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ARMSTRONG
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1
00:00:02,320 --> 00:00:03,560
Apollo 11 Highlights
Day 1

2
00:00:03,560 --> 00:00:10,560
PAO T-10, 9, 8, we have a GO for main engine start. We have main engine start, 4, 3, 2,

3
00:00:52,760 --> 00:00:59,760
1, O.

4
00:01:14,470 --> 00:01:21,470
PAO Thirty seconds and counting. Astronauts report it feels good. T minus 25 seconds.

5
00:01:45,840 --> 00:01:52,840
20 seconds and counting. T minus 15 seconds. Guidance is internal. 12, 11, 10, 9. Ignition

6
00:01:55,590 --> 00:02:02,590
sequence starts. 6, 5, 4, 3, 2, 1, 0. All engines running. Liftoff. We have a liftoff,

7
00:02:04,280 --> 00:02:11,280
32 minutes past the hour, liftoff on Apollo 11. Tower cleared.

8
00:02:23,350 --> 00:02:30,350
SC One Bravo.

9
00:02:35,380 --> 00:02:42,380
CAPCOM 11, Houston, you're good at one minute.

10
00:02:49,980 --> 00:02:53,260
CAPCOM Shut down right on time.

11
00:02:53,260 --> 00:02:56,370
SC 101.4 by 103.6

12
00:02:56,370 --> 00:03:03,370
CAPCOM Roger. Shut down and we copy 101.4
by 103.6.

13
00:03:04,130 --> 00:03:11,130
CAPCOM Apollo 11, this is Houston. You are
confirmed to go for orbit.

14
00:03:18,280 --> 00:03:21,450
SC Roger.

15
00:03:21,450 --> 00:03:28,450
CAPCOM Apollo 11, this is Houston. You are
go for TLI. Over.

16
00:03:33,080 --> 00:03:40,080
SC Apollo 11. Thank you.

17
00:03:50,430 --> 00:03:52,220
CAPCOM Roger. Out.

18
00:03:52,220 --> 00:03:53,690
SC Ignition.

19
00:03:53,690 --> 00:04:00,320
CAPCOM We confirm ignition and the thrust
is GO.

20
00:04:00,320 --> 00:04:07,320
CAPCOM Apollo 11, this is Houston at one minute.
Trajectory and guidance looks good and the

21
00:04:07,340 --> 00:04:10,040
stage is good. Over.

22
00:04:10,040 --> 00:04:12,750
SC Apollo 11, roger.

23

00:04:12,750 --> 00:04:15,360
PAO Speed 5000 feet per second

24
00:04:15,360 --> 00:04:22,360
PAO Cut out. We're showing velocity 35,
570 feet per second. Altitude 177 nautical

25
00:04:36,460 --> 00:04:37,380
miles.

26
00:04:37,380 --> 00:04:44,380
SC Okay, Houston, Apollo 11. That Saturn gave
us a magnificent ride

27
00:04:48,010 --> 00:04:55,010
CAPCOM Ah, Roger, 11, we'll pass that on
and it's certainly looks like you're rolling

28
00:04:55,030 --> 00:04:57,910
your way now.

29
00:04:57,910 --> 00:05:04,910
PAO That was Neil Armstrong praising the launch
vehicle.

30
00:05:07,720 --> 00:05:14,720
SC We have no complaints with any of those
three stages on, on that, that ride. It was

31
00:05:21,290 --> 00:05:22,090
beautiful.

32
00:05:22,090 --> 00:05:27,820
CAPCOM Roger. We copy. No transients at staging
of any significance? Over.

33
00:05:27,820 --> 00:05:29,680
SC That's right. It was nominal, all a good
ride.

34
00:05:29,680 --> 00:05:31,620
CAPCOM Houston, roger, out.

35
00:05:31,620 --> 00:05:38,020
CAPCOM Apollo 11, this is Houston. For your
information we expect the maneuver to separation

36
00:05:38,020 --> 00:05:45,020
attitude to begin at 3 plus 05 plus 03 and
to be completed at plus 09 plus 20. Separation

37
00:05:48,930 --> 00:05:55,340
at 3 plus 15 plus 00.

38
00:05:55,340 --> 00:06:02,340
SC Roger, time to begin maneuvers in 30503
complete 30920 and separation 3 plus 15 00.

39
00:06:10,290 --> 00:06:17,290
CAPCOM Roger. That's separation should be
3 plus 15 03, my error in reading up.

40
00:06:26,360 --> 00:06:26,490
SC Roger.

41
00:06:26,490 --> 00:06:32,620
PAO This is Apollo Control. The velocity falling
off now. Immediately after shutdown we■re

42
00:06:32,620 --> 00:06:39,620
showing 34,000 feet per second now, that the
altitude building, 512 nautical miles.

43
00:06:40,320 --> 00:06:47,320
CAPCOM Apollo 11, this is Houston. All the
booster functions are proceeding normally.

44
00:06:47,830 --> 00:06:54,830
The sequencing is in good shape and it doesn't

look like they're having any problems at

45
00:07:03,930 --> 00:07:09,310
all. Over.

46
00:07:09,310 --> 00:07:14,690
SC Roger.

47
00:07:14,690 --> 00:07:21,370
PAO This is Apollo Control and we're showing orbital weight now, 138 892.9 pounds.

48
00:07:21,370 --> 00:07:25,290
CAPCOM Apollo 11, Apollo 11, this is Houston. Over.

49
00:07:25,290 --> 00:07:32,290
SC Hello, Houston. Hello, Houston. This is Apollo 11. I'm reading you loud and clear.

50
00:07:38,320 --> 00:07:43,260
Go ahead, over.

51
00:07:43,260 --> 00:07:50,260
CAPCOM Roger, 11, this is Houston. We had to shift stations. We weren't reading you

52
00:07:57,030 --> 00:08:04,030
through Gulfstone. We show pyro A armed and pyro B not armed at the present time. Over.

53
00:08:07,190 --> 00:08:14,190
SC That's affirmative, Houston. It's affirmative.

54
00:08:16,430 --> 00:08:19,510
CAPCOM Roger.

55
00:08:19,510 --> 00:08:26,510
PAO The S-IVB has completed its maneuver to

separation attitude.

56
00:08:29,020 --> 00:08:36,020
PAO 4 minutes away from separation, 4 minutes.

57
00:08:39,589 --> 00:08:46,589
PAO At 3 hours 11 minutes into the mission,
velocity 26,314 feet per second, distance

58
00:08:50,170 --> 00:08:52,520
from Earth 3, 140 nautical miles.

59
00:08:52,520 --> 00:08:59,520
PAO The S-IVB is reported in a stable attitude
for this separation.

60
00:09:00,140 --> 00:09:07,140
PAO Rates are less than 1/10th of a foot per
second in all axis. One minute to separation.

61
00:09:12,480 --> 00:09:19,480
CAPCOM Apollo 11, this is Houston. You are
GO for separation. Our system's recommendation

62
00:09:21,320 --> 00:09:23,440
is arm both pyro busses. Over.

63
00:09:23,440 --> 00:09:24,980
SC Okay, Pyro B coming armed. My intent is
to use bottle primary 1 as per the checklist.

64
00:09:24,980 --> 00:09:29,140
Therefore I just A on.

65
00:09:29,140 --> 00:09:34,140
CAPCOM Roger, we confer with the logic.

66
00:09:34,140 --> 00:09:41,140
PAO We are waiting confirmation of separation.

67
00:09:42,390 --> 00:09:49,390
SC And (garbled) secondary propellant B went
(garbled).

68
00:09:50,200 --> 00:09:57,200
CAPCOM That was secondary propellant on quad
BRAVO?

69
00:09:57,940 --> 00:10:04,940
SC Quad BRAVO, yes. Both the primary and secondary
(garbled).

70
00:10:08,860 --> 00:10:12,370
SC Houston, stand by.

71
00:10:12,370 --> 00:10:19,370
CAPCOM Apollo 11, this is Houston. Radio check.
Over.

72
00:10:20,750 --> 00:10:24,880
CAPCOM Roger. We're copying you about 5
by 2, very weak. Can you give us a status

73
00:10:24,880 --> 00:10:24,970
report, please?

74
00:10:24,970 --> 00:10:31,970
SC Roger. We are docked and we do want acquisition
with the high gain at this time, I think.

75
00:10:38,550 --> 00:10:41,870
CAPCOM Understand you are using the high gain,
over.

76
00:10:41,870 --> 00:10:43,330
SC That's affirmative.

77
00:10:43,330 --> 00:10:48,410

CAPCOM Roger. I read you very loud and clear, Buzz. Mike is pretty weak.

78
00:10:48,410 --> 00:10:55,410
SC Roger. We've got the high gain locked on now, I believe, auto tracking now.

79
00:10:59,360 --> 00:11:04,870
CAPCOM Okay. You're coming in loud and clear but Mike is just barely readable.

80
00:11:04,870 --> 00:11:09,510
SC That was Neil. How you reading Mike?

81
00:11:09,510 --> 00:11:13,140
CAPCOM Ah, loud and clear now, Mike, and we understand that you are docked.

82
00:11:13,140 --> 00:11:16,140
SC That is affirmative.

83
00:11:16,140 --> 00:11:22,160
SC Houston, CDR how do you read (garbled).

84
00:11:22,160 --> 00:11:29,160
CAPCOM 11, CDR, loud and clear, Neil.

85
00:11:35,000 --> 00:11:42,000
SC Okay.

86
00:11:45,339 --> 00:11:52,339
PAO This is Apollo Control. Apollo 11's velocity now 21,096 feet per second, distance

87
00:11:58,420 --> 00:12:05,420
from Earth 6,649 nautical miles.

88
00:12:12,670 --> 00:12:19,670
CAPCOM Alright, 11, this is Houston. Over.

89
00:12:37,180 --> 00:12:44,180
SC Houston, Apollo 11, go ahead.

90
00:12:45,610 --> 00:12:52,540
CAPCOM Ah, Roger. When you commented on that
BRAVO problem at separation, you were a little

91
00:12:52,540 --> 00:12:59,540
weak. Could you go through what you did after
you noticed the talk-back again, please?

92
00:13:13,990 --> 00:13:20,990
CAPCOM We copied the primary and secondary
propellant talkback SM RCS BRAVO 1 (garbled).

93
00:13:28,890 --> 00:13:35,890
SC Roger. Roger, that is affirmative and we
moved that switch to the open position and

94
00:13:39,670 --> 00:13:46,670
they went back to gray. Over.

95
00:14:00,970 --> 00:14:07,970
PAO This is Apollo Control. We are at 34 minutes
away from extraction from extraction from

96
00:14:10,300 --> 00:14:17,300
the lunar module from its adaptor in the third
stage of the Saturn. The crew has started

97
00:14:30,209 --> 00:14:37,209
pressurizing the LM.

98
00:14:38,519 --> 00:14:45,519
CAPCOM Apollo 11, this is Houston. Over.

99
00:14:49,790 --> 00:14:51,589
SC Roger. Houston, Apollo 11, go ahead.

100
00:14:51,589 --> 00:14:58,589
CAPCOM Roger. Could you give us some comments
on how the transposition docking went? Over.

101
00:14:59,660 --> 00:15:06,660
SC I thought it went pretty well, Houston,
although I suspect I used more gas than I've

102
00:15:20,529 --> 00:15:27,529
been using in the simulator. The turnaround
maneuver, I went pitch, accel command and

103
00:15:40,690 --> 00:15:47,690
started to pitch up and then when I put the
manual attitude pitch back to rate command,

104
00:16:07,209 --> 00:16:14,209
for some reason it, it stopped its pitch rate
and I had to go back to excel command and

105
00:16:40,990 --> 00:16:47,990
hit what I thought was an extra proceed on
the DSKY key. Then during the course of that,

106
00:16:54,500 --> 00:17:01,500
we drifted slightly further away from the
S-IV B than I expected. I expected to be out

107
00:17:43,309 --> 00:17:50,309
about 66 feet and my guess would be I was
around a hundred or so and, therefore, I expect

108
00:17:58,149 --> 00:17:59,659
I used a bit more coming back in but except
for using a little more gas, and I'd be

109
00:17:59,659 --> 00:18:00,220
interested in your numbers, everything went
nominally.

110
00:18:00,220 --> 00:18:00,779
CAPCOM This is Houston. Roger. We copy.

111
00:18:00,779 --> 00:18:01,600
PAO That was Mike Collins giving the description
on the transposition and docking.

112
00:18:01,600 --> 00:18:01,609
SC This is Apollo 11. Over.

113
00:18:01,609 --> 00:18:01,639
SC Bruce, we're working on the pressurization
on the LM now and working off the decal of

114
00:18:01,639 --> 00:18:01,669
the SM LM pressure equalization and we're
down to Step 13 where we're waiting for

115
00:18:01,669 --> 00:18:01,700
the cabin pressure to be 5 or it should be
roughly 5 before we turn the repress package

116
00:18:01,700 --> 00:18:01,720
O2 valve to FILL. Instead of 5 we're running
about 4.4. Over.

117
00:18:01,720 --> 00:18:07,049
CAPCOM Ah, Roger. Stand by a second.

118
00:18:07,049 --> 00:18:14,049
SC And, Houston, Apollo 11, we just put the
repress package O2 valve to FILL momentarily

119
00:18:30,909 --> 00:18:31,919
there in Step 13 and we have filled the bottles
back up partially. What's the pressure reading

120
00:18:31,919 --> 00:18:32,059

on them?

121
00:18:32,059 --> 00:18:32,609
SC We have about 450 PSI in the, in the 3
1-pound bottles.

122
00:18:32,609 --> 00:18:32,879
CAPCOM Stand by a second, please.

123
00:18:32,879 --> 00:18:35,639
SC Roger. Standing by. And the repress package
valve is now in the OFF position. What's

124
00:18:35,639 --> 00:18:36,279
the cabin pressure now, Buzz? Cabin pressure
is now 4.5.

125
00:18:36,279 --> 00:18:38,259
PAO At 3 hours 46 minutes, velocity is 18,917
feet per second, distance from Earth 9,002

126
00:18:38,259 --> 00:18:38,940
nautical miles.

127
00:18:38,940 --> 00:18:45,940
SC Houston, Apollo 11. We think these readings
are within normal tolerances. We just wanted

128
00:18:50,149 --> 00:18:57,149
to get your concurrence before we press down
any further with the decals.

129
00:19:02,230 --> 00:19:09,230
CAPCOM Okay, Captain.

130
00:19:14,529 --> 00:19:21,529
SC Ah, Houston, Apollo 11. How do you read?

131
00:19:36,179 --> 00:19:39,269

CAPCOM Apollo 11, this is Houston. Go ahead.

132
00:19:39,269 --> 00:19:46,269
SC LM looks to be in pretty fine shape from
about all we can see from here.

133
00:19:47,190 --> 00:19:54,190
CAPCOM Okay, and in reference to your question
on this Step 13 on the decal, I understand

134
00:19:54,279 --> 00:20:01,279
that you have used up the contents of the
repress O2 and at that time instead of being

135
00:20:02,700 --> 00:20:09,700
up to 5 PSI, you were reading 4.4. Is that
correct?

136
00:20:10,609 --> 00:20:14,529
SC Okay. 4-4, yes, sir.

137
00:20:14,529 --> 00:20:20,070
CAPCOM Okay, and you want to know if you can
go ahead and use additional oxygen to bring

138
00:20:20,070 --> 00:20:21,159
the command module up to 5,.0 and continue
the equalization? Over.

139
00:20:21,159 --> 00:20:26,899
SC We think it's within normal balance,
Bruce, but we just wanted your concurrence

140
00:20:26,899 --> 00:20:33,899
before we press on with this procedure.

141
00:20:34,570 --> 00:20:39,769
CAPCOM Roger, Apollo 11. Go ahead.

142

00:20:39,769 --> 00:20:44,840
SC Okay. We're pressing on with the procedure.

143
00:20:44,840 --> 00:20:50,340
CAPCOM And 11, Houston. We have a request for you. On the service module, secondary

144
00:20:50,340 --> 00:20:57,340
propellant fuel pressurization valve, as a precautionary measure, we'd like you to

145
00:20:57,909 --> 00:21:04,309
momentarily cycle the 4 switches to the close position and then release. As you know, we

146
00:21:04,309 --> 00:21:10,450
have no TM or talkback on these value positions and it's conceivable that one of them might

147
00:21:10,450 --> 00:21:14,359
also have been moved into a different position by the shock of separation. Over.

148
00:21:14,359 --> 00:21:16,850
SC Okay. Good idea. That's being done.

149
00:21:16,850 --> 00:21:23,669
CAPCOM Houston, roger. Out.

150
00:21:23,669 --> 00:21:30,669
CAPCOM Apollo 11, Houston. We're doing a non-propulsive vat on the booster at the present

151
00:21:38,970 --> 00:21:45,090
time. You may see some sort of a cloud coming out of it and when you're ready I have your

152
00:21:45,090 --> 00:21:46,929
evasive maneuver pad.

153
00:21:46,929 --> 00:21:50,609
SC Roger. That's coming out.

154
00:21:50,609 --> 00:21:52,809
CAPCOM Roger. Out.

155
00:21:52,809 --> 00:21:59,809
SC It's a haze. It's going by toward our
minus X direction and several small particles

156
00:22:02,580 --> 00:22:07,139
are moving along with it. A natural velocity
is fairly high. At least it appears to be

157
00:22:07,139 --> 00:22:10,129
high and we've got an O2 high, flow high
right now.

158
00:22:10,129 --> 00:22:17,080
CAPCOM Houston, roger. Out.

159
00:22:17,080 --> 00:22:24,080
SC And Houston, you might be interested that
out my firsthand window right now I can observe

160
00:22:50,769 --> 00:22:57,769
the entire continent of North America, Alaska,
over the pole down to the Yucatan Peninsula,

161
00:22:59,049 --> 00:23:06,049
Cuba, northern part of South America and then
I run out of window.

162
00:23:07,840 --> 00:23:13,059
CAPCOM Roger. We copy.

163
00:23:13,059 --> 00:23:20,059
PAO That was Neil Armstrong with that report.

164
00:23:30,859 --> 00:23:37,859
SC Houston. Apollo 11. All twelve latches
are locked.

165
00:23:57,519 --> 00:24:04,519
CAPCOM Roger 11. This is Houston. Understand
12 latches locked.

166
00:24:09,330 --> 00:24:16,330
PAO And that was Buzz Aldrin reporting that
all 12 of the latches in the docking mechanism

167
00:24:16,889 --> 00:24:23,889
had locked.

168
00:24:30,320 --> 00:24:37,320
SC 11, Houston. Whenever you're possessed
of

169
00:26:04,019 --> 00:26:10,840
a free moment, we've got this Evasive Maneuver
Pad.

170
00:26:10,840 --> 00:26:13,720
CAPCOM Okay.

171
00:26:13,720 --> 00:26:20,720
SC Go ahead, Houston. Apollo 11 ready to copy.

172
00:26:24,479 --> 00:26:31,479
CAPCOM Apollo 11, this is Houston. Evasive
Maneuver, SPS G&N 63481 plus 095 minus 020.

173
00:26:34,909 --> 00:26:41,909
GTI is 004 40 01 00 plus 000 51 plus all balls
plus 00190. ROLL is your option. PITCH 213

174
00:26:50,369 --> 00:26:57,369
357. NOUN 44 is NA VT is 00 197 003 00152.

The rest of the pad is NA. No ullage. LM weight

175
00:27:14,359 --> 00:27:21,359
33290. Read back. Over.

176
00:27:49,570 --> 00:27:56,570
CAPCOM Apollo 11, this is Houston, standing
by for your read back. Over.

177
00:28:13,969 --> 00:28:20,969
CAPCOM 11, Houston. Do you read? Over.

178
00:28:34,759 --> 00:28:41,759
CAPCOM Apollo 11, this is Houston. Do you
read? Over.

179
00:29:04,469 --> 00:29:11,469
SC Alright. All of a sudden, we had a little
click and the signal strength began to start

180
00:29:18,659 --> 00:29:23,450
dropping off. Your transmissions were cut
off very abruptly. How do you read now?

181
00:29:23,450 --> 00:29:28,759
CAPCOM Roger. Loud and clear. We had a handover
to Madrid about the time, I was I guess halfway

182
00:29:28,759 --> 00:29:34,119
through the pad. If you could give me the
last value you read, I'll pick up there.

183
00:29:37,639 --> 00:29:34,619
Over.

184
00:29:37,639 --> 00:29:44,639
CAPCOM Roger. VZ is plus 00190. ROLL your
option. PITCH 213 357 and NOUN 44 is NA ■ VT

185

00:29:52,639 --> 00:29:59,639
is 00 197 003 00152. The rest of the pad is
NA and no ullage. LM weight 33290. Read back.

186
00:30:15,979 --> 00:30:17,159
Over.

187
00:30:17,159 --> 00:30:24,159
SC Roger. Houston. Evasive Maneuver SPS G&N
63481 plus 095 minus 020. 004 40 01 00 plus

188
00:30:37,219 --> 00:30:44,219
000 51 plus all zeroes plus 00190. ROLL, crew
option. 213 357 NA 00 197 003 00152. LM weight

189
00:31:05,200 --> 00:31:06,379
33290. Over.

190
00:31:06,379 --> 00:31:13,379
CAPCOM 11, this is Houston. Read back correct.
Out.

191
00:31:16,200 --> 00:31:23,200
PAO This is Apollo Control at 4 hours 4 minutes.
Apollo's velocity now is 17, 014 feet per

192
00:31:30,799 --> 00:31:37,799
second. It's distance from Earth, 11,753
nautical miles. We're about 5 minutes away

193
00:31:40,729 --> 00:31:47,729
from ejection of the lunar module and about
35 minutes away from this evasive maneuver.

194
00:31:50,099 --> 00:31:57,099
The ignition on the evasive maneuver an elapsed
time of 4 hours 40 minutes 1 second. It will

195
00:32:00,289 --> 00:32:07,289
be a service propulsion system burn of 3 seconds

duration, V 19.7 feet per second.

196
00:32:39,960 --> 00:32:46,960
SC Houston. Apollo 11.

197
00:32:53,570 --> 00:33:00,570
CAPCOM Go ahead 11.

198
00:33:15,649 --> 00:33:22,649
SC We'd like to arm our logic switches.

199
00:33:26,899 --> 00:33:29,629
CAPCOM Okay, go ahead with the logic.

200
00:33:29,629 --> 00:33:36,629
SC Okay, mark logic 1 and 2 armed.

201
00:33:44,830 --> 00:33:51,830
CAPCOM Roger. We show the logic armed and
you're GO for pyro alarm.

202
00:34:06,629 --> 00:34:13,629
SC Houston, we're ready for LM ejection.

203
00:35:50,140 --> 00:35:57,140
CAPCOM Roger, you're go for LM ejection.

204
00:36:42,730 --> 00:36:49,730
SC Thank you.

205
00:36:54,420 --> 00:37:01,420
SC Houston, we are sep. We have a cryo press
light.

206
00:37:11,080 --> 00:37:18,080
CAPCOM Roger, copy. Cryo press light.

207
00:37:27,260 --> 00:37:34,260

CAPCOM Roger, 11. We recommend that you turn the O2 fans on manually and insure that the

208
00:37:41,600 --> 00:37:43,410
O2 heaters are in the automatic position.

209
00:37:43,410 --> 00:37:50,320
SC Roger, O2 heaters are on and we're going to cycle the O2 fans now.

210
00:37:50,320 --> 00:37:55,830
CAPCOM Roger, O2 heaters to auto or you can watch them in the armed position and O2 fans

211
00:37:55,830 --> 00:38:02,830
manual on.

212
00:39:19,630 --> 00:39:26,630
CAPCOM Apollo 11, this is Houston, over.

213
00:41:21,170 --> 00:41:28,170
SC This is Apollo 11.

214
00:41:59,040 --> 00:42:06,040
CAPCOM Roger. In reference to your question on RCS usage, it looks like you are about

215
00:42:26,790 --> 00:42:33,790
18, maybe 20 pounds below nominal at the present time. No problem at all. Over.

216
00:42:34,170 --> 00:42:36,140
SC Great.

217
00:42:36,140 --> 00:42:43,140
SC Wanted to be 18 20 pounds above nominal.

218
00:42:45,010 --> 00:42:52,010
CAPCOM Sorry about that.

219
00:43:48,980 --> 00:43:55,980
PAO This is Apollo Control at 4 hours 34 minutes. Apollo 11's velocity is 14,972 feet per

220
00:44:59,060 --> 00:45:06,060
second. Its distance from Earth is 15,895 nautical miles. Spacecraft weight 96,760.9

221
00:45:15,150 --> 00:45:22,150
pounds. We're about 5 minutes from the Evasive Maneuver that one sure there will be no

222
00:45:25,340 --> 00:45:32,340
problems of re contact between the spacecraft and the S IV B stage of the launch vehicle.

223
00:45:50,100 --> 00:45:57,100
CAPCOM 11, Houston. Your systems are looking good. We're standing by for the burn.

224
00:49:47,340 --> 00:49:54,340
PAO The duration of this burn will be 3 seconds. Delta V 19.7 feet per second.

225
00:49:58,920 --> 00:50:05,920
PAO Ignition. Shut down.

226
00:50:21,690 --> 00:50:28,690
SC Houston, Apollo 11. Could you confirm that pitch gimbal motor turned off? We just shut

227
00:51:12,230 --> 00:51:18,860
all 4 off and we got a questionable indication on the ECS on PITCH 1.

228
00:51:18,860 --> 00:51:23,990
CAPCOM Roger. Stand by a second.

229

00:51:23,990 --> 00:51:30,990
CAPCOM Apollo 11, this is Houston. Stand by,
please.

230
00:51:39,000 --> 00:51:46,000
SC Go ahead, Houston. Did you copy our residuals?

231
00:51:53,130 --> 00:51:59,360
CAPCOM Roger. We got 00 and .2 it looks like.

232
00:51:59,360 --> 00:52:03,920
SC We had .1 a while ago. It just went to
.2.

233
00:52:03,920 --> 00:52:04,880
CAPCOM Okay.

234
00:52:04,880 --> 00:52:08,700
SC That EMS Delta-V counter is minus 4.0.

235
00:52:08,700 --> 00:52:10,620
CAPCOM Minus 4.0, roger.

236
00:52:10,620 --> 00:52:15,460
SC And how about pitch gimbal 1? Can you confirm
that off?

237
00:52:15,460 --> 00:52:19,370
CAPCOM Can you stand by just a second on that?
At the present time, we cannot confirm it

238
00:52:19,370 --> 00:52:25,420
off. We saw a current drop indicating that
several gimbal motors had gone off. We'll

239
00:52:25,420 --> 00:52:32,420
be back with you in just a second on it, over.

240
00:52:44,660 --> 00:52:51,660

SC Okay. If necessary, we can recycle it.

241
00:53:56,030 --> 00:54:03,030
CAPCOM Apollo 11, this is Houston. If you
go ahead and cycle Pitch gimbal motor number

242
00:54:10,290 --> 00:54:14,450
1 on and then off and give us a mark and we'll
tell you what we see. Over.

243
00:54:14,450 --> 00:54:20,230
SC Okay, fine. It's coming back on, ready,
mark. It's going back off, ready, mark.

244
00:54:20,230 --> 00:54:27,230
And that time we got an on board indication,
Houston. Thank you a lot.

245
00:54:29,190 --> 00:54:36,190
CAPCOM Roger, we confirm that it is off.

246
00:55:04,710 --> 00:55:05,020
SC Yah, we do likewise.

247
00:55:05,020 --> 00:55:12,020
PAO This is Apollo Control at 4 hours 44 minutes.
A news conference at the Kennedy Space Center

248
00:55:12,780 --> 00:55:19,200
is about to begin. We will take down the live
circuits and tape air to ground during this

249
00:55:19,200 --> 00:55:26,200
news conference, play it back after the conference.
This is Mission Control Houston.

250
00:55:40,190 --> 00:55:47,190
PAO This is Apollo Control at 5 hours 11 minutes
into the mission. The S IV B slingshot maneuver

251
00:56:03,040 --> 00:56:10,040
was completed about 5 minutes ago, designed
to put the third stage of the launch vehicle

252
00:56:10,300 --> 00:56:15,540
into a trajectory, will take it behind the
trailing edge of the moon and then into a

253
00:56:15,540 --> 00:56:22,540
solar orbit. The crew did not witness this
maneuver. The Command Module was not in the

254
00:56:25,619 --> 00:56:32,350
proper attitude where they could see the S
IV B at the time. We've advised the crew

255
00:56:32,350 --> 00:56:39,350
that we do not believe we will do the first
mid-course correction, that we'll wait for

256
00:56:40,480 --> 00:56:47,480
mid-course correction 2 tomorrow and expect
a Delta-V to be performed in that maneuver

257
00:56:48,140 --> 00:56:55,140
of about 21.3 feet per second. We've also
had some other brief transmissions including

258
00:56:59,470 --> 00:57:05,430
comments from Neil Armstrong on the view out
the window and a weather report on a part

259
00:57:05,430 --> 00:57:11,770
of the world he can see. We have the tape
of these transmissions that have occurred

260
00:57:11,770 --> 00:57:16,690
during the news conference at the Cape. We'll
play that for you now and then catch up live.

261
00:57:16,690 --> 00:57:23,030
SC Houston, Apollo 11. We're starting our maneuver to observe the S IV B slingshot.

262
00:57:23,030 --> 00:57:30,030
CAPCOM Roger, 11. We've got an updated attitude for you on the slingshot operation.

263
00:57:30,880 --> 00:57:34,430
SC Okay, say the angle please.

264
00:57:34,430 --> 00:57:41,430
CAPCOM Roger, ROLL 002.5. PITCH 289.3. YAW 357.5 and there's also an update, minor

265
00:57:49,380 --> 00:57:55,270
correction to your attitude for the P 52.
Over.

266
00:57:55,270 --> 00:58:02,270
SC Roger, I have ROLL 2.5. PITCH 289.3 and YAW 357.5. Over.

267
00:58:05,180 --> 00:58:12,180
CAPCOM Roger, and for your P 52 and optics calibration it'll be ROLL 346.5. PITCH 345.0.

268
00:58:13,860 --> 00:58:16,760
YAW 0007.8, over.

269
00:58:16,760 --> 00:58:23,760
SC Roger, 346.5, 345.0 and 7.8. Thank you.

270
00:58:24,490 --> 00:58:28,350
CAPCOM Houston, roger, out.

271
00:58:28,350 --> 00:58:34,150
CAPCOM Apollo 11, this is Houston.

272
00:58:34,150 --> 00:58:40,910
SC Roger, go ahead, Houston. Apollo 11.

273
00:58:40,910 --> 00:58:47,910
CAPCOM Roger, we're going to go ahead and
enable the S IV B for the slingshot maneuver.

274
00:58:52,060 --> 00:58:56,030
The LOX dump will start about 12 minutes from
now, over.

275
00:58:56,030 --> 00:58:59,840
SC Okay, LOX dump about, I guess that'll
make it about 0.1 up.

276
00:58:59,840 --> 00:59:06,840
CAPCOM All right, I'll try to give you a
little closer update as we approach it.

277
00:59:06,869 --> 00:59:10,600
SC All right.

278
00:59:10,600 --> 00:59:17,600
CAPCOM And 11, for your information, the magnitude
of mid-course correction number 1, if we burned

279
00:59:19,220 --> 00:59:26,220
it, looks like about 17 feet per second. We're
presently considering not burning it. This

280
00:59:26,780 --> 00:59:29,650
would make mid-course correction 2 tomorrow
about 21.3, over.

281
00:59:29,650 --> 00:59:33,040
SC That sounds good to us.

282
00:59:33,040 --> 00:59:37,530
CAPCOM Roger, you're looking good now.

283
00:59:37,530 --> 00:59:44,530
SC We didn't have much time, Houston, to
talk to about our views out the window when

284
00:59:46,410 --> 00:59:53,410
we were preparing for LM ejection but up to
that time we had the entire northern part

285
00:59:53,720 --> 01:00:00,720
of the lighted hemisphere including North
America, the North Atlantic and Europe and

286
01:00:02,230 --> 01:00:09,230
Northern Africa. We could see that the weather
was good, just about everywhere. There was

287
01:00:09,860 --> 01:00:16,860
one cyclonic depression in Northern Canada
and the Athabaska, probably east of Athabaska

288
01:00:20,800 --> 01:00:24,730
area. Greenland was clear and it appeared
to be, we were seeing just the ice cap in

289
01:00:24,730 --> 01:00:30,770
Greenland. All North Atlantic was pretty good
in Europe and Northern Africa seemed to be

290
01:00:30,770 --> 01:00:36,860
clear. Most of the United States was clear.
There was a, looked like a front stretching

291
01:00:36,860 --> 01:00:41,790
from the center of the country up across north
of the Great Lakes and into Newfoundland.

292
01:00:41,790 --> 01:00:41,820
CAPCOM Roger, we copy.

293
01:00:41,820 --> 01:00:48,820
SC And I don't know what I was looking at,
but I sure did like it.

294
01:00:50,460 --> 01:00:56,690
CAPCOM Okay. I guess the view must be pretty
good from up there. We show you just roughly

295
01:00:56,690 --> 01:00:59,880
somewhere around 19,000 miles out now.

296
01:00:59,880 --> 01:01:03,570
SC I didn't have much outside my window.

297
01:01:03,570 --> 01:01:10,430
CAPCOM We'll get you into PTC one of these
days and take turns looking.

298
01:01:10,430 --> 01:01:17,430
SC Houston, Apollo 11. We're, we've completed
our maneuver to observe the slingshot attitude

299
01:01:19,800 --> 01:01:26,800
but we don't see anything, no Earth and
no S IV B.

300
01:01:27,619 --> 01:01:34,619
CAPCOM Roger, stand by. In GET I have a LOX
dump start time for you. It's supposed to

301
01:01:39,770 --> 01:01:46,770
start at 5 plus 03 plus 07 and stop at 5 plus
04 plus 55. LH burn starts at 5 plus 37 plus

302
01:01:56,020 --> 01:02:01,920
47, stops at 5 plus 42 plus 7. Over.

303
01:02:01,920 --> 01:02:04,540
SC Roger, thank you.

304
01:02:04,540 --> 01:02:06,510
CAPCOM 11, Houston.

305
01:02:06,510 --> 01:02:09,130
SC Go ahead, Houston.

306
01:02:09,130 --> 01:02:16,130
CAPCOM Roger. We now recommend the following
attitude. ROLL 307.0. PITCH 354.0. YAW 019.5

307
01:02:26,100 --> 01:02:33,100
and the LOX dump has already been enabled
so we can't hold it off any longer.

308
01:02:33,970 --> 01:02:40,970
SC That's okay. Go ahead. We'll maneuver
around at 307, 354, and 19 ?. Thank you.

309
01:02:43,250 --> 01:02:43,530
CAPCOM Roger.

310
01:02:43,530 --> 01:02:46,960
CAPCOM 11, Houston. It doesn't look to us
like you'll be able to make it around to

311
01:02:46,960 --> 01:02:52,520
this observation attitude in two minutes.
We recommend that you save the fuel. Over.

312
01:02:52,520 --> 01:02:59,520
SC Okay, Houston. We've, you got to us just
a little late. Our maneuver's already begun

313
01:03:02,730 --> 01:03:09,730
so it's going to cost just about the same
amount of fuel to stop it no matter where

314
01:03:09,760 --> 01:03:11,230

we stop it and we may as well keep going.

315
01:03:11,230 --> 01:03:11,820
CAPCOM Roger, go ahead.

316
01:03:11,820 --> 01:03:12,869
CAPCOM 11, Houston, LOX dump initiated.

317
01:03:12,869 --> 01:03:14,119
SC Roger. We still don't have the

318
01:03:14,119 --> 01:03:16,650
CAPCOM Roger, out.

319
01:03:16,650 --> 01:03:22,570
CAPCOM Apollo 11, this is Houston, over.

320
01:03:22,570 --> 01:03:25,100
SC Go ahead.

321
01:03:25,100 --> 01:03:32,100
CAPCOM Roger, if you'll give us ACCEPT and
stay in POO, we'll set your trunnion bias

322
01:03:34,510 --> 01:03:40,070
to 0 and I have a plan for balancing your
oxygen cryos, over.

323
01:03:40,070 --> 01:03:42,340
SC You got it.

324
01:03:42,340 --> 01:03:43,480
CAPCOM Roger.

325
01:03:43,480 --> 01:03:50,480
SC Houston, Apollo 11. We've got what appears
to be the S IV B in sight only it has to be

326

01:03:53,619 --> 01:04:00,619
a couple of miles away. It's at our number
5 window and the dump appears to be coming

327
01:04:01,609 --> 01:04:08,609
out of two radially opposite directions from
the S IV B.

328
01:04:09,540 --> 01:04:16,540
CAPCOM Roger. They're continuing with the
non-propulsive vent from the liquid oxygen

329
01:04:17,060 --> 01:04:24,060
tank. It would be radially opposite then.
And boosters tell me, tells me it's the

330
01:04:24,470 --> 01:04:30,800
continuous vents system, they're also dumping
a small amount of fuel at this time. You got

331
01:04:30,800 --> 01:04:36,680
about 23 ? minutes or so until the APS burn.
Over.

332
01:04:36,680 --> 01:04:39,119
SC Roger.

333
01:04:39,119 --> 01:04:46,119
CAPCOM 11, Houston. We have a recommended
configuration for your cryo switches to even

334
01:04:47,100 --> 01:04:51,200
up the load between oxygen tanks 1 and 2.
Over.

335
01:04:51,200 --> 01:04:52,220
SC Okay.

336
01:04:52,220 --> 01:04:59,220
CAPCOM You're coming in very weakly there.

We're recommending O2 tank 1 heater OFF,

337
01:05:01,460 --> 01:05:08,460
O2 tank 2 heater to AUTO, O2 tank 1 and 2
fans both OFF. H1, H2 tank 1 heaters to AUTO

338
01:05:18,500 --> 01:05:23,310
and H2 tank 2 heaters to OFF. Over.

339
01:05:23,310 --> 01:05:30,310
SC Rog, we have that except the last one was
H2 fans to OFF. Is that affirmed?

340
01:05:31,850 --> 01:05:38,850
SC The configuration we have now is hydrogen
heaters, we got 1 AUTO, 2 OFF, oxygen heaters

341
01:05:41,840 --> 01:05:46,350
1 OFF, 2 AUTO and we have all the fans off.

342
01:05:46,350 --> 01:05:49,380
CAPCOM This is Houston. Roger, we concur.
Out.

343
01:05:49,380 --> 01:05:56,380
CAPCOM 11, this is Houston. We've completed
the trunnion zero bias setting. You can retrieve

344
01:05:57,030 --> 01:05:58,820
the computer and go to BLOCK.

345
01:05:58,820 --> 01:06:01,260
SC Roger, I thank you.

346
01:06:01,260 --> 01:06:08,260
CAPCOM 11, this is Houston. We're just maneuvering
to view the slingshot. I guess we missed copying

347
01:06:08,380 --> 01:06:12,859

LM CM Delta P reading. Over.

348
01:06:12,859 --> 01:06:19,859
SC Stand by, we'll give you a recent one.
Right now reading 0.2, Bruce.

349
01:06:22,230 --> 01:06:24,320
CAPCOM Roger, 0.2.

350
01:06:24,320 --> 01:06:31,320
CAPCOM Okay, Mike, and could you verify that
your waste compartment valve is in VENT then?

351
01:06:32,560 --> 01:06:37,500
SC Roger, waste compartment valve has been
in VENT for, oh, 45 minutes or so.

352
01:06:37,500 --> 01:06:38,820
CAPCOM Roger, we copy.

353
01:06:38,820 --> 01:06:45,180
SC If we're late in answering, it's because
we're munching sandwiches.

354
01:06:45,180 --> 01:06:49,470
CAPCOM Roger, I wish I could do the same here.

355
01:06:49,470 --> 01:06:50,900
SC Don't leave the console.

356
01:06:50,900 --> 01:06:56,900
CAPCOM Don't worry. I won't.

357
01:06:56,900 --> 01:07:02,790
SC Frank doesn't like it. How is Frank today?

358
01:07:02,790 --> 01:07:06,400
CAPCOM Oh, he's doing quite well.

359
01:07:06,400 --> 01:07:13,400
PAO This is Apollo Control at 5 hours 22 minutes.
We're back live now. The Delta-P you heard

360
01:07:16,530 --> 01:07:23,530
discussed is the difference in pressure between
the LM and the Command Module, cabin pressure.

361
01:07:26,500 --> 01:07:33,500
Apollo 11 coming up on 22,000 miles distance
from the Earth now. Velocity 12, 914 feet