
NASA

1
00:00:05,860 --> 00:00:04,280
welcome to this launch status news

2
00:00:07,760 --> 00:00:05,870
conference for Space Shuttle Endeavour's

3
00:00:09,500 --> 00:00:07,770
sts-134 mission to the International

4
00:00:10,970 --> 00:00:09,510
Space Station joining us at NASA's

5
00:00:12,320 --> 00:00:10,980
Kennedy Space Center this afternoon our

6
00:00:13,549 --> 00:00:12,330
two managers will give us the latest on

7
00:00:15,589 --> 00:00:13,559
efforts to prepare endeavour for its

8
00:00:17,150 --> 00:00:15,599
next launch attempt first we have space

9
00:00:18,890 --> 00:00:17,160
shuttle launch integration manager and

10
00:00:22,939 --> 00:00:18,900
mission management team chair Mike Moses

11
00:00:25,130 --> 00:00:22,949
Efrain and shuttle launch director Mike

12
00:00:26,330 --> 00:00:25,140
Leinbach good afternoon or start with

13
00:00:28,609 --> 00:00:26,340

some opening comments about where we are

14
00:00:31,460 --> 00:00:28,619
and then open to questions sir thanks

15
00:00:32,630 --> 00:00:31,470
Alan let's see yeah the team's been

16
00:00:34,880 --> 00:00:32,640
working really hard on the

17
00:00:36,709 --> 00:00:34,890
troubleshooting plan we've been getting

18
00:00:39,799 --> 00:00:36,719
getting information updates as they go

19
00:00:41,150 --> 00:00:39,809
it was a pretty good a pretty good plan

20
00:00:43,040 --> 00:00:41,160
that they had and I'll let Mike go into

21
00:00:45,830 --> 00:00:43,050
the details of how they got to where

22
00:00:48,740 --> 00:00:45,840
that we are today but but the the bottom

23
00:00:50,720 --> 00:00:48,750
line is that the failure that we have

24
00:00:53,510 --> 00:00:50,730
appears to be a power problem which is

25
00:00:55,910 --> 00:00:53,520
in the LCA the load control assembly box

26
00:00:59,090 --> 00:00:55,920
which is basically a box of switches

27
00:01:01,700 --> 00:00:59,100
that we use to control power feeds so

28
00:01:03,680 --> 00:01:01,710
that's an electronic box so that

29
00:01:05,509 --> 00:01:03,690
basically means that the the powers not

30
00:01:07,010 --> 00:01:05,519
getting out to the heaters that that

31
00:01:08,780 --> 00:01:07,020
weren't working on launch day and we

32
00:01:11,780 --> 00:01:08,790
need to go in and change out that box

33
00:01:14,570 --> 00:01:11,790
the team had some options in case it was

34
00:01:16,070 --> 00:01:14,580
a ground side problem on the on the

35
00:01:17,960 --> 00:01:16,080
ground electrically grounded side

36
00:01:20,090 --> 00:01:17,970
problem we could have may be kind of hot

37
00:01:22,370 --> 00:01:20,100
wired our way around and and rewired a

38
00:01:23,990 --> 00:01:22,380

few things but this is on the upstream

39
00:01:25,330 --> 00:01:24,000
side so it's the power feed side and

40
00:01:27,620 --> 00:01:25,340
there really are no options other than

41
00:01:29,990 --> 00:01:27,630
replacing the failed component which

42
00:01:31,580 --> 00:01:30,000
requires removing the whole box so that

43
00:01:32,539 --> 00:01:31,590
works gonna take us a while so

44
00:01:33,590 --> 00:01:32,549
unfortunately we're not gonna be able to

45
00:01:35,690 --> 00:01:33,600
make a launch attempt here in the next

46
00:01:36,859 --> 00:01:35,700
few days I'm here to disappoint

47
00:01:37,760 --> 00:01:36,869
everybody by saying I'm not going to

48
00:01:40,490 --> 00:01:37,770
tell you what the new launch date is

49
00:01:43,039 --> 00:01:40,500
because I have no idea we have a lot

50
00:01:45,740 --> 00:01:43,049
more to evaluate both the work to do the

51
00:01:48,380 --> 00:01:45,750
RNR the retest that has to be done how

52
00:01:49,940 --> 00:01:48,390
we work all that schedule in there's

53
00:01:51,200 --> 00:01:49,950
their APIs on the range lunch and on the

54
00:01:53,690 --> 00:01:51,210
sixth right now so we have to evaluate

55
00:01:56,330 --> 00:01:53,700
conflicts with them and then the mission

56
00:01:57,889 --> 00:01:56,340
timelines and the ISS time would be

57
00:02:00,740 --> 00:01:57,899
coming up as we move to the other side

58
00:02:02,810 --> 00:02:00,750
of the Atlas we'd be looking at some

59
00:02:04,670 --> 00:02:02,820
potential conflicts with the 25 Soyuz

60
00:02:06,410 --> 00:02:04,680
undocking and we want to make sure we D

61
00:02:09,020 --> 00:02:06,420
conflict the right way with that

62
00:02:10,190 --> 00:02:09,030
activity so right now we are we're not

63
00:02:12,350 --> 00:02:10,200

ready to settle launch date we're going

64
00:02:13,520 --> 00:02:12,360
to need a couple more days we might have

65
00:02:15,920 --> 00:02:13,530
an M empty tomorrow to pick the

66
00:02:17,059 --> 00:02:15,930
we might go to Tuesday and do that will

67
00:02:19,100 --> 00:02:17,069
kind of wait and see where we have

68
00:02:20,300 --> 00:02:19,110
enough data to make that decision but we

69
00:02:22,610 --> 00:02:20,310
can tell you pretty much that it's not

70
00:02:23,960 --> 00:02:22,620
gonna be any earlier than the 8th that

71
00:02:25,670 --> 00:02:23,970
doesn't mean we're gonna go launch on

72
00:02:27,080 --> 00:02:25,680
the 8th that just means we know right

73
00:02:28,970 --> 00:02:27,090
now the 8th is our next available

74
00:02:30,229 --> 00:02:28,980
opening so we'll kind of start looking

75
00:02:32,240 --> 00:02:30,239
at that but we're really not even

76
00:02:33,440 --> 00:02:32,250
setting the schedules today there's

77
00:02:36,080 --> 00:02:33,450
still a whole lot of short-term work

78
00:02:37,490 --> 00:02:36,090
that has to be done in addition to once

79
00:02:39,680 --> 00:02:37,500
the box comes out we have to go verify

80
00:02:41,600 --> 00:02:39,690
circuitry and prove that the box itself

81
00:02:42,920 --> 00:02:41,610
was the failure and that there's not

82
00:02:45,320 --> 00:02:42,930
some other failure in the ship somewhere

83
00:02:46,610 --> 00:02:45,330
that we're getting fooled by so we still

84
00:02:48,560 --> 00:02:46,620
have a lot of work and a lot of off

85
00:02:50,420 --> 00:02:48,570
roads that could take us one way or

86
00:02:52,400 --> 00:02:50,430
another but we're not gonna try any

87
00:02:54,650 --> 00:02:52,410
earlier than the 8th and and we may or

88
00:02:56,600 --> 00:02:54,660

may not be on the 8th itself so again

89
00:02:57,949 --> 00:02:56,610
don't take that as a launch date just

90
00:03:00,140 --> 00:02:57,959
take that as a target for when we're

91
00:03:02,300 --> 00:03:00,150
ready to start talking again about a

92
00:03:03,710 --> 00:03:02,310
lunch date so with that we we knew

93
00:03:05,270 --> 00:03:03,720
enough that we could send folks home the

94
00:03:07,490 --> 00:03:05,280
crew has departed their families are on

95
00:03:08,930 --> 00:03:07,500
their way home all the support teams

96
00:03:10,610 --> 00:03:08,940
from other centers around the country

97
00:03:13,100 --> 00:03:10,620
have gone home or in the process of

98
00:03:14,930 --> 00:03:13,110
going home like I said will then convene

99
00:03:16,699 --> 00:03:14,940
there's a management team on Monday or

100
00:03:19,280 --> 00:03:16,709
Tuesday where we'll start to discuss

101
00:03:20,780 --> 00:03:19,290
future options and bring in the whole

102
00:03:23,060 --> 00:03:20,790
entire team's impacts with the space

103
00:03:25,130 --> 00:03:23,070
station program and then the range and

104
00:03:26,390 --> 00:03:25,140
the Atlas team I talked to them this

105
00:03:28,009 --> 00:03:26,400
morning they're still in really good

106
00:03:29,990 --> 00:03:28,019
shape and on schedule they don't

107
00:03:32,210 --> 00:03:30,000
anticipate any hiccups and their flow

108
00:03:33,740 --> 00:03:32,220
but again obviously we need to be ready

109
00:03:35,449 --> 00:03:33,750
in case they had some problems too as to

110
00:03:37,520 --> 00:03:35,459
how we mutually work through range

111
00:03:39,440 --> 00:03:37,530
conflicts as we get to the get to the

112
00:03:42,140 --> 00:03:39,450
end of end of that week in May so about

113
00:03:44,630 --> 00:03:42,150

a week from now so that's the that's the

114
00:03:46,039 --> 00:03:44,640
quick and dirty answer for us a lot of

115
00:03:48,229 --> 00:03:46,049
more work to happen the teams have been

116
00:03:50,750 --> 00:03:48,239
doing an amazing job up to this point

117
00:03:52,099 --> 00:03:50,760
and again one of the things we can tend

118
00:03:54,170 --> 00:03:52,109
to not try to make decisions too quickly

119
00:03:56,569 --> 00:03:54,180
is is this team is shown again and again

120
00:03:58,069 --> 00:03:56,579
that given enough time they can come up

121
00:03:59,630 --> 00:03:58,079
with some pretty creative solutions so

122
00:04:01,280 --> 00:03:59,640
right now we have what looks like a

123
00:04:03,890 --> 00:04:01,290
boiler plate scheduled to go pull this

124
00:04:05,750 --> 00:04:03,900
box out in the next day you go retest

125
00:04:07,490 --> 00:04:05,760
put a new box in and then do a whole

126
00:04:09,319 --> 00:04:07,500
bunch of checks get back into launch

127
00:04:10,759 --> 00:04:09,329
count that looks like it's a pretty

128
00:04:13,370 --> 00:04:10,769
aggressive schedule to make the end of

129
00:04:14,630 --> 00:04:13,380
next week but but you know they need

130
00:04:16,099 --> 00:04:14,640
more time to go look and see how they

131
00:04:17,270 --> 00:04:16,109
can parallel that work up and what

132
00:04:19,250 --> 00:04:17,280
really has to be in there so we need to

133
00:04:21,199 --> 00:04:19,260
give them that time before we go set any

134
00:04:22,760 --> 00:04:21,209
dates in front of them so so we're gonna

135
00:04:23,600 --> 00:04:22,770
let them do that with that all that Mike

136
00:04:24,649 --> 00:04:23,610
talk to you little more about the

137
00:04:26,360 --> 00:04:24,659
details of how the team's been working

138
00:04:26,730 --> 00:04:26,370

but again can't be more proud of how

139
00:04:29,760 --> 00:04:26,740
they're

140
00:04:30,870 --> 00:04:29,770
make really good decisions based on the

141
00:04:32,760 --> 00:04:30,880
data we have and try not to make any

142
00:04:34,020 --> 00:04:32,770
decisions before we actually have data

143
00:04:35,520 --> 00:04:34,030
and we've been doing pretty good with

144
00:04:38,370 --> 00:04:35,530
that so far so we're gonna keep on that

145
00:04:40,200 --> 00:04:38,380
track go Mike okay thanks

146
00:04:41,700 --> 00:04:40,210
let's say we've had a series of telecoms

147
00:04:43,320 --> 00:04:41,710
over the last day and a half or so to

148
00:04:45,330 --> 00:04:43,330
try to understand this problem little

149
00:04:47,820 --> 00:04:45,340
bit better and as Mike said it does lead

150
00:04:50,430 --> 00:04:47,830
to a box RNR so we're in the process of

151
00:04:52,290 --> 00:04:50,440
gaining a full full platform set in they

152
00:04:54,270 --> 00:04:52,300
after the orbiter that's not required

153
00:04:55,650 --> 00:04:54,280
for the box itself that's required for

154
00:04:56,700 --> 00:04:55,660
some of the retest we have to get all

155
00:04:59,430 --> 00:04:56,710
the way down to the bottom they have

156
00:05:01,020 --> 00:04:59,440
compartment for some of the retest so

157
00:05:02,760 --> 00:05:01,030
that access is going into the after the

158
00:05:05,129 --> 00:05:02,770
orbiter right now we're also

159
00:05:07,020 --> 00:05:05,139
establishing the connection for the

160
00:05:09,469 --> 00:05:07,030
orbiter mid body umbilical unit that's

161
00:05:11,969 --> 00:05:09,479
the unit that we use to drain the PRS D

162
00:05:13,830 --> 00:05:11,979
cryogenics we need to offload PRS D for

163
00:05:16,200 --> 00:05:13,840

this operation we also need to

164
00:05:17,610 --> 00:05:16,210
disconnect our ordnance complete

165
00:05:18,930 --> 00:05:17,620
ordnance or partial ordnance that's

166
00:05:20,339 --> 00:05:18,940
still an open question for the team

167
00:05:23,010 --> 00:05:20,349
they'll come to grips with that later

168
00:05:24,719 --> 00:05:23,020
this afternoon or this evening and then

169
00:05:26,790 --> 00:05:24,729
we'll power down the ship tomorrow and

170
00:05:28,379 --> 00:05:26,800
that will effectively take us out it

171
00:05:30,749 --> 00:05:28,389
does it take it takes us out of launch

172
00:05:31,110 --> 00:05:30,759
countdown and then we'll get into the

173
00:05:33,240 --> 00:05:31,120
box

174
00:05:35,040 --> 00:05:33,250
removal we'll check the cold plate under

175
00:05:37,110 --> 00:05:35,050
the box right now to make sure there are

176
00:05:39,330 --> 00:05:37,120
no dings as we were pulling the Box off

177
00:05:41,279 --> 00:05:39,340
we'll put in the new box and then we'll

178
00:05:43,409 --> 00:05:41,289
get into the retest the retest is quite

179
00:05:46,290 --> 00:05:43,419
lengthy we've done this once before and

180
00:05:48,779 --> 00:05:46,300
the integrated flow STS 70 I believe it

181
00:05:49,980 --> 00:05:48,789
was and there are nine different systems

182
00:05:51,870 --> 00:05:49,990
we're going to have to retest they're

183
00:05:54,089 --> 00:05:51,880
quite lengthy retest I think we reported

184
00:05:55,379 --> 00:05:54,099
the other day two full days of retest

185
00:05:57,420 --> 00:05:55,389
we're taking a good hard look at that

186
00:05:59,580 --> 00:05:57,430
schedule that was developed many years

187
00:06:01,350 --> 00:05:59,590
ago to see if that's a still all

188
00:06:03,839 --> 00:06:01,360

required or maybe there's even a bit

189
00:06:06,600 --> 00:06:03,849
more but right now our our tentative

190
00:06:08,730 --> 00:06:06,610
plan has two full days of retest after

191
00:06:10,620 --> 00:06:08,740
which we get back in and and connect up

192
00:06:12,719 --> 00:06:10,630
ordnance again get into launch countdown

193
00:06:14,399 --> 00:06:12,729
and it'll be a standard three day launch

194
00:06:14,939 --> 00:06:14,409
countdown we'll start over from ground

195
00:06:17,100 --> 00:06:14,949
zero

196
00:06:19,409 --> 00:06:17,110
and we'll load PRS D two days before

197
00:06:21,390 --> 00:06:19,419
count and then now launch two days later

198
00:06:23,700 --> 00:06:21,400
so it's a it's a heck of a lot of work

199
00:06:24,930 --> 00:06:23,710
ahead of the team I'm extremely proud of

200
00:06:26,670 --> 00:06:24,940
the work we've already done over the

201
00:06:28,830 --> 00:06:26,680
weekend to understand this problem and

202
00:06:30,540 --> 00:06:28,840
now that now that we've essentially

203
00:06:33,120 --> 00:06:30,550
pinpointed the problem to inside the

204
00:06:35,070 --> 00:06:33,130
load control assembly we'll get on about

205
00:06:37,379 --> 00:06:35,080
our business of taking that guy out and

206
00:06:38,910 --> 00:06:37,389
replacing it with the new one so that's

207
00:06:40,470 --> 00:06:38,920
the work in front of us and

208
00:06:41,910 --> 00:06:40,480
Tina's ready to execute the team is

209
00:06:43,320 --> 00:06:41,920
upbeat I'll tell you a little

210
00:06:46,080 --> 00:06:43,330
disappointing of course that we couldn't

211
00:06:47,550 --> 00:06:46,090
launch but you know respond to problems

212
00:06:49,470 --> 00:06:47,560
is one of the things we do best around

213
00:06:51,420 --> 00:06:49,480

here and the team always likes a good

214
00:06:52,950 --> 00:06:51,430
challenge I'm sure we're going to be

215
00:06:55,170 --> 00:06:52,960
really glad when when endeavour is

216
00:06:56,730 --> 00:06:55,180
finally on orbit but right now the team

217
00:06:59,400 --> 00:06:56,740
is upbeat and ready to execute the plan

218
00:07:03,480 --> 00:06:59,410
that we've laid out so with that we'll

219
00:07:05,010 --> 00:07:03,490
be glad to take questions like you said

220
00:07:07,170 --> 00:07:05,020
we'll love when the microphone gets to

221
00:07:08,880 --> 00:07:07,180
you and I think I don't want to go from

222
00:07:11,340 --> 00:07:08,890
here um please wait for the microphone

223
00:07:12,750 --> 00:07:11,350
and name news affiliation to whom you'd

224
00:07:16,920 --> 00:07:12,760
like to answer your question and we'll

225
00:07:18,990 --> 00:07:16,930
start with the front row Marcia Marcia

226
00:07:20,760 --> 00:07:19,000
den Associated Press I'm just wondering

227
00:07:25,230 --> 00:07:20,770
what do you think's wrong with the

228
00:07:28,200 --> 00:07:25,240
switch box and is it any indicate is it

229
00:07:29,940 --> 00:07:28,210
just sort of an illustration of how the

230
00:07:31,950 --> 00:07:29,950
shoulders are getting older and perhaps

231
00:07:34,100 --> 00:07:31,960
how complicated they are could you just

232
00:07:36,480 --> 00:07:34,110
sort of put this in a big picture for me

233
00:07:38,220 --> 00:07:36,490
we won't know exactly what's wrong with

234
00:07:39,930 --> 00:07:38,230
this particular this it's called a

235
00:07:41,940 --> 00:07:39,940
hybrid driver it's it's essentially a

236
00:07:43,650 --> 00:07:41,950
power switch we won't know for sure

237
00:07:45,420 --> 00:07:43,660
until we get that box out when we send

238
00:07:47,400 --> 00:07:45,430

it down to our malfunction lab for

239
00:07:49,470 --> 00:07:47,410
detailed analysis but we know the powers

240
00:07:51,450 --> 00:07:49,480
not getting through and so there's a

241
00:07:53,310 --> 00:07:51,460
shorter and open something like that and

242
00:07:55,680 --> 00:07:53,320
inside that box and we'll go do it

243
00:07:56,880 --> 00:07:55,690
complete forensics on it as far as you

244
00:07:58,770 --> 00:07:56,890
know the work we're getting old no it's

245
00:08:00,540 --> 00:07:58,780
it's a machine and occasionally machines

246
00:08:03,330 --> 00:08:00,550
break and and this this time we had a

247
00:08:05,490 --> 00:08:03,340
failure in a in a switching box and and

248
00:08:08,160 --> 00:08:05,500
so no I mean it's just part of the

249
00:08:10,590 --> 00:08:08,170
business well yeah we go to great

250
00:08:12,330 --> 00:08:10,600
lengths to test various systems but this

251
00:08:14,100 --> 00:08:12,340
one this one just failed on us and so

252
00:08:15,600 --> 00:08:14,110
with it that's where we are these things

253
00:08:18,870 --> 00:08:15,610
in addition to active switches they also

254
00:08:20,070 --> 00:08:18,880
act as fuses effectively and so same

255
00:08:21,840 --> 00:08:20,080
kind of thing it doesn't mean that that

256
00:08:23,760 --> 00:08:21,850
hybrid driver itself was the cause it

257
00:08:25,800 --> 00:08:23,770
could have been the victim so to speak

258
00:08:27,120 --> 00:08:25,810
so some other circuitry opened up put a

259
00:08:28,860 --> 00:08:27,130
little high spike a current in there and

260
00:08:31,170 --> 00:08:28,870
this this guy popped off and and did

261
00:08:32,250 --> 00:08:31,180
what it was supposed to do so we really

262
00:08:34,320 --> 00:08:32,260
need to wait and get in there and see

263
00:08:35,610 --> 00:08:34,330

but but no you know this kind of I don't

264
00:08:37,770 --> 00:08:35,620
want to say it happens all the time but

265
00:08:40,320 --> 00:08:37,780
these are typical electronics failures

266
00:08:42,450 --> 00:08:40,330
and and nothing in there that indicates

267
00:08:43,770 --> 00:08:42,460
anything with age a life or your age of

268
00:08:45,330 --> 00:08:43,780
components or anything like that nothing

269
00:08:47,280 --> 00:08:45,340
nothing to make us suspect that how long

270
00:08:49,730 --> 00:08:47,290
does this buck spin working or in there

271
00:08:52,220 --> 00:08:49,740
do you have any idea how old it is

272
00:08:53,750 --> 00:08:52,230
oh gosh I don't know what question on

273
00:08:57,860 --> 00:08:53,760
this particular box don't know I will

274
00:08:59,780 --> 00:08:57,870
have to get you that hi Clara Moskowitz

275
00:09:01,550 --> 00:08:59,790
with space comm and can you give us an

276
00:09:05,600 --> 00:09:01,560
idea of how this slip might affect the

277
00:09:07,130 --> 00:09:05,610
135 launch date you want to take that

278
00:09:09,889 --> 00:09:07,140
role out for them well let's see

279
00:09:13,160 --> 00:09:09,899
Atlantis is due to roll out of the of

280
00:09:14,990 --> 00:09:13,170
the OPF on the on the 10th over the

281
00:09:18,079 --> 00:09:15,000
Vehicle Assembly Building and out to the

282
00:09:19,760 --> 00:09:18,089
pad on the 20th of this month and so if

283
00:09:21,170 --> 00:09:19,770
we if we launch by the 8th that's

284
00:09:22,820 --> 00:09:21,180
probably okay if we're a little bit

285
00:09:25,100 --> 00:09:22,830
after that then it may be a slight

286
00:09:27,620 --> 00:09:25,110
impact Atlantis's roller and roll out

287
00:09:29,210 --> 00:09:27,630
date the key there is having enough time

288
00:09:31,430 --> 00:09:29,220

to turn the launchpad around from one

289
00:09:33,139 --> 00:09:31,440
launch to the next roll out to deal with

290
00:09:35,480 --> 00:09:33,149
any kind of damage we may have had from

291
00:09:37,010 --> 00:09:35,490
the previous launch typically booked

292
00:09:39,290 --> 00:09:37,020
keep eight days I think this allows us

293
00:09:40,940 --> 00:09:39,300
10 something like that so you know it's

294
00:09:42,290 --> 00:09:40,950
it's it's kind of thing where it's

295
00:09:43,820 --> 00:09:42,300
getting kind of close but right now

296
00:09:45,740 --> 00:09:43,830
we're not worried about it right now on

297
00:09:51,680 --> 00:09:45,750
paper the Atlantis mission looks

298
00:09:54,019 --> 00:09:51,690
perfectly fine what can you tell us

299
00:09:55,670 --> 00:09:54,029
about congresswoman giffords I mentioned

300
00:09:56,510 --> 00:09:55,680
that the cruise families were heading

301
00:09:59,060 --> 00:09:56,520
home

302
00:10:00,350 --> 00:09:59,070
what would her status be see I don't

303
00:10:01,670 --> 00:10:00,360
have any specific details on her

304
00:10:03,710 --> 00:10:01,680
particular travel plans you'd have to

305
00:10:05,120 --> 00:10:03,720
contact her staff and office but but

306
00:10:06,710 --> 00:10:05,130
from a family perspective I know we

307
00:10:09,260 --> 00:10:06,720
worked the details today with the crew

308
00:10:10,550 --> 00:10:09,270
office to tell them that there was no

309
00:10:12,319 --> 00:10:10,560
launch attempt that said that there was

310
00:10:14,480 --> 00:10:12,329
a need to keep the families in town from

311
00:10:16,030 --> 00:10:14,490
a travel perspective so the know they're

312
00:10:23,290 --> 00:10:16,040
free to make their own plans to go home

313
00:10:27,550 --> 00:10:26,530

J Barbary with NBC can you think of any

314
00:10:32,170 --> 00:10:27,560
scenario

315
00:10:33,820 --> 00:10:32,180
launch before the 8th yeah no that's

316
00:10:35,800 --> 00:10:33,830
that's kind of why we decided we talked

317
00:10:38,079 --> 00:10:35,810
last night we were kind of still hope

318
00:10:39,670 --> 00:10:38,089
holding some hope that we had some time

319
00:10:41,889 --> 00:10:39,680
when we looked at the need to actually

320
00:10:43,960 --> 00:10:41,899
go after the box itself that kind of set

321
00:10:46,690 --> 00:10:43,970
the timeline to say with that retest

322
00:10:48,220 --> 00:10:46,700
required we could potentially go a

323
00:10:50,320 --> 00:10:48,230
little bit earlier than then but there

324
00:10:53,079 --> 00:10:50,330
was no need to try to hold on hope to

325
00:10:54,699 --> 00:10:53,089
have Atlas have some problem or go push

326
00:10:56,260 --> 00:10:54,709
them to make them come off the range for

327
00:10:58,120 --> 00:10:56,270
a schedule that we weren't really sure

328
00:10:59,230 --> 00:10:58,130
of yet so no we were that's why we're

329
00:11:00,970 --> 00:10:59,240
ready to say we're not going to be going

330
00:11:09,329 --> 00:11:00,980
earlier than the 8th but we're not sure

331
00:11:15,579 --> 00:11:11,290
bill Harmon if he has two quick

332
00:11:17,019 --> 00:11:15,589
questions for Mike Moses if I know the

333
00:11:19,780 --> 00:11:17,029
8th in a date it's just you know earlier

334
00:11:22,030 --> 00:11:19,790
than target but then I'm confused about

335
00:11:24,220 --> 00:11:22,040
the 9th that's not available is it as it

336
00:11:25,389 --> 00:11:24,230
stands today because you'd be in dock in

337
00:11:27,190 --> 00:11:25,399
the same time so you so if you went on

338
00:11:28,600 --> 00:11:27,200

the 8th you'd skip a day to the 10th if

339
00:11:30,220 --> 00:11:28,610
you didn't get off yeah so I've learned

340
00:11:31,840 --> 00:11:30,230
after three years to be careful what I

341
00:11:33,819 --> 00:11:31,850
tell you guys so I could tell you right

342
00:11:35,230 --> 00:11:33,829
now yes right now we we on paper say

343
00:11:38,440 --> 00:11:35,240
that's not a good date but we say that

344
00:11:40,360 --> 00:11:38,450
because if we launched on time on the

345
00:11:42,639 --> 00:11:40,370
8th and added the two mission extension

346
00:11:44,079 --> 00:11:42,649
days that we want to on-orbit we would

347
00:11:47,530 --> 00:11:44,089
then be undocking on the same day that

348
00:11:48,880 --> 00:11:47,540
the Soyuz 25 s on docks so there's

349
00:11:50,650 --> 00:11:48,890
nothing to say that we can decide we

350
00:11:53,139 --> 00:11:50,660
don't we'd rather launch on the night

351
00:11:54,460 --> 00:11:53,149
then not use plus 2 and only use one of

352
00:11:55,990 --> 00:11:54,470
those 2 days in which case we just

353
00:11:58,329 --> 00:11:56,000
deconflict it in the nights now a good

354
00:12:00,040 --> 00:11:58,339
day to go we're not thinking that's what

355
00:12:01,990 --> 00:12:00,050
we're gonna do but all that thinking was

356
00:12:03,280 --> 00:12:02,000
based on before we knew we might be

357
00:12:04,870 --> 00:12:03,290
really seriously thinking about

358
00:12:06,069 --> 00:12:04,880
launching on that day so now that we

359
00:12:08,019 --> 00:12:06,079
know we're seriously headed into that

360
00:12:09,280 --> 00:12:08,029
conflict we're gonna go talk one of the

361
00:12:11,410 --> 00:12:09,290
big things I need to wait till tomorrow

362
00:12:13,030 --> 00:12:11,420
to talk to our Russian counterparts in

363
00:12:14,500 --> 00:12:13,040

our station counterparts to find out

364
00:12:16,240 --> 00:12:14,510
truly what that does to the timeline so

365
00:12:18,040 --> 00:12:16,250
yeah we kind of on paper say the night's

366
00:12:19,810 --> 00:12:18,050
not a good day but but don't hold us to

367
00:12:21,069 --> 00:12:19,820
that we could easily decide we want to

368
00:12:22,750 --> 00:12:21,079
rearrange the mission a little bit and

369
00:12:24,760 --> 00:12:22,760
make the ninth a good day thanks ed for

370
00:12:26,290 --> 00:12:24,770
Mike Leinbach could you just give us

371
00:12:27,639 --> 00:12:26,300
days when the box comes out when you

372
00:12:28,810 --> 00:12:27,649
expect to have the new and out I assume

373
00:12:29,920 --> 00:12:28,820
it comes out tomorrow the new one goes

374
00:12:31,569 --> 00:12:29,930
in Tuesday or something or maybe

375
00:12:33,730 --> 00:12:31,579
tomorrow could you give us a little

376
00:12:35,260 --> 00:12:33,740
detail on why the retest is so

377
00:12:36,519 --> 00:12:35,270
complicated with those nine systems what

378
00:12:39,309 --> 00:12:36,529
sort of things you have to do

379
00:12:40,809 --> 00:12:39,319
to go through that process but help us

380
00:12:42,999 --> 00:12:40,819
explain why it takes two days thanks

381
00:12:44,410 --> 00:12:43,009
sure well the box on paper right now the

382
00:12:46,179 --> 00:12:44,420
box will come out tomorrow you know

383
00:12:47,800 --> 00:12:46,189
again we'll send it down our malfunction

384
00:12:50,199 --> 00:12:47,810
lab for detail inspection the new box

385
00:12:51,970 --> 00:12:50,209
goes in on Tuesday and of course as we

386
00:12:53,439 --> 00:12:51,980
work through this this tentative plan

387
00:12:55,299 --> 00:12:53,449
that we have in front of us here you

388
00:12:56,799 --> 00:12:55,309

know it work execution is going to

389
00:12:58,960 --> 00:12:56,809
dictate the exact timelines but that

390
00:13:00,519 --> 00:12:58,970
that's generally it and then after that

391
00:13:02,379 --> 00:13:00,529
we get into the retest Tuesday night

392
00:13:04,090 --> 00:13:02,389
Wednesday that kind of timeframe and

393
00:13:07,119 --> 00:13:04,100
it's going to be a full two days of

394
00:13:08,679 --> 00:13:07,129
retest and I can read you the various

395
00:13:10,329 --> 00:13:08,689
systems I wrote them down so I wouldn't

396
00:13:11,519 --> 00:13:10,339
forget any exhilarate our units

397
00:13:13,780 --> 00:13:11,529
environmental control and life support

398
00:13:16,179 --> 00:13:13,790
Electric Power Distribution booster

399
00:13:18,699 --> 00:13:16,189
electric hydraulics and our water spray

400
00:13:20,439 --> 00:13:18,709
boilers main propulsion systems orbital

401
00:13:22,960 --> 00:13:20,449
maneuvering systems spatial domain

402
00:13:25,239 --> 00:13:22,970
engines and orbiter flight controls and

403
00:13:27,249 --> 00:13:25,249
any time you break a connection to a box

404
00:13:28,960 --> 00:13:27,259
like this you essentially invalidate all

405
00:13:31,239 --> 00:13:28,970
the testing we did up to that point you

406
00:13:33,340 --> 00:13:31,249
know you could take the tact of saying

407
00:13:34,989 --> 00:13:33,350
well all you're doing is replacing the

408
00:13:36,720 --> 00:13:34,999
Box everything downstream and that box

409
00:13:39,129 --> 00:13:36,730
should be fine well that's true but our

410
00:13:40,929 --> 00:13:39,139
requirements are the way we do business

411
00:13:42,819 --> 00:13:40,939
is whenever we break a connection we go

412
00:13:44,410 --> 00:13:42,829
back and retest it that's just the

413
00:13:46,329 --> 00:13:44,420

prudent thing to do and the way our

414
00:13:48,040 --> 00:13:46,339
requirements are said and so we have to

415
00:13:51,090 --> 00:13:48,050
retest every one of those those nine

416
00:13:52,809 --> 00:13:51,100
systems the details within those systems

417
00:13:55,720 --> 00:13:52,819
you know you could probably write a

418
00:13:57,610 --> 00:13:55,730
thesis on how many individual tests

419
00:14:03,579 --> 00:13:57,620
there are within those nine systems and

420
00:14:07,480 --> 00:14:03,589
that's why it takes so long it's a next

421
00:14:11,799 --> 00:14:07,490
oh hi Robert Perlman with collec

422
00:14:14,889 --> 00:14:11,809
space.com I think for Mike Moses given

423
00:14:16,600 --> 00:14:14,899
that you have the time now and if it's

424
00:14:19,600 --> 00:14:16,610
necessary or not I don't know are you

425
00:14:21,929 --> 00:14:19,610
gonna have any teams look at the at the

426
00:14:24,069 --> 00:14:21,939
ohms the right ohms pod in terms of the

427
00:14:26,889 --> 00:14:24,079
slight pressure differential that was

428
00:14:28,119 --> 00:14:26,899
seen during during the count yeah no I

429
00:14:32,079 --> 00:14:28,129
don't think there's any plans to do that

430
00:14:34,329 --> 00:14:32,089
really what that was was a creep in the

431
00:14:36,069 --> 00:14:34,339
regulator so leakage that goes through

432
00:14:37,960 --> 00:14:36,079
the regulator down into the downstream

433
00:14:40,239 --> 00:14:37,970
components we had already known about

434
00:14:42,879 --> 00:14:40,249
that condition pre-flight it was really

435
00:14:44,949 --> 00:14:42,889
just a confluence of events of of the

436
00:14:46,509 --> 00:14:44,959
time it sat in lockup it creeped in bit

437
00:14:49,059 --> 00:14:46,519
flipped up just enough to trip the limit

438
00:14:50,710 --> 00:14:49,069

the the action we took to equalize the

439
00:14:52,690 --> 00:14:50,720
pressure seemed fine

440
00:14:54,220 --> 00:14:52,700
I don't think there's any plans to do to

441
00:14:55,570 --> 00:14:54,230
do anything other than maybe some more

442
00:14:57,460 --> 00:14:55,580
data reviews to make sure there wasn't

443
00:14:59,020 --> 00:14:57,470
anything else going on there but no no

444
00:15:05,170 --> 00:14:59,030
no targets to go out for anything in the

445
00:15:08,530 --> 00:15:05,180
home system todd halvorson Florida today

446
00:15:11,020 --> 00:15:08,540
with one for each mic for Mike Moses

447
00:15:14,260 --> 00:15:11,030
could you just remind us why you don't

448
00:15:16,870 --> 00:15:14,270
like to do too undocking operations on

449
00:15:19,600 --> 00:15:16,880
the same day and for Mike Leinbach could

450
00:15:22,060 --> 00:15:19,610
you kind of give us a little information

451
00:15:25,180 --> 00:15:22,070
on the work environment the technicians

452
00:15:28,360 --> 00:15:25,190
will have in front of them in the app

453
00:15:32,890 --> 00:15:28,370
compartment and it's pretty cramped as I

454
00:15:34,980 --> 00:15:32,900
recall and what are your what would do

455
00:15:40,690 --> 00:15:34,990
to make sure you do no harm

456
00:15:43,410 --> 00:15:40,700
let's see on the on the undocking really

457
00:15:45,430 --> 00:15:43,420
comes down to crew workload and shifting

458
00:15:48,070 --> 00:15:45,440
especially when we're dealing with a

459
00:15:50,200 --> 00:15:48,080
Russian vehicle and a stay on shuttle

460
00:15:51,580 --> 00:15:50,210
vehicle the the sleep shifts required

461
00:15:53,470 --> 00:15:51,590
for each of those are going to be pretty

462
00:15:55,150 --> 00:15:53,480
drastically different so you know the

463
00:15:57,250 --> 00:15:55,160

Russians are gonna the Soyuz crew is

464
00:15:59,320 --> 00:15:57,260
going to be undocking and within a day

465
00:16:00,940 --> 00:15:59,330
coming back into to deorbit and land so

466
00:16:02,710 --> 00:16:00,950
they need to be on the right sleep shift

467
00:16:04,510 --> 00:16:02,720
so that they're well-rested and able to

468
00:16:06,250 --> 00:16:04,520
execute that event whereas our shuttle

469
00:16:08,020 --> 00:16:06,260
crew was on a sleep shift that set them

470
00:16:09,400 --> 00:16:08,030
up for their launch and is slowly

471
00:16:11,560 --> 00:16:09,410
phasing to protect them for their

472
00:16:13,810 --> 00:16:11,570
landing which I think I haven't looked

473
00:16:15,790 --> 00:16:13,820
at the details but but based on where we

474
00:16:17,290 --> 00:16:15,800
were knowing that we're delaying that's

475
00:16:18,820 --> 00:16:17,300
gonna start to start to head out a face

476
00:16:20,920 --> 00:16:18,830
from each other and so we're probably

477
00:16:22,810 --> 00:16:20,930
gonna have a decent little sleep shift

478
00:16:25,120 --> 00:16:22,820
for the crew which could be a problem

479
00:16:26,980 --> 00:16:25,130
just in general for us but so we

480
00:16:29,110 --> 00:16:26,990
basically on a crew workday on that

481
00:16:30,460 --> 00:16:29,120
given day having both crews trying to to

482
00:16:32,440 --> 00:16:30,470
work to two separate work schedules

483
00:16:33,790 --> 00:16:32,450
wouldn't really work very well a lot of

484
00:16:35,470 --> 00:16:33,800
activities have to happen both for a

485
00:16:36,790 --> 00:16:35,480
shuttle undocking in a Soyuz undocking

486
00:16:40,060 --> 00:16:36,800
and to try to do them on the same day

487
00:16:41,770 --> 00:16:40,070
would be quite a challenge well it's a

488
00:16:43,810 --> 00:16:41,780

tight on the on the question about the

489
00:16:46,000 --> 00:16:43,820
work and the after you know the the box

490
00:16:48,340 --> 00:16:46,010
itself is in avionics Bay number five

491
00:16:50,200 --> 00:16:48,350
which is just inside the door so the

492
00:16:52,570 --> 00:16:50,210
work itself to replace the box is really

493
00:16:55,270 --> 00:16:52,580
really quite easy relatively speaking

494
00:16:57,280 --> 00:16:55,280
and access is good we'd put in the entry

495
00:16:59,920 --> 00:16:57,290
level platforms and maybe one one set

496
00:17:01,150 --> 00:16:59,930
below there but then we have to put in

497
00:17:03,100 --> 00:17:01,160
the full set in order to get all the

498
00:17:05,559 --> 00:17:03,110
retest to get to the various

499
00:17:07,240 --> 00:17:05,569
and items that we need to retest and and

500
00:17:08,829 --> 00:17:07,250
from that perspective it's the same as

501
00:17:09,939 --> 00:17:08,839
closing out the after every time I mean

502
00:17:12,640 --> 00:17:09,949
we'll have an engineer we'll have a

503
00:17:14,949 --> 00:17:12,650
technician a quality inspector both NASA

504
00:17:17,110 --> 00:17:14,959
and USA if necessary for a particular

505
00:17:19,270 --> 00:17:17,120
function so it you know to me it's it's

506
00:17:21,039 --> 00:17:19,280
it's well it's standard work is just

507
00:17:22,990 --> 00:17:21,049
unfortunate happened to us in countdown

508
00:17:26,380 --> 00:17:23,000
it's getting all this attention we do

509
00:17:27,850 --> 00:17:26,390
this stuff all the time I say all the

510
00:17:30,669 --> 00:17:27,860
time whenever we have a failure we do it

511
00:17:36,360 --> 00:17:30,679
and and so that the work itself is

512
00:17:41,169 --> 00:17:38,980
carry fybel houston public radio on

513
00:17:43,390 --> 00:17:41,179

behalf of my audience which is very

514
00:17:45,640 --> 00:17:43,400
general and doesn't speak acronym can

515
00:17:48,039 --> 00:17:45,650
you just describe normally normal

516
00:17:50,830 --> 00:17:48,049
function this box what it does

517
00:17:52,570 --> 00:17:50,840
downstream does it provide power for all

518
00:17:54,580 --> 00:17:52,580
those systems you need to retest or just

519
00:17:57,220 --> 00:17:54,590
can you in simple terms lay out why this

520
00:17:59,500 --> 00:17:57,230
isn't necessary yes so it's you could

521
00:18:01,600 --> 00:17:59,510
think of it as in your house wiring it's

522
00:18:02,950 --> 00:18:01,610
not the primary fuse box on the outside

523
00:18:05,020 --> 00:18:02,960
your house but it would be the

524
00:18:06,070 --> 00:18:05,030
equivalent of if you had like in your

525
00:18:08,590 --> 00:18:06,080
garage or in your laundry room a

526
00:18:10,299 --> 00:18:08,600
breakout box that kind of a subpanel so

527
00:18:12,730 --> 00:18:10,309
it's effectively one of our sub panels

528
00:18:14,230 --> 00:18:12,740
that's taking the main power we call

529
00:18:16,690 --> 00:18:14,240
this a load control assembly and it's an

530
00:18:18,640 --> 00:18:16,700
affluent roll assembly there's three of

531
00:18:20,230 --> 00:18:18,650
them in the aft compartment that take

532
00:18:23,530 --> 00:18:20,240
our three main orbiter buses and switch

533
00:18:24,940 --> 00:18:23,540
power to all the functions one good way

534
00:18:26,860 --> 00:18:24,950
to think about how many systems this

535
00:18:28,930 --> 00:18:26,870
touch is most of the systems in the aft

536
00:18:31,180 --> 00:18:28,940
compartment are redundant and most of

537
00:18:34,240 --> 00:18:31,190
them are at least in terms of critical

538
00:18:36,039 --> 00:18:34,250

flight control functions have have two

539
00:18:37,480 --> 00:18:36,049
levels of redundancy on them so that

540
00:18:38,500 --> 00:18:37,490
means they have multiple power feeds

541
00:18:41,260 --> 00:18:38,510
going to them and we're about to

542
00:18:42,669 --> 00:18:41,270
disconnect one of those power feeds to

543
00:18:44,620 --> 00:18:42,679
verify that we reconnected that power

544
00:18:45,789 --> 00:18:44,630
feed correctly we have to go test that

545
00:18:47,560 --> 00:18:45,799
item again to make sure it's now

546
00:18:50,080 --> 00:18:47,570
receiving power from from the source

547
00:18:52,240 --> 00:18:50,090
we're basically gonna disconnect a wire

548
00:18:53,470 --> 00:18:52,250
at the fuse box and we can't test right

549
00:18:54,909 --> 00:18:53,480
there we have to go down to the the

550
00:18:56,500 --> 00:18:54,919
light at the other end of the wire and

551
00:18:58,870 --> 00:18:56,510
make sure that that light comes back on

552
00:19:00,250 --> 00:18:58,880
again so if that if that helps in a

553
00:19:03,640 --> 00:19:00,260
simplified way it's effectively a

554
00:19:06,130 --> 00:19:03,650
subpanel fuse box it's a power switching

555
00:19:07,539 --> 00:19:06,140
we call it a power switching because we

556
00:19:09,640 --> 00:19:07,549
have the ability in the cockpit to turn

557
00:19:10,840 --> 00:19:09,650
that power and if we lost the primary

558
00:19:12,700 --> 00:19:10,850
power we could switch it over to

559
00:19:14,980 --> 00:19:12,710
alternate power so we use low voltage

560
00:19:16,220 --> 00:19:14,990
power in this box to switch those power

561
00:19:17,690 --> 00:19:16,230
feeds around

562
00:19:21,279 --> 00:19:17,700
and so that's why we call it a switching

563
00:19:25,609 --> 00:19:21,289

box but it's effectively a fuse box

564
00:19:27,289 --> 00:19:25,619
powering the you know the hydraulics the

565
00:19:28,759 --> 00:19:27,299
mechanicals that we were talking about

566
00:19:31,220 --> 00:19:28,769
on Friday it's it's more than that

567
00:19:33,830 --> 00:19:31,230
correct yes the APU heaters are one of

568
00:19:36,799 --> 00:19:33,840
probably 70 or 80 things that go through

569
00:19:39,169 --> 00:19:36,809
this box I know some of the systems on

570
00:19:41,149 --> 00:19:39,179
there are ohms valve so in the ohm

571
00:19:43,099 --> 00:19:41,159
system some of the valve power goes

572
00:19:44,720 --> 00:19:43,109
through this box and so we're about to

573
00:19:46,310 --> 00:19:44,730
go take that down you need to go verify

574
00:19:49,190 --> 00:19:46,320
that that valve still has proper power

575
00:19:51,470 --> 00:19:49,200
for functionality the there's reaction

576
00:19:53,419 --> 00:19:51,480
control drivers in the RCS system which

577
00:19:55,310 --> 00:19:53,429
provide power and command to the Jets to

578
00:19:57,710 --> 00:19:55,320
fire there's main engine commands that

579
00:20:00,139 --> 00:19:57,720
go through there so a lot of things that

580
00:20:01,820 --> 00:20:00,149
besides just this APU in fact this ap is

581
00:20:03,769 --> 00:20:01,830
probably just want a tiny little thing

582
00:20:14,239 --> 00:20:03,779
that goes through there we know how to

583
00:20:17,419 --> 00:20:14,249
test the APU again now Donna line one

584
00:20:19,879 --> 00:20:17,429
from USA Today do you have any sense

585
00:20:22,609 --> 00:20:19,889
about when the astronauts will come back

586
00:20:24,979 --> 00:20:22,619
and what they're gonna be doing in the

587
00:20:26,210 --> 00:20:24,989
meantime let's see in them in the

588
00:20:29,119 --> 00:20:26,220

meantime well let me start with the

589
00:20:30,769 --> 00:20:29,129
first one like Mike said we'd reset and

590
00:20:32,629 --> 00:20:30,779
effectively start launch countdown over

591
00:20:34,580 --> 00:20:32,639
again so when we do pick a new launch

592
00:20:35,930 --> 00:20:34,590
date in the next couple days all the

593
00:20:37,940 --> 00:20:35,940
schedules are reset and the crew will

594
00:20:39,139 --> 00:20:37,950
come down at the normal time four or

595
00:20:40,729 --> 00:20:39,149
five days I actually don't remember

596
00:20:42,259 --> 00:20:40,739
exactly when they do come down but

597
00:20:45,529 --> 00:20:42,269
they'll come down at the normal time

598
00:20:47,269 --> 00:20:45,539
before a launch period so we don't plan

599
00:20:48,470 --> 00:20:47,279
to be in this kind of what if we're not

600
00:20:50,330 --> 00:20:48,480
really sure when we're gonna launch and

601
00:20:52,759 --> 00:20:50,340
sneak the qurían and suddenly go launch

602
00:20:54,109 --> 00:20:52,769
it'll be a pretty cut-and-dry this is

603
00:20:55,879 --> 00:20:54,119
our new target date go reset all your

604
00:20:56,930 --> 00:20:55,889
schedules and March to that date we're

605
00:20:59,779 --> 00:20:56,940
just not ready to make that decision

606
00:21:01,190 --> 00:20:59,789
today in the meantime the the crews

607
00:21:03,019 --> 00:21:01,200
going to basically kind of go back into

608
00:21:05,210 --> 00:21:03,029
the training they will stay in

609
00:21:06,529 --> 00:21:05,220
quarantine I think if we launch on the

610
00:21:07,820 --> 00:21:06,539
8th they could come out of quarantine

611
00:21:09,680 --> 00:21:07,830
today but have to go right back in

612
00:21:11,479 --> 00:21:09,690
tomorrow so there's no real point to

613
00:21:13,930 --> 00:21:11,489

that so they'll stay in quarantine back

614
00:21:16,279 --> 00:21:13,940
in Houston I know that the teams are

615
00:21:17,930 --> 00:21:16,289
working to set up some ascent sim

616
00:21:19,340 --> 00:21:17,940
training probably on Tuesday or

617
00:21:20,869 --> 00:21:19,350
Wednesday so they'll start some

618
00:21:22,430 --> 00:21:20,879
refresher training whenever we go for

619
00:21:24,139 --> 00:21:22,440
about a week it's good to let them have

620
00:21:25,489 --> 00:21:24,149
a chance to get back in the simulator

621
00:21:26,629 --> 00:21:25,499
and work through the normal processes

622
00:21:28,789 --> 00:21:26,639
and they'll probably have some

623
00:21:29,750 --> 00:21:28,799
standalone training a lot of what they

624
00:21:31,970 --> 00:21:29,760
do is kind of we call it

625
00:21:33,290 --> 00:21:31,980
free time but the crews are unbelievably

626
00:21:34,880 --> 00:21:33,300
dedicated they don't do anything in

627
00:21:36,500 --> 00:21:34,890
their free time other than study their

628
00:21:38,390 --> 00:21:36,510
checklists and practice their procedures

629
00:21:39,980 --> 00:21:38,400
so I don't think they're gonna go jump

630
00:21:41,180 --> 00:21:39,990
in the pool and do any VA training but I

631
00:21:43,550 --> 00:21:41,190
bet you they dry run through the

632
00:21:44,680 --> 00:21:43,560
timelines at their desk and review what

633
00:21:47,030 --> 00:21:44,690
they're supposed to be doing rehearse

634
00:21:50,840 --> 00:21:47,040
they put their time in to be ready to go

635
00:21:56,660 --> 00:21:54,170
I can't Kramer for spaceflight magazine

636
00:21:58,100 --> 00:21:56,670
for Mike Leinbach I think um can you

637
00:22:00,380 --> 00:21:58,110
tell us a little bit about the testing

638
00:22:02,180 --> 00:22:00,390

you did on this unit before the launch

639
00:22:07,490 --> 00:22:02,190
to ensure that it was good to go

640
00:22:09,620 --> 00:22:07,500
and on STS 70 I believe what was it

641
00:22:11,060 --> 00:22:09,630
exactly the same problem that you found

642
00:22:12,410 --> 00:22:11,070
or was it a different problem within

643
00:22:14,360 --> 00:22:12,420
that box thank you

644
00:22:15,860 --> 00:22:14,370
well the testing leading up to the

645
00:22:18,380 --> 00:22:15,870
countdown is Mike described the other

646
00:22:20,750 --> 00:22:18,390
day a lot of the times what we what we

647
00:22:24,020 --> 00:22:20,760
take credit for is the on-orbit success

648
00:22:26,330 --> 00:22:24,030
or failure of a system and so this

649
00:22:29,330 --> 00:22:26,340
particular box not not every function

650
00:22:33,140 --> 00:22:29,340
was tested in the OPF we do take credit

651
00:22:34,520 --> 00:22:33,150
for on-orbit on over it operations but

652
00:22:36,170 --> 00:22:34,530
everything seemed to be working just

653
00:22:38,660 --> 00:22:36,180
fine and how the failure occurred we

654
00:22:42,770 --> 00:22:38,670
just don't know yet and what was your

655
00:22:45,410 --> 00:22:42,780
part I'm sorry on STS 70 you said you

656
00:22:48,500 --> 00:22:45,420
swapped this box out before I wonder if

657
00:22:50,090 --> 00:22:48,510
the failure in that box is the same as

658
00:22:52,940 --> 00:22:50,100
what you suspect now where was it at

659
00:22:54,590 --> 00:22:52,950
different I don't know I don't know yeah

660
00:22:56,930 --> 00:22:54,600
I don't think we got that level of

661
00:22:58,970 --> 00:22:56,940
detail we know we took the box out and

662
00:23:00,920 --> 00:22:58,980
and therefore that creates the full

663
00:23:02,450 --> 00:23:00,930

retest of all those systems I mentioned

664
00:23:04,160 --> 00:23:02,460
what the particular failure was back

665
00:23:06,860 --> 00:23:04,170
then I don't remember we'll have to get

666
00:23:08,150 --> 00:23:06,870
that for you chances are it was not this

667
00:23:09,860 --> 00:23:08,160
particular failure because there are

668
00:23:13,370 --> 00:23:09,870
dozens and dozens and dozens of

669
00:23:15,650 --> 00:23:13,380
functions that go through this box this

670
00:23:19,850 --> 00:23:15,660
box replacement box fails do you have

671
00:23:22,640 --> 00:23:19,860
another one after that thanks boy

672
00:23:24,560 --> 00:23:22,650
if the replacement fails no we didn't

673
00:23:27,330 --> 00:23:24,570
were not going that way that the

674
00:23:29,100 --> 00:23:27,340
replacement is going to be great

675
00:23:31,470 --> 00:23:29,110
and that is you know the team has built

676
00:23:33,600 --> 00:23:31,480
into the timeline once we do have the

677
00:23:35,850 --> 00:23:33,610
box out of retesting and checking of the

678
00:23:38,669 --> 00:23:35,860
circuitry to verify that that box was

679
00:23:40,019 --> 00:23:38,679
the failed component so you know

680
00:23:41,789 --> 00:23:40,029
capacitance testing on the upstream and

681
00:23:43,230 --> 00:23:41,799
downstream components we kind of already

682
00:23:44,310 --> 00:23:43,240
verified heater functionality but

683
00:23:46,289 --> 00:23:44,320
they'll probably go in with breakout

684
00:23:47,489 --> 00:23:46,299
boxes and and double-check all that to

685
00:23:49,049 --> 00:23:47,499
ensure that there is no downstream

686
00:23:51,419 --> 00:23:49,059
wiring damage that might have been a

687
00:23:52,769 --> 00:23:51,429
cause to caused this break this box to

688
00:23:54,930 --> 00:23:52,779

go so that we don't put another one in

689
00:23:56,940 --> 00:23:54,940
there and blow it too so that'll be part

690
00:23:58,799 --> 00:23:56,950
of the normal test planning before we go

691
00:24:05,399 --> 00:23:58,809
put the new box in place definitely be

692
00:24:06,269 --> 00:24:05,409
doing it Sentinel from Mike Moses I just

693
00:24:09,799 --> 00:24:06,279
wanted a little bit of a clarification

694
00:24:13,470 --> 00:24:09,809
on the Soyuz undocking complication

695
00:24:15,029 --> 00:24:13,480
since 134 can have 14 15 or 16 days

696
00:24:18,619 --> 00:24:15,039
you're essentially trying to preserve a

697
00:24:21,480 --> 00:24:18,629
three-day window on the other end here

698
00:24:24,570 --> 00:24:21,490
not necessarily we're basically trying

699
00:24:25,739 --> 00:24:24,580
to preserve those two extension days we

700
00:24:27,989 --> 00:24:25,749
know ahead of time

701
00:24:30,299 --> 00:24:27,999
we're very valuable for the station in

702
00:24:32,190 --> 00:24:30,309
order to have get ahead tasks so we knew

703
00:24:34,529 --> 00:24:32,200
pre-flight we wanted to add those two

704
00:24:37,440 --> 00:24:34,539
days you could almost say we are we are

705
00:24:40,019 --> 00:24:37,450
99% ready to call this a 16-day mission

706
00:24:41,879 --> 00:24:40,029
rather than a 14-day mission but we

707
00:24:44,220 --> 00:24:41,889
didn't want to commit to them just yet

708
00:24:46,499 --> 00:24:44,230
until we got in orbit and evaluated

709
00:24:48,359 --> 00:24:46,509
other conditions like how the crew did

710
00:24:50,460 --> 00:24:48,369
how they're doing on rendezvous how

711
00:24:52,230 --> 00:24:50,470
they're adapting to being in space make

712
00:24:53,489 --> 00:24:52,240
sure there's no sleep shift issues the

713
00:24:55,710 --> 00:24:53,499

original plan was it was gonna be a

714
00:24:57,119 --> 00:24:55,720
piece of cake sleep shift so adding

715
00:24:58,739 --> 00:24:57,129
those plus two we're gonna be a pretty

716
00:25:00,269 --> 00:24:58,749
no brainer we'll sit down and look at

717
00:25:02,519 --> 00:25:00,279
all the new math and see where we're at

718
00:25:04,169 --> 00:25:02,529
the act of staying up two more days now

719
00:25:05,789 --> 00:25:04,179
might be a little more stress on the

720
00:25:07,259 --> 00:25:05,799
crew if they are having to do a big

721
00:25:08,669 --> 00:25:07,269
sleep shift and we might decide that

722
00:25:10,080 --> 00:25:08,679
that's not the right thing to do anymore

723
00:25:12,119 --> 00:25:10,090
which would then tell us we don't need

724
00:25:13,619 --> 00:25:12,129
to cover so many days of a launch window

725
00:25:15,810 --> 00:25:13,629
and we could drop a day off that mission

726
00:25:17,340 --> 00:25:15,820
so yeah it's kind of it's kind of what

727
00:25:19,470 --> 00:25:17,350
you said but it's a few more factors

728
00:25:20,159 --> 00:25:19,480
than that - one of the reasons why we

729
00:25:24,899 --> 00:25:20,169
need little more time to evaluate

730
00:25:26,940 --> 00:25:24,909
exactly what the right decision is yes

731
00:25:28,710 --> 00:25:26,950
yeah well with right now the conflict of

732
00:25:30,899 --> 00:25:28,720
why we wouldn't launch May 9th is

733
00:25:32,999 --> 00:25:30,909
because on the 16th today that would be

734
00:25:37,019 --> 00:25:33,009
undocking actually that's not that's not

735
00:25:38,430 --> 00:25:37,029
the 16th take that it's on the second

736
00:25:39,940 --> 00:25:38,440
day of docked operations second

737
00:25:42,669 --> 00:25:39,950
additional day docked operations

738
00:25:44,169 --> 00:25:42,679

but okay but it would affect the

739
00:25:45,639 --> 00:25:44,179
consequence of having a secure day-long

740
00:25:48,370 --> 00:25:45,649
mission coming what's what the undocking

741
00:25:50,019 --> 00:25:48,380
is on the same day yeah I know it's

742
00:25:54,759 --> 00:25:50,029
confusing without our calendar I don't

743
00:25:56,529 --> 00:25:54,769
have one either look at the panel CERN

744
00:25:58,029 --> 00:25:56,539
and right how far can you push this

745
00:26:01,060 --> 00:25:58,039
mission this mission not to four feet

746
00:26:03,340 --> 00:26:01,070
the next one well as Mike said you know

747
00:26:05,740 --> 00:26:03,350
we know that the eighth ninth 10th is

748
00:26:07,029 --> 00:26:05,750
probably about the same not too much of

749
00:26:08,500 --> 00:26:07,039
an impact beyond that we'll have to look

750
00:26:10,000 --> 00:26:08,510
pretty close so we're getting very close

751
00:26:11,919 --> 00:26:10,010
to being an impact to the next mission

752
00:26:13,029 --> 00:26:11,929
we're not quite there yet but that's one

753
00:26:15,549 --> 00:26:13,039
of the things that teams will take a

754
00:26:17,620 --> 00:26:15,559
close look at one of the consequences of

755
00:26:19,389 --> 00:26:17,630
our of us coming to the end of the

756
00:26:22,360 --> 00:26:19,399
program is we no longer have you know

757
00:26:24,279 --> 00:26:22,370
multiple teams able to do the jobs we're

758
00:26:25,810 --> 00:26:24,289
down on our resources and our staffing

759
00:26:27,970 --> 00:26:25,820
so we need to make sure we know what

760
00:26:29,590 --> 00:26:27,980
this launch schedule is and then we'll

761
00:26:31,180 --> 00:26:29,600
let the next team take a look at what

762
00:26:32,799 --> 00:26:31,190
they need resource wise and make sure we

763
00:26:34,870 --> 00:26:32,809

don't have to move that launch date to

764
00:26:36,639 --> 00:26:34,880
avoid some conflicts really I think what

765
00:26:37,810 --> 00:26:36,649
we're gonna find is the pad turnaround

766
00:26:39,789 --> 00:26:37,820
that Mike talked about is really gonna

767
00:26:41,440 --> 00:26:39,799
be our driver of once we launch this

768
00:26:43,240 --> 00:26:41,450
vehicle go out and assess the damage to

769
00:26:44,950 --> 00:26:43,250
the pad how long it'll take to repair

770
00:26:46,840 --> 00:26:44,960
and be ready to receive the next mission

771
00:26:49,899 --> 00:26:46,850
on paper right now it looks like we're

772
00:26:51,639 --> 00:26:49,909
okay but if we go too much past the 9th

773
00:26:53,889 --> 00:26:51,649
or the 10th and we might need to add a

774
00:26:55,149 --> 00:26:53,899
couple extra days so I don't want to

775
00:26:56,560 --> 00:26:55,159
tell you no impact but I don't want to

776
00:27:01,029 --> 00:26:56,570
tell you definite impact it's it's

777
00:27:03,039 --> 00:27:01,039
getting close the saint-jacques from the

778
00:27:06,460 --> 00:27:03,049
Houston Chronicle just wanted to know

779
00:27:08,080 --> 00:27:06,470
about the quarantine can you explain to

780
00:27:10,389 --> 00:27:08,090
us again why astronauts have to be on

781
00:27:13,570 --> 00:27:10,399
quarantine and where are they going to

782
00:27:15,639 --> 00:27:13,580
be quarantined in Houston also I

783
00:27:17,320 --> 00:27:15,649
understand they're allowed I think one

784
00:27:19,840 --> 00:27:17,330
visitor a day for a certain amount of

785
00:27:22,419 --> 00:27:19,850
hours does that visitor have to come to

786
00:27:23,769 --> 00:27:22,429
the quarantine area or are there

787
00:27:27,639 --> 00:27:23,779
exceptions being made for certain

788
00:27:29,440 --> 00:27:27,649

astronauts like commander Mark Kelly we

789
00:27:31,529 --> 00:27:29,450
lock them in a box and we don't let

790
00:27:35,289 --> 00:27:31,539
anybody ever see him again

791
00:27:37,570 --> 00:27:35,299
yeah the quarantine rules are pretty

792
00:27:39,250 --> 00:27:37,580
straightforward I don't remember the

793
00:27:41,200 --> 00:27:39,260
exact number of days before mission but

794
00:27:44,649 --> 00:27:41,210
the purpose is to basically stay away

795
00:27:46,029 --> 00:27:44,659
from any any contagious illnesses that

796
00:27:48,759 --> 00:27:46,039
would then take a few days to show up

797
00:27:50,549 --> 00:27:48,769
and manifest and so the quarantine

798
00:27:52,539 --> 00:27:50,559
basically is the crew reports to a

799
00:27:53,860 --> 00:27:52,549
quarantine facility that's on site at

800
00:27:56,170 --> 00:27:53,870
the Johnson Space Center

801
00:27:57,400 --> 00:27:56,180
astronaut crew quarters it's a it's a

802
00:28:00,190 --> 00:27:57,410
pretty nice building conference room

803
00:28:02,740 --> 00:28:00,200
facilities training facilities a gym and

804
00:28:04,150 --> 00:28:02,750
and sleeping quarters and then they have

805
00:28:06,040 --> 00:28:04,160
contact a lot more than just one person

806
00:28:07,720 --> 00:28:06,050
for an hour a day there's a whole list

807
00:28:09,070 --> 00:28:07,730
of folks who are on the approved contact

808
00:28:10,870 --> 00:28:09,080
list as long as you've passed your

809
00:28:12,670 --> 00:28:10,880
physical and are cleared with what we

810
00:28:14,110 --> 00:28:12,680
call a where we used to call a primary

811
00:28:15,910 --> 00:28:14,120
contact physical I think we've changed

812
00:28:17,590 --> 00:28:15,920
the name of it recently but it's

813
00:28:18,820 --> 00:28:17,600

effectively if you're in primary contact

814
00:28:21,370 --> 00:28:18,830
with the crew you also have to show

815
00:28:24,700 --> 00:28:21,380
you're in good health really the the

816
00:28:26,020 --> 00:28:24,710
biggest restriction is in terms of young

817
00:28:28,990 --> 00:28:26,030
children that's those are the ones that

818
00:28:30,460 --> 00:28:29,000
really we have trouble for those of us

819
00:28:31,930 --> 00:28:30,470
who have very young children they bring

820
00:28:33,640 --> 00:28:31,940
home all kinds of nasty bugs and you get

821
00:28:35,230 --> 00:28:33,650
sick when a short notice you can tell

822
00:28:36,940 --> 00:28:35,240
I'm coughing I am I am currently not

823
00:28:40,780 --> 00:28:36,950
allowed on primary contact with the crew

824
00:28:41,740 --> 00:28:40,790
by choice if nothing else but but it's

825
00:28:43,090 --> 00:28:41,750
that kind of thing so they'll go back

826
00:28:44,860 --> 00:28:43,100
into quarantine at the crew facility

827
00:28:46,360 --> 00:28:44,870
they'll be able to visit with family

828
00:28:48,040 --> 00:28:46,370
members who are cleared and through

829
00:28:49,510 --> 00:28:48,050
their through their physical process

830
00:28:51,100 --> 00:28:49,520
they'll start meeting with all their

831
00:28:52,990 --> 00:28:51,110
trainers and all their flight directors

832
00:28:54,760 --> 00:28:53,000
and the training crews and they'll get

833
00:28:56,200 --> 00:28:54,770
back in and do their job it'll be a lot

834
00:28:57,850 --> 00:28:56,210
like they were just a couple days before

835
00:28:59,740 --> 00:28:57,860
they came down here not a lot of

836
00:29:02,470 --> 00:28:59,750
difference for him yeah they'll be at

837
00:29:04,680 --> 00:29:02,480
Johnson Space Center know they'll be

838
00:29:06,669 --> 00:29:04,690

yeah they'll stay in the crew quarters

839
00:29:07,810 --> 00:29:06,679
but they don't know they're not

840
00:29:09,250 --> 00:29:07,820
restricted and locked in the building

841
00:29:10,270 --> 00:29:09,260
like I was joking at the beginning you

842
00:29:11,530 --> 00:29:10,280
know they'll leave and they'll go over

843
00:29:12,820 --> 00:29:11,540
to the trainers and they'll run in the

844
00:29:14,560 --> 00:29:12,830
training facility if they needed to go

845
00:29:15,790 --> 00:29:14,570
out to the NBL they could so they're not

846
00:29:16,990 --> 00:29:15,800
they're not locked down they just don't

847
00:29:22,780 --> 00:29:17,000
go home and sleep at night in their own

848
00:29:24,430 --> 00:29:22,790
bed at home annaleigh he lofty ambitions

849
00:29:26,980 --> 00:29:24,440
and Chapman magazine one more

850
00:29:29,890 --> 00:29:26,990
clarification on the crew when you're

851
00:29:32,410 --> 00:29:29,900
working a delay how long does the delay

852
00:29:34,299 --> 00:29:32,420
have to out how long do you have to know

853
00:29:36,130 --> 00:29:34,309
the delay is going to be before you send

854
00:29:37,810 --> 00:29:36,140
the crew home does it have to be at

855
00:29:40,120 --> 00:29:37,820
least five days because that's what they

856
00:29:42,040 --> 00:29:40,130
would normally spend here yeah that

857
00:29:45,100 --> 00:29:42,050
factors into it really it's kind of more

858
00:29:47,140 --> 00:29:45,110
just of a logistics if we knew that that

859
00:29:48,730 --> 00:29:47,150
we'd be picking up a launch day such

860
00:29:49,900 --> 00:29:48,740
that they'd go home turn right back

861
00:29:51,520 --> 00:29:49,910
around and have to fly back here the

862
00:29:53,560 --> 00:29:51,530
next day we'd probably give them the

863
00:29:55,540 --> 00:29:53,570

choice to do that if they wanted to it's

864
00:29:57,160 --> 00:29:55,550
not like they can go back and and repack

865
00:29:58,990 --> 00:29:57,170
their suitcase and do a lot of other

866
00:30:01,570 --> 00:29:59,000
things so there's not a lot of drive for

867
00:30:04,360 --> 00:30:01,580
them to return home on a short trip but

868
00:30:06,230 --> 00:30:04,370
then again it is a chance to go back to

869
00:30:08,570 --> 00:30:06,240
your home environment and

870
00:30:10,040 --> 00:30:08,580
more comfort little more contact you're

871
00:30:11,300 --> 00:30:10,050
not you're not stuck here at the Kennedy

872
00:30:12,890 --> 00:30:11,310
Space Center you're least stuck at the

873
00:30:15,200 --> 00:30:12,900
Johnson Space Center which is a little

874
00:30:16,760 --> 00:30:15,210
closer to your home but it really comes

875
00:30:18,290 --> 00:30:16,770
down to a trade-in and the crew office

876
00:30:20,090 --> 00:30:18,300
the crew management office and and the

877
00:30:21,620 --> 00:30:20,100
program talks about the likelihood we

878
00:30:23,510 --> 00:30:21,630
had those conversations this morning and

879
00:30:25,040 --> 00:30:23,520
I let him know pretty clearly that that

880
00:30:27,140 --> 00:30:25,050
we weren't going to be looking at a

881
00:30:28,310 --> 00:30:27,150
Thursday Friday launch attempt and there

882
00:30:29,690 --> 00:30:28,320
was no need to keep the guys here they

883
00:30:35,120 --> 00:30:29,700
could head home and we'll bring them

884
00:30:37,910 --> 00:30:35,130
back when we're ready Mark Boucher

885
00:30:40,580 --> 00:30:37,920
spacecraft for Mike Moses are there any

886
00:30:43,550 --> 00:30:40,590
dates between the 8th and the 15th that

887
00:30:45,770 --> 00:30:43,560
you have ruled out not specifically no

888
00:30:47,210 --> 00:30:45,780

those all look pretty good to us and a

889
00:30:49,730 --> 00:30:47,220
follow-up question for Michael wingback

890
00:30:54,950 --> 00:30:49,740
have you ever had a failure with the

891
00:30:56,510 --> 00:30:54,960
hybrid drivers before I don't know the

892
00:30:58,010 --> 00:30:56,520
answer to that I'll have to get I have

893
00:30:59,570 --> 00:30:58,020
to get to that data do we hear that and

894
00:31:00,680 --> 00:30:59,580
I know a telecoms last night yeah I know

895
00:31:02,570 --> 00:31:00,690
failure to it we've definitely had

896
00:31:04,640 --> 00:31:02,580
hybrid driver failures before whether

897
00:31:08,320 --> 00:31:04,650
it's this is a civic hybrid driver I

898
00:31:12,770 --> 00:31:10,820
Jean macoco both talking space could you

899
00:31:14,960 --> 00:31:12,780
give us an idea on how big the LCA is as

900
00:31:18,890 --> 00:31:14,970
a bigger than a breadbox or something

901
00:31:21,980 --> 00:31:18,900
like that what it's 40 to 50 pounds it's

902
00:31:25,130 --> 00:31:21,990
probably on this sort of scale maybe a

903
00:31:26,900 --> 00:31:25,140
little bit bigger and and to get it into

904
00:31:28,580 --> 00:31:26,910
the avionics babies a little bit of a

905
00:31:31,070 --> 00:31:28,590
trick because you kind of kind of wiggle

906
00:31:33,200 --> 00:31:31,080
it up there and then attach it and so we

907
00:31:36,290 --> 00:31:33,210
have a system of rails that we actually

908
00:31:38,240 --> 00:31:36,300
use to to guide the Box in place to help

909
00:31:41,210 --> 00:31:38,250
the technicians as they're bolting it in

910
00:31:43,460 --> 00:31:41,220
and so we have to put the rail set in as

911
00:31:44,960 --> 00:31:43,470
well and that's just sort of a safety

912
00:31:46,700 --> 00:31:44,970
precaution I mean the guys probably

913
00:31:48,590 --> 00:31:46,710

could muscle it into place but it's a

914
00:31:50,630 --> 00:31:48,600
heck of a lot easier with that rail so

915
00:31:53,570 --> 00:31:50,640
yeah it's 40 to 50 pounds probably 48

916
00:32:01,310 --> 00:31:53,580
something like that and a little tricky

917
00:32:03,750 --> 00:32:03,360
there's actually this I didn't think of

918
00:32:13,260 --> 00:32:03,760
it

919
00:32:15,690 --> 00:32:13,270
ken is Apollo sorry I can't grammar

920
00:32:17,340 --> 00:32:15,700
again for spaceflight magazine for

921
00:32:19,290 --> 00:32:17,350
either Mike I'm not sure these these

922
00:32:22,290 --> 00:32:19,300
hydrazine fuel lines can you tell me how

923
00:32:25,530 --> 00:32:22,300
thick they are and what kind of pressure

924
00:32:27,330 --> 00:32:25,540
they can withstand please oh I don't

925
00:32:30,270 --> 00:32:27,340
know that well my head yeah I don't know

926
00:32:32,460 --> 00:32:30,280
what an APU fuel line I could speculate

927
00:32:34,260 --> 00:32:32,470
about probably wrong I don't I don't

928
00:32:37,530 --> 00:32:34,270
know either Ken I'm sorry we'll get you

929
00:32:40,470 --> 00:32:37,540
that right the concern is if if it's

930
00:32:42,660 --> 00:32:40,480
thaws and expands that the lines could

931
00:32:44,520 --> 00:32:42,670
good so we have a lot of testing and

932
00:32:46,740 --> 00:32:44,530
we've we've done that out or white sands

933
00:32:48,780 --> 00:32:46,750
test facility in New Mexico a whole

934
00:32:50,670 --> 00:32:48,790
bunch of testing to show that the lines

935
00:32:53,910 --> 00:32:50,680
we can basically withstand a single

936
00:32:55,410 --> 00:32:53,920
freeze-thaw cycle but beyond that you

937
00:32:57,630 --> 00:32:55,420
then kind of really start to worry about

938
00:32:59,670 --> 00:32:57,640

the integrity of the system we've shown

939
00:33:01,650 --> 00:32:59,680
in that testing that the plug of

940
00:33:03,540 --> 00:33:01,660
hydrazine ice that would form would kind

941
00:33:04,920 --> 00:33:03,550
of move up and down the line so that

942
00:33:06,270 --> 00:33:04,930
that's not really the problem but

943
00:33:07,980 --> 00:33:06,280
there's a lot of valves and plumbing and

944
00:33:09,840 --> 00:33:07,990
piping and if you if you were in one of

945
00:33:11,430 --> 00:33:09,850
those regions where you had a nice ball

946
00:33:13,200 --> 00:33:11,440
formation you'd worry about extra stress

947
00:33:15,660 --> 00:33:13,210
in that region which is hard to model

948
00:33:17,430 --> 00:33:15,670
and test and therefore we try our very

949
00:33:18,930 --> 00:33:17,440
best and that's why this rule allows us

950
00:33:20,670 --> 00:33:18,940
or does not allow us to launch with a

951
00:33:22,110 --> 00:33:20,680
failed heater we want to make sure we

952
00:33:23,130 --> 00:33:22,120
have good integrity of those systems so

953
00:33:26,000 --> 00:33:23,140
we don't ever have to get into a

954
00:33:30,360 --> 00:33:29,100
Doug deco Knox magazine since you

955
00:33:33,180 --> 00:33:30,370
introduced that part of the

956
00:33:36,090 --> 00:33:33,190
functionality of the LCA is as a fusing

957
00:33:37,440 --> 00:33:36,100
system doesn't that allow for the

958
00:33:40,110 --> 00:33:37,450
possibility that something upstream of

959
00:33:42,270 --> 00:33:40,120
that fuse is malfunctioning and if so

960
00:33:45,330 --> 00:33:42,280
what would concern you the most yeah

961
00:33:46,980 --> 00:33:45,340
most definitely we've effectively kind

962
00:33:48,960 --> 00:33:46,990
of cleared the wiring outside the box by

963
00:33:50,460 --> 00:33:48,970

doing the the thermostat response tests

964
00:33:51,900 --> 00:33:50,470
and the measurements of the current

965
00:33:53,130 --> 00:33:51,910
there they're going to go back and do

966
00:33:55,560 --> 00:33:53,140
that again with a different set of

967
00:33:57,180 --> 00:33:55,570
equipment once the box is out but

968
00:33:59,370 --> 00:33:57,190
there's a lot of internal components

969
00:34:01,560 --> 00:33:59,380
inside that LCA that takes the power

970
00:34:03,270 --> 00:34:01,570
from the from the the connectors down to

971
00:34:04,710 --> 00:34:03,280
the right hybrid driver over to the

972
00:34:06,690 --> 00:34:04,720
common ground hybrid drivers there's a

973
00:34:09,090 --> 00:34:06,700
lot of a wiring path in there that could

974
00:34:10,290 --> 00:34:09,100
be the problem you know a little little

975
00:34:11,010 --> 00:34:10,300
piece of debris or something like that a

976
00:34:14,430 --> 00:34:11,020
blown

977
00:34:16,530 --> 00:34:14,440
have what could have been what caused

978
00:34:18,930 --> 00:34:16,540
this just a solder connection that came

979
00:34:20,700 --> 00:34:18,940
open really could be the problem and so

980
00:34:22,500 --> 00:34:20,710
we'll take that box out and then we'll

981
00:34:23,820 --> 00:34:22,510
confirm that the failures inside that

982
00:34:25,440 --> 00:34:23,830
box and then that'll give us a

983
00:34:27,720 --> 00:34:25,450
confidence that we know it might not be

984
00:34:29,520 --> 00:34:27,730
the hybrid driver itself these why the

985
00:34:31,290 --> 00:34:29,530
problem happened but the problems also

986
00:34:36,570 --> 00:34:31,300
inside the box as well if that makes

987
00:34:39,869 --> 00:34:36,580
sense okay well last questions that need

988
00:34:42,000 --> 00:34:39,879

answering now okay not see any hands up

989
00:34:44,010 --> 00:34:42,010
we do have some new video of some of the

990
00:34:46,109 --> 00:34:44,020
activities going on at the pad this

991
00:34:47,099 --> 00:34:46,119
morning it's not any of course you've

992
00:34:49,109 --> 00:34:47,109
heard them saying nothing about the

993
00:34:50,909 --> 00:34:49,119
actual chain Network since that hasn't

994
00:34:53,040 --> 00:34:50,919
happened yet but at least is some fresh

995
00:34:55,139 --> 00:34:53,050
video from today so we playing that

996
00:34:58,349 --> 00:34:55,149
after the briefing of course to follow

997
00:35:00,599 --> 00:34:58,359
along online go to wws AG up slash

998
00:35:02,580 --> 00:35:00,609
shuttle tell you about the any of the