

LOAN DOCUMENT

PHOTOGRAPH THIS SHEET

DTIC ACCESSION NUMBER

LEVEL

INVENTORY

HADC Weekly Test Status Rept

DOCUMENT IDENTIFICATION

29 JUN 1954

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

DISTRIBUTION STATEMENT

| | |
|---------------------------|--|
| ACCESSION FOR | |
| NTIS | GRAB <input checked="" type="checkbox"/> |
| DTIC | TRAC <input type="checkbox"/> |
| UNANNOUNCED JUSTIFICATION | |
| BY | |
| DISTRIBUTION/ | |
| AVAILABILITY CODES | |
| DISTRIBUTION | AVAILABILITY AND/OR SPECIAL |
| <i>A-1</i> | |

DISTRIBUTION STAMP

19970328 070

DTIC QUALITY INSPECTED

DATE ACCESSIONED

DATE RETURNED

DATE RECEIVED IN DTIC

REGISTERED OR CERTIFIED NUMBER

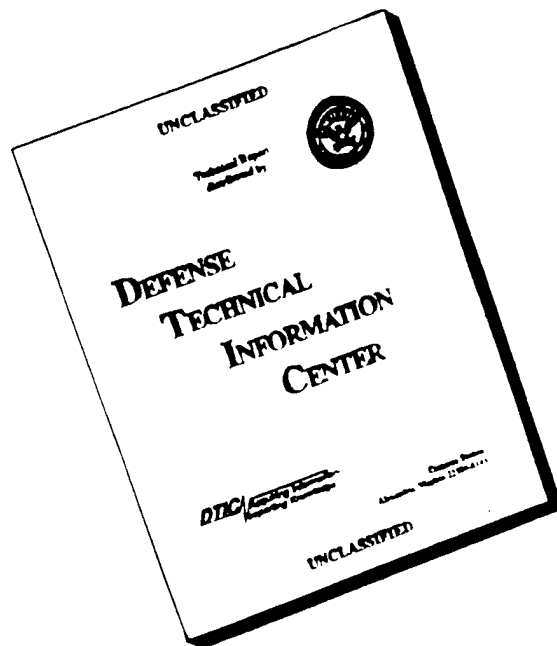
PHOTOGRAPH THIS SHEET AND RETURN TO DTIC-FDAC

H
A
N
D
L
E

W
I
T
H

C
A
R
E

DISCLAIMER NOTICE



THIS DOCUMENT IS BEST QUALITY AVAILABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

Spec Project

HOLLOWAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

WEEKLY TEST STATUS REPORT

Report on Project MX-1450B (Manned Balloon), USAF Priority 1-B, For Week Ending 29 June 1954, Project Objective: To investigate physical and biological phenomena incident to flight between 50,000 and 100,000 feet, MSL. Current Test Objectives: Stage II, Phase B: To study free fall characteristics of dummies from altitudes between 50,000 and 100,000 feet, MSL. Agencies conducting tests: Wright Air Development Center, Ohio, and Balloon Unit, 6580th Test Squadron (Special), Holloman Air Development Center.

1. Test Summary: HAFB Flight No. 236 was scheduled for three days before conditions permitted actual launch of the balloon. On 23 June, the balloon was inflated and launched but the balloon failed to rise and had to be destroyed. On 25 June, this flight was also scheduled but because of difficulties in the command cut-down system, it was delayed until the winds became stronger and the flight had to be postponed.

This flight was rescheduled for 28 June and on this date was successfully inflated and launched at 0606 hours, MST. The balloon ascended to approximately 53,000 feet, MSL. However, this cannot be verified at this time because the balloon was out of range of radar, and the radio transmitter was inoperative prior to separation. Cut-down occurred at 0955 hours, MST, in the vicinity of Dunkin, New Mexico. The three payload packages were all recovered on the day of launch.

2. Operational Details: HAFB Flight No. 236 was successfully inflated and launched, using the "Platform" launching technique, on 28 June. The balloon initially rose enough to lift the packages a few feet off the ground but settled back to earth. This is the second time that this particular package has failed to rise from the ground. Several attempts are being made to find the source of error. The inflation computation has been verified, the inflation gauge has been checked for proper calibration, the payload was double weighed, and the helium trailer was checked for leaks before the flight. None of these checks disclosed a possible error.

Because of the near calm wind conditions, the launch crew was able to save the balloon by holding it down and continue inflation through the open bottom.

At cut-down the instrumentation package carried by the dummy was to have free fallen with the dummy to 8,000 feet, MSL, but its parachute deployed immediately upon separation and it floated to the ground near the balloon flight control instrumentation package. The dummy free fell to about 14,000 feet, MSL, where the parachute deployed as planned.

HOLLOMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

WEEKLY TEST STATUS REPORT

Report on Project MX-1450B (Manned Balloon), USAF Priority 1-B, For Week
Ending 6 July 1954. Project Objective: To investigate physical and biolog-
ical phenomena incident to flight between 50,000 and 100,000 feet, MSL.

Current test objectives: Stage II, Phase B: To study free fall character-
istics of dummies from altitudes between 50,000 and 100,000 feet, MSL.

Agencies conducting tests: Balloon Unit, 6580th Test Squadron (Special),
Holloman Air Development Center and Aero Medical Laboratories, Wright Air
Development Center.

1. Test Summary: This balloon was successfully inflated and launched
on 30 June 1954, using the "Platform" launching technique. The balloon rose
to a maximum altitude of 48,900 feet, MSL, with an ascent rate of 290 feet
per minute. Cut-down occurred at 0840 hours, approximately 10 miles south-
southwest of Holloman Air Development Center. The payload was recovered on
the day of launch.

2. Operational Details: The balloon was launched at 0615 hours, MST,
on 30 June 1954. The ascent rate was somewhat less than the planned ascent
rate of 700 feet per minute. The Balloon Unit on two previous dates has
encountered the same problem with this particular payload. This failure to
rise properly, resulted in the destruction of a balloon on 23 June 1954.
After this first failure, the balloon was weighed with a dynamometer which
seemed to verify the weight submitted by the Wright Air Development Center
representatives. This instrument was later found to be in error for upon
weighing of the payload, when it was recovered on 30 June, it was found to
be 47 pounds overweight. 322

The command cut-down system was not activated on this flight in
order to allow the balloon to reach maximum altitude, however, at 0840 hours,
MST, the mechanical timers activated as planned and effected separation.

Upon separation the dummy free fell to approximately 15,000 feet,
MSL, at which time its parachute deployed. At 8,000 feet, MSL, the dummy
instrumentation kit was to separate from the dummy and float to the ground on
its own parachute. This separation did not occur, however, and may have
resulted in additional damage to the dummy upon impact.

OFFICIAL FILE COPY

WA Doc - WCDL - 2

Because of the proximity of the impact area the payload's trajectory was accurately tracked and plotted until it reached the ground. As a result recovery crews were close to the payload when it impacted and were able to recover it with a minimum of searching.

3. General Information:

a. Instrumenting Agency Personnel: Lt. Schwartz, Robert E. Chinn, and S/Sgt William Abrams of Wright Air Development Center.

b. Balloon Unit Personnel: 6 Officers, 15 Airmen, and 3 Civilians.

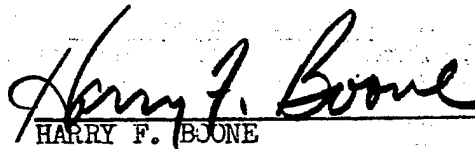
c. Aircraft used and hours flown: L-20 No. 6100, 1 hour and 15 minutes and L-20 No. 6103, 1 hour and 15 minutes.

4. Conclusions and Recommendations: It has been concluded during this series of flights that all packages must be double weighed. The weight submitted by the instrumenting agency will, in all cases, be checked by the Balloon Unit to prevent a reoccurrence of this type of error. The shape of this payload prevented a weight check on platform scales of the size assigned to the Balloon Unit. A platform scale with a larger weighing area has been on order for approximately 8 months. Until the arrival of these scales, odd shaped packages will be weighed on truck scales located at Holloman Air Force Base.

PREPARED BY THE 6580TH TEST GROUP



JACK CAHOON, JR.
1st Lt., USAF
Chief, Balloon Unit
6580th Test Squadron (Sp)



HARRY F. BOONE
Lt. Col., USAF
Commander

HOLLOMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

WEEKLY TEST STATUS REPORT

Report on Project 7218, Manned Balloon Flights, (MX-1450B), USAF Priority 1-B,
For Week Ending 7 December 1954, Program Objectives: To investigate physical
and biological phenomena incident to flight between 50,000 and 100,000 feet.

Current Test Objectives: To determine the free fall characteristics of the
human body, using an instrumented anthropomorphic dummy. Agencies conducting
tests: Balloon Unit, 6580th Squadron (Special), Holloman Air Development
Center and Aero Medical Laboratories, Wright Air Development Center.

1. Test Summary: Three flights in support of this project were sched-
uled and launched on 1, 2 and 6 December. On 1 December, the launch was
delayed for approximately 1 1/2 hours due to light, shifting winds. Upon
launching, the balloon slowly rose to approximately 2000 feet above the
surface and impacted approximately 20 minutes after launch. On 2 December,
the balloon was launched as scheduled, and rose with a normal ascent rate to
44,000 feet MSL, where the balloon slowed down and started to descend. At
30,000 feet MSL, the safety switch caused separation, and the package impacted
12 miles south of Artesia, New Mexico. The packages were recovered undamaged.
On 6 December, the balloon was successfully inflated and launched. It rose
to floating and remained at floating until cut-down. At cut-down, however,
the dummy and instrumentation kit failed to separate from the balloon instru-
mentation package, and the payload impacted near Twin Buttes. The payload
was recovered undamaged.

2. Operational Details:

a. HAFB NR 266, 1 December 1954: Launched at 0900 hours using
launch arms, and a 116-foot diameter, 2-mil balloon. The payload weighed
a total of 428 pounds. Upon examination of the balloon after impact, it was
found that the heat seal had failed at the load tapes near the apex of the
balloon. Balloons of this type have failed in this manner in past flights
when carrying 1000 pound payloads. These cases have been called to the
attention of the manufacturer through official correspondence.

The location of the windscreen between the launch pads will allow
for only a 90-degree shift in balloon layout after inflation and before
launching. Between 0600 hours and 0700 hours, the winds were shifting through
approximately 180 degrees, and delayed layout for this period.

b. HAFB NR 267, 2 December 1954: Launched at 0828 hours, using
launch arms and a 83.3 foot diameter, 2-mil balloon. The payload weighed
419 pounds complete. The failure of the balloon to rise to altitude might

Weekly Test Status Report, MA-1450B, 7 December 1954.

be attributed to temperatures of -74° C and winds up to 110 knots at 45,000 feet. The critical brittleness temperature for polyethylene is -70° C. On this flight the ascent rate was approximately 760 feet per minute. The packages were recovered on the date of launch, from a location approximately 12 miles south of Artesia, New Mexico.

c. HAFB NR 268, 6 December 1954: The balloon was launched at 0738 hours, using the covered wagon and a 83.3 foot, 2-mil balloon. The payload weighed 429 pounds complete. On this flight, the altitude coder, located in the flight control package, was inoperative, as was the barograph, so no altitude data were received. Cut-down was at 1132 hours, and the dummy and instrumentation kit failed to separate from their container. All three packages descended on the main parachute, impacting near Twin Buttes, about 10 miles south of Holloman Air Force Base. The packages were recovered immediately without damage, and it was discovered that the cannon used to cause separation of the dummy from the package did not function since the squib failed to cut the line connecting the two packages. The cannon was rigged by the instrumenting agency as it was located inside the insulated bag that contains the dummy. On all previous drops with this payload the cannon rigging was accomplished by the instrumenting agency without mishap.

3. General Information:


a. Aircraft used and hours flown: On 2 December, L-20 NR 6103 flew 5 hours, 15 minutes and C-47 NR 8150 flew 7 hours, 30 minutes. On 6 December, L-20 NR 6103 flew 3 hours, 35 minutes and B-26 NR 494 flew 2 hours, 15 minutes. On 1 December, no aircraft were used.

b. Instrumenting Agency Personnel: 1 Officer, 2 Airmen, and 1 Civilian.


c. Balloon Unit Personnel: 4 Officers, 14 Airmen and 2 Civilians.

4. Conclusions and Recommendations: None.

PREPARED BY THE 6580TH TEST GROUP



JACK CAHOON, JR.
1st Lt., USAF
Chief, Balloon Unit



JOHN G. HEMANS
Lt. Col., USAF
Commander

HOLLOMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

WEEKLY TEST STATUS REPORT

Report on Project 7218, Manned Balloon Flights, (MX-1450B), USAF Priority 1-B,
For Week Ending 14 December 1954, Project Objectives: To investigate physical
and biological phenomena incident to flight between 50,000 and 100,000 feet.

Current Test Objectives: To determine the free-fall characteristics of the
human body, using an instrumented anthropomorphic dummy. Agencies conducting
tests: Balloon Unit, 6580th Test Squadron (Special), Holloman Air Development
Center and Aero Medical Laboratories, Wright Air Development Center.

1. Test Summary: One flight in support of this project was scheduled and launched on 9 December. HAFB Flight NR 269 was successfully inflated and launched at 0735 hours, MST. It rose to an altitude of 76,000 feet, MSL, with an ascent rate of 600 feet per minute. At 1145 hours, the payload was cut down by the command system, with the dummy and its instrumentation kit impacting 3 miles west of Twin Buttes, and the balloon instrumentation package 10 miles south, southeast of Mule Peak. The packages were recovered and returned to Holloman Air Force Base on 9 December.

2. Operational Details: HAFB Balloon Flight NR 269, 9 December 1954. Launched at 0735 hours, MST, using the covered wagon and an 83.3-foot diameter, 2-mil balloon. The payload weighed approximately 430 pounds. The package pickup was smooth, with very little takeoff shock. The command cut-down system caused separation at 1145 hours, allowing the dummy and its instrumentation kit to free-fall to approximately 15,000 feet, MSL, where the dummy's parachute opened. At 12,000 feet, MSL, the instrumentation kit separated from the dummy and descended on its parachute, impacting close to the dummy. The packages were recovered immediately without damage, and the flight was considered successful by all concerned.

3. General Information:

a. Aircraft used and hours flown: On 9 December, L-20 NR 6103 flew 4 hours, 32 minutes and C-47 NR 490 flew 5 hours, 50 minutes.

b. Instrumenting Agency Personnel: 1 Officer, 2 Airmen and 1 Civilian.

c. Balloon Unit Personnel: 4 Officers, 14 Airmen and 2 Civilians.

d. HAFB NR 269 concluded this series of flights, and the instrumenting agency personnel returned to Wright Air Development Center on 10 December. The next series of flights with the anthropomorphic dummy is planned for February 1955.

Copy 17

HDX Aero-Med Lab

Weekly Test Status Report, Project 7218, 14 December 1954.

4. Conclusions and Recommendations: None.

PREPARED BY THE 6580TH TEST GROUP

Handwritten signatures and names: Jack Cahoon, Jr. and John G. Hemans. The text below the signatures is mostly illegible due to bleed-through from the reverse side of the page.

JACK CAHOON, JR.
1st Lt., USAF
Chief, Balloon Unit

JOHN G. HEMANS
Lt. Col., USAF
Commander

... and remained on 9 December. HARP flights in 809 were successfully initiated and ...
... rate of 600 feet per minute. At 11:15 hours, the payload was ...
... and the balloon instrumentation package ...
... The packages were recovered and ...

... HARP balloon flights in 809, 9 December 1954 ...
... and an 8.5-foot diameter ...
... The payload ...
... allowing the buoy and the ...
... 15,000 feet, 11:15, where ...
... 10,000 feet ...
... without ...

0120152

HOLLAMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

S. J. ...

WEEKLY TEST STATUS REPORT

Report on Project 7218, Manned Balloon Flights, (MX-1450B), USAF Priority 1-B, For
Week Ending 28 February 1955. Project Objective: To investigate physical and bio-
logical phenomena incident to flight between 50,000 and 100,000 feet. Current Test
Objective: To determine the free-fall characteristics of the human body, using an
instrumented anthropomorphic dummy. Agencies conducting tests: Balloon Branch, Test
Facilities Division, Holloman Air Development Center, and Aero Medical Laboratory,
Wright Air Development Center.

WADC-WCRDB-4, LT Mueller

1. Test Summary: One balloon flight was successfully conducted for this project during the reporting period. Two additional flights were scheduled but were cancelled because of unfavorable weather conditions.

2. Operational Details: HAFB Balloon Flight Number 279 was inflated and launched at 0827 hours, MST, on 23 February 1955. The balloon (83.3 foot diameter, 2.0 mil) was launched from the "Covered Wagon", assumed an ascent rate of 725 feet per minute, passed through a 120 knot jet stream layer and floated at 75,000 feet, MSL. The minimum temperature at the jet stream level was -67° C. The flight was terminated by command at 1030 hours, 23 February 1955. The dummy was tracked to the ground by the aircraft which spotted the free falling dummy shortly before the chute deployed at 15,000 feet MSL. The instrumentation kit attached to the dummy did not separate at 12,000 feet, MSL, as planned, however it was recovered in good condition with the dummy. The HADC control instrumentation parachute deployed at separation and was tracked optically by members of the panel crew until it was lost in ground haze. The L-20 tracked the control instrumentation parachute until generator trouble forced its return to Walker Air Force Base. The dummy was picked up by the ground recovery crew at the direction of the tracking aircraft on 24 February. An aircraft search mission was planned on 25 February, but prior to the departure of the aircraft, a phone call was received from a resident in the Causey, New Mexico area stating that he had found the control instrumentation package. The point of location was within 10 miles of the projected impact point. The dummy impacted 28 miles east of Roswell, New Mexico, and when returned to the base, it was found that the contractor instrumentation had activated prematurely, thus no data were gathered from the flight.

3. General:

a. Aircraft used and hours flown: L-20 Number 6103 flew 6 hours, 15 minutes.

b. Instrumenting Agency Personnel: LT Schwartz and Mr. Shinaberger of Wright Air Development Center, Ohio

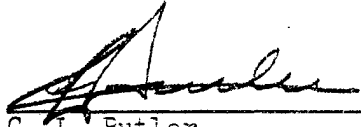
c. Balloon Branch Personnel: 4 Officers, 13 Airmen and 3 Civilians.

Copy 3 0020

Weekly Test Status Report, 7218, 28 February 1955.

4. Conclusions and Recommendations: None.

For James C. Friedrichs 2/Lt USAF
Jack Cahoon, Jr.
1st Lt, USAF
Chief, Balloon Branch


C. L. Butler
Lt. Col., USAF
Director of Laboratories

Faint, illegible text, possibly bleed-through from the reverse side of the page.

Faint, illegible text, possibly bleed-through from the reverse side of the page.

0300041

HOLLOMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

WEEKLY TEST STATUS REPORT

Report on Project 7218, Manned Balloon Flights, (MX-1450B), USAF Priority
1-B, For Week Ending 8 March 1955. Project Objective: To investigate
the physical and biological phenomena incident to flight between 50,000
and 100,000 feet. Current Test Objectives: To determine the free-fall
characteristics of the human body, using an instrumented anthropomorphic
dummy. Agencies conducting tests: Balloon Branch, Test Facilities
Division, Holloman Air Development Center and Aero Medical Laboratory,
Wright Air Development Center.

1. Test Summary: Two balloon flights were successfully conducted for
this project during the reporting period. Two additional flights were sched-
uled but cancelled because of unfavorable weather conditions.

2. Operational Details: HAFB Balloon Flight Number 280 was inflated
and launched at 0711 hours, MST, on 1 March 1955. The balloon (83.3 foot
diameter, 2.0 mil) was launched from the "Covered Wagon," assumed an ascent
rate of 650 feet per minute, passed through a 120 knot jet stream layer at
40,100 feet and floated at 75,000 feet, MSL. The minimum temperature was
-67° C at 65,000 feet, MSL. The flight was terminated by command at 0936
hours, MST. The dummy was tracked to the ground by one tracking aircraft,
impacting in the vicinity of 25 miles south of Caprock, New Mexico. The
dummy's instrumentation kit did not separate as planned, but impacted at-
tached to the dummy with no damage. The balloon instrumentation package
impacted in the vicinity of 10 miles east of Plains, Texas. Apparently, the
dummy's instrumentation worked satisfactorily, and the flight was considered
a success by all concerned.

HAFB Balloon Flight Number 281 was inflated and launched at 0825
hours, MST, on 3 March 1955. The balloon (83.3 foot diameter, 2.0 mil) was
launched from the "Covered Wagon," assumed an ascent rate of 870 feet per
minute and floated at 77,000 feet, MSL. The flight was terminated by com-
mand at 1028 hours, MST. The dummy was tracked to the ground by the track-
ing aircraft, impacting in the vicinity of 20 miles east northeast of Roswell,
New Mexico. The dummy's instrumentation kit separated properly, impacting
approximately 3 miles from the dummy. The balloon instrumentation package
was tracked by a second aircraft. Impact was in the vicinity of 5 miles west
of Plains, Texas. The dummy's instrumentation operated satisfactorily and
the flight was considered a success.

WADC. WCRDB-4 LT. NIELSON

Weekly Test Status Report, (MX-1450B), 8 March 1955

3. General:


a. Aircraft used and hours flown: On 1 March, L-20 Number 6100 flew 5 hours, 50 minutes, and L-20 Number 6103 flew 6 hours, 10 minutes. On 3 March, L-20 Number 6100 flew 6 hours, 15 minutes, and L-20 Number 6103 flew 6 hours, 10 minutes.

b. Instrumenting Agency Personnel: LT Schwartz of Wright Air Development Center, Ohio.

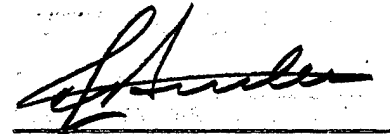
c. Balloon Branch Personnel: 4 Officers, 14 Airmen and 3 Civilians.

d. Other: HAFB Flight Number 281 concluded this series of flights, and the instrumenting agency personnel returned to Wright Air Development Center on 3 March. The next series of flights of the instrumented anthropomorphic dummy is planned for early in May 1955.

4. Conclusions and Recommendations: None.



JACK CAHOON, JR.
1st Lt. USAF
Chief, Balloon Branch



C. L. BUTLER
Lt. Col. USAF
Director of Laboratories

0300034

HOLLOMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

WEEKLY TEST STATUS REPORT

Report on Project 7218 (MX-1450B), USAF Priority 1-B, For Week Ending 21 Jun 55.

Project Objective: To investigate the physical and biological phenomena inci-
dent to flight between 50,000 and 100,000 feet. Current Test Objectives: To
determine the free-fall characteristics of the human body, using instrumented
anthropomorphic dummies. Agencies conducting test: Aero Medical Laboratory,
Wright Air Development Center, and Balloon Branch, Test Facilities Division,
Holloman Air Development Center.

1. Test Summary: One balloon flight was attempted during the reporting period.

2. Operational Details: HAFB Balloon Flight Number 300 was inflated and launched from the launch arms at 0724 MST on 15 June 1955. The balloon (75-foot diameter, 2.0-mil) assumed an ascent rate of 1300 feet per minute and burst when it reached the tropopause at 55,000 feet, MSL. The dummies were separated from the balloon instrumentation package at 30,000 feet, MSL, by the minimum altitude baroswitch. The two dummies and their instrumentation kits impacted 5 miles northwest of Dunken, New Mexico, and the balloon control package impacted 5 miles east of Mayhill, New Mexico, at 0810 MST. Since the packages impacted in an inaccessible mountain area, it required 14 hours before the dummies and their kits were returned to HAFB. The balloon control package was recovered and returned to HAFB on 16 June.

The cause of the high ascent rate, which contributed to the failure of the balloon, is not known at present, but is under investigation by the Technical Guidance Section of the Balloon Branch.

3. General:

- a. Aircraft used and hours flown: On 15 June, L-20 Number 6103 flew 2 hours, 30 minutes, and C-47 Number 8150 flew 5 hours, 45 minutes.
- b. Instrumenting agency personnel: LT Schwartz, WADC.
- c. Balloon Branch personnel: 4 Officers, 20 Airmen and 4 Civilians

OFFICIAL FILE COPY

Copy 17

Weekly Test Status Report, MX-1450B, 21 June 1955

4. Conclusions and Recommendations: None.

Jack Cahoon Jr.
JACK CAHOON, JR
1st Lt, USAF
Chief, Balloon Branch

C. L. Butler
C. L. BUTLER
Lt. Col., USAF
Director of Laboratories

HOLLOMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

WEEKLY TEST STATUS REPORT

Report on Project 7218 (MX-1450B), USAF Priority 1-B, For Week Ending
28 June 1955. Project Objective: To investigate the physical and bio-
logical phenomena incident to flight between 50,000 and 100,000 feet.

Current Test Objective: To test the free-fall characteristics of the human
body, using instrumented anthropomorphic dummies. Agencies conducting test:
Aero Medical Laboratory, Wright Air Development Center, and Balloon Branch,
Test Facilities Division, Holloman Air Development Center.

1. Test Summary: One balloon flight was conducted during the report-
ing period.

2. Operational Details: HAFB Balloon Flight Number 304 was inflated
and successfully launched from the launch arms at 0545 MST on 23 June 1955.
The balloon (95.77-foot diameter, 1.5-mil, tailored tapeless) assumed an
ascent rate of 620 feet per minute, reaching a floating altitude of 76,500
feet, MSL. Because of a conflict with a mission at White Sands Proving
Ground, it was not possible to CUT by command, and separation was caused
by clocks at 0853 MST, with impact occurring approximately 35 miles south-
west of Holloman Air Force Base, in the foothills of the San Andres Moun-
tains. Because of the rough country and improper location of ground vehicles,
caused by the inability to cut down at the optimum time, the dummies were not
recovered until 24 June, and the balloon control instrumentation was not re-
covered until 27 June. On 23 June, an H-19 helicopter, which was used in an
attempt to expedite recovery, had mechanical difficulties, and recovery was
delayed until it could be repaired on 24 June. In spite of the delayed re-
covery, the flight was considered a success, in that, from preliminary obser-
vations, the dummies' instrumentation operated satisfactorily.

3. General:

a. Aircraft used and hours flown: On 23 June, L-20 Number 6100
flew 3 hours, 15 minutes; L-20 Number 6103 flew 4 hours. On 23 and 24 June,
the H-19 flew a total of 2 hours, 30 minutes; and on 27 June, L-20 Number
6100 flew 1 hour, 45 minutes.

b. Instrumenting agency personnel: LT Schwartz, Wright Air
Development Center.

c. Balloon Branch personnel: 4 Officers, 20 Airmen and 4 Civil-
ians.

UNOFFICIAL FILE COPY

Copy 17

AERO MED LAB

Weekly Test Status Report, MX-1450B, 28 June 1955

4. Conclusions and Recommendations: None.

Jack Cahoon Jr.
JACK CAHOON, JR.
1st Lt, USAF
Chief, Balloon Branch

for S. V. Butler Lt Col USAF
S. V. BUTLER
Lt. Col., USAF
Director of Laboratories

HOLLOMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

Spec Proj

WEEKLY TEST STATUS REPORT

Report on Project 7218 (MX-1450B), USAF Priority 1-B, For Week Ending 5 Jul 55.

Project Objective: To investigate the physical and biological phenomena incident to flight between 50,000 and 100,000 feet. Current Test Objectives: To test the free-fall characteristics of the human body, using instrumented anthropomorphic dummies. Agencies conducting test: Aero Medical Laboratory, Wright Air Development Center, and Balloon Branch, Test Facilities Division.

WADC, WAC RDB-4

1. Test Summary: One balloon flight was conducted during the reporting period.

2. Operational Details: HAFB Balloon Flight Number 306 was inflated and launched at 0814 on 29 June 1955. The balloon (75-foot diameter, 2.0-mil) assumed an ascent rate of approximately 1000 feet per minute and reached a floating altitude of 78,000 feet, MSL. Separation was caused by command at 1034 MST, and the dummy and its instrumentation kit impacted close together at a point 20 miles west of Three Rivers, New Mexico. The balloon flight control package impacted 3 miles north of Oscuro, New Mexico. The dummy and its kit were returned to HAFB on 29 June, and the balloon flight control package was returned to HAFB on 30 June. From preliminary observations, the dummy's instrumentation operated satisfactorily, and the flight was considered a success by all concerned.

3. General:

a. Aircraft used and hours flown: On 29 June, L-20 Number 6103 flew 3 hours, 45 minutes and an H-19 flew 2 hours, 5 minutes.

b. Instrumenting agency personnel: LT Schwartz, WADC.

c. Balloon Branch personnel: 4 Officers, 16 Airmen and 4 Civilians.

4. Conclusions and Recommendations: None.

Jack Cahoon Jr.

JACK CAHOON, JR.
1st Lt, USAF
Chief, Balloon Branch

C. E. Butler

C. E. BUTLER
Lt. Col., USAF
Director of Laboratories

HOLLOMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

WEEKLY TEST STATUS REPORT

Report on Project 7218 (MX-1450B), USAF Priority 1-B, For Week Ending 12 Jul 55

Project Objective: To investigate the physical and biological phenomena inci-
dent to flight between 50,000 and 100,000 feet. Current Test Objective: To
test the free-fall characteristics of the human body, using instrumented an-
thropomorphic dummies. Agencies conducting tests: Aero Medical Laboratory,
Wright Air Development Center, and Balloon Branch, Test Facilities Division,
Holloman Air Development Center.

1. Test Summary: One balloon flight was attempted during the reporting period.

2. Operational Details: HAFB Balloon Flight Number 311 was inflated and launched at 0831 MST on 7 July, after a 3-hour delay because of unfavorable cloud conditions. At the time of launch, the hold-down line was severed prematurely, and the dummies rigging was damaged when they fell off the launch cart and dragged for approximately 30 feet along the launch area. When the package reached an altitude of approximately 50 feet, the instrumentation kit separated from one of the dummies and impacted before its parachute opened. (After preliminary inspection, it appeared that the kit could be repaired satisfactorily.) The balloon (128-foot diameter, 1.5-mil) assumed an ascent rate of 1210 feet per minute and reached a floating altitude of 92,700 feet MSL. Cut-down was effected by command at 1023 MST, with impact occurring at a point approximately 13 miles west of Tularosa Peak, New Mexico. The dummy, which had lost its instrumentation kit, failed to separate from the balloon instrumentation package. The instrumentation kit failed to separate from the second dummy. The instrumentation did not operate satisfactorily on the instrumentation kit flown, and the flight will be repeated at a later date.

3. General:

- a. Aircraft used and hours flown: On 7 July, L-20 Number 6100 flew 1 hour, 55 minutes.
- b. Instrumenting agency personnel: LT Schwartz, WADC.
- c. Balloon Branch personnel: 4 Officers, 16 Airmen and 4 Civilians

Weekly Test Status Report, MX-1450B, 12 July 1955

4. Conclusions and Recommendations: None.

Jack Cahoon Jr.
JACK CAHOON, JR.
1st Lt, USAF
Chief, Balloon Branch

Louis W. Tibbitt, Lt Col
for C. L. BUTLER
Lt Col, USAF
Director of Laboratories
USA

L. Nielsen 20 JUL 1955

HOLLOMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

WEEKLY TEST STATUS REPORT

Report on Project 7218 (MX-1450B), USAF Priority 1-B, For Week Ending 19 July 1955. Project Objective: To investigate the physical and biological phenomena incident to flight between 50,000 and 100,000 feet.

Current Test Objectives: To test the free-fall characteristics of the human body, using instrumented anthropomorphic dummies. Agencies Conducting Tests: Aero Medical Laboratory, Wright Air Development Center, and Balloon Branch, Test Facilities Division, Holloman Air Development Center.

1. Test Summary: One balloon flight was conducted during the reporting period.

2. Operational Details: HAFB Balloon Flight Number 314 was inflated and launched from the launch arms at 0544 MST on 15 July 1955. The balloon (92.5-foot diameter, 2.0-mil) assumed an ascent rate of approximately 795 feet per minute and reached a floating altitude of approximately 87,000 feet MSL. Separation was caused by command at 0810. The dummy and its instrumentation impacted 15 miles northeast of Hatch, New Mexico, and the balloon flight control package impacted 3 miles east of Hatch, New Mexico. The dummy's parachute partly deployed but did not inflate, and the dummy was severely damaged by the free-fall. The parachutes on the dummy's instrumentation kit and the balloon flight control package opened satisfactorily. The dummy's instrumentation operated satisfactorily, and the flight was considered a success.

3. General:

- a. Aircraft used and hours flown: On 15 July, L-20 Number 6100 flew 3 hours, 55 minutes, and L-20 Number 6103 flew 3 hours, 10 minutes.
- b. Instrumenting agency personnel: Lt Schwartz, WADC.
- c. Balloon Branch personnel: 4 Officers, 17 Airmen and 4 civilians
- d. In compliance with ARDCR 80-9, this is the concluding Weekly Test Status Report on Project 7218, and any future flights or series of flights will be covered by Test Reports in implementation of ARDCR 80-9.

WADC, WCRDB-4, LT. NIELSEN

Weekly Test Status Report, MK-1450B, 19 July 1955

4. Conclusions and Recommendations: None.

James C. Friedrichs 1/Lt

JACK CAHOON, JR.
1st Lt, USAF
Chief, Balloon Branch

C. L. Butler

C. L. BUTLER
Lt Col, USAF
Director of Laboratories

NOTICE

The HADC Weekly Test Status Report which you have been receiving is being discontinued. It is being replaced by a Test Report which will be written on each individual test. The purpose is to keep you better informed on the test program by presenting timely and meaningful information on each specific test accomplished.

The Test Report will be written no more than ten working days after a test date. When no tests are scheduled on a project for a period of thirty days, a Test Report will be written every two weeks in order to keep you informed of the preparations that are being made.

The format of the Test Report is as follows:

- I. Program Objective - Reference the specific test to a task or phase of the program.
- II. Test Objective - Indicate the parameters to be measured.
- III. Test Conditions - Give the physical conditions to be met. (Mach number, altitude, etc.)
- IV. Test Operations:
 - A. Preparation - What has been going on prior to test?
 - B. Operations - How was the test conducted?
 - C. Results vs. Plan - What happened vs. what was supposed to happen?
 - D. Discussion - Comments on above plus conclusions and recommendations on the specific test.

HOLLOMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

TEST REPORT

on

THE MANNED BALLOON FLIGHT

Project Title: The Manned Balloon Flight

Number: 1

Date of Test: 17 November 1955

6 January 1956

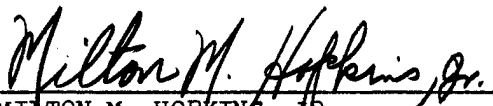
Contractor: Aero-Medical Laboratory, Wright Air Development Center


Project Number: 7218

Test Directive Number: 5586-H1

Prepared by:

Approved by:


MILTON M. HOPKINS, JR.
Captain, USAF
Chief, Balloon Branch


GERALD J. KLECKER
Captain, USAF
Chief, Test Facilities Division
Att: HOLA

WANG, W. C. R. 4-4 LT. NIELSON

ORIGINAL COPY

Copy 3

NOV 20 1955

ABSTRACT

The objective of this test was to determine the feasibility of using a stabilization parachute on dummies to prevent horizontal spinning during free fall from an altitude in excess of 75,000 feet.

Two anthropomorphic dummies equipped with stabilization parachutes, which were to deploy immediately upon separation from the balloon and regulation parachutes which were to deploy at 15,000 feet, were attached to a 128-foot diameter tailored tapeless balloon. Instrumentation kits were also attached to each dummy to record the spinning and gyrations down to 15,000 feet MSL where the kits were detached from the dummies let down on parachutes.

Only one dummy and one instrumentation kit were recovered. The dummy free fell to the ground and was damaged. The instrumentation kit separated from the dummy at 15,000 feet and reached the ground intact. Valuable data were obtained from cameras and other instruments attached to the dummy and instrumentation kit. The second dummy and instrumentation kit have not been recovered to date.

Test Report #1 on the Manned Balloon Flight, 6 Jan 56

B. Operations

HAFB Balloon Flight: Number 353

Date: 17 November 1955

Balloon Type: 128-foot diameter, 2.0 mil, tailored tapeless.

Balloon Weight: 561 pounds (estimated since no weight figures for balloon were shipped by manufacturer).

Payload Weight: HAFB instrumentation - 99 pounds. WADC instrumentation and dummies - 631 pounds.

Gross Load: 1291 pounds

Launch Time: 0830 MST

Type of Launch: Roller launch arms and crane capture technique

Average Ascent Rate: 933 feet per minute

Maximum Altitude: 88,800 feet MSL

Time at Maximum Altitude: 20 minutes

Cut-Down: Packages were separated from balloon at 1020 MST by radio command activated cutters.

Impact Area: The HAFB instrumentation package impacted 55 miles northeast of Roswell, New Mexico. The two dummies and the two dummy instrumentation kits impacted approximately 10 miles northwest of Roswell.

Recovery: The HAFB control instrumentation package was recovered on the day of the flight. One dummy was recovered eight miles northeast of Roswell, New Mexico, on 14 December 1955 and one dummy instrumentation kit was recovered on 21 December 1955 about 12 miles northeast of Roswell. The second dummy and instrumentation kit have not been recovered to date.

C. Results vs. Plan

1. Preliminary investigation of the recovered equipment indicates that the baroswitch failed to open the main dummy parachute and the dummy free fell to the ground. The head and legs of the dummy were damaged. The baroswitch attached to the dummy instrumentation kit operated as planned and deployed the kits parachute at 15,000 feet MSL. The instrumentation package was recovered in good condition.

2. The cameras attached to the dummy and instrumentation kit were recovered intact.

3. It is not known whether or not the second dummy and instrumentation kit free fell.

Jig *lyn*

HOLLOMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

TEST REPORT

ON

THE MANNED BALLOON PROGRAM

Project Title: The Manned Balloon Program

Number: 2

Date of Test: 25 January, 8 and 21 February 1956

26 March 1956

Contractor: Aero Medical Laboratory
Wright Air Development Center

Project Number: 7218

Test Directive Number: 5586-H1

W. H. G. WCRDB-4 LT, WILSON

Prepared by:

Approved by:

Milton M. Hopkins
MILTON M. HOPKINS, JR.
Captain, USAF
Chief, Balloon Branch

Gerald J. Klacker
GERALD J. KLACKER
Captain, USAF
Chief, Test Facilities Division

ABSTRACT

The objective of the series of tests covered in this report was to measure the horizontal spin and the accelerations associated with a free falling body from altitudes in excess of 75,000 feet, MSL, using instrumented anthropomorphic dummies.

Several balloon flights were attempted during January and February. The attempted launches on 25 January and 21 February were unsuccessful. Successful launches were made on 8 and 21 February and the balloons reached floating altitude. The dummies were not recovered immediately. Upon examination of the kits which were recovered, one on 19 February and the other on 2 March, it appeared that good data were obtained. The second attempted launch on 21 February was successful, but the balloon failed at 47,000 feet and the dummy and its kit were recovered on 17 March.

The series of flights was only partially successful since only two dummy drops were made.

I. PROGRAM OBJECTIVE:

Stage II to study the biophysical problems of parachute descent following high altitude bail-out.

II. TEST OBJECTIVE:

To measure the rates of horizontal spin and accelerations in unstabilized free fall from altitudes in excess of 75,000 feet, using instrumented anthropomorphic dummies.

III. TEST CONDITIONS:

A. Number of flights desired - 6.

B. Desired altitudes - in excess of 75,000 feet, MSL.

C. Desired ascent rate - 700-800 feet per minute.

D. Balloon types - 128-foot diameter, 2.0-mil, tailored tapeless and 95.77-foot diameter, 2.0-mil, tailored tapeless.

E. Tracking and recovery - standard HAFB procedures.

F. Test equipment (package) - either one or two instrumented anthropomorphic dummies were to be raised to an altitude between 75,000 and 100,000 feet on each balloon flight. The dummies were to be separated from the balloon at maximum altitude and free fall to 15,000 feet where the dummy's parachute would deploy. The instrument kits were to be separated from the dummies at 12,000 feet and descend on their own parachutes. An additional parachute was used to lower the HAFB control instrumentation package to the ground.

IV. TEST OPERATIONS:

A. Preparation

Since instrumented dummies of this type have been flown successfully in the past, only the normal preparation and scheduling for a balloon flight were involved.

B. Operations

1. HAFB Balloon Flight Number: 366 (Two dummies)

Date: 25 January 1956

Balloon Type: 128-foot diameter, 2.0-mil, tailored tapeless.

Balloon Weight: 550 pounds

Test Report #2 on The Manned Balloon Flight, 26 March 1956

Payload Weight: 690 pounds

Gross Load: 1240 pounds

Launch Time: 0744

Type of Launch: Roller launch arms and crane capture technique.

Maximum Altitude: N/A

Time at Maximum Altitude: N/A

Cut-Down: N/A. The cut-down mechanism was activated by an unknown cause before the balloon was launched. The balloon was lost and the package was damaged in falling from the crane.

2. HAFB Balloon Flight Number: 368 (Two dummies)

Date: 8 February 1956

Balloon Type: 128-foot diameter, 1.5-mil, tailored tapeless.

Balloon Weight: 510 pounds

Payload Weight: 690 pounds

Gross Load: 1200 pounds

Launch Time: 0936 MST

Type of Launch: Roller launch arms and crane capture technique.

Average Ascent Rate: 890 feet per minute.

Maximum Altitude: 88,500 feet, MSL.

Cut-Down: Time activated cutters at 1424 MST.

Impact Area: The dummies and instrumentation kits impacted approximately 20 miles south of Roswell, New Mexico, and the balloon instrumentation package impacted approximately 30 miles north-east of the dummies.

Recovery: Because of heavy cloud cover in the impact area, separation was not observed. One dummy was found by a rancher on 9 February 1956 and the second on 19 February 1956 by the same rancher.

Test Report #2 on The Manned Balloon Flight, 26 March 1956

Both instrumentation kits were recovered, one on 19 February and one on 2 March. To date, the balloon instrumentation package has not been found.

3. HAFB Balloon Flight Number: 371 (One dummy, first attempt)

Date: 21 February 1956

Balloon Type: 95.77-foot diameter, 2.0-mil, tailored tapeless.

Balloon Weight: 343 pounds

Payload Weight: HAFB instrumentation - 112.5 pounds, dummy and kit, 295 pounds.

Gross Load: 750.5 pounds

Launch Time: 0746 MST

Type of Launch: Roller launch arms and crane capture technique.

Cut-Down: Radio interference activated the command receiver prematurely, causing the package to separate from the balloon while still suspended from the crane. The balloon was lost.

4. HAFB Balloon Flight Number: 371 (Second attempt)

Date: 21 February 1956

Balloon Type: 95.77-foot diameter, 2.0-mil, tailored tapeless.

Balloon Weight: 349 pounds

Payload Weight: HAFB instrumentation - 112.5 pounds, dummy and kit, 295 pounds.

Gross Load: 756.5 pounds

Launch Time: 1121 MST

Type of Launch: Roller launch arms and capture technique.

Average Ascent Rate: 850 feet per minute

Maximum Altitude: 47,000 feet, MSL

Cut-Down: The balloon burst at 47,000 feet and the packages were separated from the balloon at 30,000 feet, MSL, by the aneroid pressure activated safety cutters. The dummy instrumentation packages descended together on the HAFB instrumentation parachute.

Test Report #2 on The Manned Balloon Flight, 26 March 1956

Impact Area: Approximately 50 miles east southeast of HAFB. The tracking aircraft had to return to HAFB because of generator trouble and was not airborne when the balloon failed. Impact was not observed.

Recovery: The package was recovered 20 miles east of Dunken, New Mexico, on 17 March 1956. It was returned to HAFB on 19 March 1956.

C. Results vs. Plan

1. Flight Number 368 was conducted as planned. Valuable data were obtained from the flight.
2. The data obtained from Flight Number 371 were considered unsatisfactory.

D. Discussion

The premature activation of the cut-down mechanism on Flight Number 366 was attributed to a faulty safety aneroid. A close examination of the undamaged instrumentation control package of Flight Number 371 (first attempt) indicates the premature activation of the cut-down mechanism was due to unauthorized transmission on the command radio frequency. An unauthorized radio transmission is also a possible cause of the premature cut-down of Flight Number 366 in recent weeks.

Flights for other projects have been terminated by the premature activation of cut-down mechanism caused by unauthorized transmission on the radio command frequency.

The radio frequency monitor station at HAFB is conducting an investigation to determine the source and frequency of unauthorized radio transmission.

The Balloon Instrumentation Unit is developing a command radio receiver which will not be sensitive to unauthorized transmissions on the command radio frequency in order to eliminate premature cut-downs.

Escape

HOLLOMAN AIR DEVELOPMENT CENTER
Holloman Air Force Base
New Mexico

TEST REPORT

ON

"THE THRESHOLD OF SPACE"

Dates Covered: 5 October thru 9 December 1955

Number: 2

Contractor: 20th Century Fox Corporation

Submission Date: 23 January 1956

WFOG, WSC RDB-4

Prepared by:

Approved by:

Milton M. Hopkins, Jr.
MILTON M. HOPKINS, JR.
Captain, USAF
Chief, Balloon Branch

Gerald J. Kiecker
GERALD J. KIECKER
Captain, USAF
Chief, Test Facilities Division

ABSTRACT

The objective of this series of flights was to support the filming of the motion picture "The Threshold of Space" by 20th Century Fox.

The first sequence of filming recorded the balloon layout, inflation, and the launch of the "Skylight" gondola. Further filming recorded the separation and impact of the gondola and also an attempted filming of a simulated bail-out from the gondola.

A second sequence of filming was conducted by balloon-borne remote controlled cameras. The first flight recorded the surface directly under the balloon at altitudes of 50,000 to 100,000 feet at 10,000 foot increments. A second flight repeated the previous balloon-borne camera sequence with the exception that the camera was mounted with the lens 8.5° downward from the horizontal and therefore photographed the horizon.

Test Report #2 on "The Threshold of Space", 23 Jan 56

I. PROGRAM OBJECTIVE:

To conduct balloon flights in support of the filming of the motion picture, "The Threshold of Space."

II. TEST OBJECTIVE:

To conduct special balloon flights so that 20th Century Fox could film the necessary scenes needed for the movie "The Threshold of Space." This involved the photographing of the following:

- A. Layout and inflation prior to a flight of the "Skylight" gondola.
- B. Separation and impact of the "Skylight" gondola.
- C. A simulated bail-out from the "Skylight" gondola.
- D. The ground from altitudes of 50,000, 60,000, 70,000, 80,000, 90,000 and 100,000 feet.

III. TEST CONDITIONS:

These balloon flights were to be conducted when wind and cloud conditions were favorable. Tests must also be conducted during the part of the day favorable to color photography.

IV. TEST OPERATIONS:

A. Preparation.

The over-all planning for Balloon Branch support of the filming of "The Threshold of Space" was constructed at meetings between officials from 20th Century Fox and Holloman authorities approximately one month and three months in advance of the filming.

B. Operations.

1. Filming of layout and inflation of a balloon for a flight of the "Skylight" gondola was conducted on 5 October 1955. A 128-foot diameter balloon was used but it was destroyed by high winds which occurred at approximately 1300 MST.

2. HAFB Balloon Flight Number 344

Date: 7 October 1955

Launch Time: 0903 MST

Balloon Size: 128-foot diameter, 2.0-mil, tailored tapeless

Test Report #2 on "The Threshold of Space", 23 Jan 56

Balloon Weight: 524 pounds.

Payload: "Skylight" gondola.

Payload Weight: 1125 pounds.

Gross Weight: 1650 pounds.

Launch Method: Roller launch arms and capture technique.

Average Ascent Rate: 500 feet per minute.

Maximum Altitude: 11,800 feet MSL.

Cut-Down: The gondola was separated from the balloon by radar command activated cutter at 0912 MST.

Impact Area: The gondola impacted approximately three miles north of the HAFB launch site.

Recovery: The gondola was recovered on date of launch.

General: Although the flight was delayed by the camera aircraft, the motion picture coverage was satisfactory and the mission was considered successful.

3. HAFB Balloon Flight Number 346

Date: 19 October 1955.

Launch Time: 0730 MST.

Balloon Size: 138-foot diameter, 2.0-mil, tailored tapeless.

Balloon Weight: 642 pounds.

Payload: Mitchell Camera and balloon instrumentation.

Payload Weight: 459 pounds.

Gross Weight: 1101 pounds.

Launch Method: Roller launch arms and capture.

Average Ascent Rate: 850 feet per minute.

Maximum Altitude: 98,000 feet MSL.

Cut-Down: The package was separated from the balloon by radio command activated cutters at 1118 MST.

Impact Location: 20 miles southeast of Roswell, New Mexico.

Test Report #2 on "The Threshold of Space", 23 Jan 56

Recovery: Package was recovered and returned to HAFB on date of launch.

General: The camera was mounted at the bottom of a box and one minute movie shots were made each 10,000 feet between 50,000 and 100,000 feet. The camera was activated by radio command and operated satisfactorily for the required periods at the required altitudes. The flight was considered a success. Upon examination of the film, however, it was discovered that the horizon was not in the pictures. It was decided to repeat the flight with the camera mounted in such a manner as to view the horizon instead of looking vertically downward.

4. HAFB Balloon Flight Number 349

Date: 3 November 1955.

Launch Time: 1040 MST.

Balloon Size: 138-foot diameter, 2.0-mil, tailored tapeless.

Balloon Weight: 651 pounds.

Payload: Mitchell Camera and balloon instrumentation.

Payload Weight: 450 pounds.

Gross Weight: 1101 pounds.

Launch Method: Roller arms and capture.

Average Ascent Rate: 860 feet per minute.

Maximum Altitude: 45,000 feet MSL.

Cut-Down: Balloon burst at 1128 MST, and the package was separated from the balloon by the minimum altitude safety switch at 30,000 feet MSL.

Impact Location: 35 miles east of HAFB.

Recovery: Because of the extremely rough terrain in the impact location, it required 1-1/2 days to recover the package and return it to HAFB.

General: The flight was a failure, since the balloon did not reach sufficient altitude to activate the horizontal (-8.5°) pointing camera.

Test Report #2 on "The Threshold of Space", 23 Jan 56

5. HAFB Balloon Flight Number 351

Date: 16 November 1955.

Launch Time: 1359 MST.

Balloon Size: 128-foot diameter, 2.0-mil, tailored tapeless.

Balloon Weight: 540 pounds.

Payload: "Skylight" gondola.

Payload Weight: 1095 pounds.

Gross Load: 1635 pounds.

Launch Method: Roller launch arms and capture.

Average Ascent Rate: 560 feet per minute.

Maximum Altitude: 8,300 feet MSL.

Cut-Down: The gondola was separated from the balloon by radio command activated cutters at 1405 MST.

Impact Location: Near the balloon launch site at HAFB.

Recovery: The gondola was recovered on date of launch.

General: The flight was considered successful in all aspects.

6. On 18 November 1955, a 128-foot diameter, tailored tapeless balloon was inflated in preparation to launch the "Skylight" gondola in order to photograph the ejection of a dummy, simulating bail-out, and separation of the gondola. At approximately 0835 MST, the balloon was destroyed by high surface winds, and the attempted flight was a failure.

7. HAFB Balloon Flight Number 355

Date: 21 November 1955.

Launch Time: 0826 MST.

Balloon Size: 128-foot diameter, 2.0-mil, tailored tapeless.

Balloon Weight: 545 pounds.

Payload: "Skylight" gondola and dummy.

Payload Weight: 1280 pounds.

Test Report #2 on "The Threshold of Space", 23 Jan 56

Gross Load: 1825 pounds.

Launch Method: Roller launch arms and capture.

Average Ascent Rate: 290 feet per minute.

Maximum Altitude: 7350 feet MSL.

Cut-Down: The gondola was separated from the balloon by radio command activated cutters at 0837 MST.

Impact Location: Near balloon launch site at HAFB.

Recovery: The gondola and dummy were recovered and returned to HAFB on date of launch.

General: The dummy did not eject, although the activating devices operated. The dummy was caught in the door of the gondola when the ejection signal was given. Separation of the gondola from the balloon was photographed and the flight was considered a partial success.

8. On 6 December 1955, a 128-foot diameter, 2.0-mil balloon was inflated preparatory to launching the Mitchell Camera. Because of an improperly prepared mechanical cutter box, the load line was severed and the balloon destroyed.

9. HAFB Balloon Flight Number 357

Date: 9 December 1955.

Launch Time: 1005 MST.

Balloon Size: 128-foot diameter, 2.0-mil, tailored tapeless.

Balloon Weight: 547 pounds.

Payload: Mitchell Camera and balloon instrumentation.

Payload Weight: 429 pounds.

Gross Load: 977 pounds.

Launch Method: Roller launch arms and capture.

Average Ascent Rate: 1000 feet per minute.

Maximum Altitude: 95,000 feet MSL.

Cut-Down: The package was separated from the balloon at 1240 MST by radio command activated cutters.

Test Report #2 on "The Threshold of Space", 23 Jan 56

Impact Location: 45 miles east southeast of Roswell, New Mexico

Recovery: The package was recovered and returned to HAFB on 10 December.

General: The Mitchell Camera was activated by radio command and operated satisfactorily for the required periods at the required periods at the required altitudes. The package was dragged by the parachute for approximately 1-1/2 miles after impact, causing some damage to the camera. The film was apparently undamaged and the flight was considered a success.

C. Results vs. Plan.

The layout and inflation aspects were completely covered and the photography considered successful.

Separation of the "Skylight" gondola from the balloon was photographed three times and adequate coverage was secured.

The simulated bail-out was not photographed. The dummy failed to eject from the gondola on 21 November, and it was impossible to schedule another flight, before the 20th Century Fox crew returned to Hollywood, California, on 22 Nov 55.

The photography of the ground from 50,000, 60,000, 70,000, 80,000, 90,000, and 100,000 feet was successful with both vertical and 8.5° below horizontal orientations of the Mitchell Camera.