT PLANNING BRANCH

CSM ONLY ALTERNATE

FLIGHT PLAN

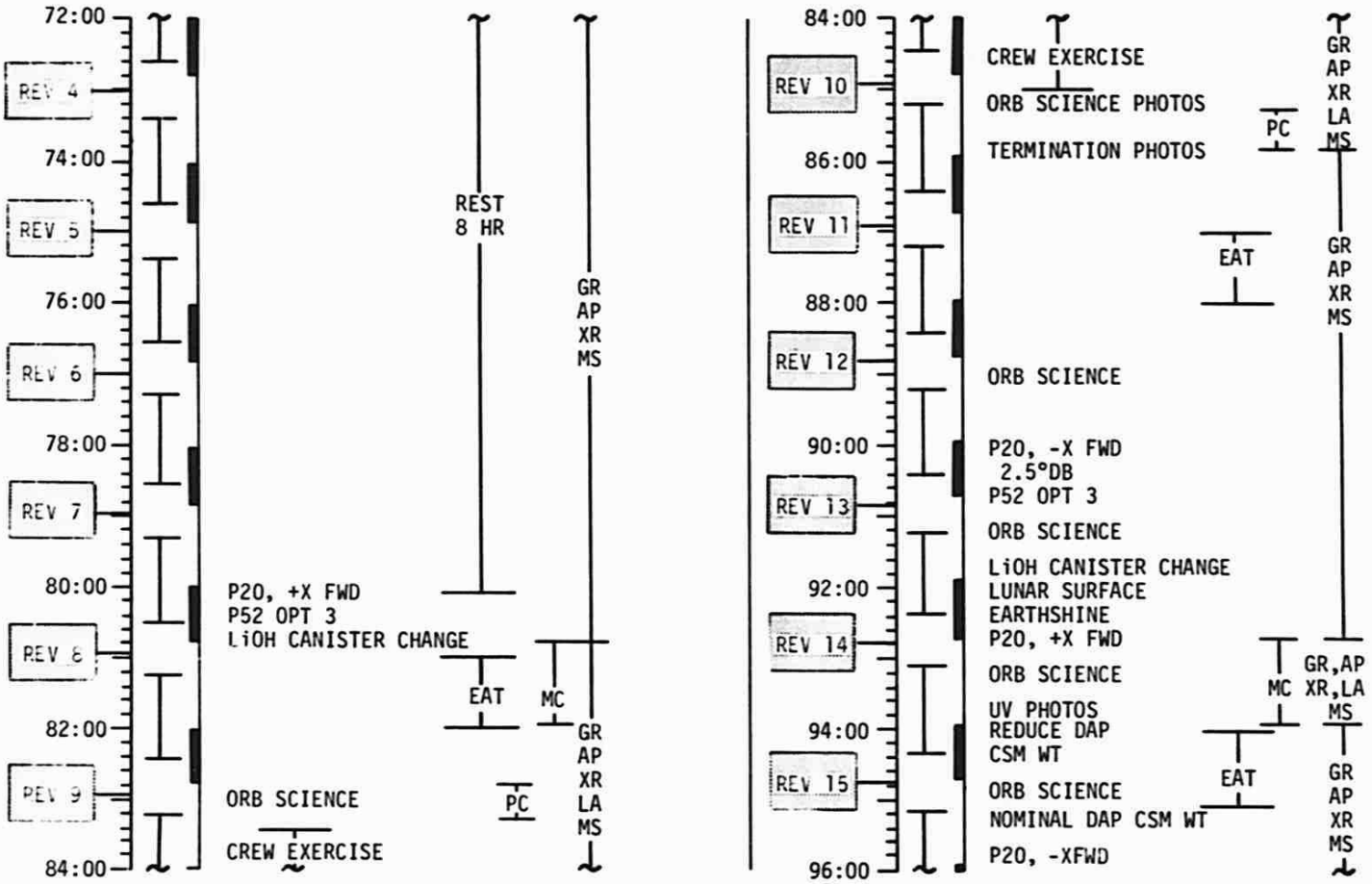


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	48:00 - 72:00	3/1-3	6-27

MSC Form 1077 OT (Mar 68) FLIGHT PLANNING BRANCH

CSM ONLY ALTERNATE

FLIGHT PLAN

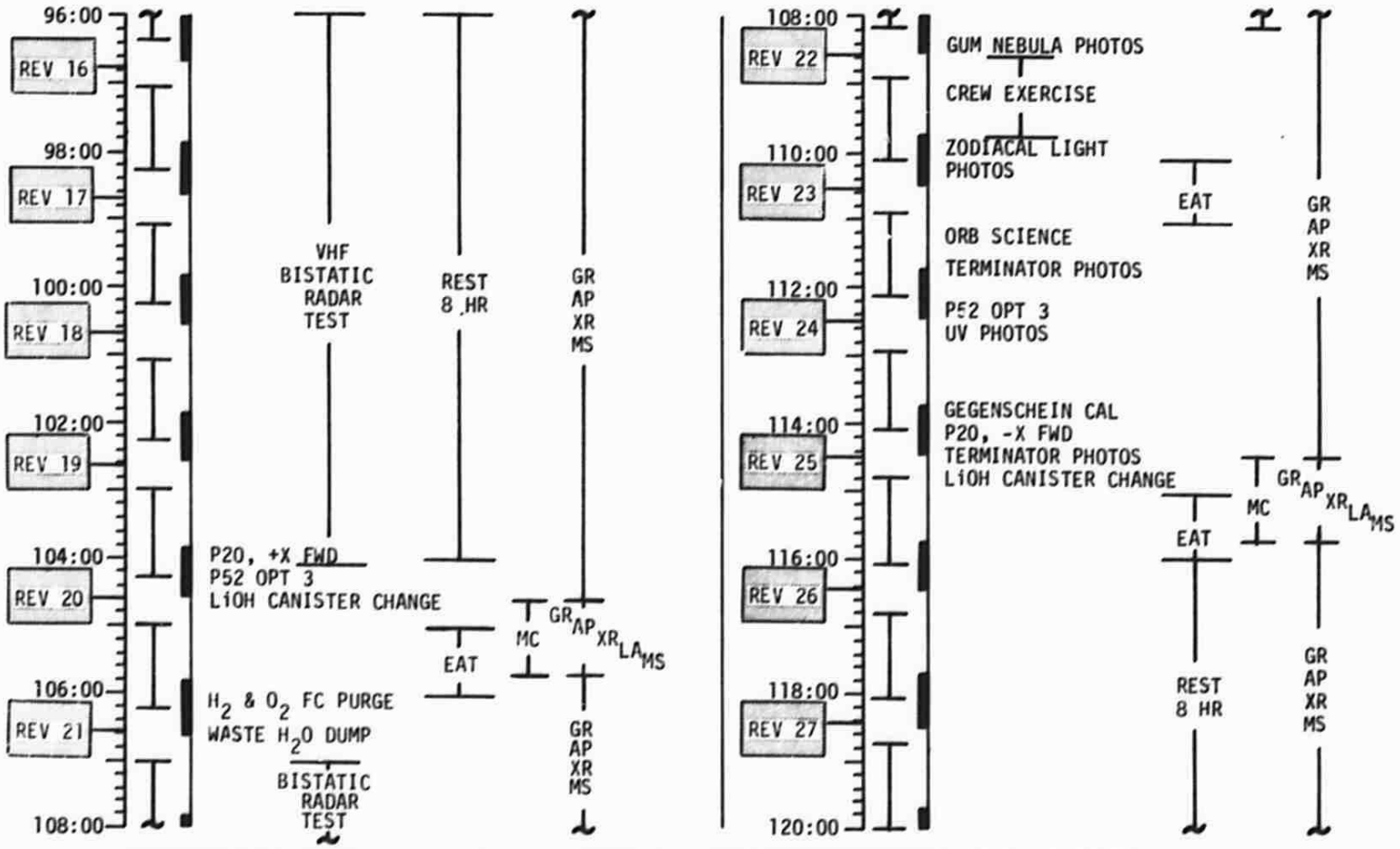


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	72:00 - 96:00	4/3-15	6-28

FLIGHT PLANNING BRANCH

CSM ONLY ALTERNATE

FLIGHT PLAN

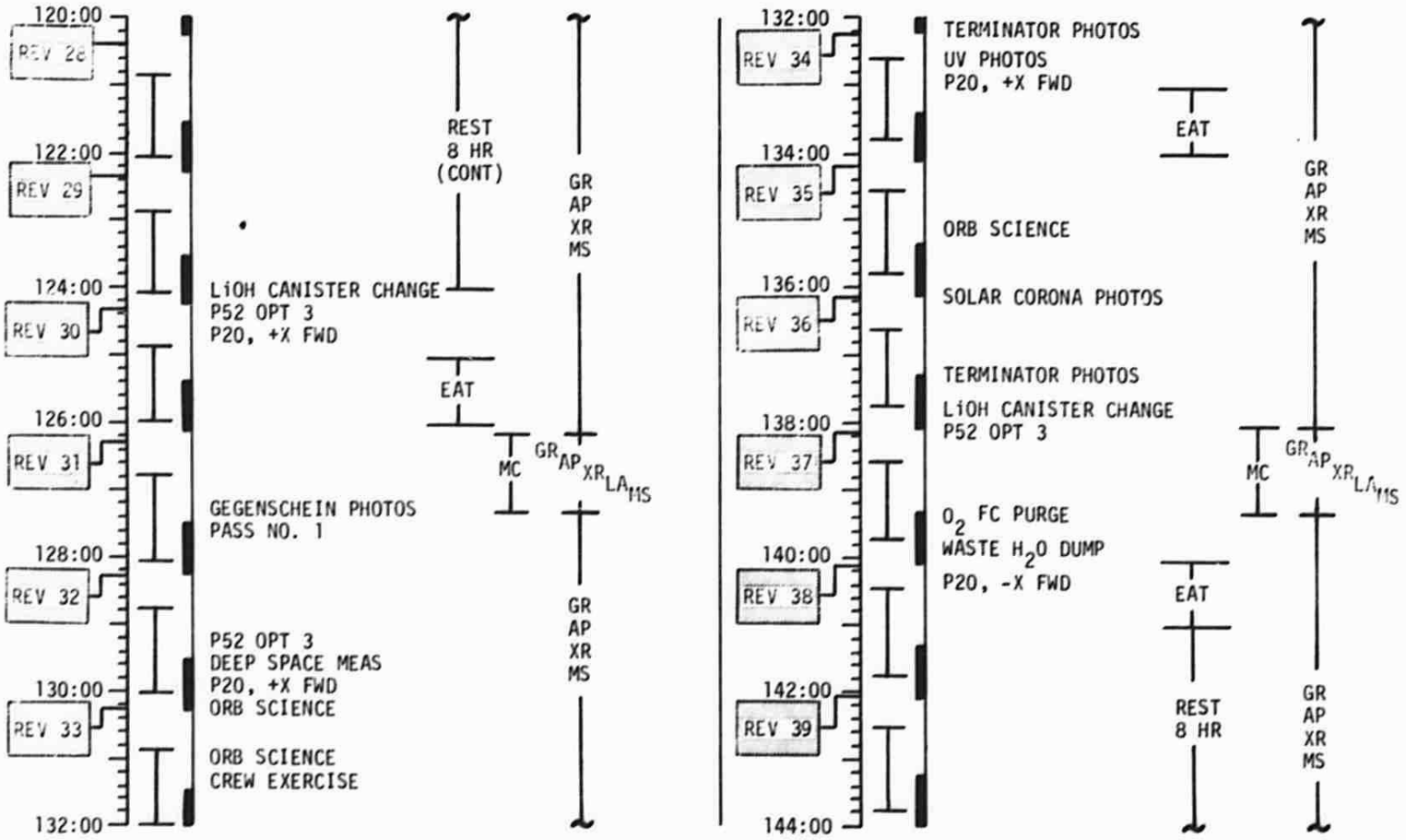


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	96:00 - 120:00	5/15-27	6-29

FLIGHT PLANNING BRANCH

CSM ONLY ALTERNATE

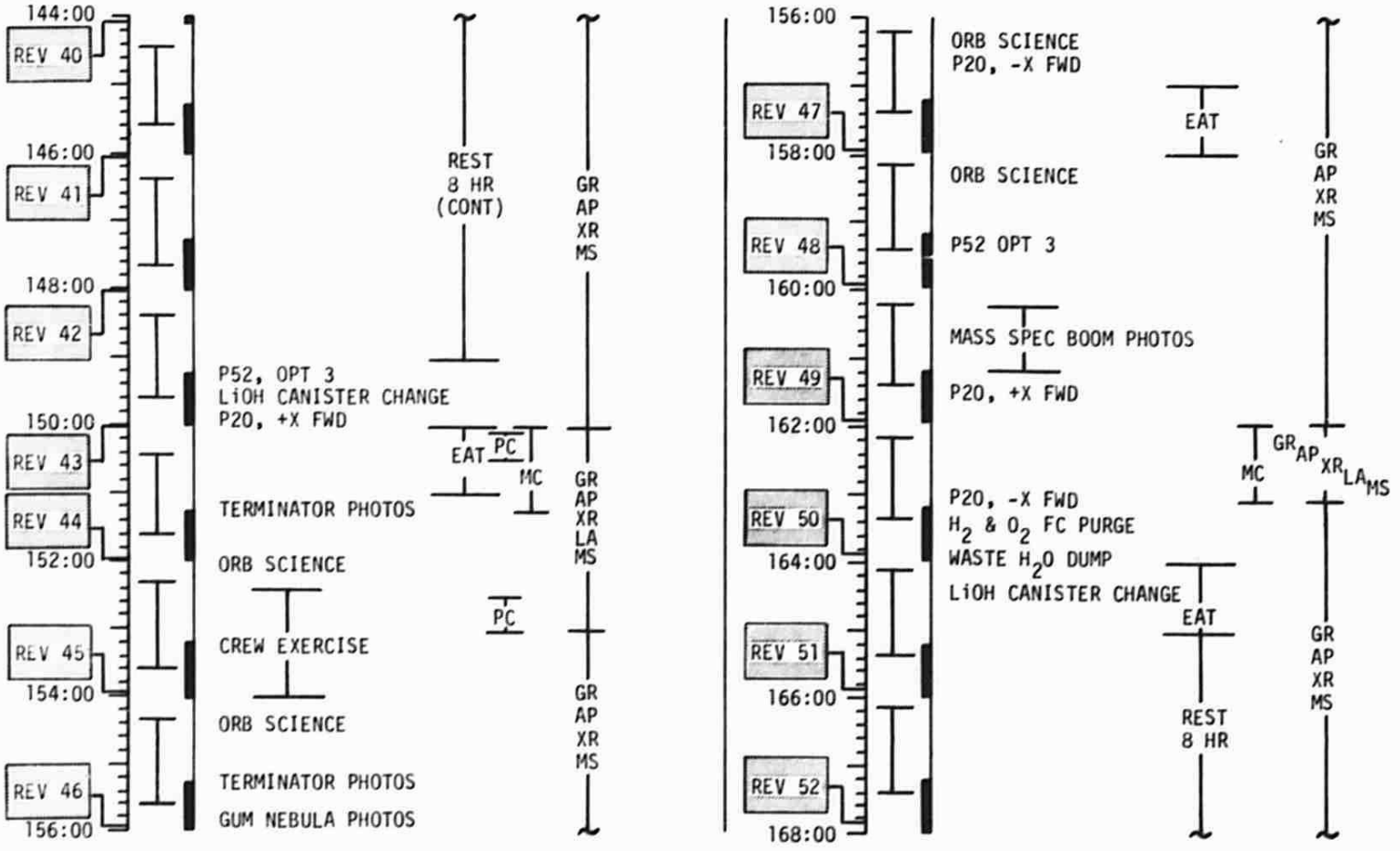
FLIGHT PLAN



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	120:00 - 144:00	6/27-39	6-30

FLIGHT PLANNING BRANCH

FLIGHT PLAN

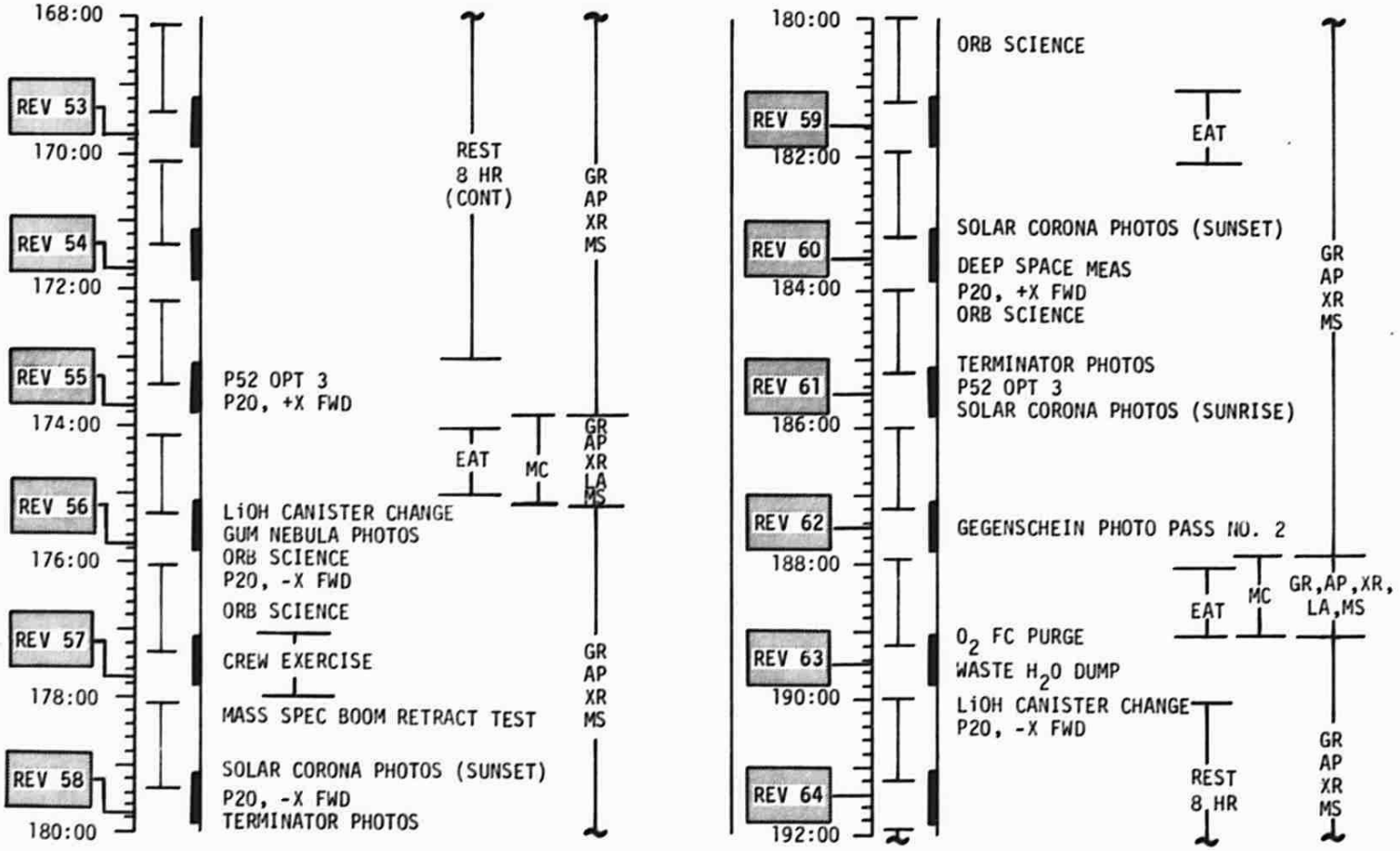


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	144:00 - 168:00	7/40-52	6-31

FLIGHT PLANNING BRANCH

FLIGHT PLAN

CSM ONLY ALTERNATE

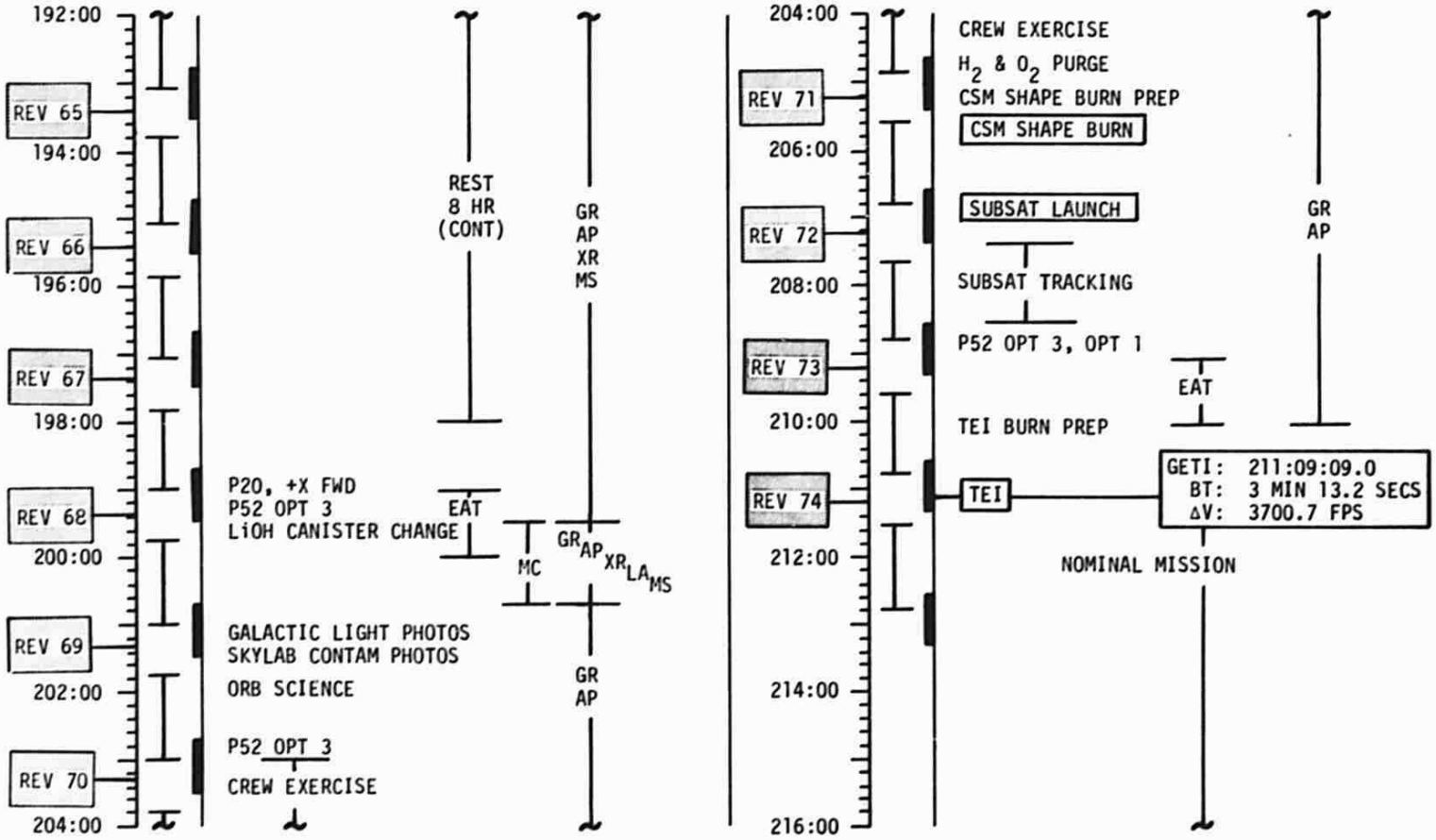


MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	168:00 - 192:00	8/52-64	6-32

FLIGHT PLANNING BRANCH

FLIGHT PLAN

CSM ONLY ALTERNATE



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	192:00 - 216:00	9/64-TEC	6-33

FLIGHT PLANNING BRANCH

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CSM/LM ALTERNATE MISSION POST LOI (GOOD DPS)

Assumptions

1) Nominal LOI and DOI Burns have been achieved by the SPS.
2) A systems failure while in lunar orbit has resulted in a NO/GO for landing.

Constraints

1) DPS Circularization Burn at approximately nominal Circularization burn time.
2) DPS Plane Change Burn to match LPO ground track with CSM only alternate Mission (20° inclination).
3) LM Jettison to Lunar impact.
4) Adhere to nominal flight plan as much as possible.
5) Obtain sim bay experiments data.
6) SPS TEI

Sequence of Events

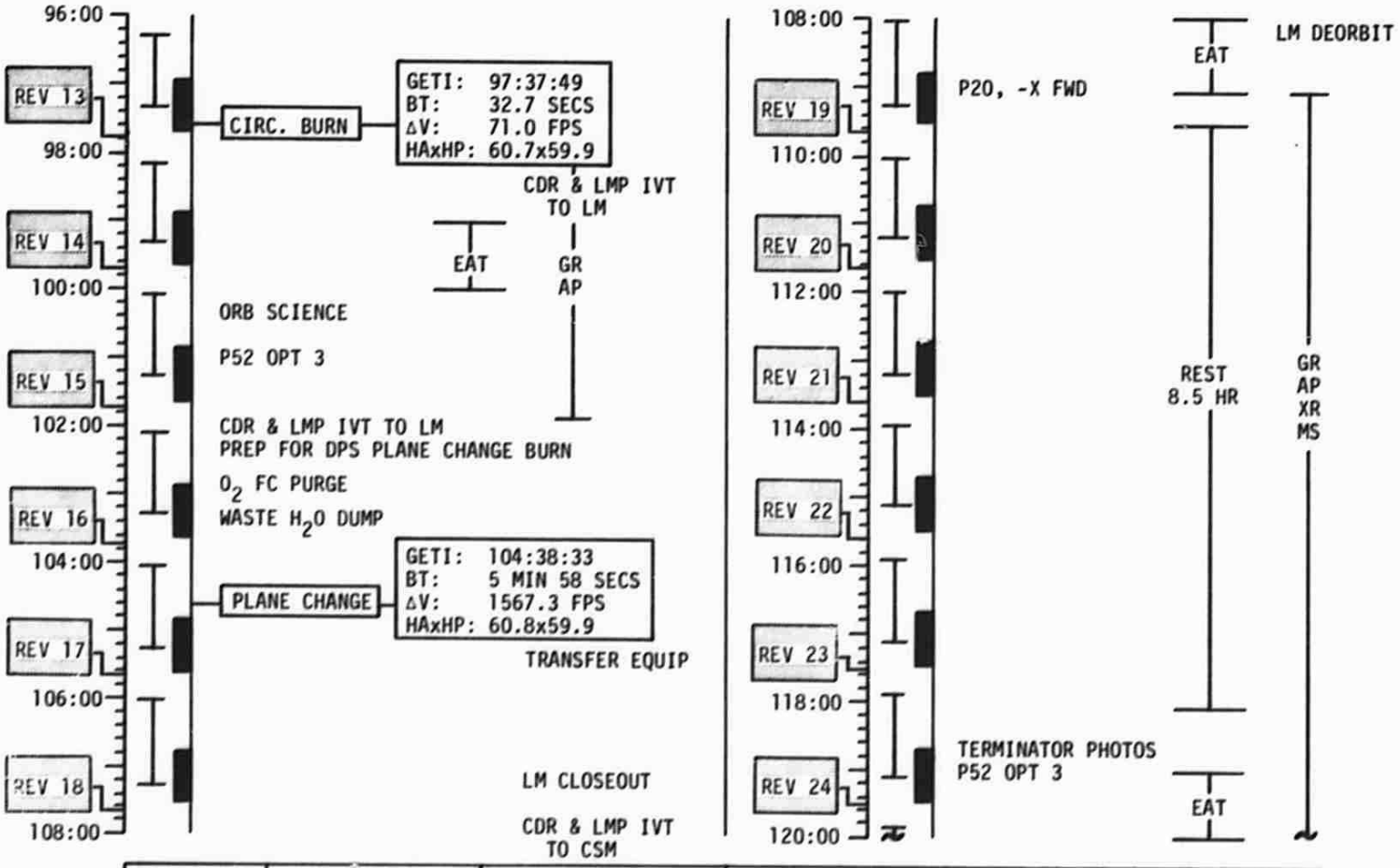
This alternate Mission is initiated by a systems failure other than the DPS which will not allow a landing mission. The nominal mission is followed through DOI with a Circularization burn performed by the DPS at approximately the same time as the nominal Circularization burn. A DPS plane change burn is performed to make the LPO ground track approximately the same as the CSM only alternate mission with an inclination of twenty degrees. Six days are planned in lunar orbit operating all the sim bay experiments, with the shaping burn, subsatellite jettison and the TEI burn following a sequence similar to the nominal mission.

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CSM/LM ALTERNATE

FLIGHT PLAN

POST-LOI (GOOD DPS)



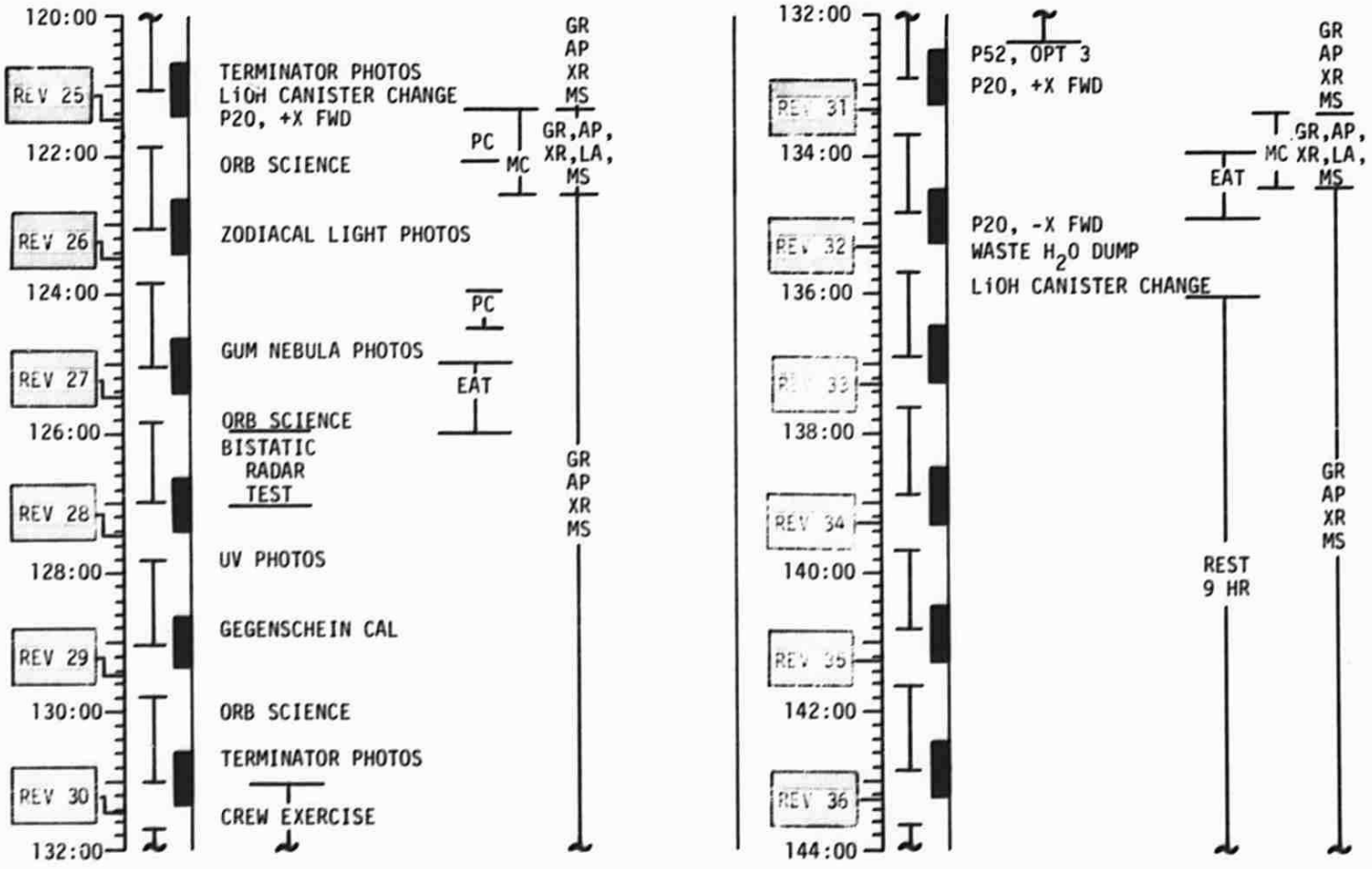
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	96:00 - 120:00	5/12-24	6-37

FLIGHT PLANNING BRANCH

CSM/LM ALTERNATE

FLIGHT PLAN

POST-LOI (GOOD DPS)



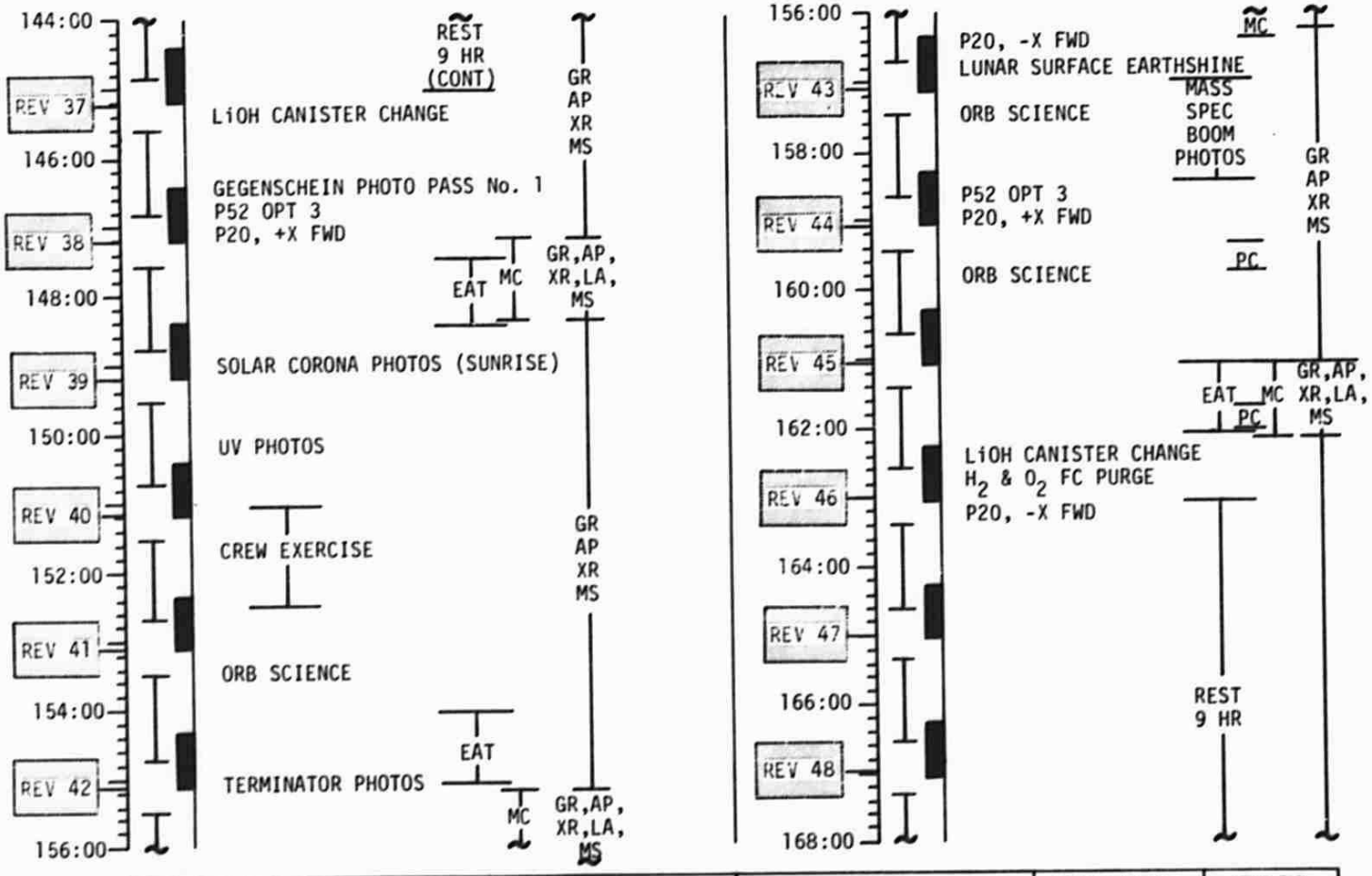
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	120:00 - 144:00	6/24-36	6-38

FLIGHT PLANNING BRANCH

CSM/LM ALTERNATE

FLIGHT PLAN

POST-LOI (GOOD DPS)



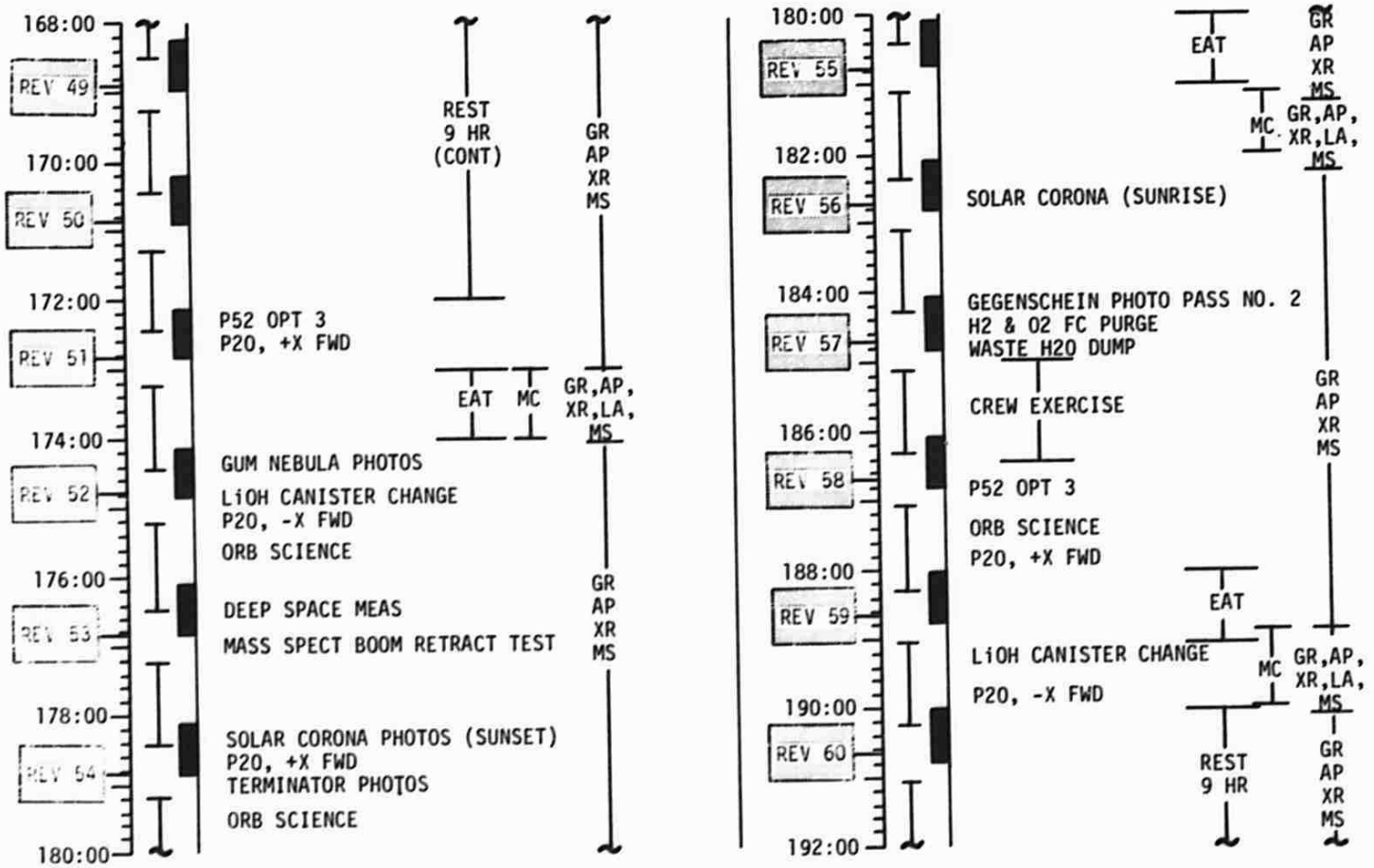
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	144:00 - 168:00	7/36-48	6-39

FLIGHT PLANNING BRANCH

CSM/LM ALTERNATE

FLIGHT PLAN

POST-LOI (GOOD DPS)



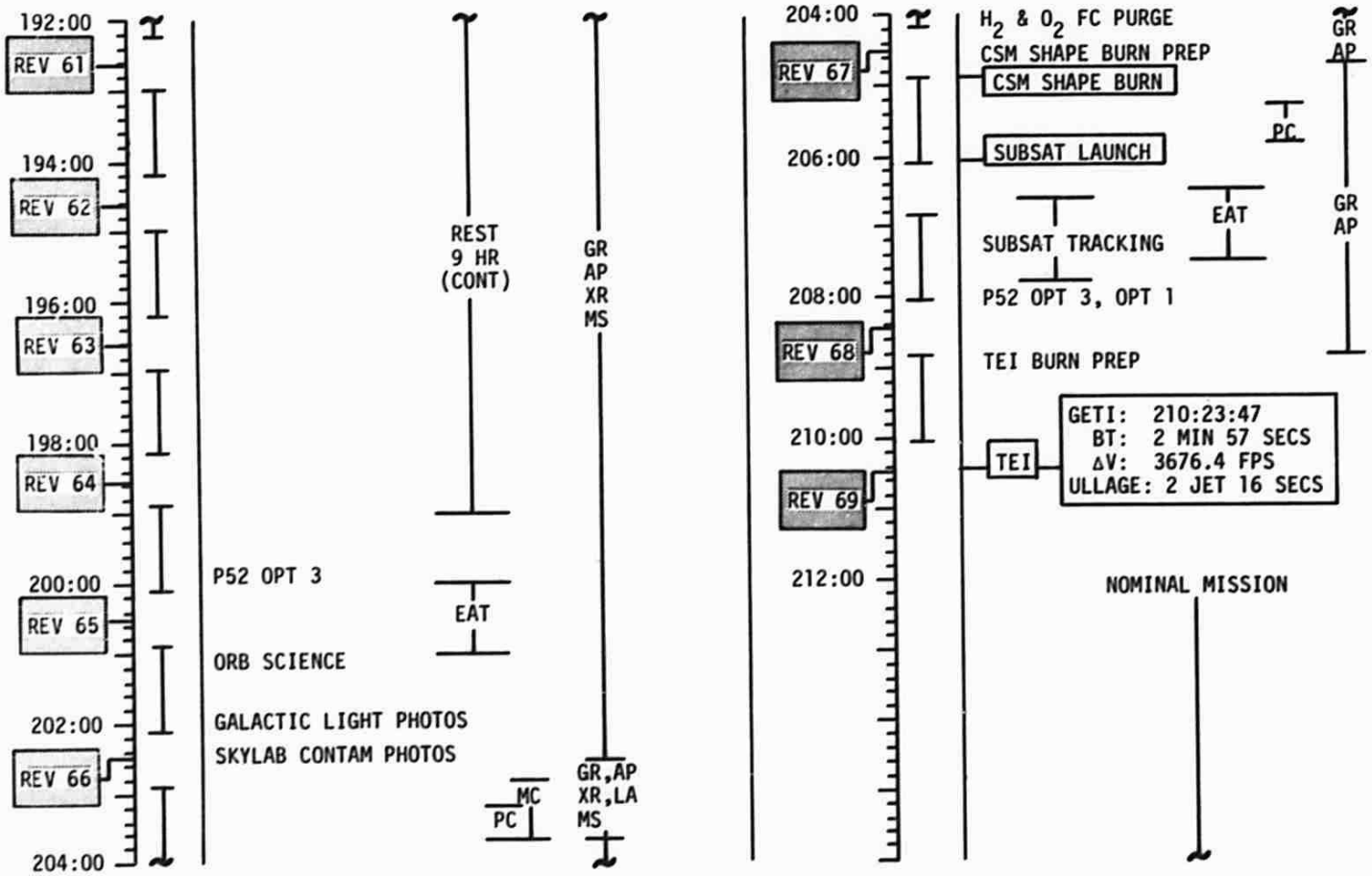
MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	168:00 - 192:00	8/48-60	6-40

FLIGHT PLANNING BRANCH

CSM/LM ALTERNATE

FLIGHT PLAN

POST-LOI (GOOD DPS)



MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 16	CHANGE A (4/16)	3/27/72	192:00 -	9/69-TEC	6-41

MSC Form 1667 OT (Mar 69) FLIGHT PLANNING BRANCH

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CSM/LM ALTERNATE MISSION - BAD DPS

Assumptions

1) Nominal LOI and DOI Burns have been achieved by the SPS.
2) A systems failure while in lunar orbit has resulted in a NO/GO for landing.

Constraints

1) Jettison LM to a lunar impact.
2) Circularize to a 60 nm orbit.
3) Adhere to the nominal flight plan as much as possible.
4) Obtain sim bay experiments data.

Sequence of Events

This alternate mission is initiated by a systems failure with the DPS which will not allow a landing mission. The LM is jettisoned and the CSM Circularizes at approximately the nominal time; at which time the nominal flight plan will be followed.

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