KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SATURN V GROUND COMPUTER - DATA PATCH AIRBORNE COMPUTER INTERFACE CHECKOUT PROCEDURE

2. KSC TEST NO.

V-32013-GSE39

3. STAGE, VEHICLE OR GSE

GROUND COMPUTER

4. TEST OBJECTIVES

TO VERIFY THAT THE AIRBORNE COMPUTER INTERFACE EQUIPMENT IS FUNCTIONING PROPERLY.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A. LOAD THE COMPUTER WITH THE PROGRAM USED FOR CHECKOUT OF THE AIRBORNE COMPUTER PORTION OF THE DATA PATCH.

B. VERIFY THE OPERABILITY OF THIS PORTION OF THE DATA PATCH BY DYNAMICALLY ACTIVATING ALL LOGIC GATES EITHER AUTOMATICALLY OR MANUALLY.

C. WITH AN OSCILLOSCOPE, CHECK THE RISE AND FALL TIME OF THE LOGIC ELEMENTS.

D. THIS PROCEDURE IS TO BE PERFORMED AFTER A VEHICLE HAS BEEN LAUNCHED AND PRIOR TO THE TESTING OF THE NEXT VEHICLE.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

1045

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
R. Bernard	R.D. Clements	7-19-66
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
IBM-GROUND COMPUTER SYSTEM	LVO 242	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF
1. TEST TITLE SATURN V GROUND COMPUTER - DATA PATCH AIRBORNE COMPUTER INTERFACE CHECKOUT PROCEDURE	2. KSC TEST NO. V-32013-GSE39 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
N/A	NOT ESTABLISHED	

15. TEST CONFIGURATION
N/A

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[ ] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[ ] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[ ] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[ ]	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

104

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE
SIMULATED FLIGHT TEST

2. KSC TEST NO.
V-33010-IU-502

3. STAGE, VEHICLE OR GSE
Saturn V

4. TEST OBJECTIVES

TO PREPARE THE STABILIZED PLATFORM SYSTEM FOR THE OPERATING STEPS OF THE SIMULATED FLIGHT TEST; TO PARTICIPATE IN THE TEST AND TO INACTIVATE THE SYSTEM AFTER COMPLETING THE TEST.

5. TEST DESCRIPTION/EQUIPMENT STATUS

VERIFY SYSTEM READINESS AND PARTICIPATE IN THE TEST ACCORDING TO THE OPERATING STEPS AND POST TEST OPERATIONS.

FUNCTIONAL TEST COMPLETED.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

1047

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
[illegible]	C M LePorte	6/22/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
IBM	LVO-23	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF
1. TEST TITLE SIMULATED FLIGHT TEST	2. KSC TEST NO. V-33010-IU-502 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB		4 HRS

15. TEST CONFIGURATION

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☒ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☒ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☒ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

1048

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

LAUNCH COUNTDOWN PART I; GYRO DRIFT AND ACCELEROMETER CALIBRATION TEST; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS

2. KSC TEST NO.

V-33011-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO OBTAIN GYRO AND ACCELEROMETER PERFORMANCE INFORMATION IMMEDIATELY PRIOR TO THE LAUNCH COUNTDOWN.

5. TEST DESCRIPTION/EQUIPMENT STATUS

MONITOR THE OUTPUTS OF THE THREE ACCELEROMETERS, WITH THE PLATFORM +X PIVOT UP. WITH THE STABILIZED PLATFORM ALIGNMENT TURNED OFF, MEASURE THE DISPLACEMENT OF THE STABILIZED PLATFORM FOR A FIXED PERIOD OF TIME. MOVE THEINERTIAL GIMBAL TO A 45° ANGLE IN PITCH. MONITOR THE OUTPUTS OF THE THREE ACCELEROMETERS. MOVE THE INERTIAL GIMBAL TO +Y PIVOT UP THEN 45° IN YAW. MONITOR THE OUTPUTS OF THE THREE ACCELEROMETERS. TURN STABILIZED PLATFORM ALIGNMENT OFF AND MEASURE DRIFT OF THE THREE GYROS. MOVE THE INERTIAL GIMBAL BACK TO THE +Y PIVOT UP POSITION. MONITOR THE OUTPUT OF THE THREE ACCELEROMETERS. TURN ALIGNMENT OFF AND MEASURE DRIFT OF THREE GYROS.

THE ACCELEROMETER DATA OBTAINED IS SIDE BALANCE, DRIFT, SCALE FACTOR, AND Z TO Y AND X TO Y ORTHOGONALITY.

SATISFACTORY OPERATION DURING ALL TESTS PRIOR TO LAUNCH COUNTDOWN.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

10 149

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
[illegible]	CM LaPorte	6/21/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
IBM	LVO-23	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF
1. TEST TITLE LAUNCH COUNTDOWN PART I; GYRO DRIFT AND ACCELEROMETER CALIBRATION TEST; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS	2. KSC TEST NO. V-33011-IU-502 11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
PAD		8 HRS

15. TEST CONFIGURATION

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☒ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☒ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☒ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
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☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

1050

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

LAUNCH COUNTDOWN POWER TRANSFER TEST; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS

2. KSC TEST NO.

V-33012-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO PREPARE THE STABILIZED PLATFORM SYSTEM FOR THE LAUNCH POWER TRANSFER TEST AND TO PARTICIPATE IN THE TEST.

5. TEST DESCRIPTION/EQUIPMENT STATUS

PARTICIPATE IN THE LAUNCH POWER TRANSFER TEST ACCORDING TO THE LAUNCH COUNTDOWN SCHEDULE.

OPTICAL ACCESS TO THE PLATFORM PRISMS REQUIRED.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

1051

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D Elliott	C M LaPorte	6/21/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
IBM	LVO-23	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF
1. TEST TITLE LAUNCH COUNTDOWN POWER TRANSFER TEST; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS	2. KSC TEST NO. V-33012-IU-502 11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
PAD		8 HRS

15. TEST CONFIGURATION

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☒ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☒ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☒ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
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☐	☐	☐

OTHERS:

1052

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE
COMBINED G&C SYSTEMS TEST; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS

2. KSC TEST NO.
V-33013-IU-502

3. STAGE, VEHICLE OR GSE
Saturn V

4. TEST OBJECTIVES

TO ESTABLISH THE COMPATIBILITY OF THE STABILIZED PLATFORM SYSTEM WITH THE NAVIGATION SYSTEM.

5. TEST DESCRIPTION/EQUIPMENT STATUS

OPERATE THE STABILIZED PLATFORM SYSTEM WITH THE NAVIGATION SYSTEM SO THAT THE GUIDANCE AND CONTROL FUNCTIONS CAN BE FUNCTIONALLY CHECKED.

FUNCTIONAL TEST COMPLETED. PNEUMATIC AND ELECTRICAL SUPPORT REQUIRED.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

1053

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D K Eccles	C M LaPorta	6/21/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
IBM	LVO-23	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF
1. TEST TITLE COMBINED G&C SYSTEMS TEST; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS	2. KSC TEST NO. V-33013-IU-502 11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB		8 HRS

15. TEST CONFIGURATION

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☒ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☒ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☒ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
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☐	☐	☐
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☐	☐	☐

OTHERS:

1054

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-1VB COAST OVERALL STEERING TEST PROGRAM

2. KSC TEST NO.

V-33014-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO PROVIDE ST-124M PLATFORM ANGLES IN SUPPORT OF THE S-1VB COAST ATTITUDE ERROR CONTROL SYSTEM TEST.

5. TEST DESCRIPTION/EQUIPMENT STATUS

THE PROGRAM SHALL POSITION THE ST-124M PLATFORM TO PROVIDE θ (GIMBAL ANGLE) INPUTS TO THE LVDC/LVDA SUBSYSTEM. THE LVDC SHALL CONVERT THESE θ INPUTS TO PSI (ATTITUDE ERROR) SIGNALS, WHICH SHALL BE APPLIED AS LVDA LADDER OUTPUTS TO THE S-1VB CONTROL SYSTEM ATTITUDE ERROR CHANNELS IN THE COAST MODE. POSITIVE, NEGATIVE, AND NULL PLATFORM POSITIONS SHALL BE COMMANDED ON EACH AXIS, ONE AXIS AT A TIME, IN ORDER OF PITCH, YAW, ROLL. FOR EACH INPUT ON EACH AXIS, THE APS CHAMBER PRESSURES SHALL BE READ AND DISPLAYED AND THE PROGRAM SHALL VERIFY THAT THE CORRECT CHAMBERS ARE PRESSURIZED. THE PSI SIGNALS SHALL BE CHECKED FOR CORRECT POLARITY FOR ALL PLATFORM DISPLACEMENTS.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

1055

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D R Eckert	C M LaPorte	6/21/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
IBM	LVO-23	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF
1. TEST TITLE S-IVB COAST OVERALL STEERING TEST PROGRAM	2. KSC TEST NO. V-33014-IU-502 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB		4 HRS.

15. TEST CONFIGURATION

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☐ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☒ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☒ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
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☐	☐	☐

OTHERS:

1056

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-1C OVERALL STEERING TEST

2. KSC TEST NO.

V-33015-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

THE OVERALL STEERING TEST PROGRAM VERIFIES THE POLARITY AND DISPLAYS THE MAGNITUDE OF THE ATTITUDE CONTROL SYSTEM SIGNALS.

5. TEST DESCRIPTION/EQUIPMENT STATUS

THIS PROGRAM COMMANDS THE LVDC TO THE LVDC STEERING TEST MODE, CONTROLS PLATFORM ATTITUDE BY SEQUENTIALLY DEVIATING THE PITCH, ROLL, AND YAW GIMBALS FROM THEIR REFERENCED VALUES. THE LVDC, IN THE LVDC STEERING TEST MODE, GENERATES STEERING COMMANDS WHICH ARE A FUNCTION OF THE DIFFERENCE BETWEEN THE PLATFORM ATTITUDE AND THE VEHICLE ATTITUDE. THESE STEERING SIGNALS ARE USED BY THE FLIGHT CONTROL SYSTEM TO POSITION THE ENGINE ACTUATORS. THE RESULTING ACTUATOR DEFLECTION ANGLES ARE MONITORED FOR POLARITY AND MAGNITUDE AS A FUNCTION OF THE PLATFORM POSITION.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

1057

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
[illegible]	C M LePorte	6/21/66
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
IBM	LVO-23	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF

1. TEST TITLE	2. KSC TEST NO.
S-1C OVERALL STEERING TEST	V-33015-IU-502
	11. VEHICLE EFFECTIVITY
	AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB		8 HRS.

15. TEST CONFIGURATION

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☒ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☒ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☐ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☒ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

1058

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE
S-II OVERALL STEERING TEST

2. KSC TEST NO.
V-33016-IU-502

3. STAGE, VEHICLE OR GSE
Saturn V

4. TEST OBJECTIVES

THE OVERALL STEERING TEST PROGRAM VERIFIES THE POLARITY AND DISPLAYS THE MAGNITUDE OF THE ATTITUDE CONTROL SYSTEM SIGNALS.

5. TEST DESCRIPTION/EQUIPMENT STATUS

THIS PROGRAM COMMANDS THE LVDC TO THE LVDC STEERING TEST MODE, CONTROLS PLATFORM ATTITUDE BY SEQUENTIALLY DEVIATING THE PITCH, ROLL, AND YAW GIMBALS FROM THEIR REFERENCED VALUES. THE LVDC, IN THE LVDC STEERING TEST MODE, GENERATES STEERING COMMANDS WHICH ARE A FUNCTION OF THE DIFFERENCE BETWEEN THE PLATFORM ATTITUDE AND THE VEHICLE ATTITUDE. THESE STEERING SIGNALS ARE USED BY THE FLIGHT CONTROL SYSTEM TO POSITION THE ENGINE ACTUATORS. THE RESULTING ACTUATOR DEFLECTION ANGLES ARE MONITORED FOR POLARITY AND MAGNITUDE AS A FUNCTION OF THE PLATFORM POSITION.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

1059

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D R Elliott	C M LaPorte	6/21/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
IBM	LVO-23	AS- 502

KSC FORM 23-191A (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF
1. TEST TITLE S-II OVERALL STEERING TEST	2. KSC TEST NO. V-33016-IU-502 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB		8 HRS.

15. TEST CONFIGURATION

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☒ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☒ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☐ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☒ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

1060

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

ALL SYSTEMS OVERALL TEST/PLUGS IN; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS

2. KSC TEST NO.

V-33017-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO PREPARE THE STABILIZED PLATFORM SYSTEM FOR THE OPERATING STEPS OF THE ALL SYSTEMS OVERALL TEST/PLUGS IN; TO PARTICIPATE IN THE TEST AND TO INACTIVATE THE SYSTEM AFTER COMPLETING THE TEST.

5. TEST DESCRIPTION/EQUIPMENT STATUS

VERIFY SYSTEM READINESS AND PARTICIPATE IN THE TEST ACCORDING TO THE OPERATING STEPS AND POST TEST OPERATIONS.

MEASURING TEST COMPLETED. OPTICAL ACCESS TO THE PLATFORM PRISMS REQUIRED.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

1061

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D. R. Ellis	C M LaPorte	6/21/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
IBM	LVO-23	AS-502

KSC FORM 23-191A (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF

1. TEST TITLE
ALL SYSTEMS OVERALL TEST/PLUGS IN; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS

2. KSC TEST NO.
V-33017-IU-502

11. VEHICLE EFFECTIVITY
AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB		8 HRS

15. TEST CONFIGURATION

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☒ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☒ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☐ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☒ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

1062

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

ALL SYSTEM OVERALL TEST/PLUGS OUT; ST-124M STABILIZED PLATFORM SYSTEMS OPERATIONS

2. KSC TEST NO.

V-33018-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO PREPARE THE STABILIZED PLATFORM SYSTEM FOR THE OPERATING STEPS OF ALL SYSTEMS OVERALL TEST/PLUGS OUT; TO PARTICIPATE IN THE TEST AND TO IN-ACTIVATE THE SYSTEM AFTER COMPLETING THE TEST.

5. TEST DESCRIPTION/EQUIPMENT STATUS

VERIFY SYSTEM READINESS AND PARTICIPATE IN THE TEST ACCORDING TO THE OPERATING STEPS AND POST TEST OPERATIONS.

MEASURING TEST COMPLETED. OPTICAL ACCESS TO THE PLATFORM PRISMS REQUIRED.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

1063

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D R Ellis	C M LaPorta	6/21/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
IBM	LVO-23	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF

1. TEST TITLE	2. KSC TEST NO.
ALL SYSTEM OVERALL TEST/PLUGS OUT; ST-124M STABILIZED PLATFORM SYSTEMS OPERATIONS	V-33018-IU-502
	11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB		8 HRS

15. TEST CONFIGURATION

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☒ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☒ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☒ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

1064

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

FRT; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS

2. KSC TEST NO.

V-33019-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO PREPARE THE STABILIZED PLATFORM SYSTEM FOR THE OPERATING STEPS OF THE FRT; TO PARTICIPATE IN THE TEST AND TO INACTIVATE THE SYSTEM AFTER COMPLETING THE TEST.

5. TEST DESCRIPTION/EQUIPMENT STATUS

VERIFY SYSTEM READINESS AND PARTICIPATE IN THE TEST ACCORDING TO THE OPERATING STEPS AND POST TEST OPERATIONS.

SATISFACTORY PARTICIPATION IN ALL TESTS PRIOR TO FRT. OPTICAL ACCESS TO THE PLATFORM PRISMS REQUIRED.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

1065

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D. R. Elliott	C. M. L. Potts	
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
IBM	LVO-23	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF
1. TEST TITLE FRT; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS	2. KSC TEST NO. V-33019-IU-502 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
PAD		8 HRS.

15. TEST CONFIGURATION

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☒ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☒ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☐ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☒ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

1066

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE
LAUNCH COUNTDOWN; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS

2. KSC TEST NO.
V-33020-IU-502

3. STAGE, VEHICLE OR GSE
Saturn V

4. TEST OBJECTIVES

TO ENERGIZE THE STABILIZED PLATFORM SYSTEM IN PREPARATION FOR LAUNCH.

5. TEST DESCRIPTION/EQUIPMENT STATUS

PARTICIPATE IN THE LAUNCH COUNTDOWN ACCORDING TO THE LAUNCH COUNTDOWN SCHEDULE.

OPTICAL ACCESS TO THE PLATFORM PRISMS REQUIRED.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

1067

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
[illegible]	C M LoPorto	6/21/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
IBM	LVO-23	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF
1. TEST TITLE LAUNCH COUNTDOWN; ST-124M STABILIZED PLATFORM SYSTEM OPERATIONS	2. KSC TEST NO. V-33020-IU-502 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
PAD		8 HRS

15. TEST CONFIGURATION

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

☐ GROUND POWER	☒ LCC MEASURING (LVO)	☐ ETR/KSC RADAR
☐ S-IB OR S-IC STAGE PWR	☐ LCC MEASURING (INS)	☐ ETR COMMAND XMITTER
☐ S-II STAGE POWER	☐ GSE MEASURING (LVO)	☐ LOCAL COMMAND (C.L.)
☐ S-IVB STAGE POWER	☐ GSE MEASURING (INS)	☐ ALDS
☒ IU POWER	☐ LCC DATA DISPLAY	☐ LCC TM STA. (MONITOR)
☐ LEM POWER	☐ CIF DATA DISPLAY	☐ LCC TM RECORDING
☐ SM POWER	☒ DDAS	☐ CIF TM STA. (MONITOR)
☐ CM POWER	☐ DDAS TAPE RECORDING	☐ CIF TM RECORDING
☐ BACK-UP BATTERIES	☐ SERVICE STRUCTURE MEAS.	☐ CIF COMPUTER
☒ TIMING	☒ RCA-110A COMPUTERS	☐ CIF DATA
☐ COUNTDOWN CLOCK	☐ ACE	☐ TM RECORDS
☐ ETR SEQUENCER	☐ L/V W-G ECS	☐ REAL-TIME CIF COMPUT.
☐ ETR COUNTDOWN CLOCK	☐ CM W-G ECS	☐ POST-TEST CIF COMPUT.
☐ ETR S.R.O.	☐ FACILITY ECS (GAS)	☐ KSC TRACKING
☐ ETR R.S.O.	☒ H.P. GAS	☐ RFI MONITORING
☐ ETR PAD SAFETY	☐ CCF	☐ RF READOUTS (ETR)
☐ KSC PAD SAFETY	☐ FACILITY TV (OTV)	☐ RF READOUTS (KSC)
☐ SECURITY POLICE	☒ FACILITY COMM. (OIS)	☐ WEATHER FORECAST
☐ FIRE FIGHTING	☐ FILM CAMERAS	☐ MCC-C
☐ MEDICAL	☐ SEARCH LIGHTS	☐ MCC-H
☐	☐	☐ FOOD SERVICE
☐	☐	☐
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☐	☐	☐
☐	☐	☐

OTHERS:

1068

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE
RP-1 SYSTEM PREPARATIONS FOR S-1C STAGE LOADING AND REPLENISH OPERATIONS

2. KSC TEST NO.
V-35000-S1C2

3. STAGE, VEHICLE OR GSE
S-1C RP-1 GSE

4. TEST OBJECTIVES

TO PREPARE THE SYSTEM FOR TRANSFER OPERATIONS.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A. EXERCISE PNEUMATICALLY-CONTROLLED VALVES.

B. VERIFY SUFFICIENT STORAGE TANK LEVEL TO SUPPORT THE PROGRAMMED OPERATION.

C. VERIFY THE STORAGE TANK SAMPLE RESULTS

D.* POSITION MANUAL VALVES.

PROCEDURE SET-UP AND CONDITIONS:

REQUIRED PRIOR TO VEHICLE LOADING AND REPLENISH.

GSE AND SPECIAL MATERIALS REQUIRED:

RP-1 SYSTEM POWER AND CONTROL SYSTEMS (ELECTRICAL AND PNEUMATIC)

1069

Stage Processing

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
for D. A. PATRICK	ROBERT G. WARD	JULY 11, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC-M&PS-FUELS	LVO-341	AS- 502 (TEST)

KSC FORM 23-191 (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE RP-1 SYSTEM PREPARATIONS FOR S-1C STAGE LOADING AND REPLENISH OPERATIONS	2. KSC TEST NO. V-35000-S1C2 11. VEHICLE EFFECTIVITY AS- 502 (TEST)

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
COMPLEX 39A		

15. TEST CONFIGURATION

RP-1 SYSTEM POWER AND CONTROL SYSTEMS (ELECTRICAL & PNEUMATIC) OPERATIONAL

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[XX] GROUND POWER ML & STORAGE AREA	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[ ] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[ ] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[ ] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[ ] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[ ] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[ ] TIMING	[XX] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[XX] H.P. GAS STORAGE AREA 3500 PSI ML 6000 PSI GN2	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[XX] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[XX] PROPELLANT NETWORKS	[ ]	[ ] FOOD SERVICE
[XX] S-1C STAGE NETWORKS	[ ]	[ ]
[XX] S-1C MECHANICAL	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

1070

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

6G-287

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SPACE VEHICLE LAUNCH COUNTDOWN

2. KSC TEST NO.
V-40300-502

3. STAGE, VEHICLE OR GSE
AS-502

4. TEST OBJECTIVES

A. To launch the space vehicle.

B. To provide the sequence of operation required to prepare for launch.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The countdown is divided into two parts: Part I (pre-count) and Part II (countdown).

During Part I, the spacecraft is powered up and on-board systems are verified. Pyrotechnics will be installed and connected during a period of RF silence and limited access. Servicing of liquids, gaseous, and cryogenic tanks will be performed. Also during Part I the launch vehicle is powered up, batteries are activated and installed and ordnance items are installed and connected (except propellant dispersion which are connected in Part II).

Between Parts I and II, a built in hold may occur. After beginning Part II the spacecraft fuel cells are activated. All final servicing and mechanical work requiring the Mobile Service Structure for access will be performed. The Mobile Service Structure will be removed and secured in the park area with all remaining spacecraft work in the command module cabin area performed via the Apollo access arm.

RF Systems Checkout, CM Cabin Closeout, hatch leak check, power transfer checks, final systems verification and launch readiness complete the spacecraft activities.

During Part II the launch vehicle begins its activities with power on guidance system checks. After removal of the MSS, cryogenic propellant loading is accomplished. Range Safety Command checks and RF checks will be performed. Power transfer checks, final systems verification and launch readiness complete the launch vehicle activities.

1071

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
J. R. Oliver	R. E. Moser	June 30, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
DIOT/GE	DIOT	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
SPACE VEHICLE LAUNCH COUNTDOWN	V-40300-502
	11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
Launch Pad 39A		60 hours

15. TEST CONFIGURATION

Spacecraft propellants loaded, launch vehicle RPT loaded.

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[X] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[X] LCC MEASURING (INS)	[X] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[X] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[X] ALDS
[X] IU POWER	[X] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[X] LEM POWER	[X] CIF DATA DISPLAY	[X] LCC TM RECORDING
[X] SM POWER	[X] DDAS	[X] CIF TM STA. (MONITOR)
[X] CM POWER	[X] DDAS TAPE RECORDING	[X] CIF TM RECORDING
[X] BACK-UP BATTERIES	[X] SERVICE STRUCTURE MEAS.	[X] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[X] CIF DATA
[X] COUNTDOWN CLOCK	[X] ACE	[X] TM RECORDS
[X] ETR SEQUENCER	[X] L/V W-G ECS	[X] REAL-TIME CIF COMPUT.
[X] ETR COUNTDOWN CLOCK	[X] CM W-G ECS	[X] POST-TEST CIF COMPUT.
[X] ETR S.R.O.	[X] FACILITY ECS (GAS)	[X] KSC TRACKING
[X] ETR R.S.O.	[X] H.P. GAS	[X] RFI MONITORING
[X] ETR PAD SAFETY	[X] CCF	[X] RF READOUTS (ETR)
[X] KSC PAD SAFETY	[X] FACILITY TV (OTV)	[X] RF READOUTS (KSC)
[X] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[X] WEATHER FORECAST
[X] FIRE FIGHTING	[X] FILM CAMERAS	[X] MCC-C
[X] MEDICAL	[X] SEARCH LIGHTS	[X] MCC-H
[ ]	[ ]	[X] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

1072

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SPACE VEHICLE COUNTDOWN DEMONSTRATION

2. KSC TEST NO.
V-40310-502

3. STAGE, VEHICLE OR GSE
AS-502

4. TEST OBJECTIVES

A. To demonstrate the time phasing of the normal sequences necessary to prepare the space vehicle for launch.

B. To verify that the space vehicle and GSE are in a satisfactory status for launch as if launch were eminent, thus demonstrating the countdown procedure adequacy.

C. Loading of LV and SC cryogenic to verify propellant system integrity.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A countdown will be conducted performing the same checkout and operating sequences that will be utilized during the launch countdown. A cutoff will be generated just prior to T-0 terminating the demonstration.

The Countdown Demonstration is divided into two parts: Part I (precount) and Part II (countdown).

During Part I the spacecraft is powered up and on-board systems are verified. Servicing of liquid, gas, and cryogenic tanks will be performed. Pyrotechnic simulators will be installed. Finally, spacecraft equipment and cabin provisions will be installed.

Also, during Part I, the launch vehicle is powered up, batteries are actuated and installed, and ordnance items are installed and connected during a period of RF silence and limited pad access.

Between Parts I and II a built in hold may occur. After beginning Part II, the spacecraft fuel cells will be started up. All final servicing and mechanical work requiring the Mobile Service Structure for access will be performed. Then the Mobile Service Structure will be removed and secured in the park area with all remaining spacecraft work in the Command Module cabin area performed via the access arm. RF systems checkout, CM cabin closeout, hatch leak check, power transfer checks, final systems verification and launch readiness complete the spacecraft activities. Space vehicle EDS checks will be accomplished.

During Part II the launch vehicle begins its activities with power on and guidance system checks. After removal of the Mobile Service Structure cryogenic propellant loading is accomplished. Range Safety command checks and RF checks will be performed. Power transfer checks, final systems verification and launch readiness complete the launch vehicle activities.

1075

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
L. R. Oliver	R. E. Moser	June 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
DLOT/GE	DLOT	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
SPACE VEHICLE COUNTDOWN DEMONSTRATION	V-40310-502
	11. VEHICLE EFFECTIVITY: AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
Launch Pad 39A		60 hours

15. TEST CONFIGURATION

No RP-1 on board. No S/C hypergolic propellants on board.

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[X] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[X] LCC MEASURING (INS)	[X] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[X] ALDS
[X] IU POWER	[X] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[X] LEM POWER	[X] CIF DATA DISPLAY	[X] LCC TM RECORDING
[X] SM POWER	[X] DDAS	[X] CIF TM STA. (MONITOR)
[X] CM POWER	[X] DDAS TAPE RECORDING	[X] CIF TM RECORDING
[X] BACK-UP BATTERIES	[X] SERVICE STRUCTURE MEAS.	[X] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[X] CIF DATA
[X] COUNTDOWN CLOCK	[X] ACE	[X] TM RECORDS
[X] ETR SEQUENCER	[X] L/V W-G ECS	[X] REAL-TIME CIF COMPUT.
[X] ETR COUNTDOWN CLOCK	[X] CM W-G ECS	[X] POST-TEST CIF COMPUT.
[X] ETR S.R.O.	[X] FACILITY ECS (GAS)	[X] KSC TRACKING
[X] ETR R.S.O.	[X] H.P. GAS	[X] RFI MONITORING
[ ] ETR PAD SAFETY	[X] CCF	[X] RF READOUTS (ETR)
[X] KSC PAD SAFETY	[X] FACILITY TV (OTV)	[X] RF READOUTS (KSC)
[X] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[X] WEATHER FORECAST
[X] FIRE FIGHTING	[X] FILM CAMERAS	[X] MCC-C
[X] MEDICAL	[X] SEARCH LIGHTS	[X] MCC-H
[ ]	[ ]	[X] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

1074

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SPACE VEHICLE OVERALL TEST (PLUGS IN)

2. KSC TEST NO.

V-41300-502

3. STAGE, VEHICLE OR GSE

AS-502

4. TEST OBJECTIVES

The object of this test is to verify compatibility and proper operation of all space vehicle electrical and appropriate mechanical systems with the local complex GSE and the KSC/ETR Range during a normal automatic firing sequence and flight sequence with simulated umbilical plug ejection and simulated liftoff.

5. TEST DESCRIPTION/EQUIPMENT STATUS

This test is to be performed as the first complete sequence test of the assembled space vehicle. All applicable systems of the launch vehicle, spacecraft and GSE will be sequenced in an established countdown and countup (simulated flight) to meet the objectives of the test. Fuse boxes and an interstage separation simulator will be utilized between the launch vehicle and spacecraft at the IU/SLA electrical interface to electrically isolate the two systems at the proper time in the flight sequence. The launch vehicle will similarly utilize fuse boxes and separation simulators at each in-flight separation station. During the space vehicle plus time, an LES abort will be actuated. The count will be recycled to space vehicle minus time and a normal mission run.

All links of TM will be operated with the launch vehicle "closed loop" and the spacecraft open loop utilizing hats and parasitic antennas. Launch vehicle command control will operate "closed loop" from the LCC command station while spacecraft will be open loop utilizing the ETR command station with modulation supplied by HMCC. All space vehicle tracking instrumentation will operate open loop with hats and repeating antennas, except for the ODOP, C-band radar beacon and CCS, which will be interrogated and read out the VAB RFCE.

Prior to terminal sequence, an EDS check will be made on the space vehicle. The launch vehicle will perform an internal power check. The spacecraft will perform cabin temp control/air fan check, a power distribution check and stabilization, guidance and navigation checks. During the simulated flight count-up, cutoff of each of the launch vehicle stages will be simulated to comply with the normal flight program. Range safety propellant dispersion commands will be given after S-IVB stage normal cutoff. It will be verified and a safing command sent.

Umbilical ejection, holddown release, and swing arm retraction will be simulated in the ESE.

1075

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
L. R. Oliver	R. E. Moser	June 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
DLOT/GE	DLOT	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
SPACE VEHICLE OVERALL TEST (PLUGS IN)	V-41300-502
	11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
High Bay of VAB		2 days

15. TEST CONFIGURATION: Complete space vehicle is in erected pre-launch condition and mechanically and electrically mated internally & to the launch GSE.

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[X] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[X] LCC MEASURING (INS)	[X] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[X] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[X] ALDS
[X] IU POWER	[X] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[X] LEM POWER	[X] CIF DATA DISPLAY	[X] LCC TM RECORDING
[X] SM POWER	[X] DDAS	[X] CIF TM STA. (MONITOR)
[X] CM POWER	[ ] DDAS TAPE RECORDING	[X] CIF TM RECORDING
[X] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[X] CIF DATA
[X] COUNTDOWN CLOCK	[X] ACE	[X] TM RECORDS
[X] ETR SEQUENCER	[X] L/V W-G ECS	[X] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[X] CM W-G ECS	[X] POST-TEST CIF COMPUT.
[X] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[X] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[X] RFI MONITORING
[ ] ETR PAD SAFETY	[X] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[X] FACILITY TV (OTV)	[X] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[X] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[X] MCC-H
[X] OAT EQUIPMENT	[ ]	[X] FOOD SERVICE
[X] GETS EQUIPMENTS	[ ]	[X] UNIFIED S-BAND STATION
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

1076

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SPACE VEHICLE OVERALL TEST (PLUGS OUT)

2. KSC TEST NO.
V-41301-502

3. STAGE, VEHICLE OR GSE
AS-502

4. TEST OBJECTIVES

Verify compatibility and proper operation of all space vehicle and GSE systems during a normal automatic firing sequence and flight sequence with actual holddown release, electrical umbilical ejection and firing of live ordnance in test chambers, where applicable. Verify no electrical interference at the time of umbilical disconnect.

5. TEST DESCRIPTION/EQUIPMENT STATUS

All applicable systems of the spacecraft, launch vehicle, and GSE will be prepared and conditions for "preparation complete" will be achieved and/or simulated. An EDS test will be performed on the space vehicle prior to Launch Sequence Start. The automatic sequence will generate stimuli to the GSE through simulated propellant loading securing, sequence power transfer, engine sequence commit and holddown release. Liftoff will be given by ejection of electrical umbilicals, swing arm retraction will be simulated.

The LV flight computer system will drive the switch selectors through a simulated flight sequence. The interstage plugs will be separated during the simulated flight sequence.

All ordnance circuits on the launch vehicle will be "end item" checked with live ordnance items installed in test chambers.

All RF and G&C systems will be operated. All LV telemeters will be operated through "closed loop" cables. Hats and repeater antennas will be used on LV RF tracking systems. All spacecraft RF systems will be operated open loop utilizing ETR, MSOB, CIF unified S-band station will be utilized for readouts.

LV Range Safety Command Receivers will be operated through "closed loop" cables from the LCC Command Station. Propellant dispersion system command functions will be given after cutoff of the S-IVB stage, action will be verified and safe command will be sent.

All spacecraft RF systems will be operated open loop utilizing the ETR Radio Command Carrier with modulation supplied by HMCC. S/C C-band beacon readouts will be performed by ETR. IU C-band beacon, CCS and ODOP will be interrogated and read out by the VAB RFCE

The spacecraft will be programmed for a normal mission sequence and reset verification.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
L. R. Oliver	R. E. Moser	June 30, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
DLOT/GE	DLOT	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 3
1. TEST TITLE SPACE VEHICLE OVERALL TEST (PLUGS OUT)	2. KSC TEST NO. V-41301-502 11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB High Bay		

15. TEST CONFIGURATION

The S/C and LV are erected on the mobile launcher and are mechanically and

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[X] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[X] LCC MEASURING (INS)	[X] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[X] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[X] ALDS
[X] IU POWER	[X] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[X] LEM POWER	[X] CIF DATA DISPLAY	[X] LCC TM RECORDING
[X] SM POWER	[X] DDAS	[X] CIF TM STA. (MONITOR)
[X] CM POWER	[X] DDAS TAPE RECORDING	[X] CIF TM RECORDING
[X] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[X] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[X] CIF DATA
[X] COUNTDOWN CLOCK	[X] ACE	[X] TM RECORDS
[ ] ETR SEQUENCER	[X] L/V W-G ECS	[X] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[X] CM W-G ECS	[X] POST-TEST CIF COMPUT.
[X] ETR S.R.O.	[X] FACILITY ECS (GAS)	[X] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[X] CCF	[X] RF READOUTS (ETR)
[X] KSC PAD SAFETY	[X] FACILITY TV (OTV)	[X] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[X] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[X] MCC-H
[ ]	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[X] UNIFIED S-BAND STATION
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

1078

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

1. TEST TITLE

SPACE VEHICLE OVERALL TEST (PLUGS OUT)

2. KSC TEST NO.

V-41301-502

11. VEHICLE EFFECTIVITY

AS-502

CONTINUED

Item 15.

electrically mated. Fuse boxes and interstage separation simulators will be installed. Flight type batteries will be utilized. OAT equipment will be utilized for the launch vehicle.

1077

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SPACE VEHICLE SWING ARM OVERALL TEST

2. KSC TEST NO.

V-41302-502

3. STAGE, VEHICLE OR GSE

AS-502

4. TEST OBJECTIVES

To verify compatibility and proper operation of all space vehicle and GSE systems during a normal automatic firing sequence and flight sequence with actual holddown arm release, umbilical ejection, actual swing arm and tail service mast operations. The space vehicle will be electrically isolated from the GSE after liftoff to simulate actual flight conditions as close as possible.

5. TEST DESCRIPTION/EQUIPMENT STATUS

All systems will be prepared and the conditions for "preparation complete" will be achieved or simulated. Fuse boxes and interstage simulators will be installed at vehicle separation planes. Overall test equipment will be utilized for all stages of the launch vehicle and OAT batteries will supply internal power. Umbilicals, holddown arms and swing arms will be prepared for actual operation.

The launch sequence start will be given and the automatic sequence will generate stimuli to the GSE through simulated pressurization, simulated propellant loading securing, sequence power transfer, F-1 simulated engine sequence, commit and holddown release. Simulated liftoff will be given and umbilical ejection, service arm control switch operation and swing arm retraction will actually occur on all except the S-II aft and the command and service module arms. The calips pressures will be vented and the flight computer will drive the stage switch selectors through a simulated flight sequence. The interstage connectors will be separated during the flight sequence and all S-II and S-IVB valves will be operated. The spacecraft will be in a power-off condition. After S-IVB engine cutoff and the propellant dispersion system command functions have been give, the test will be terminated.

1280

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
L. R. Oliver	R. E. Moser	June 30, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
DLOT/GE	DLOT	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
SPACE VEHICLE SWING ARM OVERALL TEST	V-41302-502
	11. VEHICLE EFFECTIVITY: AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB High Bay		2 days

15. TEST CONFIGURATION The SC & LV are erected on the mobile launcher. The space vehicle is mechanically & electrically mated internally and to the launch GSE

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[X] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[ ] GSE MEASURING (LVO)	[X] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[ ] ALDS
[X] IU POWER	[X] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[X] LCC TM RECORDING
[ ] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[ ] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[X] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[X] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[X] L/V W-G ECS	[X] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[X] POST-TEST CIF COMPUT.
[X] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[X] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[X] CCF	[ ] RF READOUTS (ETR)
[X] KSC PAD SAFETY	[X] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[X] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] GROUND HYDRAULICS	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

1. Launch vehicle cooling is required until T-0.
2. Retraction of the required high bay platforms.

1081

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

EMERGENCY DETECTION SYSTEM

2. KSC TEST NO.

V-41303-502

3. STAGE, VEHICLE OR GSE

AS-502

4. TEST OBJECTIVES

A. To verify the operational integrity of the Emergency Detection System.

B. Excepted from this procedure are the Q-Ball and Abort Request Circuitry, which are covered in other procedures.

5. TEST DESCRIPTION/EQUIPMENT STATUS

This test will be conducted in two modes utilizing the RCA 110A. The first mode will be a single step operation to accomplish: Engine-out Abort Test, Excessive Rate Circuitry Test, Gyro Excessive Rate Test, Space Vehicle Abort Test and the Command Module Indicator Verification Test. The second mode will be an automatic stimulation of spacecraft and launch vehicle and evaluating system responses.

Each of the tests will verify a portion of the EDS system by permutating appropriate relays and rate gyros (both positive and negative values). During a portion of the single step mode the logic bus will be energized to verify abort circuitry.

Prior to beginning the test, pyro and logic buses will be made safe and remain safe throughout the test.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
L. R. Oliver	R. E. Moser	June 30, 1966
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
DLOT/GE	DLOT	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
EMERGENCY DETECTION SYSTEM	V-41303-502
	11. VEHICLE EFFECTIVITY AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
High Bay - VAB and Pad		

15. TEST CONFIGURATION Spacecraft and launch vehicle are mechanically and electrically mated. Ordnance simulators connected.

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[X] ~~SHEXOR~~ S-IC STAGE PWR	[X] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[ ] ALDS
[X] IU POWER	[X] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[X] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[X] CM POWER	[X] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[X] BACK-UP BATTERIES	[X] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[X] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[X] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[X] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[ ] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] DEE-6	[ ]	[X] FOOD SERVICE
[X] FLIGHT CONTROL	[ ]	[ ]
[X] MSO OPERATIONS	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

1083

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS **APOLLO/SATURN TEST CATALOG**	PAGE 1 OF
1. TEST TITLE SPACE VEHICLE CUTOFF AND MALFUNCTION TESTS	2. KSC TEST NO. V-41304-502 3. STAGE, VEHICLE OR GSE AS-502

4. TEST OBJECTIVES

To verify the compatibility and proper stage and ESE reaction to malfunction cutoff during the automatic firing sequence.

To verify hardwire safing capability & recycle capability after failure of the operational computer system during the automatic firing sequence.

To verify the compatibility and proper operation of the electrical and mechanical vehicle and GSE systems during a normal automatic firing sequence and flight sequence.

5. TEST DESCRIPTION/EQUIPMENT STATUS

Part I of this test will begin with all SV systems prepared and the conditions for "preparation complete" will be achieved or simulated. Launch sequence start will be given. The automatic sequence will generate stimuli to the GSE through simulated pressurization, simulated propellant loading securing and sequence power transfer. A mobile launcher operational computer AC power failure will then be simulated resulting in an automatic cutoff. All SV systems will be restored to a safe condition through hardwire circuits.

The operational computer will be restored to proper operating status and the count recycled to an appropriate time.

Part II will begin with the conditions for "preparation complete" achieved or simulated and launch sequence start will be given. The automatic sequence will generate stimuli to the GSE through simulated pressurization, simulated propellant loading securing and sequence power transfer. Loss of mobile launcher operational computer service will then be simulated but the automatic sequence allowed to continue through commit and holddown release. Simulated liftoff will be given. Mobile launcher operational computer will be restarted. Umbilical ejection and swing arm retraction will be simulated. The flight computer system will drive the switch selectors through a simulated flight sequence. Test will be terminated after boost phase cutoff of S-IVB stage.

Launch vehicle power transfer tests will be run on all launch vehicle stages in Part I only. Propellant dispersion system commands will be given after S-IVB cutoff has occurred on test II. Complete launch vehicle propellant loading simulation will be performed on all stages of the launch vehicle during test I S-IC hydraulic pumps will be operated through S-IC cutoff on tests I and II. S-IC engine sequence will not be run.

1014

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
L. R. Oliver	R. E. Moser	June 30, 1966
7. ORGANIZATION	**9. ORGANIZATION**	**11. VEHICLE EFFECTIVITY**
DLOT/GE	DLOT	AS-502

KSC FORM 23-191A (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 3
1. TEST TITLE SPACE VEHICLE CUTOFF AND MALFUNCTION TEST	2. KSC TEST NO. V-41304-502 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
Pad		

15. TEST CONFIGURATION

Spacecraft and launch vehicle mechanically and flight electrically mated.

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[ ] GSE MEASURING (INS)	[ ] ALDS
[X] IU POWER	[X] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[ ] LEM POWER	[X] CIF DATA DISPLAY	[X] LCC TM RECORDING
[ ] SM POWER	[X] DDAS	[X] CIF TM STA. (MONITOR)
[X] CM POWER	[X] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[X] CIF DATA
[X] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[X] L/V W-G ECS	[X] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[X] CM W-G ECS	[X] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[X] FACILITY ECS (GAS)	[ ] KSC TRACKING
[X] ETR R.S.O. (AT LCC)	[ ] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[X] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[ ]	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

1085

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

1. TEST TITLE

SPACE VEHICLE CUTOFF AND MALFUNCTION TEST

2. KSC TEST NO.
V-41304-502

11. VEHICLE EFFECTIVITY
AS-502

CONTINUED

Item 15.

Ground power will be utilized through special jumper cables to supply internal power to all launch vehicle stages.

All ordnance circuits on the launch vehicle will be "end item" checked with ordnance simulators using limited recording of ordnance functions.

Simulators will be installed for umbilical ejection, holddown release and liftoff.

No G&C systems will be operated except for the flight computer system.

No RF equipment will be operated on the IU.

1086

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SIMULATED FLIGHT TEST

2. KSC TEST NO.

V-41306-502

3. STAGE, VEHICLE OR GSE

AS-502

4. TEST OBJECTIVES

To verify the proper operation of the spacecraft, launch vehicle and associated GSE in a normal minus and plus count while following terminal countdown times and functions as closely as possible. This test verified that the space vehicle is functioning properly in a configuration as near as possible to flight configuration and is ready for transfer to the launch pad.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The spacecraft and launch vehicle are electrically and mechanically mated in a launch configuration and Space Vehicle Flight Electrical Mate has been run. The test will include a manned mission simulation in which all abort modes will be validated. Spacecraft LES and SPS aborts will be conducted in the space vehicle "minus count" with a normal mission run during the space vehicle "plus time".

Flight equipment will be employed with a minimum of simulation, umbilical plugs will remain connected and environmental control systems will be operated for the duration of the test. ACE carry-on equipment will be connected. All pyrotechnic devices will be electrically disconnected and shorting plugs installed.

OAT equipment will be mated to the vehicle and ESE will launch vehicle electrically power supplied from ground power through special jumper cables. Spacecraft will use batteries for internal electrical power.

The test will require control system pneumatic and hydraulic pressure and engine purges. S-II and S-IVB ignition start circuits will be interrupted to prevent propellant valve actuation. Critical functions of all systems will be monitored for proper operation and "override control will be available in order that damage to the vehicle might be prevented. Certain pneumatic components will be simulated where actuation of these components can jeopardize the integrity of the stages.

Stage hydraulic systems will be operated as required and monitored at the LCC consoles. The Saturn Launch Computer Complex will support the Simulated Flight Test by providing discrete monitoring and performing system test programs.

Spacecraft RF hats and parasitic antennas will be used to re-radiate to receiving stations.

The Guidance Control and Stabilized Platform (GC&SP) system operation will be verified prior to beginning the Simulated Flight Test. These preliminary tests will substantiate that the GC-SP system and its ground support equipment are ready for the test by ascertaining that all components are connected in the stages and IU, and that all control panels and monitoring equipment are ready for operation.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
L. R. Oliver	R. S. Moser	June 30, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
DIOT/GE	DIOT	AS-502

KSC FORM 23-191A (2/66)

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APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 3
1. TEST TITLE SIMULATED FLIGHT TEST	2. KSC TEST NO. V-41306-502 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
High Bay - VAB		

15. TEST CONFIGURATION

Spacecraft and launch vehicle mechanically mated, umbilicals connected.

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[X] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[X] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[X] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[X] ALDS
[X] IU POWER	[X] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[X] LEM POWER	[X] CIF DATA DISPLAY	[X] LCC TM RECORDING
[X] SM POWER	[X] DDAS	[X] CIF TM STA. (MONITOR)
[X] CM POWER	[X] DDAS TAPE RECORDING	[X] CIF TM RECORDING
[X] BACK-UP BATTERIES	[X] SERVICE STRUCTURE MEAS.	[X] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[X] CIF DATA
[X] COUNTDOWN CLOCK	[X] ACE	[X] TM RECORDS
[X] ETR SEQUENCER	[X] L/V W-G ECS	[X] REAL-TIME CIF COMPUT.
[X] ETR COUNTDOWN CLOCK	[X] CM W-G ECS	[X] POST-TEST CIF COMPUT.
[X] ETR S.R.O.	[X] FACILITY ECS (GAS)	[X] KSC TRACKING
[ ] ETR R.S.O.	[ ] H.P. GAS	[X] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[X] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[X] FACILITY TV (OTV)	[X] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[X] MCC-H
[X] OAT EQUIPMENT	[ ]	[X] FOOD SERVICE
[X] VAB ECS	[ ]	[ ]
[X] DEE-3	[ ]	[ ]
[X] DTS	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

1088

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

1. TEST TITLE

SIMULATED FLIGHT TEST

2. KSC TEST NO.

V-41306-502

11. VEHICLE EFFECTIVITY

AS- 502

CONTINUED

Item 5.

Spacecraft checkout will be conducted through on-board test equipment and the ACE (Acceptance Checkout Equipment) S/C system. The spacecraft test data will be displayed to system test engineerings in the control rooms of the MSO Building. Test commands will be generated under program control in synchronization with a realtime clock.

All vehicle sensors and signal conditioners will be verified for proper operation by initiating an automatic sequencing test at the Measuring Test Engineer Station. The responses will be compared against pre-determined limits and all out-of-tolerance values will be flagged. An out-of-tolerance signal conditioner will be adjusted at the vehicle and retested by manual commands from the calibration test station. ESE preparations will include calibration of the analog recorder and DEE systems and remote automatic calibration of the DDAS system.

After all systems have been prepared, functionally checked and are in a "ready" status with the conditions required for "preparation complete" achieved, the terminal sequence will be initiated. A simulated automatic sequence will progress through guidance release, power transfer, simulated preflight swing arm retraction, simulated S-IC stage ignition, commit, simulated holddown arms release, and simulated liftoff. Service arm hydraulic and pneumatic control pressures will not be pressurized to preclude inadvertent actuation. Umbilical eject signals from the terminal countdown sequencer and liftoff switch will be verified at each arm. The count will progress into plus time to validate the performance of the airborne computers and control circuitry. A check will be made to ensure that all discretes are issued in the proper sequence and at the proper time. At liftoff, ordnance circuits are armed and the flight program is started. All systems will be monitored for proper operation by the DDAS and telemetry. During the test all applicable ordnance firing functions will be tested with pulse sensors. The ordnance electrical circuitry is verified on an individual basis during checks of the EBW. The test confirms that ordnance items will receive the correct signal at the proper time. The command destruct systems will be interrogated through directional couplers from encoders on the mobile launcher. The command receiver signals of cutoff, destruct, and destruct safe will be given after S-IVB cutoff.

The GLO-TRAC, C-band transponders and ODOP will be communicated with by the range operations ground stations. The flight TV will be monitored by the RF Checkout Station in the VAB, ODOP will be monitored by the NASA operated ground stations and the RF Checkout Station.

The CIF will monitor the telemetry and TV transmitter outputs via links processing the data and displaying the results of these checks. The test will terminate after the flight functions have been completed and the Range Safety Command System has been verified.

1031

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

FLIGHT READINESS TEST

2. KSC TEST NO.

V-41307-502

3. STAGE, VEHICLE OR GSE

AS-502

4. TEST OBJECTIVES

The Flight Readiness Test will closely resemble the Simulated Flight Test. The same systems which were in operation at the VAB Simulated Flight Test will be operated during this test. The purpose of this test is to assure that the vehicle is functioning properly in a configuration which is as near as possible to launch configuration when operated with all the pad GSE.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The Flight Readiness Test will be performed with the space vehicle in launch configuration except for use of a minimum amount of OAT equipment required for performance of the test. All electrical circuits which could cause damage to the vehicle or system upon failure or inadvertent operation will be slugged or jumpered. The DEE system and analog recorder will be properly calibrated and in operation during the test.

The spacecraft abort sequences will be run in the space vehicle "minus time" and are as follows. A space vehicle terminal count sequence will be initated beginning at a minus time and continue through MESC arming. A pad abort will be initiated and continued to ELS activate. The space vehicle will then be recycled, a terminal count sequence initiated and a normal mission conducted through tower jettison. At this pointan SPS abort will be initiated utilizing HMCC command and an abort sequence will be followed to ELS activate. The space vehicle will again be recycled and a normal mission simulation will be accomplished.

An automatic theodolite facility in the middle of the crawlerway will be used in the azimuth alignment of the stabilized platform. All modes of the guidance command interfaces between the spacecraft and the launch vehicle will be checked during the manned mission simulation.

The USB-GLO-TRAC and C-band transponders will be interrogated and read out by range operations ground stations. The ODOP transponder will be interrogated and read out by the ground station.

After S-IVB cutoff, all command destruct receivers will be supplied with cutoff, propellant dispersion and safing signals from the ETR command transmitter. The up-data command receiver will be checked by a pre-programmed data format transmitted to the command receiver/decoder and the reception verified by the advanced guidance computer through PCM/DDAS telemetry.

1090

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
L. R. Oliver	R. E. Moser	June 30, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
DLOT/GE	DLOT	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
FLIGHT READINESS TEST	V-41307-502
	11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
Launch Pad 39		

15. TEST CONFIGURATION Spacecraft and launch vehicle in as near as practical to launch configuration on the launch pad. MSS around vehicle.

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[X] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[X] LCC MEASURING (INS)	[X] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[X] ALDS
[X] IU POWER	[X] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[X] LEM POWER	[X] CIF DATA DISPLAY	[X] LCC TM RECORDING
[X] SM POWER	[X] DDAS	[X] CIF TM STA. (MONITOR)
[X] CM POWER	[X] DDAS TAPE RECORDING	[X] CIF TM RECORDING
[X] BACK-UP BATTERIES	[X] SERVICE STRUCTURE MEAS.	[X] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[X] CIF DATA
[X] COUNTDOWN CLOCK	[X] ACE	[X] TM RECORDS
[X] ETR SEQUENCER	[X] L/V W-G ECS	[X] REAL-TIME CIF COMPUT.
[X] ETR COUNTDOWN CLOCK	[X] CM W-G ECS	[X] POST-TEST CIF COMPUT.
[X] ETR S.R.O.	[X] FACILITY ECS (GAS)	[X] KSC TRACKING
[X] ETR R.S.O.	[X] H.P. GAS	[X] RFI MONITORING
[ ] ETR PAD SAFETY	[X] CCF	[ ] RF READOUTS (ETR)
[X] KSC PAD SAFETY	[X] FACILITY TV (OTV)	[X] RF READOUTS (KSC)
[X] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[X] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[X] MCC-H
[X] OAT EQUIPMENT	[ ]	[X] FOOD SERVICE
[X] VAB ECS	[ ]	[ ]
[X] DEE-3	[ ]	[ ]
[X] DTS	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SPACE VEHICLE RF COMPATIBILITY (WITH MOBILE SERVICE STRUCTURE)

2. KSC TEST NO.

V-42300-502

3. STAGE, VEHICLE OR GSE

AS-502

4. TEST OBJECTIVES

A. To verify space vehicle RF compatibility between all on-board systems and with ground stations in a countdown configuration with the Mobile Service Structure around the vehicle.

B To verify that pyrotechnic/ordnance circuitry is not susceptible to space vehicle or ground station RF with the Mobile Service Structure around the vehicle.

5. TEST DESCRIPTION/EQUIPMENT STATUS

All space vehicle RF which will be operated on launch day will be functionally exercised and checked out with the Mobile Service Structure around the space vehicle.

After turn-on and warmup of all RF systems, readouts will be made by the appropriate Range Ground Stations.

CIF TM tape recordings will be turned on.

After functional checks, all RF systems will be turned off in a sequential manner and recordings terminated.

All checkout and monitor stations will check for interference during the test and a check of low energy pyrotechnic/ordnance circuits will be performed to verify that they were not susceptible to RF radiated pickup.

1092

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
[illegible]ver	R. E. Moser	June 30, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
DLOT/GE	DLOT	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 3
1. TEST TITLE SPACE VEHICLE RF COMPATIBILITY (WITH MOBILE SERVICE STRUCTURE)	2. KSC TEST NO. V-42300-502 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LC-39		

15. TEST CONFIGURATION

1. Space vehicle mechanically and electrically mated fuse boxes at SLA/IU interface.

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[ ] LCC MEASURING (LVO)	[X] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[ ] LCC MEASURING (INS)	[X] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[ ] ALDS
[X] IU POWER	[ ] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[X] LEM POWER	[ ] CIF DATA DISPLAY	[X] LCC TM RECORDING
[X] SM POWER	[ ] DDAS	[X] CIF TM STA. (MONITOR)
[X] CM POWER	[ ] DDAS TAPE RECORDING	[X] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[X] COUNTDOWN CLOCK	[X] ACE	[X] TM RECORDS
[ ] ETR SEQUENCER	[X] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[X] ETR COUNTDOWN CLOCK	[X] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[X] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[ ] H.P. GAS	[X] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[X] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[X] RF READOUTS (KSC)
[X] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[X] SEARCH LIGHTS (FOR RF RAD.)	[X] MCC-H
[ ]	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[X] RF CLEARANCE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

1. TEST TITLE

SPACE VEHICLE RF COMPATIBILITY (WITH MOBILE SERVICE STRUCTURE)

2. KSC TEST NO.

V-42300-502

11. VEHICLE EFFECTIVITY

AS-502

CONTINUED

Item 15.

2. ACE carry-on equipment connected.

3. All external doors and panels in place.

4. Pyrotechnic/ordnance RF compatibility monitors.

2094

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SPACE VEHICLE RF COMPATIBILITY (WITHOUT MOBILE SERVICE STRUCTURE)

2. KSC TEST NO.

K-42301-502

3. STAGE, VEHICLE OR GSE

AS-502

4. TEST OBJECTIVES

A. Verify space vehicle RF compatibility between all on-board systems and with ground stations in a countdown configuration with the Mobile Service Structure secure in park area.

B. To verify that pyrotechnic/ordnance circuitry is not susceptible to space vehicle or ground station RF.

C. To be run concurrent with the Countdown Demonstration.

5. TEST DESCRIPTION/EQUIPMENT STATUS

All space vehicle RF which will be operated on launch day will be functionally exercised and checked out without the Mobile Service Structure which will be in the park area.

After turn-on and warmup of all RF systems, readouts will be made by the appropriate Range Ground Station.

CIF TM tape recording will be turned on.

After functional checks all RF systems will be turned off in a sequential manner and recordings terminated.

All checkout and monitor stations will check for interference during the test and note if low energy pyrotechnic/ordnance circuits are susceptible to RF pickup.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
L. R. Oliver	R. E. Moser	June 30, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
DLOT/GE	DLOT	AS- 502

KSC FORM 23-191A (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 3

1. TEST TITLE	2. KSC TEST NO.
SPACE VEHICLE RF COMPATIBILITY (WITHOUT MOBILE SERVICE STRUCTURE)	V-42301-502
	11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LC-39		

15. TEST CONFIGURATION

1. Space vehicle mechanically & electrically mated with fuse boxes at SLA/IU interface.

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[X] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[X] LCC MEASURING (INS)	[X] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[ ] ALDS
[X] IU POWER	[ ] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[X] LEM POWER	[ ] CIF DATA DISPLAY	[X] LCC TM RECORDING
[X] SM POWER	[ ] DDAS	[X] CIF TM STA. (MONITOR)
[X] CM POWER	[ ] DDAS TAPE RECORDING	[X] CIF TM RECORDING
[ ] BACK-UP BATTERIES	[ ] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[X] COUNTDOWN CLOCK	[X] ACE	[X] TM RECORDS
[ ] ETR SEQUENCER	[X] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[X] ETR COUNTDOWN CLOCK	[X] CM W-G ECS	[ ] POST-TEST CIF COMPUT.
[X] ETR S.R.O.	[ ] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[ ] H.P. GAS	[X] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[X] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[X] FACILITY TV (OTV)	[X] RF READOUTS (KSC)
[X] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[X] SEARCH LIGHTS (FOR RF RAD.)	[X] MCC-H
[ ]	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[X] RF CLEARANCE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

1. TEST TITLE

SPACE VEHICLE RF COMPATIBILITY (WITHOUT MOBILE SERVICE STRUCTURE)

2. KSC TEST NO.

V-42301-502

11. VEHICLE EFFECTIVITY

AS- 502

CONTINUED

Item 15.

2. ACE carry-on equipment disconnected.

3. All external doors and panels in place.

4. Pyrotechnic/ordnance RF compatibility monitors.

047

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE	2. KSC TEST NO.
SPACE VEHICLE ELECTRICAL MATE	V-43300-502
	3. STAGE, VEHICLE OR GSE: AS-502

4. TEST OBJECTIVES

A. To accomplish electrical mate of the spacecraft and launch vehicle with fuse box and separation simulator.

B. To verify electrical interface compatibility, except for EDS, and verify redundant circuitry.

C. To verify compatibility and electrical support equipment and the space vehicle.

5. TEST DESCRIPTION/EQUIPMENT STATUS

Before space vehicle power is applied, measure the resistance at the fuse boxes looking both into the Instrument Unit and the spacecraft. Bring up both launch vehicle (all stages) power and spacecraft power. In a sequential manner, install fuses in the fuse boxes to complete the interface circuit connections. In the above sequential order, activate each interface signal and monitor for proper source and receipt together with proper support equipment indications. Fuses in certain circuits are removed in order to check circuit redundancy. Leave the fuse boxes installed for subsequent testing until space vehicle flight electrical mate. Power down the launch vehicle and spacecraft power after satisfactory completion if a powered up condition is not required for the next test or checkout sequence.

109

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
L. R. Oliver	R. E. Moser	June 30, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
DLOT/GE	DLOT	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 3

1. TEST TITLE	2. KSC TEST NO.
SPACE VEHICLE ELECTRICAL MATE	V-43300-502
	11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
ML VAB High Bay		6 hours

15. TEST CONFIGURATION

1. The spacecraft and launch vehicle are mechanically mated.

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[X] S-IB OR S-IC STAGE PWR	[X] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[ ] ALDS
[X] IU POWER	[ ] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[X] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[X] CM POWER	[X] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[X] BACK-UP BATTERIES	[X] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[X] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[X] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[ ] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
[ ] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] DEE-6	[ ]	[X] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

1099

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

S-IC Power Procedure
S-II Power Procedure
S-IVB Power Procedure
IU Power Procedure

1. TEST TITLE

SPACE VEHICLE ELECTRICAL MATE

2. KSC TEST NO.

V-43300-502

11. VEHICLE EFFECTIVITY

AS-502

CONTINUED

Item 15.

2. The SLA/IU interface is connected through the fuse boxes - fuses not installed.

3. ACE carry-on equipment connected.

4. LV and SC power is off.

1100

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

SPACE VEHICLE FLIGHT ELECTRICAL MATE

2. KSC TEST NO.
V-43801-502

3. STAGE, VEHICLE OR GSE
AS-502

4. TEST OBJECTIVES

A. To remove the SC/LV Interface Fuse Boxes and Separation Simulator, after which the LV and SC are remated electrically.

B. To reverify electrical interface compatibility and redundant circuitry after remate.

5. TEST DESCRIPTION/EQUIPMENT STATUS

With SV power removed the fuse boxes and separation simulator at the LV/SC interface are removed Both LV (all stages) and SC are powered up. In a sequential order each interface signal is activated while monitoring for proper source and receipt together with proper support equipment indications. The SV is powered down afer satisfactory completion if a powered up condition is not required for subsequent testing or checkout.

110

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA/KSC APPROVAL	10. APPROVAL DATE
J. R. Oliver	R. E. Moser	June 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
DLOT/GE	DLOT	AS-502

KSC FORM 23-191A (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
SPACE VEHICLE FLIGHT ELECTRICAL MATE	V-43301-502
	11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
ML VAB High Bay		

15. TEST CONFIGURATION 1. SV Plugs Out OAT has been successfully completed. 2. ACE carry-on equipment connected. 3. SV power is off.

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[X] ~~S-IB OR~~ S-IC STAGE PWR	[X] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[ ] ALDS
[X] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[X] LCC TM RECORDING
[X] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[X] CM POWER	[X] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[X] BACK-UP BATTERIES	[X] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[X] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[X] FACILITY ECS (GAS)	[ ] KSC TRACKING
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[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
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[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] DEE-6	[ ]	[ ] FOOD SERVICE
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[ ]	[ ]	[ ]

OTHERS:

1102

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

S-IC Power Procedure
S-II Power Procedure
S-IVB Power Procedure
IU Power Procedure

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

Electrical Interface Mate Test (ESE-GSE)

2. KSC TEST NO.

V-43302-502

3. STAGE, VEHICLE OR GSE

AS-502 SV

4. TEST OBJECTIVES

This test is designed to electrically mate the Spacecraft ESE with the Launch Vehicle ESE and verify the interface.

5. TEST DESCRIPTION/EQUIPMENT STATUS

Description:

Continuity checks will be performed by taking resistance measurements between each pin of the interface connectors and ground. The Launch Vehicle and Spacecraft interfaces will be connected through fuse boxes to the SLA substitute box. Ground power will be applied. The S/C ESE to L/V ESE interfaces will be functionally checked.

Status:

The Launch Vehicle will be mechanically and electrically mated and the Spacecraft will be mechanically mated on the ML in the VAB. The S/C GSE to L/V ESE interfaces will be mated through fuse boxes. The IU and Spacecraft interfaces will be connected to the SLA substitute box through fuse boxes. The SLA substitute box will be removed after this test. The fuse boxes will remain until after SV OAT #2 (electrical plugs out).

1103

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D. G. Satterfield	C. W. Harrison	6/17/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
IBM	LVO-221	AS-502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2

1. TEST TITLE	2. KSC TEST NO.
Electrical Interface Mate Test (ESE-GSE)	V-43302-502
	11. VEHICLE EFFECTIVITY AS- 502 SV

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LCC-39		5 hours

15. TEST CONFIGURATION

Spacecraft Erected - Ground Power On

16. SUPPORT REQUIREMENTS CHECKLIST *(Check appropriate boxes and add any additional)*

[X] GROUND POWER	[X] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[X] ~~X-XBXOR~~S-IC STAGE PWR	[X] LCC MEASURING (INS)	[ ] ETR COMMAND XMITTER
[X] S-II STAGE POWER	[X] GSE MEASURING (LVO)	[ ] LOCAL COMMAND (C.L.)
[X] S-IVB STAGE POWER	[X] GSE MEASURING (INS)	[ ] ALDS
[X] IU POWER	[X] LCC DATA DISPLAY	[X] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[X] DDAS	[ ] CIF TM STA. (MONITOR)
[ ] CM POWER	[X] DDAS TAPE RECORDING	[ ] CIF TM RECORDING
[X] BACK-UP BATTERIES	[X] SERVICE STRUCTURE MEAS.	[ ] CIF COMPUTER
[X] TIMING	[X] RCA-110A COMPUTERS	[ ] CIF DATA
[ ] COUNTDOWN CLOCK	[ ] ACE	[ ] TM RECORDS
[ ] ETR SEQUENCER	[ ] L/V W-G ECS	[ ] REAL-TIME CIF COMPUT.
[ ] ETR COUNTDOWN CLOCK	[ ] CM W-G ECS	[X] POST-TEST CIF COMPUT.
[ ] ETR S.R.O.	[X] FACILITY ECS (GAS)	[ ] KSC TRACKING
[ ] ETR R.S.O.	[ ] H.P. GAS	[ ] RFI MONITORING
[ ] ETR PAD SAFETY	[ ] CCF	[ ] RF READOUTS (ETR)
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[ ] SECURITY POLICE	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] DEE-6	[ ]	[ ] FOOD SERVICE
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OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

S-IC Power Procedure
S-II Power Procedure
S-IVB Power Procedure
IU Power Procedure

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