



1
00:00:07,460 --> 00:00:04,910
the third-stage used in Alleghany

2
00:00:10,850 --> 00:00:07,470
ballistics laboratory solid propellant

3
00:00:13,129 --> 00:00:10,860
motor which was designed for use as an

4
00:00:18,349 --> 00:00:13,139
advanced high-performance third stage

5
00:00:20,510 --> 00:00:18,359
for Vanguard an explosive both separated

6
00:00:25,220 --> 00:00:20,520
the third stage from the payload and

7
00:00:27,920 --> 00:00:25,230
fourth stage the able one vernier and

8
00:00:28,550 --> 00:00:27,930
spin motors were also developed for the

9
00:00:33,319 --> 00:00:28,560
Vanguard

10
00:00:42,660 --> 00:00:33,329
program the fourth stage rocket was a

11
00:00:48,250 --> 00:00:46,180
state trajectory for Abel one required a

12
00:00:51,670 --> 00:00:48,260
high degree of precision in launching

13
00:00:55,090 --> 00:00:51,680

time a period of about 20 minutes of

14

00:00:59,200 --> 00:00:55,100

each of four successive days constituted

15

00:01:02,080 --> 00:00:59,210

the permissible launch time because of

16

00:01:04,450 --> 00:01:02,090

the required timing accuracy several

17

00:01:08,200 --> 00:01:04,460

scheduled holes were incorporated into

18

00:01:10,350 --> 00:01:08,210

the countdown the countdown included

19

00:01:13,000 --> 00:01:10,360

second stage propellant loading

20

00:01:16,900 --> 00:01:13,010

electrical systems checks and the

21

00:01:21,190 --> 00:01:16,910

ordnance task first stage engine checks

22

00:01:31,330 --> 00:01:21,200

and fuelling power removal regulator

23

00:01:31,340 --> 00:01:42,399

then terminal cows and finally launched

24

00:01:48,469 --> 00:01:45,859

at seventy three and six ten seconds as

25

00:01:54,320 --> 00:01:48,479

turbo pump failed and the liquid oxygen

26

00:01:57,139 --> 00:01:54,330

comes down the experiment was an

27

00:02:01,910 --> 00:01:57,149

apparent failure but science learns from

28

00:02:05,150 --> 00:02:01,920

failure as well as success on October

29

00:02:08,499 --> 00:02:05,160

10th at 3:42 a.m. Eastern Standard Time

30

00:02:12,890 --> 00:02:08,509

the second experiment in this series

31

00:02:13,880 --> 00:02:12,900

report for able one space probe under

32

00:02:16,420 --> 00:02:13,890

the management of the National

33

00:02:20,750 --> 00:02:16,430

Aeronautics and Space Administration

34

00:02:24,920 --> 00:02:20,760

achieved a near-perfect take off just 13

35

00:02:27,290 --> 00:02:24,930

seconds later than scheduled time good

36

00:02:31,550 --> 00:02:27,300

performance was obtained from both the

37

00:02:35,120 --> 00:02:31,560

first and second stages however the

38

00:02:38,240 --> 00:02:35,130

second stage velocity was 190 feet per

39

00:02:41,120 --> 00:02:38,250

second rest and expected and it shut

40

00:02:45,650 --> 00:02:41,130

down the second stage was lofted three

41

00:02:48,020 --> 00:02:45,660

degrees - hi the third stage velocity

42

00:02:52,880 --> 00:02:48,030

was 500 feet per second less than

43

00:02:55,240 --> 00:02:52,890

desired the Millstone radar station at

44

00:03:02,570 --> 00:02:55,250

Massachusetts Institute of Technology

45

00:03:07,800 --> 00:03:05,640

the Manchester station as the Jodrell

46

00:03:10,440 --> 00:03:07,810

Bank radio telescope installation

47

00:03:13,170 --> 00:03:10,450

Manchester University tracks the

48

00:03:17,520 --> 00:03:13,180

payloads pioneer one for several hours

49

00:03:20,220 --> 00:03:17,530

on each day of the two days flight the

50

00:03:22,640 --> 00:03:20,230

first day the Hawaii station tracked

51
00:03:27,119 --> 00:03:22,650
from the time Pioneer one was acquired

52
00:03:27,960 --> 00:03:27,129
until it sank below the horizon on the

53
00:03:30,240 --> 00:03:27,970
second day

54
00:03:32,940 --> 00:03:30,250
Hawaii tracked the payload as it

55
00:03:35,039 --> 00:03:32,950
approached the earth and lost it as its

56
00:03:40,289 --> 00:03:35,049
funds toward the sea in the southeastern

57
00:03:42,569 --> 00:03:40,299
Pacific because of the deficiencies in

58
00:03:46,229 --> 00:03:42,579
the speed of the second and third stages

59
00:03:49,100 --> 00:03:46,239
all vernier Rockets were fired in an

60
00:03:52,319 --> 00:03:49,110
attempt to make up this velocity deficit

61
00:03:58,800 --> 00:03:52,329
the added impulse was not sufficient and

62
00:04:00,180 --> 00:03:58,810
escape velocity was not achieved the

63
00:04:02,940 --> 00:04:00,190

National Aeronautics and Space

64

00:04:06,140 --> 00:04:02,950

Administration estimated that the fourth

65

00:04:12,599 --> 00:04:06,150

stage and payload reached an altitude of

66

00:04:15,660 --> 00:04:12,609

70,000 717 statute miles an attempt was

67

00:04:18,029 --> 00:04:15,670

scheduled on December 6th to place a

68

00:04:21,750 --> 00:04:18,039

United States space probe beyond the

69

00:04:24,900 --> 00:04:21,760

moon Jupiter was selected as boost

70

00:04:29,460 --> 00:04:24,910

vehicle for this Juno to rocket which

71

00:04:31,500 --> 00:04:29,470

was to launch pioneer 3 as the army

72

00:04:34,890 --> 00:04:31,510

ballistic missile agency Huntsville

73

00:04:38,649 --> 00:04:34,900

Alabama the first stage was modified for

74

00:04:52,309 --> 00:04:50,779

and test run on the west coast in

75

00:04:57,110 --> 00:04:52,319

Pasadena California

76
00:04:59,600 --> 00:04:57,120
@n ASA's Jet Propulsion Laboratory the

77
00:05:03,140 --> 00:04:59,610
second third and fourth stages were

78
00:05:07,249 --> 00:05:03,150
assembled the payload cone undergoing

79
00:05:14,610 --> 00:05:07,259
vibration testing was 23 inches long and

80
00:05:20,140 --> 00:05:17,260
several days before scheduled launch

81
00:05:26,140 --> 00:05:20,150
time the first stage was brought to the

82
00:05:29,020 --> 00:05:26,150
launching path the morning before launch

83
00:05:38,640 --> 00:05:29,030
the payload was hoisted positioned in

84
00:05:47,810 --> 00:05:41,950
few hours before launch the fuelling

85
00:05:52,880 --> 00:05:51,740
on December 6th June o2 stood ready on

86
00:06:16,450 --> 00:05:52,890
the launching pad

87
00:06:22,040 --> 00:06:20,240
after the burnout of the first stage the

88
00:06:28,270 --> 00:06:22,050

booster motors separated from the

89

00:06:34,960 --> 00:06:31,910

almost simultaneously the nose section

90

00:06:38,090 --> 00:06:34,970

was detached by an explosive charge and

91

00:06:42,500 --> 00:06:38,100

moved out of the way by a small rocket

92

00:06:44,930 --> 00:06:42,510

motor meanwhile Jets of the guidance

93

00:06:47,480 --> 00:06:44,940

system were activated to place the

94

00:06:51,220 --> 00:06:47,490

high-speed stages and the payload in

95

00:06:55,760 --> 00:06:51,230

proper firing attitude of direction a

96

00:06:58,280 --> 00:06:55,770

brief period of coasting followed now

97

00:07:01,430 --> 00:06:58,290

with the rocket in effect aimed at its

98

00:07:05,230 --> 00:07:01,440

target the spin stabilized high-speed

99

00:07:08,240 --> 00:07:05,240

stages commenced their firing sequence

100

00:07:10,460 --> 00:07:08,250

with the firing of the last stage rocket

101
00:07:16,360 --> 00:07:10,470
the probe has now achieved escape

102
00:07:23,780 --> 00:07:19,940
after a long period of coasting about

103
00:07:27,680 --> 00:07:23,790
ten hours the burned-out fourth stage is

104
00:07:29,780 --> 00:07:27,690
separated from the probe payload and a

105
00:07:33,530 --> 00:07:29,790
d-- spinning device consisting of

106
00:07:35,600 --> 00:07:33,540
weights attached to wires is activated

107
00:07:40,010 --> 00:07:35,610
to stop the spinning motion of the probe

108
00:07:43,940 --> 00:07:40,020
the probe payload will now coast on into

109
00:07:53,720 --> 00:07:43,950
space pioneer three rose to an altitude

110
00:07:56,630 --> 00:07:53,730
of sixty 3580 statute miles during 1958

111
00:07:59,480 --> 00:07:56,640
a large segment of the nation scientists

112
00:08:02,140 --> 00:07:59,490
engineers and production experts were

113
00:08:05,030 --> 00:08:02,150

drawn together and given direction

114

00:08:06,560 --> 00:08:05,040

against this background the country

115

00:08:09,290 --> 00:08:06,570

carried out a series of space

116

00:08:11,450 --> 00:08:09,300

experiments that yielded valuable data

117

00:08:14,000 --> 00:08:11,460

to the world store of scientific

118

00:08:16,520 --> 00:08:14,010

knowledge there were a number of

119

00:08:19,760 --> 00:08:16,530

failures during the year and the United

120

00:08:22,130 --> 00:08:19,770

States promptly announced them the first

121

00:08:26,420 --> 00:08:22,140

and most spectacular of these was

122

00:08:29,330 --> 00:08:26,430

Vanguard at the end of 1957 when other

123

00:08:31,220 --> 00:08:29,340

Vanguard failures all achieved takeoff

124

00:08:36,020 --> 00:08:31,230

but trouble occurred either in the

125

00:08:40,159 --> 00:08:36,030

second or third stages explorers two and

126

00:08:44,920 --> 00:08:40,169

five beacon and pioneer two were also

127

00:08:47,420 --> 00:08:44,930

considered unsuccessful experiments a

128

00:08:51,260 --> 00:08:47,430

beginning has been made of which we may

129

00:08:54,190 --> 00:08:51,270

well be proud we are however only just

130

00:08:56,840 --> 00:08:54,200

over the threshold much research

131

00:08:59,600 --> 00:08:56,850

re-evaluation and work lies ahead for us

132

00:09:01,760 --> 00:08:59,610

the United States is aware of the