Description of document:	**Two Monthly Reports on USAF Guided Missile Test Activities at Holloman Air Development Center, Holloman AFB NM, Prepared by 6580th Missile Test Group, AD-0001189, 14 Jan 1953 and AD-0010909, 20 May 1953**
Requested date:	10-June-2008
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Source of document:	49 CS/SCOK Holloman Freedom of Information Act (FOIA) Office 1321 Tularosa Road Holloman AFB, NM 88330 Email: Holloman.FOIA@holloman.af.mil

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 49TH FIGHTER WING (ACC)
HOLLOMAN AIR FORCE BASE, NEW MEXICO

29 July 2008

49 CS/SCOK
Holloman Freedom of Information Act (FOIA) Office
1321 Tularosa Road
Holloman AFB, NM 88330
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Your June 10, 2008 Freedom of Information Act request for a copy of the following:

- AD-0010909 USAF Guided Missile Test Activities, 20 May 1953, 44 pages (Unclass/Limited)
- AD-0001189 USAF Guided Missile Test Activities, 14 Jan 1953, 36 pages (Unclass/Limited)

is releasable and is attached.

Department of Defense Regulation 5400.7 indicates fees be assessed for processing this request; however, the fees are waived in this instance.

Sincerely

WILLIAM A. LIBBY, Lt Col, USAF
Deputy Commander, 46 Test Group

Attachment:
Releasable Records

FOIA 2008-0023

USAF GUIDED MISSILE TEST ACTIVITIES

AIR FORCE MISSILE DEVELOPMENT CENTER HOLLOMAN AFB NM

14 JAN 1953

Encl 3

AD NUMBER

AD001189

CLASSIFICATION CHANGES

TO

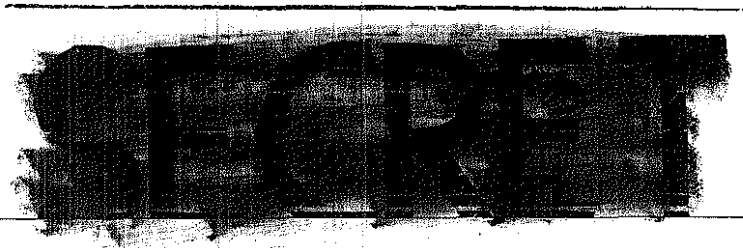
unclassified

FROM

secret

AUTHORITY

1965 per Group-4 DoDD 5200.10, 26 Jul 1962



[redacted]

SECURITY INFORMATION

Authority: C. O. Holloman ADC

By: C. M. Mangum

Initials: C.M.M.

Date: 14 January 1953

M O N T H L Y R E P O R T

O N

U S A F G U I D E D M I S S I L E

T E S T A C T I V I T I E S

A T

H O L L O M A N A I R D E V E L O P M E N T C E N T E R

H O L L O M A N A I R F O R C E B A S E

N E W M E X I C O

Prepared by 6580th Missile Test Group

C. M. Mangum

C. M. MANGUM
Lt. Col., USAF
Group Commander

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REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: MX-776A & B, XB-63 (Rascal) & X-9 (Shrike)

CONTRACTOR: Bell Aircraft Corporation, Buffalo, New York

TYPE VEHICLE: Supersonic Air-to-Ground Pilotless Parasite Bomber

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: February 1949

ESTIMATED COMPLETION DATE: July 1954

PURPOSE OF PROJECT: To develop a supersonic Pilotless Parasite Bomber capable of carrying a 3,000 pound warhead a distance of at least 75 nautical miles at Mach Nos. between 1.5 and 2.5 and at altitudes up to 60,000 feet.

PHASE OF DEVELOPMENT: Phase I - testing power plant, servo system & guidance system.

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 2 Dec 52, X-9 Missile No.2408 Power Launch; two B-17/F-80 Rascal Guidance Flights; X-9 Missile No. 2509, Captive Flight. Weekly Test Status Report for week ending 9 Dec 52, X-9 Missile No. 2610, Captive Flight; B-17/F-80 Rascal Guidance Flight. Weekly Test Status Report for week ending 16 Dec 52. Weekly Test Status Report for period 17-30 Dec 52, B-17/F-80 Rascal Guidance Flights.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

Project MX-776A, Shrike and Project MX-776B, B-63 Rascal

R E M A R K S

The month of December was one of completely normal operation marked by only one incident of more than passing interest.

On 31 December four new buildings were turned over to this project by A.I.O. Buildings 874 & 876, the two missile radar check-out buildings, are located at the northwest and southwest corners of the main Bell assembly building. Building 885 (the North Rascal Check-out building) is located across the taxiway from the Shrike pit. Building 886 (Flight Crew Ready Room) is located at the southeast corner of Building 885.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: Project MX-883, Ramjet Test Vehicle

CONTRACTOR: Lockheed Aircraft Corporation

TYPE VEHICLE: Supersonic Ramjet Engine Test Vehicle

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 5 February 1951

ESTIMATED COMPLETION DATE: Indefinite

PURPOSE OF PROJECT: To design, fabricate, and test a supersonic ramjet engine test vehicle which will be recovered by parachute.

PHASE OF DEVELOPMENT: Phase 1

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 2 Dec 52, Main Canopy Test No. 52, conducted by Special Parachute Unit. Weekly Test Status Report for week ending 9 Dec 52, Check-Out and Assembly of TV-6. Weekly Test Status Report for week ending 16 Dec 52, Main Canopy Test No. 53. Weekly Test Status Report for period 17-30 Dec, Ramjet Test Vehicle No. 6 Launching.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

The major activity on this project during the month of December concerned the launch of TV-6. This was a test of the KRJ-43-MA3 28-inch-diameter ramjet engine which will power the Bomarc missile. The successful test and recovery of this engine was a major step forward for this project.

The ramjet engine tests conducted by this project to date have indicated three things. First, that this type of test is feasible. Second, that it is improbable that a ramjet engine of this size can be designed and constructed, using all the ramjet knowledge available, which can be expected to operate with a sufficient degree of reliability to be installed in an expensive missile system and flown without previous free flight testing and development. Third, that the recovery feature of this ramjet test vehicle is valuable not simply as a money saving device, but also as a substantial aid to the development program in that the recovered engines can be inspected, post flight tested, modified, and reflown. This is particularly an advantage when there is an engine malfunction and something either goes wrong with telemetering or the malfunction is caused by something which will not register in telemetering records.

A year ago this project was in the position of having a fewer number of engine tests programed than the number of vehicles available. Consequently the funds allocated to this program were reduced to the point

where the activity on this project must be cut back drastically for the remainder of this fiscal year and until FY-54 funds are released. The present situation, due to successful recoveries, is that there are vehicles and engines available but insufficient funds available to conduct the engine tests; therefore, the project is not being used at its maximum efficient rate despite the fact that there is a great deal of ramjet engine research which remains to be accomplished.

At present two major missile programs (Bomarc and Navajo) rely on ramjet engines for cruise power. It seems unreasonable that so much effort in time and resources should be expended on the development of other phases of these programs while so little is put into the flight testing and development of the ramjets to power them. Certainly there have been large expenditures for testing facilities to support the ramjet development program, but it has been demonstrated that ground testing of components is not sufficient for the design of a reliable ramjet engine.

It is understood that FY-54 funds scheduled for this project probably exceed the amount that can be spent in one year and this is gratifying; however, the ramjet test program will receive a serious setback during the nine months between now and when FY-54 funds will be made available. For the next nine months this project will be capable of operating at three times the scheduled rate for about twice the cost. Since testing will be done in FY-54 anyway, if the funds were made available now, something on the

order of six months could be gained in time. Second, the test contractor, if expected to reduce expenditures, must necessarily either apply his experienced personnel to other tasks or lay them off; in either case the majority of these individuals will not be available to this program when it again desires to expand. This will probably be the most serious result since the effects will be felt even after funds are available and could cause a longer effective delay than the six months mentioned above.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: MX-904, XF-98, Falcon

CONTRACTOR: Hughes Aircraft Company, Culver City, California

TYPE VEHICLE: Air-to-Air, Supersonic, Target Seeker

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 1 February 1949

ESTIMATED COMPLETION DATE: 1957

PURPOSE OF PROJECT: To develop automatic missile armament for interceptor aircraft which will be capable of destroying enemy aircraft at any altitude within the operational limit of the interceptor with a very high kill probability.

PHASE OF DEVELOPMENT: Phase I,III,IV,V,VI.

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 2 Dec 52. Weekly Test Status Report for week ending 9 Dec 52, Radar Scintillation Measurements. Weekly Test Status Report for week ending 16 Dec 52. Weekly Test Status Report for period 17-30 Dec 52, Photographic Study of K-band Radar Chaff.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

No field tests were conducted at HADC during the period of this report.

The much needed temporary partitions have finally been constructed in part of the bay area of the building assigned to this project. This has converted otherwise useless space into badly needed enclosed rooms for electronic laboratories and repair shops and a shipping and receiving room separate from the supply room.

A second missile test laboratory has been outfitted by converting the conference room into a laboratory. This room will greatly enhance the efficient operation of field test missions with several model CP missiles to be launched per mission. Installation of the necessary air and hydraulic lines, wiring, and test equipment has been almost completed. The installation in the original laboratory of the necessary wiring, piping, and control valves for a 10,000 PSC nitrogen booster compressor is nearing completion.

This addition of new partitions in the bay area and the second missile laboratory will satisfy the requirements of the contractor for the next few months.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: MX-672, XQ-1

CONTRACTOR: Radioplane Company, Van Nuys, California

TYPE VEHICLE: Drone Missile

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: May 1950

ESTIMATED COMPLETION DATE: June 1953

PURPOSE OF PROJECT: The development of a remotely controlled drone missile capable of simulating aircraft performance.

PHASE OF DEVELOPMENT: Conducting development tests of a turbojet powered aircraft for use as a remotely controlled drone missile

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 2 Dec 52, Test No. 1, High Altitude. Weekly Test Status Report for week ending 9 Dec 52. Weekly Test Status Report for week ending 16 Dec 52, Two Parachute Tests. Weekly Test Status Report for period 17-30 Dec 52, One Low Altitude Parachute Test.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

Three parachute tests were conducted during the month to obtain information essential to the design of a recovery system that will handle the increased speed, altitude and weight of the turbojet powered XQ-1. Results of these tests indicate that the recovery system under test since 5 November has inherent difficulties. At a conference on 29 December 1952, at the Radioplane Company plant in Van Nuys, California, these difficulties were discussed by representatives of the HADC Special Parachute Section, the XQ-1 Project Officer and representatives of the contractor. As a solution to the present problems a load release device has been designed by Radioplane Company. A new test program will be conducted and a satisfactory solution should be arrived at in a minimum length of time.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: Project MX-873, XQ-2

CONTRACTOR: Ryan Aeronautical Company

TYPE VEHICLE: Drone Missile

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: April 1950

ESTIMATED COMPLETION DATE: Standardization, March 1953; Post Standardization Tests, March 1954

PURPOSE OF PROJECT: The development of a remotely controlled missile capable of simulating the performance and maneuvering characteristics of modern jet aircraft.

PHASE OF DEVELOPMENT: To conduct rated power test to demonstrate the general stability of the target at 0.6 to 0.8 Mach numbers and to determine the operational characteristics of the control system at full throttle setting.

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 2 Dec 52, Free Flight No. 49.

Weekly Test Status Report for week ending 9 Dec 52, Free Flight No. 50.

Weekly Test Status Report for week ending 16 Dec 52, Free Flight No. 51.

Weekly Test Status Report for period 17-30 Dec 52, Free Flight No. 52.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

Preparation of facilities and equipment, which will be used in the training of personnel from other services in the assembly and operation of the Q-2 drone, was completed during the month. The training program is scheduled to start, 5 January 1953, and will continue for a period of eight weeks. Personnel scheduled to attend this school are from ground forces at Fort Bliss, Army Ordnance at White Sands Proving Ground and Air Force personnel from Air Proving Ground at Eglin Field, Florida.

Delay was encountered in the preparation of the drone to be used for flight test number 53 because all autopilot components were expended in flight 52, making it necessary to fabricate a complete set of mounts and brackets and to procure necessary servos, reference gyro, amplifier and other components used in the Ryan Minneapolis-Honeywell autopilot system.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: OQ-19 Aerial Target

CONTRACTOR: None

TYPE VEHICLE: Drone Missile

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: November 1951

ESTIMATED COMPLETION DATE: 30 June 1953

PURPOSE OF PROJECT: This project used the standard OQ-19 target as a vehicle to determine and improve radar response characteristics of aerial targets, to evaluate the use of a video link as a terminal guidance facility, to test the use of aerial targets as photo-reconnaissance vehicles, and to evaluate various autopilot systems.

PHASE OF DEVELOPMENT: This project is presently concerned with preparations for radar response tests and video link tests.

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT: Weekly Test Status Report for week ending 2 Dec, Flight 668, OQ-19D Modified Drone. Weekly Test Status Report for week ending 9 Dec 52, Flight 669, OQ-19D; Flights 670 and 671, OQ-19A. Weekly Test Status Report for week ending 16 Dec 52, Flights 672,673,674, and 675, OQ-19A. Weekly Test Status Report for period 17-30 Dec 52, One Routine Training Flight.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

During the month seven proficiency maintenance flights and two test flights were conducted. The proficiency maintenance flights were very successful. The two test flights were the final two of a series of three tests to determine the feasibility of launching and flying the heavily loaded TV-OQ-19. It was shown that this configuration can be launched and flown successfully.

Radar response tests are being held up as the Instrumentation Section at HADC does not yet have in operation the equipment required. The TV tests are awaiting the arrival of engineers and equipment from Wright Air Development Center on 5 January 1953.

This project moved during the month and is temporarily borrowing operating space from the XQ-1 project. Building 859 is being rehabilitated for the use of the OQ-19 project.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: MX-1277, Atmospheric Sampling

CONTRACTOR: Northwestern University, Air Force Cambridge Research Center, and Holloman Air Force Base

TYPE VEHICLE: Large diameter plastic balloons carrying atmospheric sampling apparatus

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 3 May 1951

ESTIMATED COMPLETION DATE: Unknown

PURPOSE OF PROJECT: To field test atmospheric sampling mechanisms and to obtain samples of the atmosphere at 10,000 feet intervals to 100,000 feet to determine the isotope ratios of oxygen and nitrogen.

PHASE OF DEVELOPMENT: Phase I, one test

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

None

R E M A R K S

There are no additional recommendations or conclusions at this time as the procedures of this project are fairly standardized. No flights were made this month since the balloons on hand for this project have been used up, and additional balloons have not yet been received.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: MX-1280, Low Frequency Solar Noise Measurements

CONTRACTOR: Air Force Cambridge Research Center

TYPE VEHICLE: None

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 24 March 1952

ESTIMATED COMPLETION DATE: Continuing

PURPOSE OF PROJECT: To obtain continuous measurements of Geomagnetic Fluctuations in the frequency range of 0 to 20 cycles for the purpose of aiding in the prediction of Propagation Conditions and the understanding of Geomagnetic Phenomena.

PHASE OF DEVELOPMENT: Solar noise disturbances are being recorded on a continuous 24-hour-a-day, 7-day-a-week basis.

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

Weekly Test Status Reports for weeks ending 2 Dec, 9 Dec, and 16 Dec 52.

Weekly Test Status Report for period 17-30 Dec 52.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

Project MX-1280, Low Frequency Solar Noise Measurements

R E M A R K S

Disturbances were measured throughout the month with little loss of data because of equipment failure. Some data were missed during the week of 22 December 1952 due to a shortage of manpower. Activity continued to be "quiet" with only the usual diurnal variations being recorded. The noise level associated with the equipment was decreased to a very low value this period. As a result, the data being gathered at this time are better than any ever recorded at the Holloman Site.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: MX-1342, High Frequency Back-Scatter Tests

CONTRACTOR: Rome Air Development Center, Griffis AFB, New York

TYPE VEHICLE: None

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER 1 July 1952

ESTIMATED COMPLETION DATE: 30 June 1953

PURPOSE OF PROJECT: a. To determine, through the use of back-scatter measurements, the range and reliability of high frequency communication systems.

b. To determine, through the use of forward-scatter measurements, multipath transmissions, pulse distortion, and the height of the reflecting layers of the ionosphere.

PHASE OF DEVELOPMENT: Routine target returns logged for nine-hour days at half-hourly periods on the back-scatter measurements only.

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

Weekly Test Status Reports for weeks ending 2 Dec, 9 Dec, and 16 Dec 52.

Weekly Test Status Report for period 17-30 Dec 52.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

Project MX-1342 High Frequency Back-Scatter

R E M A R K S

Twenty-four-hour operation of the project continued until 22 December 1952. At that time the project was put on 16-hour operation until the first of the year. The project will be put on 24-hour operation again the first of the year.

The data being logged now shows that there is a complete fade-out of the signal at night, but this fade-out time varies from night to night.

Routine work on the project continued with no notable difficulties.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: MX-1498, Moby Dick

CONTRACTOR: Air Force Cambridge Research Center

TYPE VEHICLE: High Altitude Plastic Balloons

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: October 1951

ESTIMATED COMPLETION DATE: Indefinite

PURPOSE OF PROJECT: To study the very high altitude wind fields

PHASE OF DEVELOPMENT: Operational test phase

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

Weekly Test Status Reports for weeks ending 2 Dec, 9 Dec, and 16 Dec 52

Weekly Test Status Report for period 17-30 Dec 52. Report No. HDT-21:

Summary Report on Project Moby Dick, Covered Wagon Balloon Launcher Development and Test Results, 6 Dec 51 to 15 Sep 52, dated 12 Dec 52.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

The Moby Dick crews are now at the three locations on the West Coast where the operational phase is to take place. The three locations are: Muroc, California; Vernalis, California; and Tillamook, Oregon. During the past month, no balloon flights were accomplished. The members of the crew have been concerned with the preparation of the sites for the operational phase to follow.

In addition to some balloons, parachutes, batteries, steel shot ballast and transmitters, two each "Moby Dick" packages were received at Edwards and Tillamook. Test equipment was received at Edwards AFB and at Vernalis NAS.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: MX-1594, Gopher

CONTRACTOR: Stanley Aviation Corporation

TYPE VEHICLE: Large plastic balloons carrying dummy loads

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 20 February 1952

ESTIMATED COMPLETION DATE: Unknown

PURPOSE OF PROJECT: To conduct detection tests on plastic balloons

PHASE OF DEVELOPMENT: Phase II - To conduct detection and vulnerability tests.

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for period 17-30 Dec 52, HADC-621; Dummy Load and Activated Cut-Down System; HADC-622: Dummy Load, AM-1 Transmitter and Clock Activated Cut-Down System.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

The aircraft was able to locate the second test vehicle which was equipped with a radio transmitter and a radar target. The first flight consisted of only a dummy load and visual contact was not established.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: Air Resupply and Communications Service Trainees

CONTRACTOR: Balloon Sonde Unit, HADC

TYPE VEHICLE: Not applicable

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: August 1952

ESTIMATED COMPLETION DATE: Indefinite

PURPOSE OF PROJECT: On-the-job training in balloon inflation and launching techniques

PHASE OF DEVELOPMENT: Phase 1, observation of balloon launching made by regular Balloon Sonde Unit crew.

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

Weekly Test Status Reports for weeks ending 2 Dec, 9 Dec, and 16 Dec 52.

Weekly Test Status Report for period 17-30 Dec 52.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

The ARCS Trainees have received lectures on balloon history and theory, and on the Moby Dick instrumentation. They have been shown movies of balloon launchings, with associated lectures. The trainees have been present at each balloon launching by the Balloon Sonde Unit. In addition, under the guidance of Balloon-Sonde personnel, they have been performing tests associated with the investigation of balloon inflating techniques. On 17 Dec 52, 8 officers and 15 airmen completed their training at HADC and returned to Mountain Home AFB, Idaho pending further orders.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: MX-1011, Standardization Plastic Balloon Flights

CONTRACTOR: Rhode Island University and Denver University

TYPE VEHICLE: Large plastic balloons carrying specialized instrumentation.

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 1 May 1952

ESTIMATED COMPLETION DATE: Unknown

PURPOSE OF PROJECT: To obtain a value for the solar constant and to measure daylight luminescence and infrared absorption.

PHASE OF DEVELOPMENT: Phase I, field testing of equipment in conjunction with Aerobee MX-1011 (X-8) firings

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 16 Dec 52, HAFB-119 and HAFB-120 Launchings. Weekly Test Status Report for period 17-30 Dec 52 HADC-121, Infrared Camera and Instrumentation.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

Project MX-1011, Standardization Flights

R E M A R K S

The first balloon flight this month, made to measure the solar constant for Rhode Island University was successful. The second flight made was only partially successful as the balloon rose at an unusually low rate and reached an altitude (about 78,000 feet MSL) below that required at separation. The Denver University flight was not recovered for three days due to difficulty in obtaining permission to enter the bombing range where impact occurred.

REPORT FOR THE MONTH OF DECEMBER 1952

PROJECT TITLE: MX-1011, Aerobee Rocket

CONTRACTOR: University of Colorado

TYPE VEHICLE: Upper Air Test Vehicle

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: August 1949

ESTIMATED COMPLETION DATE: Continuing

PURPOSE OF PROJECT: To carry aloft instrumentation designed to measure the physical phenomenon and properties of the upper atmosphere.

PHASE OF DEVELOPMENT: Varies for each individual test

REPORTS ISSUED DURING THE MONTH OF DECEMBER WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 2 Dec 52, Weekly Test Status Report for week ending 9 Dec 52, Weekly Test Status Report for week ending 16 Dec 52, USAF Aerobee No. 33, Missile GM No. 484 Launching. Weekly Test Status Report for period 17-30 Dec 52.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

REMARKS

During this period one Aerobee Sounding Rocket was launched. USAF Aerobee No. 33 was launched at 1238 hours, 12 December 1953. The University of Colorado equipment gave 28 seconds of continuous sun following. It is believed that this is the first time such solar tracking has been successfully accomplished.

During this launching Dr. Marcus O'Day, Chief, Upper Air Laboratory, Air Force Cambridge Research Center, discussed the future of the Aerobee Upper Air program. It appears that the continuation of the Upper Air research effort on the part of AFCRC is greatly dependent upon successful operation of the next two experimental RTV-A-1a rockets. Dr. O'Day feels that two successful projects will save the program.

USAF Aerobee No. 33 was the last of the standard 2600-pound thrust Aerobee Sounding Rockets model RTV-A-1. Future Aerobees will be of the model RTV-A-1a type. Prior to launching upper air instrumentation in this model, two successful test rockets will be flown. These rockets will carry instrumentation to monitor portions of the vehicle.

The first test rocket was tentatively scheduled for launching in early December. Delays have been encountered so that at present launching is scheduled for early February 1953.

Project MX-1011, Aerobee Rocket

Present indications are that the thrust on the model RTV-A-1a will be reduced to 3000 pounds (nominal 4000 pounds). This should help to reduce the probability of future failures due to aerodynamic forces or heating. A decrease of 3 miles in zenith altitude has been computed.

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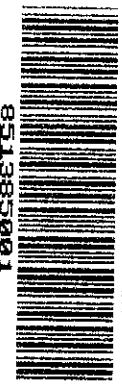

USAF GUIDED MISSILE TEST ACTIVITIES

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH

20 MAY 1953

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AD NUMBER
AD010909
CLASSIFICATION CHANGES
TO unclassified
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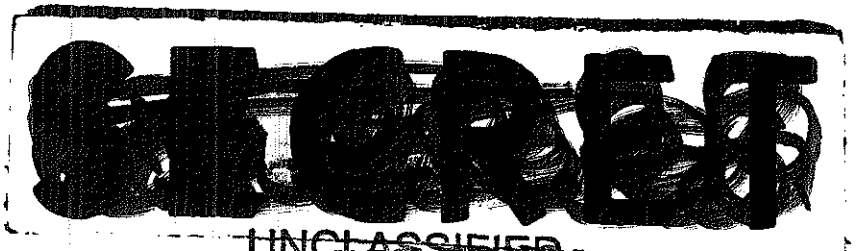

HOLLOMAN

AIR DEVELOPMENT CENTER

MONTHLY REPORT ON USAF GUIDED MISSILE TEST ACTIVITIES AT HOLLOMAN AIR FORCE BASE NEW MEXICO

REPORT NO. HDT-113

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APRIL 1953

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SECRET

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Initials: C. M. M.

Date: 20 May 1953

MONTHLY REPORT
ON
USAF GUIDED MISSILE
TEST ACTIVITIES
AT
HOLLOMAN AIR DEVELOPMENT CENTER
HOLLOMAN AIR FORCE BASE
NEW MEXICO

Prepared by the 6580th Missile Test Group

C. M. Mangum

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Lt. Col., USAF
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REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: QYB-61

CONTRACTOR: The Glenn L. Martin Company

TYPE VEHICLE: Drone Missile

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: February 1953

ESTIMATED COMPLETION DATE: July 1953

PURPOSE OF PROJECT: To develop a target drone recovery system, based on the MX-771 Matador Missile.

PHASE OF DEVELOPMENT: Conducting flight tests on the recovery system to obtain data on parachute deployment, data on the use of inflatable landing cushions and data concerning damage to the missile on impact.

REPORTS ISSUED DURING MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 7 Apr 53. Weekly Test Status Report for weeking ending 14 Apr 53, Special Parachute Test. Weekly Test Status Report for week ending 21 Apr 53. Weekly Test Status Report for week ending 28 Apr 53, QYB-61 No. 1 Test.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

[redacted]

SECURITY INFORMATION

Project QYB-61, Drone Missile

R E M A R K S

The Special Parachute Section conducted the second test of the 4-foot drag chute compartment, solenoid and release latch, installed in a 1000-pound bomb, on 10 April ; examination of the 35 mm movie films indicated that the 4-foot chute deployed about 13 seconds after the bomb was dropped, but broke away approximately 0.04 seconds after it blossomed. Recovery of the bomb revealed that the 1/4-inch drag chute cable failed, apparently under chute opening load. The drag chute cable to be used on the missile was subsequently strenghtened by adding a second 1/4-inch cable in parallel with the original one.

A dry run was conducted on 14 April. Prelaunching checks were made and an F-86-A aircraft, serving as a simulated missile, flew the proposed flight path.

A change in the control system of the missile, as directed by the contractor's plant, necessitated a rescheduling of the firing from 16 April to 23 April. Weather delayed the launching one additional day.

Modifications and checks were completed on QYB-61 No. 1 and the missile was launched, 24 April. The launching was successful, but the 16-foot parachute bag emerged prematurely approximately 1.2 seconds after the launching. This in turn pulled out the 4-foot parachute approximately 2.3 seconds after launching. The missile crashed after 42 seconds of flight. It did not burn, but was almost totally expended.

Initial preparations are being made for acceleration tests using the Track Test Facility to test the 4-foot and the 16-foot parachute compartments, and the deployment of the 4-foot and 16-foot parachutes.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: MX-776B, XB-63 (Rascal)

CONTRACTOR: Bell Aircraft Corporation, Buffalo, New York

TYPE VEHICLE: Supersonic, Air-to-Ground, Pilotless Parasite Bomber

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: February 1949

ESTIMATED COMPLETION DATE: January 1955

PURPOSE OF PROJECT: To develop a supersonic Pilotless Parasite Bomber capable of carrying a 300-pound warhead a distance of 75 nautical miles at mach numbers between 1.5 and 2.5 at altitudes up to 60,000 feet.

PHASE OF DEVELOPMENT: Testing of guidance, servo, and propulsion systems.

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 7 Apr 53. Weekly Test Status Report for week ending 14 Apr 53, F-80 Simulated Missile Flights. Weekly Test Status Report for week ending 21 Apr 53, F-80 Simulated Missile Flights. Weekly Test Status Report for week ending 28 Apr 53, F-80 Simulated Missile Flights.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

REMARKS

There were no missile operations at Holloman during the month of April 1953. The next missile, No. 13, will arrive at Holloman on 1 June 1953 and should be launched on or about 10 July 1953. Missile No. 13 will be the first missile incorporating all guidance equipment and will be one of the most important Rascal missiles to be launched at Holloman.

Eleven F-80 simulated missile flights consisting of 22 terminal dives were conducted during this period. The flights were generally successful, but difficulty was experienced in obtaining a satisfactory radar scope presentation during the last two flights.

As a result of the above flights this Project has requested the base to improve the North Impact Target area to such an extent that it will be as easy to identify as the Tarzon Target. This request was necessary because difficulty was experienced in locating the North Impact Point from Aerial Photographs taken during the F-80 terminal dive.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: MX-776 (F-80/B-50 Program)

CONTRACTOR: Equipment furnished by Bell Aircraft Corp., Buffalo, New York.

TYPE VEHICLE: F-80 simulated missile aircraft; B-50 director aircraft

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: January 1953

ESTIMATED COMPLETION DATE: July 1954

PURPOSE OF PROJECT: To establish an Air Force capability to operate and maintain B-63 guidance equipment in order that ARDC may accomplish the responsibility of providing operational know-how to using commands. Conduct tests of assigned MX-776 Research and Development Program. Gather preliminary information which will be applicable to Operational Suitability Testing of the MX-776B missile.

PHASE OF DEVELOPMENT: Phase I - Setting up shops, procuring equipment, and training of flight crew personnel for F-80/B-50 aircraft.

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Reports for weeks ending 7 Apr 53, 14 Apr 53, 21 Apr 53, and 28 Apr 53.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

Progress in the F-80/B-50 program has continued to increase, particularly in the procurement of supplies and check-out of the guidance bench sets. Little or no progress has been made in check-out of the guidance equipment installed in the F-80 and B-50 aircraft for the following reasons: The F-80 aircraft has not been available to the program during April because of maintenance difficulties; the B-50 aircraft has been in an out-of-commission status and was absent from Holloman Air Force Base for a five day period to have the compass swung at Kelly AFB, Texas.

F-80/B-50 personnel have been fully occupied in the setting-up and checking out of the guidance bench sets which precluded check-out of the B-50 equipment. The B-50 aircraft will depart Holloman on or about 4 May 1953 for Kirtland Air Force Base where the flight crews will be given additional training in the operation of the aircraft. It is estimated the aircraft will be at Kirtland for a period of ten days. It is anticipated, when the B-50 returns to Holloman, that several orientation flights will be made in order for the guidance operators to familiarize themselves with the equipment. Upon completion of these flights, regular test and training missions will be scheduled.

Special test equipment has been received from local purchase sources, Bell Aircraft Corporation, and Base Supply which will permit complete

check-out of all guidance equipment. Receipt of this equipment will also permit return of borrowed equipment to Patrick AFB in July 1953.

Headquarters, Air Reseach and Development Command, has disapproved a frequency allocation request of 65.9 mc which is used to command the F-80 during mid-course and terminal dive. Action is being taken to have a new frequency allocated; however, considerable delay may be encountered in obtaining the crystals for the new frequency. Voice commands could be used to control the F-80 during the interim period but this method is very undesirable.

Correspondence and data pertaining to the following was prepared during this period:

1. Technical assistance from Bell Aircraft Corporation for the F-80/B-50 Program.
2. Request for an Electronics Spare Parts contract with Bell Aircraft Corporation.
3. Preparation of the FY 1954 Budget Estimate for the F-80/B-50 Program.

Major Orley B. Caudill made a trip to Mather Air Force Base, California for the purpose of investigating all phases of motion picture photography of radar scopes.

Major Thomas E. Sledge made a trip to Wright-Patterson Air Force Base,

Ohio and Bell Aircraft Corporation, Buffalo, New York for the purpose of coordinating fiscal and delivery of equipment matters.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: Project MX-883, X-7, Ramjet Test Vehicle

CONTRACTOR: Lockheed Aircraft Corporation

TYPE VEHICLE: Supersonic Ramjet Engine Test Vehicle

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 5 February 1951

ESTIMATED COMPLETION DATE: Indefinite

PURPOSE OF PROJECT: To design, fabricate, and test a supersonic ramjet engine test vehicle which will be recovered by parachute.

PHASE OF DEVELOPMENT: Phase I

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 8 Apr 53, Reflight of TV-6 Full Scale Flight Test No. 10. Weekly Test Status Report for week ending 14 Apr 53, Drag Parachute Test No. 31. Weekly Test Status Report for week ending 21 Apr 53. Weekly Test Status Report for week ending 28 Apr 53.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to received desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

The ramjet engine test program was continued during the month of April with Full Scale Flight Test No. 10 which was the second test of the Marquardt Aircraft Company XRJ-43-MA-3 No. 8901 engine. During this test, engine operation was completely satisfactory for 20 seconds. The engine produced something on the order of 9,000 pounds of thrust which is considerably more thrust than that for which the engine was designed. At the end of this 20-second period, two fuel leaks developed in the engine, one in each of two systems supplying the outer and inner fuel nozzle rings. The vehicle and engine were damaged by recovery due to high surface winds. However, the engine was in good enough condition after flight to conduct a post flight check; to determine that the Mach number control was still on calibration; and to discover the two fuel leaks. This test is another example where recovery and inspection of a flight test engine was of prime importance. Without the post flight evidence of the fuel leaks, analysis of the flight would have been hampered by the coincidence of two independent fuel leaks developing almost simultaneously.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: MX-904, FALCON, GAR-1, XF-98

CONTRACTOR: Hughes Aircraft Company, Culver City, California

TYPE VEHICLE: Air-to-Air Missile

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 1 February 1949

ESTIMATED COMPLETION DATE: Interim Tactical Missile, 1 January 1956

PURPOSE OF PROJECT: To develop automatic missile armament for interceptor aircraft capable of destroying enemy aircraft at any altitude within the operational limit of the interceptor with a very high kill probability.

PHASE OF DEVELOPMENT: Phases I, III, IV, and VI

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 14 Apr 53, Launching of CP-15, CP-16, CP-12, and CP-11. Weekly Test Status Report for week ending 21 Apr 53, Attempted Launching of CP-30, CP-31, and CP-32. Weekly Test Status Report for week ending 28 Apr 53, Launching of CP-30, CP-31, and CP-33.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

During the month of April 12 Model CP missiles were launched. Three CP missiles were launched at a drone target dispensing countermeasures, four CP missiles at an APG-3 radar ground installation, and five at an air drone target.

No significant conclusions can be summarized at this time since visual observations can often be deceiving. Two hits were obtained by the missiles resulting in the loss of one drone. An important fact is that only two drones remain assigned to this project. One present schedule indicates launching of 10 CP missiles in June against a low altitude, 9 CP missiles in July against chaff, and an undetermined number of CP missiles in October against multiple targets. Requests have been submitted for additional drones but there is no indication that these will be forthcoming.

Launching of 12 missiles this month has assisted materially in acquiring data required to further study the tactics required in utilizing the missile; the limitations of the missile; and the success in producing missiles in a production line assembly.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: YQ-1

CONTRACTOR: Radioplane Company, Van Nuys, California

TYPE VEHICLE: Drone Missile

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: May 1950

ESTIMATED COMPLETION DATE: June 1953

PURPOSE OF PROJECT: The development of a remotely controlled drone missile capable of simulating aircraft performance.

PHASE OF DEVELOPMENT: Conducting development tests of a turbojet powered aircraft for use as a remotely controlled drone missile.

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 7 Apr 53, Flight Test, Drone No. 15, Flight No. 42. Weekly Test Status Report for week ending 14 Apr 53, Information on Flight No. 42, Drone No. 15. Weekly Test Status Report for week ending 21 Apr 53, YQ-1 Recovery Test Program. Weekly Test Status Report for week ending 28 Apr 53.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

There was one flight of the XQ-1 conducted on 3 April 1953. This flight was generally unsuccessful. The drone climbed continuously despite full down elevator signal. Indications are that the elevator servo does not have sufficient torque output to fly the turbojet version of the XQ-1. The recovery system also failed on this flight, and the drone was destroyed. This failure was traced to two delay squibs failing to continue burning after once having been ignited. Tests are being conducted by the contractor to determine the reason for the squib failure and to take corrective action.

Tests were continued on the XQ-1 recovery system.

Several attempts were made to fly the air-to-air controlled flight discussed in previous reports. These attempts were all unsuccessful because the 12-inch pulsejet engine would not continue running, after having been started, during pre-launching checks.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: XQ-2

CONTRACTOR: Ryan Aeronautical Company

TYPE VEHICLE: Drone Missile

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: April 1950

ESTIMATED COMPLETION DATE: Standardization, March 1953; Post Standardization Tests, March 1954.

PURPOSE OF PROJECT: The development of a remotely controlled drone missile capable of simulating the performance and maneuvering characteristics of modern jet aircraft.

PHASE OF DEVELOPMENT: To conduct rated power test to demonstrate the general stability of the target at 0.6 to 0.8 Mach numbers and to determine the operational characteristics of the control system at full throttle setting.

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 7 Apr 53. Weekly Test Status Report for week ending 14 Apr 53, Flight No. 60. Weekly Test Status Report for week ending 21 Apr 53, Flight No. 61. Weekly Test Status Report for week ending 28 Apr 53.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

On flight number 61, conducted 17 April, the main parachute separated from the drone at parachute deployment. This premature release was traced to a sheared safety pin in the ground release mechanism. The safety pin is normally sheared by the firing of a squib which is actuated when the drone contacts the ground. Because of inadequate depth clearance in the parachute release unit and the longer squib presently used, the squib had sheared the aluminum safety pin when the ground release mechanism was assembled. It is believed that a similar premature parachute release, which occurred on flight number 52, may have been caused by this same condition.

Ryan Aeronautical Company and Continental Aviation and Engineering Corporation personnel are continuing an investigation of the YJ-69 engine air inlet duct problem. Several engine runs have been made on the ground using the original Ryan designed air inlet, a Continental designed inlet, and a new Ryan design. Air inlet pressures, exhaust temperatures and engine rpm were taken on each engine run. Flight testing of modified and new air inlet designs will be conducted during May.

Five KQ-2 drone missiles have been shipped to the Navy in compliance with a letter from Wright Air Development Center.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: OQ-19 Drone Missile

CONTRACTOR: None

TYPE VEHICLE: Drone Missile

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: November 1951

ESTIMATED COMPLETION DATE: 30 June 1953

PURPOSE OF PROJECT: This project uses the standard OQ-19 drone as a vehicle to determine and improve radar response characteristics of drone missiles, to evaluate the use of a video link as a terminal guidance facility, to test the use of drone missiles as photo-reconnaissance vehicles, and to evaluate various autopilot systems.

PHASE OF DEVELOPMENT: This project is presently concerned with radar response tests, control system components tests and A-7 catapult launchings to obtain catapult data in connection with a new cast aluminum rocket car and M3E1 JATO.

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 7 Apr 53, Flight No. 697. Weekly Test Status Report for week ending 14 Apr 53, Flight No. 699. Weekly Test Status Report for week ending 21 Apr 53. Weekly Test Status Report for week ending 28 Apr 53, Flight No. 700.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

The first catapult launching test, using the new cast aluminum rocket car with a type M2 JATO unit, was conducted this month. This launching was successful except that there is need for vertical spacing adjustment between the top roller wheels and the bottom roller wheel on the rocket car, since the plunger ram on the rocket car did not center into the snubber cylinder after the firing but scraped the top side of the snubber cylinder. The plunger ram centered into the snubber cylinder before the firing.

A second test scheduled for the same day was cancelled because another project required the range. Additional catapult launching tests were not conducted this month because of higher priority tests using the same range area and a reallocation of storage buildings and subsequent moving by this activity.

During the month two proficiency maintenance flights were flown and one demonstration flight was flown for representatives from the Air War College and the University of Michigan.

A dummy drone is being prepared for A-7 catapult launching tests using the new cast aluminum rocket car with M3E1 JATO units. The weight of the dummy drone can be varied from 300 to 400 pounds.

Telemetry equipment is being installed in an OQ-19D Drone in preparation for instrumented flight tests of the Sumners Gyroscope Company model 122 Gyro-Servo.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: MX-1011, Aerobee Rocket

CONTRACTOR: Air Force Cambridge Research Center - United States Air Force

TYPE VEHICLE: Upper Air Test Vehicle

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: August 1949

ESTIMATED COMPLETION DATE: Continuing

PURPOSE OF PROJECT: To carry aloft instrumentation designed to measure the physical phenomenon and properties of the upper atmosphere.

PHASE OF DEVELOPMENT: Varies for each individual test

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 7 Apr 53. Weekly Test Status Report for week ending 14 Apr 53, Launching of USAF Aerobee No. 35, Missile GM No. 524. Weekly Test Status Report for week ending 21 Apr 53. Weekly Test Status Report for week ending 28 Apr 53, Recovery of USAF Aerobee No. 35.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

During the latter part of May, it is planned to fire two Aerobee rockets, one day apart, as a study of sky brightness. This has never been accomplished at Holloman Air Force Base.

USAF Aerobee No. 35, the second test rocket, was considered a success.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: MX-1011, Standardization Plastic Balloon Flights

CONTRACTOR: Rhode Island University and Denver University

TYPE VEHICLE: Large plastic balloons carrying specialized instrumentation.

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 1 May 1952

ESTIMATED COMPLETION DATE: Unknown

PURPOSE OF PROJECT: To obtain a value for the solar constant and to measure daylight luminescence and infrared absorption.

PHASE OF DEVELOPMENT: Phase I: Field testing of equipment in conjunction with Aerobee MX-1011, (K-8) firings.

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

None

Project MX-1011, Standardization Flights

R E M A R K S

No tests were conducted during the period covered by this report.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: Project No. R-114-13, Conductivity Meters

CONTRACTOR: Air Force Cambridge Research Center and Holloman Air Force Base

TYPE VEHICLE: Large diameter plastic balloon

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: April 1953

ESTIMATED COMPLETION DATE: Unknown

PURPOSE OF PROJECT: To flight test the balloon-borne air conductivity meter and to obtain data on atmospheric conductivity in the stratosphere.

PHASE OF DEVELOPMENT: Phase J

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

None

R E M A R K S

Some difficulty was encountered when planning the initial flight for this program. The GMD receiver to be used for receiving telemetered data was a constant source of trouble. For this reason, the flight had to be delayed until the equipment was in a workable condition.

It was agreed that problems of this nature could be overcome by shipping the apparatus to Holloman Air Force Base for each flight where check-out operations could be accomplished by members of the Balloon Sonde Unit. In this way, the flights can be performed without pressure of time element and would eliminate trips to Holloman Air Force Base, for each flight, by the contractors.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: MX-1280, Low Frequency Solar Noise Measurements

CONTRACTOR: Air Force Cambridge Research Center

TYPE VEHICLE: None

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 24 March 1952

ESTIMATED COMPLETION DATE: Continuing

PURPOSE OF PROJECT: To obtain continuous measurements of geomagnetic fluctuations in the frequency range of 0 to 20 cycles for the purpose of aiding in the prediction of propagation conditions and the understanding of geomagnetic phenomena.

PHASE OF DEVELOPMENT: Solar noise disturbances are being recorded on a continuous 24-hour-a-day, 7-day-a-week basis.

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Reports for weeks ending 7 Apr 53, 14 Apr 53, 21 Apr 53, and 28 Apr 53.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

Solar noise recording continued during the month without interruption. A minor mechanical failure occurred in the clock mechanism resulting in loss of time marks on the record. No data were lost.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: MX-1342, High Frequency Back-Scatter Tests

CONTRACTOR: Air Force Cambridge Research Center

TYPE VEHICLE: None

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 1 July 1952

ESTIMATED COMPLETION DATE: Continuous

PURPOSE OF PROJECT: a. To determine, through the use of back-scatter measurements, the range and reliability of high frequency communication systems.

b. To determine, through the use of forward-scatter measurements, multipath transmissions, pulse distortion, and the height of the reflection layers of the ionosphere.

PHASE OF DEVELOPMENT: Routine target returns were logged 24 hours a day at half hourly periods during most of the month. Starting 27 April 1953, routine target returns were logged 16 hours a day at half hourly periods.

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Reports for weeks ending 7 Apr 53, 14 Apr 53, 21 Apr 53, and 28 Apr 53.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

Project MX-1342, High Frequency Back-Scatter

R E M A R K S

The project operated on a 24-hour, five-day-a-week basis until 27 April 1953. On that date the project was cut back to a 16-hour, five-day-a-week basis. During the entire time the project was on 24-hour operation, no signal return was received between the hours of 2200 and 0630. Therefore, it is believed that 16-hour operation of the project will be sufficient to observe fade-out and fade-in of the signal return, and no data will be lost.

The plate supply transformer of the transmitter burned out during the first week of the month. Thr transmitter went back on the air using a substitute transformer setup. A new transformer has been ordered, but has not been received.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: MX-1450R, Physiology of Rocket Flight

CONTRACTOR: Space Biology Field Laboratory, HAFB

TYPE VEHICLE: High Altitude Plastic Balloon

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: May 1950

ESTIMATED COMPLETION DATE: Indefinite

PURPOSE OF PROJECT: To study the effects of temperature, pressure, and cosmic radiation on living specimens at high altitudes.

PHASE OF DEVELOPMENT: Phase II: Use of plastic balloons as vehicles for exposure of the specimens.

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 7 Apr 53. Weekly Test Status Report for week ending 14 Apr 53, HAFB-137 and HAFB-138 Launchings. Weekly Test Status Report for week ending 21 Apr 53. Weekly Test Status Report for week ending 28 Apr 53, HAFB-139 Launching.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

Due to the loss of Flight HAFB-139, the Space Biology Field Lab, has assumed all responsibility for tracking and recovery. It is thought that better coordination can be accomplished in this way.

In order to comply with the test directive concerning the manned balloon project, it will be necessary to receive the requested supplies as soon as possible. Unless these supplies (to be furnished by Wright Air Development Center) are furnished within 30 days, an amendment to the directive will be necessary.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: MX-1498, Moby Dick

CONTRACTOR: Air Force Cambridge Research Center

TYPE VEHICLE: High Altitude Plastic Balloons

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: October 1951

ESTIMATED COMPLETION DATE: Indefinite

PURPOSE OF PROJECT: To study the very high altitude wind fields

PHASE OF DEVELOPMENT: Operational test phase

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Reports for weeks ending 7 Apr 53, 14 Apr 53, 21 Apr 53, and 28 Apr 53.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

Progress is being made towards the establishment of two new Moby Dick sites. Two new "covered wagon" launchers are near completion and will undergo tests at Holloman Air Force Base prior to shipment to the new sites. Miscellaneous supplies have been requisitioned to outfit the new sites and supplement the old sites.

Recovered packages are continuing to arrive at Holloman Air Force Base.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: 504.0 Sleighride Series II and III.

CONTRACTOR: Sandia Corporation, Albuquerque, New Mexico

TYPE VEHICLE: Sled

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: January 1953

ESTIMATED COMPLETION DATE: June 1953

PURPOSE OF PROJECT: To conduct impact tests on Sandia classified units.

PHASE OF DEVELOPMENT: Sleighride Series II; sled impact test with the special unit mounted on an "A" frame which straddles the track approximately 2,000 feet from the south firing point.

Sleighride Series III; impact test on sled mounted components at high velocities. The sled impacts a concrete or wood barrier placed 15 feet off the end of the track.

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

None

504.0 Sleighride Series II and III

R E M A R K S

Sleighride tests proceeded on schedule and gave favorable results during the month.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: E-61 Fuse Test

CONTRACTOR: Army Chemical Center, Camp Detrich, Maryland

TYPE VEHICLE: Small (4 pounds or less) clusterable bomb

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: November 1952

ESTIMATED COMPLETION DATE: September 1953

PURPOSE OF PROJECT: To determine proper arming and functioning of the E-61 Fuse.

PHASE OF DEVELOPMENT: Phase I

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 21 Apr 53, E-61R4 Bomb Test.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

On 15 April 1953, 100 E-61R4 bombs were dropped from an L-19 type aircraft from an altitude of 10,000 feet above the terrain. Preliminary information, in the form of trends, was expected to facilitate in the design of the more comprehensive test and to determine the operational characteristics of the several type fuses when dropped on the E-61R4 bomb with fins. The above tests were considered satisfactory by personnel from the Army Chemical Center and they stated that considerable improvement was realized over previous tests performed.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: E-99 Cluster Tests

CONTRACTOR: Chemical Corps Biological Laboratories and Arthur D. Little Inc., Cambridge, Massachusetts.

TYPE VEHICLE: Cluster Bomb

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 10 March 1953

ESTIMATED COMPLETION DATE: 15 September 1953

PURPOSE OF PROJECT: To evaluate the subject munitions to determine if they satisfactorily meet the applicable military characteristics and are ready to be submitted to Air Proving Ground Command for operational suitability tests.

PHASE OF DEVELOPMENT: Phases 1 through VI of AFR 80-14

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

None

REMARKS

There were no tests scheduled for this program during the month of April. The next tests will be conducted during the months of July, August, and September when approximately, sixteen bombs will be dropped. Extensive damage to the stabilizing fins was experienced in the first seven bombs dropped. Ten bombs were originally scheduled for testing but because of the extensive damage to the stabilizing fins the test program at HADC was discontinued.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: Test of E-123 Glide Cluster

CONTRACTOR: Chemical Corps, Frederick, Maryland and Aircraft Armaments, Inc., Baltimore 15, Maryland.(Contractors to the Chemical Corps)

TYPE VEHICLE: Deviation Cluster Bomb

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 10 April 1953

ESTIMATED COMPLETION DATE: 15 June 1953

PURPOSE OF PROJECT: To obtain information on the free-flight performance and trajectory of the cluster during the launch from the carrier aircraft and during the helical glide.

PHASE OF DEVELOPMENT: Phase I

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 21 Apr 53, E-123 Cluster Bomb Test.

Weekly Test Status Report for week ending 28 Apr 53, E-123 Cluster Bomb Test No. 2

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

R E M A R K S

The E-123 is a Glide Cluster Bomb which was designed to give a two and one-half mile deviation to either side of the line of flight of the carrying aircraft from an altitude of 30,000 feet. Four Clusters have been dropped at Holloman Air Development Center on the following dates: 20 April, 27 April, 29 April, and 1 May, respectively. The first cluster impacted approximately two and one-half miles south of the aircraft heading, and completed a glide path to the left of the aircraft heading as planned. The second cluster operated as planned for approximately 30 seconds and then started to spiral. This cluster impacted approximately one and one-half miles south of the aircraft flight path. The third cluster started to spiral immediately upon leaving the carrier aircraft, at a rate of approximately five to six revolutions per second, and continued to do so until impact. The cluster impacted approximately one mile south and one mile east of Tula Peak. The fourth cluster executed a right turn instead of a left turn as planned, and impacted in the vicinity of Tula Peak.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: MX-1601

CONTRACTOR: Cornell Aeronautical Laboratory, Inc.

TYPE VEHICLE: Air-to-Air Missile

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: February 1953

ESTIMATED COMPLETION DATE: July 1954

PURPOSE OF PROJECT: To determine the feasibility of Jet Vane Launching Control Systems for bomber launched air-to-air missiles and to obtain design and performance data for further development of such Jet Vane Control Systems.

PHASE OF DEVELOPMENT: Phase I: Simple trajectory of missile from fixed launcher, dummy missile launches from moving sled, and missile launches from moving sled with programmed turns through 90° or less.

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

None.

Project ML-1601

REMARKS

ML-1601 made no tests or preparations at HADC during the month.

REPORT FOR THE MONTH OF APRIL 1953

PROJECT TITLE: MX-1664, Cluster Bombs

CONTRACTOR: Chemical Corps - Cognizant Agency-AF Armament Center, Eglin AFB

TYPE VEHICLE: Cluster Bombs: E-103, E-115, and E-89 clusters.

STARTING DATE AT HOLLOMAN AIR DEVELOPMENT CENTER: 31 March 1953

ESTIMATED COMPLETION DATE: 15 May 1953

PURPOSE OF PROJECT: To evaluate the performance of a new family of chemical bombs, including a multi-purpose cluster adapter and and several unit bombs designed to disseminate various chemical agents.

PHASE OF DEVELOPMENT: Phase I

REPORTS ISSUED DURING THE MONTH OF APRIL WHICH CONCERN THIS PROJECT:

Weekly Test Status Report for week ending 21 Apr 53, Test of Four E-115 Cluster Bombs. Weekly Test Status Report for week ending 28 Apr 53.

Agencies which are not on distribution to receive the above listed reports may apply to the Armed Services Technical Information Agency (ASTIA). In order to receive desired reports from ASTIA, the requesting agency should have a definite need for such reports and should be eligible to receive such information.

Project MX-1664, Cluster Bomb

REMARKS

Four of the E-115 type cluster bombs were dropped on 15 April 1953. A mission was scheduled for 17 April 1953, but was cancelled because of poor weather. A mission scheduled for 20 April 1953 was cancelled by Edwards Air Force Base. A mission scheduled for 28 April 1953 was rescheduled for 30 April because of a schedule conflict with Project XF-98; this mission finally was cancelled by Edwards Air Force Base.

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