



1
00:00:11,270 --> 00:00:09,990
and off to atlantis computers has

2
00:00:13,110 --> 00:00:11,280
occurred

3
00:00:17,590 --> 00:00:13,120
solid rocket booster nozzle steering

4
00:00:17,600 --> 00:00:22,630
firing chain is armed

5
00:00:27,189 --> 00:00:24,950
go for main engine start

6
00:00:28,070 --> 00:00:27,199
t-minus ten nine

7
00:00:29,029 --> 00:00:28,080
eight

8
00:00:31,669 --> 00:00:29,039
seven

9
00:00:34,310 --> 00:00:31,679
six five

10
00:00:35,110 --> 00:00:34,320
all three engines up and burning

11
00:00:35,990 --> 00:00:35,120
two

12
00:00:39,190 --> 00:00:36,000
one

13
00:00:41,510 --> 00:00:39,200

zero and lift off the final liftoff of

14

00:00:47,590 --> 00:00:41,520

atlantis on the shoulders of the space

15

00:00:51,590 --> 00:00:50,069

roger roll atlantis

16

00:00:53,990 --> 00:00:51,600

houston now controlling the flight of

17

00:00:56,150 --> 00:00:54,000

atlantis the space shuttle spreads its

18

00:01:00,229 --> 00:00:56,160

wings one final time for the start of a

19

00:01:04,950 --> 00:01:02,869

24 seconds into the flight world program

20

00:01:06,550 --> 00:01:04,960

complete atlantis now heads down wings

21

00:01:08,390 --> 00:01:06,560

level on the proper alignment for its

22

00:01:09,670 --> 00:01:08,400

eight and a half minute ride to orbit

23

00:01:11,510 --> 00:01:09,680

four and a half million pounds of

24

00:01:15,190 --> 00:01:11,520

hardware and humans taking aim on the

25

00:01:19,030 --> 00:01:17,190

40 seconds into the flight the three

26
00:01:21,109 --> 00:01:19,040
liquid fuel main engines throttling back

27
00:01:22,789 --> 00:01:21,119
to 72 percent of rated performance in

28
00:01:24,469 --> 00:01:22,799
the bucket reducing stress on the

29
00:01:28,469 --> 00:01:24,479
shuttle as it goes transonic for the

30
00:01:49,910 --> 00:01:30,390
engine's now revving up standing by for

31
00:01:49,920 --> 00:02:07,429
dpg

32
00:02:11,990 --> 00:02:09,990
atlantis now 15 miles in altitude

33
00:02:13,830 --> 00:02:12,000
already 16 miles downrange from the

34
00:02:16,869 --> 00:02:13,840
kennedy space center one minute 40

35
00:02:22,470 --> 00:02:19,110
atlantis flexing its muscles one final

36
00:02:27,430 --> 00:02:24,869
atlantis traveling almost 2600 miles an

37
00:02:29,830 --> 00:02:27,440
hour 21 miles in altitude 24 miles

38
00:02:43,750 --> 00:02:29,840

downrange standing by for solid rocket

39

00:02:48,150 --> 00:02:45,830

booster officer confirms staging a good

40

00:02:50,390 --> 00:02:48,160

solid rocket booster separation guidance

41

00:02:52,150 --> 00:02:50,400

now converging the main engine steering

42

00:02:54,790 --> 00:02:52,160

the shuttle on a pinpoint path to its

43

00:02:56,630 --> 00:02:54,800

preliminary orbit two minutes 20 seconds

44

00:02:59,350 --> 00:02:56,640

into the flight atlantis already

45

00:03:03,110 --> 00:02:59,360

traveling 3 200 miles an hour 35 miles

46

00:03:04,710 --> 00:03:03,120

in altitude 50 miles downrange

47

00:03:06,390 --> 00:03:04,720

the propulsion officer reports the

48

00:03:08,390 --> 00:03:06,400

orbital maneuvering system engines have

49

00:03:10,550 --> 00:03:08,400

ignited atlantis kicking on its

50

00:03:14,070 --> 00:03:10,560

afterburners for one minute 23 seconds

51
00:03:22,149 --> 00:03:14,080
for the final phase of powered flight

52
00:03:28,470 --> 00:03:24,470
in the event of contingency you're in

53
00:03:40,390 --> 00:03:28,480
plane plus 230 on the ecal page

54
00:03:40,400 --> 00:03:52,550
decimal seven

55
00:03:56,550 --> 00:03:54,470
because of the slightly late launch time

56
00:03:58,949 --> 00:03:56,560
capcom barry wilmore reading up to pilot

57
00:04:00,949 --> 00:03:58,959
doug hurley the updated abort boundaries

58
00:04:02,710 --> 00:04:00,959
for atlantis which is flying on the

59
00:04:04,229 --> 00:04:02,720
singular power of its three liquid fuel

60
00:04:05,990 --> 00:04:04,239
main engines draining a half a ton of

61
00:04:08,070 --> 00:04:06,000
fuel per second from the shuttle's large

62
00:04:10,309 --> 00:04:08,080
fuel tank three and a half minutes into

63
00:04:13,030 --> 00:04:10,319

the flight atlantis traveling 4 200

64

00:04:15,270 --> 00:04:13,040
miles an hour 54 miles in altitude

65

00:04:18,789 --> 00:04:15,280
already 120 miles downrange from the

66

00:04:22,469 --> 00:04:20,629
three good main engines three good

67

00:04:37,909 --> 00:04:22,479
auxiliary power units three good fuel

68

00:04:41,270 --> 00:04:39,909
that call from capcom barry wilmore

69

00:04:44,230 --> 00:04:41,280
indicating that we're too high in

70

00:04:45,510 --> 00:04:44,240
altitude too far down range to return to

71

00:04:47,990 --> 00:04:45,520
the launch site in the event of an

72

00:04:53,270 --> 00:04:48,000
engine failure however atlantis's three

73

00:04:53,280 --> 00:05:00,950
four minutes 20 seconds into the flight

74

00:05:06,310 --> 00:05:03,350
atlantis currently traveling 5500 miles

75

00:05:09,430 --> 00:05:06,320
an hour 62 miles in altitude almost 200

76
00:05:09,440 --> 00:05:13,990
four minutes of powered flight remaining

77
00:05:17,189 --> 00:05:15,749
atlantis speeding straight is an arrow

78
00:05:28,870 --> 00:05:17,199
toward its date with the international

79
00:05:28,880 --> 00:05:34,390
coming up on the five minute mark

80
00:05:40,469 --> 00:05:37,029
atlantis now traveling 6500 miles an

81
00:05:43,590 --> 00:05:40,479
hour 66 miles in altitude 250 miles

82
00:05:43,600 --> 00:05:49,830
atlantis press to ato

83
00:05:53,670 --> 00:05:52,150
that call indicating we can make minimal

84
00:05:55,189 --> 00:05:53,680
orbital targets in the event of an

85
00:05:57,510 --> 00:05:55,199
engine failure all three engines

86
00:05:59,350 --> 00:05:57,520
continue to function normally atlantis

87
00:06:07,029 --> 00:05:59,360
will begin its slow roll to a heads up

88
00:06:11,909 --> 00:06:09,430

five and a half minutes into the flight

89

00:06:16,070 --> 00:06:11,919

atlantis traveling 7 700 miles an hour

90

00:06:16,080 --> 00:06:32,469

atlantis single engine ops 3.

91

00:06:35,909 --> 00:06:34,150

and the guidance officer here in mission

92

00:06:44,309 --> 00:06:35,919

control confirms that the computers are

93

00:06:47,909 --> 00:06:46,150

we've rolled to a heads-up position now

94

00:06:50,309 --> 00:06:47,919

providing better communications to the

95

00:06:53,589 --> 00:06:50,319

tracking and data relay satellite system

96

00:06:55,430 --> 00:06:53,599

as atlantis heads up hill

97

00:07:00,469 --> 00:06:55,440

six minutes twenty seconds into the

98

00:07:00,479 --> 00:07:06,710

atlantis

99

00:07:11,270 --> 00:07:08,950

that call indicates that we can make our

100

00:07:13,270 --> 00:07:11,280

normal orbital cutoff targets in the

101
00:07:28,230 --> 00:07:13,280
event of an engine failure however all

102
00:07:33,189 --> 00:07:30,870
that call indicating that we will be in

103
00:07:35,749 --> 00:07:33,199
good shape for the orientation of

104
00:07:38,150 --> 00:07:35,759
atlantis for external tank photography

105
00:07:44,790 --> 00:07:38,160
following main engine cutoff now seven

106
00:07:49,270 --> 00:07:46,869
one minute 20 seconds till main engine

107
00:07:55,749 --> 00:07:49,280
cut off atlantis traveling 12 000 miles

108
00:07:59,350 --> 00:07:57,749
the main engines will soon be throttling

109
00:08:00,950 --> 00:07:59,360
down once again to limit the stress on

110
00:08:02,469 --> 00:08:00,960
the shuttle and its four crew members to

111
00:08:04,710 --> 00:08:02,479
that of three times the effect of

112
00:08:10,390 --> 00:08:04,720
gravity atlantis currently traveling at

113
00:08:22,550 --> 00:08:12,390

one minute of powered flight remaining

114

00:08:26,469 --> 00:08:24,230

three good main engines three good

115

00:08:28,230 --> 00:08:26,479

auxiliary power units three good fuel

116

00:08:29,830 --> 00:08:28,240

cells

117

00:08:33,110 --> 00:08:29,840

approaching the eight minute mark into

118

00:08:50,070 --> 00:08:35,670

atlantis now traveling more than fifteen

119

00:08:54,630 --> 00:08:51,990

eight minutes 15 seconds into the flight

120

00:08:56,150 --> 00:08:54,640

standing by for main engine cut off

121

00:08:57,829 --> 00:08:56,160

that'll be followed a few seconds later

122

00:09:04,790 --> 00:08:57,839

by the separation of the external fuel

123

00:09:08,550 --> 00:09:06,710

booster officer confirms main engine

124

00:09:10,310 --> 00:09:08,560

cutoff

125

00:09:12,790 --> 00:09:10,320

for the last time the space shuttle's

126
00:09:14,630 --> 00:09:12,800
main engines have fallen silent as the

127
00:09:18,070 --> 00:09:14,640
shuttle slips into the final chapter of

128
00:09:19,590 --> 00:09:18,080
a storied 30-year adventure

129
00:09:30,070 --> 00:09:19,600
now standing by for external tank

130
00:09:33,509 --> 00:09:32,070
atlantis off the tank

131
00:09:35,110 --> 00:09:33,519
commander chris ferguson will be

132
00:09:37,269 --> 00:09:35,120
maneuvering atlantis now into an

133
00:09:39,190 --> 00:09:37,279
orientation to enable sandy magnus to

134
00:09:41,350 --> 00:09:39,200
capture digital still imagery of the

135
00:09:43,430 --> 00:09:41,360
external fuel tank as it drifts away

136
00:09:45,509 --> 00:09:43,440
ohm's one is not required your