KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE
GYRO DRIFT TEST OF THE ST-124M STABILIZED PLATFORM SYSTEM

2. KSC TEST NO.
V-23052-IU-502

3. STAGE, VEHICLE OR GSE
Saturn V

4. TEST OBJECTIVES
TO MEASURE GYRO DRIFTS.

5. TEST DESCRIPTION/EQUIPMENT STATUS

WITH STABILIZED PLATFORM ALIGNMENT TURNED OFF, DISPLACEMENT OF PLATFORM AXIS FROM AN INITIAL SPACE FIXED REFERENCE POSITION FOR A CERTAIN TIME PERIOD IS MEASURED.

(451)

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
J Ellis	C M L. Potts	4/21/66
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
IBM	LVO-23	AS- 502

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF
1. TEST TITLE GYRO DRIFT TEST OF THE ST-124M STABILIZED PLATFORM SYSTEM	2. KSC TEST NO. V-23052-IU-502 11. VEHICLE EFFECTIVITY AS-502

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

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

FUNCTIONAL TEST OF THE ST-124M STABILIZED PLATFORM SYSTEM IN THE LABORATORY

2. KSC TEST NO.

V-23053-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO APPLY POWER TO THE STABILIZED PLATFORM SYSTEM AND VERIFY SATISFACTORY FUNCTIONAL PERFORMANCE.

5. TEST DESCRIPTION/EQUIPMENT STATUS

APPLY POWER TO THE TEST CONSOLE. APPLY POWER TO THE STABILIZED PLATFORM SYSTEM. OBSERVE ALL METERS AND RECORDERS FOR NORMAL INDICATIONS. VERIFY THAT EACH SWITCH OPERATION PERFORMS ITS FUNCTION SATISFACTORILY.

PLATFORM SYSTEM PREPARATION FOR LABORATORY TESTS COMPLETED.

4/5/

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
J Elliott	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 FUNCTIONAL TEST OF THE ST-124M STABILIZED PLATFORM SYSTEM IN THE LABORATORY	2. KSC TEST NO. V-23053-IU-502 11. VEHICLE EFFECTIVITY AS-502

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

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LABORATORY TESTING

2. KSC TEST NO.

V-23054-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO PERFORM RECEIVING INSPECTION AND TO PREPARE THE SYSTEM FOR ELECTRICAL TESTING.

5. TEST DESCRIPTION/EQUIPMENT STATUS

UNPACK EQUIPMENT AND PERFORM EXTERNAL VISUAL TYPE INSPECTIONS. INSTALL IN TEST STAND. CONNECT PNEUMATIC LINE TO PLATFORM AND ADJUST PRESSURE TO MEET PLATFORM REQUIREMENTS. CONNECT THE TEST CONSOLE CABLES AND INTERCONNECTING SYSTEM CABLES.

GN2 SUPPLY TO PLATFORM WITHIN PROPER PURITY SPECIFICATIONS. LABORATORY AREA CLEANED AND PREPARED FOR RECEIVING THE ST-124M STABILIZED PLATFORM SYSTEM.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D 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 ST-124M STABILIZED PLATFORM SYSTEM PRELIMINARY OPERATIONS FOR LABORATORY TESTING	2. KSC TEST NO. V-23054-IU-502 11. VEHICLE EFFECTIVITY AS - 502

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

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE
VEHICLE INTERSTAGE ALIGNMENT

2. KSC TEST NO.
V-23055-IU-502

3. STAGE, VEHICLE OR GSE
Saturn V

4. TEST OBJECTIVES
TO VERIFY MATED STAGES ARE ALIGNED TO SPECIFIED TOLERANCES.

5. TEST DESCRIPTION/EQUIPMENT STATUS

UTILIZING ALIGNMENT TARGETS ON THE VEHICLE, MEASURE DISPLACEMENTS FROM THEODOLITE ESTABLISHED PLANES. THE ANGULAR MISALIGNMENT OF VEHICLE IS THEN CALCULATED FROM THESE MEASUREMENTS.

THE VAB ADJUSTABLE WORKING LEVELS ARE TO BE RETRACTED, AND A MINIMUM OF MACHINE AND PERSONNEL ACTIVITY ON THE MOBILE LAUNCHER IS REQUIRED.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
[illegible]	C M LePorto	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	2. KSC TEST NO.
VEHICLE INTERSTAGE ALIGNMENT	V-23055-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
☐	☒ STRUCTURES	☐ FOOD SERVICE
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OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE
ST-124M ALIGNMENT SYSTEM PERFORMANCE TEST

2. KSC TEST NO.
V-23056-IU-502

3. STAGE, VEHICLE OR GSE
Saturn V

4. TEST OBJECTIVES

TO VERIFY THE PERFORMANCE AND TO ASSURE COMPATIBILITY BETWEEN THE PLATFORM AND THE ALIGNMENT SYSTEM.

5. TEST DESCRIPTION/EQUIPMENT STATUS

EACH GYRO IS TORQUED A NUMBER OF DEGREES AND THE TIME OF RECOVERY IS RECORDED. THE GAINS OF ALL LOOPS IN THE ALIGNMENT SYSTEM ARE ADJUSTED FOR STABILITY IN ALL MODES OF OPERATION. THE INERTIAL PLATFORM IS DRIVEN BY THE SIMULATOR TO AN ANGLE. THE ANGLE IS THEN VERIFIED BY OPTICAL MEASUREMENTS.

NO SUPPORT REQUIRED.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D Elliott	C M LoPorto	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 ST-124M ALIGNMENT SYSTEM PERFORMANCE TEST	2. KSC TEST NO. V-23056-IU-502 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LAB		1 HR

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:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

ST-124M PRISM ALIGNMENT TEST

2. KSC TEST NO.

V-23057-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO VERIFY PRISM ALIGNMENT.

5. TEST DESCRIPTION/EQUIPMENT STATUS

DETERMINE THE INERTIAL PRISM'S ORIENTATION WITH RESPECT TO THE Z ACCELEROMETER'S MEASURING AXIS, WITH MANUAL THEODOLITES.

NO SUPPORT REQUIRED.

401

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
[illegible]	CM LePort	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 ST-124M PRISM ALIGNMENT TEST	2. KSC TEST NO. V-23057-IU-502 11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LAB		2 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
☐	☒ STRUCTURES	☐ FOOD SERVICE
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OTHERS:

467

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

ST-124M MOUNTING SURFACE ALIGNMENT (VEHICLE)

2. KSC TEST NO.

V-23058-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO VERIFY THE STABILIZED PLATFORM MOUNTING SURFACE ALIGNMENT TO THE VEHICLE IS WITHIN SPECIFIED TOLERANCES.

5. TEST DESCRIPTION/EQUIPMENT STATUS

UTILIZE A CLINOMETER AND PLATFORM MOUNTING ALIGNMENT FIXTURE TO DETERMINE PLATFORM MOUNTING SURFACE ALIGNMENT.

THE CLINOMETER IS USED TO MEASURE ANGULAR ERROR OF THE ST-124M MOUNTING SURFACES TO THE LOCAL VERTICAL. THEODOLITES ARE USED TO DETERMINE THE MOUNTING SURFACE AZIMUTH.

ASSEMBLED VEHICLE AND IU ACCESS.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D E Elliott	C M LaPorta	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 ST-124M MOUNTING SURFACE ALIGNMENT (VEHICLE)	2. KSC TEST NO. V-23058-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
☐	☒ STRUCTURES	☐ FOOD SERVICE
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☐	☐	☐

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

REFERENCE PRISM AZIMUTH CHECK - LONG RANGE AUTOMATIC AZIMUTH ALIGNMENT THEODOLITE

2. KSC TEST NO.

V-23059-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO DETERMINE THE TRUE AZIMUTH OF THE LONG RANGE THEODOLITE SYSTEM BY DETERMINING THE AZIMUTH OF THE REFERENCE PRISM.

5. TEST DESCRIPTION/EQUIPMENT STATUS

ADJUST THE REFERENCE PRISM UNTIL THE LONG RANGE ALIGNMENT THEODOLITE ERROR METERS READ ZERO. MEASURE THE ANGLE BETWEEN A PRE-DETERMINED AZIMUTH REFERENCE LINE AND THE REFERENCE PRISM HEADING. COMPUTE THE AZIMUTH OF THE THEODOLITE LINE OF SIGHT.

PERFORMED UTILIZING THE LONG RANGE AZIMUTH ALIGNMENT THEODOLITE.

1/71

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D E Elliott	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 REFERENCE PRISM AZIMUTH CHECK - LONG RANGE AUTOMATIC AZIMUTH ALIGNMENT THEODOLITE	2. KSC TEST NO. V-23059-IU-502 11. VEHICLE EFFECTIVITY AS-502

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

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

VALIDATION PROCEDURE - SHORT RANGE AUTOMATIC AZIMUTH ALIGNMENT THEODOLITE

2. KSC TEST NO.

V-23060-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO PERFORM AN EVALUATION OF THE SHORT RANGE THEODOLITE PRIOR TO ITS UTILIZATION IN THE CHECKOUT OF THE ST-124M PLATFORM.

5. TEST DESCRIPTION/EQUIPMENT STATUS

CHECK THEODOLITE OPERATING CHARACTERISTICS UTILIZING A MICROPOSITIONER. VERIFY ACQUISITION, LINEARITY AND SCALE FACTORS OF EQUIPMENT.

LABORATORY CHECKOUT EQUIPMENT.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
[illegible]	CM LePoto	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 VALIDATION PROCEDURE - SHORT RANGE AUTOMATIC AZIMUTH ALIGNMENT THEODOLITE	2. KSC TEST NO. V-23060-IU-502 11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LAB		2 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:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

ST-124M MOUNTING SURFACE ALIGNMENT (IU)

2. KSC TEST NO.

V-23061-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO VERIFY THAT THE ORIENTATION OF THE ST-124M MOUNTING SURFACES IN THE IU ARE WITHIN THE SPECIFIED TOLERANCES.

5. TEST DESCRIPTION/EQUIPMENT STATUS

THE IU IS BROUGHT UNDER OPTICAL CONTROL AND REFERENCED TO THE GRAVITY VECTOR. IU REFERENCE POINTS ARE RELATED TO A TEST FIXTURE PRISM AND THIS RELATIONSHIP IS MEASURED UTILIZING A THEODOLITE. A CLINOMETER IS USED TO MEASURE THE ORIENTATION OF THE MOUNTING SURFACES WITH RESPECT TO THE HORIZONTAL.

THE IU IS MOUNTED ON A TRANSPORTER AND THE MEASUREMENTS ARE ACCOMPLISHED IN A SUITABLE OPTICAL TEST AREA

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D Elliott	CM LePort	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 ST-124M MOUNTING SURFACE ALIGNMENT (IU)	2. KSC TEST NO. V-23061-IU-502 11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB. LOW BAY		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:

476

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

VALIDATION PROCEDURE - LONG RANGE AUTOMATIC AZIMUTH ALIGNMENT THEODOLITE

2. KSC TEST NO.

V-23062-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO VERIFY THE SENSITIVITY AND GAIN ADJUSTMENTS OF THE LONG RANGE THEODOLITE ELECTRONIC CIRCUITS.

5. TEST DESCRIPTION/EQUIPMENT STATUS

USING A VTVM, OSCILLISCOPE AND MICROPOSITIONER, ADJUST THE POWER SUPPLY VOLTAGES AND MEASURE THE GAIN OF THE ERROR AND ACQUISITION CHANNELS AND ADJUST IF NECESSARY TO OBTAIN 100 MILLIVOLTS PER ARC SECOND OUTPUT.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
[illegible]	CM LaPorte	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 VALIDATION PROCEDURE - LONG RANGE AUTOMATIC AZIMUTH ALIGNMENT THEODOLITE	2. KSC TEST NO. V-23062-IU-502 11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
P-39A		4HRS

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:

478

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

ST-124M AZIMUTH LAYING PROGRAM

2. KSC TEST NO.

V-23065-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO INITIATE A PROGRAM THAT ALIGNS THE PLATFORM TO THE FIRING AZIMUTH AND MAINTAINS THIS ANGLE.

5. TEST DESCRIPTION/EQUIPMENT STATUS

THE CONTROL PORTION OF THE PROGRAM PLACES THE AZIMUTH ENCODER TO ITS FLIGHT AZIMUTH. THE MONITOR PORTION OF THE PROGRAM MONITORS THE FIRING AZIMUTH AND SENDS THE VALUE TO THE LVDC. IF MP ACQUISITION IS LOST, IT WILL CALL UP THE CONTROL PORTION TO REACQUIRE.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
[illegible]	C M LaPorte	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 ST-124M AZIMUTH LAYING PROGRAM	2. KSC TEST NO. V-23065-IU-502 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
LCC	GT16	15 MIN

15. TEST CONFIGURATION

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	[x] 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
[x] IU POWER	[ ] LCC DATA DISPLAY	[ ] LCC TM STA. (MONITOR)
[ ] LEM POWER	[ ] CIF DATA DISPLAY	[ ] LCC TM RECORDING
[ ] SM POWER	[x] 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.	[x] 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
[ ]	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

480

(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 AZIMUTH LAYING SYSTEM FUNCTIONAL TEST	2. KSC TEST NO. V-23066-IU-502 3. STAGE, VEHICLE OR GSE Saturn V

4. TEST OBJECTIVES

TO FUNCTIONALLY TEST THE AZIMUTH ALIGNMENT LONG RANGE THEODOLITE WITH THE PLATFORM WHILE THE VEHICLE IS ON THE PAD.

5. TEST DESCRIPTION/EQUIPMENT STATUS

PERFORM TURN ON AND DUAL PRISM ALIGNMENT. COMMAND THEODOLITE MOVEMENTS. MONITOR ACQUISITION AND PRISM ANGLE DEVIATIONS.

ST-124M STABILIZER SYSTEM UNITS AND GSE INSTALLED AND OPERATIONAL.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
D R Ellis	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 AZIMUTH LAYING SYSTEM FUNCTIONAL TEST	2. KSC TEST NO. V-23066-IU-502 11. VEHICLE EFFECTIVITY AS-502

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

482

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

Q-BALL MOUNTING SURFACE ALIGNMENT

2. KSC TEST NO.

V-23067-IU-502

3. STAGE, VEHICLE OR GSE

Saturn V

4. TEST OBJECTIVES

TO VERIFY Q-BALL IS ALIGNED TO VEHICLE WITHIN SPECIFIED TOLERANCES.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A CLINOMETER, A PRISM FIXTURE AND THEODOLITES ARE USED TO DETERMINE THE Q-BALL MOUNTING SURFACE ANGULAR ERROR, REFERENCED TO LOCAL VERTICAL AND A KNOWN AZIMUTH.

ASSEMBLED VEHICLE. ALIGNMENT CHECKS PERFORMED WITH MINIMUM WIND AND SOLAR EFFECTS.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
		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	2. KSC TEST NO.
Q-BALL MOUNTING SURFACE ALIGNMENT	V-23067-IU-502
	11. VEHICLE EFFECTIVITY
	AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB		2 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
☐	☒ STRUCTURES	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

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 ST-124M STABILIZED PLATFORM SLIP RING EXERCISE	2. KSC TEST NO. V-23068-IU-502 3. STAGE, VEHICLE OR GSE Saturn V

4. TEST OBJECTIVES

TO PERIODICALLY EXERCISE THE SLIP RINGS.

5. TEST DESCRIPTION/EQUIPMENT STATUS

CONNECT THE GIMBAL TORQUER BOX TO THE PLATFORM AND CAUSE THE PLATFORM TO ROTATE ABOUT THE Y AND Z AXES.

PLATFORM DE-ENERGIZED.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

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

KSC FORM 23-191A (2/66)

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

1. TEST TITLE	2. KSC TEST NO.
ST-124M STABILIZED PLATFORM SLIP RING EXERCISE	V-23068-IU-502
	11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB & PAD		30 MIN.

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:

(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 ST-124M STABILIZED PLATFORM SYSTEM EQUIPMENT INSTALLATION IN THE MOBILE LAUNCHER	2. KSC TEST NO. V-23069-IU-502 3. STAGE, VEHICLE OR GSE Saturn V

4. TEST OBJECTIVES

TO INSTALL ST-124M ESE IN THE MOBILE LAUNCHER.

5. TEST DESCRIPTION/EQUIPMENT STATUS

INSTALL ALIGNMENT AND MONITORING PANELS IN THE ST-124 LAYING AND ALIGNMENT RACKS. CONNECT CABLES.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
[illegible]	C M LePort	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	2. KSC TEST NO.
ST-124M STABILIZED PLATFORM SYSTEM EQUIPMENT INSTALLATION IN THE MOBILE LAUNCHER	V-23069-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
☐	☒ I.U. ELEC.	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-1C Mobile Service Truck - RJ-1 and Inert Prefill Functional and Leak Check

2. KSC TEST NO.
V-24013-GSE 39A

3. STAGE, VEHICLE OR GSE
GSE (TEST)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all components in the Mobile Service Truck and to verify leak tight integrity of the system.

5. TEST DESCRIPTION/EQUIPMENT STATUS

After connecting facility power to the truck, the RJ-1 and Inert Prefill systems will be connected to their respective fluid storage containers and the truck mounted RJ-1 and Inert Prefill tanks will be filled. Subsequently, the RJ-1 and Inert Prefill systems on the truck will be operated in the re-circulation mode, at nominal system flow rates and pressures, and all lines and components will be checked for leakage. Sampling will be required at this time to determine the cleanliness level.

Special Equipment Required:

1000 Gallons Deionized Water
1000 Gallons RJ-1 MIL-F-25558

4.09

CONTRACTOR REF. NO. 68-230

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
G. B. McCorquodale	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

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

1. TEST TITLE	2. KSC TEST NO.
S-1C Mobile Service Truck - RJ-1 and Inert Prefill Functional and Leak Check	V-24013-GSE 39A
	11. VEHICLE EFFECTIVITY: AS - GSE

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB or PAD	N/A	40 Hours

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)
[X] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[ ] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[X] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] QC	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

S-1C Mobile Flush and Purge Unit - Leak and Functional Test

2. KSC TEST NO.
V-24014-GSE 39A

3. STAGE, VEHICLE OR GSE
GSE (TEST)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of all system components, and to verify the leak tight integrity of the system lines and components.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The Mobile Flush and Purge Unit will be connected to the M/L at the Engine Servicing Plate - Ground Interface. The GN_2 and Trichloroethylene systems will be operated at nominal pressures and flow rates, and all components and lines will be checked for leakage. The system will be operated in the local mode using the truck mounted control panel, and in the remote mode using a pendant.

Procedure Set-up and Conditions:

This test will be accomplished after the flush and purge lines have been installed on the M/L.

GSE and Special Materials Required:

GN_2 Supply (valve Panel 11)
Engine Servicing Distribution Panel
Engine Servicing Plate
Trichloroethylene RBO-210-003
Preservative Oil MIL-C-14201

CONTRACTOR REF. NO. 6S-231

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
Brady B. McBrayer for J. Collins	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

KSC FORM 23-191A (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE S-1C Mobile Flush and Purge Unit - Leak and Functional Test	2. KSC TEST NO. V-24014-GSE 39A 11. VEHICLE EFFECTIVITY AS-502

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

15. TEST CONFIGURATION

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	[ ] 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.	[X] 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
[X] QC	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

492

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS APOLLO/SATURN TEST CATALOG	PAGE 1 OF 3
1. TEST TITLE S-1C Ground Hydraulic Sypply and Checkout Unit, Reservoir Fill, Leak and Functional	2. KSC TEST NO. V-24015-ML 3. STAGE, VEHICLE OR GSE GSE (TEST)

4. TEST OBJECTIVES

The purpose of this operation is as follows:

A. Fill the RJ-1 and Servo Reservoirs of the S-1C Ground Hydraulic Supply and Checkout Unit.

B. Verify the proper operation of all components in the System, then verify the leak tight integrity of the system lines and components.

C. Verify that the S-1C Ground Hydraulic Supply and Checkout Unit is capable of supplying the step function flow requirements of the S-1C F-1 Engines sequence, and the S-1C Thrust Vector Control System.

5. TEST DESCRIPTION/EQUIPMENT STATUS

A. The RJ-1 reservoir of the Hydraulic Supply and Checkout Unit will be filled, utilizing the Mobile Servicing Truck. The Servo Reservoir will be filled from 5 gallon cans of MIL-H-5606. The truck will be connected to the M/L at the Engine Service Plate-Ground Interface to accomplish the fluid transfer of RJ-1.

B. The S-1C Ground Hydraulic Supply and Checkout Unit will be operated from the local and remote modes. Sampling will be performed on the RJ-1 and Servo Systems until clean fluids are obtained. Both the RJ-1, Servo (MIL-H-5606) and GN_2 systems will be checked for leakage, and for proper component operation.

C. The Hydraulic Performance Tester will be connected to the tail service mast ground halves of the supply and return umbilicals. Fluid will be circulated at low system pressures until clean samples are obtained and a visual leak and component functional check made. Then, a response test will be performed, using the Ground Hydraulic Supply and Checkout Unit to compensate for changes in flow and pressure demands. A leak and component functional check will be performed while circulating through the hydraulic performance tester.

D. The unit will then be placed in the "local mode" and the automatic start, launch commit and automatic shutdown sequences checked.

E. The unit will be switched to the "remote mode" and the remote summary, starting commit and automatic shutdown sequences checked.

F. The Ground Hydraulic Supply and Checkout Unit will be operated closed loop through the S-1C Hydraulic Performance Tester. Using the Performance Tester Control Console, the starting sequence of the (5) five F-1 engines (in the S-1C Stage) will be simulated and the system flowrates and pressures, from the Ground Hydraulic Supply and Checkout Unit, will be recorded. Subsequently the test records will be evaluated, in order to verify the system performance.

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6S232

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
G. B. McCorquodale	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

1. TEST TITLE
S-1C Ground Hydraulic Supply and Checkout Unit Reservoir Fill, Leak and Functional and Drain

2. KSC TEST NO.
V-24015-MI

11. VEHICLE EFFECTIVITY
AS-502

CONTINUED

Special Equipment Required:

1. Sampling facilities from support lab.
2. Hydraulic performance Tester.
3. RJ-1 Mobile Service Truck.
4. Ten (10) Gallons MIL-H-5606.
5. 1000 Gallons RJ-1

CONTRACTOR REF. NO. 6S-232

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APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 3
1. TEST TITLE S-1C Ground Hydraulic Supply and Checkout Unit Reservoir Fill, Leak and Functional and Drain	2. KSC TEST NO. V-24015-ML 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB/LCC	N/A	80 Hours Total

15. TEST CONFIGURATION

S-1C Stage Erected on Mobile Launcher in High Bay of VAB

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

[X] GROUND POWER	[ ] LCC MEASURING (LVO)	[ ] ETR/KSC RADAR
[X] 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	[X] 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)
[X] KSC PAD SAFETY	[ ] FACILITY TV (OTV)	[ ] RF READOUTS (KSC)
[ ] SECURITY POLICE	[ ] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[X] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] GSE	[ ]	[ ] FOOD SERVICE
[X] ESE	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS APOLLO/SATURN TEST CATALOG	PAGE 1 OF 2
1. TEST TITLE S-1C Inert Prefill Unit - Reservoir Fill, Leak and Functional	2. KSC TEST NO. V-24016-ML 3. STAGE, VEHICLE OR GSE GSE (TEST)

4. TEST OBJECTIVES

The purpose of this test is to fill the reservoir of the Inert Prefill Unit, verify proper operation of all components, verify leak tight integrity of the system lines.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The reservoir of the Inert Prefill Unit will be filled utilizing the Mobile Servicing Truck. The truck will be connected to the M/L at the Engine Servicing Plate, and operated in the local mode (truck mounted control panel) to accomplish the transfer of the Inert Prefill Solution to the reservoir of the Inert Prefill Unit.

The Inert Prefill Unit will be operated "closed loop" (ie., fluid flowing from the reservoir, to the pump, back to the reservoir) using control from the "Local Control and Monitor Panel" at unit. All components will be activated and checked for proper operation and feedback monitor indications at the "Local Control Panel". All components, lines, fittings, etc., will be checked for allowable leakage.

GSE and Special Materials Required:

S-1C Mobile Servicing Unit
1000 Gallons Ethylene Glycol RBO-210-014

CONTRACTOR REF. NO. 6S-233

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
Gradyle McEquadale for R. Nelson	R. Newall R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

KSC FORM 23-191A (2/66)

APOLLO/SATURN TEST CATALOG (Continuation Sheet)	PAGE 2 OF 2
1. TEST TITLE S-1C Inert Prefill Unit - Reservoir Fill, Leak and Functional	2. KSC TEST NO. V-24016-ML 11. VEHICLE EFFECTIVITY AS-502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB	N/A	80 Hours

15. TEST CONFIGURATION

S-1C Mobile Servicer Connected to Engine Servicing Interface Plate

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	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] QC	[ ]	[ ] FOOD SERVICE
[X] ESE (BOEING)	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS APOLLO/SATURN TEST CATALOG	PAGE 1 OF 2
1. TEST TITLE F-1 Engine LOX Dome and GGLOX Injector Purge, Leak and Functional Test	2. KSC TEST NO. V-24018-S1C2 3. STAGE, VEHICLE OR GSE S-1C (TEST)

4. TEST OBJECTIVES

The purpose of this test is to verify proper operation of the LOX Dome and GG LOX Injector Purge System on each of the five (5) F-1 Engines.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The F-1 Engine LOX Dome and GGLOX Injector Purge System dynamic and lock-up pressures will be verified at the Stage Umbilical Coupling. The system will be controlled from the S-1C Control and Purge Panel (LCC).

All system lines will be leak checked using leak detection solution.

Procedure Set-up and Conditions:

This test will be accomplished as a portion of the S-1C/Saturn V system checkout in the VAB. This test is required prior to the engine sequence test.

GSE and Special Materials Required:

S-1C Control and Purge Panel
Portable Pneumatic Gage Panels

CONTRACTOR REF. NO. 6S-235

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
Gradyb. McBrendale J. B. Thompson	R. Newall R. Newall	May 20, 1966
7. ORGANIZATION BATC	9. ORGANIZATION LVO-33	11. VEHICLE EFFECTIVITY AS-502

KSC FORM 23-191A (2/66)

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

1. TEST TITLE

F-1 Engine LOX Dome and GG Injector Purge Leak and Functional Test

2. KSC TEST NO.

V-24018-S1C2

11. VEHICLE EFFECTIVITY

AS - 502

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

15. TEST CONFIGURATION

S-1C Stage Erected on Mobile Launcher in VAB High Bay

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	[ ] 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	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] ESE GROUP	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

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(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS APOLLO/SATURN TEST CATALOG	PAGE 1 OF 2
1. TEST TITLE F-1 Engine Thrust Chamber - Leak Test	2. KSC TEST NO. V-24019-S1C2 3. STAGE, VEHICLE OR GSE S-1C Stage (TEST)

4. TEST OBJECTIVES

The purpose of this test is to verify that there are no external leaks in the Thrust Chamber and Associated Engine Lines.

5. TEST DESCRIPTION/EQUIPMENT STATUS

With the Thrust Chamber sealed at the chamber throat, the chamber and associated lines will be pressurized to approximately 30 psig GN_2. The External Thrust Chamber body tubes and all associated lines, including Propellant Feed Lines, Sense Lines and Instrumentation Lines will be checked for external leakage, using leak detector solution. In addition, a reverse flow leakage rate measurement will be made on the Thrust Chamber Prefill Check Valve, and the Chamber Pressure Transducer will be monitored for a positive pressure indication. (NOTE: The Internal Thrust Chamber tubes will be checked for leaks during the Thrust Chamber Jacket Fill Operation).

Special Equipment Required:

1. Thrust Chamber Throat Plug, G3136.
2. Portable Regulator Panels 22A12004-103-12 (LOX Clean)
3. Gox Flow Control Valve Blind Flange, 65B23046-1.
4. Flow Meter Kit G3104.
5. Petrolatum Lubricant VV-P-236 (Federal Specification)
6. Lubricant KEL-F-90.

500

CONTRACTOR REF. NO. 6S-236

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
Grady B. McBrayer for R. M. Nelson	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS-502

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

1. TEST TITLE	2. KSC TEST NO.
F-1 Engine Thrust Chamber Leak Check	V-24019-S1C2
	11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB	N/A	12 Hours

15. TEST CONFIGURATION

S-1C Stage Erected on Mobile Launcher in High Bay of VAB

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	[X] 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	[X] 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	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] QC	[ ]	[ ] FOOD SERVICE
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

TOI

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE
F-1 Engine Turbine Exhaust, Turbine and Gas Generator Leakage Test

2. KSC TEST NO.
V-24020-S1C2

3. STAGE, VEHICLE OR GSE
S-1C Stage (TEST)

4. TEST OBJECTIVES

The purpose of this test is to verify that there are no external leaks in the hot gas system of the F-1 Engine.

5. TEST DESCRIPTION/EQUIPMENT STATUS

With the exhausterator exit sealed, the hot gas system will be pressurized to approximately 10 psig GN_2. All joints, mating flanges and external connections on the exhausterator, heat exchanger, turbine and gas generator will be checked for external leakage, using leak detection solution. Leakage measurements will be made to determine seal leakage rates on all seals which incorporate leakage.

Special Equipment Required:

1. Exhausterator Test Fixture G3144.
2. One Flex Hose ¼", 3000 psig operating approximately 30' long.
3. Flowmeter Kit G3104.
4. Petrolatum Lubricant VV-P-236 (Federal Specification)
5. Adapter 9025299 from Kit G3132.
6. Adapter 9022043 from Kit G3132.
7. Portable Regulator Panel 22A12004-103-12 (LOX Clean).

502

CONTRACTOR REF. NO. 6S-237

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
Grady B. McCaguedale for R. M. Nelson	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS- 502

KSC FORM 23-191A (2/66)

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

1. TEST TITLE

F-1 Engine Turbine Exhaust Turbine and Gas Generator Leakage Test.

2. KSC TEST NO.

V-24020 S1C2

11. VEHICLE EFFECTIVITY

AS- 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB	N/A	12 Hours

15. TEST CONFIGURATION

S-1C Stage Erected on Mobile Launcher in High Bay of VAB

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
☒ QC	☐	☐ FOOD SERVICE
☐	☐	☐
☐	☐	☐
☐	☐	☐
☐	☐	☐

OTHERS:

505

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE
F-1 Engine Thrust Chamber Fuel Jacket Fill, Overflow, Leakcheck, Drain and Purge

2. KSC TEST NO.
V-24021-S1C2

3. STAGE, VEHICLE OR GSE
S-1C Stage (TEST)

4. TEST OBJECTIVES

Verify that no leaks exist (internally and externally) in the tubular walled structure of the F-1 Engines. (VAB TEST)

5. TEST DESCRIPTION/EQUIPMENT STATUS

Using the S-1C Inert Prefill Unit, the F-1 Engine Thrust Chamber Jackets will be filled with de-mineralized water. The tubular wall portion of each Thrust Chamber will then be checked for leaks. The de-mineralized water will be drained from the jackets after completion of the test, and the fuel jacket and LOX Dome of each engine purged.

Special Equipment Required:

1. 1000 Gallons De-mineralized Water.
2. Fuel Jacket Drain Tool G2037.
3. Engine Drain Manifold and Hoses.
4. Flush and Purge Servicer.
5. Engine Servicing Platform.

CONTRACTOR REF. NO. 6S-238

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
Grady R. McLaughlin for R. M. Nelson	R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	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.
F-1 Engine Thrust Chamber Fuel Jacket Fill, Overflow, Leakcheck, Drain and Purge.	V-24021-S1C2
	11. VEHICLE EFFECTIVITY AS - 502

12. WHERE TEST PERFORMED	13. COMPUTER/ACE PROG. IDENT. (IF APPLICABLE)	14. EST. TEST TIME
VAB	N/A	16 Hours

15. TEST CONFIGURATION

S-1C Stage Erected on Mobile Launcher in High Bay of VAB

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	[X] 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	[X] FACILITY COMM. (OIS)	[ ] WEATHER FORECAST
[ ] FIRE FIGHTING	[ ] FILM CAMERAS	[ ] MCC-C
[ ] MEDICAL	[ ] SEARCH LIGHTS	[ ] MCC-H
[X] QC	[ ]	[ ] FOOD SERVICE
[X] INERT PREFILL UNIT	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]
[ ]	[ ]	[ ]

OTHERS:

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

17. OTHER APPLICABLE REFERENCE DOCUMENTATION

KSC OPERATIONS
APOLLO/SATURN TEST CATALOG

1. TEST TITLE

F-1 Engine Turbo-Pump Torque Test

2. KSC TEST NO.
V-24022-S1C2

3. STAGE, VEHICLE OR GSE
S1C Stage (TEST)

4. TEST OBJECTIVES

The purpose of this test is to verify the breakaway and running torque values of the turbo-pump do not exceed the specified limits.

5. TEST DESCRIPTION/EQUIPMENT STATUS

The breakaway torque of the torbo-pump will be verified by installing a Torque Wrench on the Pinion Gear Shaft and applying pressure until movement is noted. The running torque will be measured by completely rotating the drive shaft with the torque wrench.

Special Equipment Required:

Torbo-pump Torque Adapter

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CONTRACTOR REF. NO. 6S-239

(CONTINUE ON KSC FORM 23-192 IF REQUIRED)

6. PREPARED BY	8. NASA-KSC APPROVAL	10. APPROVAL DATE
Gladys A. McCaguendale for J. Rogers	R. Newall R. Newall	May 20, 1966
7. ORGANIZATION	9. ORGANIZATION	11. VEHICLE EFFECTIVITY
BATC	LVO-33	AS-502

KSC FORM 23-191A (2/66)