

R. La Cognata

CONTRACT REQUIREMENTS	CONTRACT ITEM	MODEL	CONTRACT NO.	CONTRACT DATE
Ex. E Para. 5.5.4	Work Package Function 640	IM	NAS 9-1100 Primary No. 819	10-4-65

REPORT

NUMBER: LPC

DATE: 15 May 1969

REVISION: _____

REVISION DATE: _____

LM-2 LANDING SIMULATION TEST
POST TEST BASELINE
OCP-B-90008-IM-2
1 APRIL 1969

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MANNED SPACECRAFT CENTER, HOUSTON

ocp/vtp checklist

OCP
VTP NO. 90008 TPS NO. 29006 PART NO. LM-2

OCP
VTP TITLE/TEST LANDING SIMULATION TEST, POST-TEST BASELINE

DATE STARTED 4-4-69 ☒ COMPLETE RUN ☐ PARTIAL RUN RUN NO.

	OPERATION	INSPECTION	
		GAEC	NASA
1	All required OCP/VTP pages complete and stamped		
2	Component Time/Cycle Report complete		
3	OCP/VTP Deviation Sheets complete and signed - of pages <u>32</u> Total number		
4	Test Data Sheets complete and signed - Total number of pages <u>257</u>		
5	Test Summary Sheets complete and signed - of pages <u>289</u> Total number		
6	OCP/VTP Run complete DATE <u>4-7-69</u>		

List associated TPS, DR and IDR numbers

TPS 29006

DR A/S 360.7 - A/S 390.16 - A/S 300.4 - A/S 300.5

IDR 90008.1-2-3-4-5-6-7-8-9-10

NOTES:

INSTRUCTIONS: 1. THIS FORM TO BE INSERTED IN FRONT OF ALL OCP'S/VTP'S AND SHALL BE
STAMPED PROGRESSIVELY AS EACH ITEM IS ACCOMPLISHED TO INDICATE CURRENT STATUS.
2. ALL SUBSEQUENT OCP/VTP RUNS SHALL INCLUDE THIS FORM AND SHALL STATE THE RUN NO.
NOTE: WHEN A PARTIAL RUN IS PERFORMED BY TPS AUTHORITY, IT SHALL BE TREATED THE
SAME AS A COMPLETED RUN.
3. THIS FORM WILL REMAIN WITH AND BECOME A PERMANENT PART OF THE OCP/VTP.

QUALITY CONTROL DEPARTMENT



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

OCP-B-90008-IM-2

1 April 1969

IM-2 LANDING SIMULATION TEST,

POST-TEST BASELINE

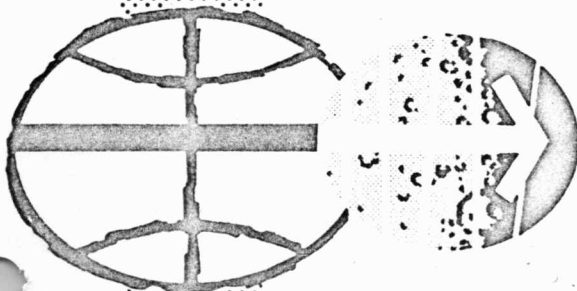
Grumman Aircraft Engineering Corporation

Official Test Record

This Is The Current Issue Of

OCP-B-90008-IM2 for Run No. 1
of this
R. L. Carney OCP 4-4-69
Issued by Pubs. 4-4-69
Received by O. C. Date

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS



PROJECT APOLLO

NAS 9-1100
EXHIBIT E, PARAGRAPH 10.3.1
PRIMARY NO. 169 WORK PACKAGE 640
TYPE I

OCP-B-90008-LM-2
DATE 04/01/69
REVISION

LM-2 LANDING SIMULATION TEST, POST-TEST BASELINE

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DATA RETRIEVAL NO. IMA790-45123

PROJECT APCLLC

DATE 04/01/69

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REVISION RECORD

TYPE	DATE	REVISION	AUTHORITY FOR REVISION	TOTAL PAGES	PAGES AFFECTED
.....					
BASIC	04/01/69			257	ALL

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ABSTRACT

THIS PROCEDURE IS A COMBINED SYSTEMS TEST DESIGNED TO PROVIDE A POST LM-2 DROP TEST SUBSYSTEM EVALUATION TO BE USED FOR COMPARISON WITH THE SUBSYSTEM BASELINE ESTABLISHED PRIOR TO THE DROP TEST. THE THREE MAJOR PHASES OF THE TEST ARE (1) VEHICLE POWER UP, (2) SUBSYSTEM CHECKOUT, AND (3) VEHICLE POWER DOWN. THIS TEST IS TO BE PERFORMED SUBSEQUENT TO LM-2 DROP TEST, UNDER AMBIENT CONDITIONS, WHILE THE VEHICLE IS MOUNTED IN THE DROP TEST RIG, BLDG 49, MSC, HOUSTON, TEXAS.

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TEST OBJECTIVES

THE COMBINED SYSTEM TEST SHALL DEMONSTRATE THAT THE SELECTED LM-2 SUBSYSTEMS FUNCTION AS DESIGNED UNDER AMBIENT CONDITIONS IN A LUNAR LANDING ORIENTED TEST SEQUENCE. THE DATA OBTAINED FROM THIS TEST WILL BE UTILIZED AS A BASELINE TO EVALUATE THE EFFECTS OF THE DROP TEST ON VEHICLE SUBSYSTEM PERFORMANCE.

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DOCUMENTS

<u>NUMBER</u>	<u>DATE</u>	<u>ORIGINATOR</u>	<u>TITLE</u>
	10/30/68	NASA/GAEC	CCB NUMBER 8
LTP 942-17002 REV A	10/5/68	GAEC	PLAN FOR DROP TEST OF LM-2
LED566-15	1/14/69	GAEC	LM-2 DROP TEST PROGRAM TEST AND C/O REC DOCUMENT
LED566-16	1/30/69	GAEC	LM-2 DROP TEST PROGRAM TEST AND CHECKOUT SPECIFICATION AND CRITERIA DOCUMENT
LPC 933-47001	2/27/68	GAEC	PROCEDURE FOR STRUCTURAL DROP TESTS OF LTA-3
LPC 75-382	1/20/68	GAEC	INTEGRATED LMP FUNCTIONAL TEST OCP-B63007-LM-2
OCP-GF-61018-LM-2	2/15/68	GAEC	FEAT/EMC ORIENTED (PLUGS OUT)
LMO-520-579	2/17/67	GAEC	LTA-3 STRUCTURAL DROP TEST PROGRAM
LAV-700-178-640	11/22/68	GAEC	LM-2 DROP TEST
LMO-706-214 REV A	12/18/68	GAEC	LM-2 TASK DESCRIPTIONS
NASW-410		GE	ACE-S/C FIELD OPERATIONS MANUAL
NASW-410-AM-04		GE	ACE-S/C OPERATORS MANUAL
NASW-410-AM-06		GE	ACE-S/C MAINTENANCE MANUAL

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STATION OPERATING
PROCEDURE NO.1.4

HOUSTON ACE-S/C
STATION OPERATING
PROCEDURES NO. 1.5

HOUSTON ACE-S/C
STATION OPERATING
PROCEDURES NO. 1.6

HOUSTON ACE-S/C
STATION OPERATING
PROCEDURES NO. 1.7

LMA790-3-LM2 3/1/68

GAEC

GCT-LM-2-2

GAEC

LEVEL III TIMELINE 2/19/69

GAEC

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LIST OF ABBREVIATIONS AND SYMBOLS

AA	ANTENNA ASSEMBLY
AC	ALTERNATING CURRENT
ACA	ATTITUDE CONTROLLER ASSEMBLY
ACE-S/C	ACCEPTANCE CHECKOUT EQUIPMENT SPACECRAFT
ACC	ACE-S/C COMPUTER ROOM TEST OPERATOR
AEA	ABORT ELECTRONICS ASSEMBLY
AELD	ASCENT ENGINE LATCHING DEVICE
ALT	ALTITUDE/ALTIMETER
AMP	AMPERE
ANT	ANTENNA
ACT	ALIGNMENT OPTICAL TELESCOPE
APS	ASCENT PROPULSION SYSTEM
AR	ANALOG RECORDER (ACE-S/C READOUT)
ARS	ATMOSPHERE REVITALIZATION SECTION
ASA	ABORT SENSOR ASSEMBLY
ASC	ASCENT
ASST	ASSISTANT
ASSY	ASSEMBLY
ATCA	ATTITUDE AND TRANSLATION CONTROL ASSEMBLY
AUTO	AUTOMATIC
AUX	AUXILIARY
AZ	AZIMUTH
A/S	ASCENT STAGE
BAT	BATTERY

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LIST OF ABBREVIATIONS AND SYMBOLS

BCL	BEACON CHECKOUT UNIT
BEC	BIT ERROR COMPARISON
BOB	BREAKOUT BOX
BP	BARBER POLE
BTC	BENCH TEST CONSOLE
B/L	BACKUP
CAL	CALIBRATE
CAK	CHECKOUT ADAPTER KIT
CB	CIRCUIT BREAKER
CCS	COMMAND CONTROL SECTION (LMP)
CCTV	CLOSED CIRCUIT TELEVISION
CCW	COUNTERCLOCKWISE
CDR	COMMANDER
CDL	COUPLING DATA UNIT
CE	COMMUNICATIONS ENGINEER
CES	CONTROL ELECTRONICS SECTION
CFE	CONTRACTOR FURNISHED EQUIPMENT
CHAN	CHANNEL
CM	COMMUNICATIONS MONITOR/COMMAND MODULE
CMD	COMMAND
COMM	COMMUNICATIONS/COMMUNICATIONS SUBSYSTEM
CONT	CONTROL
COO	CARRY-ON OPERATOR
CPS	COLD PLATE SECTION/CYCLES PER SECOND
CRSFD	CROSSFEED

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LIST OF ABBREVIATIONS AND SYMBOLS

CRT	CATHODE RAY TUBE
CSE	CSS ENGINEER
CSL	CSS LC BCY
CSM	COMMAND AND SERVICE MODULE
CSS	COMMUNICATIONS SUBSYSTEM
CT	COMMUNICATIONS TECHNICIAN
CTF	CONTRACTOR TANK FARM
CTL	CONTROL
CTP	CENTER
CTS	COMM TEST STATION OPERATOR
C/C	CHECKOUT
CW	CLOCKWISE
D	DOPPLER
D AND C	DISPLAYS AND CONTROLS
DAR	DATA ACQUISITION RACK
DB	DECIBEL
DBM	DECIBEL WITH RESPECT TO 1 MILLIWATT
DC	DIRECT CURRENT
DCA	DIGITAL COMMAND ASSEMBLY
DECA	DESCENT ENGINE CONTROL ASSEMBLY
DEI	DEFENSE ELECTRONICS INDUSTRY
DES	DESCENT
DFI	DEVELOPMENTAL FLIGHT INSTRUMENTATION
DPS	DESCENT PROPULSION SYSTEM
DSKY	DISPLAY AND KEYBOARD

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LIST OF ABBREVIATIONS AND SYMBOLS

DRR	DATA RECORDING RACK
DTC	DIGITAL TEST COMMAND ASSEMBLY TECHNICIAN
DTCA	DIGITAL TEST COMMAND ASSEMBLY
DTP	DETAIL TEST PROCEDURE
DVM	DIGITAL VOLTMETER
D/S	DESCENT STAGE
EC	ELECTRICAL POWER SUPPLY
ECA	ELECTRONIC CONTROL ASSEMBLY
ECC	ELECTRICAL CHECKOUT CONTROLLER
ECH	ECS HI BCY
ECL	ECS LC BCY
ECS	ENVIRONMENTAL CONTROL SUBSYSTEM
ECU	ECS CONTROL UNIT
ED	EXPLOSIVE DEVICES
EDH	ED HI BCY CONSOLE OPERATOR
FH1/2	FCS HI BCY OPERATORS
EIU	ELECTRICAL INTERFACE UNIT
EL	ELECTRICIAN/EVENT LIGHT
ELEV	ELEVATION
EO	ENGINEERING ORDER
EPL	EPS LC BCY
EPS	ELECTRICAL POWER SUBSYSTEM
ER	EVENT RECORDER
EXP	EXPONENT
FAC	FACILITY

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LIST OF ABBREVIATIONS AND SYMBOLS

FC	FACILITY COORDINATOR
FCS	FLIGHT CONTROL SUBSYSTEM
FDAI	FLIGHT DIRECTOR ATTITUDE INDICATOR
FDP	FLOW DISTRIBUTION PANEL
FDS	FLUID DISTRIBUTION SYSTEM
FITH	FIRE IN THE HOLE
FLT	FLIGHT
FM	FREQUENCY MODULATION
FPC	FACILITY POWER
FPS	FEET PER SECOND
FQC	FACILITY QUALITY CONTROL
FREQ	FREQUENCY
FSC	FLIGHT SAFETY COORDINATOR
FT	FEET
FTC	FACILITY TEST CONDUCTOR
FV	FACILITY VALVE
FWD	FORWARD
F/D	FILL AND DRAIN
GAEC	GRUMMAN AIRCRAFT ENGINEERING CORPORATION
G AND N	GUIDANCE AND NAVIGATION SUBSYSTEM
GE	GENERAL ELECTRIC
GEN	GENERATOR
GFE	GOVERNMENT FURNISHED EQUIPMENT
GH	G AND N HI RCV
GHE	GASEOUS HELIUM

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LIST OF ABBREVIATIONS AND SYMBOLS

GMBL	GIMBAL
GN	GUIDANCE AND NAVIGATION SUBSYSTEM
GNL	G AND N LC RCY
GN2	GASECUS NITROGEN
GDX	GASECUS OXYGEN
GPC	GROUND POWER CONTROL PANEL
GPS	GROUND POWER SUPPLY
GS	GRUMMAN SAFETY
GSE	GROUND SUPPORT EQUIPMENT
GSA	GAEC SOFTWARE ANALYST
GTL	GE TASK LEADER
HBR	HIGH BIT RATE
HTR	HEATER
HV	HIGH VOLTAGE
HVT	HIGH VOLTAGE TAP
HZ	HERTZ
I AND E	INSTRUMENTATION AND ELECTRICAL
ID	IDENTIFICATION
IE	INSTRUMENTATION ENGINEER
IES	INSTRUMENTATION AND ELECTRICAL STATION
IG	INNER GIMBAL
IMU	INERTIAL MEASURING UNIT
INCP	INOPERATIVE
INST	INSTRUMENTATION/INSTRUMENTATION SUBSYSTEM

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LIST OF ABBREVIATIONS AND SYMBOLS

INV	INVERTER
IRIG	INTER-RANGE INSTRUMENTATION GROUP
ISL	INSTRUMENTATION SUBSYSTEM LC PCY
ISS	INERTIAL SUBSYSTEM
IT	INSTRUMENTATION TECHNICIAN
J-BCX	JUNCTION BOX
KHZ	1000 HZ
KPS	1000 PULSES PER SECOND
LD	LEAK DETECTOR
LDC	LM INTERFACE DEFINITION DRAWING
LDC	LANDING
LDR	LUT DEADFACE RELAY
LDW	LM DRAWING
LGC	LM GUIDANCE COMPUTER
LH	LEFT HAND
LM	LUNAR MODULE
LMGSS	LM GROUND STATION SIMULATOR
LMP	LM PILOT/LM MISSION PROGRAMMER
LO	LOCAL OSCILLATOR
LSB	LEAST SIGNIFICANT BIT
LSC	LEM SPECIFICATION CONTROL DRAWING
LT	LIGHT
LTS	LM TEST SPECIFICATION
LUT	LAUNCH UMBILICAL TOWER
LV	LOW VOLTAGE

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LIST OF ABBREVIATIONS AND SYMBOLS

LVT	LOW VOLTAGE TAP (28V BAT)
MA	MICROWAVE ASSEMBLY
MAX	MAXIMUM
MDIS	MINIATURIZED DATA INTERLEAVING SYSTEM
MEAS	MEASUREMENT
MG	MIDDLE GIMBAL
MIN	MINIMUM/MINUTE
MM	MILLIMETER
MON	MONITOR
MSB	MOST SIGNIFICANT BIT
MSC	MANNED SPACECRAFT CENTER
MSFN	MANNED SPACE FLIGHT NETWORK
MV	MANUAL VALVE/MILLIVOLT
MW	MILLIWATT
M/H	MINNEAPOLIS HONEYWELL
NA	NOT APPLICABLE
NAR	NORTH AMERICAN ROCKWELL
NASA	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
NAV	NAVIGATION
NIB	NOISE INTERFERENCE BASIS
NLT	NOT LESS THAN
NMT	NOT MORE THAN
NCE	NASA OPERATIONS ENGINEER
NO.	NUMBER

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LIST OF ABBREVIATIONS AND SYMBOLS

NUM	NUMERICS
CCP	OPERATIONAL CHECKOUT PROCEDURE
CC	CLTER GIMBAL
CSS	OXYGEN SUPPLY SUBSYSTEM
CVHD	OVERHEAD
O2	OXYGEN
PA	PUBLIC ADDRESS
PB	PUSH BUTTON
PCA	PROGRAM COUPLER ASSEMBLY
PCM	PULSE CODE MODULATION
PCMTFA	PCM AND TIMING ELECTRONICS ASSY
PCT	PERCENT
PCA	POWER DISTRIBUTION ASSEMBLY
PDS	POWER DISTRIBUTION SECTION
PER	PORTABLE FILL RESERVOIR
PGNS	PRIMARY G AND N
PGC	PULSE GENERATOR OPERATOR
PH	PHASE
PM	PULSE MODULATION
POV	PILCT OPERATED VALVE
PP	PARTIAL PRESSURE
PRA	PROGRAM READER ASSEMBLY
PRF	PULSE REPETITION FREQUENCY
PRIM	PRIMARY
PRN	PSEUDO RANDOM NOISE

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LIST OF ABBREVIATIONS AND SYMBOLS

PRCP	PROPELLSION
PSA	POWER SERVO ASSEMBLY
PSH	PROPELLSION SUBSYSTEM HI BCY
PSI	POUNDS PER SQUARE INCH
PSIA	PSI, ABSOLUTE
PSID	PSI, DIFFERENTIAL
PSIG	PSI, GAGE
PSL	PROPELLSION SUBSYSTEM LO BCY
PTC	PORTABLE TEMPERATURE CONTROLLER
PTT	PRESS TO TALK
PWR	POWER
QA	QUALITY ASSURANCE
QC	QUALITY CONTROL
QD	QUICK DISCONNECT
RCCA	ROUGH COMBUSTION CUTOFF ASSY
RCS	REACTION CONTROL SUBSYSTEM
RCVR	RECEIVER
REG	REGULATOR
RF	RADIO FREQUENCY
RGA	RATE GYRO ASSEMBLY
RH	RIGHT HAND
RNG	RANGE
RR	RENDEZVOUS RADAR
RT	RIGHT/RATE
SAL	SPACECRAFT ACOUSTICS LAB

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LIST OF ABBREVIATIONS AND SYMBOLS

SAM	SLEW ANTENNA MONITOR
S AND C	STABILIZATION AND CONTROL SUBSYSTEM
SCEA	SIGNAL CONDITIONER ELECTRONICS ASSY
SCL	S AND C LC BCY
SDD	SIGNAL DATA DEMODULATOR
SEC	SECOND/SECONDARY
SEP	SEPARATE
SEQ	SEQUENCE
SESL	SPACE ENVIRONMENT SIMULATION LABORATORY
SFT	SAFETY ENGINEER
SH	S AND C HI BCY
SIL	STIMULI INTERFACE UNIT
SLA	SATURN LEM ADAPTER
SMRD	SPIN MOTOR ROTATION DETECTOR
SCV	SHUT OFF VALVE
SPEC	SPECIFICATION
SSR	SIGNAL SWITCHING RACK
ST	SPECIAL TEST
STC	SYSTEM TEST CONSOLE
STD	STANDARD
STTN	STATION
SW	SWITCH
S/C	SPACECRAFT, STABILIZATION AND CONTROL
S/O	SWITCHOVER
S/S	SUBSYSTEM

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LIST OF ABBREVIATIONS AND SYMBOLS

TB	TALKBACK
TBD	TO BE DETERMINED
TC	TEST CONDUCTOR
TCA	THRUSTER CLUSTER ASSEMBLY
TCU	TRIM CONTROL UNIT
TD	TEST DIRECTOR
TE	TIMING ELECTRONICS
TEMP	TEMPERATURE
TFR	TERMINAL FACILITY ROOM
TFT	TANK FARM TECHNICIAN
TCN	TEST OPERATIONS NOTICE
TPA	TEST PREPARATION AREA
TPS	TEST PREPARATION SHEET
TSC	TEST SAFETY OFFICER
TTCA	THRUST/TRANSLATION CONTROL ASSEMBLY
TV	TELEVISION
TVM	TELEVISION MONITOR
Tw	TECHNICAL WRITER/THUMBWHEEL
T/C	THERMOCOUPLE
V	VOLT/VALVE
VAC	VOLT AC
VDC	VOLT DC
VEL	VELOCITY
VHF	VERY HIGH FREQUENCY
VLV	VALVE

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LIST OF ABBREVIATIONS AND SYMBOLS

VRMS	VOLT, ROOT MEAN SQUARE
WGM	WATER GLYCCL MONITOR
WMS	WATER MANAGEMENT SECTION
W/G	WATER GLYCCL
XMTR	TRANSMITTER
XPCR	TRANSPENDER
XTAL	CRYSTAL

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CHECKOUT SUPPORT REQUIREMENTS

PERSONNEL

TYPE OF PERSONNEL	NUMBER REQUIRED		OPERATIONAL ASSIGNMENT
	NASA	GAEC	
ATC		1	ASST TEST CONDUCTOR
CEC		1	CEC RECORDER OPERATOR
CM	1		COMMUNICATIONS MONITOR
COO		1	CARRY-ON OPERATOR
CSL		1	COMMUNICATIONS S/S LC BCY
CT		1	COMMUNICATIONS TECHNICIAN
DAR		1	DATA ACQUISITION RACK TECHNICIAN
DCT		1	DIGITAL COMMAND TEST ASSEMBLY TECHNICIAN
ECL		1	ECS LC BCY
ECS		1	ECS ENGINEER
EPL		1	EPS LC BCY
FPC		1	FACILITY POWER TECHNICIAN
FSC	1		FLIGHT SAFETY CO-ORDINATOR
FTC	1		FACILITY TEST CONDUCTOR
GH	1		G AND N HI BCY
GNL	1		G AND N LC BCY
GPS		1	GROUND POWER SUPPLY TECHNICIAN
GS		1	GRUMMAN SAFETY
GSH		1	GAEC SOFTWARE ANALYST
GTL	1		GE TASK LEADER
IE		1	INSTRUMENTATION ENGINEER

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CHECKOUT SUPPORT REQUIREMENTS

ISL	1	INSTRUMENTATION S/S LC PCY
LMP	1	LM PILOT
LRC	1	LMP RESET COMMAND UNIT
PSF	1	PREPULSION S/S HI BCY
PSL	1	PREPULSION S/S TEST ENGINEER
QA	1	QUALITY ASSURANCE
QC	6	QUALITY CONTROL
QE	1	QUALITY ENGINEER
SAM	1	SLEW ANTENNA MONITOR
SCL	1	S AND C LC PCY
SFT	1	SAFETY ENGINEER
SH	1	S AND C HI PCY
TC	1	TEST CONDUCTOR
TD	1	TEST DIRECTOR
TPC	1	PTC OPERATOR
TW	1	TECH WRITER
VDC	1	VTAF DATA CONTROL OPERATOR
WGM	1	W/G TRIM CONTROL UNIT MONITOR
TOTAL	11	34

SPECIAL TOOLS AND EQUIPMENT

NOMENCLATURE	MANUFACTURER AND/OR PART NUMBER	APPLICATION
POWER METER WITH MOUNT	HP431C	S-BC C/C
ATTENUATOR	AT-106 OR EQUIV	S-BC C/C

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CHECKOUT SUPPORT REQUIREMENTS

20 DB DIRECTIONAL COUPLER		S-BD C/C
CHART RECORDER	DYNAGRAPH	S-BD C/C
SCOPE	TEK 545	S-BD PCM MONITOR
CONVERTER	HP2590	S-BD TX FREQ MON
PRESCALER	HP5253B	S-BD XMTR FREQ MCN
COUNTER	HP5245L	S-BD XMTR FREQ MCN
COUNTER	HP5245L	SMRD (RGA) FREQ MCN
SPECTRUM ANALYZER	SINGER EF4A	S-BD RCVR RF MON
SIGNAL GENERATOR	HP616B	S-BD CALIB
10-WATT WIDE BAND AMPLIFIER		PCM SIG COND
BOB	LDW410-2591-1	RR VOLTAGE TESTS
CABLE ASSY	LDW410-2586-7	RR VOLTAGE TESTS
DIGITAL VOLTMETER	CIMRON 7200 CR EQUIV	RR VOLTAGE TESTS
MULTIMETER	SIMPSON 260 CR EQUIV	RR VOLTAGE TESTS
RMS VOLTMETER	HP 3400A	RR VOLTAGE TESTS

GROUND SUPPORT EQUIPMENT

NOMENCLATURE	CONTRACTOR'S CR MAN- UFACTURER'S PART NUMBER	APPLICATION
-----	-----	-----
DATA RECORDING RACK	LSC410-11080	RECORD DFI DATA
RF J-BOX	LDW410-11225	JUNCTION BOX FOR RF SIGNALS
ACE/SC STATION	LSC410-11990	RECEIVE, RECORD AND DISPLAY DATA FROM S/C AND GSE

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CHECKOUT SUPPORT REQUIREMENTS

DFI SYSTEM TEST CONSOLE	LSC410-32110	RECEIVE AND PROCESS DFI SIGNALS
DIGITAL COMMAND	LSC410-32190	PROVIDES UPLINK SIG DISPLAYS FOR LMP
LMP RESET CMD UNIT	LSK410-2698-1	RESETS PDA
RCS 5 VOLT MONITOR UNIT	LDW410-63002-1	PROVIDE INTERFACE FOR TEST EQUIP RCS VALVES
GROUND POWER ISOLATION UNIT	LDW410-80041-1	PREVENTS REVERSE CURRENT
EPS INTERFACE UNIT	LDW410-81060-1	VEHICLE POWER SWITCHING
DC CONVERTER	LSC410-81190-1	5 VOLT SOURCE
EPS C/O CONTROLLER	LDW410-82090-1	28 VDC POWER AND VEHICLE C/O
VEH GROUND PWR SUPPLY	LDW410-82140-1	VEHICLE 28 VDC POWER
PWR SUPPLY 10V PCMTEA	LSC410-92205-1	PROVIDE 10V POWER FOR PCM
DATA INTERLEAVER	LSC410-92232-1	RECEIVES PCM, GENERATES SYNC AND ID WORDS
PGA BOB	LSK417-1040-7	MONITOR RGA SMRDS
INITIATOR SIMULATORS (24)	LSC410-80000-11	SIMULATE PYROTECHNIC INITIATORS
FWD ACCESS HATCH ADAPTER	LDW420-11000-21	PREVENTS DAMAGE TO HATCH AREA
LG TOOL KIT	LDW420-11002-1	USED TO INSTALL L/G

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CHECKOUT SUPPORT REQUIREMENTS

I/E PLATFORM	LSC420-1350	PROVIDE ACCESS TO FWD HATCH OF VEHICLE
WORK PLATFORM	LSC420-1430	PROVIDE ACCESS TO VEHICLE IN DROP RIG
DOCKING HATCH COVER	LSC420-1501	MAINTAIN CLEANLINESS
PORTABLE HOIST CLEAN RM TYPE	LSC420-1535	SERVICING VEHICLE IN DROP RIG
COOLING DUCT	LDW430-14059	DIRECT COOLING AIR
ICE BARREL	LTT430-24060-1	PROVIDES AUXILIARY COOLING TO TRIM CONTROL UNIT FOR PROP SYS LOADING
CABIN COOLING	LSC430-91011	CONDITION CABIN AIR
LUNAR MODULE GROUND STATION SIMULATOR	LMGSS	SIMULATES MSFN
S-BAND ANT (CLP-18)		SIMULATE MSFN ANT

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SAFETY REQUIREMENTS

BEFORE START OF TESTING, SECTION 5.0 (EMERGENCY SHUTDOWN) SHALL BE UNFOLDED AND SHALL REMAIN VISIBLE THROUGHOUT TEST

PERSONNEL SAFETY IS THE DIRECT RESPONSIBILITY OF NASA AND CONTRACTOR SUPERVISION IN ACCORDANCE WITH THE MSC SAFETY MANUAL.

SUPERVISION IS RESPONSIBLE FOR PROVIDING SAFE WORKING CONDITIONS AND OBTAINING PERSONNEL COMPLIANCE WITH ALL CONTRACTOR AND SPECIAL SAFETY RULES.

WHEN UNSAFE CONDITION EXISTS, TD HAS RESPONSIBILITY TO PREVENT PERSONNEL INJURY AND PRESERVE SPACECRAFT/TEST COMPLEX INTEGRITY

PERSONNEL ENCOUNTERING EMERGENCY SHALL NOTIFY TEST CONDUCTOR AND RESPOND AS DIRECTED TO PREVENT PERSONNEL INJURY AND EQUIPMENT DAMAGE.

DURING TEST, MEDICAL, FIRE, AND SECURITY DEPARTMENTS SHALL BE STAFFED AND PREPARED TO RECEIVE AND DISPATCH MESSAGES AND PERSONNEL TO SUPPORT EMERGENCY OPERATIONS.

PRIOR TO START OF OPERATIONAL TESTING, A LIST OF ALL EMERGENCY SECURITY, FIRE AND MEDICAL DEPARTMENT TELEPHONE NUMBERS SHALL BE POSTED AT ALL TELEPHONES IN TEST AREA AND CONTROL ROOM. PERSONNEL ARE REQUIRED TO BE FAMILIAR WITH SPECIFIC LOCATIONS AND NUMBERS.

AVOID PRESENCE OF HYDROCARBONS INCLUDING WATER-GLYCOL IN VICINITY OF OXYGEN. MIXTURES OF HYDROCARBONS WITH PURE OXYGEN ARE SUBJECT TO SPONTANEOUS COMBUSTION AND EXPLOSION.

IF AN EMERGENCY OCCURS, AN AMBULANCE SHOULD BE SUMMONED BY TELEPHONE (3211). PATIENTS WITH MINOR INJURIES SHOULD BE ESCORTED TO THE OCCUPATIONAL MEDICINE DISPENSARY AT BUILDING 8 THE DISPENSARY SHOULD THEN BE NOTIFIED OF THE EMERGENCY OR INJURY (4211).

IN CASE OF INJURY, GOVERNMENT PERSONNEL WILL NORMALLY BE TRANSFERRED TO METHODIST HOSPITAL. DR. FRANCIS USHER WILL BE NOTIFIED BY CALLING JA 9-3413. CONTRACTOR PERSONNEL WILL BE TRANSFERRED TO HOSPITAL DESIGNATED BY COMPANY PHYSICIAN.

NO PERSONNEL SHALL BE ALLOWED WITHIN 6 FEET OF THE S-BAND STEERABLE ANTENNA WHILE S-BAND TRANSMITTER IS RADIATING.

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SPECIAL INSTRUCTIONS

PERSONNEL SHALL NOT LEAVE THEIR STATIONS DURING TEST WITHOUT PERMISSION OF RESPONSIBLE SUBSYSTEMS ENGINEER AND TC.

PERSONNEL SHALL IMMEDIATELY REPORT ANY DISCREPANCIES FOUND DURING TEST TO TC.

AT START OF TEST, TC AND TD SHALL DESIGNATE INDIVIDUALS TO ASSUME THEIR RESPONSIBILITIES IF EITHER SHOULD BECOME INCAPACITATED.

24-HOUR LOCAL TIME STANDARD SHALL BE USED FOR TIME RECORDINGS.

DATA REDUCTION WILL SUPPORT CHECKOUT BY FURNISHING CURRENT CALIBRATION INFORMATION ON ALL SENSORS AND TRANSDUCERS. SOFTWARE ANALYST WITH CALIBRATION CURVES SHALL BE PRESENT DURING TEST.

S/C OPERATIONAL TELEMETERED MEASUREMENTS WILL BE RECORDED ON MAGNETIC TAPE.

ACE-S/C COUNTDOWN CLOCK WILL BE CONTROLLED BY TC.

IN THE EVENT OF ACE-S/C STATION FAILURE, ACE-S/C STATION SWITCHING WILL BE IN ACCORDANCE WITH HOUSTON ACE-S/C OPERATION PROCEDURE NO. 1.12.

DEVIATIONS FROM THESE PROCEDURES DURING TEST WILL BE WRITTEN ON DEVIATION SHEETS, RECORDED BY QC, AND APPROVED AND SIGNED BY QE, TC, AND TD BEFORE ACCOMPLISHMENT.

ANY MALFUNCTION OR DISCREPANCY DURING TEST PREPARATION AND TESTING WILL BE RECORDED BY QC ON A DISCREPANCY RECORD/ MATERIAL REVIEW RECORD (MSC FORM 2176)

IT IS RESPONSIBILITY OF EACH LEAD SUBSYSTEM ENGINEER TO MONITOR HIS SUBSYSTEM'S CONDITIONS AND PARAMETERS THROUGHOUT TEST.

SUBSYSTEM ENGINEERS SHALL OBTAIN PERMISSION FROM TC BEFORE OPERATIONS REQUIRING COMMUNICATIONS WITH CABIN.

ACE-S/C CONSOLE OPERATORS SHALL ANNOTATE RECORDER CHARTS WITH OCP NUMBER, DATE, TIME, MEASUREMENT IDENTIFICATION, RECORDER NO., AND SWITCH POSITIONS WHEN APPLICABLE.

WHENEVER MASTER ALARM SOUNDS, CDR SHALL RESET, THEN NOTIFY TC OF REASON FOR ALARM.

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SPECIAL INSTRUCTIONS

ONLY SPECIAL OPERATING SEQUENCES DURING PRETEST PREPARATIONS ARE - FACILITY SWITCH, VALVE, AND CR POSITIONS WHICH MUST BE VERIFIED BEFORE GSE VERIFICATIONS.

DIRECTION TO ESTABLISH A TEST CONDITION AUTHORIZES OPERATOR TO MAINTAIN ASSOCIATED TOLERANCES UNTIL DIRECTED TO CHANGE OR TERMINATE THE CONDITION

GUARDED CIRCUIT BREAKERS ARE CALLED OUT IN TEST SET-UP AND ARE REFERRED TO ONLY FOR TEMPORARY REMOVAL AND INSTALLATION IN THE REMAINDER OF THIS DOCUMENT.

ANY CR OR SWITCH WHICH ACTIVATES OR DEACTIVATES LIMITED LIFE EQUIPMENT SHALL BE IDENTIFIED BY THE APPROPRIATE LL NO. IN EACH SEQUENCE WHERE IT IS USED. THE S/S ENGINEER IN WHOSE SEQUENCE THE LL ITEM APPEARS SHALL CALL OUT THE TIME AT ACTUATION, USING THE 24 HOUR LOCAL STANDARD TIME. THE GAEC 'LIMITED LIFE EQUIPMENT TEST OPERATIONS SUMMARY' FORM (GH52-177) SHALL BE MAINTAINED BY THE COGNIZANT S/S ENGINEER. CC SHALL RECORD THE TIME IN THE OFFICIAL COPY OF THE OCP AND ENTER DATA IN THE VEHICLE LIMITED LIFE LOG/SUBSYSTEM LOGS.

COMMUNICATIONS SUBSYSTEM

S-BAND LOCKUP WILL BE PERFORMED PER DIRECTION OF CSL WHENEVER REQUIRED.

UPLINK LOCK-IN

CT ROTATE VCO BIAS CN LMGSS TO + AND - EXTREMES UNTIL CSL INDICATES LOCK-UP BY READING OF GREATER THAN 0.5 VDC AGC ON CRT PAGE 6, LINE 13. RESET VCO BIAS FOR 2101.8 MC USING FREQ COUNTER.

DOWNLINK LOCK-IN

CT ENSURE FIRST LC TO C AND 2282.5 MC. ENSURE SECOND LC TO XTAL. PRESS 'LOOP OPEN' SWITCH ON WIDE-BAND DEMOD AND ADJUST TUNING FOR APPROX ZERO ON TUNING METER. RELEASE SWITCH AND VERIFY 'LOOP LOCKED' LIGHT ON.

ELECTRICAL POWER SUBSYSTEM

PANEL 14 AMMETER READINGS REFLECT TWICE ACTUAL CURRENT FOR DESCENT BATTERIES. WHEN READING AC BUS VOLTAGE, PANEL 14 VOLT-METER READINGS OF 35.8 TO 38.7 ARE EQUIVALENT TO 112 TO 121 VAC.

GUIDANCE AND NAVIGATION SUBSYSTEM

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SPECIAL INSTRUCTIONS

DURING MANEUVERS, PANEL 1 'TCA' WARNING LIGHT WILL COME ON, MASTER ALARM WILL BE ACTIVATED, AND GLAD TALK-BACKS ON PANEL 2 WILL GO RED. THESE INDICATIONS SHOULD BE REPORTED AND RESET AFTER COMPLETION OF MANEUVER.

IMU GIMBALS MUST BE 'PARKED' PRIOR TO IMU SHUTDOWN.

WHEN VEHICLE POWER IS REMOVED FROM IMU, ENSURE THAT PTC IS OPERATING.

ALL PGNS DEVIATIONS SHALL BE SIGNED BY AN A.C. ELECTRONICS REPRESENTATIVE.

FIGURE 1-1 IS USED TO DETERMINE IF TIME REMAINS TO PERFORM IMU OPERATIONAL TEST, AND IMU PERFORMANCE TEST.

DURING JET FIRINGS, ALL JETS WILL BE OFF UNLESS OTHERWISE NOTED.

UNLESS DIRECTED OTHERWISE, ACE-S/C RECORDERS 4A AND 5A SHALL BE OPERATED AT 5 MM/SEC WHEN TAKING READINGS, AND 2 MM/SEC AT ALL OTHER TIMES.

FOLLOWING A POWER INTERRUPTION OF IMU OPERATE POWER ONLY, MINIMUM 5 MINUTES IN STANDBY MODE IS REQUIRED PRIOR TO REAPPLICATION OF IMU OPERATE POWER.

FOLLOWING A POWER INTERRUPTION OF ALL G AND N POWER, THE SYSTEM MUST BE OPERATED IN STANDBY MODE FOR A PERIOD EQUAL TO DURATION OF THE INTERRUPTION (MINIMUM 15 MINUTES/MAXIMUM 2 HOURS) PRIOR TO REAPPLICATION OF IMU OPERATE POWER.

FDAI READINGS ARE FOR ENGINEERING EVALUATION ONLY

DCTA TAPE MAY BE RESEQUENCED AS REQUIRED TO ACCOMPLISH TEST CRITERIA.

INSTRUMENTATION SUBSYSTEM

DFI IS TURNED ON, CALIBRATED, AND TURNED OFF DURING INITIAL CABIN OPERATIONS. IF A SUBSYSTEM SEQUENCE REQUIRES ACQUISITION OF DFI DATA, IT IS THE RESPONSIBILITY OF THE COGNIZANT SUBSYSTEM LEAD ENGINEER TO NOTIFY THE TC OF THE REQUIREMENT. INST 58, ACQUIRE DFI DATA, WILL THEN BE PERFORMED AT TC'S DIRECTION. TOTAL TAPE TIME AVAILABLE PER RUN IS APPROX 20 MINUTES.

PROPULSION SUBSYSTEM

DURING THE PERFORMANCE OF PROP 70, DISREGARD THE CRT UPPER AND LOWER LIMITS AS SHOWN IN THIS SEQUENCE BECAUSE VALUES ARE FOR ENGINEERING EVALUATION ONLY.

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IF R1 IS NOT GREATER THAN	APPROX. TIME LEFT TO COMPLETE TEST	
	HOURS	MINUTES
37700	00	05
37600	00	11
37500	00	16
37400	00	21
37300	00	27
37200	00	33
37100	00	38
37000	00	44
36000	01	27
35000	02	11
34000	02	55
33000	03	38
32000	04	22
31000	05	06
30000	05	48
24000	08	45
20000	11	40
00000	23	20

FIGURE 1-1
TEST TIME TO OVERFLOW CONVERSION

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COMMUNICATIONS CHANNEL ASSIGNMENTS

PERSONNEL WILL USE ASSIGNED SUBSYSTEM CHANNELS FOR OPERATIONS NOT REQUIRING CREW ACTIVITY.

CREW CHANNEL WILL BE USED BY SUBSYSTEM PERSONNEL WHEN PERFORMING VEHICLE OR VEHICLE/GSE INTEGRATED OPERATIONS.

PERSONNEL WILL MONITOR SUPERVISOR'S ACTIVE CHANNEL AT ALL TIMES. DURING MANNED OPERATIONS TC WILL DIRECT SUBSYSTEM PERSONNEL TO MONITOR THE CREW CHANNEL.

DIRECTION TO USE OTHER THAN ASSIGNED CHANNELS WILL BE GIVEN BY SUPERVISION. PERSONNEL WILL RETURN TO ASSIGNED CHANNELS AFTER EACH OPERATION REQUIRING ANOTHER CHANNEL.

CHANNEL ASSIGNMENTS FOR THIS OCP ARE AS FOLLOWS -

PERSONNEL	ACTIVE	MONITOR
.....		
QC/QA	9	ALL
TC/TD	1	ALL
ECS	2	1
EPS	3	1
PROP/PCS	4	1
INST	5	1
COMM	6	1
G AND N/S AND C	7	1
GE (ACE STATION)	8	1

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TEST SET-UP

4/4/69
16:30 998 VERIFY PRE TEST MEETING HAS BEEN HELD

998 VERIFY ALL CONSTRAINTS TO TEST PERFORMANCE ARE CLEARED

998 VERIFY ALL APPLICABLE GAGES AND TEST EQUIPMENT CONTAIN VALID CALIBRATION AND/OR INSPECTION STICKERS.

998 VERIFY SPACECRAFT DROP TEST FIXTURE DROP AREA, AND ASSOCIATED GSE IN BLDGS 32 AND 49 ARE INSPECTED PER QCT LM-2-2 IN A MANNER THAT DOES NOT INVALIDATE EXISTING CONFIGURATION.

998 VERIFY WITH THE GTL THAT ACE-S/C GROUND STATION PREPARATION IS COMPLETE AND ACE-S/C STATION IS READY TO SUPPORT LM-2 TEST INTERFACING WITH TEST AREA NO. 2 USING STATION AND TEST FILE TAPE(S) SPECIFIED BY THE APPLICABLE TEST OPERATION NOTICE (TON).

998 ENSURE THAT THE FOLLOWING TAPES ARE AVAILABLE FOR LMP USE, 24711-6, -10, -22, AND 7C

998 ENSURE W/G REFRIGERATION UNIT IS OPERATIONAL.

998 ENSURE COOLING SUPPORT PRECPS COMPLETE.

998 ENSURE FACILITY EMERGENCY POWER IS AVAILABLE.

998 DEMATE P/J 1411.

998 CONNECT CES ADAPTER LSK 56C-1046 TO P/J 1411.

998 ~~VERIFY VEHICLE IN HARD MOUNT POSITION~~

998 ENSURE CABLE LDW410-2586-7 P1 MATED TO BCB LDW410-2591-1 P1.

998 MATE P2 OF LDW410-2586-7 TO RNDZ RDR ELECTRONIC ASSY J202.

998 ENSURE AC POWER AVAILABLE TO DVM.

998 ENSURE GSS PATCHING AS FOLLOWS,

P17 OF LSK410-2669 TO J17 ON CONNECTOR PANEL

998 J-6 ON CONNECTOR PANEL TO 'RF IN' ON HP 2590 CONVERTOR

998 HP 2590 CONVERTOR '10 MC IN' TO OUTPUT STD FREQ OF HP 5245L COUNTER

998 HP 2590 CONVERTOR 'TO FREQ METER' PATCHES TO 'INPUT' OF HP 5253 PRESCALER

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE:	GN	DATE: 4-7-69	SHEET 1 OF
CP-B-9008-LM-2	TPS NO.	PRETEST	TEST POST-TEST
<u>GAEC</u> J. McDuff ACEL APRIL 7, 1969 <u>D. Massey 4/7/69</u>		<u>NASA</u> <u>W.T. Mulcahey 4/7/69</u> <u>W.H. Frost 4/7/69</u> <u>for D.E.</u>	

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
1	1-28	TEST SET-UP	DELETE 20 TH LINE "VERIFY VEHICLE IN..." (NOT REQUIRED - VEHICLE STABILITY IS CONSTANT IN JACKS OR HARD MOUNT)	P	998 4/7/69	

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE: <u>OCB-9008-LM-2</u>	<u>Comm</u>	DATE: <u>4-7-69</u>	SHEET <u>2</u> OF
<u>GAEC</u> <u>W. T. Mulcahey 4-7-69</u> <u>W. T. Mulcahey 4/7/69</u> <u>NASA</u> <u>W. T. Mulcahey 4/7/69</u> <u>for O. E.</u>		TPS NO.	<u>PRETEST</u> TEST POST-TEST

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
2	1-29	TEST SET-UP	LINE 22, CHANGE "2 EACH" TO "ONE" (ONLY ONE COMM CARRIER AVAILABLE)	T	998 4/7/69	

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE: <u>SCC</u> <u>OCPB-90008-WM-2</u>	DATE: <u>4-7-69</u>	SHEET <u>9</u> OF <u> </u>
<u>GAEC</u> <u>Walter F. Bowlds</u> <u>D. Massey 4/7/69</u>	TPS NO. <u> </u>	PRETEST TEST POST-TEST
<u>NASA</u> <u>W.T. Mulcahey 4/7/69</u> <u>ASH. Frost 4/7/69</u> <u>for O. E.</u>		

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
11	1-29	TEST SET-UP	LINE 24, DELETE "DEMATE P/J2 III" (TANKS ARE PRESSURIZED, VALVES WILL NOT BE ACTIVATED)	T	998 4/7/69	

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TEST SET-UP

- 998 20DB DIRECTIONAL COUPLER 'RF IN' TO J16 CN CONNECTOR PANEL
- 998 PATCH TEST XMTR PF CUT TO HP491C RF-IN.
- 998 PATCH HP491C RF CUT TO TRANSMITTER PORT OF POWER SPLITTER
- 998 AT-106 ATTENUATOR 'RF IN' TO 20 DB DIRECTIONAL COUPLER 'RF OUTPUT'
- 998 DIRECTIONAL COUPLER '20 DB PORT' TO SPECTRUM ANALYZER 'DIRECT INPUT'.
- 998 AT-106 'RF OUTPUT' TO ANTENNA CABLE FROM DEI RCVR
- 998 DYNAGRAPH 'CHAN 1' INPUT TO J9 TEE CN CONNECTOR PANEL, PATCH OTHER SIDE OF TEE TO A102 ON GFE J-BOX.
- 998 INPUT OF WIDE BAND AMPL TO J-8 CN CONNECTOR PANEL
- 998 TEK 1A2 PRE-AMP 'VERT 1 IN' TO TEE CN OUTPUT OF WIDE BAND AMPL
- 998 PCM CABLE TO SANGAMO RECORDER MATED TO OTHER SIDE OF TEE CN OUTPUT OF WIDE BAND AMPLIFIER
- 998 ENSURE LSK410-2669 CONNECTED TO J1101 CN LM-2
- 998 ENSURE GSE ANTENNA IS CONNECTED TO RF CABLE LSK410-2659 AND CABLE ROUTED TO LMSS.
- 998 ENSURE S-BD ANTENNA POSITIONED TO -75 DEG PITCH AND -30 DEG YAW, AND MANUALLY VERIFY FREEDOM OF MOVEMENT IN PITCH AND YAW

ENSURE LMSS IS POWERED UP AND WITHIN LIMITS PER COMM 63.

PROCURE (2 EACH) COMM CARRIER AND UPPER BICMED HARNESS FROM GAEC BICMED STORAGE AND STORE IN CABIN

998 DEMATE P/J2 FROM 5V POWER SUPPLY (LSC 412-8119C-1).

998 SET UP RGA BOB (LSK 417-104C-7) AS FOLLOWS.

DEMATE P/J 704 AT RGA.

CONNECT (VEHICLE) P704 TO RGA BOB J704.

CONNECT (RGA BOB) P704 TO J704 AT RGA.

SET RGA BOB ON/OFF SW TO ON.



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TEST SET-UP

998 CONNECT HP5245L COUNTER (OR ECLIV) AS FOLLOWS.

998 NEG LEAD (SHIELD) TO TEST JACK E ON RCA PCB

998 POS LEAD TO TEST JACK U FOR YAW, X FOR ROLL, OR G FOR PITCH SMRD'S

998 CONNECT TEST LEAD TO COUNTER INPUT JACK AND SET COUNTER TO READ FREQUENCY (~~APPROX 1000 FPS~~)

998 ON 3211C SYSTEM TEST CONSOLE, PATCH AS FOLLOWS

998 RACK 4, EXTERNAL PATCH PANEL

998 100 KC-TO SIGMA AMP 1 + INPUT

998 SIGMA AMP 1 + CUT-TC-TAPE REC INPUT TRACK 1

998 R VIDEO 1 TO TAPE REC INPUT TRACK 3

998 R VIDEO 2-TC-TAPE REC INPUT TRACK 5

998 R VIDEO 3-TC-TAPE REC INPUT TRACK 7

998 R VIDEO 4-TC-TAPE REC INPUT TRACK 9

998 R VIDEO 5-TC-TAPE REC INPUT TRACK 10

998 RACK 4, ISP PANEL

998 DC AMP TO DISC SIG CUT

998 DC AMP CUT TO EXT (DCVM)

998 EXT DCVM TO DVM INPUT CONN

998 VIDEO BUS TO TAPE TRACK (STC)

998 SCOPE A TO TAPE TRACK (STC)

998 ON 1108C RECORDING RACK, PATCH AS FOLLOWS

998 TAPE REC PATCH PANEL

998 STC TAPE INPUT 1-TO-REC TAPE TRACK 1

998 STC TAPE INPUT 3-TO-REC TAPE TRACK 3

998 STC TAPE INPUT 5-TO-REC TAPE TRACK 5



7 APR 69

OPERATIONAL CHECKOUT PROCEDURE DEVIATION SHEET

OCP NO. AND TITLE: CP-B-90008-LM-2	DATE: 4-7-69 TPS NO.	SHEET 11 OF PRETEST TEST POST-TEST
GAEC Walter F. Boulds D. Mulcahey 4/7/69	NASA W. T. Mulcahey 4/7/69 D. H. Frost 4-7-69 for O. E.	

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
13	1-30	TEST SET-UP	DELETE "APPROX 1600 PPS)" from 6 TH LINE (MISLEADING)	P	998	

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE: <u>CP-B-90008-AM-2</u>	<u>SCL</u>	DATE: <u>4-7-69</u>	SHEET <u>10</u> OF <u> </u>
<u>Walter F. Bowlds</u> <u>W. Massey 4/7/9</u>		TPS NO. <u> </u>	<u>PRETEST</u> TEST POST-TEST
<u>GAEC</u> <u>Walter F. Bowlds</u> <u>W. Massey 4/7/9</u>		<u>NASA</u> <u>W.T. Mulcahey 4/7/9</u> <u>AT First 4-7-69</u> <u>for O.E.</u>	

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
12	1-30	TEST SET-UP	DELETE LINES 3 AND 4 "POS LEAD TO TEST...." (NOT REQUIRED)	P	998	

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE: <u>1 SCL</u>	DATE: <u>4-7-69</u>	SHEET <u>12</u> OF <u> </u>
<u>OCP-B-90008-LM-2</u>	TPS NO. <u> </u>	☒ PRETEST ☐ TEST ☐ POST-TEST
<u>GAEC</u> <u>Walter F. Bowlds</u> <u>W. T. Mulcahey 4/7/69</u> <u>for O.E.</u>	<u>NASA</u> <u>W. T. Mulcahey 4/7/69</u> <u>for O.E.</u>	

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/PERM	GAEC	NASA
<u>14</u>	<u>1-31</u>	<u>TEST SET-UP</u>	<u>ADD FOLLOWING -</u> <u>FOLLOWING LINE 21-</u> <u>"ASC FEED"</u> <u>"ATT DIR CONT"</u> <u>FOLLOWING LAST LINE -</u> <u>"ASC FEED"</u> <u>(PREVENT ACCIDENTAL PROPELLANT DUMP)</u>	<u>T</u>	<u>998</u>	

PROJECT APCLLC

DATE 04/01/69

PAGE 1-31
DCP-B-90008-LM-2

TEST SET-UP

- (998) STC TAPE INPUT 7-TC-REC TAPE TRACK 7
- (998) STC TAPE INPUT 9-TC-REC TAPE TRACK 9
- (998) STC TAPE INPUT 10-TC-REC TAPE TRACK 11
- (998) TIME REF (IRIG B)-TC-REC TAPE TRACK 14
- (998) MICROPHONE TO MIKE IN
- (998) STC IN TO REC/PLAY TRACKS (AS REQ)
- (998) VERIFY SUFFICIENT DEGAUSSED TAPE AVAILABLE FOR DRR
- (998) IF FACILITY POWER OR FLUIDS ARE OFF AT START OF TEST SET-UP, ENSURE THAT RELATED GSE IS OFF BEFORE STARTING PRE-CHECKOUT PREPARATION CHECKLIST.

ENSURE FOLLOWING CB'S ON PANEL 10 ARE OPEN AND GUARDED,

SLA/LEM ANT TRNFR A (998)
SLA/LEM ANT TRNFR B (998)

ENSURE FOLLOWING CB'S ON PANEL 11 ARE OPEN AND GUARDED,
ALL OTHERS NOT GUARDED

ROW 1, 'FLT DISP' 'CRDEAL' (998)
'STAB/CONT' 'AGS' (998)
ROW 2, 'RCS SYS A' 'CLAD 4 TCA' (998)
'RCS SYS A' 'QUAD 3 TCA' (998)
'RCS SYS A' 'QUAD 2 TCA' (998)
'RCS SYS A' 'QUAD 1 TCA' (998)
'LTG' 'CAS' (998)
ROW 3, 'COMM' 'VHF A RCVR' (998)
'COMM' 'VHF B XMTR' (998)
'HEATERS' 'RNDZ RDR' 'STRY' (998)
'HEATERS' 'LDG RDR' (998)
'FLIGHT DISPLAYS' 'CRDEAL' (998)
ROW 4, 'ECS' 'SUIT FAN 1' (998)
'ECS' 'CABIN FAN 1' (998)
'ECS' 'GLYCOL PUMP 2' (998)
'ECS' 'GLYCOL PUMP 1' (998)

ENSURE FOLLOWING CB'S ON PANEL 16 ARE OPEN AND GUARDED,
ALL OTHERS NOT GUARDED

ROW 1, 'LTG' 'TRACK' (998)
'STAB/CONT' 'AEA' (998)
'STAB/CONT' 'ASA' (998)

Dev.
14
No.

Dev.
14
No.

7 APR 69 (998)

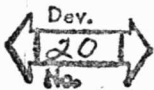
PROJECT APCLLC

DATE C4/01/69

PAGE 1-32
OCP-R-90008-LM-2

TEST SET-UP

'PCS SYS B' 'QUAD 1 TCA' 998
'PCS SYS B' 'QUAD 2 TCA' 998
'PCS SYS B' 'QUAD 3 TCA' 998
'PCS SYS B' 'QUAD 4 TCA' 998
ROW 3, 'COMM' 'VHF A XMTR' 998
'COMM' 'VHF B RCVR' 998
'COMM' 'TV' 998
'CAMR' 'SEQ' 998
ROW 4, 'ECS' 'CC2 SENSOR' 998
'ECS' 'GLYCCL PUMP SEC' 998
'ECS' 'CABIN FAN 2' 998
'ECS' 'SUIT FAN 2' 998
'ECS' 'SUIT FLOW CNT' 998
'ECS' 'SUIT/CABIN REPRESS' 998



Rev 2 - PROP PAGES

998
4/7/69
10:05



OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

NO. AND TITLE: / TC <u>OCP-B-90008-LM-2</u>	DATE: <u>4-7-69</u>	SHEET <u>18</u> OF <u> </u>
<u>GAEC</u> <u>N/A</u> <u>id Masseng</u> <u> </u>	TPS NO. <u> </u>	PRETEST <u> </u> TEST <u> </u> POST-T. <u> </u> <u>NASA</u> RM <u>W.T. Mulcahey 4/7/69</u> <u>GH-Front 4-7-69</u> <u>for O. E.</u>

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
20	132	TEST SET-UP	ADD TO BOTTOM OF PAGE "Row 2 "PROP PQGS" (HARDWARE NOT INSTALLED)	P	998 4/7/69	

PROJECT APCLLC

DATE 04/01/69

PAGE 1-33
OCP-B-90008-LM-2-----
PRE-CHECKOUT PREPARATION CHECKLIST

OPERATION AREA

FACILITY POWER PANEL RP1 (AC PWR)

PERSONNEL	CONTROL	POSITION
998 GPS	CB1,3,5	CN
	CB2	CN
	CB4,6,8	CN
	CB7,9,11	CN

OPERATION AREA

PANEL C (DC PWR)

PERSONNEL	CONTROL	POSITION
998 GPS	CB1	CN
	CB3	CN
	CB4	CN
	CB7	CN
	CB8	CN
	CB11	CN
	CB12	CN
	CB13	CN
CB14	CN	

OPERATION AREA

FILTER DISTRIBUTION UNIT

PERSONNEL	CONTROL	POSITION
998 GPS	CB 2	CN
	CB 6	CN

OPERATION AREA

LM GROUND STATION

PERSONNEL	CONTROL	POSITION

998



4/4/69 18:00

PROJECT APCLLC

DATE 04/01/69

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OCP-B-90008-LM-2-----
PRE-CHECKOUT PREPARATION CHECKLIST

CT	998 POWER SUPPLY NO. 1 'AC-CN'	CFF
	998 POWER SUPPLY NO. 2 'AC-CN'	CFF
	998 POWER SUPPLY NO. 3 CN-CFF	CFF
	998 S-BD TEST XMTR, VARIABLE ATTEN	17
	998 RF LEVEL (-DBM)	-40
	998 VCC SELECTOR	1
	998 HP491 RF AMP LINE SW	CFF
	998 S-BD DEI RECEIVER PWR SW	CFF
	998 AUDIO GAIN	MID RANGE
	998 VIDEO FILTER BAND WIDTH	2.0 MC
	998 IF SELECTOR	CCW
	998 2ND L.O. MODE	XTAL
	998 TUNING	2282.5
	998 FIRST L.O. MODE	C PHASE
	998 WIDE ANGE PHASE DEMOD BW	-500
	998 LOCP SW	SHORT LOOP
	998 TUNE	89C
	998 AT-106 ATTENLATCH	24DB
	998 DYNAGRAPH RECCRDER SENSITIVITY	C.1V/DIV
	998 CHART SPEED	1MM/SEC
	998 POWER SWITCH	CFF
	998 VARIABLE GAIN	X1
	998 HIGH FREQ (2)	IN
	998 SPECTRUM ANALYZER RF ATTEN	0
	998 RANGE PB	1-4.5 GCS

998



11/4/69 18:00

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE:

Comm

DATE:

4-7-69

SHEET

3

OF

CP-B-90008-LM-2

TPS NO.

PRETEST

TEST

POST-TEST

GAEC

Alamp 4-7-69

W. T. Mulcahey 4/7/69

NASA

W. T. Mulcahey 4/7/69

9th - Frost 4-7-69
for O.E.

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
3	1-35	PREP PREP CHECKLIST	DELETE 11 TH LINE "SIGNAL GETV..." (NOT REQUIRED)	P	998	

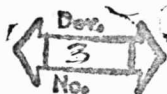
PROJECT APCLLC

DATE 04/01/69

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OCP-B-90008-LM-2

PRE-CHECKOUT PREPARATION CHECKLIST

(998)	TUNING	2282.5MC (APPROX)
(998)	AMPLITUDE SCALE	LCG
(998)	SWEEP WIDTH RATE	0-80 MC
(998)	SWEEP RATE	MIC
(998)	VIDEO FILTER	CUT
(998)	POWER SW	OFF
(998)	PRD686A POWER SW	OFF
(998)	MCINT RES	UNBAL
(998)	RANGE	T10DRM
(998)	TEK 545 SCOPE POWER	OFF
(998)	SIGNAL GEN HP616B POWER SW	OFF
(998)	5245L COUNTER SAMPLE RATE	CCW
(998)	SENS SEL	PLUG-IN
(998)	TIME BASE	1 MS/SEC
(998)	MODE SW	INT STD FREQ
(998)	FUNCTION	FREQ
(998)	CONVERTER HP2590A POWER SW	NO PRESS
(998)	MODE PB	APC
(998)	FREQ	355 (APPROX)
(998)	FINE TRACK	TRACK
(998)	RANGE PB	2-4 GCS
(998)	PRESALER HP 5253B FREQ	350
(998)	WIDE BAND AMPLIFIER POWER SW	OFF



OPERATION AREA

W/G TRIM CONTROL UNIT

4/4/69 18:00

PROJECT APCLLC

DATE 04/01/69

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DCP-B-90008-LM-2

PRE-CHECKOUT PREPARATION CHECKLIST

PERSONNEL	CONTROL	POSITION
-----------	---------	----------

998

NOTE

DO NOT PERFORM FOLLOWING WGM OR
NAR FUNCTIONS IF TCU IS OPERATING

WGM

28 VDC CB	OFF
120 VAC CB	OFF
200 VAC CB	OFF
SERVICE MODES POWER SW	OFF
SERVICE MODES SELECTOR SW	OFF

OPERATION AREA

W/G TCU FLUID CONTROL PANEL

PERSONNEL	CONTROL	POSITION
-----------	---------	----------

WGM

998

V8 ECS RETURN SHUTOFF	CLOSED
V9 ECS SUPPLY SHUTOFF	CLOSED
V12 MT1 SHUTOFF	CLOSED
V23 ENCLOSURE BLEED	CLOSED
R3 PURGE PRESSURE REGULATOR	DECREASE
VACUUM INDICATOR SEL SW	OFF

OPERATION AREA

W/G TCU PNEU. INTERFACE PANEL

PERSONNEL	CONTROL	POSITION
-----------	---------	----------

WGM

998

V-1 FLUID SAMPLING	CLOSED
--------------------	--------

OPERATION AREA

W/G TCU CABINET INTERIOR

PERSONNEL	CONTROL	POSITION
-----------	---------	----------

WGM

998

V10 MT5 SHUTOFF	OPEN
-----------------	------

998

USA

4/4/69 18:00

PROJECT APCLLC

DATE 04/01/69

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OCP-B-90008-LM-2-----
PRE-CHECKOUT PREPARATION CHECKLIST

998

V11 MT3 SHUTCFF	CPEN
V13 GA2 SHUTCFF	CPEN
V14 GA1 SHUTCFF	CPEN
V19 FL1 SHUTCFF	CPEN
V20 FL1 SHUTCFF	CPEN
V21 GA4 SHUTCFF	CPEN
V24 P1 SHUTCFF	CLOSED
V26 H/X SHUTCFF	CLOSED
V29 BYPASS	CLOSED
V30 SHUTCFF	CLOSED
V31 BYPASS	CLOSED

OPERATION AREA

W/G PFR INST PANEL

PERSONNEL -----	CONTROL -----	POSITION -----
WGM 998	V2 VAC REG SHUTCFF	CLOSED
	V3 RESERVOIR FILL	CLOSED
	V4 TRIM FILL	CLOSED
	V7 DE-AERATION TRAP	CLOSED
	R3 VACUUM REGULATOR	CPEN
	R1 HI PRESSURE	DECREASE
	R2 TRANSFER PRESSURE	CLOSED

OPERATION AREA

W/G PFR FITTING AND CONNECTOR PANEL

PERSONNEL -----	CONTROL -----	POSITION -----
WGM 998	V5 VACUUM SHUTOFF	CLOSED
	V8 TRANSFER PRESSURE SHUTCFF	CLOSED

998

04/01/69 12:00

PROJECT APCLLC

DATE 04/01/69

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PRE-CHECKOUT PREPARATION CHECKLIST

OPERATION AREA

W/G PER TEMP CONT PANEL

PERSONNEL

CONTROL

POSITION

998

WGM

POWER SWITCH

OFF (DOWN)

OPERATION AREA

W/G PER CABINET INTERIOR

PERSONNEL

CONTROL

POSITION

998

WGM

V1 GAI SHUTOFF

OPEN

OPERATION AREA

VEHICLE GROUND POWER SUPPLY

PERSONNEL

CONTROL

POSITION

998

GPS

MAIN POWER

OFF

POWER ON/OFF

OFF

REMOTE/LOCAL

LOCAL

VOLTAGE ADJUST

CCW

OPERATION AREA

EPS CHECKOUT CONTROLLER

PERSONNEL

CONTROL

POSITION

998

GPS

CONSOLE CONTROL PANEL, MAIN POWER OFF
CB

POWER SUPPLY 1 CB

OFF

POWER SUPPLY 2 CB

OFF

POWER SUPPLY 3 CB

OFF

POWER SUPPLY 4 CB

OFF

RELAY CHASSIS PANEL, PS1

OFF

PS2

OFF

PS3

OFF

998

4/1/69 18:00

PROJECT APCLLC

DATE 04/01/69

PAGE 1-30
DCP-8-900C8-LM-2-----
PRE-CHECKOUT PREPARATION CHECKLIST

998

PS4	CFF
PS1, AC INPLT	CFF
VCLTAGE ADJUST	CCW
PS2, AC INPLT	CFF
VCLTAGE ADJUST	CCW
PS3, AC INPLT	CFF
VCLTAGE ADJUST	CCW
PS4, AC INPLT	CFF
VCLTAGE ADJUST	CCW

OPERATION AREA

EPS C/C INTERFACE UNIT

PERSONNEL
-----CONTROL
-----POSITION
-----GPS
998

CONTROL POWER	CFF
AUX OUTPUT	CFF
GSE LMB PWR	CFF
CSM/PYRC PWR	CFF
GSE UMBILICAL T. ECLIP PWR	MID
GSE UMBILICAL LEM PWR	MID
VEH PWR SUP INPUT	CFF
VEH PWR SUP OUTPUT	CFF
CONTROLLER OUTPUT SECT 1	DESCENT STAGE
CONTROLLER OUTPUT SECT 2	DESCENT STAGE
LOAD BANK/BUS CONN	CFF
LEM PWR ON/CSM PWR ON	MID
SYS A/SYS B	CFF

998

11/1/69 10:00

PROJECT APCLLC

DATE 04/01/69

PAGE 1-40
CCP-B-90008-LM-2-----
PRE-CHECKOUT PREPARATION CHECKLIST

OPERATION AREA

A/S BATTERY CONTROL

PERSONNELCONTROLPOSITION

998

GPS

AUX OUTPUT

OFF

BATTERY 5 NORMAL

MID

BATTERY 5 B/U

MID

BATTERY 6 NORMAL

MID

BATTERY 6 B/U

MID

OPERATION AREA

GROUND POWER ISOLATION UNIT

PERSONNELCONTROLPOSITION

998

GPS

ASCENT ECA-3

CN

ASCENT ECA-4

CN

FAN ON/OFF

OPEN

OPERATION AREA

PORTABLE TEMP CONTROLLER

PERSONNELCONTROLPOSITION

BATTERY RACK

998

TPO

G AND N 'CN' (PTC INHIBITED) LT

OFF

PRESS TO CHARGE LT

OFF

CHARGING LT

OFF

115V LINE POWER LT

CN

115V OFF ALARM RESET LT

OFF

PTC OPERATING LT

CN

PTC OFF ALARM RESET LT

OFF

INVERTER POWER LT

OFF

998

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PROJECT APCLLC

DATE 04/01/69

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PRE-CHECKOUT PREPARATION CHECKLIST

998

INVERTER OFF ALARM RESET LT	CFF
EMERGENCY HEATER POWER LT	CFF
NORMAL HEATER POWER LT	CFF
PTC HEATER POWER LT	CFF
BATTERY IN USE LT	CFF
BATTERY DISCHARGE LT	CFF
ICTC POWER SW	CN
FUSE LT'S (7)	CFF
ICTC	
PILOT LT	CN
WARNING LT	CFF
SAFE LT	CN
FUSE LT'S (4)	CFF
BRIDGE EXCIT FAILURE LT	CFF
HOT LT	CFF
COLD LT	CFF
CN-CFF SW	CN

VERIFY TEMP METER INDICATES
BETWEEN 127 AND 133 DEG F

OPERATION AREA

DIGITAL TEST COMMAND ASSEMBLY

PERSONNEL

CONTROL

POSITION

DTC

998

✓ DCM POWER/OFF
✓ TEST SET POWER/OFF
✓ FREQ
✓ DEVIATION

DCM POWER
TEST SET POWER
448 TC 452 MC
50



998

4/4/69 18:00

PROJECT APCLLC

DATE 04/01/69

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OCP-B-900C8-LM-2

PRE-CHECKOUT PREPARATION CHECKLIST

998	✓ PUNCH	CFF
	✓ READER	CFF
	✓ EDIT/NORMAL	NORMAL
	✓ DCS POWER/CFF	CFF
	✓ TEST SET POWER/CFF	TEST SET POWER
	✓ READER	CN
	✓ MANUAL/TAPE	TAPE
	✓ SERIAL/SINGLE	SINGLE
	✓ DCM POWER	CFF

OPERATION AREA

LMF RESET COMMAND UNIT

PERSONNEL	CONTROL	POSITION
998 LRC	S1 CN/OFF	CN

OPERATION AREA

MDIS

PERSONNEL	CONTROL	POSITION
998 CQC	CR GATE 3-NRZ 2	CPEN
	NR73	CPEN
	NR74	CPEN
	TIMING - INTERNAL/EXTERNAL	INTERNAL
	RZ1/R72	RZ1
	CIE 512 KC	CPEN
	CR GATE 2-RZ2	CPEN
	NR75	CPEN
	CR GATE 1 - RZ1	CPEN
	NR21	CPEN

998

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PROJECT APCLLC

DATE 04/01/69

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PRE-CHECKOUT PREPARATION CHECKLIST

998

CR GATE 4 - NR26

CPEN ✓

NR27

CPEN ✓

NR28

CPEN ✓

DATA RATE - RZ1

51.2 KBS ✓

RZ2

51.2 KBS ✓

MODE

LOCAL ✓

OUTPUT

ICV ✓

DC POWER

CN ✓

OPERATION AREA

32110 SYSTEM TEST CONSOLE

PERSONNEL

CONTROL

POSITION

✓ DAR

RACK 2, RACKS 1, 2, 3 AND 4 AND
POWER SUPPLY CB'S

CN

998

RACK 4, REGATRAN P/S CB'S

CN

ADJUST REGATRAN P/S FOR 28 VDC

RACKS 1, 2, 3, AND 4 COMMERCIAL
EQUIPMENT POWER CN/CFF SWITCHES

CN

RACK 1, RCVR SIG LEVEL/DISC DEV
SW'S

DISC DEV

ALLOW 1/2 HOUR CONSOLE WARMUP

OPERATION AREA

11080 RECORDING RACK

PERSONNEL

CONTROL

POSITION

998 DAR

RACK 1, 115 VAC CB

CN

RACK 1, OSCILLSCOPE POWER SW

CN

RACK 2, TAPE RECORDER RECKER SW

CN

RACK 2

998

4/4/69 18:00

PROJECT APCLLC

DATE 04/01/69

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PRE-CHECKOUT PREPARATION CHECKLIST

RECORD TRAY

.....

998	AUX A	CTM
	REC 1	DIRECT
	REC 5	DIRECT
	REC 7	DIRECT
	REC 9	DIRECT
	REC 11	DIRECT
	REC 13	FM
	REC 14	FM
	AUX B	SERVICE MODULE TYPE-2

REPRODUCE TRAY

.....

998	AUX A	BLANK
	REP 1	DIRECT
	REP 3	DIRECT
	REP 5	DIRECT
	REP 7	DIRECT
	REP 9	DIRECT
	REP 11	DIRECT
	REP 13	FM
	REP 14	FM
	AUX B	BLANK

OPERATION AREA

VEHICLE PANEL 11

998



4/4/69 18:00 HRS

PROJECT AFCLLC

DATE 04/01/69

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OCP-B-900C8-LM-2

PRE-CHECKOUT PREPARATION CHECKLIST

10:14
4/7/69

PERSONNEL	CONTROL	POSITION
CDR	RCW 1 - ALL	CPEN 998
	RCW 2 - ALL	CPEN 998
	RCW 3 - ALL	CPEN 998
	RCW 4 - ALL	CPEN 998

OPERATION AREA

PANEL 1C

PERSONNEL	CONTROL	POSITION
CDR	ALL CB'S	CPEN 998
	C-BAND PWR	CFF 998
	R/D TLM CALIBRATE	CFF 998

OPERATION AREA

PANEL 8

PERSONNEL	CONTROL	POSITION
CDR	ED STAGE	SAFE 998
	LDG GEAR DEPLOY	SAFE, TB-BP 998
	MASTER ARM	CFF 998
	ASC HE SEL	BCTH 998
	RCS PRESS	SAFE 998
	DES PRESS	SAFE 998
	ASC HE PRESS	SAFE 998
	AUDIC S-BAND T/R	CFF 998
	ICS T/R	CFF 998
	RELAY CN	RELAY CFF 998
	S-BAND VCL CCNT	9 998



998

PROJECT APCLLC

DATE 04/01/69

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OCP-B-900C8-LM-2

PRE-CHECKOUT PREPARATION CHECKLIST

ICS VCL	9 (998)
VCX	PTT (998)
AUDIO CONT	ACRM (998)
VHF-A	CFF (998)
VHF-B	CFF (998)
VCX SENS	7.5 (998)
VHF A VOL	9 (998)
VHF B VOL	9 (998)
MASTER VCL	9 (998)

OPERATION AREA

PANEL 1

PERSONNEL

CONTROL

POSITION

CDR	IMC CAGE	CFF (998)
	MASTER ALARM	CFF (998)
	RATE/ERR MCN	LDG RDR/CMPT (998)
	ATTITUDE MCN	PGNS (998)
	GLID CONT	PGNS (998)
	MCDE SEL	PGNS (998)
	RNG/ALT MCN	RNG/RNG RT (998)
	SHFT/TRUN ANGLE	+ CR -50 DEG (998)
	ENGINE THRUST CONT THR CONT	AUTC (998)
	MAN THRCT	CDR (998)
	ENG ARM	CFF (998)
	X-TRANSL	2 JETS (998)
	BAL CPL	CK (998)

998
4/7/69

PROJECT APCLLC

DATE 04/01/69

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OCP-B-90008-LM-2

PRE-CHECKOUT PREPARATION CHECKLIST

PRFLNT CTY MON

CFF (998)

TEMP/PRESS MON

DES 1 (998)

HELIUM MON

SUPCRIT PRESS (998)

ASC HE REG 1

CENTER, TB-GRAY (998)

REG 2

CENTER, TB-GRAY (998)

DES HE REG 1

CENTER, TB-GRAY (998)

REG 2

CENTER, TB-BP (998)

ABCR

FLUSH (998)

ABCR STAGE

FLUSH (998)

OPERATION AREA

PANEL 2

PERSONNEL

CONTROL

POSITION

LMP

LMP TCA ISOLATION

ENABLE (998)

RCS SYS A MAIN SCV

CENTER, TB-GRAY (998)

ASC FEED

CENTER, TB - BP (998)

QUAD 1

CENTER, TB-GRAY (998)

QUAD 2

CENTER, TB-GRAY (998)

QUAD 3

CENTER, TB-GRAY (998)

QUAD 4

CENTER, TB-GRAY (998)

RCS SYS B MAIN SCV

CENTER, TB-GRAY (998)

ASC FEED

CENTER, TB-BP (998)

QUAD 1

CENTER, TB-GRAY (998)

QUAD 2

CENTER, TB-GRAY (998)

QUAD 3

CENTER, TB-GRAY (998)

QUAD 4

CENTER, TB-GRAY (998)

4/7/69



(998)

PROJECT APCLLC

DATE 04/01/69

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OCP-B-90008-LM-2

PRE-CHECKOUT PREPARATION CHECKLIST

TEMP/PRESS MCN

HE 998

CRSED

CENTER, TE-RP 998

RATE SCALE

5 DEG SEC 998

RCCA

CFF/RESET 998

MASTER ALARM

CFF 998

RATE/ERR MCN

RNDZ RADAR 998

ATTITUDE MCN

PGNS 998

GLYCCL PUMP

1 998

SUIT FAN

1 998

O2/H2O QTY MCN

DES 998

OPERATION AREA

PANEL 3

PERSONNEL

CONTROL

POSITION

CDR

LUNAR CONTACT

CFF 998

X PCINTER SCALE

HI MULT 998

RADAR LCG ANT

HOVER 998

TEST

CFF 998

TEST MCN

RNDZ RADAR AGC 998

SLEW RATE

HI 998

SLEW

CENTER 998

NO TRACK

CFF 998

ENG CMBL

CFF 998

RNDZ RADAR SEL

LGC 998

S/C DEAD BAND

MIN 998

GYRO TEST ROLL

RCLL 998



998

4/7/69

PROJECT APCLLC

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PRE-CHECKOUT PREPARATION CHECKLIST

	GYRO TEST PCS RT	CFF (998)
	RCLL	MODE CCNT (998)
	PITCH	MODE CCNT (998)
	YAW	MODE CCNT (998)
	MODE CCNT	AUTO (998)
LMP	HTR CCNT TEMP MON	RNDZ RADAR (998)
	RESFT/CCUNT	UP (998)
	TIMER CCNT	CENTER (998)
	SLEW CCNT MIN	CENTER (998)
	SLEW CCNT SEC	CENTER (998)
	LTC SIDE PANELS	CFF (998)
	FLCCD	CFF (998)
	EXTERIOR LTC	CFF (998)
	LAMP/TONE TEST	CFF (CCW) (998)
	LUNAR CONTACT	CFF (998)
	X-PCINTER SCALE	HI MULT (998)

OPERATION AREA

TTCA

PERSONNEL

CONTROL

POSITION

CDP

THRUSTLE/JETS

JETS (998)

OPERATION AREA

PANEL 5

PERSONNEL

CONTROL

POSITION

CDP

DES RATE

CENTER (998)

ENG START

CFF (998)

ENG STOP

CFF (998)

WPS 4/1/69 (998)

PROJECT APCLLC

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OCP-B-90008-LM-2

PRE-CHECKOUT PREPARATION CHECKLIST

+X TRANSL	CUT 998
TIMER CONT	STOP 998
SLEW CONT HOURS	CENTER 998
SLEW CONT MIN	CENTER 998
SLEW CONT SEC	CENTER 998
LTC OVERRIDE ANUN	CFF 998
OVERRIDE NUM	CFF 998
OVERRIDE INTEGRAL	CFF 998
SIDE PANELS	CFF 998
ANUN/NUM	MIC 998
INTEGRAL	DIM 998

OPERATION AREA

PANEL 4

PERSONNEL	CONTROL	POSITION
CDR	ACA/4 JET	DISABLE 998
	TTCA/TRANSL	DISABLE 998
IMP	ACA/4 JET	DISABLE 998
	TTCA/TRANSL	DISABLE 998

OPERATION AREA

PANEL 6

PERSONNEL	CONTROL	POSITION
LMP	STOP	CFF 998
	AGS STATUS	CFF 998

OPERATION AREA

VEHICLE PANEL 16

PERSONNEL	CONTROL	POSITION
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PRE-CHECKOUT PREPARATION CHECKLIST

LMP	ROW 1 - ALL	CPEN (998)
	ROW 2 - ALL	CPEN (998)
	ROW 3 - ALL	CPEN (998)
	ROW 4 - ALL	CPEN (998)

OPERATION AREA

PANEL 14

<u>PERSONNEL</u>	<u>CONTROL</u>	<u>POSITION</u>
------------------	----------------	-----------------

LMP	POWER/TEMP MON	CFF (998)
	AC POWER	CFF (998)
	DESCENT POWER BAT 1 HI VOLTAGE	CENTER, TE-BP (998)
	BAT 2 HI VOLTAGE	CENTER, TE-BP (998)
	BAT 3 HI VOLTAGE	CENTER, TE-BP (998)
	BAT 4 HI VOLTAGE	CENTER, TE-BP (998)
	BAT 1 LOW VOLTAGE	CENTER (998)
	BAT 2 LOW VOLTAGE	CENTER (998)
	BAT 3 LOW VOLTAGE	CENTER (998)
	BAT 4 LOW VOLTAGE	CENTER (998)
	DES BATS	CENTER, TE-BP (998)
	ASCENT POWER BAT 5 NORMAL FEED	CENTER, TE-BP (998)
	BAT 5 BACKUP FEED	CENTER, TE-BP (998)
	BAT 6 NORMAL FEED	CENTER, TE-BP (998)
	BAT 6 BACKUP FEED	CENTER, TE-BP (998)

OPERATION AREA

PANEL 12

<u>PERSONNEL</u>	<u>CONTROL</u>	<u>POSITION</u>
------------------	----------------	-----------------

LMP	AUDIC CONT	NCRM (998)
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4/7/69
NVS
998

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PRE-CHECKOUT PREPARATION CHECKLIST

S-BAND T/P	CFF 998
S-BAND VOLUME	9 998
ISC T/P	CFF 998
ICS VCL	9 998
RELAY	RELAY CFF 998
VCX	PTT 998
VCX SENS	7.5 998
VHF-A	CFF 998
VHF-A VCL	9 998
VHF-B	CFF 998
VHF-B VCL	9 998
MASTER VCL	9 998
COMM S-BAND MODULATE	FM 998
S-BAND XMTR/RCVR	CFF 998
S-BAND PWR AMPL	CFF 998
FUNCTIONS VOICE	CFF 998
FUNCTIONS PCM	CFF 998
FUNCTIONS RANGE	CFF 998
VHF-A XMTR	CFF 998
VHF-A RCVR	CFF 998
VHF-B XMTR	CFF 998
VHF-B RCVR	CFF 998
TLM BICMED	CFF 998
TLM PCM	HI 998
SQUELCH VHF-A	7 998

998
4/1/69
WTS

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PRE-CHECKOUT PREPARATION CHECKLIST

SCLELCH VHF-B

7 (998)

RECCORDER

CFF, TB-BP (998)

COMM ANT TRACK MODE

CFF (998)

VHF

2 (998)

PITCH

-75 (998)

YAW

-30 (998)

S-RAND

LUNAR STAY (998)

OPERATION AREA

ECS CONTROLS

PERSONNEL

CONTROL

POSITION

LMP

SUIT GAS DIVERTER

PUSH CABIN (998)

CABIN REPRESS

AUTO (998)

PLSS FILL

CLOSE (998)

PRESS PEG A

CLOSE (998)

PRESS PEG B

CLOSE (998)

NC. 2 ASC C2

CLOSE (998)

NC. 1 ASC C2

CLOSE (998)

DES C2

CLOSE (998)

SEC EVAP FLOW

CLOSE (998)

PRIM EVAP FLOW NC. 2

CLOSE (998)

ASC H2O

CLOSE (998)

WATER TANK SELECT

DES (998)

SUIT TEMP

CCLD (998)

CABIN TEMP

MAX CCCL (998)

PRIM EVAP FLOW

CENTER (998)



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PRE-CHECKOUT PREPARATION CHECKLIST

SUIT CIRCUIT RELIEF	AUTO (998)
CABIN GAS RETURN	AUTO (998)
CO2 CANISTER SEL	MID (998)
PRIMARY CO2 CANISTER	CLOSE (998)
SECONDARY CO2 CANISTER	CLOSE (998)
WATER SEP SEL	PUSH SEP 1 (998)
CABIN RELIEF AND DUMP (CVFD)	AUTO (998)
CABIN RELIEF AND DUMP (FWC)	AUTO (998)

OPERATION AREA

POWER DISTRIBUTION ASSY

PERSONNEL

CONTROL

POSITION

LMP

ALL CB'S

CPEN (998)

LMP ASC ENG ARM

CFF (998)

OPERATION AREA

ACT/CCREA

PERSONNEL

CONTROL

POSITION

CDR

RETICLE CONTROL

MIN (998)

10:29

(998)

4/7/69



SECTION 2.0

OPERATIONAL PROCEDURES

PROJECT APCLLC

DATE 04/01/69

PAGE 2-1
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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
14:00 4/7/69		01-000			ADMIN COUNT
		01-001	TC	CM	TURN ON VOICE RECORDERS, VERIFY READY TO SUPPORT TEST
		01-002	TD	ALL	REPORT GC/NC GC CONDITION WHEN CALLED
				01. NCA	
				02. TC	
				03. GTL	
				04. CM	
		01-003	TC	ALL	REPORT GC/NC GC CONDITION WHEN CALLED
				01. NCA	
				02. GTL	
				03. CM	
				04. CDR	
				05. CSL	
				06. ECL	
				07. EPL	
				08. GNL	
				09. ISL	
				10. PSL	
				11. QCI	
				12. SCL	
				13. GS	
		01-004	TD	TC	PROCEED WITH TEST
		01-005	TC	ECL	TURN ON COOLANT SUPPORT PER ECS 229
		01-006	TC	EPL	TURN ON GROUND POWER TO EPS GSE PER EPS 06

PROJECT APCLLC

DATE 04/01/69

PAGE 2-2
OCP-B-90008-LM-2

TIME	CH	SEC	C/O CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		01-007	TC	EPL	TURN ON S/C POWER VIA SIMULATED C/S BATTs (HV) AND TURN ON CI PER EPS 144
		01-008	TC	ECL	PERFORM W/G PUMP C/C PER ECS 234
		01-009	TC	ISL	PERFORM LAMP TCNE TEST PER INST 47
		01-010	TC	ISL	TURN ON C/WEA PER INST 42
		01-010A			
		01-011	TC	EPL	TURN ON S/C AC FWR PER EPS 140
		01-012	TC	EPL	CLOSE CIRCUIT BREAKERS PER EPS 138
		01-013	TC	EPL	PERFORM LTG ACTIVATION AND C/O PER EPS 50
		01-014	TC	GNL	TURN ON LGC PER GN 95
		01-015	TC	SCL	PERFORM LMP ACTIVATION PER GN 149
		01-016	TC	CSL	PERFORM S-BAND ACTIVATION AND C/C PER CCMM 64
		01-017	TC	ISL	TURN ON AND CALIBRATE DFI PER INST 50 (VL)
		01-018	TC	GNL	SELF TEST LGC PER GN 150
					-NOTE-
					VERIFY IMU IN STANDBY MODE FOR SUFFICIENT TIME
		01-019	TC	GNL	TURN ON IMU OPERATE POWER PER GN 81
		01-020	TC	GNL	PERFORM FLIGHT DISPLAYS C/C PER GN 143
		01-021	TC	SCL	PERFORM RANGEZVCLS RADAR TEST PER GN 141
		01-022	TC	EPL	PARALLEL SIMULATED A/S BATTs WITH C/S BATTs, CHECK INV 1, ISOLATE BUSES AND RETURN TO INV 2 PER EPS 146
		01-023	TC	PSL	PREP RCS, DPS AND APS FOR LUNAR LANDING PER PRCP 70
		01-024	TC	SCL	PERFORM PGNS RCS AUTO HOT FIRE SETUP PER GN 157
		01-025	TC	SCL	PERFORM RCS AUTO FIRE USING LMP PER GN 145

Dev.
4
No.Dev.
24
No.Dev.
15
No.

1045

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE:

COMM

DATE: 4-7-69

SHEET 24 OF

OCP-B-90008-LM-2

TPS NO.

PRETEST

TEST

POST-TI

GAEC

Alley 4/7/69

Robert P. Whitely 4/7/69

NASA

W. T. Mulcahey 4/8/69

Ch. Lunt 4-8-69
for O.E.

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
27	2-2	01-021	ADD NEW STEP 01-021A TC/CSL TURN OFF LIMSS PER COMM 65 (VL) (TO RELEASE COMM PERSONNEL - NO FURTHER COMM ACTIVITY)	T	209 4-7-69	

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

CCP NO. AND TITLE: <u>SCC</u> <u>CP-B-9000B-LM-2</u>	DATE: <u>4-7-69</u>	SHEET <u>13</u> OF <u> </u>
TPS NO. <u> </u>		<u>PRETEST</u> TEST POST-TEST
<u>GAEC</u> <u>Walter F. Bowlds</u> <u>D. Massey</u>		<u>NASA</u> <u>W.T. Mulcahey 4/7/69</u> <u>W.H. Frost 4/7/69</u> <u>for Q.E.</u>

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/PERM	GAEC	NASA
15	2-2	01-024 01-025	> DELETE (TANK DUMP NOT REQUIRED)	T	998 4/7/69	

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE: <u>OCPB 90008-LM-2</u>	<u>INST</u>	DATE: <u>4-7-69</u>	SHEET <u>4</u> OF <u> </u>
<u>GAEC</u> <u>Kenneth Bauman</u> <u>D. Massey</u> <u>NASA</u> <u>W.T. Mulcahey 4/7/69</u> <u>A.H. Frost 4/7/69</u> <u>for Q.E.</u>		TPS NO. <u> </u>	<u>PRETEST</u> <u>TEST</u> <u>POST-TEST</u>

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/PERM	GAEC	NASA
4	22	01-010	ADD NEW STEP 01-010A TC/ISL PERFORM GSE INSTRUMENTATION TURN ON PER INST 68 (EQUIPMENT NEVER TURNED ON)	P	998 4/7/69	

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE:

15CL

DATE:

4-7-69

SHEET

14 OF

OCP-B-90008-LM-2

TPS NO.

PRETEST

TEST

POST-TEST

GAEC

Walter F. Bowlds

D. H. Haggerty

NASA

W. T. Mulrahey 4/7/69

AW. Frost 4/7/69
for Q. E.

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
16	2-3	01-026 01-027	> DELETE (TANKS DUMP NOT REQUIRED)	T	998 4/7/69	

PROJECT APCLLC.

DATE 04/01/69

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					PERFORM DIRECT MODE MANUAL C/C PER GN 156
					PERFORM ACA TAKEOVER C/C PER GN 144
					ENSURE 5 VOLT GSE POWER TO RCS TCA IS ON PER GN 162 2103 209
					PERFORM PGNS ATTITUDE HOLD MANEUVER SET-UP PER GN 164 2042
					PERFORM PGNS ATTITUDE MANEUVERS PER GN 107 2105 209 2112
					PERFORM CDR MANUAL CONTROL PGNS TRANSLATION PER GN 112 2112 209 2118
					PERFORM CDR MANUAL CONTROL CES ROTATION PER GN 110 2121 2124 209
					PERFORM CDR MANUAL CONTROL CES TRANSLATION PER GN 115 2125 2131 209
					TIE BUSES, TURN OFF INV 1, AND REMOVE SIMU- LATED A/S BATTs FROM BUS PER EPS 29 2132 2136 209
					PERFORM RGA C/C PER GN 142 2141 2140 209
					PERFORM IMU OPERATIONAL TEST PER GN 107 2256 2317 1320
					SET IML TO GYROCOMPASS MODE PER GN 26 2317 1320
					SWITCH TO A/S PATTS, ISOLATE BUSES, CHECK INV 1 AND RETURN TO INV 2 PER EPS 33 2317 1320
					PERFORM WINDOW HEATER C/C PER EPS 153 2321 2352 209
					ARM ED SYSTEM AND FIRE ASC HE PRESS INITIATORS PER EPS 154 2323 1320
					PERFORM ASCENT ENGINE MANUAL CHECKOUT PER GN 85 0022 0644 209
					PERFORM PYRC SIMULATOR INSPECTION PER EPS 147 0024 0042 209
					PERFORM ABCRT STAGE CHECKS PER GN 87 0045 0450 209
					PERFORM MANUAL ASC ENG FIRE AND ACA MANEUVERS PER GN 160 0653 0058

4-8-69



PROJECT APCLLC

DATE C4/C1/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
-NOTE-					
ENSURE IMU IN GYROCOMPASS FOR AT LEAST 1 HOUR, BEFORE PROCEEDING					
01-045	TC		GNL		CCARSE - ALIGN IMU PER GN 31
01-046	TC		SCL		PERFORM APS AUTO TURN USING LMP PER GN 146
01-047	TC		EPL		TURN OFF INV 1 PER EPS 96
01-048	TC		GNL		PARK GIMBALS AND DEACTIVATE PGNS PER GN 69
01-049	TC		SCL		TURN OFF 5V GSE PWR SUPPLY PER GN 166
01-050	TC		SCL		PERFORM LMP DEACTIVATION PER GN
01-051	TC		EPL		PERFORM CABIN CLOCSECUT PER EPS 139
01-052	TC		ISL		TURN OFF CF1 GSE PER INST 48
01-053	TC		EPL		PERFORM GSE POWER DEACTIVATION PER EPS 12
01-054	TC		ECL		TURN OFF GROUND COOLING PER ECS 227
01-055	TC		CSL		TURN OFF LMSS PER GCM 65
01-056	TC		SCL		PERFORM DTCA DEACTIVATION PER GN 148
01-057	TC		CM		TURN OFF VOICE RECORDERS
01-058	TC		ALL		SECURE DUTY STATIONS
DATE 5/12/9... GAEC CC... NASA QA...					

418149
0312 HR

1345

OPERATIONAL CHECKOUT PROCEDURE DEVIATION SHEET

OCP NO. AND TITLE:	Comm	DATE: 4-7-69	SHEET 25 OF
OCP-B-90008-LM-2	TPS NO.	PRETEST	TEST POST-TI
<u>GAEC</u> <u>Robert K. Whetsit</u> 4/7/69	<u>NASA</u> <u>W. T. Mulcahey</u> 4/8/69 <u>John J. ...</u> 4-8-69 for O. E.		

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
28	2-4	01-055	DELETE (REF DEVIATION # 24)	T	209	8-8-69

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		02-000			(COMM 63) GSS TURN-ON 13:15
		02-001	CSL	CT	01. PANEL 3, PWR SUPPLY 1, 'AC-CN' SW - 'CN' 149
					02. PANEL 5, PWR SUPPLY 2, 'AC-CN' SW - 'CN' 140
					03. PANEL 9, PWR SUPPLY 3, 'CN-OFF' SW - 'CN' 141
					04. PANEL 2 MICROWAVE AMPL (HP491C) 'LINE SW - 'STNBY' 142
					05. PANEL 6, S-BD TELEMETRY RCVR, 'PWR CN' SW - 'CN' 143
		02-002	CSL	CT	01. DYNAGRAPH RECORDER, 'PWR' SW - 'CN', ZERO PENS
					02. SPECTRUM ANALYZER, (SINGER 4FCA) 'PWR' SW - 'CN' 144
					03. GAIN, FOCUS, BRILLIANCE - AS REQUIRED 145
					04. TEK 545 SCOPE, 'PWR' SW - 'CN' 146
					05. COUNTER (HP5245L) 'SAMPLE RATE' SW - MICRANGE
					06. WIDE BAND AMPL (CCA 10) 'PWR' SW - PUSH TO ON 147
					07. DYNAGRAPH RECORDER, PUSH 'OFF' PB 148
					08. CONVERTER (HP259CA) 'POWER' SW - 'CN' 149
					09. POWER METER (PRD686A) 'POWER' SW - 'CN' 150
		02-003	CSL	CT	PANEL 4 TEST XMTR, VERIFY ATTENUATION SET TO -75 DBM 151
					01. ADJUST FREQ UNTIL VCC BIAS METER INDICATES 0.2 VCC
		02-004	CSL	CT	PUSH AND HOLD 'TRANSMITTER DISABLE' PB 152
					01. ADJUST ZERO SET FOR 'ZERO SET' CN PWR METER 153
					02. RELEASE PB 154
					03. ADJUST LEVEL SET FOR LEVEL SET CN METER (RESET AS REQUIRED) 155

IDR.1

PROJECT APOLLO

DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		02-005	CSL	CT	PANEL 2, HP4910, 'LINE' SW - 'OPERATE' 143
					01. ROTATE 'GAIN' CONTROL UNTIL CATHODE CURRENT METER INDICATES RATED POWER
		02-006	CSL	CT	01. PANEL 7, TELEMETRY DEMCD NC 1 '32KC FM/PM' PB-PUSH TO FM 143
					02. '560 KC' PB/LT - PUSH TO FM 143
					03. '768 KC' PB/LT - PUSH TO FM 143
					04. '1.024 MC/2 PHASE' PB/LT - PUSH TO FM 143
					05. '1.024 MC/4 PHASE' LT - PUSH TO FM 143
					06. '1.25 MC VOICE PICKED' LT - PUSH TO FM 143
					07. '1.25 MC RCVD VOICE' LT - PUSH TO FM 143
					08. '1.395 MC' LT - PUSH TO FM 143
					09. 'LCCP STATUS 560 KC' LT - PUSH TO OPEN 143
					10. 'LCCP STATUS 1.024 MC 2 PHASE' LT - PUSH TO OPEN 143
					11. 'LCCP STATUS 1.024 MC 4 PHASE' LT - PUSH FOR NC LIGHT 143
					12. 1.024 MC FILTER - 150 KC 143
		02-007	CSL	CT	01. PANEL 8, TELEMETRY DEMCD NC.2, 'LCCP STATUS 32 KC' LT - PUSH TO OPEN (DIM) 143
					02. 'LCCP STATUS 768 KC' LT - PUSH TO OPEN 143
					03. 'LCCP STATUS 1.25 MC RCVD VOICE' LT - PUSH TO OPEN 143
					04. 'LCCP STATUS 1.395 MC' LT - PUSH TO OPEN 143
					05. 'PRE-DET FILTER' LT - PUSH TO 150 KC 143
					06. 'DEMCD' LT - PUSH TO REAL TIME 143

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					07. 'VOICE/BIOMED' LT - PUSH TO PHASE LL 149
	02-008		CSL	CT	REAR OF DEI PCVR, VERIFY ATTENUATOR SET TO DB 149
	02-009		CSL	CT	01. PANEL 5, POWER SUPPLY NO 2, VERIFY DC AMMETER INDICATES 3.0 TO 3.5 AMPS 149
					02. PANEL 9, PWR SUPPLY NO 3, VERIFY DC AMMETER INDICATES 0.32 TO 0.42 AMPS 149
					-NOTE-
					WAIT 1 HOUR BEFORE PROCEEDING
	02-010		CSL	CT	VERIFY COUNTER (5245L) INDICATES 355.296 TO 355.303 MC (2101.8 MC +/- 20 KC). ADJUST VCO BIAS IF REQUIRED. 149
					-NOTE-
					REPORT COMPLETION TO TC (NIBY).

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					7-4-69 S.T. 15:21
		03-000			(CCMM 64) S-BAND ACTIVATE AND CHECKOUT
		03-001	CSL	LMP	PANEL 12, SWITCHES AS FOLLOWS -
					C1. 'CCMM' 'XMTR/RCVR' - 'PRIM' 149
					C2. 'PWR AMPL' - 'PRIM' (LL-63-1) 149
					C3. 'PCM' - 'PCM' 149
					C4. 'RECCORDER' - 'CM' 149
					C5. 'PITCH' - '+90' 149
					C6. 'YAW' - 'C' 149
		03-002	CSL	CT	PERFORM S-BAND LOCK PER SPECIAL INSTRUCTIONS 149
					C1. ENSURE TEST XMTR OUTPUT ATTEN SET TO -75 DBM SELCD SB XMTR PWR GT09935
					C2. RECORD CRT PAGE 06 LINE 12 RECORD 1385mV 149
					SELCD SB RCVR AGC GT09945
					C3. VERIFY CRT PAGE 06 LINE 13 LL=+0.50 UL=+4.00 VDC 3.75VDC 149
					STA PH ER A XPNDR GT09925
					C4. VERIFY CRT PAGE 06 LINE 11 LL=-15.00 UL=+15.00 DEG -1.93 149
					CT C5. SPECTRUM ANALYZER, VERIFY S-BAND HIGH POWER 149
					C6. VERIFY 1.024 MC SUBCARRIER VISIBLE 149
		03-003	CSL	CT	C1. DYNAGRAPH RECORDER, ANNOTATE PAPER WITH TEST DATA 149
					C2. PUSH 'OPERATE' PB 149
		03-004	CSL	CT	DEI RCVR, ADJUST VIDEQ LEVEL UNTIL OUTPUT METER INDICATES -0.5 TO +0.5 DB 149

7-4-69

149

149

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					-NOTE-
					WAIT 2 MINUTES BEFORE PROCEEDING. ADJUST PWR SUPPLY 2 AS REQUIRED.
					01. TM DEMOD 1 VERIFY '1.024 4 PHASE LCCP STATUS' PB/LT - 'LOCK' 998
					02. 545 SCOPE, VERIFY PCM (ADJUST AS REQUIRED) 998
	03-005		CSL	VDC	VERIFY S-BD PCM PATCHED TO SANGAMO RECORDER, AND RECORDER IS OPERATING
	03-006		CSL	CDR	PANEL 8 'AUDIO', SWITCHES AS FOLLOWS -
					01. 'S-BD TR' - 'S-BAND' 'T/R' 998
					02. 'ICS/TR' - 'ICS/TR' 998
					03. 'ICS VCL' - 9 998
					04. 'S-BD VCL' - 3 998
					05. 'VCX' - 'PTT' 998
					06. 'VCX SENS' - 8.5 998
					07. 'MASTER VCL' - AS REQUIRED 998
	03-007		CSL	LMP	PANEL 12, SWITCHES AS FOLLOWS -
					01. 'AUDIO' 'S-BAND T/R' - 'S-BAND T/R' 998
					02. 'ICS T/R' - 'ICS T/R' 998
					03. 'ICS VCL' - 9 998
					04. 'S-BD VCL' - 3 998
					05. 'VCX' - 'PTT' 998
					06. 'VCX SENS' - 8.5 998
					07. 'MASTER VCL' - AS REQUIRED 998

PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
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-NOTE-

READ NEXT STEP, THEN PERFORM

Dev.
5
No.03-008 CSL CDR
LMP CONNECT SCFT CAPS TO UPPER BICMED HARNESS

01. CONNECT COMM UMBILICAL TO PGA CONNECTION ON UPPER BICMED HARNESS (998)
02. ENSURE P85 (CDR) AND P86 (LMP) CONNECTED TO COMM UMBILICALS (998)
03. DCN SCFT CAPS (998)
- LMP 04. VOICE ANNOTATE OCP 90000, DATE, TIME (998)
05. PANEL 12 'CCMM', OBSERVE TAPE RECORDER TR (998)
06. REMOVE SCFT CAPS, DCN NORCCM HEADSETS AND REPORT (998)

Dev.
6
No.

03-009 SCL CDR 01. VERIFY LMP VOICE

Dev.
7
No.

- LMP 02. VERIFY RECORDER TR WENT GRAY WHEN VEXED
03. VERIFY SIDETONE (998)

03-010 CSL LMP 01. PANEL 12 'CCMM', 'S-BD XMTR/RCVR' SW - 'SEC' (998)

02. 'PWR AMPL' SW - 'OFF' (LL-63-1) (998)

CSL 03. RECCRD TIME 15:46 (998)

LMP 04. 'FUNCTIONS VOICE' SW - 'VOICE' (998)

05. 'TLM BICMED' SW - 'LEFT' (998)

06. 'S-BD PWR AMPL' SW - 'SEC' (LL-63-2) (998)

CSL 07. RECCRD TIME 15:46 (998)

LMP 08. 'RECORDER' SW - 'OFF' (998)

03-011 CSL CT PERFORM S-BAND LOCK-UP PER SPECIAL

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE:

Comm

DATE: 4-7-69

SHEET 5 OF

2B-90008-LM-2

TPS NO.

PRETEST

TEST

POST-TEST

GAEC

W. T. Mulcahey GAEC 4-7-69

D. Kearney 4/7/69

NASA

W. T. Mulcahey 4/7/69

A. H. Frost 4-7-69
for O.E.

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
5	2-10	03-008	DELETE ALL REFERENCE TO "CDR" AND CHANGE "CAPS" TO "CAP" (ONLY ONE COMM CARRIER AVAILABLE)	T	998 4/7/69	
6	2-10	03-009 5/5 01.	DELETE 5/5 01 (ONLY ONE COMM CARRIER AVAILABLE)	T	998 4/7/69	
7	2-10	03-009 5/5 02.	DELETE 5/5 02. (DSGA NOT ON TRACK NO. 1)	T	998 4/7/69	

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					INSTRUCTIONS
			CSL		SELCD SB XMTR PWR
				01.	RECORD CRT PAGE 06 LINE 12
					RECORD..... 1476 mV (998) GTC9935
					SELCD SB RCVR AGC
				02.	VERIFY CRT PAGE 06 LINE 13
					LL=+0.50 LL=+4.00 VDC 4.00VDC (998) GTC9945
					STA PH ER B XPDR
				03.	VERIFY CRT PAGE 06 LINE 14
					LL=-15.00 LL=+15.00 DEG -2.80 (998) GTC9925
			CT	04.	SPECTRUM ANALYZER, VERIFY S-BAND HIGH POWER (998)
				05.	VERIFY 1.024 MC SUBCARRIER VISIBLE (998)
				06.	VERIFY 1.25 MC SUBCARRIER VISIBLE (998)
	03-012		CSL	CT	DYNAGRAPH RECORDER, PUSH 'STOP' PB (998)
				01.	ANNOTATE CHART PAPER WITH TEST DATA (998)
				02.	PUSH 'OPERATE' PB (998)
	03-013		CSL	CT	DEI RCVR, ADJUST VIDEO LEVEL UNTIL OUTPUT METER INDICATES -0.5 TO +0.5 DB (998)
					-NOTE-
					WAIT 2 MINUTES BEFORE PROCEEDING. ADJUST PWR SUPPLY 2 AS REQUIRED.
				01.	TM DEMOD 1 VERIFY '1.024 4 PHASE LCCP STATUS' PB/LT - 'LCK' (998)
				02.	545 SCOPE, VERIFY PCM (ADJUST AS REQUIRED) (998)
	03-014		CSL	LMP	01. PANEL 12 'CCMM', 'S-BD PWR AMPL' SW - 'OFF' (998)
					(LL-63-2)
			CSL	02.	RECORD TIME 15:53 (998)

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					LMP C3. 'S-BD XMTR/RCVR' SW - 'OFF' 998
		03-015	CSL	CT	TEST XMTR TC -140 DB 998
		03-016	CSL	CT	DISCONNECT HARDLINE RF CABLE FROM J-17 998
					C1. CONNECT GSE ANTENNA RF CABLE TO J-17 998
		03-017	CSL	VDC	TURN OFF SANGAMO RECORDER 998
		03-018	CSL	LMP	C1. PANEL 12 'CCMM ANT', 'S-BAND' SW - 'SLEW' 998
					C2. 'CCMM', 'S-BD XMTR/RCVR' SW - 'PRIM' 998
					C3. 'S-BD PWR AMPL' SW - 'PRIM' (LL62-1) 998
			CSL		C4. RECCRD TIME 15:55 998
		03-019	CSL	CT	TEST XMTR, SET VARIABLE ATTEN TO ZERO 998
		03-020	CSL	LMP	C1. 'CCMM ANT' 'PITCH' CONT - '+85' 998
					C2. 'YAW' CONT - '+5' 998
					C3. 'TRACK MODE' SW - 'SLEW' 998
			SAM		C4. VERIFY ANTENNA MOVEMENT IN PITCH AND YAW 998
		03-021	CSL	CT	PERFORM S-BD LOCK-UP PER SPECIAL INSTRUCTIONS
		03-022	CSL	CSL	MONITOR FOLLOWING, WHILE CT ADJUST TEST XMTR. WHEN READING IS AT 3.4, INSTRUCT CT TO STOP ADJUSTMENT 149
					SELCD SB RCVR AGC GT09945
					C1. VERIFY CRT PAGE 06 LINE 13 3.4 VDC 149
					LL=+3.20 UL=+3.60 VDC
					C2. ADJUST TEST XMTR (AS DIRECTED) 149
		03-023	CSL	LMP	PANEL 12 'CCMM ANT', 'TRACK MODE' SW - 'AUTO' 149
			SAM		C1. VERIFY STEERABLE ANTENNA 'TRACKING' 149



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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		03-024	CSL	LMP	01. PANEL 12 'CCMM ANT' 'TRACK MODE' SW - 'OFF' 149
					02. 'S-BD PWR AMPL' SW - 'OFF' (LL-63-1) 149
			CSL		03. RECORD TIME .16.14 149
		03-025	CSL	LMP	01. PANEL 12 'CCMM ANT', 'YAW' CONT - '+30' 149
					02. 'TRACK MODE' SW - 'SLEW' 149
			SAM		03. VERIFY ANTENNA YAW MOVEMENT 149
			LMP		04. 'TRACK MODE' SW - 'OFF' 149
		03-026	CSL	LMP	01. 'PITCH' CONT - '+60' 149
					02. 'TRACK MODE' SW - 'SLEW' 149
			SAM		03. VERIFY ANTENNA PITCH MOVEMENT 149
		03-027	CSL	LMP	01. 'TRACK MODE' SW - 'OFF' 149
					02. 'CCMM', 'S-BD XMTR/RCVR' SW - 'OFF' 149
					03. 'CCMM ANT' 'S-BAND' SW - 'LUNAR STAY' 149
		03-028	CSL	CT	TEST XMTR TC -140 DB 149
		03-029	CSL	CT	01. DISCONNECT GSE ANTENNA RF CABLE FROM J-17 149
					02. CONNECT RF HARDLINE CABLE TO J-17 149
					03. TEST XMTR DISCONNECT RF OUT TO HP4910 RF INPUT 149
					04. DISCONNECT HP4910 RF OUTPUT CABLE AND RECONNECT TO TEST XMTR RF OUT 149
		03-030	CSL	LMP	PANEL 12 'CCMM', 'S-BD XMTR/RCVR' SW - 'PRIM' 149
		03-031	CSL	CT	AT -106 TO 14 DB 149
					01. SPECTRUM ANALYZER, VERIFY LOW POWER 149

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					02. SET S-BD TEST XMTR TC -57 DB (149)
	03-032		CSL	CT	PERFORM S-BD UP-LINK LOCK-UP PER SPECIAL (149)
			CSL		SELCD SB XMTR FWR GT09935
					01. RECORD CRT PAGE 06 LINE 12 RECORD 13.67m (149)
	03-033		CSL	CT	SET S-BD TEST XMTR TC -42 DBM (149)
			CSL		SELCD SB RCVR ACC GT09945
					01. RECORD CRT PAGE 06 LINE 13 RECORD 3.70 (149)
	03-034		CSL	CT	SET S-BD TEST XMTR TC -47 DBM (149)
			CSL		SELCD SB RCVR ACC GT09945
					01. RECORD CRT PAGE 06 LINE 13 RECORD 3.68 (149)
	03-035		CSL	CT	SET S-BD TEST XMTR TC -52 DBM (149)
			CSL		SELCD SB RCVR ACC GT09945
					01. RECORD CRT PAGE 06 LINE 13 RECORD 3.62 (149)
	03-036		CSL	CT	SET S-BD TEST XMTR TC -57 DBM (149)
			CSL		SELCD SB RCVR ACC GT09945
					01. RECORD CRT PAGE 06 LINE 13 RECORD 3.56 (149)
	03-037		CSL	CT	SET S-BD TEST XMTR TC -62 DBM (149)
			CSL		SELCD SB RCVR ACC GT09945
					01. RECORD CRT PAGE 06 LINE 13 RECORD 3.48 (149)
	03-038		CSL	CT	SET S-BD TEST XMTR TC -67 DBM (149)

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TIME	CH	SEC	C/C CTL	C/D STTN	DESCRIPTION/INSTRUCTION	
			CSL		SELCD SB RCVR AGC	GT09945
					01. RECORD CRT PAGE 06 LINE 13	RECORD 3.40 (149)
	03-039		CSL CT		SET S-BD TEST XMTR TC -72 DBM (149)	GT09945
			CSL		SELCD SB RCVR AGC	
					01. RECORD CRT PAGE 06 LINE 13	RECORD 3.28 (149)
	03-040		CSL CT		SET S-BD TEST XMTR TC -77 DBM (149)	GT09945
			CSL		SELCD SB RCVR AGC	
					01. RECORD CRT PAGE 06 LINE 13	RECORD 3.22 (149)
	03-041		CSL CT		SET S-BD TEST XMTR TC -82 DBM (149)	GT09945
			CSL		SELCD SB RCVR AGC	
					01. RECORD CRT PAGE 06 LINE 13	RECORD 3.09 (149)
	03-042		CSL CT		SET S-BD TEST XMTR TC -87 DBM (149)	GT09945
			CSL		SELCD SB RCVR AGC	
					01. RECORD CRT PAGE 06 LINE 13	RECORD 2.92 (149)
	03-043		CSL CT		SET S-BD TEST XMTR TC -92 DBM (149)	GT09945
			CSL		SELCD SB RCVR AGC	
					01. RECORD CRT PAGE 06 LINE 13	RECORD 2.73 (149)
	03-044		CSL CT		SET S-BD TEST XMTR TC -93 DBM (149)	GT09945
			CSL		SELCD SB RCVR AGC	
					01. RECORD CRT PAGE 06 LINE 13	RECORD 2.65 (149)
	03-045		CSL CT		SET S-BD TEST XMTR TC -94 DBM (149)	

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION	
				CSL	SELCD SB RCVR AGC	GT09945
				01.	RECORD CRT PAGE 06 LINE 13	RECORD 2:60 149
03-046			CSL	CT	SET S-BD TEST XMTR TC -95 DBM 149	GT09945
				CSL	SELCD SB RCVR AGC	
				01.	RECORD CRT PAGE 06 LINE 13	RECORD 2:55 149
03-047			CSL	CT	SET S-BD TEST XMTR TC -96 DBM 149	GT09945
				CSL	SELCD SB RCVR AGC	
				01.	RECORD CRT PAGE 06 LINE 13	RECORD 2:49 149
03-048			CSL	CT	SET S-BD TEST XMTR TC -97 DBM 149	GT09945
				CSL	SELCD SB RCVR AGC	
				01.	RECORD CRT PAGE 06 LINE 13	RECORD 2:45 149
03-049			CSL	CT	SET S-BD TEST XMTR TC -98 DBM 149	GT09945
				CSL	SELCD SB RCVR AGC	
				01.	RECORD CRT PAGE 06 LINE 13	RECORD 2:41 149
03-050			CSL	CT	SET S-BD TEST XMTR TC -99 DBM 149	GT09945
				CSL	SELCD SB RCVR AGC	
				01.	RECORD CRT PAGE 06 LINE 13	RECORD 2:39 149
03-051			CSL	CT	SET S-BD TEST XMTR TC -100 DBM 149	GT09945
				CSL	SELCD SB RCVR AGC	
				01.	RECORD CRT PAGE 06 LINE 13	RECORD 2:30 149
03-052			CSL	CT	SET S-BD TEST XMTR TC -101 DBM 149	

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION	
				CSL	SELCD SB RCVR AGC	GT09945
				01. RECORD CRT	PAGE 06 LINE 13	RECORD. 2:25 (149)
				CSL CT	SET S-BD TEST XMTR TC -102 DBM (149)	
				CSL	SELCD SB RCVR AGC	GT09945
				01. RECORD CRT	PAGE 06 LINE 13	RECORD. 2:21 (149)
				CSL CT	SET S-BD TEST XMTR TC -103 DBM (149)	
				CSL	SELCD SB RCVR AGC	GT09945
				01. RECORD CRT	PAGE 06 LINE 13	RECORD. 2:11 (149)
				CSL CT	SET S-BD TEST XMTR TC -104 DBM (149)	
				CSL	SELCD SB RCVR AGC	GT09945
				01. RECORD CRT	PAGE 06 LINE 13	RECORD. 2:00 (149)
				CSL CT	SET S-BD TEST XMTR TC -105 DBM (149)	
				CSL	SELCD SB RCVR AGC	GT09945
				01. RECORD CRT	PAGE 06 LINE 13	RECORD. 1:54 (149)
				CSL CT	SET S-BD TEST XMTR TC -106 DBM (149)	
				CSL	SELCD SB RCVR AGC	GT09945
				01. RECORD CRT	PAGE 06 LINE 13	RECORD. 1:46 (149)
				CSL CT	SET S-BD TEST XMTR TC -107 DBM (149)	
				CSL	SELCD SB RCVR AGC	GT09945
				01. RECORD CRT	PAGE 06 LINE 13	RECORD. 1:32 (149)
				CSL CT	SET S-BD TEST XMTR TC -108 DBM (149)	

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
				CSL	SELCD SB RCVR AGC C1. RECORD CRT PAGE 06 LINE 13 GTC9945 RECORD. 1.64 (149)
03-060			CSL	CT	SET S-BD TEST XMTR TC -109 DBM (149)
03-061			CSL	CT	SET S-BD TEST XMTR TC -110 DBM (154)
			CSL		SELCD SB RCVR AGC C1. RECORD CRT PAGE 06 LINE 13 GTC9945 RECORD. 1.40 (149)
03-062			CSL	CT	SET S-BD TEST XMTR TC -111 DBM (149)
			CSL		SELCD SB RCVR AGC C1. RECORD CRT PAGE 06 LINE 13 GTC9945 RECORD. 1.23
03-063			CSL	CT	SET S-BD TEST XMTR TC -112 DBM (149)
			CSL		SELCD SB RCVR AGC C1. RECORD CRT PAGE 06 LINE 13 GTC9945 RECORD. 1.01 (149)
03-064			CSL	CT	SET S-BD TEST XMTR TC -113 DBM (149)
			CSL		SELCD SB RCVR AGC C1. RECORD CRT PAGE 06 LINE 13 GTC9945 RECORD. 0.77 (149)
03-065			CSL	CT	SET S-BD TEST XMTR TC -114 DBM (149)
			CSL		SELCD SB RCVR AGC C1. RECORD CRT PAGE 06 LINE 13 GTC9945 RECORD. 0.43 (149)
03-066			CSL	LMP	PANEL 12 'CCMM', 'S-BD XMTR-RCVR' SW - 'SEC'
			CSL		SELCD SB XMTR PWR C1. RECORD CRT PAGE 06 LINE 12 GTC9935 RECORD. 1476 MW (149)

Lost Lock

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		03-067	CSL	CT	SET S-BD TEST XMTR TC -57 DBM (149)
					01. PERFORM S-BD UP-LINK LOCK UP PER SPECIAL INSTRUCTIONS (149)
					02. SPECTRUM ANALYZER, VERIFY S-BAND LOW POWER (149)
		03-068	CSL	CT	SET S-BD TEST XMTR TC -42 DBM
			CSL		SELCD SB RCVR AGC
					01. RECCRD CRT PAGE 06 LINE 13
					RECORD. 3.77 (149)
					1476mW (149)
		03-069	CSL	CT	SET S-BD TEST XMTR TC -47 DBM (149)
			CSL		SELCD SB RCVR AGC
					01. RECCRD CRT PAGE 06 LINE 13
					RECCRD. 3.93 (149)
		03-070	CSL	CT	SET S-BD TEST XMTR TC -52 DBM (149)
			CSL		SELCD SB RCVR AGC
					01. RECCRD CRT PAGE 06 LINE 13
					RECORD. 3.89 (149)
		03-071	CSL	CT	SET S-BD TEST XMTR TC -57 DBM (149)
			CSL		SELCD SB RCVR AGC
					01. RECCRD CRT PAGE 06 LINE 13
					RECORD. 3.85 (149)
		03-072	CSL	CT	SET S-BD TEST XMTR TC -62 DBM (149)
			CSL		SELCD SB RCVR AGC
					01. RECCRD CRT PAGE 06 LINE 13
					RECORD. 3.79 (149)
		03-073	CSL	CT	SET S-BD TEST XMTR TC -57 DBM (149)
			CSL		SELCD SB RCVR AGC
					01. RECCRD CRT PAGE 06 LINE 13
					RECCRD. 3.72 (149)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
03-074	CSL	CT			SET S-BD TEST XMTR TC -72 DBM (149) SELCD SB RCVR AGC 01. RECORD CRT PAGE 06 LINE 13 GT09945 RECORD 3.64 (149)
03-075	CSL	CT			SET S-BD TEST XMTR TC -77 DBM (149) SELCD SB RCVR AGC 01. RECORD CRT PAGE 06 LINE 13 GT09945 RECORD 3.52 (149)
03-076	CSL	CT			SET S-BD TEST XMTR TC -82 DBM (149) SELCD SB RCVR AGC 01. RECORD CRT PAGE 06 LINE 13 GT09945 RECORD 3.42 (149)
03-077	CSL	CT			SET S-BD TEST XMTR TC -87 DBM (149) SELCD SB RCVR AGC 01. RECORD CRT PAGE 06 LINE 13 GT09945 RECORD 3.26 (149)
03-078	CSL	CT			SET S-BD TEST XMTR TC -92 DBM (149) SELCD SB RCVR AGC 01. RECORD CRT PAGE 06 LINE 13 GT09945 RECORD 3.08 (149)
03-079	CSL	CT			SET S-BD TEST XMTR TC -93 DBM (149) SELCD SB RCVR AGC 01. RECORD CRT PAGE 06 LINE 13 GT09945 RECORD 3.02 (149)
03-080	CSL	CT			SET S-BD TEST XMTR TC -94 DBM (149) SELCD SB RCVR AGC 01. RECORD CRT PAGE 06 LINE 13 GT09945 RECORD 2.96 (149)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		03-081	CSL	CT	SET S-BD TEST XMTR TC -95 DBM (149)
			CSL		SELCD SB RCVR AGC
					01. RECORD CRT PAGE 06 LINE 13
					RECORD 2.91. (149)
		03-082	CSL	CT	SET S-BD TEST XMTR TC -96 DBM (149)
			CSL		SELCD SB RCVR AGC
					01. RECORD CRT PAGE 06 LINE 13
					RECORD 2.89. (149)
		03-083	CSL	CT	SET S-BD TEST XMTR TC -97 DBM (149)
			CSL		SELCD SB RCVR AGC
					01. RECORD CRT PAGE 06 LINE 13
					RECORD 2.83. (149)
		03-084	CSL	CT	SET S-BD TEST XMTR TC -98 DBM (149)
			CSL		SELCD SB RCVR AGC
					01. RECORD CRT PAGE 06 LINE 13
					RECORD 2.77. (149)
		03-085	CSL	CT	SET S-BD TEST XMTR TC -99 DBM (149)
			CSL		SELCD SB RCVR AGC
					01. RECORD CRT PAGE 06 LINE 13
					RECORD 2.73. (149)
		03-086	CSL	CT	SET S-BD TEST XMTR TC -100 DBM (149)
			CSL		SELCD SB RCVR AGC
					01. RECORD CRT PAGE 06 LINE 13
					RECORD 2.65. (149)
		03-087	CSL	CT	SET S-BD TEST XMTR TC -101 DBM (149)
			CSL		SELCD SB RCVR AGC
					01. RECORD CRT PAGE 06 LINE 13
					RECORD 2.61. (149)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
03-088	CSL	CT			SET S-BD TEST XMTR TC -102 DBM SELCD SB RCVR AGC 01. RECCRD CRT PAGE 06 LINE 13 RECORD 2.59. (149)
03-089	CSL	CT			SET S-BD TEST XMTR TC -103 DBM SELCD SB RCVR AGC 01. RECCRD CRT PAGE 06 LINE 13 RECORD 2.49. (149)
03-090	CSL	CT			SET S-BD TEST XMTR TC -104 DBM SELCD SB RCVR AGC 01. RECCRD CRT PAGE 06 LINE 13 RECORD 2.43. (149)
03-091	CSL	CT			SET S-BD TEST XMTR TC -105 DBM SELCD SB RCVR AGC 01. RECCRD CRT PAGE 06 LINE 13 RECORD 2.37. (149)
03-092	CSL	CT			SET S-BD TEST XMTR TC -106 DBM SELCD SB RCVR AGC 01. RECCRD CRT PAGE 06 LINE 13 RECORD 2.23. (149)
03-093	CSL	CT			SET S-BD TEST XMTR TC -107 DBM SELCD SB RCVR AGC 01. RECCRD CRT PAGE 06 LINE 13 RECORD 2.17. (149)
03-094	CSL	CT			SET S-BD TEST XMTR TC -108 DBM SELCD SB RCVR AGC 01. RECCRD CRT PAGE 06 LINE 13 RECORD 2.08. (149)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
03-095	CSL	CT			SET S-BD TEST XMTR TC -109 DBM (149)
		CSL			SELCD SB RCVR ACC
					01. RECORD CRT PAGE 06 LINE 13
					RECORD 2.00 (149)
03-096	CSL	CT			SET S-BD TEST XMTR TC -110 DBM (149)
		CSL			SELCD SB RCVR ACC
					01. RECORD CRT PAGE 06 LINE 13
					RECORD 1.90 (149)
03-097	CSL	CT			SET S-BD TEST XMTR TC -111 DBM (149)
		CSL			SELCD SB RCVR ACC
					01. RECORD CRT PAGE 06 LINE 13
					RECORD 1.68 (149)
03-098	CSL	CT			SET S-BD TEST XMTR TC -112 DBM (149)
		CSL			SELCD SB RCVR ACC
					01. RECORD CRT PAGE 06 LINE 13
					RECORD 1.6 (149)
					LOST LOCK
03-099	CSL	LMP			PANEL 12 'COMM', 'S-BD XMTR-RCVR' SW - 'OFF' (149)
03-100	CSL	CT			SET S-BD TEST XMTR TC -140 DBM (149)
					01. DISCONNECT HARDLINE CABLE (LSK41C-2669) FROM J17 (149)
					02. CONNECT HARDLINE CABLE (LSK41C-2669) TO RF IN CN DIR COUPLER (149)
					03. PATCH DIR COUPLER RF OUT TO PWR METER AND THERMISTOR MOUNT VIA 10 DB PAD (149)
					04. PATCH -20 DB PORT CN DIR COUPLER TO 'RF IN' ON HP2590 CONVERTER (149)
					05. ZERO POWER METER (149)
03-101	CSL	LMP			PANEL 12 'COMM', 'S-BD XMTR/RCVR' SW - 'PRIM' (149)

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TIME	CH	SFC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
			CSL		SELCD SB XMTR PWR 01. RECORD CRT PAGE 06 LINE 12 RECORD..... 1367 mw (149)
	03-102		CSL	CT	MEASURE PRIMARY DOWNLINK S-BD POWER ON POWER METER (149)
			CSL	01.	RECORD 42.00 (149)
	03-103		CSL	CT	MEASURE PRIMARY DOWNLINK S-BD FREQUENCY ON COUNTER/CONVERTER (149)
			CSL	01.	RECORD 385.422 (149)
	03-104		CSL	LMP	PANEL 12 'COMM', 'S-BD XMTR/RCVR' SW - 'SEC'
			CSL		SELCD SB XMTR PWR 01. RECORD CRT PAGE 06 LINE 12 RECORD... 147.6 mw (149)
	03-105		CSL	CT	MEASURE SECONDARY DOWNLINK POWER ON POWER METER (149)
			CSL	01.	RECORD 42.6 DB (149)
	03-106		CSL	CT	MEASURE SECONDARY DOWNLINK S-BD FREQUENCY ON COUNTER/CONVERTER (149)
			CSL	01.	RECORD 385.428 (149)
	03-107		CSL	LMP	PANEL 12 'COMM', 'S-BD XMTR/RCVR' SW - 'OFF' (149)
	03-108		CSL	CT	DISCONNECT HARDLINE CABLE (LSK410-2669) FROM POWER METER (HP431C) (149)
				01.	INSERT 20 DB PAD (149)
				02.	CONNECT HARDLINE CABLE (LSK410-2669) TO HP431C (149)
	03-109		CSL	LMP	01. PANEL 12 'COMM', 'S-BD XMTR-RCVR' SW - 'PRIM' (149)
				02.	'PWR AMPL' SW - 'PRIM' (LL63-1) (149)
			CSL	03.	RECORD TIME 16.56 (149)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					SELCD SB XMTR PWR 04. RECORD CRT PAGE 06 LINE 12 GTC9935 RECORD 1349 (149)
03-110	CSL	CT			MEASURE PRIM DOWNLINK S-BD PWR CN POWER METER 01. RECORD 76.6 DB (149)
03-111	CSL	CT			MEASURE PRIM DOWNLINK S-BD FREQUENCY CN COUNTER/CONVERTER 01. RECORD 385.422 (149)
03-112	CSL	LMP			PANEL 12 'CCMM', 'S-BD PWR AMPL' SW - 'SEC' (LL-63-1) (LL-63-2) 01. RECORD TIME 16:58 Hrs (149) SELCD SB XMTR PWR 02. RECORD CRT PAGE 06 LINE 12 GTC9935 RECORD 1349 (149)
03-113	CSL	CT			MEASURE SEC S-BD PWR CN POWER METER 01. RECORD 76 DB (149)
03-114	CSL	CT			CN COUNTER/CONVERTER MEASURE, S-BD SEC DOWN LINK FREQ 01. RECORD 385.422 (149)
03-115	CSL	LMP			PANEL 12 'CCMM', 'S-BD POWER AMPL' SW - 'OFF' (LL-63-2) 01. RECORD TIME 16:59 02. 'S-BD XMTR/RCVR' SW - 'OFF' (149) 03. 'FUNCTIONS VOICE' SW - 'OFF' (149) 04. 'FUNCTIONS PCM' SW - 'OFF' (149)
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
2010		04-000			(CCMM 65) GSS TURN-OFF
		04-001	CSL	CT	01. PANEL 3, PWR SUPPLY 1 'AC-ON' SW - 'OFF' (209) 02. PANEL 5, PWR SUPPLY 2 'AC-CN' SW - 'OFF' (209) 03. PANEL 9, PWR SUPPLY 3 'CN-OFF' SW - 'OFF' (209) 04. PANEL 2, MICROWAVE AMPL (HP491C) 'LINE' SW - 'OFF' (209) 05. PANEL 6, S-BD TELEMETRY RCVR, 'PWR CN' SW - 'OFF' (209)
		04-002	CSL	CT	01. DYNAGRAPH RECORDER, 'PWR' SW - 'OFF' (209) 02. SPECTRUM ANALYZER (SINGER 4 FCA) 'PWR' SW - 'OFF' (209) 03. TEK 545 SCOPE, 'PWR' SW - 'OFF' (209) 04. COUNTER (HP5245L) 'SAMPLE RATE' SW - OFF (209) 05. CONVERTER (2590A) 'PWR' SW - 'OFF' (209) 06. PWR METER (PRD686A) 'PWR' SW - 'OFF' (209) 07. WIDE BAND AMPL (DCA10) 'PWR' SW - 'OFF' (209)
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		05-000			(ECS 227) GROUND COOLING TURN-OFF

		05-001	ECL	WGM	01. SECURE REFRIGERATION SOURCE 209
--	--	--------	-----	-----	--

		05-002	ECL	WGM	01. PUSH 'MAIN POWER OFF' PB 209
					02. '28 VDC' CB - 'OFF' 209
					03. '120 VAC' CB - 'OFF' 209
					04. '220 VAC' CB - 'OFF' 209

-NOTE-

REPORT COMPLETION TO TC (NIB).

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
13:57 4/7/69		06-000			(ECS 225) CCCLANT SUPPORT TURN-CN
		06-001	ECL	WGM	01. POWER DISTRIBUTION PANEL, '28 VDC' CB - 'ON' (998)
					02. 120 VAC, 1 PHASE, 60 CYCLE CB - 'CN' (998)
					03. 220 VAC, 3 PHASE, 60 CYCLE CB - 'ON' (998)
		06-002	ECL	WGM	CONTROL AND INSTRUMENTATION PANEL, PUSH 'MAIN POWER ON' SW, FOLLOWING LTS - CN (998)
					01. 'MAIN POWER 28 VDC' (998)
					02. 'MAIN POWER 115 VAC' (998)
					03. 'MAIN POWER 220 VAC' (998)
					04. 'TEST AND CALIBRATE METER TEST CFF' (998)
					05. 'HEATER POWER CFF' (998)
					06. 'FILL HOSE VACUUM CLOSE' (998)
					07. 'OPERATION STATION LOCAL' (998)
					08. 'WARNING LOCAL PURGE PRESS. LCM' (998)
					09. 'CONTROL W/G TEMP CFF' (998)
		06-003	ECL	WGM	PUSH AND HOLD 'TEST AND CALIBRATE LIGHT TEST' PB, VERIFY ALL LIGHTS GO ON, AND RELEASE PB (998)
					----- CAUTION -----
					'MT1 SHUTOFF V12' MUST NOT BE OPENED WHILE ANY LIQUID IS IN THE CIRCUIT, OR MT1 TRANSDUCER WILL BE PERMANENTLY DAMAGED
		06-004	ECL	WGM	01. OPEN 'ECS SUPPLY SHUTOFF V9'. (998)
					02. OPEN 'ECS RETURN SHUTOFF V8'. (998)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		06-005	ECL	WGM	CONTROL AND INSTRUMENTATION PANEL, PUSH 'CONTROL W/G TEMP CN' PB, 'W/G TEMP OFF' LT - OFF, 'W/G TEMP CN' LIGHT - ON (998)
		06-006	ECL	WGM	C1. PRESS 'W/G PUMP START' SWITCH, VERIFY 'W/G 'PUMP CN' LT - 'CN' (998)
		06-007	ECL	WGM	C1. TEMPERATURE CONTROLLER, 'MIXING VALVE MAN/ AUTO' SW - 'AUTO'. (998)
					C2. 'TEMPERATURE' CCNT - 52 DEG F (998)
		06-008	ECL	WGM	C1. SET AND HOLD 'CONTROLLER PROCESS/SET POINT' SW - 'SET POINT' (998)
					C2. SET 'CONTROLLER INCREASE/DECREASE' SW - 'INCREASE' OR 'DECREASE' AS REQUIRED, UNTIL DEG F METER INDICATES -1 TO +1 DEG F. (998)
					C3. RELEASE 'SET POINT' SW, VERIFY SW MOVES TO 'PROCESS'. (998)
					-NOTE-
					NEXT 2 STEPS MAY BE REPEATED TO ACHIEVE STABLE METER INDICATIONS.
		06-009	ECL	WGM	C1. CONTROL AND INSTRUMENTATION PANEL, PUSH AND HOLD 'CONTROL W/G PRESSURE INCREASE' PB UNTIL 'ECS W/G SUPPLY PRESS' METER IND- ICATES 45 TO 50 PSIA, THEN RELEASE PB (998)
					C2. PRESS AND HOLD 'W/G FLOW INCREASE' SW UNTIL 'ECS W/G FLOW' METER INDICATES 250 TO 275 LBL HR, THEN RELEASE PB (998)
					-NOTE-
					WAIT 20 MINUTES FOR SYSTEM STABILIZATION BEFORE PROCEEDING.

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		06-010	ECL	WGM	'ECS INTERFACE W/G TEMP' METER, 50 TO 60 DEG F (998)
		06-011	ECL	WGM	MAINTAIN FOLLOWING INDICATIONS
					01. 'ECS W/G SUPPLY PRESS', 50 PSIA MAXIMUM (998)
					02. 'ECS W/G RETURN PRESS', 18 PSIA MINIMUM (998)
					03. 'ECS INTERFACE W/G TEMP', 55 TO 60 DEG F (998)
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
14:23 4/7/69		07-000			(ECS 234) W/G FLMP CHECKOUT
		07-001	ECL	WGM	C1. PUSH 'PUMP STOP' PB (998)
					C2. SIMULTANECUSLY CLOSE 'V8' AND 'V9' (998)
		07-002	ECL	CDR	PANEL 11 ROW 4 'ECS', REMOVE GUARDS AND CLOSE
			ECL		'GLYCOL PUMP 1' AND '2' CB'S (LL54) 14:24 (998)
					GLYCOL PUMP DISCH GF99975
					C1. RECORD CRT PAGE 11 LINE 20
					LL=+35.0 LL=+50.0 PSIA
					RECORD 4/1.0 (998)
					PRIM GLYC PUMP ,F GF20215
					C2. RECORD CRT PAGE 11 LINE 22
					RECORD 18.4 (998)
		07-003	ECL	LMP	C1. PANEL 2, 'GLYCOL PUMP' SEL - '2' (998)
			CDR		C2. PANEL 11 ROW 4 'ECS', OPEN 'GLYCOL PUMP 1' CB
			ECL		GLYCOL PUMP DISCH GF99975 (998)
					C3. RECORD CRT PAGE 11 LINE 20
					LL=+35.0 LL=+50.0 PSIA
					RECORD 4/1.0 (998)
					PRIM GLYC PUMP ,F GF20215
					C4. RECORD CRT PAGE 11 LINE 22
					RECORD 18.4 (998)
		07-004	ECL	CDR	PANEL 11 ROW 4 'ECS', OPEN 'GLYCOL PUMP 2' CB
					(LL 54) 14:25 (998)
					C1. GUARD 'GLYCOL PUMP 1' AND '2' CB'S (998)
		07-005	ECL	WGM	C1. SIMULTANECUSLY OPEN 'V8' AND 'V9' (998)
					C2. PUSH 'PUMP START' PB (998)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
14:00		08-000			(EPS 06) GSE POWER ACTIVATION
		08-001	EPL	GPS	01. ECC, CONSOLE CONTROL PANEL, SET MAIN POWER CB ON, PHASE A, B, AND C LT'S - CN 998
					02. RELAY CHASSIS PANEL, PS1, PS2, PS3, AND PS4 UV LT'S - CN 998
					03. CONSOLE CONTROL PANEL, POWER SUPPLY 1 CB - CN 998
					04. POWER SUPPLY 2 CB - CN 998
					05. POWER SUPPLY 3 CB - CN 998
					06. POWER SUPPLY 4 CB - CN 998
		08-002	EPL	GPS	PS1 PANEL, 'AC' CB - CN, AC LT - CN 998
					01. ROTATE 'VOLTAGE ADJUST' CONTROL UNTIL VOLTMETER INDICATES 30 VDC 998
		08-003	EPL	GPS	PS2 PANEL, 'AC' CB - CN, AC LT - CN 998
					01. ROTATE 'VOLTAGE ADJUST' CONTROL UNTIL VOLT METER INDICATES 30 VDC 998
		08-004	EPL	GPS	PS3 PANEL, 'AC' CB - CN, AC LT - CN 998
					01. ROTATE 'VOLTAGE ADJUST' CONTROL UNTIL VOLT METER INDICATES 30 VDC 998
		08-005	EPL	GPS	PS4 PANEL, 'AC' CB - CN, AC LT - CN 998
					01. ROTATE 'VOLTAGE ADJUST' CONTROL UNTIL VOLT METER INDICATES 30 VDC 998
		08-006	EPL	GPS	RELAY CHASSIS PANEL, PRESS FOLLOWING PB'S, VERIFY ASSOCIATED LT'S - OFF 998
					01. PS1 UV RESET 998
					02. PS2 UV RESET VOID 998
					03. PS3 UV RESET 998
					04. PS4 UV RESET 998

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		08-007	EPL	GPS	01. GPS, POWER 'CN/CFF' SW - 'CN' 998
					02. MAIN POWER CB - CN, 'PHASE A', 'E', AND 'C' LT'S - CN 998
					03. LOCAL OPERATION LT - CN 998
					04. OVERTEMPERATURE LT - ON 998
					05. BLOWER OPERATING 998
		08-008	EPL	GPS	PRESS AND HOLD 'AC INPUT POWER START' PB UNTIL A VOLTMETER INDICATION IS OBSERVED 998
					01. 'POWER CN' LT - CN 998
					02. OVERTEMPERATURE LT - OFF 998
		08-009	EPL	GPS	ROTATE 'VOLTAGE ADJUST' CONTROL UNTIL VOLTMETER INDICATES 30 VDC 998
		08-010	EPL	GPS	PRESS 'DC OUTPUT POWER ON' PB, 'POWER CN' LT - CN 998
		08-011	EPL	GPS	A/S BATTERY CONTROL UNIT, CLOSE 'AUX OUTPUT' CB 998
					01. EIU, 'CONTROL POWER' CB - 'CN' 998
					02. 'VEH PWR SUP INPUT' SW - CN, 'VEH PWR SUP INPUT' LT - CN 998
					03. 'VEH PWR SUP OUTPUT' SW - 'ASCENT STAGE' 998
		08-012	EPL	GPS	ECC, RELAY CHASSIS PANEL, PS1, PS2, PS3, AND PS4 SW'S - '28V HI VOLTAGE INPUT' 998
					-NOTE-
					REPORT COMPLETION TO TC (NIB)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		'09-000'			(EPS 12) GSE POWER DEACTIVATION
		'09-001'	EPL	GPS	ECC, RELAY CHASSIS PANEL, PS1, PS2, PS3, AND PS4 SW'S - 'OFF' 209
		'09-002'	EPL	GPS	01. EIL, 'VEH PWR SUP OUTPUT' SW - 'OFF' 209
					02. 'VEH PWR SUP INFLT' SW - 'OFF' 209
					'VEH PWR SUP INFLT' LT - OFF 209
					03. VERIFY BLOWER STOPS OPERATING 209
					04. 'CONTROL POWER' CB - 'OFF' 209
		'09-003'	EPL	GPS	ECC, PS1, 'AC' CB - 'OFF', 'AC' LT - OFF 209
					01. PS2, 'AC' CB - 'OFF', 'AC' LT - OFF 209
					02. PS3, 'AC' CB - 'OFF', 'AC' LT - OFF 209
					03. PS4, 'AC' CB - 'OFF', 'AC' LT - OFF 209
		'09-004'	EPL	GPS	CONSOLE CONTROL PANEL, FOLLOWING CB'S - OFF 209
					01. 'POWER SUPPLY 1' 209
					02. 'POWER SUPPLY 2' 209
					03. 'POWER SUPPLY 3' 209
					04. 'POWER SUPPLY 4' 209
		'09-005'	EPL	GPS	'MAIN POWER' CB - 'OFF', 'PHASE A', 'B', AND 'C' LT'S - OFF 209
					01. VERIFY BLOWER STOPS OPERATING 209
		'09-006'	EPL	GPS	A/S BATTERY CONTROL UNIT, OPEN 'AUX OUTPUT' CB 209
		'09-007'	EPL	GPS	01. GPS, PRESS 'DC OUTPUT POWER OFF' PB, 'POWER ON' LT - OFF 209
					02. PRESS 'AC INPUT POWER STOP' PB, 'POWER ON' LT - OFF 209
		'09-008'	EPL	GPS	POWER ON/OFF SW - 'OFF', 'PHASE A', 'B', AND 209

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
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'C' LT'S - CFF

01. 'LCCAL OPERATION' LT - OFF

02. VERIFY BLOWER STOPS OPERATING

09-005 EPL GPS

POWER CB - 'CFF'

-ACTE-

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4/7/69 2137		10-000			(EPS 29) TIE BLSSES, TURN OFF INV 1, AND REMOVE SIMULATED A/S BATS FROM BUS
		10-001	EPL	CDR	01. PANEL 11 ROW 4 'EPS', CLOSE 'CROSS TIE - BAL LOADS' CB (209)
				LMP	02. PANEL 16 ROW 4 'EPS', CLOSE 'CROSS TIE - BAL LOADS' CB (209)
					03. PANEL 14, 'VOLTS' IND, 35.8 TO 38.7 (WITHIN GREEN BAND) (209)
		10-002	EPL	CDR	PANEL 11 ROW 4 'EPS', OPEN 'INV 1' CB (LL64) 2138 (209)
		10-003	EPL	LMP	01. PANEL 14, 'POWER/TEMP MON' SEL - 'BAT 5' (209)
					02. 'BAT 5 NORMAL FEED' SW - 'OFF/RESET', TB - BP (209)
					03. 'VOLTS' IND 28.0 TO 32.5 (209)
					04. 'AMPS' IND, LESS THAN 5 (209)
		10-004	EPL	LMP	01. 'POWER/TEMP MON' SEL - 'BAT 6' (209)
					02. 'BAT 6 NORMAL FEED' SW - 'OFF/RESET', TB - BP (209)
					03. 'VOLTS' IND 28.0 TO 32.5 (209)
					04. 'AMPS' IND, LESS THAN 5 (209)
		10-005	EPL	LMP	01. 'POWER/TEMP MON' SEL - 'CDR BUS', 'VOLTS' IND, 26.5 TO 32.5 (209)
					02. 'POWER/TEMP MON' SEL - 'SE BUS', 'VOLTS' IND, 26.5 TO 32.5 (209)
					03. 'POWER/TEMP MON' SEL - 'AC BUS', 'VOLTS' IND, 35.8 TO 38.7 (WITHIN GREEN BAND) (209)
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
2/17 4-5-69					(EPS 33) SWITCH TO SIMULATED A/S BATS, ISOLATE BUSSES, CHECK INV 1, AND RETURN TO INV 2
	11-000				
	11-001	EPL	LMP		PANEL 14, 'POWER/TEMP MON' SEL - 'BAT 5', 'VCLTS' IND 28.0 TO 32.5 (1320)
	11-002	EPL	LMP		'BAT 5 NORMAL FEED' SW - 'CN' TB - GRAY (1320)
					'C1. 'VCLTS' IND 28.0 TO 32.5 (1320)
					'C2. 'AMPS' IND, GREATER THAN ZERO (1320)
	11-003	EPL	LMP		'POWER/TEMP MON' SEL - 'BAT 6' 'VCLTS' IND 28.0 TO 32.5 (1320)
	11-004	EPL	LMP		'BAT 6 NORMAL FEED' SW - 'CN', TB - GRAY (1320)
					'C1. 'VCLTS' IND 28.0 TO 32.5 (1320)
					'C2. 'AMPS' IND, GREATER THAN ZERO (1320)
	11-005	EPL	LMP		'C1. 'BAT 1 HI VOLT' SW - 'OFF/RESET', TB - BP (1320)
					'C2. 'BAT 2 HI VOLT' SW - 'OFF/RESET', TB - BP (1320)
					'C3. 'BAT 3 HI VOLT' SW - 'OFF/RESET', TB - BP (1320)
					'C4. 'BAT 4 HI VOLT' SW - 'OFF/RESET', TB - BP (1320)
					'C5. 'DES BATS' SW - 'DEADFACE', TB - BP (1320)
	11-006	EPL	CDR		'C1. PANEL 11 ROW 4 'EPS', OPEN '-CROSS TIE- BAL LOADS' CB (1320)
					'C2. OPEN 'DES ECA CCNT' CB (1320)
					'C3. OPEN 'DES ECA' CB (1320)
					'C4. CLOSE 'INV 1' CB (LL 64) 2319 (1320)
	11-007	EPL	LMP		'C1. PANEL 16 ROW 4 'EPS', OPEN 'DES ECA' CB (1320)
					'C2. OPEN 'DES ECA CCNT' CB (1320)
					'C3. OPEN '-CROSS TIE- BAL LOADS' CB (1320)

1320
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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4-7-69 2320					C4. PANEL 14, 'AC PWR' SW - 'INV 1' (1320)
	11-008		EPL	LMP	PANEL 14, 'POWER/TEMP MON' SEL - 'BAT 5' (1320)
					C1. 'VOLTS' IND 28.0 TO 32.5 (1320)
					C2. READ 'AMPS' IND (1320) 20 AMPS
	11-009		EPL	LMP	'POWER/TEMP MON' SEL - 'BAT 6' (1320)
					C1. 'VOLTS' IND 28.0 TO 32.5 (1320)
					C2. READ 'AMPS' IND (1320) 45 AMPS
	11-010		EPL	LMP	C1. 'POWER/TEMP MON' SEL - 'CDR BUS', 'VOLTS' IND, 26.5 TO 32.5 (1320)
					C2. 'POWER/TEMP MON' SEL - 'SE BUS', 'VOLTS' IND, 26.5 TO 32.5 (1320)
					C3. 'POWER/TEMP MON' SEL - 'AC BUS', 'VOLTS' IND, 35.8 TO 38.7 (WITHIN GREEN BAND) (1320)
					C4. 'AC PWR' SW - 'INV 2', 'VOLTS' IND, 35.8 TO 38.7 (WITHIN GREEN BAND) (1320)
					-ACTE-
					REPORT COMPLETION TO TC (NIB).
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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		12-000			(EPS 50) LIGHTING ACTIVATION AND CHECKOUT
		12-001	EPL	LMP	01. PANEL 3 'LTG', 'FLOOD' SW - 'PARTIAL', PANELS 5 AND 6 FLOODLIGHTS ON (998)
					02. 'FLOOD' SW - 'CN', ALL FLOODLIGHTS CN (998)
					03. 'FLOOD' SW - 'OFF', ALL FLOODLIGHTS OFF (998)
					04. 'SIDE PANELS' SW - 'CN' (998)
			CDR		05. PANEL 5 'LTG', 'SIDE PANELS' SW - 'CN' (998)
		12-002	EPL	CDR	DURING THE FOLLOWING SUBSTEP MASTER ALARM MAY BE INITIATED - DISREGARD
					01. 'OVERRIDE ANLN' SW - 'CN', THEN 'OFF' (998)
					02. 'OVERRIDE NLM' SW - 'CN', THEN 'OFF' (998)
					03. 'OVERRIDE INTEGRAL' SW - 'CN', THEN 'OFF' (998)
					04. 'ANLN/NLM' CCNT - 'BRIGHT', THEN ADJUST (998)
					05. 'INTEGRAL' CCNT - 'BRIGHT', THEN ADJUST (998)
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4/8/69					
0229					
	13-000				(EPS96) INV 1 TURN-OFF
	13-001	EPL	LMP		PANEL 14, 'POWER/TEMP MON' SEL - 'AC BUS', 'VOLTS' IND, 35.8 TO 38.7 (WITHIN GREEN BAND)
	13-002	EPL	CDR		PANEL 11 ROW 4 'EPS', OPEN 'INV 1' CB (LL64)
					-NOTE- 0229 209
					REPORT COMPLETION TO TC (NIB).
					Copy 0229 4-8-69 209

1345

PROJECT APCLLC

DATE 04/01/69

PAGE 2-42
GCP-B-900CR-LM-2

14:38

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		14-000			(EPS 138) CIRCUIT BREAKER ACTIVATION
		14-001	EPL	LMP	PANEL 16, CLOSE FOLLOWING CB'S -
					01. RCW 1 'LTG', 'FLCCD' (998)
					02. 'ED' 'LOGIC FWR B' (998)
					03. 'S/C' 'APCRT STAGE' (998)
					04. 'ENG ARM' (998)
					05. 'ATCA' (LL13) 14:39 (998)
					06. 'AELD' (998)
					07. 'ATCA (AGS)' (998)
					08. 'RCS SYS B' 'ASC FEED'
					09. 'ISCL VLV' (998)
					10. 'MAIN SCV' (998)
					11. RCW 2 'FLT/DISP', 'FDAI' (998)
					12. 'X PNTR' (998)
					13. 'RCS' 'HTR DISP' (998)
					14. 'CRSFD' (998)
					15. 'TEMP/PRESS DISP FLAGS' (998)
					16. 'PCGS' (998)
					17. 'PRCPUL' 'ASC FE REG' (998)
					18. 'TEMP/PRESS DISP FLAGS' (998)
					19. RCW 3 'CCMM' 'SE AUDIO' (998)
					20. 'PRIM S-BC PWR ANFL' (998)
					21. 'S-BC XMTR/RCVR' (998)
					22. 'S-BC ANT' (998)

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCC NO. AND TITLE: SCI/EP	DATE: <u>4-7-69</u>	SHEET <u>15</u> OF <u> </u>
<u>SP-B-90008-LM-2</u>	TPS NO. <u> </u>	<u>PRETEST</u> <u>TEST</u> <u>POST-TEST</u>
<u>GAEC</u> <u>Wally Z Bowlds</u> <u>W. Massey</u> <u> </u>	<u>NASA</u> <u>W.T. Mulcahey 4/7/9</u> <u>A.H. Frost 4-7-69</u> <u>for P.E.</u>	

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
17	2-42	14-001 5/508	DELETE (TANK DUMP NOT REQUIRED)	T	998 4/7/69	

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

CCP NO. AND TITLE: <u>SCC/EP</u> <u>CP-6-90008-LM-2</u>	DATE: <u>4-7-69</u>	SHEET <u>16</u> OF <u>16</u>
	TPS NO.	<u>PRETEST</u> TEST POST-TEST
<u>GAEC</u> <u>Walter F. Bowlds</u> <u>D. Massey</u>	<u>NASA</u> <u>W. T. Mulcahey 4/7/69</u> <u>G. H. Frost 4-7-69</u> <u>for O E</u>	

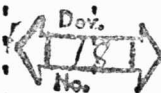
DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
18	2-43	14-002 S/S 13	DELETE (TANK DUMP NOT REQUIRED)	T	998 4/7/69	

PROJECT APCLLC

DATE 04/01/69

PAGE 2-43
QCP-B-900C8-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					23. 'PMF' (998)
					24. 'DISP' (998)
					25. 'HTR RCS SYS A/B 2' 'QUAD 1' (998)
					26. 'CLAD 2' (998)
					27. 'QUAD 3' (998)
					28. 'QUAD 4' (998)
	14-002		EPL	CCR	PANEL 11, CLOSE FOLLOWING CB'S -
					01. ROW 1 'INST' 'TAPE RCCR' (998)
					02. 'PROPUL', 'HE FCGS DISP' (998)
					03. 'CCMM' 'S-BE ANT' (998)
					04. 'PGNS' 'ACT LAMP' (998)
					05. 'FLT DISP' 'GASTA' (998)
					06. 'SE FDAI' (998)
					07. 'CCR FDAI' (998)
					08. 'LTG' 'NUM' (998)
					09. 'INTGL' (998)
					10. ROW 2 'PROPLL', 'DES HE REG' (998)
					11. 'S/C' 'AELD' (998)
					12. 'RCS SYS A' 'ISCL VLV' (998)
					13. 'ASC FEED'
					14. 'MAIN SOV' (998)
					15. ROW 3 'FLT DISP', 'CCR FDAI' (998)
	14-003		EPL	CCR	'S/C', CLOSE 'ATCA (PGNS)' CB (998)
			LMP		01. PANEL 2, 'PREAMPS' CAUT LT - OFF (998)



PROJECT APCLLC

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DCP-B-90008-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		14-004	EPL	CDR	PANEL 11, CLOSE FOLLOWING CB'S -
					01. ROW 2 'ENG CCNT' (998)
					02. 'ENG START CVRD' (998)
					03. 'ABORT STAGE' (998)
					04. 'ED' 'LOGIC PWR A' (998)
					05. ROW 3 'CCMM', 'SEC S-BD XMTR/RCVR' (998)
					06. SEC S-BD PWR AMPL (998)
					07. 'CDR ALDID' (998)
					08. 'HTR' 'RNDZ RDR CPR' (998)
					09. 'ACT' (998)
					10. 'FLT DISP' 'MISSION TMR' (998)
					11. 'X PNTR' (998)
					12. 'GASTA' (998)
					13. ROW 4, 'PGNS', 'SIG STR DISP' (998)
		14-005	EPL	CDR	CLOSE 'IMU STBY' CB (998)
			TPC		01. 'G AND N CN' LT - CN (PTC SWITCHOVER) (998)
			GNL		02. RECORD TIME 14:50 (998)
		14-006	EPL	CDR	PANEL 10, CLOSE FOLLOWING CB'S -
					01. 'RCS SYS A/B-1' 'QUAD 1' (998)
					02. 'QUAD 2' (998)
					03. 'QUAD 3' (998)
					04. 'QUAD 4' (998)
					-NOTE-
					REPORT COMPLETION TO TC (NIB).



(998)
14:50
4/7/69



PROJECT APCLLC

DATE 04/01/69

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OCP-B-900C8-LM-2

4/8/69
0241

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		15-000			(EPS 139) CABIN CLOSFLCT
		15-001	EPL	CDR	01. PANEL 1, 'RATE/ERR MCN' SW - 'RNDZ RADAR' (209)
					02. 'INL CAGE' SW - 'OFF' (209)
					03. 'ATTITUDE MCN' SW - 'PGNS' (209)
					04. 'GLID CONT' SW - 'PGNS' (209)
					05. 'MODE SEL' SW - 'PGNS' (209)
					06. 'RNG/ALT MCN' SW - 'RNG/RNG RT' (209)
					07. 'ABORT' PB - RESET (209)
					08. 'ABORT STAGE' PB - RESET (209)
					09. 'SHFT/TRUN (ANGLE)' SW '+ CR -50 DEG' (209)
					10. 'ENG THR CONT' 'THR CONT' SW - 'AUTO' (209)
					11. 'MAN THRCT' SW - 'CDR' (209)
					12. 'ENG ARM' SW - 'OFF' (209)
					13. 'X TRANSL' SW '2 JETS' (209)
					14. 'BAL CPL' SW - 'CN' (209)
					15. 'ASCENT HE REG 1' TB - GRAY (209)
					16. 'REG 2' TB - GRAY (209)
					17. 'DESCENT HE' 'REG 1' - 'OPEN' TB, GRAY (209)
					18. 'DESCENT HE' 'REG 2' - 'CLOSE' TB, BP (209)
					19. 'PRPLNT CTY MON' SW - 'OFF' (209)
					20. 'TEMP/PRESS MCN' SW - 'DES 1' (209)
					21. 'HELIUM MCN' SEL - 'SUPCRIT PRESS' (209)
		15-002	EPL	LMP	01. PANEL 2, 'LMP TCA ISCLATION' SW - 'ENABLE' (209)

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TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
1819					
0244					02. 'SYSTEM A MAIN SCV', - 'CLOSE', TB - <i>OPEN</i> <i>GRAY</i> <i>BP</i> (209)
					03. 'ASC FEED' TB - BP (209)
					04. 'SYSTEM B MAIN SCV' - 'CLOSE', TB - <i>OPEN</i> <i>GRAY</i> <i>BP</i> (209)
					05. 'ASC FEED' TB - BP (209)
					06. 'SYSTEM A CLAD 1' TB - GRAY (209)
					07. 'CLAD 2' TB - GRAY (209)
					08. 'CLAD 3' TB - GRAY (209)
					09. 'CLAD 4' TB - GRAY (209)
					10. 'SYSTEM B CLAD 1' TB - GRAY (209)
					11. 'CLAD 2' TB - GRAY (209)
					12. 'CLAD 3' TB - GRAY (209)
					13. 'CLAD 4' TB - GRAY (209)
					14. 'TEMP PRESS MCN' SEL - 'HE' (209)
					15. 'CRSFD' TB - BP (209)
					16. 'RATE SCALE' - 25 DEG/SEC (209)
					17. 'RCCA' - CFF/RESET (209)
					18. 'RATE/ERR MCN' SW - 'RNDZ RADAR' (209)
					19. 'ATTITUDE MCN' SW - 'AGS' (209)
					20. 'GLYCCL PUMP' - '1' (209)
					21. 'O2/H2O CTY MCN' SW - 'DES' (209)
					22. 'SLIT FAN' SEL - '1' (209)
					15-003 EPL CDR PANEL 3, SWITCHES AS FOLLOWS (209)
					01. 'X-PCINTER SCALE' - 'HI MULT' (209)
					02. 'RADAR' 'LDG ANT' - 'HOVER' (209)

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

NO. AND TITLE: <u>OCP-90008-LM-2</u>	DATE: <u>4/8/69</u>	SHEET <u>30</u> OF <u> </u>
GAEC <u>R. A. Brown</u> <u>PKW Unit 4/8/69</u>		TPS NO. <u> </u> PRETEST <u>TEST</u> POST-TEST <u> </u> NASA <u>W. T. Mulcahey 4/8/69</u> <u>W. T. Mulcahey 4-8-69</u> <u>for O.E.</u>

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
33	2-46	15-002 S/S02 04	Change: • close to open BP to Gray (PREV. OPEN)	T	200 4-8-69	

DATE 04/01/69

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OCP-B-90008-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4/8/9					
0247					
					03. 'RADAR TEST' - 'CFF' 209
					04. 'TEST MONITOR' - 'AGC' 209
					05. 'SLEW RATE' - 'FT' 209
					06. 'SLEW' - CENTER 209
					07. 'ENG GMBL' - 'CFF' 209
					08. RNDZ RDR SEL - 'LCC' 209
					09. 'S/C' 'DEAD BAND' - 'MIN' 209
					10. 'GYRO TEST ROLL' - 'ROLL' 209
					11. 'GYRO TEST PCS RT' - 'CFF' 209
					12. 'ATTITUDE CONTROL ROLL' - 'MODE CONT' 209
					13. 'PITCH' - 'MODE CONT' 209
					14. 'YAW' - 'MODE CONT' 209
					15. 'MODE CONTROL' - 'CFF' 209
	15-CC4	EPL	LMP		PANEL 3, SWITCHES AS FOLLOWS - 209
					01. 'HEATER CONTROL' 'TEMP MON' - 'S-BAND' 209
					02. 'EVENT TIMER' 'RESET/COUNT' SW - DOWN 209
					03. 'TIMER COUNT' SW - CENTER 209
					04. 'SLEW COUNT' MIN - CENTER 209
					05. 'SLEW COUNT' SEC - CENTER 209
					06. 'LTG' 'SIDE PANELS' - 'CFF' 209
					07. 'FLOOD' - 'CFF' 209
					08. 'EXTERIOR LTG' - 'CFF' 209
					09. 'LAMP/TONE TEST' - 'CFF' 209
					10. 'X-POINTER SCALE' - 'HI MULT' 209

PROJECT AFCLLC

DATE 04/01/69

PAGE 2-48
OCP-B-90008-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
1819 6248					
		15-005	EPL	CDR	01. PANEL 4, 'ACA/4 JET' SW - 'DISABLE' (209)
					02. 'TTCA/TRANSL' SW - 'DISABLE' (209)
			LMP		03. PANEL 4, 'ACA/4 JET' SW - 'DISABLE' (209)
					04. 'TTCA/TRANSL' SW - 'DISABLE' (209)
		15-006	EPL	CDR	01. ACT, AZIMUTH CONTROL - 'CL' (209)
					02. 'MARK X' PB - ACT PUSHED (209)
					03. 'MARK Y' PB - ACT PUSHED (209)
					04. 'REJECT' PB - ACT PUSHED (209)
		15-007	EPL	CDR	PDA, ALL CB'S - OPEN (209)
		15-008	EPL	CDR	PANEL 8, SWITCHES AS FOLLOWS (209)
					01. 'ED' 'MASTER ARM' - 'OFF' (209)
					02. 'ASC HE SEL' - 'BOTH' (209)
					03. 'LDG GEAR DEPLOY' - 'SAFE', TB - BP (209)
					04. 'RCS PRESS' - 'SAFE' (209)
					05. 'DES PRESS' - 'SAFE' (209)
					06. 'ASCENT HE PRESS' - 'SAFE' (209)
					07. 'STAGE' - 'SAFE' (209)
					08. 'AUCIC' 'S-BAND T/R' - 'OFF' (209)
					09. 'ICS T/R' - 'OFF' (209)
					10. 'RELAY CN' - 'RELAY OFF' (209)
					11. 'VCX' - 'ICS' (209)
					12. 'AUDIO CCNT' - 'NCFM' (209)
					13. 'VHF A' - 'OFF' (209)

209

PROJECT AFCLLC

DATE 04/01/69

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4/8/9
0250

TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					14. 'VHF B' - 'CFF' (209)
		15-C09	EPL	CCR	PANEL 10, CB'S AND SWITCHES AS FOLLOWS (209)
					01. 'HTR RCS A/B 1' 'QUAD 1' - CPEN (209)
					02. 'QUAD 2' - CPEN (209)
					03. 'QUAD 3' - CPEN (209)
					04. 'QUAD 4' - CPEN (209)
					05. 'R/D INST-A' - CPEN (209)
					06. 'R/D INST-B' - CPEN (209)
					07. 'C-BAND PWR' - 'CFF' (209)
					08. 'R/D TLM CAL' - 'CFF' (209)
					09. 'LMP FEED' - 'CPEN' (209)
		15-C10	EPL	CCR	TTCA, 'THRCTLLE/JETS' LEVER - 'JETS' (209)
		15-C11	EPL	CCR	01. PANEL 5, 'DES RATE' SW - CENTER (209)
					02. 'START' PB/LT - 'CFF' (209)
					03. 'STOP' PB/LT - 'CFF' (209)
					04. 'X TRANSL' PB - RESET (209)
					05. 'MISSION TIMER TIMER CNT' - 'STOP' (209)
					06. 'SLEW CNT HOURS' - CENTER (209)
					07. 'SLEW CNT MIN' SW - CENTER (209)
					08. 'SLEW CNT SEC' SW - CENTER (209)
					09. 'LTG' 'SIDE PANELS' SW - 'CFF' (209)
					10. 'OVERRIDE ALN' SW - 'CFF' (209)
					11. 'OVERRIDE ALN' SW - 'CFF' (209)
					12. 'OVERRIDE INTEGRAL' SW - 'CFF' (209)

PROJECT APCLLC

DATE 04/01/69

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OCP-B-900C8-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
18/49					
0252					
					13. 'ANLN/ALN' SW - 'DIM' (209)
					14. 'INTEGRAL' SW - 'DIM' (209)
	15-012	EPL	LMP		01. PANEL 6, 'AGS STATUS' SW - 'OFF' (209)
					02. 'STOP' PB/LT - 'CFF' (209)
	15-013	EPL	LMP		PANEL 12, SWITCHES AS FOLLOWS - (209)
					01. 'AUDIO' 'AUDIO CCNT' - 'NORM' (209)
					02. 'S-BAND T/R' - 'CFF' (209)
					03. 'ICS T/R' - 'CFF' (209)
					04. 'RELAY CN' - 'RELAY CFF' (209)
					05. 'VCX' - 'ICS' (209)
					06. 'VHF A' - 'CFF' (209)
					07. 'VHF B' - 'CFF' (209)
					08. 'CCMM' 'S-BAND MODULATE' - 'PM' (209)
					09. 'S-BAND XMTR/RCVR' - 'CFF' (209)
					10. 'S-BAND PWR AMPL' - 'CFF' (EL-63-1) (209)
					11. 'FUNCTIONS VOICE' - 'CFF' (209)
					12. 'FUNCTIONS PCM' - 'CFF' (209)
					13. 'FUNCTIONS RANGE' - 'CFF' (209)
					14. 'VHF A XMTR' - 'CFF' (209)
					15. 'VHF A RCVR' - 'CFF' (209)
					16. 'VHF B XMTR' - 'CFF' (209)
					17. 'VHF B RCVR' - 'CFF' (209)
					18. 'TLM BICMED' - 'CFF' (209)
					19. 'TLM PCM' - 'HI' (209)

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE: <u>OCP B-90008-LM-2</u>	<u>ECL/EX</u>	DATE: <u>4-7-69</u>	SHEET <u>6</u> OF <u> </u>
<u>GAEC</u> <u>J.C. McArthur 4/7/69</u> <u>D. Massing 4/7/69</u>		TPS NO. <u> </u>	<u>PRETEST</u> TEST POST-TEST
<u>NASA</u> <u>W.T. Mulcahey 4/7/69</u> <u>G.P. L. 4-7-69</u> <u>A.O.E.</u>			

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
8	2-51	15-016 5501	CHANGE "PUSH" TO "PUSH CABIN" (CABIN PLACARDING)	P	998 4/7/69	

PROJECT APOLLO

DATE 04/01/69

PAGE 2-51

CCP-P-90308-LV-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					20. 'RECORDER' - 'OFF', TB - PF (209)
					21. 'COMM ANT' 'VHF', - '2' (209)
					22. 'PITCH', '-75' (209)
					23. 'YAW', '-30' (209)
					24. 'TRACK MODE' - 'OFF' (209)
					25. 'S-BAND' - 'LUNAR STAY' (209)
15-014	EPL	LMP			01. PANEL 14, 'POWER/TEMP MON' SEL - 'OFF' (209)
					02. 'AC POWER' SW - 'OFF' (209)
15-015	EPL	LMP			01. 'DES RATS' SW - 'DEADFACE', TB-BP (209)
					02. 'BAT 5 NORMAL FEED' SW - 'OFF/RESET', TB (209) BP
					03. 'BAT 5 BACK UP FEED' SW - 'OFF/RESET', TB - BP (209)
					04. 'BAT 6 NORMAL FEED' SW - 'OFF/RESET', TB (209) BP
					05. 'BAT 6 BACK UP FEED' SW - 'OFF/RESET', TB (209) BP
15-016	EPL	LMP			01. ECS CONTROLS, 'SLIT GAS DIVERTER' VLV - 'PUSH' (209) Cassin
					02. 'CABIN REPRESS' VLV - 'AUTO' (209)
					03. 'PLSS FILL' VLV - 'CLOSE' (209)
					04. 'PRESS REG A' VLV - 'CLOSE' (209)
					05. 'PRESS REG B' VLV - 'CLOSE' (209)
					06. 'NC. 2 ASC C2' VLV - 'CLOSE' (209)
					07. 'NC. 1 ASC C2' VLV - 'CLOSE' (209)
					08. 'DES C2' VLV - 'CLOSE' (209)
					09. 'SEC EVAP FLOW' VLV - 'CLOSE' (209)
					10. 'PRIM EVAP FLOW NC. 2' VLV - 'CLOSE' (209)

Dev.
8
No.

0.1M
(209)

PROJECT APCLLC

DATE 04/01/69

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DOP-B-90008-LM-2

TIME	CH	SEC	C/C CTL	C/D STTA	DESCRIPTION/INSTRUCTION
4/8/69 0256					11. 'ASC H2O' VLV - 'CLOSE' (209)
					12. 'WATER TANK SELECT' VLV - 'DES' (209)
					13. 'SUIT TEMP' VLV - 'COLD' (209)
					14. 'CABIN TEMP' VLV - 'MAX COOL' (209)
					15. 'PRIM EVAP FLOW' VLV - 'CENTER' (209)
					16. 'SUIT CIRCUIT RELIEF' VLV - 'AUTO' (209)
					17. 'CABIN GAS RETURN' VLV - 'AUTO' (209)
					18. 'CO2 CANISTER SFL' VLV - 'MID' (209)
					19. 'PRIMARY CO2 CANISTER' VLV - 'CLOSE' (209)
					20. 'SECONDARY CO2 CANISTER' VLV - 'CLOSE' (209)
					21. 'WATER SEP SEL' VLV - 'PUSH SEP 1' (209)
					22. CABIN RELIEF AND DUMP (OVHD) VLV - 'AUTO' (209)
					23. CABIN RELIEF AND DUMP (FWD) VLV - 'AUTO' (209)
	15-017	EPL	CDR		01. PANEL 11 ROW 1, ALL CB'S - OPEN (209)
					02. ROW 2, ALL CB'S - OPEN (209)
					03. ROW 3, ALL CB'S - OPEN (209)
					04. ROW 4, ALL CB'S - OPEN (209)
	15-018	EPL	LMP		01. PANEL 16 ROW 1, ALL CB'S - OPEN (209)
					02. ROW 2, ALL CB'S - OPEN (209)
					03. ROW 3, ALL CB'S - OPEN (209)
					04. ROW 4, ALL CB'S - OPEN (209)
					-NOTE-
					REPORT COMPLETION TO TC (NIR).



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0256
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PROJECT APCLLC

DATE 04/01/69

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DGP-B-90008-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
14:34		16-000			(EPS 140) VEHICLE AC POWER ACTIVATION AND CHECKOUT
		16-001	EPL	CDR	C1. PANEL 11 ROW 1 'EPS', CLOSE 'AC BUS VOLT' CB (998)
					C2. CLOSE 'AC BUS FEED TIE' (2) CB (998)
					C3. ROW 4 'EPS', CLOSE 'INV 1' CB (LL64) 14:35 (998)
			LMP		C4. PANEL 16 ROW 4 'EPS', CLOSE 'INV 2' CB (LL65) 14:36 (998)
		16-002	EPL	LMP	C1. PANEL 14, 'POWER/TEMP MON' SEL - 'AC BUS' (998)
					C2. 'AC PWR' SW - 'INV 1', 'VOLTS' IND 35.8 TO 38.7 (GREEN BAND) 38.6 (998)
			EPL		INVERTER BUS, VOLT GC00715
					C3. VERIFY CRT PAGE 04 LINE 21 LL=+112.0 LL=+121.0 VAC 118.6 (998)
					INVERTER BUS, FREQ GC01555
					C4. VERIFY CRT PAGE 04 LINE 22 LL= +398. LL= +402. CPS 400 CPS (998)
		16-003	EPL	LMP	'AC PWR' SW - 'INV 2', 'VOLTS' IND 35.8 TO 38.7 (GREEN BAND) 38.2 (998)
			EPL		INVERTER BUS, VOLT GC00715
					C1. VERIFY CRT PAGE 04 LINE 21 LL=+112.0 LL=+121.0 VAC 118.6 (998)
					INVERTER BUS, FREQ GC01555
					C2. VERIFY CRT PAGE 04 LINE 22 LL= +398. LL= +402. CPS 400 CPS (998)
		16-004	EPL	CDR	PANEL 11 ROW 4 'EPS', OPEN 'INV 1' CB (LL64) 14:38 (998)
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

4/1/69

998 14:30

PROJECT APCLLC

DATE 14/01/69

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TIME	CH	SEC	C/C CTL	C/C STIM	DESCRIPTION/INSTRUCTION
14:44 4/7/69		17-100			(EPS 144) S/C POWER APPLICATION VIA SIMULATED D/S BATS (HV) AND OPERATIONAL INSTRUMENTATION TURN-ON
		17-101	EPL	CDR	PANEL 11, CLOSE FOLLOWING CB'S -
					01. ROW 2 'LTG', ANLN/DOCK COMPT (998)
					02. ROW 3 'INST' 'SIG CDR 1' (998)
					03. ROW 4 'EPS' 'BAT FEED TIE' (2) (998)
					04. 'CROSS TIE BAL LOADS' (998)
					05. 'X LUNAR BUS TIE' (998)
					06. 'DES ECA CNT' (998)
					07. 'DES ECA' (998)
					08. 'ASC ECA CNT' (998)
					09. 'ASC ECA' (998)
					10. 'DC BUS VOLT' (998)
		17-102	EPL	LMP	PANEL 16, CLOSE FOLLOWING CB'S -
					01. ROW 1 'LTG', ANLN/DOCK COMPT (998)
					02. ROW 2 'INST', 'PCW/TE' (998)
					03. 'SIG SENSOR' (998)
					04. 'SIG CDR 2' (998)
					05. 'ROW 4' 'EPS', 'DISP' (998)
					06. 'DC BUS VOLT' (998)
					07. 'ASC ECA' (998)
					08. 'ASC ECA CNT' (998)
					09. 'DES ECA' (998)
					10. 'DES ECA CNT' (998)

PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					11. 'X LUNAR BUS TIE' (998)
					12. 'CROSS TIE BAL LOADS' (998)
					13. 'BAT FEED TIE' (2) (998)
	17-003	EPL	LMP		PANEL 14 'POWER/TEMP MON' SEL - 'CDR BUS' (998)
	17-004	EPL	CCG		01. MDIS, 'TIMING - INTERNAL/EXTERNAL' (998) SW - 'EXTERNAL'
					02. 'CR GATE NO. 1 - R71' SW - 'CLOSE' (998)
	17-005	EPL	LMP		01. PANEL 14 'BAT 5 NORMAL FEED' SW - 'CN', TB - GRAY (LL100 AND LL101) (998) 14:17
					02. 'BAT 6 NORMAL FEED' SW - 'CN', TB - GRAY (998)
					03. 'VOLTS' IND, 26.5 TO 32.5 (998)
	17-006	EPL	LMP		01. 'DES BATS' SW - 'CONNECT', TB - GRAY (998)
					02. 'BAT 1 HI VOLT' SW - 'CN' TB - GRAY (998)
					03. 'BAT 2 HI VOLT' SW - 'CN', TB - GRAY (998)
					04. 'BAT 3 HI VOLT' SW - 'CN', TB - GRAY (998)
					05. 'BAT 4 HI VOLT' SW - 'CN', TB - GRAY (998)
					06. 'BAT 5 NORMAL FEED' SW - 'OFF/RESET', TB - (998)
					07. 'BAT 5 BACKUP FEED' SW - 'OFF/RESET', TB - (998)
					08. 'BAT 6 NORMAL FEED' SW - 'OFF/RESET', TB - (998)
					09. 'BAT 6 BACKUP FEED' SW - 'OFF/RESET', TB - (998)
					10. 'VOLTS' IND, 26.5 TO 32.5 (998)
	17-007	EPL	ISL		VERIFY ACE-S/C STATION LOCKED ON, PCM CLOCK RUNNING, AND CALIBRATION VOLTAGES WITHIN LIMITS (998)

PROJECT APCLLC

DATE 04/01/69

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JCP-B-90008-LM-2

TIME	CH	SEQ	C/C CTL	C/C STIN	DESCRIPTION/INSTRUCTION
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-ACTE-

REPORT COMPLETION TO TC (NIB).

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14.22
4/1/69

PROJECT APCLLC

DATE 04/01/69

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4/1/69
2010

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		18-000			(EPS 146) PARALLEL SIMULATED A/S BATS WITH SIMULATED C/S BATS, CHECK INV 1, ISCLATE BUSSES, AND RETURN TO INV 2
		18-001	EPL	LMP	C1. PANEL 14, 'POWER/TEMP MON' SEL - 'BAT 5' 'VOLTS' IND 28.0 TO 32.5
					C2. 'BAT 5 NORMAL FEED' SW - 'CN', TB - GRAY
					C3. 'VOLTS' IND, 28.0 TO 32.5
					C4. 'AMPS' IND, GREATER THAN ZERO
		18-002	EPL	LMP	C1. 'POWER/TEMP MON' SEL - 'BAT 6', 'VOLTS' IND 28.0 TO 32.5
					C2. 'BAT 6 NORMAL FEED' SW - 'CN', TB - GRAY
					C3. 'VOLTS' IND, 28.0 TO 32.5
					C4. 'AMPS' IND, GREATER THAN ZERO
		18-003	EPL	CDR	PANEL 11 ROW 4 'EPS', CLOSE 'INV 1' CB (LL 64)
		18-004	EPL	LMP	DURING THE FOLLOWING STEP, PANEL 2 'INVERTER' CAUT LT MAY COME ON MOMENTARILY - DISREGARD
					C1. PANEL 14 'AC PWR' SW - 'INV 1'
		18-005	EPL	LMP	C1. PANEL 16 ROW 4 'EPS', OPEN 'CROSS TIE - BAL LOADS' CB
				CDR	C2. PANEL 11 ROW 4 'EPS', OPEN 'CROSS TIE - BAL LOADS' CB
		18-006	EPL	LMP	C1. PANEL 14 'POWER/TEMP MON' SEL - 'CDR BUS' 'VOLTS' IND, 26.5 TO 32.5
					C2. 'POWER/TEMP MON' SEL - 'SE BUS', 'VOLTS' IND, 26.5 TO 32.5
					C3. 'POWER/TEMP MON' SEL - 'AC BUS', 'VOLTS' IND, 35.8 TO 38.7 (WITHIN GREEN BAND)

PROJECT APCLLC

DATE C4/C1/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
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4/7/4
2015
18-007 EPL LMPDURING THE FOLLOWING STEP, PANEL 2 'INVERTER'
CAUT LT MAY COME ON MOMENTARILY - DISREGARD01. PANEL 14, 'AC PWR' SW - 'INV 2', 'VOLTS' IND,
35.8 TO 38.7 (WITHIN GREEN BAND)

-NOTE-

REPORT COMPLETION TO TC (NIR).

Coyler
4/7/4
2016

PROJECT APCLLC

DATE 04/01/69

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OCP-8-90008-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		19-000			(EPS 147) INSPECTION OF PYRC SIMULATORS
					-NOTE-
					IF ANY PYRC SIMULATOR HAS NOT FIRED, REMOVE AND IDENTIFY BY LOCATION (I.E., QUAD 4 NUT, ECI-173-P-440, ETC.).
		19-001	EPL	XXX	VERIFY FOLLOWING SIMULATORS HAVE FIRED (BLACK UNDER GLASS ON END) -
					01. 430, QUAD 2 STAGING BOLTS (895)
					02. 431, QUAD 3 (895)
					03. 432, QUAD 1 (895)
					04. 433, QUAD 4 (895)
					05. 424, ECI 1 ELECTRICAL CIRCUIT INTERRUPTERS (895)
					06. 435, ECI 2 (895)
					07. 484, ECI 3 (895)
					08. 438, UMBILICAL CUTTER ASSEMBLY (895)
					09. 462, TANK 1 ASC ENG (HE) PRESS (895)
					10. 463, TANK 2 (895)
					11. 1605, CX ASC ENG COMPATIBILITY VLV (895)
					12. 1606, FUEL (895)
					13. 445, QUAD 2 STAGING NUTS (895)
					14. 446, QUAD 3 (895)
					15. 447, QUAD 1 (895)
					16. 448, QUAD 4 (895)
					17. 439, ECI 1 ELECTRICAL CIRCUIT INTERRUPTERS (895)
					18. 440, ECI 2 (895)

4-8-69
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PROJECT APCLLC

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TIME	CH	SEC	C/D CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					19. 483, ECI 3 (695)
					20. 451, UMBILICAL CUTTER ASSEMBLY (695)
					21. 464, TANK 1 ASC ENG (HE) PRESS
					22. 465, TANK 2 (695)
					23. 1604, CX ASC ENG COMPATIBILITY VLV. (695)
					24. 1610, FLEET (695)
					-ACTE-
					REPORT COMPLETION TO TC (NIB).

Completed
00 42
7-8-69

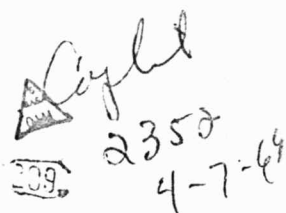
EC

PROJECT APOLLO

DATE 04/01/69

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DCP-B-90308-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4-7-69 2322					(EPS 153) WINDOW HEATER C/C
		20-001	EPL	CDR	PLACE HAND ON FOLLOWING WINDOWS, TO ESTABLISH A REFERENCE POINT FOR HEAT -
				01. CDR	(1320)
				02. DOCKING	(1320)
				03. SE	(1320)
		20-002	EPL	CDR	01. PANEL 11 ROW 1 'HTR', CLOSE 'WINDOWS SE' CR (1320)
				02. CLOSE 'WINDOWS CDR' CR	(1320)
				03. ROW 3 'HTR', CLOSE 'DOCK WINDOW' CR	(1320)
					-NOTE-
					WAIT APPROX. 30 MINUTES BEFORE PROCEEDING
		20-003	EPL	CDR	PLACE HAND ON FOLLOWING WINDOWS, VERIFY TEMP HAS INCREASED - (209)
				01. CDR	(209)
				02. DOCKING	(209)
				03. SE	(209)
		20-004	EPL	CDR	PANEL 11, OPEN FOLLOWING CR'S (209)
				01. ROW 1 'HTR', 'WINDOWS CDR'	(209)
				02. 'WINDOWS SE'	(209)
				03. ROW 3 'HTR', 'DOCK WINDOW'	(209)
					-NOTE-
					REPORT COMPLETION TO TC (NIB).



 2350

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TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
4-5-69 2323		21-000			(EPS 154) ED SYSTEM ARMING, AND FIRING OF ASC HE PRESSURE INITIATORS
110-52 4-8-69 102-8-69		21-001	EPL	CDR EPL	PANEL 8 'ED', 'MASTER ARM' SW - 'ON' (1320) SYS A BAT RELAY OPEN GYC1115 01. VERIFY 003A5A01 E02 237 OFF 0022HE 4-8-69 SYS B BAT RELAY OPEN GYC1125 02. VERIFY 003A5A01 E03 237 OFF 0042 4-8-69
		21-002	EPL	CDR	PANEL 8 'ED', 'ASC HE PRESS' SW - 'FIRE' -ACTE- 237 REPORT COMPLETION TO TC (NIB).

Copy to
4/8/69

PROJECT APCLLC

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TIME	CH	SEC	C/C CTL	C/C STN	DESCRIPTION/INSTRUCTION
		22-000			(GN 05) G AND A TO STANDBY
		22-001	GNL	CDR	01. PANEL 4, INSERT VERB 36 ENTR
					02. PUSH 'RSET' PB
		22-002	GNL	CDR	01. INSERT VERB 41 ACUA 20 ENTR
					02. INSERT +00000 ENTR
					03. INSERT +00000 ENTR
					04. INSERT +00000 ENTR
					05. VERIFY GIMBAL LOCK - 'CN'
		22-003	GNL	CDR	01. PANEL 11 ROW 4 'PGNS', OPEN 'IMU DPR' CP
		22-004	GNL	CDR	01. PANEL 11 ROW 4 PGNS, OPEN 'LGC/DSKY' CB
			GH1		02. RECORD TIME
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

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OCP-B-900CB-LM-2

TIME	CH	SEC	C/O CTL	C/O STTM	DESCRIPTION/INSTRUCTION
2314 4-7-69					(GN 26) IML TC GYROCOMPASS
	23-001		GNL	CDR	01. PANEL 4 'GIMBAL LOCK' LT - CFF (1320)
					02. INSERT VERB 57 ENTR (1320)
					03. INSERT 00006 ENTR (1320)
					04. VERB 06 NCLN 61 FLASHING (1320)
					05. R1, +04500 (LAUNCH AZIMUTH)
					-NOTE-
					IF R1 VALUE IS CORRECT, BYPASS NEXT STEP.
	23-002		GNL	CDR	01. INSERT VERB 21 ENTR (1320)
					02. INSERT +04500 ENTR (CORRECT LAUNCH AZIMUTH) (1320)
	23-003		GNL	CDR	INSERT VERB 33 ENTR (1320)
					01. VERB 06 NCLN 61 FLASHING (1320)
					02. R1, 02586 (N.P. AZIMUTH)
					03. R2, +29553 (SITE LATITUDE)
					-NOTE-
					IF R1 IS CORRECT, BYPASS NEXT STEP
	23-004		GNL	CDR	01. INSERT VERB 21 ENTR (1320)
					02. INSERT 02586 ENTR (CORRECT NAV BASE AZIMUTH) (1320)
					-NOTE-
					IF R2 IS CORRECT, BYPASS NEXT STEP

4-7-69
(1320)

PROJECT APOLLO

DATE 04/01/69

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OCP-P-90008-LM-2

TIME	CH	SFC	C/L CTL	C/R STTN	DESCRIPTION/INSTRUCTION
7-69 316					
	23-005	GNL	CDR		01. INSERT VERB 22 ENTR 1320
					02. INSERT +29556 ENTR (CORRECT SITE LATITUDE) 1320
					03. R2, +29553 1320
	23-006	GNL	CDR		INSERT VERB 33 ENTR 1320
	23-007	GNL	GH1		CRT PAGE 17, LINE 14, MONITOR CDU ANGLES UNTIL IMU OUT OF GYRO COMPASS. RECORD VALUES EVERY FIVE MINUTES 1320
					01. RECORD TIME 2317 1320
					-NOTE-
					REPORT COMPLETION TO TC (NIB).
					1320 2317 4-7-69

-NOTE-

REPORT COMPLETION TO TC (NIB).

1320

2317
4-7-69

1345

PROJECT APCLLC

DATE 04/01/69

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DGP-B-90008-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
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24-000

(GN 31) CCARSE ALIGN IMU

24-001

GNL CDR

PANEL 4, INSERT VERB 36 ENTR

01. FLSH 'RSET' PB

24-002

GNL CDR

01. INSERT VERB 41 NCLN 20 ENTR

02. INSERT +00000 ENTR

03. INSERT +00000 ENTR

04. INSERT +00000 ENTR

-NOTE-

REPORT COMPLETION TO TC (NIB).

Complete
4/8/69
0100

PROJECT APOLLO

DATE 04/01/69

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DCP-B-90008-L-2

TIME	CH	SEC	C/C CTL	C/C STIN	DESCRIPTION/INSTRUCTION
		25-000			(GN 69) PGNS POWER DOWN
		25-001	GNL	CDR	01. PANEL 4, INSERT VERB 36 ENTR PUSH 'RSET' PB (209)
		25-002	GNL	CDR	01. INSERT VERB 41 NCUN 20 ENTR (209)
					02. INSERT +00000 ENTR (209)
					03. INSERT +00000 ENTR (209)
					04. INSERT +09.00 ENTR (209)
					05. 'GIMBAL LOCK' LT - CN (209)
			GH1		06. CDU ANGLE X/CG (209)
					VERIFY CRT PAGE 17 LINE 14 LL=358.00 LL=032.00 RECCRD 7.359.5407
					07. CDU ANGLE Y/IG (209)
					VERIFY CRT PAGE 17 LINE 14 LL=358.00 LL=032.00 RECCRD 7.359.6807
					08. CDU ANGLE Z/NG (209)
					VERIFY CRT PAGE 17 LINE 14 LL=088.00 LL=092.00 RECCRD 7.089.9107
		25-003	GNL	CDR	PANEL 11 ROW 4 'PGNS', OPEN 'IMU OPR' CB (209)
			GH1		01. RECCRD TIME ...0231 (209)
		25-004	GNL	CDR	OPEN 'LGC/DSKY' CB (209)
					01. PANEL 1 'LGC' WARN LT - CN (209)
			GH1		02. RECCRD TIME 0231 (209)
		25-005	GNL	CDR	01. PANEL 11 ROW 4 'PGNS', OPEN 'IMU STBY' CB (209)
			GH1		02. RECCRD TIME 0230 (209)
			TPC		03. VERIFY PTC SWITCHOVER (209)

ZG80875

LEFT

ZG80885

MIDDLE

ZG80895

RIGHT

(209)

(209)

(209)

(209)

(209)

(209)

(209)

(209)

(209)

PROJECT APCLLC

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

Crylit
4-8-64
0237
E200

PROJECT APCLLC

DATE 04/01/69

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CCP-B-90008-LM-2

TIME	CH	SEC	C/C CTL	C/C STIN	DESCRIPTION/INSTRUCTION
					1741
		26-000			(GN 81) IMU OPERATE TURN ON
		26-001	GNL	GH1	VERIFY THREE IX SIN SIGNALS CHAN 1, 4, AND DAMP OUT WITHIN 15 SECONDS AFTER IMU OPERATE POWER IS APPLIED. (149)
		26-002	GNL	CDR	PANEL 11 ROW 4 'FGNS', CLOSE 'IMU DPR' CB (149)
			GH1	01.	RECORD TIME 1.742
					-NOTE-
					WAIT 90 SECONDS BEFORE PROCEEDING
				02.	CDU ANGLE X/CG VERIFY CRT PAGE 17 LINE 14 LL=358.00 LL=002.00 RECORD 1.00.49. (149)
				03.	CDU ANGLE Y/IG VERIFY CRT PAGE 17 LINE 14 LL=358.00 LL=002.00 RECORD 1.00.73. (149)
				04.	CDU ANGLE Z/MG VERIFY CRT PAGE 17 LINE 14 LL=358.00 LL=002.00 RECORD 1.00.67. (149)
		26-003	GNL	CDR	PANEL 4, INSERT VERR 36 ENTR (149)
				01.	PUSH 'RSET' PB
		26-004	GNL	CDR	01. INSERT VERR 41 NCUN 27 ENTR (149)
				02.	INSERT +00000 ENTR (149)
				03.	INSERT +00000 ENTR (149)
				04.	INSERT +00000 ENTR (149)
			GH1	05.	CDU ANGLE X/CG VERIFY CRT PAGE 17 LINE 14 LL=358.00 LL=002.00 RECORD 1.35.50. (149)
				06.	CDU ANGLE Y/IG VERIFY CRT PAGE 17 LINE 14 LL=358.00 LL=002.00 RECORD 1.35.50. (149)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					07. CDL ANGLE Z/MG
					VERIFY CRT PAGE 17 LINE 14
					LL=358.00 LL=002.00
					RECORD 149
					-NOTE-
					REPORT COMPLETION TO TC (NIB).
					149 17:46 149

PROJECT APCLLC

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4-8-69
0022

TIME	CH	SEG	C/C CTL	C/F STTN	DESCRIPTION/INSTRUCTION
		27-000			(GN 85) APS BURN (MANUAL)
		27-001	SCL	CDR SH1	PANEL 1 'ENG THR CONT' 'ENG ARM' SW - 'ASC' ASC ENGINE ARM GH12305
				01. VERIFY	005A2A02 E23 209 CN
					SCS MOD SEL AUTOMATIC GH16085
				02. VERIFY	005A2A02 E01 209 CFF
					SCS MOD SEL ATT. HOLD GH16095
				03. VERIFY	005A2A02 E02 209 CN
			GH2	04. ATTITUDE HOLD MODE VERIFY 004A3A05 E21 CN	209 ZG95455
		27-002	SCL	CDR SH2	PANEL 5, PUSH 'START' PB/LT - CN 209 ASC ENGINE CN TC PROP GH12605
				01. VERIFY	005A2A02 E24 209 CN
		27-003	SCL	CDR	PUSH 'STOP' PB/LT - CN 209
				01. VERIFY 'START' PB/LT - OFF	209
		27-004	SCL	CDR SH2	PUSH 'STOP' PB/LT - CFF 209 ASC ENGINE CN TC PROP GH12605
				01. VERIFY	005A2A02 E24 209 CFF
					0024 4-8-69
					-NOTE-
					DO NOT CONTINUE UNTIL EPS 147 IS COMPLETED
					0043
		27-005	SCL	CDR SH2	PUSH 'START' PB/LT - CN 209 ASC ENGINE CN TC PROP GH12605
				01. VERIFY	005A2A02 E24 CN
		27-006	SCL	LMP	PANEL 6, PUSH 'STOP' PB/LT - CN 209

209

PROJECT APCLLC

DATE 04/01/69

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4/8/69
0044

TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
			CDR		01. PANEL 5 'START' PB/LT - CFF
			SH2		ASC ENGINE CN TO PRCP
					02. VERIFY 005A2A02 E24
					GH1265 CFF
27-007	SCL	LMP			PUSH 'STOP' PB/LT - CFF
27-008	SCL	CDR			PANEL 1 'ENG TFR CONT' 'ENG ARM' SW - 'CFF'
			SH2		ASC ENGINE ARM
					01. VERIFY 005A2A02 E23
					GH12305 CFF
			GH2		02. ENGINE ARMED
					VERIFY 004A3A05 E23 CFF
					ZG95935
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

4/8/69
0044

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

NO. AND TITLE: <u>OCP-B-90008-LM-2</u>		DATE: <u>4/11/69</u>	SHEET <u>32</u> OF
		TPS NO.	PRETEST TEST <u>POST-TEST</u>
<u>GAEC</u> <u>Carl H. Simon 4/10/69</u> <u>Robert L. Whitsett 4/11/69</u>		<u>NASA</u> <u>W.T. Mulcahy 4-11-69</u> <u>OK Sent for</u> <u>O.E.</u>	

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
35	2-13	28-001	Delete the following: "verify yellow collar visible" (LM-2 does not have yellow collar) REF ID: 90008.10	P	1329 4-11-69	

PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		28-000			(GN 87) ABORT STAGE CHECKOUT
		28-001	SCL	CDR	PUSH 'ABORT STAGE' PB, VERIFY YELLOW COLLAR VISIBLE
			SH1		ABORT STAGE COMMANDED GH12835
				01. VERIFY	005A2A02 E07 CN
				02. ABORT STAGE	
				VERIFY 004A3A05 E11	ZG95815 CN
		28-002	SCL	CDR	RESET 'ABORT STAGE' PB
			SH1		ABORT STAGE COMMANDED GH12835
				01. VERIFY	005A2A02 E07 CFF
				02. ABORT STAGE	
				VERIFY 004A3A05 E11	ZG95815 CFF
-NOTE-					
REPORT COMPLETION TO TC (NIR).					

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209

209

209

PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
14:54		29-000			(GN 95) LGC TURN ON
		29-001	GNL	CDR	IGNORE 'LGC' AND 'ISS' WARNING INDICATIONS UNTIL PANEL 4 'PSET' PB IS PUSHED (998)
		29-002	GNL	CDR	PANEL 11 ROW 4 'FGNS', CLOSE 'LGC/DSKY' CR (998)
					01. RECORD TIME 14:55 (998)
		29-003	GNL	CDR	PANEL 4, IF 'STBY' LT - ON, PUSH AND HOLD 'STBY' PB FOR APPROX 3 SECONDS, VERIFY 'STBY' LT - OFF. (998)
		29-004	GNL	CDR	INSERT VERR 36 ENTR (998)
					01. PUSH 'PSET' PB (998)
					02. VERIFY COMPUTER ALARMS CLEAR (998)
			GH2		LGC OPERATE GG1523
					03. VERIFY 004A3AC6 E02 GG15235 CN (998)
			GH1		1331 2EV3.2H GG13315
					04. VERIFY CRT PAGE 16 LINE 24 RIGHT LL=+27.5 LL=+29.7 (998)
-NOTE-					
REPORT COMPLETION TO TC (NIB).					
4/7/69 14:58 (998)					

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		30-000			(GN 103) INL OPERATIONAL TEST AND CORDA
		30-001	GNL	CDR	01. INSERT VERB 01 ACUN 17 ENTR (1320)
					02. INSERT 00003 ENTR (1320)
				GH1	03. RECCRD CRT PAGE 18 LINE 03 RIGHT R1, 0.5110 (1320)
					04. VERIFY SUFFICIENT TIME REMAINS TO COMPLETE THIS TEST. (REF FIG 1-1) (1320)
		30-002	GNL	CDR	01. INSERT VERB 57 ENTR (1320)
					02. INSERT 00004 ENTR (1320)
				GH1	03. VERIFY VERB 06 ACUN 66 FLASHING (APPROX 12 MINUTES) (1320)
					04. RECCRD R1, +0.0777. (LOCAL G WHOLE +00085) (1320)
		30-003	GNL	CDR	01. INSERT VERB 33 ENTR (1320)
				GH1	02. VERIFY VERB 06 ACUN 66 FLASHING (1320)
					03. VERIFY R1, +00000 (HORIZONTAL EARTH RATE WHOLE) (1320)
					04. RECCRD R2, +8.705% (HORIZONTAL EARTH RATE FRACTIONAL +77000 TO +97000) (1320)
		30-004	GNL	CDR	01. INSERT VERB 33 ENTR (1320)
					02. VERIFY VERB 16 ACUN 40 FLASHING (1320)
					03. INSERT VERB 34 ENTR (1320)
					04. INSERT VERB 41 ACUN 20 ENTR (1320)
					05. INSERT +00000 ENTR (1320)
					06. INSERT +00000 ENTR (1320)
					07. INSERT +00000 ENTR (1320)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
2310 4-769				GH1	08. CDU ANGLE X/CG VERIFY CRT PAGE 17 LINE 14 LL=358.00 UL=002.00 RECCRD 4.357.85 (1320) ZG80875 LEFT
				09.	CDU ANGLE Y/IG VERIFY CRT PAGE 17 LINE 14 LL=358.00 UL=002.00 RECCRD 4.359.44 (1320) ZG80885 MIDDLE
				10.	CDU ANGLE Z/MG VERIFY CRT PAGE 17 LINE 14 LL=358.00 UL=002.00 RECCRD 4.359.45 (1320) ZG80895 RIGHT
	30-005		GNL	LMP	ACT, (CCORDA) 'MARK X' PB - PUSH AND HOLD (1320)
				CDR	01. VERB 05 NCUN 31 DISPLAYED (1320)
				02.	R1, 00112 (1320)
				03.	'PRCG' LT - CN (1320)
	30-006		GNL	CDR	01. PUSH 'RSET' PB, 'PRCG' LT - OFF (1320)
				02.	INSERT VERB 11 NCUN 10 ENTR (1320)
				03.	INSERT 00016 ENTR (1320)
				04.	R1, INDICATES XXX04 (1320)
	30-007		GNL	LMP	ACT, (CCORDA) 'MARK X' PB - RELEASE (1320)
				CDR	01. R1 INDICATES XXX00 (1320)
	30-008		GNL	LMP	ACT, (CCORDA) 'MARK Y' PB - PUSH AND HOLD (1320)
				CDR	01. VERB 05 NCUN 31 DISPLAYED (1320)
				02.	R1, 00112 (1320)
				03.	'PRCG' LT - CN (1320)
	30-009		GNL	CDR	01. PUSH 'RSET' PB, 'PRCG' LT - OFF (1320)
				02.	INSERT VERB 11 NCUN 10 ENTR (1320)
				03.	INSERT 00016 ENTR (1320)

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TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
21-9-69 2312					04. R1 INDICATES XXX1 (1320)
	30-010		GNL	LMP	ACT, (CCPDA) 'MARK Y' PB - RELEASE (1320)
				CDR	01. R1, XXX00 (1320)
	30-011		GNL	LMP	ACT, (CCPDA) 'REJECT' PB - PUSH AND HOLD (1320)
				CDR	01. VERB 05 ACUN 31 DISPLAYED (1320)
					02. R1, 00112 (1320)
					03. 'PRCG' LT - CN (1320)
	30-012		GNL	CDR	01. PUSH 'RSET' PB, 'PRCG' LT - OFF (1320)
					02. INSERT VERB 11 ACUN 10 ENTR (1320)
					03. INSERT 00016 ENTR (1320)
					04. R1, XXX20 (1320)
	30-013		GNL	LMP	ACT, (CCPDA) 'REJECT' PB - RELEASE (1320)
				CDR	01. R1, XXX00 (1320)
					02. VERIFY ACT LAMP - CN (1320)
	30-014		GNL	CDR	ACT, 'INCR RETICLE BRIGHTNESS' SW - INCR TO STOP (1320)
					01. VIEW THROUGH ACT AND VERIFY RETICLE LAMP INCREASES IN BRIGHTNESS (1320)
	30-015		GNL	CDR	'INCR RETICLE BRIGHTNESS' TW - DECR TO STOP (1320)
					01. VIEW THROUGH ACT AND VERIFY RETICLE LAMP DECREASES IN BRIGHTNESS TO OFF (1320)
	30-016		GNL	CDR	ROTATE ACT THROUGH EACH DETENT AND OBSERVE THROUGH THAT FIELD OF VISION CHANGES FOR EACH DETENT (1320)
	30-017		GNL	CDR	ROTATE RETICLE CONT AND VERIFY RETICLE POSITION READOUT CHANGES AS RETICLE IS ROTATED (1320)

(1320)

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TIME	CH	SEC	C/C CTL	C/E STTN	DESCRIPTION/INSTRUCTION
					-NOTE-
					REPORT COMPLETION TO TC (NIB).
					4-7269 2314

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		31-000			(GN 107) PGNS ATTITUDE MANEUVERS (CDR)
		31-001	GAL	CDR SH1	PANEL 3, 'MODE CONTROL' SEL - 'ATT HOLD' SCS MOD SEL ATT. HOLD 01. VERIFY 005A2A02 E02 CN GH16095 SCS MOD SEL AUTOMATIC 02. VERIFY 005A2A02 E01 CFF GH16085
		31-002	CNL	CDR	01. PANEL 4 'ACA/4 JET' SW - 'ENABLE' 02. 'TTCA/TRANSL' SW - 'ENABLE'
		31-003	CNL	GH2	01. ATTITUDE HOLD MODE VERIFY 004A3A05 E21 02. ATT CUT OF DETENT VERIFY 004A3A06 E19 03. +EL/+PMI VERIFY 004A3A04 E11 04. -EL/-PMI VERIFY 004A3A04 E12 05. +YMI VERIFY 004A3A04 E13 06. -YMI VERIFY 004A3A04 E14 07. +AZ/+RMI VERIFY 004A3A04 E15 08. -AZ/-RMI VERIFY 004A3A04 E16
		31-004	GNL	CDR	(CDR), ACA YAW LEFT TO SOFT STOP AND HOLD
		31-005	CNL	GH2	01. ATT CUT OF DETENT VERIFY 004A3A05 E19

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					02. +YMI VERIFY 004A3A/4 SH1 ACA CUT CF DETENT 03. VERIFY 005A2A02 E09
					E13 ZG80525 ON GH12045
					GL1 04. R3 VERIFY CRT PAGE 18 LINE 5 RIGHT LL=00046 UL=00061
					ZG90065
					31-006 GNL CDR NEUTRAL
					GH2 01. +YMI VERIFY 004A3A04 E13
					ZG80525 OFF
					02. ATT CUT CF DETENT VERIFY 004A3A05 E19
					ZG95895 OFF SH1 ACA CUT CF DETENT 03. VERIFY 005A2A02 E09
					GH12045 OFF
					31-007 GNL CDR YAW ACA RIGHT, TO SOFT STOP AND HOLD
					31-008 GNL GH2 01. ACA CUT CF DETENT VERIFY 004A3A05 E19
					ZG95895 ON
					02. -YMI VERIFY 004A3A04 E14
					ZG80535 ON
					GH1 03. R3 VERIFY CRT PAGE 18 LINE 5 RIGHT LL=77716 UL=77731
					ZG90065
					SH1 ACA CUT CF DETENT 04. VERIFY 005A2A02 E09
					GH12045 ON
					31-009 GNL CDR NEUTRAL
					GH2 01. -YMI VERIFY 004A3A04 E14
					ZG80535 OFF
					02. ATT CUT CF DETENT VERIFY 004A3A05 E19
					ZG95895 OFF

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION		
4/7/9 2115				SH1	ACA CUT CF DETENT		GH12045
				03. VERIFY	05A2A02	E09	OFF
		31-010	GNL	CDR	ACA PITCH UP, TO SCFT STOP AND HOLD		
				GH2	01. ATT CUT CF DETENT		ZG95895
					VERIFY 004A3A05	E19	ON
					02. +EL/+PMI		ZG80505
					VERIFY 004A3A04	E11	ON
				GH1	03. R1		ZG90045
					VERIFY CRT PAGE 18 LINE 3 RIGHT		
					LL=00046 UL=00061		
				SH1	ACA CUT CF DETENT		GH12045
				04. VERIFY	005A2A02	E09	ON
		31-011	GAL	CDR	NEUTRAL		
				GH2	01. +EL/+PMI		ZG80505
					VERIFY 004A3A04	E11	OFF
					02. ATT CUT CF DETENT		ZG95895
					VERIFY 004A3A05	E19	OFF
				SH1	ACA CUT CF DETENT		GH12045
				03. VERIFY	005A2A02	E09	OFF
		31-012	GNL	CDR	PITCH DOWN, ACA FORWARD TO SCFT STOP AND HOLD		
				GH2	01. ATT CUT CF DETENT		ZG95895
					VERIFY 004A3A05	E19	ON
					02. -EL/-PMI		ZG80515
					VERIFY 004A3A04	E12	ON
				GH1	03. R1		ZG90045
					VERIFY CRT PAGE 18 LINE 3 RIGHT		
					LL=77716 UL=77731		
				SH1	ACA CUT CF DETENT		GH12045
				04. VERIFY	005A2A02	E09	ON

RECORD 24...

GH12045

ON

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TIME	CH	SEC	C/D CTL	C/D STTN	DESCRIPTION/INSTRUCTION
1119 2116		31-013	GNL	CDR	NEUTRAL
			GH2	01.	-EL/-PMI VERIFY 004A3A04 E12 ZG80515 OFF
				02.	ATT CUT CF DETENT VERIFY 004A3A05 E19 ZG95895 OFF
			SH1	03.	ACA CUT CF DETENT VERIFY 005A2A02 E09 GH12045 OFF
		31-014	GNL	CDR	MOVE ACA ROLL RIGHT TO SOFT STOP AND HOLD
			GH2	01.	ATT CUT CF DETENT VERIFY 004A3A05 E19 ZG95895 ON
				02.	+AZ/+RMI VERIFY 004A3A04 E15 ZG80545 ON
			GH1	03.	R2 VERIFY CRT PAGE 18 LINE 4 RIGHT LL=00046 UL=00061 ZG90055
			SH1	04.	ACA CUT CF DETENT VERIFY 005A2A02 E09 GH12045
		31-015	GNL	CDR	NEUTRAL
			GH2	01.	ATT CUT CF DETENT VERIFY 004A3A05 E19 ZG95895 OFF
				02.	+AZ/+RMI VERIFY 004A3A04 E15 ZG80545 OFF
			SH1	03.	ACA CUT CF DETENT VERIFY 005A2A02 E09 GH12045
		31-016	GNL	CDR	MOVE ACA ROLL LEFT TO SOFT STOP AND HOLD
			GH2	01.	ATT CUT CF DETENT VERIFY 004A3A05 E19 ZG95895 ON
				02.	-AZ/-RMI VERIFY 004A3A04 E16 ZG80555 ON

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION	
4/1/69 2117				GH1	C3. R2 VERIFY CRT PAGE 18 LINE 4 RIGHT LL=77716 UL=77731	ZG90055
				SH1	ACA CUT CF DETENT C4. VERIFY 005A2A02 E09	GH12045 CA
	31-017		GNL	CDR	NEUTRAL	
				GH2	C1. ATT CUT CF DETENT VERIFY 004A3A05	ZG95895 OFF
					C2. -AZ/-RMI VERIFY 004A3A04	ZG80555 OFF
				SH1	ACA CUT CF DETENT C3. VERIFY 005A2A02 E09	GH12045 OFF
	31-018		GNL	CDR	C1. PANEL 4 INSERT VERR 34 ENTR (TERMINATE PROGRAM)	
					C2. INSERT VERR 21 ACUN 01 ENTR	
					C3. INSERT 03636 ENTR	
					C4. INSERT 04505 ENTR	
					-NOTE-	
					REPORT COMPLETION TO TC (NIB).	

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		32-000			(GN 110) CES ATTITUDE MANEUVERS (CDR)
		32-001	SCL	CDR SH1	PANEL 1 'GUID CONT' SW - 'AGS' GUID SEL AGS MODE 01. VERIFY 005A2A02 E03 CN (209) GH16215
		32-002	SCL	CDR SH1	ACA, YAW LEFT TO SCFT STOP AND HOLD ACA CUT CF DETENT 01. VERIFY 005A2A02 E09 CN (209) GH12045
					4S 02. VERIFY 005A1A02 CHAN 05 CN (209) GH14215
					3F 03. VERIFY 005A1A02 CHAN 08 CN (209) GH14245
					2S 04. VERIFY 005A1A02 CHAN 13 CN (209) GH14295
					1F 05. VERIFY 005A1A02 CHAN 16 CN (209) GH14325
					LOGIC INPUT 06. VERIFY CRT PAGE 09 LINE 07 RIGHT LL=+12.00 UL=+LL.UU VDC (209) GH12475
		32-003	SCL	CDR SH1	NEUTRAL ACA CUT CF DETENT 01. VERIFY 005A2A02 E09 CFF (209) GH12045
					02. VERIFY ALL JETS CFF (209)
		32-004	SCL	CDR SH1	YAW RIGHT TO SCFT STOP AND HOLD ACA CUT CF DETENT 01. VERIFY 005A2A02 E09 CN (209) GH12045

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION			
41719 2128					4F			GH14215
					02. VERIFY	005A1A02	CHAN 04 CN	209
					3S			GH14255
					03. VERIFY	005A1A02	CHAN 09 CN	209
					2F			GH14285
					04. VERIFY	005A1A02	CHAN 12 CN	209
					1S			GH14335
					05. VERIFY	005A1A02	CHAN 17 CN	209
					LOGIC INPUT			GH12475
					06. VERIFY CRT	PAGE 09	LINE 07 RIGHT	209
					LL=-LL.LL	LL=-12.00	VDC	
								209
					32-005 SCL CDR	NEUTRAL		
					SH1	ACA CUT CF	DETENT	GH12045
					01. VERIFY	005A2A02	E09 CFF	209
					02. VERIFY ALL	JETS - CFF		209
					LOGIC INPUT			GH12475
					03. VERIFY CRT	PAGE 09	LINE 07 RIGHT	
					LL=-00.30	LL=+00.30	VDC	209
								209
					32-006 SCL CDR	PITCH UP TO	SOFT STOP AND HOLD	
					SH1	ACA CUT CF	DETENT	GH12045
					01. VERIFY	005A2A02	E09 CN	209
					2U			GH14265
					02. VERIFY	005A1A02	CHAN 10 CN	209
					1D			GH14315
					03. VERIFY	005A1A02	CHAN 15 CN	209

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
11/19 2124					LOGIC INPUT C4. VERIFY CRT PAGE 09 LINE 07 LEFT LL=+12.00 LL=+LU.UU VDC GH12485
		32-007	SCL	CDR SH1	NEUTRAL ACA CUT CF DETENT C1. VERIFY C05A2A02 E09 CFF GH12045
					C2. VERIFY ALL JETS - CFF
		32-008	SCL	CDR SH1	PITCH DOWN TO SCFT STOP AND HOLD ACA CUT CF DETENT C1. VERIFY C05A2A02 E09 CN GH12045
					2D C2. VERIFY C05A1A02 CHAN 11 CN GH14275
					1U C3. VERIFY C05A1A02 CHAN 14 CN GH14305
					LOGIC INPUT C4. VERIFY CRT PAGE 09 LINE 07 LEFT LL=-LL.LL UL=-12.00 VDC GH12485
		32-009	SCL	CDR SH1	NEUTRAL ACA CUT CF DETENT C1. VERIFY C05A2A02 E09 CFF GH12045
					C2. VERIFY ALL JETS - CFF
					LOGIC INPUT C3. VERIFY CRT PAGE 09 LINE 07 LEFT LL=-00.30 LL=+00.30 VDC GH12485
		32-010	SCL	CDR	ROLL RIGHT TO SCFT STOP AND HOLD



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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION			
4/1/69 2130				SH1	ACA CUT CF DETENT			GH12045
				01.	VERIFY 005A2A02	EO9	209	CN
				3U				GH14225
				02.	VERIFY 005A1A02	CHAN 06	209	CN
				2D				GH14275
				03.	VERIFY 005A1A02	CHAN 11	209	CN
					LOGIC INPUT			GH12495
				04.	VERIFY CRT PAGE 09 LINE 07 MIDDLE		209	
					LL=+12.00 LL=+00.00 VDC			
	32-011		SCL	CDR	NEUTRAL			
				SH1	ACA CUT CF DETENT		209	GH12045
				01.	VERIFY 005A2A02	EO9	209	CFF
				02.	VERIFY ALL JPTS - CFF		209	
	32-012		SCL	CDR	ROLL LEFT TO SOFT STOP AND HOLD		209	
				SH1	ACA CUT CF DETENT		209	GH12045
				01.	VERIFY 005A2A02	EO9	209	CN
				3D				GH14235
				02.	VERIFY 005A1A02	CHAN 07	209	CN
				2U				GH14265
				03.	VERIFY 005A1A02	CHAN 10	209	CN
					LOGIC INPUT			GH12495
				04.	VERIFY CRT PAGE 09 LINE 07 MIDDLE		209	
					LL=-12.00 UL=-12.00 VDC			
	32-013		SCL	CDR	NEUTRAL		209	

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TIME	CH	SEC	C/O CTL	C/C STTN	DESCRIPTION/INSTRUCTION
131				SH1	ACA CLT CF DETENT GH12045
				01. VERIFY	005A2A02 E09 CFF
					LOGIC INPUT GH12495
				02. VERIFY CRT	PAGE 09 LINE 07 MIDDLE
				LL=-00.30	LL=+00.30 VDC
					-NOTE-
					REPORT COMPLETION TO TC (NIR).
					<i>Angeli</i>
					<i>2/31</i>
					<i>4/7/9</i>

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		33-000			(GN 112) PCNS TRANSLATION MANEUVERS (CDR)
		33-001	GNL	GH2	01. +X TRANS VERIFY 004A3A04 E19 ZG80075 OFF
				02. -X TRANS VERIFY 004A3A04 E20 ZG80085 OFF	
				03. +Y TRANS VERIFY 004A3A04 E21 ZG80095 OFF	
				04. -Y TRANS VERIFY 004A3A04 E22 ZG80105 OFF	
				05. +Z TRANS VERIFY 004A3A04 E23 ZG80115 OFF	
				06. -Z TRANS VERIFY 004A3A04 E24 ZG80125 OFF	
		33-002	GNL	CDR SH2	MVUE UP TO STOP AND HOLD TRAN CM XYZ GH12405 01. VERIFY CRT PAGE 09 LINE 09 LEFT LL=+01.10 LL=+00.00 VDC
				GH2	02. +X TRANS VERIFY 004A3A04 E19 ZG80075 GN
		33-003	GNL	CDR	NEUTRAL GH12405
				GH2	01. +X TRANS VERIFY 004A3A04 E19 ZG80075 OFF
				SH2	TRAN CM XYZ 02. VERIFY CRT PAGE 09 LINE 09 LEFT LL=-00.40 LL=+00.40 VDC GH12405
		33-004	GNL	CDR GH1	MVUE DOWN TO STOP AND HOLD TRAN CM XYZ GH12405 01. VERIFY CRT PAGE 09 LINE 09 LEFT LL=-01.10 LL=-01.10 VDC

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION		
4619 2123							
				GH2	02. -X TRANS VERIFY 004A3A04	(209) E20	ZG80085 ON
		33-005	GNL	CDR	NEUTRAL	(209)	
				GH2	01. -X TRANS VERIFY 004A3A04	(209) E20	ZG80085 OFF
				GH1	TRAN CM XYZ		GH12405
					02. VERIFY CRT PAGE 09 LINE 09 LEFT LL=-00.40 LL=+00.40 VDC	(209)	
		33-006	GNL	CDR	MCMF RIGHT STOP AND HOLD	(209)	
				GH2	01. +Y TRANS VERIFY 004A3A04	E21 (209)	ZG80095 ON
		33-007	GNL	CDR	NEUTRAL	(209)	
				GH2	01. +Y TRANS VERIFY 004A3A04	E21 (209)	ZG80095 OFF
		33-008	GNL	CDR	MCMF LEFT STOP AND HOLD	(209)	
				GH2	01. -Y TRANS VERIFY 004A3A04	E22 (209)	ZG80105 ON
		33-009	GNL	CDR	NEUTRAL	(209)	
				GH2	01. -Y TRANS VERIFY 004A3A04	E22 (209)	ZG80105 OFF
		33-010	GNL	CDR	PUSH FORWARD TO STOP AND HOLD	(209)	
				GH2	01. +Z TRANS VERIFY 004A3A04	E23 (209)	ZG80115 ON
		33-011	GNL	CDR	NEUTRAL	(209)	
				GH2	01. +Z TRANS VERIFY 004A3A04	E23 (209)	ZG80115 OFF
		33-012	GNL	CDR	PULL AFT TO STOP AND HOLD	(209)	
				GH2	01. -Z TRANS VERIFY 004A3A04	E24 (209)	ZG80125 ON

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TIME	CH	SEC	C/C CTL	C/C STIN	DESCRIPTION/INSTRUCTION
		32-013	GML	OFF	NEUTRAL
			GH2	01.	-Z TRANS
					VERIFY 004A3A04
					E24
					7680125
					OFF
					-NOTE-
					REPORT COMPLETION TO TC (NIR).

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4/1/69 2132					
		34-000			(GN 115) CES TRANSLATION MANEUVERS (CDR)
					-NOTE-
					DURING THIS SEQUENCE, ALL JETS WILL BE OFF UNLESS OTHERWISE NOTED.
		34-001	SCL	CDR	01. PANEL 1, 'ENG THR CONT' 'X TRANSL' SW - '4 JETS' 209
		34-002	SCL	CDR SH1	TTCA (CDR) - MOVE UP 209
				4D	GH14195
				01. VERIFY	005A1A02 CHAN 03 CN 209
				3D	GH14235
				02. VERIFY	005A1A02 CHAN 07 CN 209
				2D	GH14275
				03. VERIFY	005A1A02 CHAN 11 CN 209
				1D	GH14315
				04. VERIFY	005A1A02 CHAN 15 CN 209
				TRAN CM XYZ	GH12405
				05. VERIFY CRT	PAGE 09 LINE 09 LEFT
				LL=+11.35	UL=+00.00 VDC 209
		34-003	SCL	CDR	TTCA, NEUTRAL 209
				SH1	01. VERIFY ALL JETS OFF 209
				TRAN CM XYZ	GH12405
				02. VERIFY CRT	PAGE 09 LINE 09 LEFT
				LL=-01.00	LL=+01.00 VDC 209
		34-004	SCL	CDR	TTCA MOVE DOWN 209

PROJECT APCLLC

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION			
				SH1	4L			GH14185
				01.	VERIFY	005A1A02	CHAN 02 CN	(209)
					3U			GH14225
				02.	VERIFY	005A1A02	CHAN 06 CN	(209)
					2U			GH14265
				03.	VERIFY	005A1A02	CHAN 10 CN	(209)
					1U			GH14305
				04.	VERIFY	005A1A02	CHAN 14 CN	(209)
					TRAN CM XYZ			GH12405
				05.	VERIFY CRT	PAGE 09	LINE 09 LEFT	(209)
					LL=-LL.LL	LL=-11.35	VDC	(209)
	34-005		SCL	CDR	PANEL 1 'ENG THR CCNT'	'BAL CPL' SW	'OFF'	(209)
				SH1	01.	VERIFY ALL JETS - CFF		(209)
	34-006		SCL	CDR	'ENG THR CCNT'	'BAL CPL' SW -	'CN'	(209)
	34-007		SCL	CDR	PANEL 1 'ENG THR CCNT'	'X-TRANSL' SW	'2 JETS'	(209)
				SH1	1U			GH14305
				01.	VERIFY	005A1A02	CHAN 14 CN	(209)
					3U			GH14225
				02.	VERIFY	005A1A02	CHAN 06 CN	(209)
					TRAN CM XYZ			GH12405
				03.	VERIFY CRT	PAGE 09	LINE 09 LEFT	(209)
					LL=-LL.LL	LL=-11.35	VDC	(209)
	34-008		SCL	CDR	TTCA, NEUTRAL			(209)
	34-009		SCL	CDR	TTCA, MOVE LF			(209)



(209)

PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTA	DESCRIPTION/INSTRUCTION
				SH1	1D GH14315
				01. VERIFY	005A1A02 CHAN 15 CN (209)
				3D	GH14235
				02. VERIFY	005A1A02 CHAN 07 CN (209)
				TRAN CM XYZ	GH12405
				03. VERIFY CRT	PAGE 09 LINE 09 LEFT (209)
				LL=+11.35	LL=+LL.UU VDC
	34-010		SCL	CDR	NEUTRAL (209)
	34-011		TE	CDR	PANEL 1 'ENG THR CONT' 'X-TRANSL' SW - '4 JETS' (209)
				SH1	01. VERIFY ALL JETS - CFF (209)
	34-012		SCL	CDR	TTCA, MOVE RIGHT
				SH1	2S
				01. VERIFY	005A1A02 CHAN 13 CN (209)
				1S	GH14295
				02. VERIFY	005A1A02 CHAN 17 CN (209)
	34-013		SCL	CDR	NEUTRAL (209)
				SH1	01. VERIFY ALL JETS - CFF (209)
	34-014		SCL	CDR	MVVE LEFT
				SH1	4S
				01. VERIFY	005A1A02 CHAN 05 CN (209)
				3S	GH14215
				02. VERIFY	005A1A02 CHAN 09 CN (209)
	34-015		SCL	CDR	NEUTRAL (209)
				SH1	01. VERIFY ALL JETS - CFF (209)
	34-016		SCL	CDR	PUSH FORWARD (209)

PROJECT AFCLLC

DATE 34/01/69

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DCP-B-9008-LM-2

TIME	CH	SEQ	C/C CIL	C/C STIN	DESCRIPTION/INSTRUCTION			
4/7/9 2136				SH1	3F			GH14245
					01. VERIFY	005A1A02	CHAN 08 CN	209
					2F			GH14285
					02. VERIFY	005A1A02	CHAN 12 CN	209
		34-017	SCL	CDR	NEUTRAL			209
				SH1	01. VERIFY ALL JETS - CFF			209
		34-018	SCL	CDR	PULL AFT			
				SH1	4F			GH14205
					01. VERIFY	005A1A02	CHAN 04 CN	209
					1F			GH14325
					02. VERIFY	005A1A02	CHAN 16 CN	209
		34-019	SCL	CDR	NEUTRAL			209
				SH1	01. VERIFY ALL JETS - CFF			209
					-NOTE-			
					REPORT COMPLETION TO TC (NIB).			

Completed
4/7/69
2136

209

209

PROJECT APOLLO

DATE 14/01/69

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TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
15:39		35-000			(GN 141) RNDZ RADAR TEST
		35-001	SCL	COO	01. ENSURE ANTENNA NOT OBSTRUCTED AND IS FREE TO MOVE (998)
				COO	02. RELEASE STCW CLAMP MANUALLY POSITION ANTENNA TO 0 DEG TRUN 0 DEG SHAFT (998)
		35-002	SCL	CDR	01. PANEL 1 'RNG/ALT MCN' SW - 'RNG/RNG RT' (998)
				SH1	02. 'RATE/ERR MCN' SW - 'RNDZ RADAR' (998) GUID SEL AGS MODE GH16215
					03. VERIFY 005A2A72 E03 CFF (998)
		35-003	SCL	LMP	01. PANEL 2 'RATE/ERR MCN' SW - 'RNDZ RADAR' (998)
					02. PANEL 3 'HTR CNT' 'TEMP MONITOR' SEL - 'RADAR RNDZ' (998)
					03. RNDZ RADAR SEL - 'SLEW' (998)
					04. 'X-PCINTER SCALE' SW - 'HI MULT' (998)
				CDR	05. PANEL 3, 'X-PCINTER SCALE' SW - 'HI MULT' (998)
		35-004	SCL	CDR	PANEL 11 CLOSE FOLLOWING CB'S
					01. ROW 1 'PGNS' 'RNDZ RDR' (LL 62) 18:41 (998)
					02. ROW 4 'PGNS' 'RNDZ RDR' (LL 140) 18:41 (998)
		35-005	SCL	CDR	01. PANEL 4 INSERT VERB 36 ENTR (998)
					02. PUSH 'RSET' PB (998)
					03. PROGRAM ALARM MAY COME ON DURING NEXT STEP DISREGARD (998)
		35-006	SCL	CDR	01. INSERT VERB 40 MCUN 40 ENTR (998)

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OPD NO. AND TITLE:	<u>SCL</u>	DATE: <u>4-7-69</u>	SHEET <u>23</u> OF
<u>OCP-B-90008-1M-2</u>	TPS NO.	PRETEST <u>TEST</u> POST-TI	
<u>GAEC</u> <u>Walter F. Brulds</u> <u>A. Massey</u>		<u>NASA</u> <u>W. T. Mulcahey</u> 4/8/69 <u>QTH First 4-8-69</u> <u>for O.E.</u>	

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/PERM	GAEC	NASA
26	2-97	35-009	FIRST LINE, CHANGE "DIGITAL" TO "FLUKE" (EQUIPMENT NOT AVAILABLE)	T	209 4-7-69	



R. Dintamake 4/10/69

R. Sweet 4/10/69

Earl Calver 4/10/69

for L.R. Dickson

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCN NO. AND TITLE:

OCN-B-90008 LM-2

DATE: 10 April 69

SHEET 31 OF

TPS NO:

PRETEST

TEST

POST-TEST

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM.	GAEC	NASA
34	2-97	35-008	ADD AT BEGINNING OF S/S 03 'USING VOM, VERIFY' (MATCH BASELINE METHOD of OCN 90006)	P	149 4/10/69	

PROJECT APCLLC

DATE 04/01/69

PAGE 2-97
DCP-B-9108-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					2. PUSH 'RESET' PB, 'PROG' LT - OFF 998
	35-007		SCL	CCR	PANEL 3 'RADAR', MODE SEL - 'LCC' 998
	35-008		SCL	CCC	RNDZ RDR BCB J1 (RED), USING VTVM VERIFY FOLLOWING AC RMS VOLTAGES
					01. 28V 800HZ +/- 2V RMS PIN 16 HI PIN 17 LC RECORD ...28... 998 GN7686
					02. 15V 400HZ +/- 2PCT PIN 31 HI PIN 33 LC RECORD ...15.2... 998 GN7655
					03. 20V 400HZ +/- 2V RMS PIN 32 HI PIN 33 LC RECORD ...22.2... 998 GN7656
					04. PANEL 3 'RADAR', MODE SEL - 'SLOW' 998
					05. 15V 800 HZ +/- 4 PCT PIN 16 HI PIN 17 LC RECORD ...14.87... 998 GN7686
	35-009		SCL	CCC	RNDZ RDR BCB J1 (RED) USING DIGITAL VOLTMETER VERIFY FOLLOWING DC VOLTAGES
					01. +25 VDC (SSC) +/- 4 PCT PIN 41 HI PIN 22 LC RECORD ...25.97... 998 GN7631
					02. +25 VDC +/- 2 PCT PIN 42 HI PIN 22 LC RECORD ...25.01... 998 GN 7630
					03. +12 VDC +/- 2 PCT PIN 43 HI PIN 22 LC RECORD ...12.04... 998 GN7629
					04. -12 VDC +/- 2 PCT PIN 44 HI PIN 22 LC RECORD ...11.98... 998 GN7620
					05. +6.0 VDC +/- 2 PCT PIN 45 HI PIN 22 LC RECORD ...6.01... 998 GN7619
					06. +4.3 VDC +/- 2 PCT PIN 46 HI PIN 22 LC RECORD ...4.34... 998 GN7618
	35-010		SCL	CCC	01. RNDZ RDR BCB DISCONNECT LDW 410-2586-7 P2/J202 OF RREA 998
					02. INSTALL DUST CAP CN J202 RREA 998

Dev.
No.

Q1M

1345

PROJECT APOLLO

DATE 04/01/69

PAGE 2-98
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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		35-011	SCL	CDR	PANEL 3 'RADAR' 'NO TRACK' LT - CN (998)
					01. PANEL 4, INSERT VERR 45 ENTR (998)
					02. INSERT 00000 ENTR (998)
			SP1		03. RR DATA NO GOOD VERIFY 013A3A02 E18 ZG95205 ON (998)
		35-012	SCL	CDR	PANEL 3 'TEST MONITOR' SEL - 'RNDZ RADAR XMTR POWER' (998)
					01. RECORD 'SIGNAL STRENGTH' METER INDICATION 3.9 (998) LL= 1.0 UL= 5.0
		35-013	SCL	CDR	01. PANEL 4 INSERT VERR 36 ENTR (998) ✓
					02. PLSH 'RSET' PR (998) ✓
					03. INSERT VERR 21 NCUN 01 ENTR (998) ✓
					04. INSERT 00045 ENTR (998) ✓
					05. INSERT 00000 ENTR (998) ✓
					06. PLSH 'RSET' PR (998) ✓
		35-014	SCL	CDR	PANEL 3 RNDZ RADAR SEL - 'LGC' (998) ✓
					01. PANEL 4 INSERT VERR 36 ENTR (998) ✓
					02. PUSH 'RSET' PR (998) ✓
		35-015	SCL	CDR	01. PANEL 4 INSERT VERR 40 NCUN 40 ENTR (998) ✓
					02. INSERT VERR 41 NCUN 41 ENTR (998) ✓
					03. INSERT +00000 ENTR (998) ✓
					04. INSERT +00000 ENTR (998) ✓
		35-016	SCL	CDR	INSERT VERR 34 ENTR (998) ✓
					01. RR ALTC VERIFY 013A3A02 E02 ZG95015 ON (998)



PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION	
					C2. RR ERROR CTR ENA VERIFY 013A3A02 E04	ZG95035 CN (998)
					C3. DESIGNATE VERIFY 013A3A02 E21	ZG95235 CN
					C4. CONTINUOUS DESIGNATE VERIFY 013A3A02 E22	ZG95245 CN (998)
					C5. WAIT 45 SECONDS	
			SH1		C6. RR TRUNNICK CDL ANGLE VERIFY CRT PAGE 15 LINE 17 LL= +359.70 UL= +000.30	ZG80265 RIGHT RECORD +359.70 (998)
					C7. PR SHAFT CDL ANGLE VERIFY CRT PAGE 15 LINE 17 LL= +359.70 UL= 000.30	ZG80255 LEFT RECORD +000.00 (998)
			CDR		C8. PANEL 1 FDAI RECORD PITCH INDICATION	0 (998)
					C9. RECORD YAW INDICATION	0 (998)
	35-C17		SCL	CDR	PANEL 4 INSERT VERB 36 ENTR	(998)
					C1. PLSH 'RSET' PB	(998)
	35-C18		SCL	CDR	C1. INSERT VERB 41 ACUN 40 ENTR	(998)
					C2. INSERT -C1000 ENTR	(998)
					C3. INSERT -C1000 ENTR	(998)
	35-C19		SCL	CDR	INSERT VERB 34 ENTR	(998)
					C1. WAIT 45 SECONDS	
			SH1		C2. PR TRUNNICK CDL ANGLE VERIFY CRT PAGE 15 LINE 17 LL= +349.70 UL= +350.30	ZG80265 RIGHT RECORD +349.70 (998)
					C3. PR SHAFT CDL ANGLE VERIFY CRT PAGE 15 LINE 17 LL= +349.70 UL= +350.30	ZG80255 LEFT RECORD +350.00 (998)
			LMP		C4. PANEL 2 FDAI, RECORD PITCH INDICATION	2 (998)



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PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/O CTL	C/O STN	DESCRIPTION/INSTRUCTION	
					05. RECORD YAW INDICATION <i>2 RT</i> (998) ✓	
	35-020		SCL	CDR	PANEL 4 INSERT VERB 36 ENTR (998) ✓	
					01. PUSH 'RSET' PB (998) ✓	
	35-021		SCL	CDR	01. INSERT VERB 41 NCUN 40 ENTR (998) ✓	
					02. INSERT +00000 ENTR (998) ✓	
					03. INSERT +00000 ENTR (998) ✓	
	35-022		SCL	CDR	INSERT VERB 34 ENTR (998) ✓	
					01. WAIT 45 SECONDS ✓	
			SH1		02. RE TRANSMICN CDU ANGLE VERIFY CRT PAGE 15 LINE 17 LL = +359.70 LL = +000.30 RECORD <i>4.35.9.94</i> (998) ✓	ZG80265 RIGHT
					03. PR SHAFT CDU ANGLE VERIFY CRT PAGE 15 LINE 17 LL = +359.70 LL = +000.30 RECORD <i>7.00.02</i> (998) ✓	ZG80255 LEFT
			LMP		04. PANEL 2 FDAI RECORD PITCH INDICATION <i>0.0.0.0</i> (998) ✓	
					05. RECORD YAW INDICATION <i>0.0.0.0</i> (998) ✓	
	35-023		SCL	CDR	INSERT VERB 36 ENTR (998) ✓	
					01. PUSH 'RSET' PB (998) ✓	
	35-024		SCL	CDR	01. INSERT VERB 41 NCUN 20 ENTR (998) ✓	
					02. INSERT +00000 ENTR (998) ✓	
					03. INSERT +00000 ENTR (998) ✓	
					04. INSERT +00000 ENTR (998) ✓	
			GH1		05. CDU ANGLE X/OG VERIFY CRT PAGE 17 LINE 14 LL = +358.00 LL = +002.00 RECORD <i>7.3.7.94</i> (998) ✓	ZG80375 LEFT
					06. CDU ANGLE Y/IG VERIFY CRT PAGE 17 LINE 14	ZG80885 MIDDLE



5481

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

NO. AND TITLE: <u>500</u> <u>00P-B-90008-LM-2</u>	DATE: <u>4-7-69</u>	SHEET <u>26</u> OF <u> </u>
GAEC <u>Walter F. Bowlds</u> <u>Robert H. Whitcomb 4/7/69</u>		TPS NO. <u> </u> PRETEST <u>TEST</u> POST-TEST <u> </u> NASA <u>W.T. Mulcahey 4/8/69</u> <u>G.H. Frost 4/8/69</u> <u>for O.E.</u>

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
29	2-101	35-030	ADD S/S 02. "PANEL R, RECORD X-POINTER 'ELU RT' INDICATION BETWEEN 10 AND 40 MR. 20" (PROCEDURAL ERROR)	P	207 4-9-69	

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					LL= +358.00 LL= +002.00 RECCRD <i>359.69</i>
					07. CDU ANGLE 2/MG ZG80895
					VERIFY CRT PAGE 17 LINE 14 RIGHT
					LL= +358.00 LL= +002.00 RECCRD <i>359.94</i>
					-NOTE-
					READ FOLLOWING TIMED STEPS BEFORE PERFORM-
					ING. RR SHAFT AND TRUNNION DRIFT RATES
					SHOULD NOT EXCEED 8 DEG MAX.
00.00					
	35-025		SCL	SH1	01. RR TRUNNION CDU ANGLE ZG80265
					RECCRD CRT PAGE 15 LINE 17 RECCRD <i>357.04</i>
					02. RR SHAFT CDU ANGLE ZG80255
					RECCRD CRT PAGE 15 LINE 17 RECCRD <i>357.14</i>
00.01					
	35-026		SCL	SH1	01. RR TRUNNION CDU ANGLE ZG80265
					RECCRD CRT PAGE 15 LINE 17 RECCRD <i>357.14</i>
					02. RR SHAFT CDU ANGLE ZG80255
					RECCRD CRT PAGE 15 LINE 17 RECCRD <i>357.14</i>
	35-027		SCL	CCC	MONITOR RRAA. REPORT 'STOP' WHEN RRAA REACHES
					FULL TRAVEL
	35-028		SCL	CDR	PANEL 2 RNDZ RADAR SEL - 'SLEW' <i>998</i>
	35-029		SCL	CDR	SET AND HOLD 'RADAR' 'SLEW' SW - 'UP' UNTIL
					CCC REPORTS 'STOP' <i>998</i>
					01. PANEL 1, RECCRD X-PCINTER
					'ELEV RT' INDICATION BETWEEN 10 AND 40 MR <i>998</i>
			LMP		02. PANEL 2, RECCRD X-PCINTER 'ELEV RT'
					INDICATION BETWEEN 10 AND 40 MR <i>20998</i>
	35-030		SCL	CDR	PANEL 3 SET AND HOLD 'RADAR' 'SLEW' SW
					'DOWN' UNTIL CCC REPORTS 'STOP' <i>998</i>
					01. PANEL 1, RECCRD X-PCINTER 'ELEV RT'
					INDICATION BETWEEN 10 AND 40 MR <i>20998</i>
					02. <i>MANUALLY POSITION RNDZ RDR ANTENNA TO 0 DEG</i>
	35-031		SCL	CCC	

Dev.
No. 124

209

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DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					SHAFT AND 0 DEG TURN INDICATION BETWEEN 10 AND 40 MR 20° (209) <i>20°</i>
1/7/69 1918		35-032	SCL	CDR	PANEL 3, SET AND HOLD 'RADAR' 'SLEW' SW - 'RIGHT' UNTIL CCC REPORTS 'STOP' (209)
					01. PANEL 1, RECORD X-POINTER 'AZ RT' INDICATION BETWEEN 10 AND 40 MR ... 20° (209)
			LMP		02. PANEL 2 RECORD X-POINTER 'AZ RT' INDICATION BETWEEN 10 AND 40 MR ... 20° (209)
		35-032	SCL	CDR	PANEL 3, SET AND HOLD 'RADAR' 'SLEW' SW - 'LEFT' UNTIL CCC REPORTS 'STOP' (209)
					01. PANEL 1, RECORD X-POINTER 'AZ RT' INDICATION BETWEEN 10 AND 40 MR ... 20° (209)
			LMP		02. PANEL 2, RECORD X-POINTER 'AZ RT' INDICATION BETWEEN 10 AND 40 MR ... 20° (209)
		35-034	SCL	CDR	01. PANEL 3, RELEASE 'RADAR' 'SLEW' SW (209)
					02. 'RADAR' 'SLEW RATE' SW - 'LC' (209)
		35-035	SCL	CCC	MANUALLY POSITION BRAA TO APPROX 0 DEG SHAFT 0 DEG TURN (209)
		35-036	SCL	CDR	PANEL 3, SET AND HOLD 'RADAR' 'SLEW' SW - 'UP' (209)
					01. PANEL 1, RECORD X-POINTER 'ELEV RT' INDICATION BETWEEN 1 AND 4 MR ... 3° (209)
			LMP		02. PANEL 2 RECORD X-POINTER 'ELEV RT' INDICATION BETWEEN 1 AND 4 MR ... 3° (209)
		35-037	SCL	CDR	PANEL 3, SET AND HOLD 'RADAR' 'SLEW' SW 'DOWN' (209)
					01. PANEL 1, RECORD X-POINTER 'ELEV RT' INDICATION BETWEEN 1 AND 4 MR ... 3° (209)
			LMP		02. PANEL 2 RECORD X-POINTER 'ELEV RT' INDICATION BETWEEN 1 AND 4 MR ... 3° (209)
		35-038	SCL	CDR	PANEL 3, SET AND HOLD 'RADAR' 'SLEW' SW 'RIGHT' (209)

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

NO. AND TITLE: <u>OCB-90008-LM-2</u>	<u>SCL</u>	DATE: <u>4-7-69</u>	SHEET <u>27</u> OF
	TPS NO.	PRETEST	<u>TEST</u> POST-TEST
<u>GAEC</u> <u>Walter Z. Bowlds</u> <u>Robert K. Whitat 4/7/69</u>		<u>NASA</u> <u>W.T. Mulcahy 4/8/69</u> <u>AST. Fort 4-8-69</u> <u>for O.E.</u>	

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/PERM	GAEC	NASA
30	2-102	35-031	DELETE "INDICATION BETWEEN 10 AND 40 MR" (PROCEDURAL ERROR)	P	 4-7-69 	

PROJECT APCLLC

DATE 14/01/69

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TIME	CH	SEC	C/O CTL	C/O STTA	DESCRIPTION/INSTRUCTION
4/1/8 1936					
					01. PANEL 1, RECORD X-POINTER 'AZ RT' INDICATION BETWEEN 1 AND 4 NR <u>.3.DIV..Rgt</u> (209)
			LMP		02. PANEL 2 RECORD X-POINTER 'AZ RT' INDICATION BETWEEN 1 AND 4 NR <u>.3.DIV..Rgt</u> (209)
	35-039		SCL	CDR	PANEL 3, SET AND HOLD 'RADAR' 'SLEW' SW 'LEFT' (209)
					01. PANEL 1, RECORD X-POINTER 'AZ RT' INDICATION BETWEEN 1 AND 4 NR <u>.3.DIV..LFT</u> (209)
			LMP		02. PANEL 2 RECORD X-POINTER 'AZ RT' INDICATION BETWEEN 1 AND 4 NR <u>.3.DIV..LFT</u> (209)
			CDR		03. PANEL 3, RELEASE 'RADAR' 'SLEW' SW (209)
					04. PANEL 3 RNDZ RADAR SEL 'AUTO TRACK' (209)
	35-040		SCL	CDR	'RADAR' 'RADAR TEST' SW - 'RNDZ' (209)
					01. VERIFY 'NO TRACK' LT - OFF (AFTER APPROX 10 SECONDS) (209)
	35-041		SCL	CDR	01. PANEL 11 ROW 1 'FLT DISP', CLOSE 'RNG/RNG RT ALT/ALT RT' CR (209)
					02. ROW 3 'FLT DISP', CLOSE 'RNG/RNG RT ALT/ALT RT' CR (209)
	35-042		SCL	CDR	PANEL 3 'RADAR' 'TEST MONITOR' SEL - 'RNDZ RADAR' 'AGC' (209)
					01. RECORD 'SIGNAL STRENGTH' INDICATION BETWEEN 0.7 AND 3.0 VDC ... <u>1.05</u> ... (209) -NOTE-
					FOLLOWING SIGNAL STRENGTH INDICATIONS CYCLE ONCE PER SEC, RECORD HIGH AND LOW VALUES
	35-043		SCL	CDR	PANEL 3 'RADAR' 'TEST MONITOR' SEL - 'RNDZ RADAR' 'SHAFT ERR' (209)
					01. RECORD 'SIGNAL STRENGTH' INDICATION BETWEEN

PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
1-7-9 1952					0.9 AND 4.5 VDC LC <u>2.6</u> HI <u>2.2</u>
	35-044		SCL	CDR	'TEST MONITOR' SEL - 'RNDZ RADAR' 'TRUN ERR' <u>209</u>
					01. RECORD 'SIGNAL STRENGTH' INDICATION BETWEEN 0.9 AND 4.5 VDC LC <u>2.1</u> HI <u>2.8</u> <u>209</u>
	35-045		SCL	CDR	PROGRAM ALARM MAY COME ON DURING NEXT STEP <u>209</u>
	35-046		SCL	CDR	PANFL 4 INSERT VERB 40 NCUN 40 ENTR <u>209</u>
					01. PUSH 'RSET' FB <u>209</u>
					02. 'PRCG' LT - OFF <u>209</u>
	35-047		SCL	CDR	01. INSERT VERB 24 NCUN 01 ENTR <u>209</u>
					02. INSERT 00053 ENTR <u>209</u>
					03. INSERT 00000 ENTR <u>209</u>
					04. INSERT 00000 ENTR <u>209</u>
					05. INSERT VERB 46 ENTR <u>209</u>
					06. INSERT 00000 ENTR <u>209</u>
	35-048		SCL	CDR	INSERT VERB 16 NCUN 62 ENTR <u>209</u>
					01. RECORD R1 INDICATES BETWEEN +17092 AND +21092 <u>1345</u>
	35-049		SCL	CDR	INSERT VERB 16 NCUN 63 ENTR <u>209</u>
					01. RECORD R1 INDICATES BETWEEN +00465 AND +00505 <u>1345</u>
			GNL		02. RR PANGE VERIFY 013A3A02 E07 <u>209</u> ZG83005 CN
					03. RR PANGE RATE VERIFY 013A3A02 E08 <u>209</u> ZG80155 CN
	35-050		SCL	CDR	01. INSERT VERB 34 ENTR <u>209</u>
					02. INSERT VERB 21 NCUN 01 ENTR <u>209</u>

PROJECT APCLLC

DATE 14/01/69

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2005

TIME	CH	SFC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
					03. INSERT 03435 ENTR <u>200</u>
					04. INSERT 00000 ENTR <u>200</u>
		35-051	SCL	CDR	01. PANEL 1 VERIFY 'RANGE' INDICATES BETWEEN 191 AND 201 NMI 195-5 <u>200</u>
					02. VERIFY 'RANGE RATE' INDICATES BETWEEN -465 AND -505 FPS (BLACK ON WHITE) 483.5 <u>200</u>
		35-052	SCL	CDR	01. PANEL 11 ROW 1 'FLT DISP', OPEN 'RNG/RNG RT ALT/ALT RT' CB <u>200</u>
					02. ROW 3 'FLT DISP', OPEN 'RNG/RNG RT ALT/ALT RT' CB <u>200</u>
		35-053	SCL	CDR	01. PANEL 3 'RADAR' 'RADAR TEST' SW - 'OFF' <u>200</u>
			SH1		02. RECORD TIME 2006
			CDR		03. RNDZ RADAR SEL - 'SLEW' <u>200</u>
					04. 'NC TRACK' LT - ON <u>200</u>
			LMP		05. PANEL 2 'RNDZ RDR' CAUT LT - OFF <u>200</u>
		35-054	SCL	CDR	01. PANEL 11 ROW 1 'PGNS', OPEN 'RNDZ RDR' CB (LL62) 20:07 <u>200</u>
					02. ROW 3 'HTR', OPEN 'RNDZ RDR CDR' CB <u>200</u>
					03. ROW 4 'PGNS', OPEN 'RNDZ RDR' CB (LL 140) 20:07 <u>200</u>
					04. PANEL 3 'NC TRACK' LT - OFF
		35-055	SCL	CCC	STCW RNDZ RDR ANTENNA <u>200</u>
					-NOTE-
					REPORT COMPLETION TO TC (NIP).

Appld
20:09
200

PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4-7-4 2141		36-000			(GN 142) RGA CHECKOUT -NOTE- DURING THIS SEQUENCE, ALL JETS WILL BE OFF UNLESS OTHERWISE NOTED. THE RGA SMRD READ- INGS WILL BE MADE USING A FREQUENCY COUNTER ON THE DESIGNATED POINTS OF THE RGA BOB (LSK417-1040-7)
		36-001	SCL	CDR	01. PANEL 1 ATTITUDE MCN SW - 'AGS' (209) 02. 'RATE/ERR MCN' SW - 'LDG RCR/CMPTN' (209) LMP 03. PANEL 2 'ATTITUDE MCN' SW - 'AGS' (209) SH2 04. 'RATE/ERR MCN' SW 'LDG RCR/CMPTN' DEADBND SEL WIDE GH16035 05. VERIFY 005A2A02 E08 CFF (209) GUID SEL AGS MCDE GH16215 06. VERIFY 005A2A02 E03 ON (209)
2221		36-002	SCL	COG	RGA BOB, RECORD FOLLOWING RGA SMRD INDICATIONS (209) (REF STEP GN1) 01. ROLL X AND E 000 1200 (209) 02. PITCH $\bar{g}$ AND E 000 1200 (209) 03. YAW U AND E 11.91 (209)
		36-003	SCL	CDR	PANEL 11 ROW 2 'S/C', OPEN 'ATCA (PGNS) CB' (209) -NOTE- READ NEXT TWO STEPS BEFORE PROCEEDING
		36-004	SCL	LMP SH1	ON MY 'MARK', PERFORM FOLLOWING (209)

 Dev.
 32
 No.

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

CCP NO. AND TITLE:	SCC	DATE: 4-7-69	SHEET 29 OF
00P-B-90008-LM-2	TPS NO.	PRETEST	TEST POST-TL
<u>GAEC</u> <u>George O. Sully 4/7/69</u> <u>Robert K. Whitcomb 4/7/69</u>		<u>NASA</u> <u>W.T. Mulcahey 4/8/69</u> <u>QJ. Frost 4-8-69</u> <u>for O.E.</u>	

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
32	2-106	36-002	CHANGE S/502 to read 'PITCH g AND E _____'	P	4-7-69	

PROJECT APCLLC

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4-7-9				CCC	
22				LMP	01. PANEL 16 ROW 1 'S/C', OPEN 'ATCA' CB (LL13)
2236:00				SH1	02. RECORD TIME 22:36:00
				CCC	03. OBSERVE RGA SMRD ROLL, BCR PINS X AND E
				SCL	04. 5,4,3,2,1 - 'MARK'
2236:13		36-005	SCL	CCC	WHEN COUNTER READING DECREASES FROM 1600 TO 400 PPS, STATE 'MARK 1'
				SH1	01. ON 'MARK 1', RECORD TIME 22:36:13
					-NOTE-
					READ NEXT TWO STEPS BEFORE PROCEEDING
		36-006	SCL	LMP	ON MY 'MARK' PERFORM FOLLOWING
				SH1	
				CCC	
				LMP	01. PANEL 16 ROW 1 'S/C', CLOSE 'ATCA' CB (LL13)
				SH1	02. RECORD TIME 22:37:30
				CCC	03. OBSERVE RGA SMRD ROLL, BCR PINS X AND E
				SCL	04. 5,4,3,2,1 - 'MARK'
					-NOTE-
					DURING FOLLOWING, RGA RUN UP TIME SHOULD NOT EXCEED 25 SECONDS.
		36-007	SCL	CCC	WHEN COUNTER READING INCREASES TO NORMAL VALUE RECORDED IN REFERENCE STEP GN1 STATE 'MARK 1'
				SH1	01. ON 'MARK 1', RECORD TIME 22:38:00
		36-008	SCL	LMP	01. PANEL 16 ROW 1 'S/C', OPEN 'ATCA' CB (LL13)

ON DR 390.16
READING
OR FOR
9 & E = 11.5 sec
X & E = 11.5 sec
U & E = 13.5 sec
H32K9
102.11
OFFICE TO
DR 390.16

2239 209

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DCP-8-90208-LM-2

TIME	CH	SEC	C/C CTL	C/C STTA	DESCRIPTION/INSTRUCTION
17/64 2239					02. OPEN 'ATCA (AGS)' CB (209)
		36-009	SCL	CCC	DISCONNECT RGA PCB, AND MATE P/J 704 (209)
		36-010	SCL	LMP	01. PANEL 16 PCW 1 'S/C', CLOSE 'ATCA' CB (LL13) (209) 22 43
					02. CLOSE 'ATCA (AGS)' CB (209)
				CDR	03. PANEL 11 PCW 2 'S/C', CLOSE 'ATCA (PGNS)' CB (209)
		36-011	SCL	SH2	START 005A1A02 AT 5 MM/SEC (1320)
		36-012	SCL	SH2	RECORDER 005A3A02 SET SW'S AS FOLLOWS (1320)
					CHAN POSITION MEASUREMENTS
				01.	1 1 PITCH (GH13135)
				02.	2 1 ROLL (GH13145)
				03.	3 1 YAW LOGIC (GH12475)
				04.	4 1 PITCH LOGIC (GH12485)
				05.	5 1 ROLL LOGIC (GH12495)
				06.	6 2 RGA YAW (GH14615)
				07.	7 2 RGA PITCH (GH14625)
				08.	8 2 RGA ROLL (GH14635)
		36-013	SCL	SH2	01. START 005A3A05 AT 5 MM/SEC (1320)
					02. START 005A1A04 AT 5 MM/SEC (1320)
					03. ANNOTATE RECORDERS 005A1A02, 005A3A05, AND 005A1A04 (1320)
		36-014	SCL	CDR	01. PANEL 3 'S/C' 'GYRO TEST ROLL' SW - 'PITCH' (1320)
					02. SET AND FOLD 'GYRO TEST PCS RT' SW - 'PCS RT' (1320)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
1-7-69 2247		36-015	SCL	CDR	11. FDAI RECCRD 'PITCH RATE' INDICATION 1320
			LMP		12. FDAI RECCRD 'PITCH RATE' INDICATION 1320
			SH1		RGA ERROR GH14625
					13. VERIFY CRT PAGE 09 LINE 05 LEFT 1320
					LL=+00.61 LL=+00.79 VRMS
			SH2		20 GH14275
					14. VERIFY 005A1A02 CHAN 11 CN 1320
					1L GH14305
					15. VERIFY 005A1A02 CHAN 14 CN 1320
		36-016	SCL	CDR	PANEL 3 'GYRO TEST PCS RT' SW - 'OFF' 1320
			SH1		RGA ERROR GH14625
					11. VERIFY CRT PAGE 09 LINE 05 LEFT 1320
					LL=-00.08 LL=+00.08 VRMS
			SH2		12. 005A1A02, VERIFY ALL JETS - OFF 1320
		36-017	SCL	CDR	PANEL 3 SET AND HOLD 'GYRO TEST PCS RT' SW 1320
					'NEG RT'
					11. PANEL 1 FDAI RECCRD 'PITCH RATE' INDICATION 1320
			LMP		12. PANEL 2 FDAI RECCRD 'PITCH RATE' INDICATION 1320
			SH1		RGA ERROR GH14625
					13. VERIFY CRT PAGE 09 LINE 05 LEFT 1320
					LL=-00.79 UL=-00.61 VRMS
			SH2		20 GH14265
					14. VERIFY 005A1A02 CHAN 15 CN 1320
					1D GH14315
					15. VERIFY 005A1A02 CHAN 15 CN 1320

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
2249 4-7-69		36-018	SCL	CDR	PANEL 3 'GYRO TEST PCS RT' SW - 'CFF' (1320) RGA ERROR GH14625
				SH1	01. VERIFY CRT PAGE 09 LINE 05 LEFT LL=-00.08 LL=+00.08 VRMS (1320)
				SH2	02. CC5A1AC2 VERIFY ALL JETS - OFF (1320)
		36-019	SCL	CDR	01. PANEL 3 'GYRO TEST ROLL' SW - 'ROLL' (1320)
					02. SET AND HOLD 'GYRO TEST PCS RT' SW - 'POS RT' (1320)
		36-020	SCL	CDR	01. PANEL 1 FDAI RECCRD 'ROLL RATE' INDICATION (1320) <i>S.S. LEFT</i>
			LMP		02. PANEL 2 FDAI RECCRD 'ROLL RATE' INDICATION (1320) <i>S.S. LEFT</i>
				SH1	RGA ERROR GH14635
					03. VERIFY CRT PAGE 09 LINE 05 MIDDLE LL=+00.61 LL=+00.79 VRMS (1320)
				SH2	3D GH14235
					04. VERIFY CC5A1AC2 CHAN 07 ON (1320)
					2U GH14265
					05. VERIFY CC5A1AC2 CHAN 10 CN (1320)
		36-021	SCL	CDR	PANEL 3 'GYRO TEST PCS RT' SW - 'CFF' (1320) RGA ERROR GH14635
				SH1	01. VERIFY CRT PAGE 09 LINE 05 MIDDLE LL=-00.08 LL=+00.08 VRMS (1320)
				SH2	02. CC5A1AC2 VERIFY ALL JETS - OFF (1320)
		36-022	SCL	CDR	PANEL 3 SET AND HOLD 'GYRO TEST POS RT' SW - 'NEG RT' (1320)
				CDR	01. PANEL 1 FDAI RECCRD 'ROLL RATE' INDICATION (1320) <i>S.S. RIGHT</i>

(1320)

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QCP-B-97008-LM-2

TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
17-69					LMP 02. PANEL 2 FDI REC'D 'ROLL RATE' INDICATION 5.5. RIGHT 1320
					SH1 RGA ERROR GH14635
					03. VERIFY CRT PAGE 09 LINE 05 MIDDLE LL=-00.79 LL=-00.61 VRMS 1320
					SH2 3U GH14225
					04. VERIFY 005A1A02 CHAN 06 CN 1320
					3D GH14275
					05. VERIFY 005A1A02 CHAN 11 CN 1320
					36-023 SCL CDP PANEL 3 'GYRO TEST POS RT' SW - 'OFF' 1320
					SH1 RGA ERROR GH14635
					01. VERIFY CRT PAGE 09 LINE 05 MIDDLE LL=-00.08 LL=+00.08 VRMS 1320
					SH2 02. 005A1A02 VERIFY ALL JETS - OFF 1320
					36-024 SCL CDP 01. PANEL 3 'GYRO TEST ROLL' SW - 'YAW' 1320
					02. SET AND HOLD 'GYRO TEST POS RT' SW - 'POS RT' 1320
					36-025 SCL CDP 01. PANEL 1 FDI REC'D 'YAW RATE' INDICATION 5.5. RIGHT 1320
					LMP 02. PANEL 2 FDI REC'D 'YAW RATE' INDICATION 1320
					SH1 RGA ERROR GH14615
					03. VERIFY CRT PAGE 09 LINE 05 RIGHT LL=+00.61 LL=+00.79 VRMS 1320
					SH2 4F GH14205
					04. VERIFY 005A1A02 CHAN 04 CN 1320

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TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION		
2252 4-7-69					2F		GH14285
					05. VERIFY	005A1A02 CHAN 12 CN	(1320)
					3S		GH14255
					06. VERIFY	005A1A02 CHAN 09 CN	(1320)
					1S		GH14335
					07. VERIFY	005A1A02 CHAN 17 CN	(1320)
	36-026		SCL	CDR SH1	PANEL 3 'GYPC TEST PCS RT' SW - 'CFF'		GH14615
					01. VERIFY CRT PAGE 09 LINE 05 RIGHT		(1320)
					LL=-00.08 UL=+00.08 VRMS		
				SH2	02. 005A1A02 VERIFY ALL JETS - CFF		(1320)
	36-027		SCL	CDR	PANEL 3 SET AND HOLD 'GYPC TEST PCS RT' SW		(1320)
					'NEG RT'		
					01. PANEL 1 FDAI 'YAW RATE' INDICATES BETWEEN		(1320)
					4.5 AND 5.5 DEG/SEC		
			LMP		02. PANEL 2 FDAI 'YAW RATE' INDICATES BETWEEN		(1320)
					4.5 AND 5.5 DEG/SEC		
				SH1	RGA ERROR		GH14615
					03. VERIFY CRT PAGE 09 LINE 05 RIGHT		(1320)
					LL=-00.79 UL=-00.61 VRMS		
				SH2	3F		GH14245
					04. VERIFY	005A1A02 CHAN 08 CN	(1320)
					1F		GH14325
					05. VERIFY	005A1A02 CHAN 16 CN	(1320)
					2S		GH14295
					06. VERIFY	005A1A02 CHAN 13 CN	(1320)

(1320)
4-7-69

1320

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					4S GH14215
					07. VERIFY 005A1A02 CHAN 05 CN 1320
					PANEL 3 'GYRO TEST PCS RT' SW - 'OFF' 1320
					FGA ERROR GH14615
					01. VERIFY CRT PAGE 09 LINE 05 RIGHT
					LL=-00.08 LL=+00.08 VRMS 1320
					02. 005A1A02, VERIFY ALL JETS - OFF 1320
					-NOTE-
					REPORT COMPLETION TO TC (NIR).

2254
4-7-69

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PROJECT APCLLC

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OCP-P-90003-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					17:46
		37-000			(GN 143) FLIGHT DISPLAYS CHECKOUT
		37-001	GNL CDR		PANEL 1, 'RATE/ERR MCN' SW - 'LDG RDR/CMPTR' 149
			SH1		GUID SFL AGS MODE GH16215
				01. VERIFY	005A2A02 E03 CFF
			CDR	02.	'RNG/ALT MCN' SW - 'ALT/ALT RT' 149
		37-002	GNL CDR	01.	PANEL 2, 'X-PCINTER SCALE' SW (CDR) - 'HI-MULT' 149
			LMP	02.	'X-PCINTER SCALE' SW (LMP) - 'HI-MULT' 149
		37-003	GNL LMP	01.	PANEL 2, 'RATE/ERR MCN' SW - 'LDG RDR/CMPTR' 149
				02.	'ATTITUDE MCN' SW - 'PGNS' 149
		37-004	GNL CDR		PANEL 11, CLOSE THE FOLLOWING CB'S. 149
				01.	PCW 1, 'FLIGHT DISPLAYS' 'RNG/RNG RT ALT/ALT RT' 149
				02.	PCW 3, 'FLIGHT DISPLAYS' 'RNG/RNG RT ALT/ALT RT' 149
		37-005	GNL CDR	01.	PANEL 4, INSERT VERB 36 ENTR 149
				02.	PRESS RSET FB 149
				03.	INSERT VERB 21 NCUN 01 ENTR 149
				04.	INSERT 00364 ENTR 149
				05.	INSERT 00000 ENTR 149
		37-006	GNL CDR	01.	PANEL 4, INSERT VERB 57 ENTR 149
				02.	INSERT 00016 ENTR 149
				03.	INSERT VERB 24 NCUN 44 ENTR 149
				04.	INSERT +00200 ENTR 149

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TIME	CH	SEC	C/C CTL	C/C STTA	DESCRIPTION/INSTRUCTION
					05. INSERT +00200 ENTR 149
					06. INSERT VERR 25 NCUN 64 ENTR 149
					07. INSERT +00000 ENTR 149
					08. INSERT +00500 ENTR 149
					09. INSERT +00010 149
	37-007		GNL	CDR	01. PANEL 4, PUSH 'ENTR' PB 149
					02. PANEL 1 'ALT RATE' IND, -7.5 TO -12.5 FT/SEC 10 (BLACK)
					03. 'ALT' IND, +450 TO ⁺⁵⁰¹ +550 FT (APPRX 50 SECONDS) 149
			CDR		04. PANEL 1, 'FWD VEL' IND +197.5 TO ²⁰⁰ +202.5 FT/SEC 149
					05. 'LAT VEL' IND, +197.5 TO ²⁰⁰ +202.5 FT/SEC 149
			LMP		06. PANEL 2, 'FWD VEL' IND +197.5 TO ²⁰⁰ +202.5 FT/SEC 149
					07. 'LAT VEL', +197.5 TO ²⁰⁰ +202.5 FT/SEC 149
	37-008		GNL	CDR	01. PANEL 4, INSERT VERR 36 ENTR 149
					02. PRESS RSET PB 149
					03. INSERT VERR 57 ENTR 149
					04. INSERT 00016 ENTR 149
					05. INSERT VERR 24 NCUN 44 ENTR 149
					06. INSERT -00200 ENTR 149
					07. INSERT -00200 ENTR 149
					08. INSERT VERR 25 NCUN 64 ENTR 149
					09. INSERT +00500 ENTR 149
					10. INSERT +50000 ENTR 149
					11. INSERT +00500 149

PROJECT APCLLC

DATE C4/C1/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
37-009	GNL	CDR			01. PANEL 4, PUSH 'ENTR' PR (149)
					02. PANEL 1, 'ALT RATE' INC, -497.5 TO -502.5 FT/SEC
					03. 'ALT' IND, +49550 TO +50050 FT (APPROX 10 SECONDS) (149)
37-010	GNL	CDR			01. 'FWD VEL' INC, -197.5 TO -202.5 FT/SEC (149)
					02. 'LAT VEL' INC, -197.5 TO -202.5 FT/SEC (149)
		LMP			03. 'FWD VEL' INC, -197.5 TO -202.5 FT/SEC (149)
					04. 'LAT VEL' INC, -197.5 TO -202.5 FT/SEC (149)
37-011	GNL	CDR			01. PANEL 4, INSERT VERB 36 ENTR (149)
					02. PRESS RSET PR
37-012	GNL	CDR			01. INSERT VERB 21 ACUN 01 ENTR (149)
					02. INSERT 00060 ENTR (149)
					03. INSERT 41750 ENTR (149)
					04. INSERT VERB 21 ACUN 10 ENTR (149)
					05. INSERT 00014 ENTR (149)
					06. INSERT 00006 ENTR (149)
					07. INSERT VERB 21 ACUN 01 ENTR (149)
					08. INSERT 00060 ENTR (149)
					09. INSERT 61107 ENTR (149)
					10. INSERT VERB 21 ACUN 10 ENTR (149)
					11. INSERT 00014 ENTR (149)
					12. INSERT 00004 ENTR (149)

PROJECT APOLLO

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		37-013	GNL	CDR	PANEL 1 VERIFY 'ALT RATE' INDICATES BETWEEN +497.5 AND +502.5 FT/SEC 199.9 (Black) 149
		37-014	GNL	CDR	PANEL 4, INSERT VERR 36 ENTR 149
					01. PRESS RSET PB 149
					02. INSERT VERR 57 ENTR 149
					03. INSERT 00016 ENTR 149
					04. INSERT VERR 24 NCUN 44 ENTR 149
					05. INSERT +00020 ENTR 149
					06. INSERT +00020 ENTR 149
					07. INSERT VERR 25 NCUN 64 ENTR 149
					08. INSERT +00000 ENTR 149
					09. INSERT +00005 ENTR 149
					10. INSERT +00001 ENTR 149
		37-015	GNL	CDR	01. 'X PCINTER SCALE' SW (CDR) - 'LC MULT' 149
			LMP		02. 'X PCINTER SCALE' SW (LMP) - 'LC MULT' 149
		37-016	GNL	CDR	01. PANEL 1, 'FWD VEL' IND, +17.5 TC +22.5 FT/SEC +20 149
					02. 'LAT VEL' IND, +17.5 TC +22.5 FT/SEC +20 149
			LMP		03. PANEL 2, 'FWD VEL' IND, +17.5 TC +22.5 FT/SEC +20 149
					04. 'LAT VEL' IND, +17.5 TC +22.5 FT/SEC +20 149
		37-017	GNL	CDR	01. PANEL 4, INSERT VERR 36 ENTR 149
					02. PRESS RSET PB 149
					03. INSERT VERR 57 ENTR 149
					04. INSERT 00016 ENTR 149

PROJECT APOLLO

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TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
					05. INSERT VERB 24 NCUN 44 ENTR 149
					06. INSERT -00020 ENTR 149
					07. INSERT -00020 ENTR 149
					08. INSERT VERB 25 NCUN 64 ENTR 149
					09. INSERT +00000 ENTR 149
					10. INSERT +00005 ENTR 149
					11. INSERT +00001 ENTR 149
	37-018		GNL	CDR	01. PANEL 1, 'FWD VEL' IND, ⁻²⁰ -17.5 TC -22.5 FT/SEC 149
					02. 'LAT VEL' IND, ⁻²⁰ -17.5 TC -22.5 FT/SEC 149
			LMP		03. PANEL 2, 'FWD VEL' IND, ⁻²⁰ -17.5 TC -22.5 FT/SEC 149
					04. 'LAT VEL' IND, ⁻²⁰ -17.5 TC -22.5 FT/SEC 149
	37-019		GNL	CDR	01. PANEL 4, INSERT VERB 36 ENTR 149
					02. PRESS RSET PR 149
					03. INSERT VERB 57 ENTR 149
					04. INSERT 00016 ENTR 149
					05. INSERT VERB 24 NCUN 44 ENTR 149
					06. INSERT +00000 ENTR 149
					07. INSERT +00000 ENTR 149
					08. INSERT VERB 25 NCUN 64 ENTR 149
					09. INSERT +00000 ENTR 149
					10. INSERT +00005 ENTR 149
					11. INSERT +00001 ENTR 149
	37-020		GNL	CDR	01. PANEL 1, 'FWD VEL' IND, ⁰ -2.5 TC +2.5 FT/SEC 149

1345

1345

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					02. 'LAT VEL' IND, -2.5 TC +2.5 FT/SEC 148
			LMP		03. PANEL 2, 'FWD VEL' IND, -2.5 TC +2.5 FT/SEC 148
					04. 'LAT VEL' IND, -2.5 TC +2.5 FT/SEC 148
		37-021	GNL	CDR	PANEL 11, OPEN THE FOLLOWING CR'S. 148
					01. ROW 1, 'FLT DISP' 'RNG/RNG RT ALT/ALT RT' 148
					02. ROW 3, 'FLT DISP' 'RNG/RNG RT ALT/ALT RT' 148
		37-022	GNL	CDR	01. PANEL 4 INSERT VERB 43 ENTR 998
					02. INSERT +00000 ENTR 998
					03. INSERT +00000 ENTR 998
					04. INSERT +00000 ENTR 998
		37-023	GNL	CDR	PANEL 1 RECCRD FOLLOWING FCAI INDICATIONS (STEERING ERROR)
					01. 'ROLL' ...000... 998
					02. 'PITCH' ...000... 998
					03. 'YAW' ...000... 998
		37-024	GNL	LMP	PANEL 2 RECCRD FOLLOWING FCAI INDICATIONS (STEERING ERROR)
					01. 'ROLL' ...000... 998
					02. 'PITCH' ...000... 998
					03. 'YAW' ...000... 998
		37-025	GNL	CDR	01. PANEL 4 INSERT VERB 43 ENTR 998
					02. INSERT +00050 ENTR 998
					03. INSERT +00050 ENTR 998
					04. INSERT +00050 ENTR 998

998

20W

PROJECT APCLLC

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		37-026	GAL	CDR	PANEL 1 RECORD FOLLOWING FCAI INDICATIONS (STEERING ERROR) 01. 'ROLL' ... 2 LEFT 998 02. 'PITCH' ... 2 DOWN 998 03. 'YAW' ... 2 RT. 998
		37-027	GAL	LVP	PANEL 2 RECORD FOLLOWING FCAI INDICATIONS (STEERING ERROR) 01. 'ROLL' ... 2 LEFT 998 02. 'PITCH' ... 2 DOWN 998 03. 'YAW' ... 2 RT. 998
		37-028	GAL	CDR	01. PANEL 4 INSERT VERB 43 ENTR 998 02. INSERT +00100 ENTR 998 03. INSERT +00100 ENTR 998 04. INSERT +00100 ENTR 998
		37-029	GAL	CDR	PANEL 1 RECORD FOLLOWING FCAI INDICATIONS (STEERING ERROR) 01. 'ROLL' ... 4 LEFT 998 02. 'PITCH' ... 4 DOWN 998 03. 'YAW' ... 4 RT. 998
		37-030	GAL	LMP	PANEL 2 RECORD FOLLOWING FCAI INDICATIONS (STEERING ERROR) 01. 'ROLL' ... 4 LEFT 998 02. 'PITCH' ... 4 DOWN 998 03. 'YAW' ... 4 RT. 998
		37-031	GAL	CDR	01. PANEL 4 INSERT VERB 43 ENTR 998



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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					02. INSERT +CCCCC ENTR 998
					03. INSERT +CCCCC ENTR 998
					04. INSERT +CCCCC ENTR 998
	37-032		GNL	CDR	PANEL 1 RECCRD FCLLOWING FCAI INDICATIONS (STEERING ERROR)
					01. 'ROLL' ...000... 998
					02. 'PITCH' ...000... 998
					03. 'YAW' ...000... 998
	37-033		GNL	LMP	PANEL 2 RECCRD FCLLOWING FCAI INDICATIONS (STEERING ERROR)
					01. 'ROLL' ...000... 998
					02. 'PITCH' ...000... 998
					03. 'YAW' ...000... 998
	37-034		GNL	CDR	01. PANEL 4 INSERT VERR 43 ENTR 998
					02. INSERT -CCCCC ENTR 998
					03. INSERT -CCCCC ENTR 998
					04. INSERT -CCCCC ENTR 998
	37-035		GNL	CDR	PANEL 1 RECCRD FCLLOWING FCAI INDICATIONS (STEERING ERROR)
					01. 'ROLL' ...2 RT... 998
					02. 'PITCH' ...2 UP... 998
					03. 'YAW' ...2 LEFT... 998
	37-036		GNL	LMP	PANEL 2 RECCRD FCLLOWING FCAI INDICATIONS (STEERING ERROR)
					01. 'ROLL' ...2 RT... 998
					02. 'PITCH' ...2 UP... 998

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					03. 'YAW' ... <i>2 LEFT</i> (998)
	37-037		GNL	CDR	01. PANEL 4 INSERT VERB 43 ENTR (998)
					02. INSERT -00100 ENTR (998)
					03. INSERT -00100 ENTR (998)
					04. INSERT -00100 ENTR (998)
	37-038		GNL	CDR	PANEL 1 RECCRD FOLLOWING FCAI INDICATIONS (STEERING ERROR)
					01. 'ROLL' ... <i>4 RT</i> (998)
					02. 'PITCH' ... <i>4 UP</i> (998)
					03. 'YAW' ... <i>4 LEFT</i> (998)
	37-039		GNL	LMP	PANEL 2 RECCRD FOLLOWING FCAI INDICATIONS (STEERING ERROR)
					01. 'ROLL' ... <i>4 RT</i> (998)
					02. 'YAW' ... <i>4 LEFT</i> (998)
					03. 'PITCH' ... <i>4 UP</i> (998)
	37-040		GNL	CDR	01. PANEL 4 INSERT VERB 43 ENTR (998)
					02. INSERT +00000 ENTR (998)
					03. INSERT +00000 ENTR (998)
					04. INSERT +00000 ENTR (998)
	37-041		GNL	CDR	PANEL 1 RECCRD FOLLOWING FCAI INDICATIONS (STEERING ERROR)
					01. 'ROLL' ... <i>0</i> (998)
					02. 'PITCH' ... <i>0</i> (998)
					03. 'YAW' ... <i>0</i> (998)
	37-042		GNL	LMP	PANEL 2 RECCRD FOLLOWING FCAI INDICATIONS (STEERING ERROR)

Dev.
03
No.

1345

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

NO. AND TITLE: <u>16N</u> <u>OCPB-90008-1M-2</u>	DATE: <u>4-7-69</u>	SHEET <u>22</u> OF <u> </u>
GAEC <u>R Mast ACED</u> <u>W. Bowlds. GAEC.</u> <u>D. Massie</u>		NASA <u>W.T. Mulcahey 4/8/69</u> <u>A. J. First 4/8/69</u> <u>for O. E.</u>

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
25	2-122	37-039 5/501	ADD NEW S/S O/A "PITCH" (PROCEDURAL ERROR)	P	998 4/7/69	

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					C1. 'ROLL' 0 998 C2. 'PITCH' 0 998 C3. 'YAW' 0 998
	37-C43		GNL	CDR	C1. PANEL 4 INSERT VERB 41 NOUN 20 ENTR 998 C2. INSERT +00000 ENTR 998 C3. INSERT +00000 ENTR 998 C4. INSERT +00000 ENTR 998
	37-C44		GNL	GH1	C1. CDU ANGLE X/CG VERIFY CRT PAGE 17 LINE 14 LL= +358.00 LL= +002.00 RECCRD 7.357.87 998 ZG80875 LEFT C2. CDU ANGLE Y/IG VERIFY CRT PAGE 17 LINE 14 LL= +358.00 LL= +002.00 RECCRD 7.359.73 998 ZG80885 MIDDLE C3. CDU ANGLE Z/MG VERIFY CRT PAGE 17 LINE 14 LL= +358.00 LL= +002.00 RECCRD 7.000.07 998 ZG80895 RIGHT
	37-C45		GNL	CDR	PANEL 1 RECCRD FOLLOWING FCAI INDICATIONS (ATTITUDE) C1. 'ROLL' 000 998 C2. 'PITCH' 000 998 C3. 'YAW' 000 998
	37-C46		GNL	LMP	PANEL 2 RECCRD FOLLOWING FCAI INDICATIONS (ATTITUDE) C1. 'ROLL' 000 998 C2. 'PITCH' 000 998 C3. 'YAW' 000 998
	37-C47		GNL	CDR	C1. PANEL 4 INSERT VERB 41 NOUN 20 ENTR 998

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TIME	CH	SFC	C/C CTL	C/O STTN	DESCRIPTION/INSTRUCTION
					02. INSERT +00000 ENTR 998
					03. INSERT +00000 ENTR 998
					04. INSERT +03000 ENTR 998
37-048			GNL	CDR	PANEL 1 RECORD FOLLOWING FCAI INDICATIONS (ATTITUDE)
					01. 'ROLL' ... 30° L 998
					02. 'PITCH' ... 0° 998
					03. 'YAW' ... 0° 998
37-049			GNL	LMP	PANEL 2 RECORD FOLLOWING FCAI INDICATIONS (ATTITUDE)
					01. 'ROLL' ... 30° L 998
					02. 'PITCH' ... 0° 998
					03. 'YAW' ... 0° 998
37-050			GNL	CDR	01. PANEL 4 INSERT VERR 41 NCUN 20 ENTR 998
					02. INSERT +00000 ENTR 998
					03. INSERT +00000 ENTR 998
					04. INSERT -03000 ENTR 998
37-051			GNL	CDR	PANEL 1 RECORD FOLLOWING FCAI INDICATIONS (ATTITUDE)
					01. 'ROLL' ... 30° RT 998
					02. 'PITCH' ... 0° 998
					03. 'YAW' ... 0° 998
37-052			GNL	LMP	PANEL 2 RECORD FOLLOWING FCAI INDICATIONS (ATTITUDE)
					01. 'ROLL' ... 30° RT 998
					02. 'PITCH' ... 0° 998



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TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
					C3. 'YAW' ... 0° 998
37-053	GNL	CDR			C1. PANEL 4 INSERT VERB 41 NOUN 20 ENTR 998
					C2. INSERT +00000 ENTR 998
					C3. INSERT +03000 ENTR 998
					C4. INSERT +00000 ENTR 998
37-054	GNL	CDR			PANEL 1 RECCRD FCLLWING FCAI INDICATIONS (ATTITUDE)
					C1. 'ROLL' ... 0°
					C2. 'PITCH' ... 30° DOWN (WHITE)
					C3. 'YAW' ... 0°
37-055	GNL	LMP			PANEL 2 RECCRD FCLLWING FCAI INDICATIONS (ATTITUDE)
					C1. 'ROLL' ... 0° 998
					C2. 'PITCH' ... 30° WHITE 998
					C3. 'YAW' ... 0° 998
37-056	GNL	CDR			C1. PANEL 4 INSERT VERB 41 NOUN 20 ENTR 998
					C2. INSERT +00000 ENTR 998
					C3. INSERT -03000 ENTR 998
					C4. INSERT +00000 ENTR 998
37-057	GNL	CDR			PANEL 1 RECCRD FCLLWING FCAI INDICATIONS (ATTITUDE)
					C1. 'ROLL' ... 0° 998
					C2. 'PITCH' ... 30° BLK 998
					C3. 'YAW' ... 0° 998
37-058	GNL	LMP			PANEL 2 RECCRD FCLLWING FCAI INDICATIONS

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					(ATTITUDE)
					01. 'ROLL' ... 0° 998
					02. 'PITCH' ... 30° BLK 998
					03. 'YAW' ... 0° 998
37-059			GNL	CDR	01. PANEL 4 INSERT VERR 41 NCUN 20 ENTR 998
					02. INSERT +03000 ENTR 998
					03. INSERT +00000 ENTR 998
					04. INSERT +00000 ENTR 998
37-060			GNL	CDR	PANEL 1 RECORD FOLLOWING FCAI INDICATIONS (ATTITUDE)
					01. 'ROLL' ... 0° 998
					02. 'PITCH' ... 0° 998
					03. 'YAW' ... 30° L 998
37-061			GNL	LMP	PANEL 2 RECORD FOLLOWING FCAI INDICATIONS (ATTITUDE)
					01. 'ROLL' ... 0° 998
					02. 'PITCH' ... 0° 998
					03. 'YAW' ... 30° L 998
37-062			GNL	CDR	01. PANEL 4 INSERT VERR 41 NCUN 20 ENTR 998
					02. INSERT -03000 ENTR 998
					03. INSERT +00000 ENTR 998
					04. INSERT +00000 ENTR 998
37-063			GNL	CDR	PANEL 1 RECORD FOLLOWING FCAI INDICATIONS (ATTITUDE)
					01. 'ROLL' ... 0° 998

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TIME	CH	SEC	C/D CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					C2. 'PITCH' 0° 998
					C3. 'YAW' 30° R 998
	37-064		GNL	LMP	PANEL 2 RECCRD FOLLOWING FCAI INDICATIONS (ATTITUDE)
					C1. 'ROLL' 0° 998
					C2. 'PITCH' 0° 998
					C3. 'YAW' 30° R 998
	37-065		GNL	CDR	01. PANEL 4 INSERT VERB 41 NCUN 20 ENTR 998
					C2. INSERT +00000 ENTR 998
					C3. INSERT +00000 ENTR 998
					C4. INSERT +00000 ENTR 998
	37-066		GNL	CDR	PANEL 1 RECCRD FOLLOWING FCAI INDICATIONS (ATTITUDE)
					C1. 'ROLL' 0° 998
					C2. 'PITCH' 0° 998
					C3. 'YAW' 0° 998
	37-067		GNL	LMP	PANEL 2 RECCRD FOLLOWING FCAI INDICATIONS (ATTITUDE)
					C1. 'ROLL' 0° 998
					C2. 'PITCH' 0° 998
					C3. 'YAW' 0° 998
	37-068		GNL	GH1	C1. CDU ANGLE X/CG VERIFY CRT PAGE 17 LINE 14 LL= +358.00 LL= +002.00 RECCRD 998
					C2. CDU ANGLE Y/IG VERIFY CRT PAGE 17 LINE 14 LL= +358.00 UL= +002.00 RECORD 998

ZG80875
LEFT
RECCRD 998

ZG80885
MIDDLE
RECORD 998

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TIME	CH	SFC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					03. CDU ANGLE Z/MG
					VERIFY CRT PAGE 17 LINE 14
					LL= +358.00 LL= +002.00
					RECCRD
					-NOTE-
					REPORT COMPLETION TC TC (NIB).

ZG80895

RIGHT

RECCRD 3.5.9.9-3998

998
18:36
4/7/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		38-000			(GN 144) ACA HARDCOVER CHECKOUT
		38-001	SCL	CDR	01. PANEL 11 ROW 2 'S/C', CLOSE 'ATT DIR CCNT' CB
				LMP	02. PANEL 16 ROW 1 'S/C', OPEN 'ATCA' CB (LL 13)
					03. OPEN 'ATCA (AGS)' CB
				CDR	04. PANEL 1, 'ENG THR CONT' 'X-TRANSL' SW - '4 JETS'
					05. PANEL 4 'ACA/4 JET' SW (CDR) - 'ENABLE'
					06. 'TTCA/TRANSL' SW (CDR) - 'ENABLE'
		38-002	SCL	CEC	START RECORDER
		38-003	SCL	CDR	ACA, YAW LEFT TO HARD STOP AND HOLD
				CEC	01. VERIFY JET NO. 4S - CN
					02. VERIFY JET NO. 2S - CN
					03. VERIFY JET NO. 3F - CN
					04. VERIFY JET NO. 1F - CN
		38-004	SCL	CDR	NEUTRAL
				CEC	01. VERIFY ALL JETS OFF
		38-005	SCL	CDR	YAW RIGHT TO HARD STOP AND HOLD
				CEC	01. VERIFY JET NO. 4F - CN
					02. VERIFY JET NO. 2F - CN
					03. VERIFY JET NO. 1S - CN
					04. VERIFY JET NO. 3S - CN
		38-006	SCL	CDR	NEUTRAL
				CEC	01. VERIFY ALL JETS OFF
		38-007	SCL	CDR	PITCH UP TO HARD STOP AND HOLD

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PER
DEV # 16

PROJECT APCLLC

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
				CEC	01. VERIFY JET NO. 1C - CN
					02. VERIFY JET NO. 2L - CN
					03. VERIFY JET NO. 4C - CN
					04. VERIFY JET NO. 3L - CN
	38-008		SCL	CDR	NEUTRAL
				CEC	01. VERIFY ALL JETS OFF
	38-009		SCL	CDR	PITCH DOWN TO HARD STOP AND HOLD
				CEC	01. VERIFY JET NO. 2C - CN
					02. VERIFY JET NO. 1L - CN
					03. VERIFY JET NO. 4L - CN
					04. VERIFY JET NO. 3C - CN
	38-010		SCL	CDR	NEUTRAL
				CEC	01. VERIFY ALL JETS OFF
	38-011		SCL	CDR	ROLL RIGHT TO HARD STOP AND HOLD
				CEC	01. VERIFY JET NO. 3L - CN
					02. VERIFY JET NO. 2C - CN
					03. VERIFY JET NO. 4L - CN
					04. VERIFY JET NO. 1C - CN
	38-012		SCL	CDR	NEUTRAL
				CEC	01. VERIFY ALL JETS OFF
	38-013		SCL	CDR	ROLL LEFT TO HARD STOP AND HOLD
				CEC	01. VERIFY JET NO. 3C - CN
					02. VERIFY JET NO. 2L - CN
					03. VERIFY JET NO. 1L - CN

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TIME	CH	SEC	C/C CTL	C/D STTN	DESCRIPTION/INSTRUCTION
					04. VERIFY JET AC. 40 - CN
	38-014		SCL	CDR	NEUTRAL
			CEC		01. VERIFY ALL JETS OFF
			CEC		02. TURN OFF RECORDER
	38-015		SCL	CDR	01. PANEL 11 ROW 2 'S/C', OPEN 'ATT DIR CONT' CB
			LMP		02. PANEL 16 ROW 1 'S/C', CLOSE 'ATCA' CB (LL 13)
					03. CLOSE 'ATCA (AGS)' CB
					-NOTE-
					REPORT COMPLETION TO TC (NIR).

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TIME	CH	SFC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION	
		39-000			(GN 145) PGMS RCS AUTO FIRE	
		39-001	SCL	DCT	01. REMOVE MODULATION JUMPER	
					02. 'SINGLE/SERIAL' SW - 'SERIAL'	
					03. 'MANUAL/TAPE' SW - 'TAPE'	
					04. 'READER/OFF' SW - 'OFF'	
					05. LOAD TAPE 24011-6	
					06. SET 'START NUMBERS' SW'S - '010'	
					07. SET 'STOP NUMBERS' SW'S - '014'	
					08. 'READER/OFF' SW - 'READER'	
		39-002	SCL	DCT	'START SEARCH/STOP SEARCH' SW - 'START SEARCH'	
					01. VERIFY TEST 010 IS NEXT MESSAGE	
					02. CONNECT MODULATION JUMPER	
					03. VERIFY MESSAGE IS 3161350400	
		39-003	SCL	DCT	PUSH 'START READ' SW	
					01. VERIFY 014 IS NEXT MESSAGE	
			CH2		02. VERB 21 ACUM 02 (FLASHING) VERIFY CRT PAGE 18 LINE 02	ZG90265
					03. R3=C2007 VERIFY CRT PAGE 18 LINE 05	ZG90065
			SH1		04. TRANSFER 4 VERIFY CRT PAGE 09 LINE 18	GT04415
		39-004	SCL	DCT	SET 'STOP NUMBERS' SW'S - '272'	
					01. VERIFY TEST 014 IS NEXT MESSAGE	
		39-005	SCL	DCT	PUSH 'START READ' SW	
					01. VERIFY TEST 272 IS NEXT MESSAGE	

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PER
DEV #15

PROJECT AFCLLC

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					-NOTE-
					IF TRANSFER COUNT IS LOW ON CRT AFTER LOAD, PERFORM C-START 164, 23000000005 XEQ AND RE-START ON 145 FROM BEGINNING.
				SH1	02. TRANSFER 210 VERIFY CRT PAGE 09 LINE 18
					GT04415
	39-006		SCL	DCT	SET 'STOP NUMBERS' SW'S - '777'
					01. VERIFY TEST 272 IS NEXT MESSAGE
	39-007		SCL	SH1	005A1A02, START RECORDER AT 20 MM/SEC WHEN DCT PUSHES 'START READ' SW, AND MONITOR JET FIRINGS
	39-008		SCL	CEC	START RECORDER
	39-009		SCL	DCT	PUSH 'START READ' SW
					01. VERIFY 777 IS NEXT MESSAGE
					-NOTE-
					WAIT 30 SECONDS
	39-010		SCL	CEC	STOP RECORDER
	39-011		SCL	SH1	STOP RECORDER 005A1A02
	39-012		SCL	SH1	VERIFY FOLLOWING JETS WERE ON AT TIMES INDICATED, NO OTHER JETS FIRED, AND NO JETS REMAINED ON. (TIMES ARE IN SECONDS, REFERENCED TO DCT'S ACTIVATION OF 'PROGRAM START' SW
000001					40 GH14195
					01. VERIFY 005A1A02 CHAN 03 ON
					30 GH14235
					02. VERIFY 005A1A02 CHAN 07 ON

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION			
					2D			GH14275
				03.	VERIFY	005A1A02	CHAN 11	CN
					1D			GH14315
				04.	VERIFY	005A1A02	CHAN 15	CN
000006					4U			GH14185
				05.	VERIFY	005A1A02	CHAN 02	CN
					3U			GH14225
				06.	VERIFY	005A1A02	CHAN 06	CN
					2U			GH14265
				07.	VERIFY	005A1A02	CHAN 10	CN
					1U			GH14305
				08.	VERIFY	005A1A02	CHAN 14	CN
000011					3F			GH14245
				09.	VERIFY	005A1A02	CHAN 08	CN
					2F			GH14285
				10.	VERIFY	005A1A02	CHAN 12	CN
000016					4F			GH14205
				11.	VERIFY	005A1A02	CHAN 04	CN
					1F			GH14325
				12.	VERIFY	005A1A02	CHAN 16	CN
000021					2S			GH14295
				13.	VERIFY	005A1A02	CHAN 13	CN
					1S			GH14335
				14.	VERIFY	005A1A02	CHAN 17	CN

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION	
000026					4S	GH14215
				15.	VERIFY 005A1A02 CHAN 05 CN	
					3S	GH14255
				16.	VERIFY 005A1A02 CHAN 09 CN	
				17.	TRANSFER 222	GT04415
					VERIFY CRT PAGE 09 LINE 18	
	39-013		SCL	SH1	005A3A06, C164, 2300000006	XEQ
				01.	TRANSFER C	GT04415
					VERIFY CRT PAGE 09 LINE 18	
	39-014		SCL	CCR	PANEL 11 ROW 2 'RCS SYS A', OPEN AND GUARD FOLLOWING CB'S -	
				01.	'CLAD 1 TCA'	
				02.	'CLAD 2 TCA'	
				03.	'CLAD 3 TCA'	
				04.	'CLAD 4 TCA'	
	39-015		SCL	LMP	PANEL 16 ROW 1 'RCS SYS B', OPEN AND GUARD FOLLOWING CB'S -	
				01.	'CLAD 1 TCA'	
				02.	'CLAD 2 TCA'	
				03.	'CLAD 3 TCA'	
				04.	'CLAD 4 TCA'	
					-ACTE-	
					REPORT COMPLETION TO TC (NIB).	

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		40-000			(GN 146) PGMS ASCENT ENGINE AUTO FIRE
		40-001	SCL	CCR	PANEL 3 'MODE CONTROL' SEL - 'AUTO' (209)
		40-002	SCL	DCT	'01. REMOVE MODULATION JUMPER (209)
					'02. 'SINGLE/SERIAL' SW - 'SERIAL' (209)
					'03. 'MANUAL/TAPE' SW - 'TAPE' (209)
					'04. 'READER/CFF' SW - 'CFF' (209)
					'05. LOAD TAPE 24011-10 (209)
					'06. SET 'START NUMBERS' SW'S - '267' (209)
					'07. SET 'STOP NUMBERS' SW'S - '272' (209)
					'08. 'READER/CFF' SW - 'READER' (209)
		40-003	SCL	DCT	'START SEARCH/STOP SEARCH' SW - 'START SEARCH' (209)
					'01. VERIFY TEST 267 IS NEXT MESSAGE (209)
					'02. CONNECT MODULATION JUMPER (209)
		40-004	SCL	DCT	PUSH 'START READ' SW (209)
					'01. VERIFY TEST 272 IS NEXT MESSAGE (209)
			SH1	'02. TRANSFER 17	GT04415
				VERIFY CRT PAGE 09 LINE 18	
			SCL	ASC ENGINE ARM	(209) GH12305
				'03. VERIFY C05A2A02 E23 ON	(209)
			GH1	'04. ENGINE ARMED	ZG95935
				VERIFY 004A3A05 E23	(209) ON
		40-005	SCL	DCT	'01. REMOVE MODULATION JUMPER (209)
					'02. SET 'START NUMBERS' SW'S - '300' (209)
					'03. SET 'STOP NUMBERS' SW'S - '303' (209)

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PROJECT APCLLC

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4/8/9
0109

TIME	CH	SEC	C/C CTL	C/C STIN	DESCRIPTION/INSTRUCTION
40-006	SCL	DCT			01. 'START SEARCH/STOP SEARCH' SW - 'START SEARCH'
					02. VERIFY TEST 300 IS NEXT MESSAGE
					03. CONNECT MODULATION JUMPER
40-007	SCL	DCT			PUSH 'START READ' SW
					01. VERIFY TEST 303 IS NEXT MESSAGE
			SH1		02. TRANSFER 33
					VERIFY CRT PAGE 09 LINE 18
			SCL		AUTC ENGINE CN
					03. VERIFY 005A2A02 F14 CN
					ASC ENGINE CN TC PRCP
					04. VERIFY 005A2A02 E24 CN
			GH1		05. ENGINE CN
					VERIFY 004A3A05 E13
					06. ENGINE OFF
					VERIFY 004A3A05 E14
40-008	SCL	DCT			SET 'STOP NUMBERS' SW'S - '306'
					01. VERIFY TEST 303 IS NEXT MESSAGE
40-009	SCL	DCT			PUSH 'START READ' SW
					01. VERIFY TEST 306 IS NEXT MESSAGE
			SH1		02. TRANSFER 49
					VERIFY CRT PAGE 09 LINE 18
			SCL		AUTC ENGINE CN
					03. VERIFY 005A2A02 E14 OFF
					ASC ENGINE CN TC PRCP
					04. VERIFY 005A2A02 E24 OFF
			GH1		05. ENGINE OFF

GT04415

GH12145

GH12605

ZG80015
ONZG95845
OFF

GT04415

GH12145

GH12605

ZG95845

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION	
					VERIFY 004A3A05 E14	239 ON
					06. ENGINE CN	239 7680015
					VERIFY 004A3A05 E13	239 OFF
	40-C10		SCL	DCT	SET 'STOP NUMBERS' SW'S - '340'	239
					01. VERIFY TEST 306 IS NEXT MESSAGE	239
	40-C11		SCL	DCT	PUSH 'START READ' SW	239
					01. VERIFY TEST 340 IS NEXT MESSAGE	239
			SH1		02. TRANSFER 66	GT04415
			SCL		VERIFY CRT PAGE 09 LINE 18	239
					ASC ENGINE ARM	GH12305
					03. VERIFY 005A2A02 E23	CFF
	40-C12		SCL	SH1	005A3A06, C164, 2300000006	239 XEQ
					-NOTE-	
					REPORT COMPLETION TO TC (NIB).	

Angela
4/8/69
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TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
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					02. 'PRA'
					03. 'DCA'
					04. 'EPS LOGIC'

-NOTE-

REPORT COMPLETION TO TC (NIB).

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4/8/69 0244		42-000			(GN 148) DTCA DEACTIVATION
		42-001	SCL	DCT	01. REMOVE MODULATION JUMPER (209)
					02. SET SIG GEN TO STANDBY (209)
					03. 'START NUMBERS' SW'S - '000' (209)
					04. 'START SEARCH/STOP SEARCH' SW - 'START SEARCH' (209) (UNTIL 000 IS READ OUT)
					05. 'READER ON/READER OFF' SW - 'READER OFF' (209)
					06. REMOVE TAPE FROM TAPE HANDLER (209)
					07. 'TAPE/MANUAL' SW - 'MANUAL' (209)
					08. 'SINGLE/SERIAL' SW - 'SINGLE' (209)
					09. 'DCM POWER/OFF' SW - 'OFF' (209)
					10. 'TEST SET POWER/OFF' SW - 'OFF' (209)
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

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(209)

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TIME	CH	SEC	C/C CTL	C/C STIN	DESCRIPTION/INSTRUCTION	
14:58		43-000			(GN 149) LMF ACTIVATION	
		43-001	SCL DCT		01. 'TEST SET POWER' SW - 'ON' (998)	
					02. 'DCM POWER' SW - 'ON' (998)	
		43-002	SCL CDR		PANEL 10, CLOSE 'LMF FEED' CB (998)	
			SH1		01. DCA LPLK WD LMF 00000000 VERIFY CRT PAGE 06 LINE 07 (998)	GT04415
		43-003	SCL CDR		PDA, CLOSE 'DCA' CB (998)	
			SH1		01. DCA LPLK WD LMF 10100100 VERIFY CRT PAGE 06 LINE 07 (998)	GT04415
		43-004	SCL SH1		005A3A06, C164, 2300000006 (998)	XEQ
					01. TRANSFER C VERIFY CRT PAGE 09 LINE 18 (998)	GT04415
					02. ERROR C VERIFY CRT PAGE 09 LINE 19 (998)	GT04415
					03. CLOCK PULSE C COMP PULSE C VERIFY CRT PAGE 09 LINE 20 (998)	GW51535
		43-005	SCL CDR		PDA, CLOSE FOLLOWING CB'S -	
					01. 'PRA' (998)	
					02. 'PCA' (998)	
					03. 'EPS LOGIC' (998)	
		43-006	SCL DCT		01. REMOVE MODULATION JUMPER (998)	
					02. 'SINGLE/SERIAL' SW - 'SINGLE' (998)	
					03. 'MANUAL/TAPE' SW - 'TAPE' (998)	
					04. 'READER/CFF' SW - 'CFF' (998)	
					05. LOAD TAPE 24011-10 (998)	
					06. SET 'START NUMBERS' SW'S - '010' (998)	



1345

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

NO. AND TITLE: <u>SCC</u> <u>OCP-B-90008-1M-2</u>	DATE: <u>4/7/69</u>	SHEET <u>20</u> OF <u> </u>
<u>GAEC</u> <u>Wally Z. Boulds</u> <u>W. Massey</u>	TPS NO. <u> </u>	PRETEST <u>TEST</u> POST-T. <u> </u>
<u>NASA</u> <u>W. T. Mulvaney 4/7/69</u> <u>Qth. Inst 4-7-69</u> <u>for O E.</u>		

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/PERM	GAEC	NASA
22	2142	4B-001	ADD S/S 03, — "SET FM SIG GEN OUTPUT ATTN TO -23 DB"	P	998 4/7/69	
		4B-002	ADD S/S 02. VERIFY CRT PAGE 06 LINE 10 LL = +3.95 UL = +4.05 VDC (INCREASE SIGNAL TO ENABLE DCA TO SENSE SAME REF IDC 90008.2)		4/7/69	
			 4/7/69			

PROJECT APCLLC

DATE 04/01/69

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NCP-B-90008-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					07. SET 'STOP NUMBERS' SW'S - '073' (998)
					08. 'READER/CFF' SW - 'READER' (998)
	43-007		SCL	DCT	'START SEARCH/STOP SEARCH' SW - 'START SEARCH' (998)
					01. VERIFY TEST 010 IS NEXT MESSAGE (998)
					02. VERIFY MESSAGE 3500000000 (998)
					03. CONNECT MODULATION JUMPER (998)
	43-008		SCL	DCT	PUSH 'START READ' SW (998)
					01. PUSH 'PROGRAM START' SW (998)
					02. VERIFY TEST 024 IS NEXT MESSAGE (998)
	43-009		SCL	DCT	PUSH 'PROGRAM START' SW (998)
					01. VERIFY TEST 025 IS NEXT MESSAGE (SENDS MASTER RESET-CN) (998)
	43-010		SCL	DCT	PUSH 'PROGRAM START' SW AT 1 SECOND INTERVALS UNTIL TEST 072 IS NEXT MESSAGE (998)
	43-011		SCL	DCT	PUSH 'PROGRAM START' SW (RESET PCA GROUND MATRIX) (998)
	43-012		SCL	CDF	01. PANEL 4 INSERT VERB 21 NCUN 01 ENTR (998)
					02. INSERT C0045 ENTR (998)
					03. INSERT C0000 ENTR (998)
					04. TRANSFER 31
					VERIFY CRT PAGE 09 LINE 18 (998)
	43-013		SCL	DCT	01. REMOVE MODULATION JUMPER (998)
					02. SET 'START NUMBERS' SW'S - '206' (998)
					03. SET 'STOP NUMBERS' SW'S - '213' (998)
					04. 'START SEARCH/STOP SEARCH' SW - 'START SEARCH (UNTIL 206 IS READ CUT) (998)

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SH-1

GTC4415

PROJECT APCLLC

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					05. 'READER CN/READER CFF' SW - 'READER ON' (998)
					06. CONNECT MODULATION JUMPER (998)
					07. PRESS 'START READ' SW (998)
43-014			SCL	DCT	PRESS 'PROGRAM START' SW AT 1 SECOND INTERVALS (998)
					01. VERIFY TEST 212 IS NEXT MESSAGE (998)
				SH1	ACA OUT OF DETENT GH12045
					02. VERIFY 005A2AC2 E09 CFF (998)
43-015			SCL	DCT	01. REMOVE MODULATION JUMPER (998)
					02. SET 'START NUMBERS' SW'S - '166' (998)
					03. SET 'STOP NUMBERS' SW'S - '170' (998)
					04. 'START SEARCH/STOP SEARCH' SW - 'START SEARCH' (998)
					05. CONNECT MODULATION JUMPER (998)
43-016			SCL	DCT	PUSH 'PROGRAM START' SW TWICE (998)
					01. VERIFY TEST 170 IS NEXT MESSAGE (998)
				SH1	GUID SFL AGS MODE GH16215
					02. VERIFY 005A2AC2 E03 CFF (998)
43-017			SCL	DCT	'SINGLE/SERIAL' SW - 'SINGLE' (998)
43-018			SCL	SH1	005A3AC6, C164, 2300000006 (998)
					01. TRANSFER C TEST C GT04415
					02. OBSERVE CRT PAGE 09 LINE 18 (998)
					02. ERROR C GT04415
					03. OBSERVE CRT PAGE 09 LINE 19 (998)
					03. CLOCK PULSE C COMP PULSE C SW51535
					03. OBSERVE CRT PAGE 09 LINE 20 (998)

IDR
3
SCL

1345

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

DEV. NO. AND TITLE: SCL	DATE: 4-7-69	SHEET 21 OF
OCPB-90008-LM-2	TPS NO.	PRETEST TEST POST-T
<u>GAEC</u> Wally F. Boulders W. H. Harsney	<u>NASA</u> W.T. Mulcahey 4/7/69 G.H. Frost 4-7-69 for O.E.	

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/PERM	GAEC	NASA
23	2-144	43-015	ADD S/S OG. "PRESS START READ" SW (REQUIRED TO ENABLE PROGRAM START SW REF IDR 90008.3)	P	4/7/69	
24		43-016 S/S 01	CHANGE STEP TO READ "PUSH PROGRAM START" SW UNTIL TEST 170 IS NEXT MESSAGE. 02, VERIFY OOSA2A02, E02 OFF (PROGRAM START SWITCHING ACTIVITY VARIES WITH CONDITIONS REF IDR 90008.3)	P	998 4/7/69	
			 4/7/69			

PROJECT APOLLO

DATE 04/01/69

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TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
					-NOTE-
					REPORT COMPLETION TO TC (NIB).
					4/17/69
					15:18
					998

PROJECT APCLLC

DATE 04/01/69

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OCP-B-97008-LM-2

TIME	CH	SEC	C/D CTL	C/D STTN	DESCRIPTION/INSTRUCTION
					17:15
		44-000			(GN 150) LGC OPERATIONAL TESTS
					-NOTE-
					FOLLOWING STEP MAY BE REPEATED AS REQUIRED TO ENSURE ALL INDICATIONS ARE VERIFIED
					DSKY CHECK
		44-001	GNL	CDR	01. PANEL 4, INSERT VERB 57 ENTR (149)
					02. INSERT 00015 ENTR (149)
					03. INSERT VERB 21 ACUN 27 ENTR (149)
					04. INSERT BLT CC ACT ENTR 00011 (149)
					05. PUSH 'ENTR' PB (149)
					-NOTE-
					FOLLOWING SHOULD BE DISPLAYED BEFORE ALL LIGHTS GO OUT. ('CCMP ACTY' WILL REMAIN ON FOR APPROX 5 SECONDS)
					06. VERIFY ALL ELECTROLUMINESCENT ELEMENTS ARE DISPLAYED (149)
					07. VERIFY DECIMAL NUMBERS NINE THROUGH ZERO IN SUCCESSION ARE DISPLAYED (149)
					08. VERIFY VERB AND ACUN ARE DISPLAYED FLASHING (149)
					09. VERIFY PLUS AND MINUS SIGNS ON R1, R2, AND R3 ARE DISPLAYED (149)
		44-002	GNL	CDR	01. INSERT VERB 25 ACUN 01 ENTR (149)
					02. INSERT C1740 ENTR (149)
					03. INSERT +00123 ENTR (149)

(149)



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TIME	CH	SEC	C/D CTL	C/D STTN	DESCRIPTION/INSTRUCTION
					04. INSERT -00456 ENTR (149)
					05. INSERT BUT DO NOT ENTR -00789 (149)
					06. R1 = +00123 (149)
					07. R2 = -00456 (149)
					08. R3 = -00789 (149)
	44-003		GNL	CDR	PUSH 'CLR' FB THREE TIMES (149)
					01. R1, R2, AND R3 - BLANK (149)
					LIGHT TEST
					-NOTE-
					FOLLOWING STEP MAY BE REPEATED AS REQUIRED TO INSURE ALL INDICATIONS ARE VERIFIED.
	44-004		GNL	CDR	INSERT VERB 35 ENTR (149)
					01. 'VERR', 'NCUN', 'KEY REL', AND 'CPR ERR' LT'S - FLASHING FOR APPROX 5 SECONDS (149)
					02. ALL REMAINING LTS ARE ON FOR APPROX 5 SECONDS (149)
					03. 'PRCG', 'VERB', AND 'NCUN' DISPLAY '88' (149)
					04. R1, R2, AND R3 DISPLAY +88888 (149)
					05. PANEL 1 'LGC' AND 'ISS' WARN LT'S MAY MOMENTARILY GO ON - DISREGARD (149)
			GH2		06. LGC AND ISS EVENT LIGHTS ON 004A3A04 ARE MOMENTARILY ON (MAY REMAIN ON APPROX 5 SECONDS) (149)
	44-005		GNL	CDR	INSERT VERB 36 ENTR (149)
					01. PUSH 'RSET' FB (149)

(149)



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TIME	CH	SEQ	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
		44-006	GNL	CDR	01. INSERT VERB 57 ENTR 149
					02. INSERT CCC15 ENTR 149
			GH1		03. VERIFY CRT PAGE 18 LINE 03 RIGHT 149 R1 IS BLANK
					04. VERIFY CRT PAGE 18 LINE 04 RIGHT 149 R2 IS BLANK
					05. VERIFY CRT PAGE 18 LINE 05 RIGHT 149 R3 IS BLANK
		44-007	GNL	CDR	01. INSERT VERB 21 NCUN 27 ENTR 149
					02. INSERT 77777 ENTR 149
					03. INSERT VERB 15 NCUN 01 ENTR 149
					04. INSERT C1266 ENTR 149
			GH1		05. CRT PAGE 18 LINE 05, WHEN R3 INCREMENTS TWICE VERIFY R1 DOES NOT DISPLAY C1102 OR 41102 149 (APPROX 5 MIN)
		44-008	GNL	CDR	01. INSERT VERB 34 ENTR 149
					02. INSERT VERB 21 NCUN 27 ENTR 149
					03. INSERT CCCCC ENTR 149
					LGC STANDBY CHECK 149
		44-009	GNL	CDR	01. INSERT VERB 21 NCUN 10 ENTR 149
					02. INSERT CCC13 ENTR 149
					03. INSERT C2000 ENTR 149
		44-010	GNL	CDR	PUSH 'STBY' PB FOR APPROX 3 SECONDS
					01. VERIFY 'STRY' LT - ON 149

149



PROJECT APCLLC

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CCP-B-90008-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
				GH1	1331 28V3.2H GG13315
					C2. RECCRD CRT PAGE 16 LINE 24 RIGHT
					LL=+27.5 LL=+29.7
					RECORD. 28.7VDC (149)
				44-011 GNL CDR	PUSH 'STPY' PB FOR APPROX 3 SECCNDS
					C1. VERIFY 'STBY' LT - CFF (149)
					C2. PLSH 'RSET' PB (149)
					PARITY FAIL TEST
				44-012 GNL CDR	C1. INSERT VERB 21 NCUN 02 ENTR (149)
					C2. INSERT 01600 ENTR (149)
					C3. INSERT 33777 ENTR (149)
					C4. INSERT VERB 25 NCUN 26 ENTR (149)
					C5. INSERT 04000 ENTR (149)
					C6. INSERT 01600 ENTR (149)
					C7. INSERT 00003 ENTR (149)
				44-013 GNL CDR	INSERT VERB 30 ENTR (149)
					C1. VERIFY 'RESTART' LT - CN (149)
				44-014 GNL CDR	INSERT VERB 36 ENTR (149)
					C1. PLSH 'RSET' PB, VERIFY ALL ALARMS CLEAR (149)
					RUPT LOCK TOC LCNC
				44-015 GNL CDR	C1. INSERT VERB 24 NCUN 01 ENTR (149)
					C2. INSERT 01600 ENTR (149)
					C3. INSERT 30001 ENTR (149)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					04. INSERT 01600 ENTR 149
					05. INSERT VERB 25 NCUN 26 ENTR 149
					06. INSERT 00001 ENTR 149
					07. INSERT 01600 ENTR 149
					08. INSERT 00003 ENTR 149
	44-016		GNL	CDR	INSERT VERB 31 ENTR 149
					01. VERIFY 'RESTART' LT - CN 149
	44-017		GNL	CDR	INSERT VERB 36 ENTR 149
					01. PUSH 'RSET' FB, VERIFY ALL ALARMS CLEAR 149
					TC TRAP TEST
	44-018		GNL	CDR	01. INSERT VERB 21 NCUN 01 ENTR 149
					02. INSERT 01470 ENTR 149
					03. INSERT 31474 ENTR 149
					04. INSERT NCUN 15 ENTR 149
					05. INSERT 54067 ENTR ENTR 149
					06. INSERT 31475 ENTR ENTR 149
					07. INSERT 54001 ENTR ENTR 149
					08. INSERT 14613 ENTR ENTR 149
					09. INSERT 00067 ENTR 149
					10. INSERT VERB 25 NCUN 26 ENTR 149
					11. INSERT 35000 ENTR 149
					12. INSERT 01470 ENTR 149
					13. INSERT 00003 ENTR 149

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PROJECT APCLLC

DATE 14/01/69

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TIME	CH	SEC	C/C CIL	C/C STTN	DESCRIPTION/INSTRUCTION
		44-019	GML	CDR	INSERT VERB 30 ENTR 149
					01. VERIFY 'RESTART' LT - CN 149
		44-020	GML	CDR	VERB 26 ENTR 149
					01. PUSH 'RSET' FB 149
		44-021	GML	CDR	01. INSERT VERB 21 NCUN 01 ENTR 149
					02. INSERT 01470 ENTR 149
					03. INSERT 30067 ENTR 149
					04. INSERT NCUN 15 ENTR 149
					05. INSERT 31474 ENTR ENTR 149
					06. INSERT 22000 ENTR ENTR 149
					07. INSERT 22005 ENTR ENTR 149
					08. INSERT 01470 ENTR 149
					09. INSERT VERB 25 NCUN 26 ENTR 149
					10. INSERT 36000 ENTR 149
					11. INSERT 01470 ENTR 149
					12. INSERT 00003 ENTR 149
		44-022	GML	CDR	INSERT VERB 30 ENTR 149
					01. VERIFY 'RESTART' LT - CN 149
		44-023	GML	CDR	INSERT VERB 36 ENTR 149
					01. PUSH 'RSET' FB, VERIFY ALL ALARMS CLEAR 149
					NIGHT WATCHMAN TEST
					02. INSERT VERB 24 NCUN 01 ENTR 149
					03. INSERT 01600 ENTR 149

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					C4. INSERT 30001 ENTR (149)
					C5. INSERT 01600 ENTR (149)
					C6. INSERT VERB 25 ACUM 26 ENTR (149)
					C7. INSERT 03400 ENTR (149)
					C8. INSERT 01600 ENTR (149)
					C9. INSERT 00003 ENTR (149)
	44-024		GNL	CDP	INSERT VERB 30 ENTR (149)
					C1. VERIFY 'RESTART' LT - CN (149)
	44-025		GNL	CDP	INSERT VERB 36 ENTR (149)
					C1. PUSH 'RSET' PB, VERIFY ALL ALARMS CLEAR (149)
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

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4/7/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		'45-000'			(GN 156) DIRECT MODE MANUAL CONTROL CHECKOUT
		'45-001'	SCL	CDR	PANEL 11 ROW 2 'S/C', CLOSE 'ATT DIR CONT' CB
		'45-002'	SCL	CDR SH1	PANEL 1, 'GLID CONT' SW - 'AGS' GUID SEL AGS MODE GH16215 '01. VERIFY 005A2A02 E03 CN
		'45-003'	SCL	CDR	'01. PANEL 3, 'S/C' 'MODE CONTROL' SW - 'ATT HOLD' '02. 'YAW' SW - 'DIR' '03. 'PITCH' SW - 'DIR' '04. 'ROLL' SW - 'DIR'
		'45-004'	SCL	CEC	START RECORDER
		'45-005'	SCL	CDR	ACA, YAW LEFT TO SCFT STOP '01. VERIFY JET AC. 3F - CN '02. VERIFY JET AC. 1F - CN
		'45-006'	SCL	CDR	NEUTRAL '01. VERIFY ALL JETS OFF
		'45-007'	SCL	CDR	YAW RIGHT TO SCFT STOP '01. VERIFY JET AC. 3S - CN '02. VERIFY JET AC. 1S - CN
		'45-008'	SCL	CDR	NEUTRAL '01. VERIFY ALL JETS OFF
		'45-009'	SCL	CDR	PITCH UP TO SCFT STOP '01. VERIFY JET AC. 2U - CN '02. VERIFY JET AC. 1U - CN
		'45-010'	SCL	CDR	NEUTRAL

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TIME	CH	SEC	C/C CTL	C/C STAN	DESCRIPTION/INSTRUCTION
				CEC	01. VERIFY ALL JETS OFF
	45-011		SCL	CDR	PITCH DOWN TO SOFT STOP
				CEC	01. VERIFY JET NO. 20 - CN
					02. VERIFY JET NO. 40 - CN
	45-012		SCL	CDR	NEUTRAL
				CEC	01. VERIFY ALL JETS OFF
	45-013		SCL	CDR	ROLL RIGHT TO SOFT STOP
				CEC	01. VERIFY JET NO. 40 - CN
					02. VERIFY JET NO. 10 - CN
	45-014		SCL	CDR	NEUTRAL
				CEC	01. VERIFY ALL JETS OFF
	45-015		SCL	CDR	ROLL LEFT TO SOFT STOP
				CEC	01. VERIFY JET NO. 20 - CN
					02. VERIFY JET NO. 20 - CN
	45-016		SCL	CDR	NEUTRAL
				CEC	01. VERIFY ALL JETS OFF
	45-017		SCL	CDR	PANEL 1, 'GLID CONT' SW - 'PGNS'
			SH1		GLID SEL AGS MODE GH16215
				01. VERIFY	005A2A02 E03 CFF
	45-018		SCL	CDR	01. PANEL 3, 'S/C' 'MODE CONTROL' SW - 'AUTO'
					02. 'ROLL' SW - 'MODE CONT'
					03. 'PITCH' SW - 'MODE CONT'
					04. 'YAW' SW - 'MODE CONT'
					05. PANEL 11 ROW 2 'S/C', OPEN 'ATT DIR CONT' CB

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

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TIME	CH	SEC	C/C CTL	C/C STTA	DESCRIPTION/INSTRUCTION
		46-000			(GN 157) PGMS RCS AUTO HOT-FIRE SET-UP
		46-001	SCL	COO	5 VOLT POWER SUPPLY, VERIFY P/J2 DISCONNECTED
		46-002	SCL	CCR	PANEL 11 ROW 2 'RCS SYS A', REMOVE GUARDS AND CLOSE FOLLOWING CB'S
				01.	'QUAD 1 TCA'
				02.	'QUAD 2 TCA'
				03.	'QUAD 3 TCA'
				04.	'QUAD 4 TCA'
		46-003	SCL	LMP	PANEL 16 ROW 1 'RCS SYS B', REMOVE GUARDS AND CLOSE FOLLOWING CB'S
				01.	'QUAD 1 TCA'
				02.	'QUAD 2 TCA'
				03.	'QUAD 3 TCA'
				04.	'QUAD 4 TCA'
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

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4/8/69
0053

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		47-000			(IGN 160) MANUAL ASC ENG FIRE AND ACA MANEUVERS
		47-001	SCL	SH1	GUID SEL AGS MODE 01. VERIFY 005A2A02 E03 GH16215 CN
		47-002	SCL	CDR SH1	PANEL 1 'ENG THR CONT', 'ENG ARM' SW 'ASC' ASC ENGINE ARM GH12305 01. VERIFY 005A2A02 E23 CN
					SCS MOD SEL AUTOMATIC 02. VERIFY 005A2A02 E01 GH16085 CFF
					SCS MOD SEL ATT. HOLD 03. VERIFY 005A2A02 E02 GH16095 CN
			GH1		04. ATTITUDE HOLD MODE VERIFY 004A3A05 E21 ZG95455 CN
		47-003	SCL	CDR SH1	PANEL 5, PUSH 'START' PB/LT, LT - CN ASC ENGINE CN TC PRCP GH12605 01. VERIFY 005A2A02 E24 CN
		47-004	SCL	CDR SH1	ACA, PITCH LP TC SCFT STOP AND HOLD ACA CUT CF DETENT GH12045 01. VERIFY 005A2A02 E09 CN
					2U 02. VERIFY 016A2A01 E09 GH14265 CN
					3U 03. VERIFY 016A2A01 E05 GH14225 CN
					1C 04. VERIFY 016A2A01 E14 GH14315 CN

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PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION			
0054					4D			GH14195
					05. VERIFY	016A2A01	E02	209 CN
	47-005		SCL	CDR SH1	NEUTRAL ACA CUT CF	DETENT		GH12045
					01. VERIFY	005A2A02	E09	209 CFF
					02. VERIFY ALL JETS - CFF			209
	47-006		SCL	CDR SH1	PITCH DOWN TO SCFT STOP AND HOLD	DETENT		GH12045
					01. VERIFY	005A2A02	E09	209 CN
					2D			GH14275
					02. VERIFY	016A2A01	E10	209 CN
					3D			GH14235
					03. VERIFY	016A2A01	E06	209 CN
					1U			GH14305
					04. VERIFY	016A2A01	E13	209 CN
					4U			GH14185
					05. VERIFY	016A2A01	E01	209 CN
	47-007		SCL	CDR SH1	NEUTRAL ACA CUT CF	DETENT		GH12045
					01. VERIFY	005A2A02	E09	209 CFF
					02. VERIFY ALL JETS - CFF			209
	47-008		SCL	CDR SH1	ROLL RIGHT TO SCFT STOP AND HOLD	DETENT		GH12045
					01. VERIFY	005A2A02	E09	209 CN

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4/8/69
0656

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					3U GH14225
				02. VERIFY	016A2A01 E05 CN 209
					4U GH14185
				03. VERIFY	016A2A01 F01 CN 209
					2D GH14275
				04. VERIFY	016A2A01 E10 CN 209
					1D GH14315
				05. VERIFY	016A2A01 E14 CN 209
	47-009		SCL	CDR SH1	NEUTRAL ACA OUT CF DETENT 01. VERIFY 005A2A02 E09 CFF 209
					02. VERIFY ALL JETS - CFF 209
	47-010		SCL	CDR SH1	ROLL LEFT TO SOFT STOP AND HOLD ACA OUT CF DETENT 01. VERIFY 005A2A02 E09 CN 209
					4D GH14195
				02. VERIFY	016A2A01 E02 CN 209
					3D GH14235
				03. VERIFY	016A2A01 E06 CN 209
					1U GH14305
				04. VERIFY	016A2A01 E13 CN 209
					2U GH14265
				05. VERIFY	016A2A01 E09 CN 209
	47-011		SCL	CDR	NEUTRAL 209

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TIME	CH	SEC	C/C CTL	C/C STN	DESCRIPTION/INSTRUCTION
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				SP1	ACA CLT CF DETENT GH12045
				C1. VERIFY	005A2AC2 E09 CFF

C2. VERIFY ALL JETS - CFF

47-012			SCL	CDR	PANEL 5, PUSH 'STOP' PB/LT, LT - ON
--------	--	--	-----	-----	-------------------------------------

C1. VERIFY 'START' PB/LT - CFF

47-013			SCL	CDR	PUSH 'STOP' PB/LT, LT - CFF
--------	--	--	-----	-----	-----------------------------

SH1 ASC ENGINE CN TC PRCP

C1. VERIFY 005A2AC2 E24

GH12605
CFF

47-014			SCL	CDR	PANEL 1, 'ENG THR CONT' 'ENG ARM' SW - CFF
--------	--	--	-----	-----	--

SH1 ASC ENGINE ARM

C1. VERIFY 005A2AC2 E23

GH12305
CFF

47-015			SCL	CDR	'GLID CONT' SW - 'PGNS'
--------	--	--	-----	-----	-------------------------

SH1 GLID SEL AGS MODE

C1. VERIFY 005A2AC2 E03

GH16215
CFF

-NOTE-

REPORT COMPLETION TO TC (NIB).

Completed
 4-8-69
 0058

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OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

NO. AND TITLE: <u>SCV</u> <u>OCPB-90008-LM-2</u>	DATE: <u>4-7-69</u>	SHEET <u>28</u> OF <u> </u>
	TPS NO. <u> </u>	PRETEST <u>TEST</u> POST-TEST <u> </u>
<u>GAEC</u> <u>George A. Freling 4/7/69</u> <u>Robert M. Whitely 4/7/69</u>		<u>NASA</u> <u>W. T. Mulochy 4/8/69</u> <u>A. J. Frost 4/8/69</u> <u>for Q. E.</u>

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/PERM	GAEC	NASA
31	2-161	48-001	AID S/S OI. "MATE P/S 167 AND P/S 166" (NOT RE-MATED AFTER DROP TEST)	T	(209) 4-7-69	

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4/7/69 2043		48-CC0			(GN 162) 5 VOLT GSE POWER SUPPLY ACTIVATION FOR RCS JETS
Dev. 31 No.		48-CC1	SCL	CCC	5 VOLT POWER SUPPLY, CONNECT P/J 2 (LDW 410-12046) 209
		48-CC2	SCL	CCC	01. MATE P/S 100 5/1/67 209 J BOX (LDW 410-11111), CLOSE 'CB-3' 209
		48-CC3	SCL	CCC	01. 5 VOLT POWER SUPPLY, 'POWER ON/OFF' SW 209 'GN'
					02. 'S1' SW - 'OFF' 209
					03. VERIFY 'OVER-VOLTAGE' LT - OFF 209
					-NOTE-
					REPORT COMPLETION TO TC (NIE).

Complete
4-7-69
2103
209

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4/1/69
2105

TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		49-000			(GN 164) PGMS ATTITUDE HOLD MANEUVER SET-UP LOAD PROGRAM
		49-001	GNL	CDR	01. INSERT VERB 21 NOUN 01 ENTR (209)
					02. INSERT 03610 ENTR (209)
					03. INSERT 37657 ENTR (209)
					04. INSERT NOUN 15 ENTR (209)
					05. INSERT 54042 ENTR ENTR (209)
					06. INSERT 54043 ENTR ENTR (209)
					07. INSERT 54044 ENTR ENTR (209)
					08. INSERT 37643 ENTR ENTR (209)
					09. INSERT 67642 ENTR ENTR (209)
					10. INSERT 00006 ENTR ENTR (209)
					11. INSERT 05013 ENTR ENTR (209)
					12. INSERT 37646 ENTR ENTR (209)
					13. INSERT 04451 ENTR ENTR (209)
					14. INSERT 01625 ENTR ENTR (209)
					15. INSERT 00007 ENTR ENTR (209)
					16. INSERT 04505 ENTR ENTR (209)
					17. INSERT 47643 ENTR ENTR (209)
					18. INSERT 00006 ENTR ENTR (209)
					19. INSERT 03013 ENTR ENTR (209)
					20. INSERT 30042 ENTR ENTR (209)
					21. INSERT 55641 ENTR ENTR (209)

(209)



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[illegible]

Completed
4-7-69
2112

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DATE 04/01/69

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0238

TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
		50-000			(GN 166) 5 VOLT POWER SUPPLY DEACTIVATION
		50-001	SCL	CCC	5 VOLT POWER SUPPLY, 'POWER ON/OFF' SW - 'OFF'
		50-002	SCL	CCC	J BOX (LDW410-11111), OPEN 'CB-3'
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

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0233
4-8-69
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OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE:

INST

DATE: 4-7-69

SHEET 7 OF

CPB-90008-LM-2

TPS NO.

PRETEST

TEST

POST-TEST

GAEC

Kennell B. Bann
W. T. Mulcahey 4/7/69

NASA

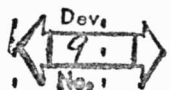
W. T. Mulcahey 4/7/69
for DE

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
9	2-165	57-003 S/S 012	CHANGE "WATER" TO "OR" (EQUIPMENT CHANGE)	P	998 4/7/69	

DATE 04/01/69

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OCP-B-90008-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		51-000			(INST 42) C/WEA TURN ON AND LIGHT CHECK
		51-001	ISL	LMP	PANEL 3 'HTR CCNT', 'TEMP MON' SEL - 'RNDZ' ⁹⁹⁸ RDR
		51-002	ISL	LMP	PANEL 16 ROW 2 'INST', CLOSE 'C/WEA' ⁹⁹⁸
		51-003	ISL	LMP	ROW 1 'LTG' CLOSE 'MASTER ALARM' CB ⁹⁹⁸
				C1.	PANEL 2, 'C/W PWR' CAUT LT - OFF ⁹⁹⁸
			CDR	C2.	PANEL 1, 'ASC PRESS' WARN LT - CN ⁹⁹⁸
				C3.	'CES AC' WARN LT - CN ⁹⁹⁸
				C4.	'CES DC' WARN LT - CN ⁹⁹⁸
				C5.	'RCS A REG' WARN LT - CN ⁹⁹⁸
				C6.	'RCS E REG' WARN LT - CN ⁹⁹⁸
			LMP	C7.	PANEL 2, 'PREAMP' CAUT LT - CN ⁹⁹⁸
				C8.	'RCS' CAUT LT - CN ⁹⁹⁸
				C9.	'HEATER' CAUT LT - CN ⁹⁹⁸
				C10.	'ECS' CAUT LT - CN ⁹⁹⁸
				C11.	'GLYCCL' CAUT LT - CN ⁹⁹⁸
				C12.	⁰² 'WATER QTY' CAUT LT - CN ⁹⁹⁸
				C13.	'H2O SEP' COMP CAUT LT - CN ⁹⁹⁸
		51-004	ISL	CDR	PANEL 3 'S/C', 'GYRO TEST' SW - 'NEG RT' ⁹⁹⁸ MOMENTARILY
				C1.	PANEL 1, 'CES AC' WARN LT - OFF ⁹⁹⁸
				C2.	'CES DC' WARN LT - OFF ⁹⁹⁸
		51-005	ISL	CDR	C1. PANEL 3 'HTR CCNT' ROTATE 'TEMP MONITOR' ⁹⁹⁸ SEL THRU ALL POSITIONS AND RETURN TO 'RNDZ' RDR
			LMP	C2.	PANEL 2, 'HEATER' CAUT LT - OFF ⁹⁹⁸



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TIME	CH	SEC	C/D CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					RCTATE 'C2/H20 CTY MCN' SEL - TC 'C/W RESET' 998 AND RETURN TO 'CES'
					C1. ⁰² 'WATER CTY' CALT LT - CF 998 -NOTE- REPORT COMPLETION TO TC (NIR).

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE:		INST	DATE: 4-7-69	SHEET 8 OF	
OCP B-90008-LM-2		TPS NO.	PRETEST	TEST	POST-TEST
<u>GAEC</u> <u>Kenneth J. Bauman</u> <u>Reading 4/7/69</u>			<u>NASA</u> <u>W.T. Mulcahey 4/7/69</u> <u>Ch. Frost 4-7-69</u> <u>for O.E.</u>		

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/PERM	GAEC	NASA
10	2-166	51-006 5/5 01	CHANGE "WATER" TO "O2" (EQUIPMENT CHANGE REFERENCE DEV #9)	P	998 4/7/69	

PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/D CTL	C/C STTN	DESCRIPTION/INSTRUCTION
14:21 4/1/69		52-000			(INST 47) LAMP TEST AND CMEA CFF/CN CYCLE
		52-001	ISL	LMP	PANEL 3, 'LAMP/TCNE TEST' SEL - 'C/W 1' 998
			CDR	C1.	PANEL 1, LEFT BANK WARN LTS - CN 998
		52-002	ISL	LMP	PANEL 3 'LAMP/TCNE TEST' SEL - 'ENG PB C/W 2' 998
			CDR	C1.	PANEL 1 LEFT BANK WARN LTS - CFF, RIGHT BANK WARN LTS - CN 998
				C2.	PANEL 5, ENG 'STCP' AND 'START' PB/LTS - CN 998
			LMP	C3.	PANEL 6, ENG 'STCP' PB/LT - CN 998
		52-003	ISL	LMP	PANEL 3, 'LAMP/TCNE TEST' SEL - 'C/W 3' 998
			CDR	C1.	PANEL 5, ENG 'STCP' AND 'START' PB/LTS - CFF 998
			LMP	C2.	PANEL 6, ENG 'STCP' PB/LTS - CFF 998
			CDR	C3.	PANEL 1, RIGHT BANK WARN LTS - CFF 998
			LMP	C4.	PANEL 2, LEFT BANK CAUT LTS - CN 998
		52-004	ISL	LMP	PANEL 3, 'LAMP/TCNE TEST' SEL - 'C/W 4' 998
				C1.	PANEL 2, LEFT BANK CAUT LTS - CFF, RIGHT BANK CAUT LTS - CN 998
		52-005	ISL	LMP	PANEL 3, 'LAMP/TCNE TEST' SEL - 'COMPNT' 998
				C1.	PANEL 2, RIGHT BANK CAUT LTS - CFF, EXCEPT 'C/W PWR' 998
				C2.	'SLIT FAN' CCMP CAUT LT - CN 998
				C3.	'GLYCOL PUMP' CCMP CAUT LT - CN 998
				C4.	'CC2' CCMP CAUT LT - CN 998
				C5.	'H2O SEP' CCMP CAUT LT - CN 998
				C6.	PANEL 14, 'BAT FAULT' CCMP CAUT LT - CN 998
				C7.	PANEL 3, 'NO TRACK' LT - CN 998
				C8.	'LLNAR CONTACT' LT (2) - CFF 998



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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
		52-CC6	ISL	LMP	'LAMP/TONE TEST' SEL - 'OFF' 998
					'01. PANEL 14, 'BAT FAULT' COMP CAUT LT - OFF 998
					'02. PANEL 2, 'SLIT FAN' COMP CAUT LT - OFF 998
					'03. 'GLYCOL PUMP' COMP CAUT LT - OFF 998
					'04. 'CC2' COMP CAUT LT - OFF 998
					'05. 'H2O SEP' COMP CAUT LT - OFF 998
					'06. PANEL 3, 'NO TRACK' LT - OFF 998
					'07. 'LLAR CONTACT' LT (2) - OFF 998
					-NOTE-
					REPORT COMPLETION TO TC (NIB).

4/1/69
998
14:28

PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4/8/69 02:40		53-000			(INST 48) S/C CFI POWER TURN OFF
		53-001	ISL	DAR	C1. REGATRAN POWER SUPPLY CB'S (2) - 'OFF' 1357
					C2. RACK 2, RACK 1, 2, 3/4, AND POWER SUPPLY CB'S - 'OFF' 1357
		53-002	ISL	DAR	'TAPE RECORDER' SW - 'OFF' 1357
		53-003	ISL	DTC	'115 VAC' CB - 'OFF' 1357
					-NOTE-
					REPORT COMPLETION TO TC (NIB).
					4/8/69 02:41 1357



PROJECT APCLLC

DATE 24/01/69

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TIME	CH	SEC	C/C CTL	C/C STIN	DESCRIPTION/INSTRUCTION
					(INST 50) S/C DFI POWER TURN ON AND DFI CALIBRATE
					PANEL 10, CLOSE 'R/D INST A' AND 'B' CB'S 982
					-NOTE- 1716
					THE 'SCL PANEL' AND 'RF METERING AND SEL PANEL' SW'S ARE TO BE USED TO PERFORM RCVR TUNING OPERATION
					RWR 2,345 982
					SEQUENTIALLY TUNE EACH RCVR TO ITS PROPER XMTR FREQ BY OBSERVING THE RCVR METER FOR NULL AND THE PANCRAMIC PANADAPTER VIDEO WAVEFORM FOR CTR FREQ.
					ENSURE RECORDER HAS SUFFICIENT TAPE TO PERFORM REMAINDER OF SEQUENCE 982
					01. VERIFY VIDEO INPUTS AT TAPE RECORDER INPUT TRACKS BY OBSERVING CN TLM INDICATOR
					PRESS 'DRIVE' AND 'RECORD' SW'S
					01. VERIFY 'RECORD' LT - CN
					VOICE ANNOTATE TAPE WITH 'BEGIN R/D TLM CAL DFI TEST TAPE NO. 1', DOCUMENT NO., DATE, TIME AND SEQUENCE STEP NO.
					PANEL 10, SET AND HOLD 'R/D TLM CALIBRATE' SW - 'CN' (APPROX 12 TO 14 SECONDS)
					VOICE ANNOTATE RECORDER WITH 'END OF R/D TLM CAL', TIME, AND 'BEGIN 20 MINUTE AMBIENT DATA'
					-NOTE-
					WAIT APPROX 20 MINUTES BEFORE PROCEEDING. REPORT START OF DFI AMBIENT DATA RECORDING IN PROGRESS TO TC (NIB).
					VOICE ANNOTATE TAPE WITH 'END OF DFI TEST TAPE NO. 1, DOCUMENT NO., DATE, TIME, AND

DEV
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OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

NO. AND TITLE: OCP-B-900CB-LM-2	INST INST	DATE: 4-7-69	SHEET 19 OF
GAEC Kenneth D. B... W. Massey		TPS NO.	PRETEST TEST POST-T.
NASA W. T. Mulcahey 4/7/69 G. H. Hunt 4-7-69 for O.E.			

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
21	2-170	54-002	CHANGE STEP TO READ "TUNE RCVR'S 2,3, 4+5 TO THEIR PROPER XMITR FREQ BY OBSERVING THE RCVR METER FOR NULL AND THE PANORAMIC PANADAPTER VIDEO WAVEFORM FOR CTR FREQ. TUNE RCVR NO. 1 TO LOWER S-BD FOR -150KC DEVIATION AS INDICATED ON FRONT PANEL NULL METER. (PREVENT IMPROPER EQUIPMENT OPERATION)	P	982 866 4/7/69	

DATE 04/01/69

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TIME	CH	SFC	C/C CTL	C/D STTN	DESCRIPTION/INSTRUCTION
					SEQUENCE STEP NO.
					1. PUSH 'STOP' PB ON RECORDER
					2. REWIND TAPE AND PLACE ANNOTATED TAPE LABEL ON REEL AND CONTAINER.
		54-009	ISL	CDR	PANEL 10, OPEN 'R/D INST A' AND 'B' CB'S
					-NOTE-
					REPORT COMPLETION TO TC (NIB).
					4/7/69
					21130
					1357

PROJECT APCLLC

DATE 74/01/69

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TIME	CH	SEC	C/D CTL	C/D STTN	DESCRIPTION/INSTRUCTION
4/7/69 21:10		55-000			(INST 58) CFI DATA ACQUISITION
		55-001	ISL	CDR ✓	PANEL 10, CLOSE 'R/D INST A' AND 'B' CB'S (1357)
					-NOTE-
					THE 'SDU PANEL' AND 'RF METERING AND SEL PANEL' SW'S ARE TO BE USED TO PERFORM RCVR TUNING OPERATION
		55-002	ISL	DAR ✓	ENSURE RECORDER HAS SUFFICIENT TAPE TO PERFORM (1357)
				01.	VERIFY VIDEO INPUTS AT TAPE RECORDER INPUT TRACKS BY OBSERVING ON TLM INDICATOR (1357)
		55-003	ISL	DAR ✓	PRESS 'DRIVE' AND 'RECORD' SW'S, 'RECORD' LT CN (1357)
		55-004	ISL	DAR ✓	VOICE ANNOTATE TAPE WITH 'BEGIN R/D TLM CAL CFI TEST TAPE NO. , DOCUMENT NO., DATE, TIME AND SEQUENCE STEP NO. (1357)
		55-005	ISL	CDR ✓	PANEL 10, SET AND HOLD 'R/D TLM CALIBRATE' SW - 'CN' (APPRX 12 TO 14 SECONDS) (1357)
		55-006	ISL	DAR ✓	VOICE ANNOTATE RECORDER WITH 'END OF R/D TLM CAL', TIME, AND 'BEGIN AMBIENT DATA NO. ...' (1357)
					-NOTE-
					REPORT START OF CFI AMBIENT DATA RECORDING IN PROGRESS TO TC (NIB).
		55-007	ISL	DAR ✓	01. AT CONCLUSION OF AMBIENT DATA RUN, VOICE ANNOTATE TAPE WITH 'END OF AMBIENT DATA NO. DOCUMENT NO., DATE, TIME, AND SEQUENCE STEP NO. (1357)
				02.	PUSH 'STOP' PB ON RECORDER (1357)

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

OCP NO. AND TITLE:	INST	DATE: 4-7-69	SHEET 17 OF
00P-B-70008-4M-2	TPS NO.	PRETEST	TEST POST-TEST
<u>GAEC</u> <u>Kenneth Baum</u> <u>W. Massey</u>		<u>NASA</u> <u>W.T. Mulcahey 4/7/69</u> <u>St. Frost 4-7-69</u> <u>for O.E.</u>	

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
19	2173	55-008	ADD NEW 55A-000 AS follows	P		
		55A-000	(INST 68) GSE INST TURN ON		996 4/7/69	
		55A-001	ISL/DAR 01. 32110, RACK 3, RACKS 1, 2, 3, 4 AND POWER SUPPLY CB'S - 'ON' 996 02. RACK 4, REGATRAN POWER SUPPLY CB'S - 'ON' 996 03. ADJUST REGATRAN POWER SUPPLY FOR 28VDC. 996			
		55A-002	ISL/DAR 01. 11080, RACK 1, 115 VAC CB - 'ON' 996 02. RACK 2, TAPE RECORDER SW - 'ON' 996 (REQUIRED TO TURN ON GSE POWER)			

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					-NOTE-
					AT END OF TAPE, VOICE ANNOTATE TAPE WITH 'END OF CFI TEST TAPE NO., DOCUMENT NO., DATE, TIME AND SEQUENCE STEP NO.' PUSH 'STOP' PB ON RECORDER. REMOVE TAPE AND RELOAD MACHINE WITH DEGAUSSED TAPE. PLACE ANNOTATED TAPE LABEL ON USED REEL AND REEL CONTAINER.
		55-008	ISL	CCR	PANEL 10, OPEN 'R/D INST A' AND 'B' CH'S
					-NOTE-
					REPORT COMPLETION TO TC (NIB)
					4/7/69
					21:30
					1357
#19		55A-000			

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TIME	CH	SEC	C/C CTL	C/O STTN	DESCRIPTION/INSTRUCTION
					(PRCP 70) PREPARATION OF RCS DPS AND APS FOR LUNAR LANDING
		56-000			
		56-001	PSL	LMP	01. PANEL 2, 'RCS SYS A', 'MAIN SCV' TB - GRAY
					02. 'ASC FEED' TB - BP
					03. 'GLAD 1' TB - GRAY
					04. 'GLAD 2' TB - GRAY
					05. 'GLAD 3' TB - GRAY
					06. 'GLAD 4' TB - GRAY
		56-002	PSL	LMP	01. 'RCS SYS B', 'MAIN SCV' TB - GRAY
					02. 'ASC FEED' TB - BP
					03. 'GLAD 1' TB - GRAY
					04. 'GLAD 2' TB - GRAY
					05. 'GLAD 3' TB - GRAY
					06. 'GLAD 4' TB - GRAY
					07. PANEL 2, 'RCS' 'CRSFD' TB - BP
		56-003	PSL	LMP	'TEMP/PRESS MCN' SEL - 'HE'
					01. RECORD 'PRESS A' IND
					02. RECORD 'PRESS B' IND
		56-004	PSL	LMP	'TEMP/PRESS MCN' SEL - 'PRPLNT'
					01. RECORD 'TEMP A' IND
					02. RECORD 'TEMP B' IND
					03. RECORD 'PRESS A' IND
					04. RECORD 'PRESS B' IND
		56-005	PSL	LMP	'RCS', 'TEMP/PRESS MCN' SEL - 'FUEL

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TIME	CH	SEQ	C/C CTL	C/C STIN	DESCRIPTION/INSTRUCTION
					-NOTE-
					AT END OF TAPE, VOICE ANNOTATE TAPE WITH 'END OF CFI TEST TAPE NO. ..., DOCUMENT NO., DATE, TIME AND SEQUENCE STEP NO.' PUSH 'STOP' FB ON RECORDER. REMOVE TAPE AND RELOAD MACHINE WITH DEGAUSSED TAPE. PLACE ANNOTATED TAPE LABEL ON USED REEL AND REEL CONTAINER.
		55-008	ISL	CDR	PANEL 10, OPEN 'R/D INST A' AND 'B' CH'S
					-NOTE-
		55-008A			REPORT COMPLETION TO TC (NIB)



PROJECT APCLLC

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TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
169 026					(PRCP 70) PREPARATION OF RCS DPS AND APS FOR LUNAR LANDING
	56-000				
	56-001	PSL	LMP		01. PANEL 2, 'RCS SYS A', 'MAIN SCV' TB - GRAY (209)
					02. 'ASC FEED' TB - BP (209)
					03. 'GLAD 1' TB - GRAY (209)
					04. 'GLAD 2' TB - GRAY (209)
					05. 'GLAD 3' TB - GRAY (209)
					06. 'GLAD 4' TB - GRAY (209)
	56-002	PSL	LMP		01. 'RCS SYS B', 'MAIN SCV' TB - GRAY (209)
					02. 'ASC FEED' TB - BP (209)
					03. 'GLAD 1' TB - GRAY (209)
					04. 'GLAD 2' TB - GRAY (209)
					05. 'GLAD 3' TB - GRAY (209)
					06. 'GLAD 4' TB - GRAY (209)
					07. PANEL 2, 'RCS' 'CRSED' TB - BP (209)
	56-003	PSL	LMP		'TEMP/PRESS MON' SEL - 'HE' (209)
					01. RECCRD 'PRESS A' IND ... 0 (209)
					02. RECCRD 'PRESS B' IND ... 0 (209)
	56-004	PSL	LMP		'TEMP/PRESS MON' SEL - 'PRPLNT' (209)
					01. RECCRD 'TEMP A' IND ... 21°F (209)
					02. RECCRD 'TEMP B' IND ... 7.3°F (209)
					03. RECCRD 'PRESS A' IND ... 20 PSIA (209)
					04. RECCRD 'PRESS B' IND ... 20 PSIA (209)
	56-005	PSL	LMP		'RCS', 'TEMP/PRESS MON' SEL - 'FUEL' (209)

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4/7/69 2028					MANF'
					'01. RECCRD 'PRESS A' IND <u>30</u> ..PSIA (209)
					'02. RECCRD 'PRESS B' IND <u>35</u> ..PSIA (209)
	56-CC6	PSL	LMP		'TEMP/PRESS MON' SEL - 'CXID MANF' (209)
					'01. RECCRD 'PRESS A' IND <u>40</u> ..PSIA (209)
					'02. RECCRD 'PRESS B' IND <u>41</u> ..PSIA (209)
					'03. READ 'CTY A' INC 0 (209)
					'04. READ 'CTY B' INC 0 (209)
	56-CC7	PSL	LMP		RECCRD FOLLOWING CAUTION LIGHTS ON OR OFF (209)
					'01. 'RCS' ..OFF.
					'02. 'HEATER' ..OFF.
					'03. 'ASC HI REG' ..OFF.
					'04. 'ASC QTY'OFF.
	56-CC8	PSL	LMP		'01. PANEL 3 'HTR CONT', 'TEMP MONITOR' SEL - 'QUAD 1', RECCRD 'TEMP' IND <u>125</u> ..F (209)
					'02. 'TEMP MONITOR' SEL - 'QUAD 2', RECCRD 'TEMP' IND <u>125</u> ..F (209)
					'03. 'TEMP MONITOR' SEL - 'QUAD 3', RECCRD 'TEMP' IND <u>125</u> ..F (209)
					'04. 'TEMP MONITOR' SEL - 'QUAD 4', RECCRD 'TEMP' IND <u>125</u> ..F (209)
					'05. 'TEMP MONITOR' SEL - 'S BAND' -100 (209)
	56-CC9	PSL	CDR		'01. PANEL 1 'MAIN PROPULSION', 'ASCENT HE REG 1' TB- GRAY (209)
					'02. 'REG 2' TB - GRAY (209)
					'03. 'DESCENT HE REG 1' TB - GRAY (209)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
1749 2031					04. 'REG 2' TB - RF (209)
	56-C10		PSL	CDR	01. 'HELIUM MCN' SEL - 'AMB PRESS', RECCRD (209) 'HELIUM' IND ..0030
					02. 'HELIUM MCN' SEL - 'SUPCRIT PRESS', RECORD (209) 'HELIUM' IND ..0090
					03. 'HELIUM MCN' SEL - 'ASC TEMP 1', RECCRD (209) 'HELIUM' IND ..7070
					04. 'HELIUM MCN' SEL - 'ASC TEMP 2', RECORD (209) 'HELIUM' IND ..7074
					05. 'HELIUM MCN' SEL - 'ASC PRESS 1', RECORD (209) 'HELIUM' IND ..70040
					06. 'HELIUM MCN' SEL - 'ASC PRESS 2', RECORD (209) 'HELIUM' IND ..70010
	56-C11		PSL	CDR	'PRPLNT TEMP/PRESS MCN' SW - 'ASC' (209)
					01. RECORD 'FUEL TEMP' IND ..71°F (209)
					02. RECORD 'OXID TEMP' IND ..72°F (209)
					03. RECORD 'FUEL PRESS' IND '0' PSIA (209)
					04. RECORD 'OXID PRESS' IND '0' PSIA (209)
	56-C12		PSL	CDR	'PRPLNT TEMP/PRESS MCN' SW - 'DES 1' (209)
					01. RECORD 'FUEL TEMP' IND ..71°F (209)
					02. RECORD 'OXID TEMP' IND ..72.5°F (209)
					03. RECORD 'FUEL PRESS' IND '0' PSIA (209)
					04. RECORD 'OXID PRESS' IND '0' PSIA (209)
	56-C13		PSL	CDR	'PRPLNT TEMP/PRESS MCN' SW - 'DES 2' (209)
					01. RECORD 'FUEL TEMP' IND ..71°F (209)
					02. RECORD 'OXID TEMP' IND ..70°F (209)
					03. RECORD 'FUEL PRESS' IND '0' PSIA (209)



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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4/1/69 2034					04. RECCRD 'OXID PRESS' INC 0.0 PSIA 209
	56-014	PSL	CDR		'PRPLNT QTY MCN' SW - 'DES 1' 209
					01. RECCRD 'OXID QTY' INC 0.0 209
					02. RECCRD 'FUEL QTY' INC 4.2 209
	56-015	PSL	CDR		'PRPLNT QTY MCN' SW - 'DES 2' 209
					01. RECCRD 'OXID QTY' INC 0.0 209
					02. RECCRD 'FUEL QTY' INC 4.2 209
	56-016	PSL	CDR		RECCRD 'T/W' INC 6 209
	56-017	PSL	CDR		RECCRD FOLLOWING WARNING LIGHTS ON OR OFF -
					01. 'ASC PRESS' ON 209
					02. 'DES REG' OFF 209
					03. 'DES QTY' OFF 209
					04. 'RCS TCA' ON 209
					05. 'RCS A REG' ON 209
					06. 'RCS B REG' ON 209
					-NOTE-
					LIMITS PRINTED FOR FOLLOWING MEASUREMENTS ARE NOT APPLICABLE TO THIS TEST.
	56-018	PSL	PSH		HE SUPPLY PRESS
					01. RECORD CRT PAGE 02 LINE 02 LEFT
					LL=+0190. LL=+2500. PSIA
					RECORD 4.7 209

GPO0015

01M

209

PROJECT APCLLC

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
034					HE SUPPLY PRESS GP00025 02. RECCRD CRT PAGE 02 LINE 02 RIGHT LL=+0190. UL=+3500. PSIA RECCRD...16... (200)
					REG CUT MNFLD P GP00185 03. RECCRD CRT PAGE 02 LINE 16 LL=+000.0 LL=+250.0 PSIA RECCRD...15.4... (200)
					P REG CUT MNFLD GP00255 04. RECCRD CRT PAGE 02 LINE 07 LL=+100.0 LL=+250.0 PSIA RECCRD...4.4... (200)
					TEMP HE SUPPLY GP02015 05. RECCRD CRT PAGE 02 LINE 03 LEFT LL= +040. LL= +100. DEGF RECCRD...7.7... (200)
					TEMP HE SUPPLY GP02025 06. RECCRD CRT PAGE 02 LINE 03 RIGHT LL= +040. LL= +100. DEGF RECCRD...7.5... (200)
					HE SCL VLV CLOSED GPC3185 07. RECCRD CRT PAGE 02 LINE 04 LEFT RECCRD...OFF... (200)
					HE SCL VLV CLOSED GPC3205 08. RECCRD CRT PAGE 02 LINE 04 RIGHT RECCRD...OFF... (200)
					TEMP FUEL TK BULK GPC7185 09. RECCRD CRT PAGE 02 LINE 11 LL= +040. LL= +100. DEGF RECCRD...7.1... (200)

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION	
					FUEL TK LEVEL LCH	GP09085
					10. RECORD CRT PAGE 02 LINE 05	RECORD.OFF.200
					TEMP CX TK CX BULK	GP12185
					11. RECORD CRT PAGE 02 LINE 12	
					LL= +040. LL= +100. DEGF	RECORD.72.200
					CX TANK LEVEL LCH	GP14085
					12. RECORD CRT PAGE 02 LINE 06	RECORD.OFF.200
					F ISOL VLV INLET	GP15015
					13. RECORD CRT PAGE 02 LINE 08	
					LL= +050. LL= +250. PSIA	RECORD.28.200
					CX ISOL VLV INLET	GP15035
					14. RECORD CRT PAGE 02 LINE 09	
					LL= +050. LL= +250. PSIA	RECORD.42.200
					P THRUST CHAMBER	GP20105
					15. RECORD CRT PAGE 02 LINE 10	
					LL=+090.0 LL=+121.0 PSIA	RECORD.14.200
					ISOL/BIPROCP MISMCH	GP29975
					16. RECORD CRT PAGE 02 LINE 14 LEFT	RECORD.OFF.200
					ISOL/BIPROCP MISMCH	GP29985
					17. RECORD CRT PAGE 02 LINE 14 RIGHT	RECORD.OFF.200



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DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION	
57					AMB HE RCTT PRES	GQ30155
					18. RECORD CRT PAGE 03 LINE 15	
					LL=+0000. UL=+1750. PSIA	RECORD 2.8.200
					P HE REG CUT MFELD	GQ30185
					19. RECORD CRT PAGE 03 LINE 05 LEFT	
					LL=+210.0 UL=+270.0 PSIA	RECORD 2.1.3.200
					HE REG CUT MFELD P	GQ30255
					20. RECORD CRT PAGE 03 LINE 16	
					LL=+210.0 UL=+270.0 PSIA	RECORD 2.8.5.200
					GQ3309 CL	GQ33095
					21. RECORD CRT PAGE 12 LINE 11 LEFT	
						RECORD 0.0.FF.200
					GQ3310 CP	GQ33105
					22. RECORD CRT PAGE 12 LINE 12 LEFT	
						RECORD 0.0.FF.200
					P SHE SUPPLY TANK	GQ34355
					23. RECORD CRT PAGE 03 LINE 10 LEFT	
					LL=+0000. UL=+1750. PSIA	RECORD 40.200
					QUANTITY FUEL	GQ36035
					24. RECORD CRT PAGE 03 LINE 02 LEFT	
					LL=+000.0 UL=+095.0 PCT	RECORD 2.5.2.200
					QUANTITY FUEL	GQ36045
					25. RECORD CRT PAGE 03 LINE 02 RIGHT	
					LL=+000.0 UL=+095.0 PCT	RECORD 3.4.2.200

PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
4/1/9 2038					P ENG INTFACE FUEL GQ36115 26. RECCRD CRT PAGE 03 LINE 06 LEFT LL=+050.0 LL=+270.0 PSIA RECCRD...LLL (207)
					TEMP FUEL BULK GQ37185 27. RECCRD CRT PAGE 03 LINE 11 LEFT LL= +040. LL= +100. DEGF RECCRD...71.0 (207)
					TEMP FUEL BULK GQ37195 28. RECCRD CRT PAGE 03 LINE 11 RIGHT LL= +040. LL= +100. DEGF RECCRD...71.0 (207)
					QUANTITY OXID GQ41035 29. RECCRD CRT PAGE 03 LINE 03 LEFT LL=+000.0 LL=+095.0 PCT RECCRD...25.2 (207)
					QUANTITY OXID GQ41045 30. RECCRD CRT PAGE 03 LINE 03 RIGHT LL=+000.0 LL=+095.0 PCT RECCRD...34.2 (207)
					P ENG INTFACE OXID GQ41115 31. RECCRD CRT PAGE 03 LINE 07 LEFT LL=+050.0 LL=+270.0 PSIA RECCRD...19.0 (207)
					TEMP OX BULK GQ42185 32. RECCRD CRT PAGE 03 LINE 12 LEFT LL= +040. LL= +100. DEGF RECCRD...72.0 (207)
					TEMP OX BULK GQ42195 33. RECCRD CRT PAGE 03 LINE 12 RIGHT LL= +040. LL= +100. DEGF RECCRD...72.0 (207)



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PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/D CTL	C/D STTN	DESCRIPTION/INSTRUCTION
039					PRCP LCD LEVEL LCW GQ44555 34. RECORD CRT PAGE 03 LINE 04 LEFT RECORD...OFF 209
					GQ6510 PSIA GQ65105 35. RECORD CRT PAGE 12 LINE 12 RIGHT RECORD...7.9. 209
					PCS VAR INJECT ACT GQ68065 36. RECORD CRT PAGE 03 LINE 08 LEFT LL=+010.0 LL=+100.0 PCT RECORD...8.3 209
					S/C VLV A/B MIDPCS GQ74985 37. RECORD CRT PAGE 03 LINE 13 RECORD...OFF 209
					S/C VLV C/D MIDPCS GQ74995 38. RECORD CRT PAGE 03 LINE 14 RECORD...OFF 209
					QUANT PRCP GR10855 39. RECORD CRT PAGE 01 LINE 03 LEFT RECORD...LLL% 209
					QUANT PRCP GR10955 40. RECORD CRT PAGE 01 LINE 03 RIGHT RECORD...LLL% 209
					HELIUM PRESSURE GR11015 41. RECORD CRT PAGE 01 LINE 07 LEFT LL=+3000. LL=+3250. PSIA RECORD...28. 209
					HELIUM PRESSURE GR11025 42. RECORD CRT PAGE 01 LINE 07 RIGHT LL=+3000. LL=+3250. PSIA RECORD...42. 209



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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION	
					HE REG CLTPLT	GR12015
					43. RECORD CRT PAGE 01 LINE 09 LEFT	
					LL=+171.0 LL=+200.0 PSIA	RECORD..19.4.200
					HE REG CLTPLT	GR12025
					44. RECORD CRT PAGE 01 LINE 09 RIGHT	
					LL=+171.0 LL=+200.0 PSIA	RECORD..15.2.200
					TEMP FUEL	GR21215
					45. RECORD CRT PAGE 01 LINE 04 LEFT	
					LL= +020. LL= +090. DEGF	RECORD..71..
					TEMP FUEL	GR21225
					46. RECORD CRT PAGE 01 LINE 04 RIGHT	
					LL= +020. LL= +090. DEGF	RECORD..73.2.200
					PRESS FUEL MNFLD	GR22015
					47. RECORD CRT PAGE 01 LINE 05 LEFT	
					LL=+171.0 LL=+200.0 PSIA	RECORD..31.8.200
					PRESS FUEL MNFLD	GR22025
					48. RECORD CRT PAGE 01 LINE 05 RIGHT	
					LL=+171.0 LL=+200.0 PSIA	RECORD..31.8.200
					PRESS CYID MNFLD	GR32015
					49. RECORD CRT PAGE 01 LINE 06 LEFT	
					LL=+171.0 LL=+200.0 PSIA	RECORD..36.4.200
					PRESS CYID MNFLD	GR32025
					50. RECORD CRT PAGE 01 LINE 06 RIGHT	
					LL=+171.0 LL=+200.0 PSIA	RECORD..37.4.200



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DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
11:44 2040					QUAD CLUSTER NO 4 GR60015 51. RECCRD CRT PAGE 01 LINE 13 LL= +000. UL= +200. DEGF RECORD...12.7... (209)
					QUAD CLUSTER NO 3 GR60025 52. RECCRD CRT PAGE 01 LINE 14 LL= +000. UL= +200. DEGF RECORD...12.3... (209)
					QUAD CLUSTER NO 2 GR60035 53. RECCRD CRT PAGE 01 LINE 15 LL= +000. UL= +200. DEGF RECORD...12.7... (209)
					QUAD CLUSTER NO 1 GR60045 54. RECCRD CRT PAGE 01 LINE 16 LL= +000. UL= +200. DEGF RECORD...12.7... (209)
					MN PROP VLV CLOSED GR96095 55. RECCRD CRT PAGE 01 LINE 10 LEFT RECORD...OFF... (209)
					MN PROP VLV CLOSED GR96105 56. RECCRD CRT PAGE 01 LINE 10 RIGHT RECORD...OFF... (209)
					GR9613 CP GR96135 57. RECCRD CRT PAGE 12 LINE 04 LEFT RECORD...OFF... (209)

-NOTE-

REPORT COMPLETION TO TC (NIB).

Accepted
4/7/69
2041

(209)



SECTION 3.C

CHECKOUT DATA SHEET

DATE 04/01/69

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SUMMARY CHECKOUT DATA SHEET

1. PROCEDURE AUTHORIZED BY TPS NO. 29006
2. PROCEDURE START DATE AND TIME 4-4-69 — 1630HR —
3. PROCEDURE TOTAL HOLD TIME

SEQ MALFUNCTION
-----TEST DISCP
RECORD NO.
-----AUTHORITY FOR
TROUBLESHOOTING

SEE IDR Log

4. PROCEDURE COMPLETION DATE AND TIME 4-7-69 2041

VERIFIED BY *A. La Corrata*
CAEC QUALITY CONTROL 5/12/69
DATE

APPROVED BY *A. Fower*
CAEC TEST ENGINEER 5/12/69
DATE

APPROVED BY *W.T. Mulcahey*
NASA SYSTEMS ENGINEER 5-12-69
DATE

SECTION 4.0

POST-CHECKOUT VERIFICATION AND ACCEPTANCE

PROJECT APCLLC

DATE 04/01/69

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THE PROCEDURES DELINEATED IN DOCUMENT NO. OCP-B-90008-LM-2
HAVE BEEN SATISFACTORILY COMPLETED AND THE RESULTS ARE ACCEPTABLE.

VERIFIED BY

C. L. Coyne
GAEC GC

5/12/69
DATE

VERIFIED BY

Justin K. Host
NASA GA

5/12/69
DATE

APPROVED BY

R. L. Loefer *5/12/69*
GAEC TEST CONDUCTOR

5-12-69
DATE

APPROVED BY

W. T. Mulcahey
NASA TEST DIRECTOR

5-12-69
DATE

SECTION 5.C

EMERGENCY SHUTDOWN PROCEDURES

PROJECT APCLLC

DATE 04/01/69

PAGE 5-1
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TIME	CH	SEC	C/O CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					(EM-1) LABORATORY EMERGENCY EVACUATION AND FIRE PLAN
					-NOTE-
					THE FOLLOWING INFORMATION IS BASED ON AND IS IN COMPLIANCE WITH AEGOF I-123, II-503 (FOR BLDG 32) AND VAFB ORI FIRE PLAN (FOR BLDG 49) AND IS INTENDED ONLY TO SUPPLEMENT THESE PROCEDURES.
					'C1. REPORT EMERGENCY TO TEST DIRECTOR ON CHANNEL 1 BRIEFLY DESCRIBE EMERGENCY AND LOCATION.
					'C2. TAKE SUCH EMERGENCY STEPS AS MAY BE IMMEDIATELY NECESSARY TO AVOID FURTHER INJURY OR HARM.
					'C3. CALL FIRE DEPARTMENT VIA RADIO 'WHITE-BIRD CONTROL' THIS IS NASA TD. DESCRIBE NATURE OF EMERGENCY AND LOCATION.
					'C4. HOLD TEST IF DEEMED NECESSARY.
				'FTC	BLDG 49 - UPON NOTIFICATION FROM THE TD, IMMEDIATELY PROCEED TO THE FIRE CONTROL CENTER TO MEET THE FIRE DEPARTMENT AND DIRECT THEM TO THE SCENE OF THE EMERGENCY.
				'FS	BLDG. 32 - UPON NOTIFICATION FROM TD PROCEED TO FIRE CONTROL PANEL TO MEET THE FIRE DEPARTMENT AND DIRECT THEM TO THE SCENE OF THE EMERGENCY. EVACUATION OF TEST TEAM MEMBERS (INCLUDING CREWMEN) DURING TEST OPERATIONS SHALL BE AS DIRECTED BY THE TEST DIRECTOR. THE TEST DIRECTOR SHALL CONTROL EVACUATION OF TEST TEAM PERSONNEL AND EQUIPMENT TO PRECLUDE UNNECESSARY EXPOSURE OF PERSONNEL AND EQUIPMENT TO HAZARDOUS CONDITIONS.
					'C5. THE FACILITY SAFETY REPRESENTATIVES ARE TO BE CONSIDERED IN CHARGE AT THE SCENE OF ALL INCIDENTS UNTIL THIS AUTHORITY IS SPECIFICALLY RELEASED BY THE TD TO THE SENIOR FIRE DEPARTMENT REPRESENTATIVE OR MEDICAL OFFICERS AT THE SCENE.

PROJECT APCLLC

DATE 04/C1/69

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TIME	CH	SEC	C/O CTL	C/O STTN	DESCRIPTION/INSTRUCTION
					C6. THE FACILITY-SAFETY REPRESENTATIVE, WITH ASSISTANCE FROM THE GAEC SAFETY REPRESENTATIVE SHALL BE RESPONSIBLE FOR MAINTAINING SECURITY OF THE AFFECTED AREA TO INSURE THAT INVESTIGATION ACTIVITIES CAN BE ACCOMPLISHED WITHOUT COMPROMISE OF INCIDENT CONDITIONS.
				TD	C7. PERSONNEL ENTRY TO THE AREA OF THE INCIDENT WILL BE ALLOWED ONLY AFTER COORDINATION WITH THE SAFETY REPRESENTATIVES.
					C8. INVESTIGATIVE COMMITTEES AS FORMED BY THE TC, WILL BE DISPATCHED TO AID IN DETERMINATION OF THE ADVISABILITY OF CONTINUING THE TEST OR ABORTING.

PROJECT APCLLC

DATE C4/C1/69

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TIME	CH	SEQ	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					(EM-2) EMERGENCY S/C POWER CFF
			GPS	01.	ON LDW41C-82C9C, SET 'MAIN POWER' CB TC 'OFF'
				02.	ON LDW41C-8214C, SET 'MAIN POWER' CB TC 'OFF'

PROJECT APCLLC

DATE 04/01/69

FAGE 5-4
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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					(EM-3) PGNS EMERGENCY SHUTDOWN
			GNL	CDR	C1. PANEL 11 ROW 4 'PGNS', OPEN 'IMU OPR' CB
					C2. OPEN 'LGC/DSKY' CB
					C3. OPEN 'IML STRY' CB
					C4. RECCRD TIME
			GNL	TPC	C1. PTC, 'G AND N CN (PTC INHIBITED)' LT - OFF
					C2. 'POWER CN' LT - CN

GRUMMAN AIRCRAFT ENGINEERING CORPORATION MSC HOUSTON

90008

INTERIM DISCREPANCY REPORT (IDR) LOG

Classification Code			(1) GSE	(2) S/C	(3) Facility	(4) ACE	(5) Deviation	(6) Human
Number	Class	DR Number	Test Reference	Remarks	Q.C. Stamp		Date Closed	
					GAEC	NASA		
90008.1			COMM 63 SEQ 02-004 S/S 03 GN 149	UNABLE TO ADJUST SET LEVEL ON PWR METER	(149)		4/10/69	
.2			SEQ 43-012 S/S 04 GN 149	PG 9, LINE 18, TRANSFER WAS 0, S/B-31	(998)		4/7/69	
.3			SEQ 43-016 S/S 01 GN 149	PROGRAM DID NOT ADVANCE TO TEST 170	(998)		4/7/69	
.4			SEQ 35-008 S/S 03 GN 141	VOLTAGE AT PWR 32 & 33 READ OUT OF T.O.L.	(141)		4/10/69	
.5			35-049 S/S 01 GTN SEQ 35-048 S/S 01	CRT READS 00000 S/B BTWN - 21092	(141)		4/10/69	
.6		A/S 340.7	SEN GTN	JETS FAIL LIGHTS CAME ON DURING ERSYC TEST	(1353)		4/11/69	
.7		DK A/S 390.16	GTN SEQ 36-007 S/S 01	RUNUP TIME EXCEEDED 25 SECONDS	(1354)		4-9-9	
.8		A/S 300.4	EPS 15242 SEQ 21-001 S/S 02	PWL 8 ED'SYS A & B NON VERIFY	(1357)		4/8/69	
.9		300.5	EPS SEQ 19-001 S/S 01	462 TK1 ASC ENG HC DID NOT FIRE	(1354)		4-9/69	
.10	5		GTN 152-73 SEQ 28-001 S/S 01	PUSH 'ABORT STAGE' PB YELLOW COLLAR NOT VISIBLE	(1354)		4-11-69	

1. Category		DISCREPANCY REPORT/MATERIAL REVIEW RECORD NASA - MANNED SPACECRAFT CENTER					PAGE <u>1</u> OF <u>2</u>		
2. Article Name		3. Drawing Number		4. Serial/Lot Number		5. RECORD NUMBER			
6. Contractor's Name		7. Contractor's Drawing Number		8. Contractor's Serial Number		IDR <u>90008.1</u>			
9. Supplier's Name		10. Supplier's Drawing Number		11. Supplier's Serial No.		DR/MRR			
13. REF. Document No. <u>OCF 90008</u>		14. Spacecraft <u>2M-2</u>		15. Fault		16. Funct.		17. Cause/Origin	
								18. System	
								19. Disposition	

DISCREPANCY

REF: 02-004 s/s 03

UNABLE TO ADJUST LEVEL SET ON POWER METER

20. Initiator's Signature <u>Alan Glaser</u>		21. Stamp Number <u>G998</u>		22. Organization and Location of Initiator <u>GTEC / MSC</u>		23. Date <u>4/7/69</u>	
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DISPOSITION

24. MR Action Required? ☐ YES ☒ No		25. Replacement Part Number <u>N/A</u>		26. Retest Required ☒ Yes ☐ No		27. Retest Accept Date <u>4/9/69</u> 149		28. FIAR Number <u>N/A</u>	
--	--	---	--	--	--	---	--	-------------------------------	--

29. MRB Decision ☐ USE "ASIS" ☐ REPAIR ☐ REWORK ☐ SCRAP		INSTRUCTIONS						QC STAMP CONT. NASA	
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7/8/69 per continuation sheet.

GTEC Affairman 4/7/69
TC W. Masson 4/7/69
NASA W.T. Mulcahey 4/7/69

No constraint to further testing of 90008

GTEC - [Signature] 4/7/69
TC W. Masson 4/7/69
TD W.T. Mulcahey 4/7/69

CLASS 6

SEE PAGE 2 FOR CONCLUSION/DISPOSITION

RETEST PER (STEPS 2 THRU 4) PAGE 2

30. DATE <u>4/10/69</u>		FINAL ACCEPTANCE 149	
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MRB APPROVAL SIGNATURES

31. System Engineer (Contractor)		DATE		32. System Engineer (NASA)		DATE	
33. Quality Control Rep. (Contractor)		DATE		34. Quality Control Rep. (NASA)		DATE	
35. Program Office Rep. (Office Code)		DATE		36. Quality Engineer (NASA)		DATE	

TK Shooting ~~Alman~~ 7 April 69

- ① USING PWR METER AND COUNTER CONVERTOR, MEASURE POWER (-20DB PART) AND FREQ OF TEST XMITR & RECORD

POWER = -18 DBM

FREQ = 355.301 (2101.806 MC)

TEMP (INCLUSION/1) POWER AND FREQ WITHIN ACCEPTABLE LIMITS FOR TESTING UNDER OUR 90008.

~~PROBLEM~~

- (2) 20DB DEGRADATION INDICATES PROBABLE LOW EFFICIENCY

Det. from 4/7/69

TROUBLE SHOOTING CONTINUATION:

- ② PWR SUPPLIES 1, 2, & 3 ON, ADJUST TO 28VDC, +15VDC, & -15VDC RESPECTIVELY
- ③ PUSH & HOLD 'TRANSMITTER DISABLE' PB
01. ADJUST ZERO SET FOR 'ZERO SET'
 02. RELEASE PB
 03. ADJUST LEVEL SET FOR LEVEL SET ON METER
- ④ TURN OFF PWR SUPPLIES 1, 2, & 3

CONCLUSION/DISPOSITION: OPERATOR ERROR (PWR SUPPLY #2, IF SET ABOVE 3.5 AMPS OR 17 VOLTS DC, CAUSES PROBLEM).

(CLASS 6)

CAEC R. Rintamaki 4/9/69

L. J. J. J.
Earl Calvin
for N. F. MURPHY

4/9/69

4/10/69

1. Category		DISCREPANCY REPORT/MATERIAL REVIEW RECORD NASA - MANNED SPACECRAFT CENTER					PAGE <u>1</u> OF <u>1</u>	
2. Article Name		3. Drawing Number		4. Serial/Lot Number		5. RECORD NUMBER		
6. Contractor's Name		7. Contractor's Drawing Number		8. Contractor's Serial Number		IDR <u>90008.2</u>		
9. Supplier's Name		10. Supplier's Drawing Number		11. Supplier's Serial No.		DR/MRR		
13. REF. Document No. <u>OCP 90008</u>		14. Spacecraft <u>LM-2</u>		15. Fault	16. Funct.	17. Cause/Origin	18. System	19. Disposition
DISCREPANCY								
<u>ON Pg 9 LINE 18 TRANSFER WAS 0, S/B 31</u>								
<u>REF: SEQ 43-012 S/S 04</u>								
20. Initiator's Signature <u>Don Glaser</u>		21. Stamp Number <u>G998</u>		22. Organization and Location of Initiator <u>GAEC/MSC</u>			23. Date <u>4/7/69</u>	
DISPOSITION								
24. MR Action Required? ☐ YES ☐ No		25. Replacement Part Number		26. Retest Required ☐ Yes ☐ No		27. Retest Accept Date		28. FIAR Number
29. MRB Decision ☐ USE "ASIS" ☐ REPAIR ☐ REWORK ☐ SCRAP		INSTRUCTIONS						QC STAMP CONT. NASA
		<u>NO TEST CONSTRAINT</u>						
		<u>W. Bowlds. GAEC 4/7/69</u>						
		<u>W.T. Mulcahey R. Massey TC 4/7/69</u>						
		<u>ON DTRA</u>						
		<u>Adjust. Micro-Pot FM SIG GEN OUTPUT ATTN. T-11</u>						
		<u>LHF UPLINK S. ST. READS. 4 VDC. ±0.02 VDC ON CRT PAGE</u>						
		<u>06 LINE 10. AND RE-RUN. GN 149, INCLUDING DEV. 22</u>						
		<u>CLASS 5</u>						
		<u>W. Bowlds. GAEC 4/7/69</u>						
		<u>TC - R. Massey 4/7/69</u>						
		<u>TD - W.T. Mulcahey 4/7/69</u>						
				30. DATE <u>4/7/69</u>		FINAL ACCEPTANCE <u>998</u>		
MRB APPROVAL SIGNATURES								
31. System Engineer (Contractor)		DATE		32. System Engineer (NASA)			DATE	
33. Quality Control Rep. (Contractor)		DATE		34. Quality Control Rep. (NASA)			DATE	
35. Program Office Rep. (Office Code)		DATE		36. Quality Engineer (NASA)			DATE	

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

NO. AND TITLE: <u>SCC</u> <u>OCP-B-90008-1M-2</u>	DATE: <u>4/7/69</u>	SHEET <u>20</u> OF <u> </u>
GAEC <u>W. L. 7. Boulds.</u> <u>10 Massey</u>		TPS NO. <u> </u> PRETEST <u>TEST</u> POST-T. <u> </u> NASA <u>W. T. Massey 4/7/69</u>

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
22	2142	43-001	ADD S/S 03, — "SET FM S/S GETU OUTPUT AHN TO -23 DB" 43-002 ADD S/S 02. VERIFY CRT PAGE 06 LINE 10 LL = +3.95 UL = +4.05 VDC (INCREASE SIGNAL TO ENABLE DCA TO SENSE SAME REF IDC 90008.2)	P	998 998 4/7/69 998 4/7/69	



1. Category		DISCREPANCY REPORT/MATERIAL REVIEW RECORD NASA - MANNED SPACECRAFT CENTER				PAGE <u>1</u> OF <u>1</u>	
2. Article Name		3. Drawing Number		4. Serial/Lot Number		5. RECORD NUMBER	
6. Contractor's Name		7. Contractor's Drawing Number		8. Contractor's Serial Number		IDR <u>90008.3</u>	
9. Supplier's Name		10. Supplier's Drawing Number		11. Supplier's Serial No.		DR/MRR	
13. REF. Document No. <u>OCF 90008</u>		14. Spacecraft <u>LM-2</u>		15. Fault		16. Funct.	
				17. Cause/Origin		18. System	
						19. Disposition	

DISCREPANCY

REF: SGR 43.016 3/5 01

PROGRAM DID NOT ADVANCE TO TEST 170
IT STAYED AT 166

20. Initiator's Signature <u>Heen Glace</u>		21. Stamp Number <u>G 998</u>		22. Organization and Location of Initiator <u>GAEC/MS</u>		23. Date <u>4/7/69</u>	
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DISPOSITION

24. MR Action Required? ☐ YES ☒ No		25. Replacement Part Number		26. Retest Required ☒ Yes ☐ No		27. Retest Accept Date		28. FIAR Number	
--	--	-----------------------------	--	--	--	------------------------	--	-----------------	--

29. MRB Decision ☐ USE "ASIS" ☐ REPAIR ☐ REWORK ☐ SCRAP		INSTRUCTIONS <u>NO TEST CONSTRAINT</u> <u>W. Boulds GAEC 4/7/69</u> <u>TC W. Massey 4/7/69</u> <u>TD W.T. Mulvaney 4/7/69</u>						QC STAMP CONT. NASA	
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CLASS. 5

RE RUN GN 149 including Dev. 23 & 24
REF: IDR 90008.2

W. Boulds GAEC 4/7/69
TC W. Massey 4/7/69
TD W.T. Mulvaney 4/7/69

998
4/7/69

30. DATE <u>4/7/69</u>				FINAL ACCEPTANCE <u>998</u>			
------------------------	--	--	--	-----------------------------	--	--	--

MRB APPROVAL SIGNATURES

31. System Engineer (Contractor)		DATE		32. System Engineer (NASA)		DATE	
33. Quality Control Rep. (Contractor)		DATE		34. Quality Control Rep. (NASA)		DATE	
35. Program Office Rep. (Office Code)		DATE		36. Quality Engineer (NASA)		DATE	

REF: IDR-.24.3

PROJECT APCLLC

DATE 04/01/69

PAGE 2-142
OCP-B-90008-LM-2

17:00
4/1/69

TIME	CH	SEC	C/O CTL	C/C STTN	DESCRIPTION/INSTRUCTION	
		43-000			(GN 149) LMP ACTIVATION	
		43-001	SCL	DCT	01. 'TEST SET POWER' SW - 'ON' (998)	
					02. 'DCM POWER' SW - 'ON' (998)	
		43-002	SCL	CDR	PANEL 10, CLOSE 'LMP FEED' CB (998)	
				SH1	01. DCA LPLK WD LMP 00000000 VERIFY CRT PAGE 06 LINE 07	GT04415
		43-003	SCL	CDR	02. PDA, CLOSE 'DCA' CB (998)	
				SH1	01. DCA LPLK WD LMP 10100100 VERIFY CRT PAGE 06 LINE 07 (998)	GT04415
		43-004	SCL	SH1	005A3AC6, C164, 2300000006 (998)	XEQ
					01. TRANSFER C VERIFY CRT PAGE 09 LINE 18 (998)	GT04415
					02. ERROR C VERIFY CRT PAGE 09 LINE 19 (998)	GT04415
					03. CLOCK PULSE C COMP PULSE C VERIFY CRT PAGE 09 LINE 20 (998)	GW51535
		43-005	SCL	CDR	PDA, CLOSE FOLLOWING CB'S -	
					01. 'PRA' (998)	
					02. 'PCA' (998)	
					03. 'EPS LOGIC' (998)	
		43-006	SCL	DCT	01. REMOVE MODULATION JUMPER (998)	
					02. 'SINGLE/SERIAL' SW - 'SINGLE' (998)	
					03. 'MANUAL/TAPE' SW - 'TAPE' (998)	
					04. 'READER/CFF' SW - 'CFF' (998)	
					05. LOAD TAPE 24011-10 (998)	
					06. SET 'START NUMBERS' SW'S - '01' (998)	

PROJECT APCLLC

DATE 04/01/69

PAGE 2-1
DCC-B-90008-LM-2

TIME	CH	SEC	C/D CTL	C/D STTN	DESCRIPTION/INSTRUCTION
		42-000			(GN 148) DTCA DEACTIVATION
		42-001	SCL	DCT	01. REMOVE MODULATION JUMPER
					02. SET SIG GEN TO STANDBY
					03. 'START NUMBERS' SW'S - '000'
					04. 'START SEARCH/STOP SEARCH' SW - 'START SEARCH' (UNTIL 000 IS READ OUT)
					05. 'READER ON/READER OFF' SW - 'READER OFF'
					06. REMOVE TAPE FROM TAPE HANDLER
					07. 'TAPE/MANUAL' SW - 'MANUAL'
					08. 'SINGLE/SERIAL' SW - 'SINGLE'
					09. 'DCM POWER/OFF' SW - 'OFF'
					10. 'TEST SET POWER/OFF' SW - 'OFF'
					-NOTE-
					REPORT COMPLETION TO TC (NIR).

PROJECT APCLLC

DATE 04/01/69

PAGE 2-143
OCP-B-90008-LM-2

TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					07. SET 'STOP NUMBERS' SW'S - '073' (998)
					08. 'READER/OFF' SW - 'READER' (998)
	43-007		SCL	DCT	'START SEARCH/STOP SEARCH' SW - 'START SEARCH' (998)
					01. VERIFY TEST 010 IS NEXT MESSAGE (998)
					02. VERIFY MESSAGE 3500000000 (998)
					03. CONNECT MODULATION JUMPER (998)
	43-008		SCL	DCT	PUSH 'START READ' SW (998)
					01. PUSH 'PROGRAM START' SW (998)
					02. VERIFY TEST 024 IS NEXT MESSAGE (998)
	43-009		SCL	DCT	PUSH 'PROGRAM START' SW (998)
					01. VERIFY TEST 025 IS NEXT MESSAGE (SENDS MASTER RESET-CN) (998)
	43-010		SCL	DCT	PUSH 'PROGRAM START' SW AT 1 SECOND INTERVALS UNTIL TEST 072 IS NEXT MESSAGE (998)
	43-011		SCL	DCT	PUSH 'PROGRAM START' SW (RESET PCA GROUND MATRIX) (998)
	43-012		SCL	GDF	01. PANEL 4 INSERT VERB 21 NCUN 01 ENTR (998)
					02. INSERT 00045 ENTR (998)
					03. INSERT 00000 ENTR (998)
				SH1	04. TRANSFER 31 VERIFY CRT PAGE 09 LINE 18 (998)
	43-013		SCL	DCT	01. REMOVE MODULATION JUMPER (998)
					02. SET 'START NUMBERS' SW'S - '206' (998)
					03. SET 'STOP NUMBERS' SW'S - '213' (998)
					04. 'START SEARCH/STOP SEARCH' SW - 'START SEARCH' (UNTIL 206 IS READ CUT) (998)

GTC4415



PROJECT APCLLC

DATE 04/01/69

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TIME	CH	SEC	C/C CTL	C/C STTN	DESCRIPTION/INSTRUCTION
					05. 'READER CN/READER CFF' SW - 'READER ON' (998)
					06. CONNECT MODULATION JUMPER (998)
					07. PRESS 'START READ' SW (998)
43-014			SCL	DCT	PRESS 'PROGRAM START' SW AT 1 SECOND INTERVALS (998)
				SH1	01. VERIFY TEST 212 IS NEXT MESSAGE (998) GH12045
					ACA OUT CF DETENT
					02. VERIFY 005A2AC2 E09 CFF (998)
43-015			SCL	DCT	01. REMOVE MODULATION JUMPER (998)
					02. SET 'START NUMBERS' SW'S - '166' (998)
					03. SET 'STOP NUMBERS' SW'S - '170' (998)
					04. 'START SEARCH/STOP SEARCH' SW - 'START SEARCH' (998)
					05. CONNECT MODULATION JUMPER (998)
					06. PRESS START READ SW.
					PUSH 'PROGRAM START' SW TWICE
				SH1	01. VERIFY TEST 170 IS NEXT MESSAGE
					GUID SEL AGS MODE GH16215
					02. VERIFY 005A2AC2 E02 CFF
43-017			SCL	DCT	'SINGLE/SERIAL' SW - 'SINGLE' (998)
43-018			SCL	SH1	005A3AC6, C164, 2300000006 (998) XEQ
					01. TRANSFER C TEST C
					OBSERVE CRT PAGE 09 LINE 18 (998) GT04415
					02. ERROR C
					OBSERVE CRT PAGE 09 LINE 19 (998) GT04415
					03. CLOCK PULSE C COMP PULSE C
					OBSERVE CRT PAGE 09 LINE 20 (998) SW51535

17:14
(998)
4/7/69

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

NO. AND TITLE: <u>OCPB-90008-LM-2</u>	<u>SCL</u>	DATE: <u>4-7-69</u>	SHEET <u>21</u> OF <u> </u>
GAEC <u>Walter F. Bowlds</u> <u>AD Harssey</u>		TPS NO.	PRETEST <u>(TEST)</u> POST-T.
NASA <u>W.T. Mulcahey 4/7/69</u>			

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/ PERM	GAEC	NASA
23	2-144	43-015	ADD S/S 06. "PRESS START READ" SW (REQUIRED TO ENABLE PROGRAM START SW REF IDR 90008.3)	P	998 4/7/69	
24		43-016 S/S 01	CHANGE STEP TO READ "PUSH PROGRAM START" SW UNTIL TEST 170 IS NEXT MESSAGE. OR, VERIFY CCSA2A02, E02 OFF (PROGRAM START SWITCHING ACTIVITY VARIES WITH CONDITIONS REF IDR 90008.3)	P	998 998 4/7/69	

DATE 04/01/69

PAGE 2-145
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TIME	CH	SEC	C/C CTL	C/C STIN	DESCRIPTION/INSTRUCTION
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-NOTE-

REPORT COMPLETION TO TC (NIB).

PROJECT APCLLC

DATE 04/01/69

PAGE 2-146
CCP-B-90008-LM-2

TIME	CH	SEC	C/D CTL	C/D STTN	DESCRIPTION/INSTRUCTION
		44-000			(GN 150) LGC OPERATIONAL TESTS
					-NOTE-
					FOLLOWING STEP MAY BE REPEATED AS REQUIRED TO ENSURE ALL INDICATIONS ARE VERIFIED
					DSKY CHECK
		44-001	GNL	CDR	01. PANEL 4, INSERT VERB 57 ENTR
					02. INSERT 00015 ENTR
					03. INSERT VERB 21 ACUN 27 ENTR
					04. INSERT BLT CC ACT ENTR 00011
					05. PUSH 'ENTR' PB
					-NOTE-
					FOLLOWING SHOULD BE DISPLAYED BEFORE ALL LIGHTS GO OUT. ('CCMP ACTY' WILL REMAIN ON FOR APPROX 5 SECONDS)
					06. VERIFY ALL ELECTROLUMINESCENT ELEMENTS ARE DISPLAYED
					07. VERIFY DECIMAL NUMBERS NINE THROUGH ZERO IN SUCCESSION ARE DISPLAYED
					08. VERIFY VERB AND ACUN ARE DISPLAYED FLASHING
					09. VERIFY PLUS AND MINUS SIGNS ON R1, R2, AND R3 ARE DISPLAYED
		44-002	GNL	CDR	01. INSERT VERB 25 ACUN 01 ENTR
					02. INSERT C1740 ENTR
					03. INSERT +CC123 ENTR

1. Category		DISCREPANCY REPORT/MATERIAL REVIEW RECORD NASA - MANNED SPACECRAFT CENTER					PAGE <u>1</u> OF <u>2</u>	
Article Name		3. Drawing Number		4. Serial/Lot Number		5. RECORD NUMBER		
6. Contractor's Name		7. Contractor's Drawing Number		8. Contractor's Serial Number		IDR <u>90008.4</u>		
9. Supplier's Name		10. Supplier's Drawing Number		11. Supplier's Serial No.		DR/MRR		
12. Next Higher Assy.								
13. REF. Document No.	14. Spacecraft	15. Fault	16. Funct.	17. Cause/Origin	18. System	19. Disposition		
<u>OCP 90008</u>	<u>LM-2</u>							
DISCREPANCY								
<u>Seq. 35-008 5/5 03 - VOLTAGE AT PINS</u>								
<u>32 & 33 out of TOLERANCE. S/B 20V</u>								
<u>+ 2V RMS. READS 22.2 VOLTS.</u>								
20. Initiator's Signature		21. Stamp Number	22. Organization and Location of Initiator			23. Date		
<u>[Signature]</u>		<u>G149</u>	<u>GAEC/MSC</u>			<u>4/7/69</u>		
DISPOSITION								
24. MR Action Required?	25. Replacement Part Number		26. Retest Required	27. Retest Accept Date		28. FIAR Number		
☐ YES ☒ No	<u>N/A</u>		☒ Yes ☐ No	<u>4/9/69</u>		<u>N/A</u>		
29. MRB Decision	INSTRUCTIONS						QC STAMP	
☐ USE "ASIS"	<u>NO CONSTRAINT TO CONTINUING</u> <u>OCP-B-90008.</u> <u>TROUBLESHOOT ON CONTINUATION SHEET</u> <u>GAEC: R. Rytanaka 7 April 69</u> <u>Robert Whitest 7/7/69</u>						CONT. NASA	
☐ REPAIR								
☐ REWORK								
☐ SCRAP								
<u>CLASS: 5</u>								
<u>CONCLUSION/DISPOSITION: MEASUREMENT WAS</u>								
<u>PERFORMED IN OCP 90006 WITH VOM - READ 21.50</u>								
<u>STEP 5 MEASUREMENT WAS MADE WITH</u>								
<u>VOM - READ 21V, IN LIMITS, DEVIATION</u>								
<u>NUMBER <u>34</u> CHANGES SEQ 35-008 5/5 03</u>								
<u>TO USE VOM FOR MEASUREMENT.</u>								
<u>GAEC 4-10-69 R. Rytanaka</u> <u>for W. T. MULCAHEY 4/10/69</u>								
30. DATE				<u>4/10/69</u>		FINAL ACCEPTANCE <u>[Signature]</u>		
MRB APPROVAL SIGNATURES								
31. System Engineer (Contractor)		DATE		32. System Engineer (NASA)		DATE		
33. Quality Control Rep. (Contractor)		DATE		34. Quality Control Rep. (NASA)		DATE		
35. Program Office Rep. (Office Code)		DATE		36. Quality Engineer (NASA)		DATE		

IDR 90008.4

DR/MRR

QC STAMP
CONT. | NASA

1. MATE RR B.O.B. TO J 202 OF RREA	3. RECORD IDR 900
2. PNL 11 ROW 1, 'PPGS' CLOSE RR CB (LL 62) 4:02	DR/MRR
01. ROW 4, 'PPGS' CLOSE RR CB (LL 140) 4:02	
3. PNL 16 ENSURE ATCA CB (LL 13) CLOSED 4:02	
4. USING VTVM MEASURE PINS 32 & 33 (J1) RMS VOLTAGE RECORD <u>23 VRMS</u>	
5. USING SIMPSON VOM MEASURE PINS 32 & 33 (J1) RMS VOLTAGE RECORD <u>21 VRMS</u>	
6. PNL 16 OPEN 'ATCA' CB (LL 13) 4:12	
7. PNL 11 OPEN ROW 4 RR CB (LL 140) 4:12	
02. ROW # RR CB (LL 62) 4:12	
8. DE-MATE RR B.O.B. FROM RREA J 202	
9. ENSURE RRAA IS STOWED	

29R 4/9/69

DATE: .

FINAL ACCEPTANCE

1. Category		DISCREPANCY REPORT/MATERIAL REVIEW RECORD NASA - MANNED SPACECRAFT CENTER					PAGE <u>1</u> OF <u>2</u>	
2. Article Name		3. Drawing Number		4. Serial/Lot Number		5. RECORD NUMBER		
6. Contractor's Name		7. Contractor's Drawing Number		8. Contractor's Serial Number		IDR <u>90008-5</u>		
9. Supplier's Name		10. Supplier's Drawing Number		11. Supplier's Serial No.		DR/MRR		
13. REF. Document No. <u>OCP 90008</u>		14. Spacecraft <u>LM-2</u>		15. Fault	16. Funct.	17. Cause/Origin	18. System	19. Disposition
TIME <u>2000</u>				DISCREPANCY				
① SEQ 35-048 S/S 01 CRT READS 00000 S/B +17092 TO +21092								
② SEQ 35-049 S/S 01 CRT READS 00000 S/B +00465 TO +00505								
(REF SEQ GN 141)								
20. Initiator's Signature <u>Lee Coyne</u>		21. Stamp Number <u>G209</u>		22. Organization and Location of Initiator <u>GAEC/MS</u>			23. Date <u>4-7-69</u>	
DISPOSITION								
24. MR Action Required? ☐ YES ☒ No		25. Replacement Part Number		26. Retest Required ☒ Yes ☐ No		27. Retest Accept Date <u>4/9/69</u>		28. FIAR Number
29. MRB Decision ☐ USE "AS IS" ☐ REPAIR ☐ REWORK ☐ SCRAP		INSTRUCTIONS						QC STAMP CONT. NASA
		No CONSTRAINT TO CONTINUING						
		OCP B-90008						
		GAEC: <u>George O. Sullivan</u>						
		<u>Robert K. Whitworth</u> 4/7/69						
TROUBLESHOOT ON CONTINUATION SHEET								
<u>R. Putnam</u> 4/8/69								
<u>Robert K. Whitworth</u> 4/8/69								
CLASS 6								
CONCLUSION/DISPOSITION: LCC INPUT NOT PROPERLY INITIATED. RETEST PER PAGE 2 PERFORMED THREE TIMES VERIFIED CRT READINGS WERE WITHIN LIMITS.								
<u>GAEC R. Putnam</u> 4/10/69 <u>Earl Colvin</u> 4/10/69 <u>L. S. Fowell</u> 4/10/69 <u>for W. T. MURPHY</u>								
				30. DATE <u>4/10/69</u>		FINAL ACCEPTANCE		(1/10)
MRB APPROVAL SIGNATURES								
31. System Engineer (Contractor)		DATE		32. System Engineer (NASA)			DATE	
33. Quality Control Rep. (Contractor)		DATE		34. Quality Control Rep. (NASA)			DATE	
35. Program Office Rep. (Office Code)		DATE		36. Quality Engineer (NASA)			DATE	

3. RECORD NUMBER
IDR 90008.5
DR/MRR

QC STAMP
CONT. NASA

1. CDR / PNL 11, CLOSE FOLLOWING CB'S
 - 01. ROW 1 'PN65' 'RNDZ RDR' CB (LL62) 1:46
 - 02. ROW 4 'PN65' 'RNDZ RDR' CB (LL140)
2. PNL 4 01. INSERT V 36 ENTER
 - 02. PUSH 'RSET' PB
 - 03. INSERT V 40 N 40 ENTR
 - 04. PUSH 'RSET' PB
3. PNL 3 01. RNDZ RDR SEL - AUTO-TRACK
 - 02. RADAR TEST SW - 'RNDZ'
 - 03. NO TRACK LITE OFF (DELAYED)
4. PNL 4 01. INSERT V 24 N 01 ENTR
 - 02. 00053 E
 - 03. 00000 E
 - 04. 00000 E
 - 05. V 46 E
 - 06. 00000 E
 - 07. V 16 N 62 E
 - 08. RECORD R1 0190073 @ +18963
 - 09. V 16 N 63 E @ +18963
 - 10. RECORD R1 0100478 @ +00485
 - 11. V 34 E @ +00485
 - 12. V 21 N 01 E
 - 13. 03435 E
 - 14. 00000 E
5. PNL 3 01. 'RADAR TEST' SW - 'OFF'
 - 02. 'RNDZ RDR SEL' - 'SLEW'
- ~~6. PNL 11 OPEN FOLLOWING CB'S~~
 - ~~01. ROW 4 'PN65' 'RNDZ RDR' CB (LL140)~~
 - ~~02. ROW 1 'PN65' 'RNDZ RDR' CB (LL62)~~
7. CDR - UNSTOW RR ANT & POSITION TO 0'S, 01
8. PERFORM STEPS 2 THRU 5 (A-OK)
9. PERFORM STEPS 2 THRU 5 (A-OK)
10. 01. PNL 11 ROW 4 OPER RR CB (LL140) 2:10
- ROW 1 OPER RR CB (LL62) 2:10
11. STOW 'RNDZ RDR' CB

NOTE: STEP 8 PERFORMED WITH ANT MODEL
STEP 9 PERFORMED WITH ANT ON STEP

8 Apr 1969

2. Article Name <i>RC3 QUAD</i>	3. Drawing Number <i>146-360-550A</i>	4. Serial/Lot Number <i>14A</i>	5. RECORD NUMBER <i>IDR 90003-6</i>
Contractor's Name <i>GAEC</i>	7. Contractor's Drawing Number <i>27146</i>	6. Contractor's Serial Number <i>14A</i>	DR MRR <i>A/S 360.7</i>
9. Supplier's Name <i>GAEC</i>	10. Supplier's Drawing Number <i>27146</i>	11. Supplier's Serial No. <i>14A</i>	12. Next Higher Assy <i>146-360-550A</i>
13. REF Document No. <i>OCP 90003</i>	14. Spacecraft <i>LM-2</i>	15. Fault <i>RC3</i>	16. Function <i>OFF</i>
		17. Cause Origin <i>ISS/ZZ8</i>	18. System <i>OFA</i>
			19. Disposition

TIME 2014

DISCREPANCY

JETS FAIL LIGHT CAME ON DURING OPERATION OF
EPS 146 AND COMM 65

JET FAIL LIGHT WERE 1-3, 4-7, 13-15, 10-11
FAILURE LIGHTS WERE NOTED AT 2-14 HR-

SOL ENG REQUEST

20. Initiator's Signature <i>R. Cognata</i>	21. Stamp Number <i>G209</i>	22. Organization and Location of Initiator <i>GAEC/MSC</i>	23. Date <i>4-7-69</i>
--	---------------------------------	---	---------------------------

DISPOSITION

24. MR Action Required? ☐ YES ☐ No	25. Replacement Part Number	26. Retest Required ☐ Yes ☐ No	27. Retest Accept Date	28. FIAR Number
---	-----------------------------	---	------------------------	-----------------

29. MRB Decision ☐ USE "ASIS" ☐ REPAIR ☐ REWORK ☐ SCRAP	INSTRUCTIONS	QC STAMP CONT. NASA
---	--------------	------------------------

NO CONSTRAINT TO CONTINUING
OCP-B-90008 - DO NOT RESET
JET FAILS WITH RC3 QUAD ISOL

VALVES DUE TO PROPELANTS LOADED

GAEC George J. Sullivan 4/7/69
Robert K. Whitcomb 4/7/69

TROUBLESHOOT ON CONTINUATION SHEET.

GAEC George J. Sullivan 4/10/69

Transfer to A/S 360 DR

C. J. Loggerson
A. J. Loggerson
W. T. Mulcahy 4-1-69

30. DATE

FINAL ACCEPTANCE

MRB APPROVAL SIGNATURES

31. System Engineer (Contractor)	DATE	32. System Engineer (NASA)	DATE
33. Quality Control (Contractor)	DATE	34. Quality Control (NASA)	DATE
35. Quality Control (Contractor)	DATE	36. Quality Control (NASA)	DATE

3. RECORD NUMBER

IDR-90008-1

DR/MRR 1/5 360.7

QC STAMP
CONT. NASA

① REPLAY CCP 90008 PCM TAPE - TIME PERIOD

4-7-69 2005 THRU 2020

NOTE: QUAD FAIL INDICATIONS OCCUR DURING
GN 141, SEQUENCE 35-054 5/5 of. TIME 2007:11

DATE:

FINAL ACCEPTANCE

R. Bistamaki 4/10/69
R. Power 4/10/69
Gas Colver 4/10/69
for L. B. Dawson

OPERATIONAL CHECKOUT PROCEDURE
DEVIATION SHEET

CCP NO. AND TITLE: <i>CCP-B-90008 LM-2</i>	DATE: <i>10 April 69</i>	SHEET <i>31</i> OF
TPS NO:	PRETEST	TEST ☒ POST

DEV. NO.	PAGE	SEQ.	DEVIATION/REASON	TEMP/PERM.	CARC
<i>34</i>	<i>2-97</i>	<i>35-008</i>	<i>ADD AT BEGINNING OF S/S 03 'USING VOM, VERIFY' (MATCH BASELINE METHOD of CCP 90006)</i>	<i>P</i>	

1. Name	2. Drawing Number	3. Serial/ Lot Number	4. RECORD NUMBER
LDN 360-10027-1	N/A	N/A	IDR 90008, 9
5. Contractor's Drawing Number	6. Contractor's Serial Number	7. Supplier's Drawing Number	8. Supplier's Serial No.
360-10027	N/A	360-10027	N/A
9. System	10. Disposition	11. Next Higher Assy.	12. System
LDN 360-51006	LDN 360-51006	LDN 360-51006	LDN 360-51006

DISCREPANCY

2-107 SEQ 36-007 S/S 01, RUN UP TIME S/S NMT
5 SEC., WAS 29 SEC.

13. Initiator's Signature	14. Stamp Number	15. Organization and Location of Initiator	16. Date
[Signature]	61320	ASAC / 11-2	4-7-69

DISPOSITION

17. Action Required?	18. Replacement Part Number	19. Retest Required	20. Retest Accept Date	21. FIAR Number
Yes ☐ No ☐		☐ Yes ☐ No		

INSTRUCTIONS

QC STAMP
CONT NASA

NO CONSTRAINT TO CONTINUING
OCP-B-90008
GAPCC: Gary C. J. 4/7/69
Robert R. W. 4/7/69

DOUBLENOT ON CONTINUATION SHEET.
OCP-B-90008 Gary C. J.

CONCLUSION: FUSE ASSY #1 P/N LDN 360-10027-1 IS NOT COMPATIBLE WITH
LDN 360-51006 SYSTEM. THIS FUSE ASSY HAS AN EFFECTIVITY OF LM-3 & SUBQ IS NOT
COMPATIBLE DUE TO WIRING DIFFERENCES REF: LEVEL III SCHEMATICS LDN 360-52003
(LDN 360-53003 (LM-3) EX. FOR LM-2 THE SYSTEM REQUIRES A 1.5 AMP FUSE
PINS; FOR LM-3 A .1 AMP FUSE TO PINS THEREFORE PARSE 'A' TO RCA WAS
AT .1 AMP. THE FUSE PROBABLY AGED DUE TO OVERCURRENT AND OPENED
IT WAS LASTED TESTED ALLOWING THE RCA TO RUN ON THE OTHER TWO PHASES
CONTINUED ON PAGE 4 (ALSO Disposition)

30. DATE

FINAL ACCEPTANCE

MRE APPROVAL SIGNATURES

31. System Engineer (Contractor)	DATE	32. System Engineer (NASA)	DATE
33. Quality Control Rep. (Contractor)	DATE	34. Quality Control Rep. (NASA)	DATE
35. Program Office Rep. (Office Code)	DATE	36. Quality Engineer (NASA)	DATE

DISCREPANCY REPORT/MATERIAL REVIEW RECORD

NASA - MANNED SPACECRAFT CENTER

PAGE 1 OF 10

1. Name	3. Drawing Number LSC 300-710-5	4. Serial/Lot Number 105	5. RECORD NUMBER IDR 90008-8
2. Contractor Name GAEC	7. Contractor's Drawing Number SAME	8. Contractor's Serial Number 105	DR/MRR A/S 300.4
6. Supplier's Name GAEC	10. Supplier's Drawing Number SAME	11. Supplier's Serial No. 105	12. Next Higher Assy. LSC 300-52000
9. Document No. 90008	14. Spacecraft L14-2	15. Fault TOS	16. Funct. 04L
		17. Cause/Origin D90/FF8	18. System 103
			19. Disposition 0001

TIME 2343
 Q-21-001 S/BIS S/S 2 BOTH NON-VERIFY PAGE 2-62
 PNL 8 'ED' 'MASTER ARM' SW 'ON' SYS 'A' & SYS 'B'

(REF EPS 154)

20. Initiator's Signature Cognata	21. Stamp Number G209	22. Organization and Location of Initiator GAEC/ MSC	23. Date 4-7-69
DISPOSITION			
24. Action Required? ☒ No	25. Replacement Part Number LSC 300-710-5	26. Retest Required ☒ Yes ☐ No	27. Retest Accept Date 4/10/69 (1315)
28. FIAR Number F-6086			

E "AS IS" PAIR WOR RAP	INSTRUCTIONS		QC STAMP
	Troubleshoot per continuation sheet		CONT NASA
No constraint to OGC B 2008			
P.A. Bunker 4/8/69			
Robert K. Whitsett 4/8/69			
W.T. Mulcahey 4-11-9			
Transfer to A/S 300 DR			
P.A. Bunker 4/9/69			
A.L. Lyndet 4/9/69			
W.T. Mulcahey 4-11-9			

30. DATE 4/11/69	FINAL ACCEPTANCE (993)
---------------------	------------------------

MRB APPROVAL SIGNATURES			
31. System Engineer (Contractor)	DATE	32. System Engineer (NASA)	DATE
33. Quality Control Rep. (Contractor)	DATE	34. Quality Control Rep. (NASA)	DATE
35. Program Office Rep. (Office Code)	DATE	36. Quality Engineer (NASA)	DATE

DISCREPANCY REPORT/MATERIAL REVIEW RECORD
CONTINUATION SHEET
NASA MANNED SPACECRAFT CENTER

2.

PAGE 2 OF 10

3. RECORD NUMBER

IDR 90008-8DR/MRR A/S 300.4

QC STAMP

CONT. NASA

On DCTA

- (a) Remove Mod Jumper
(b) Single/Serial Sw - Single
(c) Tape/Manual Sw - Manual
(d) Reader Sw - off
(e) Insert 3364 000000
(f) connect mod jumper
(g) press program start once
(h) remove mod jumper
(i) Insert 3365 000000
(j) connect mod jumper
(k) press program start once
- Result: Could not reset
ED But A+B Relay
- Result: 4-8-69
- 4-8-69

On DCTA

- (a) ~~press~~ press program start once
- Result: Could not reset
ED But A+B Relay
- 4-8-69

Panel Master Arm - on

Pick up at seq 21-001 substep of OCP 8-90008

-Note-

Due to start of Seq 01-027 of admin of OCP 90008
time troubleshooting to try and reset ED Relays

On DCTA

- (a) Remove Mod Jumper
(b) Reader Sw - off
(c) Single/Serial Sw - off
(d) Tape/Manual Sw - Manual
(e) Insert 3471 000000
(f) connect mod jumper

DATE:

FINAL ACCEPTANCE

DISCREPANCY REPORT/MATERIAL REVIEW RECORD
CONTINUATION SHEET
NASA MANNED SPACECRAFT CENTER

2.

PAGE 3 OF 10

3. RECORD NUMBER

IDR 90008-8

DR/MRR A/S 300.4

QC STAMP

CONT. NASA

press program start once

4-8-69

Panel 8 master Arm Sw - off

Result: No change to ED Relays

4-8-69

Repeat steps 1-A thru 1-K of this IDR

Result: No change to ED Relays

4-8-69

In DCTA Tape/Manual Sw - Tape

Reader Sw - ON

4-8-69

~~Active~~

Note

Started following steps next evening after OCP 90008 was completed.

Activate LMP per GN 1.9 with exception of Step 43-02

OR LMP RESET BOX - 1 SW - ON

AS HEL TANK 1 SW - PRESS

AS HEL TANK 2 SW - PRESS

Tape/Manual - Manual

ON DCTA ¹ INSERT AND EXEC 3365 000 000

INSERT AND EXEC 3471 000 000

SYSTEM A/B BATT RELAYS STILL CLOSED

Close LMT Tank CB

~~Repeat step 12 thru 24~~~~Insert manually until~~~~Remove met jumper~~

Source Tape/manual sw - Tape

DATE:

FINAL ACCEPTANCE

3 RECORD NUMBER

IDR 96-05.5

DR MRR

A/S 30.4

QC STAMP

CONT. NASA

Start - 024 ; step 073

Press start Search, verify 24 next message

connect mid jumper

Press start read

Start
Press program start 073 next message

Repeat steps 11, 12, 13

Press Abort Stage Sw

Reset Abort Stage Sw

At 425 A+B pins G(-) + F(+) measure voltage

Results: 425A 0VDC

425B 0VDC

Insert 3340 SW into program 207

Insert 3341 SW into program 207

At 425 A+B pins G(-) + R(+) measure voltage

Results 425A 0VDC

425B 0VDC

Panel 8 Asc Hx Press Sw - Fire

Results

pins G(-) + R(+)

425A - 28 VDC

425B - 28 VDC

Panel 8 Asc Hx Press Sw - Safe pins G(-) + R(+)

Results 425A 0VDC

425B 0VDC

1357

10/2/84

357

DATE:

FINAL ACCEPTANCE

DISCREPANCY REPORT/MATERIAL REVIEW RECORD

CONTINUATION SHEET

NASA MANNED SPACECRAFT CENTER

PAGE 5 OF 10

3. RECORD NUMBER

IDR 90005-5

DR/MRR A/S 300-4

QC STAMP

CONT. NASA

Press Abort Stage 428A 25 VDC

428B 25 VDC

Reset Abort Stage 428A 25 VDC

428B 25 VDC

Panel 8 Asch Press Sw - Fire

At 428A & B pins 6(-) & N(+) measure voltage

Results 428A 28 VDC

428B 0 VDC

Panel 8 Asch Press Sw - Safe

PDA, All CB's open

Panel 16 open LMP Feed - B

Demate P/I 733 on P/A

Measure continuity between following pins on P/A
Side of 133

4 - 9 open

31 - 32 continuity

27 - 28 open

25 - 26 continuity

27 - 28 open

Demate T/I 732 on P/A

Measure continuity between following pins on P/A
Side of 732

111 - 114 open

136 - 135 continuity

133 - 134 continuity

129 - 130 continuity

132 - 130 open

Demate OETA

NASA FORM 100

NASA FORM 100

1357

5/5/64

1357

DISCREPANCY REPORT/MATERIAL REVIEW RECORD

CONTINUATION SHEET

NASA MANNED SPACECRAFT CENTER

PAGE 6 OF 10

3 RECORD NUMBER

IDR 9005.8

DR/MRR A/S 300.4

QC STAMP

CONT. NASA

Conclusion: (1) It appears that either relays K0251 or K0201 both in the PCA are unable to be commanded such that faults K0251A2, K0251B2, K0201A2, K0201B2 cannot be cleared. With these relays in this position the ED Betty Stage relays are unable to be reset.

(2) It also appears that relay A14K6 is unable to be energized thereby causing A14 in the ED Stage relay box not to be activated and thereby causing A14 Initiator. A14 to Tank 1 B not to fire (Ref. IDR 9005.4)

R. A. Bunker 4/7/61

position.

Remove & Replace PCA W/A LSC 300-710-B-5. W/4 LIKE ITEM OR INTERCHANGEABLE REPLACEMENT. E.O. TO FOLLOW. E. A. Bunker

RETEST ON LAF FOR THE FOLLOWING: 600-70181502

Appropriate Solutions: 1. Replace PCA with LSC 300-710-B-5. 2. Replace A14K6 with A14K6.

W. J. Bunker 4/7/61
L. A. Bunker 4/7/61
W. T. Mulvaney 4-11-61

K

RECORD NUMBER

IDR

DR/M: 43 300.4

QC STAMP
CONT. NASAFunctional C/O of PCA Follows:

Ensure DCTA powered up and in configuration for
P Reset using Tape 10 and activate AMP per
149 Seg 43-001 thru 43-011

On 81060 Set Aux Output CB on, verify Pwr on Lt. on
P Reset Box is on

LMP Reset Box momentarily press

Asc He Tank 1 Inhibit Reset PB

Asc He Tank 2 Inhibit Reset PB

Panel 11 Close ED Logic Pwr A CB

Panel 16 Close ED Logic Pwr B CB

Panel 8 Master Arm on; verify ED Bat Sys A+B
~~Master Arm off~~ Relays (R1) close - verify
Master Arm-off, verify ED Bat Sys A+B
Relays (R1) open - verify

Manually insert on DCTA 3304 on, on,
verify ED Bat Sys A+B Relays (R1) close - verify

Manually insert on DCTA 3305 on, on,
verify ED Bat Sys A+B Relays (R1) open - verify

Panel 8 Master Arm on; verify ED Bat Sys A+B
Stage 5 on - verify ED Bat Sys A+B Relays (R1) close

3. RECORD NUMBER

IDR

DR/MRR A/S 300.21

QC STAMP

CONT. NASA

Panel 8 Stage Sw - Safe

(a) Master Arm - off ; Sys A+B ED But + Stage
Relays open

CLOSE FOLLOWING PNL 11 CBS

(a) AELD

(b) Eng Cont.

(c) Eng Start Ovrd.

(d) Abort Stage

Panel 16 close following CBS

(a) Abort Stage

(b) Eng Arm

(c) ATCA (LL13) 03:38

(d) AELD

(e) ATCA (AGS) ~~03:38~~ ~~03:39~~

Manually insert on DCTA 3364 000000, verify
ED Sys But A+B Relays (K2) close - verify

Manually insert on DCTA

ED Sys A+B Stage Relays close - verify

Panel 11,

A Eng Arm Sw - ASC.

Panel 5, Eng Start PB - ON; verify ED Sys A+B
Stage Relays (K2) close - verify

Panel 5, Eng Stop PB - twice

Panel, Eng Arm Sw - off.

Panel 7, manually insert 3364 000000, ED Sys A+B
+ Stage Relay open

At EO Relay Boxes A+B connect T/S 481A + B

Remove High Energy Simulator from J464

Measure Voltage at J464 pins A(+), B(-) S/B - 0VDC
Read - 0VDC

Panel 8 - Master Arm Sw - ON

Panel 8 - Asc Hel Press Sw - Fire

Measure Voltage at J464 pins A(+), B(-) (Ref DR A/S 300.5)
Read - 13VDC - Good.

Panel 8 - Asc Hel Press Sw - Safe
Master Arm Sw - off

J464 Voltage Reads 0VDC
On DCTA manually insert 3364 000 000

On DCTA manually insert 3470 000 000

Measure J464 A(+), B(-) Voltage Reads - 13VDC (Ref DR A/S 300.5)

On DCTA manually insert 3471 000 000
J464 Voltage Reads 0VDC

On DCTA manually insert 3365 000 000

Install high Energy Simulator in J464

Panel 8 Master Arm Sw - ON

Asc Hel Press Sw - Fire

Verify J464 High energy Simulator Fired - verify (Ref DR A/S 300.5)

Panel 8 ~~Master Arm Sw~~ Asc Hel Press Sw - Safe
Master Arm Sw - off

At EO Relay Boxes A+B Demate 481A + B

DATE

FINAL ACCEPTANCE

3. RECORD NUMBER

IDR

DR/MRR 115 300.4

CC STAMP

CONT. NASA

Open CB's in steps 9 + 10 (LL 13) 04-30

Panel 11 open ED Logic Pwr A CB

Panel 16 open ED Logic Pwr B CB

PDA, All CB's open

Panel 10, open LMP Feed CB

On 81060 Set Aux Output CB-OFF

Deactivate DCTA

CONCLUSION TO RETEST

Functional check of PCA showed all functions normal and aircraft condition was restored per SOP of C/O

GAEC R. J. Reynolds 4/11/69

GAEC R. Salvadore 4/11/69

GAEC R. J. Reynolds 4/11/69

NASA W.T. McKinley 4-11-69

DATE

FINAL ACCEPTANCE

Category		DISCREPANCY REPORT/MATERIAL REVIEW RECORD					PAGE 1 OF 3	
NASA - MANNED SPACECRAFT CENTER								
1. Name	2. Drawing Number	3. Drawing Number	4. Serial/Lot Number	5. RECORD NUMBER				
PC 4	LSC 300-710-5	LSC 300-710-5	105	IDR 90008-9				
6. Name	7. Contractor's Drawing Number	8. Contractor's Serial Number	9. Supplier's Drawing Number			10. Supplier's Serial No.		
GAEC	Same	105	105			12. Next Higher Assy.		
11. Supplier's Drawing Number	12. Next Higher Assy.	13. System		14. Disposition				
GAEC	200-52000	103		004				
15. Document No.	16. Spacecraft	17. Fault	18. Funct.	19. Cause/Origin	20. System			
90008	LM-2	TOE	CHL	D9C/228	103			

TIME 0024

DISCREPANCY

Q19-001 S/S 09 - 462 TK1' ASC ENG (HE PRESS)

S/S 21 - 464 TK1' ASC ENG (HE PRESS)

DID NOT FIRE

PAGE 2-59

(REF EPS 147)

21. Stamp Number	22. Organization and Location of Initiator	23. Date
6209	GAEC/MS	4-8-69

DISPOSITION

24. Action Required?	25. Replacement Part Number	26. Retest Required	27. Retest Accept Date	28. FIAR Number
No	LSC 300-710-5	☒ Yes ☐ No	4/10/69 (1318)	F 6086

29. RB Decision	30. INSTRUCTIONS	31. QC STAMP
E "AS IS"		CONT NASA

Troubleshoot on continuation sheet.

R.A. Brown 4/18/69
R.K. Mulcahy 4/8/69

NO CONSTRAINT TO 90008 -

R.K. Mulcahy 4/8/69
R.A. Brown 4/18/69

Transfer to A/S 300 DR

R.A. Brown 4/19/69
R.S. Cognata 4/9/69

462 TK1' ROCKET FIRED FOR TEST & THIS DR

See Page 3 of this DR for disposition. See Steps 20

Page 4 of 4
a 33 on A DR 300-710-5 for retest and firing of 464.

energy simulator using (S/N 105) new PCA. R.A. Brown 4/10/69

30. DATE

FINAL ACCEPTANCE

NASA W.T. Mulcahy 4-11-69

MRS APPROVAL SIGNATURES

32. System Engineer (Contractor)	DATE	33. System Engineer (NASA)	DATE
34. Quality Control Rep. (Contractor)	DATE	35. Quality Control Rep. (NASA)	DATE
36. Program Office Rep. (Office Code)	DATE	37. Quality Engineer (NASA)	DATE

3. RECORD NUMBER

IDR 90008.9

DR/MRR 46300.5

QC STAMP
CONT. NASA

- in PCA in cabin mate T/J 714 (LMP Reset Box) 209
4-8-9
- 81060 set Aux Output CB-ON, verify LMP Reset 209
Power-on Lite-on. 4-8-9
- LMP ~~Reset~~ Reset Box momentarily press Asc He Tank 1 209
but reset PB. 4-8-9
- Verify ~~Seq~~ Seq 19001 S/S 09 - verify 209
S/S 21 - non-verify 4-8-9
- in LMP Reset Box momentarily press Asc He Tank 2 209
but reset PB - Result - no change 4-8-9
4-8-9
- in AT Reset Box momentarily press Asc He Tank 1 209
but reset PB - Result - no change 4-8-9
4-8-9
- 81060 set Aux Output CB-off 209
4-8-9

-Note-

Started following steps next evening after OCP 70008
was completed:

Remove (462) initiator and measure bridge resistance
th Alince - Results: 1.1 Ω (464) open (462 FIRED)

Panel 11 close ED Logic Power A CB

Panel 16 close ED Logic Power B CB

Panel 8 Asc He Press Sw - Fire

Measure voltage at 462 and 464
Result: 462 - 27 VDC
464 - 0 VDC

DATE:

FINAL ACCEPTANCE

3. RECORD NUMBER

IDR 90008.7

DR/MRR A/S 300.5

OC STAMP
CONT. NASA

Demate P/J 481A + B at ED Relay Box A+B and
measure voltage at P481A & P481B

Result: P481A - 18.5 VDC

P481B - 17 VDC

ASC He Press Sw - safe

Observations: Due to relays K1 & K2 in ED Relay Box
B being set and unable to be reset the ED Batteries
near to be drained - (ED Bats not needed at this point
time).

Inclusion: Reference IDR 90008.8 (Conclusion #2 Page 6)

Relay A10K6 in PCA appears to be unable to be
energized thereby causing A10 in ED Relay Box Sys B not
energize and thereby causing 404 (ASC He Thrst 1 Sys B)
motor not to fire. E.A. Broom 4-7-67

Reinstall initiators at A62 and 404.

Panel 11 open ED Logic Panel A

Panel 16 open ED Logic Panel B

Disposition: Remove & Replace PCA 1/2 LSE 300-710 ^{all}
with like item or interchange replacement

E.O. To Follow E.O. Retest all LMP Functions

per OEP B-90008-1M-2 Applicable Sequence (RAB) HOS

Walter F. Bould. 4/9/69 CREC
A. J. Leggett 4/9/69 CREC
W. T. Munkwitz 4-11-69 NASA

DATE:

FINAL ACCEPTANCE