



MASTER
ACTIVITIES
PLAN

WWW.CHROMEHOOVES.NET Site Manufacturing



TEST SUMMARY

TITLE: GROUND SYSTEM TEST PROCEDURE FOR LAUNCH CONTROL AND CHECK OUT
(GOE MARRIAGE)

RESPONSIBILITY:

The Martin Company

TEST DOCUMENT:

GSTP X21

COMPONENTS:

CP2040 Control Monitoring Group
CP4905 Time Display Board
CP2130 Launch Complex Facilities Console
CP2110 Launch Control Console
CP2010, CP2020, CP2030, Control Monitor
Groups
CP8851 Missile Air Conditioning Unit
CP8861 Hydraulic Pumping Unit

CP9301 A/C Piping Installation

CP9302 Hydraulic Piping Installation

CP3300 Battery Power Supply
CP3400 Power Switchboard

CP9510 Motor Generator

CP9520 Power Supply

CP9521 Inverter Start Power Supply
CP9202 Interconnecting Cabling

LOCATION:

Control Center
Control Center
Control Center
Control Center
Equipment Terminals, Level III
Equipment Terminals, Level II
Equipment Terminals, Level II,
Launcher 1, 2, and 3
Equipment Terminals, Utility
Tunnels and Missile Silos
Equipment Terminals, Utility
Tunnels and Missile Silos
Equipment Terminals, Level IV
Equipment Terminal, Level IV,
Launcher 1, 2, and 3
Equipment Terminal, Level IV,
Launcher 1, 2, and 3
Equipment Terminal, Level IV,
Launcher 1, 2, and 3
Equipment Terminals, Level IV
Launcher 1, 2, 3 and Control Center

WWW.CHROMEHOOVES.NET

WWW.CHROMEHOOVES.NET



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

OBJECTIVE:

The purpose of this test is to verify that the LC & CC GOE is capable of performing a simulated countdown in the Launch and Exercise Modes. This test will verify the compatibility of the LC & CO equipment and its ability to checkout the missile, prepare the missile for firing and initiate and sustain a launch.

DESCRIPTION:

The complete GOE system from the Control Center to each launcher in the complex is tested. Necessary command signals will be generated by the Launch Control Console and response signals of the Missile Ground Guidance System, PL & PS Facility and the Launcher Control System are simulated by the 3500 Test Set. Operating power is applied to the GOE and a preliminary sub-system checkout is performed. A simulated Launch countdown is started. Several runs are performed in which shutdowns will be programmed to occur at critical times. GOE signals to initiate, control and monitor functions of the countdown are verified at the appropriate GOE status indicators and the 3500 Test Set Recorders.

REFERENCE DRAWINGS:

327N2200005	Design Specification for Launch Control and Checkout system all GOE top drawings
327N2110005	Design Spec. for Launch Control Console
327N2130005	Design Spec. for Launch Complex Facilities Console
SR-59-101	Integrated Sub-system Test Plan and Procedure

PREREQUISITES:

The following Installation Process Plans and GSTP's must be completed prior to this test:

Tests

All Martin Company subsystem Ground System Test Procedures.

Installation

All Process Plans and Verification Tests for Martin GOE installation.



MASTER
ACTIVITIES
PLAN

Site Manufacturing



SUPPORT EQUIPMENT:

LC & CO Equipment Test Set, CP3500

Multimeter, Simpson 260

RECOMMENDED MANPOWER:

3 Engineers

11 Technicians

WWW.CHROMEHOOVES.NET

WWW.CHROMEHOOVES.NET



MASTER
ACTIVITIES
PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: HYDRAULIC POWER PACK

RESPONSIBILITY:

American Machine and Foundry

TEST DOCUMENT:

Hydraulic Power Pack, STR _____

TEST COMPONENTS:

Hydraulic Power Pack

Tunnel Entrance Control Station

Hydraulic Make-up System

Cycling Control Station

LOCATION:

Hydraulic Supply Room, Equipment
Terminal, Level I

Access Tunnel

Hydraulic Supply Room, ET.,
Level I

Electrical Power Control Room,
ET., Level I

OBJECTIVE:

The purpose of this test is to verify by demonstration the Hydraulic Power Pack operation, performance of the Cycling Control Station and remote control of the power pack from the tunnel entrance control station.

TEST DESCRIPTION:

This test shall be conducted with the launcher in the hard condition. The power pack shall be off and the standby circuits operating. The controls on the cycling control station shall be used to demonstrate the start and stop capability of the power pack pumps and actuation of the system control valves. Proper indication of system status as observed at the light indicators will be verified. Proper operation of the power pack pumps shall be demonstrated in both "full" and "partial" modes of operation. Specified system pressures and flow rates are measured and verified. The hydraulic system shall be visually inspected to verify that no external leakage exists.



MASTER
ACTIVITIES
PLAN

Site Manufacturing

MARTIN
DENVER

REFERENCE DRAWINGS:

Test Plan

Detailed Test Plan for WS107A-2 Launcher System, ATS-1304, dated 15 Jan 1961
(Confidential) Launcher System Test Plan I.

SR-59-101 Test Plan 14.0

PREREQUISITES:

The launcher must be in hard condition prior to start of this test.

SUPPORT:

Facilities

Electrical Power to Equipment Terminal, Missile Silo and Personnel Tunnel

Domestic Chilled Water Services

Normal and Emergency Lighting

Tools

Stop watch

RECOMMENDED MANPOWER:

Test Conductor

2 Engineers

2 Technicians



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: CLOSURE DOORS

RESPONSIBILITY:

American Machine and Foundry

TEST DOCUMENT:

Closure Doors, STR _____

TEST COMPONENTS:

Door Actuating System and Controls

Hydraulic Power Pack

Tunnel Entrance Control Station

Hydraulic Distribution System

LOCATION:

Top of Missile Silo

Equipment Terminal, Level I

Access Tunnel Entrance

Equipment Terminal, Level I,

Access Tunnel, Missile Silo

OBJECTIVE:

The purpose of this test is to verify by demonstration door actuation within the specified time limits and the capability of the hydraulic power pack to operate the door actuating system.

TEST DESCRIPTION:

The selector switch of the power pack Cycling Control Station shall be placed in the "remote" position. The power pack shall be operated from the Tunnel Entrance Control Station. The closure doors are cycled open and closed. The time required to open and close the door is measured and the proper time interval verified. Operation of warning horns, smooth operation of doors and proper angular movement of each door is verified.

REFERENCE DRAWINGS:

Test Plan

Detailed Test Plan for WS107-A-2 Launcher System (OB Units), ATS-1304, dated 15 January 1961, Launcher System Plan II.

SR-59-101, Test Plan 15.0



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

PREREQUISITES:

The launcher must be in the hard condition prior to the start of this test.

Tests

AMF System Test Plan I, Hydraulic Power Pack

SUPPORT:

Facilities

Electrical Power Substation on Level IV of Equipment Terminal

Air Conditioning

Personnel Elevator, Equipment Terminal

Damage Control System

Domestic and Chilled Water

Tools

Stop watches (2), manual control

Instrumentations for pressure and displacement

RECOMMENDED MANPOWER:

Test Conductor

2 Test Engineers

2 Test Technicians



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: SOFTENING AND HARDENING LAUNCHER SYSTEM

RESPONSIBILITY:

American Machine and Foundry

TEST DOCUMENT:

Softening and Hardening the Launcher System, STR _____

TEST COMPONENTS:

LOCATION:

Horizontal, vertical and inclined crib

locks

Top of crib, Missile Silo

Cable tension equalizers

Top of crib, Missile Silo

Rear drive base to silo locks

Drive base

Forward spring capsule locks

Drive base

Counterweight stubrail alignment locks

Drive base

Counterweight lifting mechanism

Drive base

Counterweight to drive base locks

Drive base

Local Controls

Missile Silo

Tunnel Entrance Control Station

Missile Silo

OBJECTIVE:

The purpose of this test is to verify by demonstration that the launcher is capable of being brought from "hard" to "soft" condition in the specified time and returned to "hard" condition.

TEST DESCRIPTION:

This test shall start with the launcher in the "hard" condition (i.e. the crib supported by the suspension system, the crib locks retracted, the bayonet locks engaged, the cables slackened, the counterweights supported, the power pack on stand-by, and the closure doors open). The selector switch located on the Cycling Control Station in the Electrical Power Control room shall be placed in its "remote" position prior to start of the "softening" of the launcher system. Softening of the launcher shall be initiated.



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

TEST DESCRIPTION: (Continued)

"Lock Crib" and "Tension Cable" buttons shall be pressed. Proper actuation times of subsequent softening events shall be demonstrated. After the launcher is "soft" the "hardening" operation shall be initiated. The events of cables slackening and crib locking shall be demonstrated.

REFERENCE DRAWINGS:

Test Plan

Detailed Test Plan for WS107A-2 Launcher System (OB Units) ATS-1304 dated 15 January 1961 (Confidential), Launcher System Test Plan III.

SR-59-101, Test Plan 16

PREREQUISITES:

Tests

AMF System Test Plan I, Hydraulic Power Pack

AMF System Test Plan II, Closure Doors

SUPPORT:

Facilities

Main Diesel Power Supply

Substation on Level IV Equipment Terminal

Domestic and Chilled Water Supply

Tools

Stop watch, manual control

Instrumentation for pressure readings

RECOMMENDED MANPOWER:

Test Conductor

2 Test Engineers

2 Test Technicians



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: EXERCISING LAUNCHER WORK PLATFORMS

RESPONSIBILITY:

American Machine and Foundry

TEST DOCUMENT:

Exercising Launcher Work Platforms, STR _____

TEST COMPONENTS:

Launch Work Platforms 1, 2, 3, 4, 5
Launcher Work Platform Key

Launcher Work Platforms and Leaves

Personnel Elevator

LOCATION:

Crib Structure, Missile Silo

Crib Structure, Missile Silo

Operated Local Controls

Crib Structure, Missile Silo

Safety Interlocks

Crib Structure, Missile Silo

OBJECTIVE:

The purpose of this test is to verify by demonstration the hydro-mechanical extension and retraction of the work platform sections and manual placement and removal of the leaves between the work platforms. This test shall demonstrate the functioning of the work platform controls and interlocks. The capability to install, remove, and store the hand guard rails is verified.

TEST DESCRIPTION:

The power pack shall be placed in operation. The Launcher Platform Key Operated switches shall be placed in the "extend" position. Smooth operation of the work platform shall be confirmed. Proper seating of the platforms shall be demonstrated when the GREEN switch light illuminates. Hand guard rails shall be manually installed and removed. The Key operated controls shall be placed in the "retract" position and proper retraction at the platform verified.

REFERENCE DRAWINGS:

Test Plan

Detailed Test Plan for WS107A-2 Launcher System (OB Units), ATS-1304, dated 15 January 1961 (Confidential), Launcher System Test Plan IV.

SR-59-101, Test Plan 17.



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

PREREQUISITES:

Tests

AMF System Test, Plan I, Hydraulic Power Pack

SUPPORT:

Facilities

Main Diesel Power Supply

Domestic and Chilled Water

Sub-station on Level #4 Equipment Terminal

Normal and Emergency Lighting

Air Conditioning

Damage Control System

Tools

Stop watch

Truck, Hand Platform

Maintenance Platform

Dolley, Maintenance

Tractor, Warehouse

Safety Net

Maintenance stand assembly Engine and Igniter

RECOMMENDED MANPOWER:

Test Conductor

2 Test Engineers

2 Test Technicians



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: CRIB MOUNTED UMBILICAL MECHANISMS

RESPONSIBILITY:

American Machine and Foundry

TEST DOCUMENT:

Crib-Mounted Umbilical Mechanisms, STR _____

TEST COMPONENTS:

2B1LV Lox Vent

2B2LV Lox Vent

3BLL Lox Fill

1C1LV Lox Vent

1E1L Lox Fill

Local Controls

LOCATION:

Missile Silo, Work Platform #2, Face A

Missile Silo, Work Platform #2, Face D

Missile Silo, Work Platform #3, Face B

Missile Silo, Work Platform #4, Face C

Missile Silo, Work Level #6, Face B

At each retraction mechanism

OBJECTIVE:

The purpose of this test is to verify by demonstration the operation of the crib mounted umbilical retraction mechanisms.

TEST DESCRIPTION:

This test shall start with the work platforms extended and the guard rails emplaced. The selector switch on the Cycling Control Station in the electrical power control room, shall be placed in the "remote" position with "partial" power mode of operation on the power pack pumps. Each umbilical retraction mechanism shall be extended and then retracted from the local control of each mechanism. Proper operation of the local controls and full extension and retraction of the umbilicals shall be demonstrated.

REFERENCE DRAWINGS:

Test Plan

Detailed Test Plan for WS107A-2 Launcher System (OB Units), ATS-1304, dated 15 January 1961 (Confidential), Launcher System Test Plan V.

SR-59-101, Test Plan 20.0



MASTER
ACTIVITIES
PLAN

Site Manufacturing

MARTIN
DENVER

PREREQUISITES:

Tests

AMF Test Plan I, Hydraulic Power Pack

AMF Test Plan IV, Work Platforms

SUPPORT:

Facilities

Main Diesel Power Supply

Substation on Level IV Equipment Terminal

Chilled and Domestic Water

Normal and Emergency Lighting

Air Conditioning

Damage Control System

Equipment Terminal Personnel Elevator

Tools

None required

RECOMMENDED MANPOWER:

Test Conductor

1 Test Engineer

2 Test Technicians



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: EXERCISING LAUNCHER PLATFORM

RESPONSIBILITY:

American Machine and Foundry

TEST DOCUMENT:

Exercising Launcher Platform, STR _____

TEST COMPONENTS:

Suspension System

Launcher Platform Assembly

Launcher Platform guide rails and rollers

Launcher Cable Tension Equalizers and measuring
vessels

Tunnel Entrance Control Stations

LOCATION:

Missile Silo

Missile Silo

Missile Silo

Missile Silo

Access Tunnel

OBJECTIVE:

The purpose of this test is to verify by demonstration the proper performance of the launcher platform drive assembly during raising and lowering operations and the positioning of the platform centerline (yaw axis) in launcher up and down positions.

TEST DESCRIPTION:

Transits shall be centered over the two bench marks which are located on opposite sides of the missile silo opening in line with the projections of the launcher center line. Each transit shall be boresighted on the opposite bench mark and locked in position. The centerline mark shall be scribed on the launcher platform. The Launcher shall be converted from the "hard" to "soft" condition. During the launcher raising the launcher will be stopped at an intermediate position and then completely raised and locked. The levelness of the plane of the missile support points and the positioning of the platform center line shall be measured and verified when the launcher raised and locked. During launcher lowering the launcher shall be converted from "soft" to "hard" condition. The launcher shall be stopped



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

TEST DESCRIPTION: (Continued)

at an intermediate point and then lowered to the down position. The levelness of the plane of the missile support points and positioning of the platform center line shall be measured and verified when the launcher is down. The raising and lowering operation will be repeated without intermediate stops and proper time intervals for the raising and lowering operation verified. The launcher platform will be raised and locked at the completion of the test.

The following launcher exercises shall be performed without a simulated missile weight:

Test 1. Exercise Launcher Up and Down full cycle to: (1) Demonstrate that system is operating, (2) Determine normal operating characteristics of the Launcher drive, and (3) Demonstrate the platform's ability to start down from the top without switch-over shock and disengage from the platform locks.

Test 2. Exercise Launcher Up and Down half cycle to demonstrate the capability of the surge damper accumulators during switch-over and to verify that the deceleration switches on the crib actuate the deceleration circuit in event of loss of the deceleration actuation cylinders.

Test 3. Exercise the Launcher to demonstrate that the hydraulic brake is capable of stopping the platform drive without the help of the deceleration circuit and to determine the decelerating characteristics of the brake.

Test 4. Raise the Launcher from a fully down position at fast speed and initiate at half-way position of launcher and electrical and a hydraulic failure to demonstrate that the deceleration circuit and the brake acting together do not impose excessive deceleration loads and to demonstrate the effectiveness as "fail safes" of the down-stream pressure loss switch, the redundant differential pressure switch and the skid pilot accumulator.

Test 5. Operate the launcher to demonstrate the ability of the buffers to independently decelerate the platform without imposing critical accelerations and to demonstrate that with an overspeed condition, wherein low pressure failure results in Drive Motor cavitation, the hydrotarder and buffers will maintain a controlled speed and decelerate the Platform within acceptable limits.



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

TEST DESCRIPTION: (Continued)

Test 6. Operate the launcher to demonstrate the ability of the over-speed switch to stop an overspeeding platform without imposing critical deceleration loads.

A weight equal to 110 percent of the weight of a fully loaded operational missile is placed on the launcher platform. Test 1 through 5 (above) shall be repeated with the launcher loaded. The following tests shall also be performed with the simulated missile weight on the platform. The Launcher System shall be cycled in automatic mode using the AMF Logic Test Rack. The test conductor shall be located at the Tunnel Entrance Control Station and will monitor the following tests from that location.

Test 1. The weighted Launcher Platform shall be cycled in the Automatic Mode a minimum of five cycles without a malfunction which would require the use of the Hydrotarder, Buffers, or Overspeed switch. If such a malfunction occurs, the specified number cycles shall be repeated from the point of the malfunction after repairs are made.

Test 2. The weighted Launcher Platforms shall be exercised to demonstrate the ability of the "Emergency" stop and "Raise and Lock" pushbuttons in the Control Center AMF Test Tool console to function properly. This test shall be repeated until five consecutive successful cycles have been completed.

REFERENCE DRAWINGS:

Test Plan

Detailed Test Plan for WS107A-2 Launcher System (OB Units) ATS-1304, dated 31 December 1960 (Confidential), Launcher System Test Plan VI.

SR-59-101, Test Plan 18.0

PREREQUISITES:

Tests

AMF System Test Plan I, Hydraulic Power Pack

AMF System Test Plan II, Closure Doors

AMF System Test Plan III, Softening and Hardening Launcher System



MASTER ACTIVITIES PLAN

Site Manufacturing



SUPPORT:

Facilities

Main Diesel Power Supply
Domestic and Chilled water
Air conditioning
Normal and emergency lighting

Tools

Stop watch, manual
Two surveyor's transits and twelve inch optical tooling scales for measuring angle of deviation of the yaw axis. Instrumentation for pressure, displacement and acceleration.
Simulated missile weight

RECOMMENDED MANPOWER:

Test Conductor
2 Test Engineers
3 Test Technicians



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: TOWER MAST AND GROUND LEVEL CONTROL

RESPONSIBILITY:

American Machine and Foundry

TEST DOCUMENT:

Tower Mast and Ground Level Control, STR _____

TEST COMPONENTS:

Ground Level Portable Station (GLPS)
Launcher Platform Drive and Controls
Tower Mast Retraction Mechanism
Tower Mast Assembly
Explosive Bolt Release Device

LOCATION:

Ground Level, mouth of Missile Silo
Top of Missile Silo
Missile Silo Launcher Platform
Launcher Tower Mast, Missile Silo
Tower Mast Base

OBJECTIVE:

The purpose of this test is to verify performance of the launcher when controlled by the Ground Level Portable Station. This test shall demonstrate the ability of the Tower Mast Retraction mechanism to properly tilt and erect the umbilical tower. This test will also verify the effective control and operation of the explosive bolt release device of the tower retraction mechanism.

TEST DESCRIPTION:

The test shall start with the silo doors open, the crib locked, the platform in the raised and locked position and the selector switch in the "remote" position. The capability of the launcher platform to be lowered and raised, when controlled by Ground Level Portable Station, shall be verified.

The tower mast retraction mechanism test shall start with the tower in the erected position. The explosive bolts shall be installed, connected to the controls and then detonated. The ability of the tower latch to retract and the tower to move to the retracted position in the specified time interval shall be demonstrated. The tower mast shall be erected and the capability of the actuator to erect the tower within the specified time interval and ability of the latch to automatically secure the tower is verified.



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

REFERENCE DRAWINGS:

Test Plan

Detailed Test Plan for WS107A-2 Launcher System (OB Units) ATS-1304, dated 31 December 1960, Launcher System Test Plan VII.

SR-59-101, Test Plans 19.0 and 21.0

PREREQUISITES:

Tests

AMF Test Plan I, Hydraulic Power Pack

AMF Test Plan II, Closure Doors

AMF Test Plan III, Softening and Hardening Launcher System

AMF Test Plan IV, Exercising Launcher Platform

SUPPORT:

Facilities

Main Diesel Electric power supply

Normal and emergency lighting

Air conditioning

Damage control system

Nitrogen "K" bottles on launcher platform

Domestic and chilled water

Water spray system

Tools

Explosive bolts

Non-sparking wrenches

Timer

Control box - explosive bolt

Sling Assembly #1 and #2, Silo mouth platform

Work Platform, nose cone

Winch assembly

Platform installation, Stage I and Stage II erection

Control station assembly

Maintenance Platform, cover and ring removal

Truck, tractor

Semitrailer, low bed

Crane, truck mounted MCl



MASTER
ACTIVITIES
PLAN

Site Manufacturing

MARTIN
DENVER

RECOMMENDED MANPOWER:

Test Conductor

2 Test Engineers

2 Test Technicians

WWW.CHROMEHOOVES.NET

WWW.CHROMEHOOVES.NET



MASTER ACTIVITIES PLAN

Site Manufacturing
MARTIN
DENVER

TEST SUMMARY

TITLE: ELECTRICAL CONTROL AND CHECKOUT SYSTEM

RESPONSIBILITY:

American Machine and Foundry

TEST DOCUMENT:

Electrical Control and Checkout System, STR _____

TEST COMPONENTS:

Launcher subsystem
Logic Circuitry, Test Controller
and Test Responder

LOCATION:

1st Level, Equipment Terminal and Missile Silo
Electrical Power Room, 1st level
Equipment terminal

OBJECTIVE:

The purpose of this test is to demonstrate the function of the Test Controller, Logic Circuitry and Test Responder as an integrated system. This test shall also verify operation of the launcher when controlled by the local logic control system.

TEST DESCRIPTION:

A preliminary checkout of the basic frame circuitry shall be performed. Automatic sequencing tests shall begin with the launcher in the hard condition. The launcher system shall be operated through the following automatic sequences. The automatic sequences shall be programmed through the logic frames from the Test Controller.

- a) Shutdown command after ready-to-fire.
- b) Shutdown command during crib locking.
- c) Shutdown command during door motion.
- d) Shutdown command during launcher platform motion.

REFERENCE DRAWINGS:

Test Plan

Detailed Test Plan for WS107A-2 Launcher System (OB Units), ATS-1304 dated 15 January 1961 (Confidential) Launcher System Test Plan VIII.
SR-59-101, Test Plan 23.0



MASTER ACTIVITIES PLAN

Site Manufacturing



PREREQUISITES:

- AMF System Test, Plan I, Hydraulic Power Pack
- AMF System Test, Plan II, Closure Doors
- AMF System Test, Plan III, Softening and Hardening Launcher System
- AMF System Test, Plan IV, Exercising Work Platforms
- AMF System Test, Plan V, Crib Mounted Umbilical Mechanism
- AMF System Test, Plan VI, Exercising Launcher Platform
- AMF System Test, Plan VII, Tower Mast and Ground Level Control

SUPPORT:

Facilities

- Main Diesel Power Supply
- Normal and Emergency Lighting
- Air Conditioning
- Equipment Terminal Freight Elevator
- Damage Control System
- Domestic and Chilled Water Supply

Tools

None

RECOMMENDED MANPOWER:

- Test Conductor
- 2 Test Engineers.
- 2 Test Technicians



MASTER ACTIVITIES PLAN

Site Manufacturing
MARTIN
DENVER

TEST SUMMARY

TITLE: MISSILE SUPPORT RETRACTION - EXTENSION

RESPONSIBILITY:

American Machine and Foundry

TEST DOCUMENT:

Not available

TEST COMPONENTS:

Missile support arms
Erection jacks

LOCATION:

Launcher Platform, Missile Silo
Launcher Platform, Missile Silo

OBJECTIVE:

The purpose of this test is to:

1. Demonstrate the capability of the missile supports to retract within the limits specified in AMS-1001, AMF Detail Model Specification of the issue in effect.
2. Demonstrate the capability of the jacks to erect the missile supports.
3. Verify that the missile bearing are co-planar within the specified limits.

TEST DESCRIPTION:

The test shall be performed with the Launcher Platform in the Raised and Locked position. The missile support arms shall be extended in pairs and the time recorder to retract after removal of the restrainer.

REFERENCE DRAWINGS:

Test Plan

Detailed Test Plan for WS107A-2 Launcher System (OB Units), ATS-1304, dated 15 January 1961 (Confidential)
SR-59-101, Test Plan 22.0

PREREQUISITES:

Tests

AMF System Test, Plan III, Softening and Hardening Launcher System

General

Launcher Platform must be raised and locked prior to the start of this test.



MASTER
ACTIVITIES
PLAN

Site Manufacturing

MARTIN
DENVER

SUPPORT:

Facilities

Tools

Displacement Transducer

Gunners Quadrant

Fixture for measuring coplanarity of support arms

Support arms restrainer

RECOMMENDED MANPOWER:

Test Conductor

Test Engineer

2 Test Technicians



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: GROUND GUIDANCE SYSTEM

RESPONSIBILITY:

Western Electric Company/Remington Rand Univac

TEST DOCUMENT:

Overall demonstration Test Document WS107A-2

Ground Guidance Station

TEST COMPONENTS:

GS-19900 Ground Guidance Radar, and
GS-58143 Antenna Protecting and
Elevating Set

Ground Guidance Computer

R. F. Test Tower

Orientation Targets

LOCATION:

Antenna Silos #1 and #2, Antenna
Terminal room, Electrical equipment
room

Control Center

Above Ground

Above Ground

OBJECTIVE:

The purpose of this test is to verify the performance of the Ground Guidance Radar and Antenna System. This test will verify proper operation and installation of the Ground Guidance Radar and the signal interface with RRU equipment.

TEST DESCRIPTION:

A simulated countdown shall be performed using Missile Guidance Exerciser and simulated signals representing those normally obtainable from the Launch Control Console. A demonstration as to the acceptability of the Radar system signals presented to the Radar System/RRU signal interface and acceptability by the radar system, at the same interface, of the RRU computer guidance calculation signals will be performed.

The proper operation of automatic gain control, automatic frequency controls and the ability of the radar to acquire the RF test mast within the boresight drift and jitter requirements shall be verified.

Static and dynamic tests for checking the guidance radar-RRU computer interface and compatibility shall be performed.



MASTER ACTIVITIES PLAN

Site Manufacturing



TEST DESCRIPTION: (Continued)

The accuracy of the radar ground guidance in reading out azimuth, elevation and range constants by positioning each antenna on U. S. Coast and Geodetic survey targets and comparing the radar readings against the data supplied by the survey shall be demonstrated.

REFERENCE DRAWINGS:

G-721752 Radar-Computer Compatibility and Interconnection Tests.

Signal Interface specification computer group, guided missile WS107A-2,

Weapon System Testing of DS-1162 (RRU).

SR-59-101, Test Plan 9.0

Bell Telephone Laboratories, Inc., document WS107A-2 Radio Inertial Guidance System, Over-All Technical Performance Demonstration Test of Ground Guidance Station (latest revision).

SUPPORT:

Tools

Interface signal simulator

Volt-Ohm milliammeter, Triplet Electrical Instrument Co., Model 630A or equiv.

Electric time clock or equivalent

Tektronics Model 545 or equivalent (two required)

Facilities

Air Conditioning

Electrical power for lighting and operating gear

RECOMMENDED MANPOWER:

Test Conductor

7 Technicians



MASTER ACTIVITIES PLAN

Site Manufacturing



TEST SUMMARY

TITLE: RADIO GUIDANCE SYSTEM (RIME CHECKOUT SET)

RESPONSIBILITY:

- A. The Martin Company - Test Conductor
- B. WECO - Test Document

TEST DOCUMENT:

BTL Checkout Procedure, GS-58950

TEST COMPONENTS:

CP-2800 RIME Checkout Set
CP-9202 Interconnections

LOCATION:

Equipment Terminal, Level III, TMC
Interface connections to RIME, Equip-
ment Terminal

OBJECTIVE:

The purpose of this test is to:

- a. To verify that the RIME Checkout Set is capable of performing a functional self-check.
- b. To verify that the RIME Checkout Set can recognize and isolate internal malfunctions.
- c. To verify that the RIME Checkout Set is capable of locating and isolating malfunctions in the Airborne Guidance System.
- d. To verify that the RIME Checkout Set will monitor the status of the Airborne Guidance System prior to raising the Launcher.

TEST DESCRIPTION:

A functional self-check of the RIME Checkout Set shall be performed to validate the compatibility and operability of the installed equipment and interconnecting wiring.

REFERENCE DOCUMENTS:

SR-59-101, Test Plan 9.1



MASTER
ACTIVITIES
PLAN

Site Manufacturing

MARTIN
DENVER

PREREQUISITES:

Installations complete and verification that the waveguide to the RIME Checkout Set has been tested for proper attenuation and Voltage Standing Wave Ratio.

SUPPORT:

Tools

Multimeter

Facilities

Base supplied prime 60-cycle power and air conditioning for the test locations.

RECOMMENDED MANPOWER:

Test Conductor

2 Test Technicians

WWW.CHROMEHOOVES.NET

WWW.CHROMEHOOVES.NET



MASTER
ACTIVITIES
PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: COMPUTER SYSTEM

RESPONSIBILITY:

Western Electric Company/Remington Rand

TEST DOCUMENT:

Overall Demonstration Test Document WS107A-2

Ground Guidance Station

TEST COMPONENTS:

Ground Guidance Computer

Ground Guidance Radar

System and Ground Guidance

Antenna and Elevating Set

LOCATION:

Control Center

Antenna Silos #1 and #2,

Antenna Terminal Room,

and Electrical room

OBJECTIVE:

The purpose of this test is to verify the performance of the computer system, and demonstrate compatibility of the ground guidance computer and the ground guidance radar to function as the ground guidance system. The test will also verify that the Ground Guidance computer is installed properly and has the proper signal interface with WECCO.

TEST DESCRIPTION:

A detailed performance test shall be conducted as designated in the document "Overall Demonstration Test Document for WS107A-2 Ground Guidance Station." The tests shall demonstrate the operation of the Remington Rand Univac computer as to the ability of the computer to accept data from the Radar system signal interface, perform guidance calculations and submit to the Radar system signal interface the calculated guidance results. Test program tapes will be used for comparison and determination of the guidance calculations accuracy as submitted to the Radar system signal interface.



MASTER
ACTIVITIES
PLAN

Site Manufacturing

MARTIN
DENVER

REFERENCE DOCUMENTS:

G-721752 Radar-Computer Compatibility and Interconnection Test Specifications

PREREQUISITES:

Completion of Ground Guidance Computer functional checkout.

Completion of Ground Guidance Radar and Antenna Elevating System Functional checkout.

SUPPORT EQUIPMENT:

Electric time clock or equivalent

Volt-Ohm milliammeter, Triplett Electrical Inst. Co. Model 630A or equiv.

Tektronix oscilloscope Model 545A or equivalent

Remington Rand Univac Interim Maintenance Kit.



MASTER
ACTIVITIES
PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: DIAL SYSTEM

RESPONSIBILITY:

Stromberg Carlson

TEST DOCUMENT:

Ground Communications Test Acceptance Manual

TEST COMPONENTS:

Dial Telephones
Console and/or Pallet mounted
Dial Telephones

LOCATION:

Equipment Terminal, Control Center
Antenna Terminal, and Missile Silo

OBJECTIVE:

The purpose of this test is to verify the capability of the dial telephone system (complex) to maintain proper communications.

TEST DESCRIPTION:

Calls are originated at each dial telephone and ability to complete outgoing calls to proper destination is verified.

Incoming calls shall be placed to each dial phone and receipt of call verified. Clear reception of voice by both caller and called party shall be verified.

REFERENCE DOCUMENTS:

Ground Communications Test Acceptance Manual
SR-59-101, Test Plan 1.0

PREREQUISITES:

None

SUPPORT:

Tools

None

Facilities

None

RECOMMENDED MANPOWER:

2 Test Personnel



MASTER ACTIVITIES PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: DIRECT LINE SYSTEM

RESPONSIBILITY:

Stromberg Carlson

TEST DOCUMENT:

Ground Communications Test Acceptance Manual

TEST COMPONENTS:

Communications Panel

Direct Line Telephones

Telephone Jacks

LOCATIONS:

Control Center

Complex, all areas

Complex, all areas

OBJECTIVE:

The purpose of this test is to verify that the telephones of the direct line system can satisfactorily originate and receive calls.

TEST DESCRIPTION:

Calls are originated and received at all stations of the direct line system. Proper reception is verified at each station.

REFERENCE DOCUMENTS:

Test Plan

Ground Communications Test Acceptance Manual

SR-59-101, Test Plan 1.1

PREREQUISITES:

None

SUPPORT:

Tools

None

Facilities

None

RECOMMENDED MANPOWER:

2 Test Personnel.



MASTER
ACTIVITIES
PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: MAINTENANCE NET SYSTEM

RESPONSIBILITY:

Stromberg Carlson

TEST DOCUMENT:

Ground System Test Acceptance Manual

TEST COMPONENTS:

Communications Panel

Telephone Jacks

LOCATION:

Control Center

Complex Area

OBJECTIVE:

The purpose of this test is to verify the capability of each net system to support a conference.

TEST DESCRIPTION:

Calls are initiated from each conference net station to the conference control point. A conference is held with all stations on the line. Ability to maintain conference without undue noise interference or crosstalk is verified.

REFERENCE DOCUMENTS:

Test Plan

Ground Communications Test Acceptance Manual

SR-59-101, Test Plan 1.2

PREREQUISITES:

None

SUPPORT:

Tools

None

Facilities

None

RECOMMENDED MANPOWER:

2 Test Personnel



MASTER
ACTIVITIES
PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: PUBLIC ADDRESS SYSTEM

RESPONSIBILITY:

Stromberg Carlson

TEST DOCUMENT:

Ground Communications Test Acceptance Manual

TEST COMPONENTS:

Public Address System

LOCATION:

Complex

OBJECTIVE:

The purpose of this test is to verify proper operation of the Public Address System.

TEST DESCRIPTION:

P.A. announcements will be originated from each station having system access. Clear reception from each P. A. system speaker is verified.

REFERENCE DOCUMENTS:

Test Plan

Ground Communications Test Acceptance Manual

SR-59-101, Test Plan 1.3

PREREQUISITES:

None

SUPPORT:

Tools

None

Facilities

None

RECOMMENDED MANPOWER:

2 Test Personnel

3.4.4.1



MASTER
ACTIVITIES
PLAN

Site Manufacturing

MARTIN
DENVER

TEST SUMMARY

TITLE: LAUNCH ENABLE SYSTEM

RESPONSIBILITY:

Stromberg Carlson

TEST DOCUMENT:

To be supplied at later date

TEST COMPONENTS:

To be supplied at later date

LOCATION:

OBJECTIVE:

To be supplied at later date

TEST DESCRIPTION:

To be supplied at later date

REFERENCE DOCUMENTS:

SR-59-101, Test Plan 1.4



MASTER ACTIVITIES PLAN

Site Manufacturing



TEST SUMMARY

TITLE: ENGINE GSE MOBILITY AND COMPATIBILITY TESTS

RESPONSIBILITY:

AGC

TMC

AMF

TEST DOCUMENT:

AGC Test Procedures SSTP T1-4 through T1-10 and DTP T1-4 through DTP T1-10

TEST COMPONENTS:

AGC Fig. A items 24.1, 289, 292, 135,
136, 79.1, 347, 348, 349, 364, 290,
and various tool kits

LOCATION:

Complex area, Personnel Elevator,
Tunnel areas and Missile Silo

OBJECTIVE:

The purpose of this test is to:

1. Verify that AGC-supplied GSE can be moved throughout the applicable launch complex roadways and tunnels to accomplish the defined purpose.
2. Verify that AGC-supplied GSE will connect properly to all necessary facility interfaces.
3. Verify that AGC-supplied GSE can be supplied with the required fluids.

TEST DESCRIPTION:

1. Each item of the AGC-supplied GSE shall be transported from the MAMS to the launch complex.
2. Each item of AGC-supplied GSE shall be moved through the launch complex tunnels and roadways as necessary to reach the area of usage.
3. Each item of AGC-supplied GSE shall be connected to the applicable electrical and fluid connections.

REFERENCE DOCUMENTS:

Test Plan

SR-59-101, Test Plan 11.2



MASTER ACTIVITIES PLAN

Site Manufacturing



PREREQUISITES:

MAMS Propulsion Shop and I & C complete. Launch complex roadways and tunnels must be in their final configuration (insofar as passageway clearance is concerned).

SUPPORT:

AMF Tunnel Truck

TMC Motor Pool

Air Conditioning and Vent Ducting Interface

Pneumatic and electrical power at Missile Silo

RECOMMENDED MANPOWER:

1 AGC Representative

1 TMC Engineer

4 Technicians

1 AMF Representative