



HD
High Definition

Voice of:
Steve Agid
Flight Commentator



1
00:00:03,919 --> 00:00:07,829
t minus 15 seconds

2
00:00:11,669 --> 00:00:10,790
green board t minus 10

3
00:00:12,629 --> 00:00:11,679
9

4
00:00:13,669 --> 00:00:12,639
8

5
00:00:14,709 --> 00:00:13,679
7

6
00:00:15,669 --> 00:00:14,719
6

7
00:00:16,630 --> 00:00:15,679
5

8
00:00:17,590 --> 00:00:16,640
four

9
00:00:19,990 --> 00:00:17,600
three

10
00:00:23,750 --> 00:00:20,000
two main engine start one

11
00:00:26,870 --> 00:00:23,760
zero and liftoff of the delta ii with

12
00:00:29,189 --> 00:00:26,880
the npp satellite blazing the way a new

13
00:00:35,830 --> 00:00:29,199

technology for climate research and

14
00:00:39,590 --> 00:00:37,670
chamber pressure in the main engine good

15
00:00:41,270 --> 00:00:39,600
crane for pressure in the three

16
00:00:43,510 --> 00:00:41,280
corrections two verniers and good

17
00:00:45,510 --> 00:00:43,520
chamber pressure in all six ground lit

18
00:00:47,190 --> 00:00:45,520
motors passing 24 seconds into the

19
00:00:48,709 --> 00:00:47,200
flight

20
00:00:51,350 --> 00:00:48,719
pressure beginning to trail off a little

21
00:00:54,069 --> 00:00:51,360
on the ground solids as expected coming

22
00:00:59,750 --> 00:00:54,079
up on the 33 second mark mark 33 seconds

23
00:01:03,670 --> 00:01:01,830
pressing 40 seconds in

24
00:01:05,429 --> 00:01:03,680
good stable chamber pressure in the main

25
00:01:06,630 --> 00:01:05,439
engine the verniers and the ground

26
00:01:09,429 --> 00:01:06,640
solids

27
00:01:11,030 --> 00:01:09,439
coming up 48 seconds mark 48 seconds max

28
00:01:14,230 --> 00:01:11,040
q maximum dynamic pressure in the

29
00:01:18,310 --> 00:01:16,149
10 seconds now remaining until burnout

30
00:01:24,390 --> 00:01:18,320
of the six ground lift motors

31
00:01:27,830 --> 00:01:25,670
burnout

32
00:01:29,990 --> 00:01:27,840
these six groundlet motors and we have

33
00:01:31,910 --> 00:01:30,000
ignition on the three air lit motors

34
00:01:33,990 --> 00:01:31,920
good ignition on the three motors good

35
00:01:35,510 --> 00:01:34,000
chamber pressure good symmetrical burn

36
00:01:37,670 --> 00:01:35,520
standing by for separation of the ground

37
00:01:38,710 --> 00:01:37,680
lit solids about 10 seconds from now to

38
00:01:41,190 --> 00:01:38,720

assure a

39

00:01:43,030 --> 00:01:41,200

good water impact point passing one

40

00:01:49,670 --> 00:01:43,040

minute 20 seconds standing by for ground

41

00:01:49,680 --> 00:01:53,990

we see jettison

42

00:01:59,429 --> 00:01:55,590

six motors of jettison passing one

43

00:02:03,030 --> 00:02:00,870

pressure now beginning to trail off on

44

00:02:05,350 --> 00:02:03,040

the air led motors

45

00:02:07,670 --> 00:02:05,360

in one minute and 45 second mark

46

00:02:09,910 --> 00:02:07,680

altitude now 17.8 nautical miles

47

00:02:10,910 --> 00:02:09,920

downrange distance 2.4 nautical miles

48

00:02:13,589 --> 00:02:10,920

velocity

49

00:02:15,670 --> 00:02:13,599

2587 miles per hour

50

00:02:19,270 --> 00:02:15,680

coming up one minute 55 seconds still

51
00:02:21,670 --> 00:02:19,280
looking good passing through mach 5.

52
00:02:23,830 --> 00:02:21,680
in the two-minute mark about 10 seconds

53
00:02:31,030 --> 00:02:23,840
remaining on the

54
00:02:37,270 --> 00:02:33,030
we have burnout of the airlet motors

55
00:02:37,280 --> 00:02:41,190
we see jettison

56
00:02:47,110 --> 00:02:44,309
passing two minutes 22 seconds

57
00:02:49,509 --> 00:02:47,120
altitude now 31.3 nautical miles

58
00:02:53,110 --> 00:02:49,519
downrange distance 30.3 nautical miles

59
00:02:58,710 --> 00:02:53,120
velocity 4202 miles per hour

60
00:03:02,949 --> 00:03:00,390
pressure holding very well in the main

61
00:03:08,869 --> 00:03:02,959
engine and in both verniers as we're

62
00:03:14,949 --> 00:03:12,949
down very nicely very smooth ride

63
00:03:20,390 --> 00:03:14,959

coming up on two minutes 55 seconds

64

00:03:24,630 --> 00:03:21,750

three minutes in

65

00:03:27,190 --> 00:03:24,640

altitude now 42.0 nautical miles

66

00:03:28,350 --> 00:03:27,200

downrange distance 72.4 nautical miles

67

00:03:32,149 --> 00:03:28,360

velocity

68

00:03:34,390 --> 00:03:32,159

5794 miles per hour

69

00:03:37,110 --> 00:03:34,400

data coming in through santa and there's

70

00:03:41,509 --> 00:03:39,589

remaining in first stage flight

71

00:03:43,030 --> 00:03:41,519

chamber pressure continuing to hold very

72

00:03:45,430 --> 00:03:43,040

well in the main engine and in both

73

00:03:47,030 --> 00:03:45,440

verniers

74

00:03:49,509 --> 00:03:47,040

pitching your control on the main engine

75

00:03:51,030 --> 00:03:49,519

very good very steady and vernier engine

76

00:03:52,550 --> 00:03:51,040

pitching y'all control

77

00:04:03,190 --> 00:03:52,560

looking good in both front of your

78

00:04:09,190 --> 00:04:05,990

nautical miles downrange distance 135.3

79

00:04:11,509 --> 00:04:09,200

nautical miles velocity 8 220 miles per

80

00:04:15,429 --> 00:04:13,670

lasting three minutes 53 seconds in

81

00:04:20,550 --> 00:04:15,439

about half a minute now remaining on

82

00:04:25,189 --> 00:04:22,310

passing four minutes in

83

00:04:27,670 --> 00:04:25,199

altitude now 57.8 nautical miles

84

00:04:31,990 --> 00:04:27,680

downrange distance 179 nautical miles

85

00:04:33,990 --> 00:04:32,000

velocity 10 092 miles per hour

86

00:04:44,790 --> 00:04:34,000

coming by from mikko about 10 seconds

87

00:04:44,800 --> 00:04:51,430

we have mikko standing by for vico

88

00:04:57,270 --> 00:04:53,189

and we have vico the verniers of cut off

89

00:05:00,710 --> 00:04:57,280

standing by for one two stage step

90

00:05:04,870 --> 00:05:02,390

we have ignition on the second stage

91

00:05:07,590 --> 00:05:04,880

second stage chamber pressure rising

92

00:05:08,950 --> 00:05:07,600

and we have fairing separation

93

00:05:10,790 --> 00:05:08,960

fairing has separated from the launch

94

00:05:12,870 --> 00:05:10,800

vehicle successfully four minutes 50

95

00:05:15,430 --> 00:05:12,880

seconds in

96

00:05:17,909 --> 00:05:15,440

altitude now 74.4 nautical miles

97

00:05:21,270 --> 00:05:17,919

downrange distance 316 nautical miles

98

00:05:25,749 --> 00:05:21,280

velocity 12 120 miles per hour passing

99

00:05:28,790 --> 00:05:27,350

first burn of the second stage this

100

00:05:34,390 --> 00:05:28,800

evening should last a little over five

101
00:05:34,400 --> 00:05:43,590
now five minutes 15 seconds in

102
00:05:55,189 --> 00:05:45,189
second stage chamber pressure right

103
00:06:04,469 --> 00:05:57,830
stable uh pitching your control

104
00:06:04,479 --> 00:06:14,469
one minute into the burn right now

105
00:06:14,479 --> 00:06:18,710
looking good smooth ride

106
00:06:23,749 --> 00:06:20,870
up on six minutes mark six minutes into

107
00:06:26,230 --> 00:06:23,759
the flight altitude now 91 nautical

108
00:06:31,189 --> 00:06:26,240
miles downrange distance 516 nautical

109
00:06:33,350 --> 00:06:31,199
miles velocity 12 820 miles per hour

110
00:06:35,749 --> 00:06:33,360
second stage will cut off 10 minutes 23

111
00:06:41,830 --> 00:06:35,759
seconds into flight we're at now 6

112
00:06:41,840 --> 00:06:48,550
i think 6 minutes 22 seconds

113
00:06:48,560 --> 00:06:58,070

almost two minutes into the burn

114

00:07:04,629 --> 00:06:59,909

command receiver decoders have turned

115

00:07:33,270 --> 00:07:06,950

6 minutes 45 seconds in

116

00:07:37,990 --> 00:07:35,589

now seven minutes 15 seconds in altitude

117

00:07:42,629 --> 00:07:38,000

99.6 nautical miles downrange distance

118

00:07:45,029 --> 00:07:42,639

735 nautical miles velocity 13 714 miles

119

00:07:51,830 --> 00:07:45,039

per hour

120

00:07:55,270 --> 00:07:53,990

stage chamber pressure continues to hold

121

00:07:56,309 --> 00:07:55,280

good chamber pressure in the second

122

00:08:20,950 --> 00:07:56,319

stage

123

00:08:20,960 --> 00:08:28,710

on tdrs data

124

00:08:33,269 --> 00:08:31,670

the two minutes 20 seconds now

125

00:08:35,829 --> 00:08:33,279

remaining in this first burn of the

126
00:08:42,230 --> 00:08:35,839
second stage so passing eight minutes 15

127
00:09:02,790 --> 00:08:45,030
downrange distance now 954 nautical

128
00:09:08,310 --> 00:09:06,630
passing now 8 minutes and 45 seconds in

129
00:09:10,870 --> 00:09:08,320
second stage chamber pressure holding

130
00:09:11,949 --> 00:09:10,880
rock solid

131
00:09:14,630 --> 00:09:11,959
yeah uh

132
00:09:16,230 --> 00:09:14,640
1715. uh you turn your

133
00:09:20,630 --> 00:09:16,240
flight recorders off

134
00:09:20,640 --> 00:09:26,389
guessing nine minutes

135
00:09:32,990 --> 00:09:29,430
do now 101.5 nautical miles downrange

136
00:09:38,070 --> 00:09:33,000
distance 118 nautical miles velocity 15

137
00:09:45,430 --> 00:09:39,590
minutes seven seconds remaining in the

138
00:09:49,430 --> 00:09:47,670

our first stage events so

139

00:09:51,910 --> 00:09:49,440

very close to the expected times as

140

00:09:53,590 --> 00:09:51,920

we're passing 9 minutes 30 seconds you

141

00:09:54,790 --> 00:09:53,600

can see that the second stage chamber

142

00:10:05,269 --> 00:09:54,800

pressure now beginning to decline

143

00:10:05,279 --> 00:10:12,870

40 seconds remaining in the burn

144

00:10:16,949 --> 00:10:15,030

at the stage pitching your control are

145

00:10:18,870 --> 00:10:16,959

very good at this time chamber pressure

146

00:10:20,630 --> 00:10:18,880

is continuing to drop off for trail off

147

00:10:23,509 --> 00:10:20,640

as we're passing 10 minutes mark 10

148

00:10:26,310 --> 00:10:23,519

minutes in altitude 100.3 nautical miles

149

00:10:31,030 --> 00:10:26,320

downrange distance 1321 nautical miles

150

00:10:33,670 --> 00:10:31,040

velocity 16 578 miles per hour

151

00:10:53,509 --> 00:10:33,680

i'm standing by for second

152

00:10:53,519 --> 00:11:06,310

and we have sql

153

00:11:12,310 --> 00:11:07,829

hydraulic the system pressure is

154

00:11:17,430 --> 00:11:15,350

coming up 10 minutes 55 seconds in

155

00:11:20,630 --> 00:11:17,440

altitude 100 nautical miles downrange