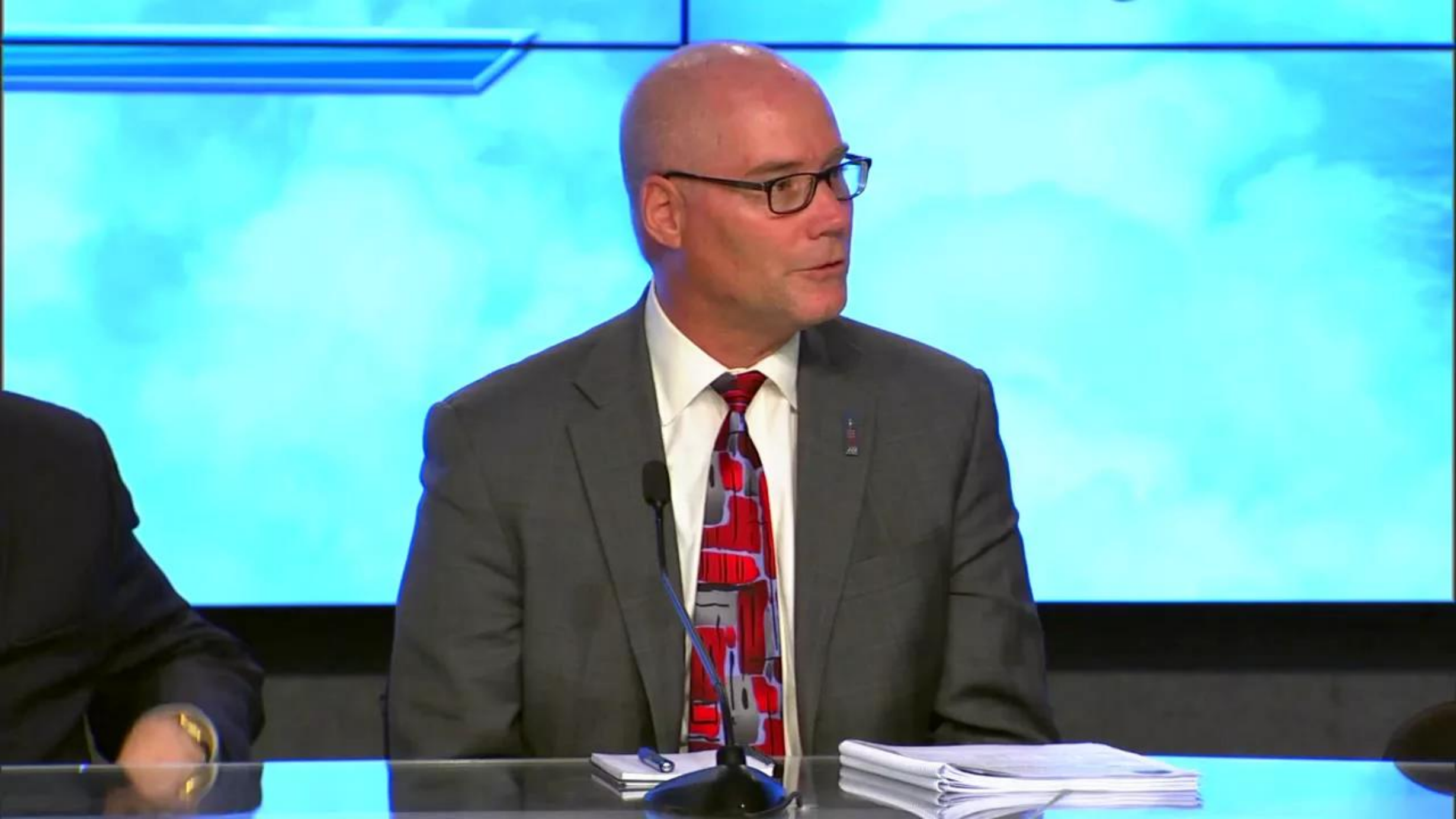

1
00:00:06,710 --> 00:00:04,950
good afternoon and welcome back to

2
00:00:09,110 --> 00:00:06,720
kennedy space center for our orion

3
00:00:11,110 --> 00:00:09,120
flight test post scrub briefing we're

4
00:00:12,870 --> 00:00:11,120
going to go over the scrub today and

5
00:00:14,789 --> 00:00:12,880
then also our plan going forward and to

6
00:00:17,910 --> 00:00:14,799
tell you all about that we have first of

7
00:00:21,590 --> 00:00:17,920
all here mark guyer the nasa program

8
00:00:26,870 --> 00:00:23,750
mike haws the lockheed martin program

9
00:00:32,950 --> 00:00:29,349
and finally dan collins the united

10
00:00:34,630 --> 00:00:32,960
launch alliance chief operating officer

11
00:00:36,630 --> 00:00:34,640
we'll start with some opening remarks

12
00:00:38,150 --> 00:00:36,640
and then take a few questions

13
00:00:39,990 --> 00:00:38,160

yeah so i'll make it short and sweet so

14
00:00:41,510 --> 00:00:40,000
the team uh

15
00:00:42,790 --> 00:00:41,520
worked really hard made a great attempt

16
00:00:44,229 --> 00:00:42,800
to get off today

17
00:00:45,910 --> 00:00:44,239
in the end made the right choice based

18
00:00:47,670 --> 00:00:45,920
on the data we had

19
00:00:49,750 --> 00:00:47,680
to not fly today we will attempt

20
00:00:51,750 --> 00:00:49,760
tomorrow there's still some open work

21
00:00:54,069 --> 00:00:51,760
that we're working today to confirm that

22
00:00:55,990 --> 00:00:54,079
but our plan is to fly tomorrow

23
00:00:59,670 --> 00:00:56,000
i do want to say the the engineering

24
00:01:01,910 --> 00:00:59,680
team the team in houston mission ops

25
00:01:03,029 --> 00:01:01,920
and the recovery team

26
00:01:04,390 --> 00:01:03,039
were ready

27
00:01:06,310 --> 00:01:04,400
did a great job today and they will be

28
00:01:07,350 --> 00:01:06,320
ready tomorrow the ships are still on

29
00:01:09,270 --> 00:01:07,360
station

30
00:01:10,789 --> 00:01:09,280
they'll stay there of course per the

31
00:01:12,870 --> 00:01:10,799
normal plan still for several days so

32
00:01:14,710 --> 00:01:12,880
not an early driver and i'll cover the

33
00:01:16,550 --> 00:01:14,720
landing weather landing weather uh for

34
00:01:17,910 --> 00:01:16,560
tomorrow still looks good

35
00:01:19,910 --> 00:01:17,920
we'll get a little little higher wave

36
00:01:21,590 --> 00:01:19,920
heights probably getting closer to six

37
00:01:23,030 --> 00:01:21,600
foot seas but again well within our

38
00:01:24,789 --> 00:01:23,040

constraints the landing weather tomorrow

39
00:01:26,310 --> 00:01:24,799
is very good

40
00:01:27,670 --> 00:01:26,320
and again i want to thank uh and

41
00:01:29,830 --> 00:01:27,680
congratulate the team for the hard work

42
00:01:31,830 --> 00:01:29,840
they did today uh as we get ready for

43
00:01:33,030 --> 00:01:31,840
tomorrow so pass to mike

44
00:01:34,870 --> 00:01:33,040
and i thought i just spent a couple of

45
00:01:37,350 --> 00:01:34,880
minutes talking more specifically about

46
00:01:39,350 --> 00:01:37,360
orion and the the spacecraft

47
00:01:40,550 --> 00:01:39,360
uh so we went through the power up

48
00:01:42,950 --> 00:01:40,560
procedure

49
00:01:44,630 --> 00:01:42,960
right at launch minus six hours as the

50
00:01:47,429 --> 00:01:44,640
timeline calls for

51
00:01:49,749 --> 00:01:47,439
uh spacecraft worked extremely well

52
00:01:51,270 --> 00:01:49,759
everything came up just as we would have

53
00:01:52,830 --> 00:01:51,280
envisioned

54
00:01:55,590 --> 00:01:52,840
and the team did a great

55
00:01:58,550 --> 00:01:55,600
job not just going through all of that

56
00:02:00,550 --> 00:01:58,560
but also going through the recycles and

57
00:02:01,990 --> 00:02:00,560
all the things as mark said that we have

58
00:02:02,950 --> 00:02:02,000
had them practice we have all been

59
00:02:04,709 --> 00:02:02,960
together

60
00:02:06,069 --> 00:02:04,719
for simulations and we have been through

61
00:02:09,029 --> 00:02:06,079
this process

62
00:02:11,110 --> 00:02:09,039
and they went just like the simulations

63
00:02:13,750 --> 00:02:11,120

have trained us all to do so

64
00:02:15,190 --> 00:02:13,760
it was uh the spacecraft looks good

65
00:02:16,790 --> 00:02:15,200
there are no

66
00:02:18,790 --> 00:02:16,800
specific issues that we're working on

67
00:02:20,869 --> 00:02:18,800
orion but there are some questions that

68
00:02:23,110 --> 00:02:20,879
come up as part of the scrub like how

69
00:02:25,350 --> 00:02:23,120
many cycles can we do in terms of the

70
00:02:27,110 --> 00:02:25,360
batteries that power our developmental

71
00:02:28,630 --> 00:02:27,120
flight instrumentation

72
00:02:30,949 --> 00:02:28,640
and those kinds of things because we do

73
00:02:31,830 --> 00:02:30,959
run on internal battery power

74
00:02:32,869 --> 00:02:31,840
uh

75
00:02:35,110 --> 00:02:32,879
after the

76
00:02:37,509 --> 00:02:35,120
the launch minus nine minute point in

77
00:02:40,229 --> 00:02:37,519
the the count so we've used up a couple

78
00:02:42,150 --> 00:02:40,239
cycles and so we have to to look at how

79
00:02:44,869 --> 00:02:42,160
that factors into the

80
00:02:46,949 --> 00:02:44,879
the next couple attempts but overall the

81
00:02:48,309 --> 00:02:46,959
the spacecraft just looks fantastic and

82
00:02:50,949 --> 00:02:48,319
then i'll

83
00:02:53,589 --> 00:02:50,959
hand over to dan then well thanks uh

84
00:02:54,710 --> 00:02:53,599
i'll echo uh the comments of both mark

85
00:02:56,390 --> 00:02:54,720
and mike

86
00:02:59,589 --> 00:02:56,400
very very proud of how the the

87
00:03:02,949 --> 00:02:59,599
integrated team the nasa lockheed martin

88
00:03:06,710 --> 00:03:02,959

range and uh ula team executed today's

89
00:03:09,990 --> 00:03:06,720
attempt we went on console just uh after

90
00:03:12,070 --> 00:03:10,000
midnight and had a very nominal count as

91
00:03:14,550 --> 00:03:12,080
we came through worked a couple of

92
00:03:15,990 --> 00:03:14,560
anomalies little little

93
00:03:17,750 --> 00:03:16,000
things that the team got together and

94
00:03:19,270 --> 00:03:17,760
discussed cleared them and continued to

95
00:03:21,589 --> 00:03:19,280
move forward

96
00:03:23,830 --> 00:03:21,599
as we got into our first couple of

97
00:03:25,110 --> 00:03:23,840
attempts we had three today

98
00:03:27,750 --> 00:03:25,120
we were

99
00:03:29,670 --> 00:03:27,760
we called a hold the the automated hold

100
00:03:31,589 --> 00:03:29,680
came out due to high ground winds we

101
00:03:34,949 --> 00:03:31,599
were battling

102
00:03:37,990 --> 00:03:34,959
some winds that in the 20 to 21 knot

103
00:03:40,470 --> 00:03:38,000
range that we're coming right at a

104
00:03:43,430 --> 00:03:40,480
separation between a direction where we

105
00:03:44,229 --> 00:03:43,440
had a 19 knot limit and a 21 knot limit

106
00:03:46,229 --> 00:03:44,239
and

107
00:03:47,910 --> 00:03:46,239
we were good unless it just kind of went

108
00:03:50,470 --> 00:03:47,920
to the wrong azimuth and then it kicked

109
00:03:53,270 --> 00:03:50,480
us out the first two times uh we got to

110
00:03:55,350 --> 00:03:53,280
a relatively quiescent period in the

111
00:03:56,869 --> 00:03:55,360
winds where he had a good shot at it and

112
00:03:58,550 --> 00:03:56,879
that's when we made our third attempt

113
00:04:00,789 --> 00:03:58,560

and at that point in time

114
00:04:04,309 --> 00:04:00,799
we had some fuel valves on the common

115
00:04:07,670 --> 00:04:04,319
booster cores that had gotten cold and

116
00:04:08,550 --> 00:04:07,680
a little sluggish in their performance

117
00:04:10,949 --> 00:04:08,560
so we

118
00:04:13,190 --> 00:04:10,959
again had a hold there

119
00:04:15,110 --> 00:04:13,200
the team did a great job of evaluating

120
00:04:17,270 --> 00:04:15,120
this this is something that we have seen

121
00:04:19,830 --> 00:04:17,280
on one previous heavy launch where we

122
00:04:21,189 --> 00:04:19,840
had a long window and had gone into it

123
00:04:23,590 --> 00:04:21,199
uh

124
00:04:26,070 --> 00:04:23,600
quite a ways into the window

125
00:04:28,390 --> 00:04:26,080
so we're off today

126
00:04:31,430 --> 00:04:28,400
going to execute the same procedures

127
00:04:33,350 --> 00:04:31,440
that we did after that last attempt and

128
00:04:36,790 --> 00:04:33,360
uh very confident we're going to be able

129
00:04:38,469 --> 00:04:36,800
to exonerate uh the hardware and then

130
00:04:39,430 --> 00:04:38,479
make an attempt

131
00:04:41,830 --> 00:04:39,440
later

132
00:04:43,189 --> 00:04:41,840
going on console again early on friday

133
00:04:45,830 --> 00:04:43,199
morning for a

134
00:04:50,150 --> 00:04:45,840
launch window which is the same friday

135
00:04:53,270 --> 00:04:51,590
all right

136
00:04:55,030 --> 00:04:53,280
we're going to take questions here but

137
00:04:56,870 --> 00:04:55,040
keep in mind these guys started their

138
00:04:58,790 --> 00:04:56,880

day yesterday and they'll start tomorrow

139
00:05:01,990 --> 00:04:58,800
tonight so we're going to try and limit

140
00:05:05,029 --> 00:05:02,000
it to 30 minutes but we can start over

141
00:05:08,469 --> 00:05:07,029
jason ryan for spaceflightinsider.com i

142
00:05:10,550 --> 00:05:08,479
think this was for dan

143
00:05:11,749 --> 00:05:10,560
we noted that a boat came in early on in

144
00:05:13,830 --> 00:05:11,759
your first launch attempt and caused a

145
00:05:15,270 --> 00:05:13,840
little bit of havoc that's happened at

146
00:05:17,430 --> 00:05:15,280
wallops at least once it happened with

147
00:05:18,550 --> 00:05:17,440
the f9 it's happened a few times before

148
00:05:21,029 --> 00:05:18,560
i was hoping maybe when you guys could

149
00:05:23,990 --> 00:05:21,039
talk a bit about that how far out does

150
00:05:26,310 --> 00:05:24,000
the the field for eft one reach that the

151
00:05:27,990 --> 00:05:26,320
i guess the coast guard has to patrol go

152
00:05:29,749 --> 00:05:28,000
and what are you guys doing to kind of

153
00:05:32,870 --> 00:05:29,759
mitigate that

154
00:05:35,430 --> 00:05:32,880
uh i i don't have the specifics as far

155
00:05:38,070 --> 00:05:35,440
as the skull box how far it goes out uh

156
00:05:40,629 --> 00:05:38,080
and it's different on uh based on

157
00:05:42,550 --> 00:05:40,639
payloads and a lot of analysis that goes

158
00:05:44,950 --> 00:05:42,560
into that but the range does an

159
00:05:46,310 --> 00:05:44,960
amazingly good job and i understand

160
00:05:48,950 --> 00:05:46,320
every once in a while these things

161
00:05:50,710 --> 00:05:48,960
happen but they go to

162
00:05:52,950 --> 00:05:50,720
really all of the different maritime

163
00:05:55,350 --> 00:05:52,960

organizations and

164
00:05:57,110 --> 00:05:55,360
communicate very very well where the

165
00:05:58,950 --> 00:05:57,120
stay out areas are

166
00:06:01,189 --> 00:05:58,960
they get to all of the marinas in the

167
00:06:03,510 --> 00:06:01,199
local area

168
00:06:06,390 --> 00:06:03,520
to make sure that the the private

169
00:06:09,270 --> 00:06:06,400
boaters all understand that's there and

170
00:06:11,350 --> 00:06:09,280
really have seen a significant change

171
00:06:13,670 --> 00:06:11,360
i'd say even in the last five to ten

172
00:06:15,670 --> 00:06:13,680
years to where these occurrences happen

173
00:06:17,270 --> 00:06:15,680
very very infrequently

174
00:06:19,909 --> 00:06:17,280
when they do happen the range is

175
00:06:22,469 --> 00:06:19,919
typically on top of it and i can clear

176
00:06:25,510 --> 00:06:22,479
the box in a relatively short period of

177
00:06:27,990 --> 00:06:25,520
time and and what happened today was uh

178
00:06:29,110 --> 00:06:28,000
they they did spot the boat that was in

179
00:06:32,629 --> 00:06:29,120
the box

180
00:06:34,629 --> 00:06:32,639
the ship uh they did started down two

181
00:06:36,070 --> 00:06:34,639
paths one was to get the specifics on

182
00:06:38,070 --> 00:06:36,080
the size of the ship so they could

183
00:06:40,710 --> 00:06:38,080
understand whether they were violating

184
00:06:41,909 --> 00:06:40,720
safety requirements or not and then two

185
00:06:43,590 --> 00:06:41,919
was to

186
00:06:45,350 --> 00:06:43,600
help the ship

187
00:06:47,590 --> 00:06:45,360
get out of the box

188
00:06:49,990 --> 00:06:47,600

as they were helping the ship get to the

189
00:06:52,230 --> 00:06:50,000
right place they just they ran their

190
00:06:54,309 --> 00:06:52,240
analysis and found out that there was

191
00:06:55,990 --> 00:06:54,319
not a safety violation with where the

192
00:06:59,749 --> 00:06:56,000
ship was at that point in time and then

193
00:07:04,070 --> 00:07:02,070
i'm jeff patterson with wfla tv out of

194
00:07:07,029 --> 00:07:04,080
tampa dan this may be for you as well

195
00:07:09,110 --> 00:07:07,039
did that boat violation set off a series

196
00:07:11,510 --> 00:07:09,120
of events that led to the ultimate

197
00:07:13,110 --> 00:07:11,520
cancellation of the launch today in

198
00:07:13,990 --> 00:07:13,120
other words the powering up powering

199
00:07:17,110 --> 00:07:14,000
down

200
00:07:19,350 --> 00:07:17,120
you had the window open at 705 and the

201
00:07:20,790 --> 00:07:19,360
wind parameters look like they were

202
00:07:23,270 --> 00:07:20,800
within reason

203
00:07:25,749 --> 00:07:23,280
but did that one event set off the

204
00:07:26,550 --> 00:07:25,759
ultimate failure of today uh

205
00:07:47,430 --> 00:07:26,560
i

206
00:07:50,309 --> 00:07:47,440
be a no-go

207
00:07:51,990 --> 00:07:50,319
because of the winds and there isn't uh

208
00:07:54,390 --> 00:07:52,000
data that i could tie

209
00:07:58,309 --> 00:07:54,400
the the cause of today's scrub back to

210
00:08:00,790 --> 00:07:58,319
that single incident with the boat

211
00:08:02,469 --> 00:08:00,800
marcia done associated press um could

212
00:08:04,230 --> 00:08:02,479
you look ahead what's your strategy

213
00:08:06,070 --> 00:08:04,240

going in how many days in a row could

214
00:08:08,390 --> 00:08:06,080
you try to launch before standing down

215
00:08:12,150 --> 00:08:08,400
for team rest and is there any cost

216
00:08:13,670 --> 00:08:12,160
associated with each day scrub

217
00:08:16,550 --> 00:08:13,680
we will uh

218
00:08:19,029 --> 00:08:16,560
we can launch a delta iv heavy

219
00:08:22,629 --> 00:08:19,039
uh two of any three days

220
00:08:26,790 --> 00:08:22,639
because of the commodities that are used

221
00:08:29,029 --> 00:08:26,800
to fill the large cbc's

222
00:08:30,550 --> 00:08:29,039
and the boil off that happens during a

223
00:08:33,269 --> 00:08:30,560
count

224
00:08:35,750 --> 00:08:33,279
we know we can get two out of three but

225
00:08:38,709 --> 00:08:35,760
if we so if we go friday and

226
00:08:41,909 --> 00:08:38,719
and actually tank and go into the window

227
00:08:43,829 --> 00:08:41,919
then we'll have to stand down saturday

228
00:08:45,990 --> 00:08:43,839
while we re

229
00:08:48,470 --> 00:08:46,000
fill the ground tanks

230
00:08:51,350 --> 00:08:48,480
if we come on

231
00:08:53,670 --> 00:08:51,360
console tonight or early friday morning

232
00:08:56,949 --> 00:08:53,680
and there we've either found something

233
00:08:58,630 --> 00:08:56,959
over the uh the the next uh you know 18

234
00:09:01,030 --> 00:08:58,640
hours or so where the weather has taken

235
00:09:01,910 --> 00:09:01,040
a significantly different path than we

236
00:09:04,230 --> 00:09:01,920
think

237
00:09:06,150 --> 00:09:04,240
then we may choose to stand down friday

238
00:09:08,150 --> 00:09:06,160

and move to saturday because we can do

239
00:09:10,230 --> 00:09:08,160
two of those three so that's our

240
00:09:12,230 --> 00:09:10,240
constraint is we can we can launch the

241
00:09:14,710 --> 00:09:12,240
heavy two of three days it's constrained

242
00:09:16,310 --> 00:09:14,720
by the size of our ground tanks it's a

243
00:09:18,790 --> 00:09:16,320
it's only an eight hundred and fifty

244
00:09:21,910 --> 00:09:18,800
thousand gallon liquid hydrogen tank and

245
00:09:24,630 --> 00:09:21,920
so uh we uh we gotta fill it back up if

246
00:09:26,470 --> 00:09:24,640
we've gone twice uh there is a cost

247
00:09:27,990 --> 00:09:26,480
associated with scrubbing uh there

248
00:09:30,550 --> 00:09:28,000
there's no doubt about it just in the

249
00:09:32,870 --> 00:09:30,560
commodities there's the uh the boil off

250
00:09:34,949 --> 00:09:32,880
that's there uh but that's part of doing

251
00:09:37,910 --> 00:09:34,959
this business and uh

252
00:09:39,030 --> 00:09:37,920
the cost of that is pales in comparison

253
00:09:41,190 --> 00:09:39,040
to uh

254
00:09:45,430 --> 00:09:41,200
trying to fly when the rocket is telling

255
00:09:49,110 --> 00:09:47,430
so if you don't go during these three

256
00:09:51,430 --> 00:09:49,120
days how long do you have to stand down

257
00:09:53,590 --> 00:09:51,440
for the next go around

258
00:09:55,110 --> 00:09:53,600
we will work with the range

259
00:09:57,350 --> 00:09:55,120
if we get past

260
00:10:00,150 --> 00:09:57,360
saturday we have thursday friday and

261
00:10:02,230 --> 00:10:00,160
saturday reserved on the range

262
00:10:04,389 --> 00:10:02,240
should we get past

263
00:10:05,509 --> 00:10:04,399

saturday then we will work with the

264
00:10:06,870 --> 00:10:05,519
range

265
00:10:11,750 --> 00:10:06,880
to

266
00:10:14,550 --> 00:10:11,760
they certainly are aware of our presence

267
00:10:15,910 --> 00:10:14,560
and are typically very very good in

268
00:10:18,949 --> 00:10:15,920
helping us

269
00:10:20,470 --> 00:10:18,959
we do know that uh we have a launch on

270
00:10:22,710 --> 00:10:20,480
the west coast

271
00:10:23,990 --> 00:10:22,720
next thursday that

272
00:10:25,750 --> 00:10:24,000
you know we're going to have to make a

273
00:10:27,990 --> 00:10:25,760
call

274
00:10:29,750 --> 00:10:28,000
the point i should make is we know that

275
00:10:33,190 --> 00:10:29,760
if we launch

276
00:10:34,870 --> 00:10:33,200
on sunday here then we are still good

277
00:10:37,670 --> 00:10:34,880
with our launch date

278
00:10:40,550 --> 00:10:37,680
on the 11th out on the west coast after

279
00:10:42,550 --> 00:10:40,560
that we would have to probably work with

280
00:10:45,430 --> 00:10:42,560
our customers to figure out how to move

281
00:10:47,110 --> 00:10:45,440
around to accommodate that

282
00:10:48,230 --> 00:10:47,120
and the other factors marsha you know we

283
00:10:49,990 --> 00:10:48,240
know we have

284
00:10:51,750 --> 00:10:50,000
tdrs time for instance for today and

285
00:10:54,630 --> 00:10:51,760
tomorrow already locked in already

286
00:10:55,829 --> 00:10:54,640
scheduled as we get past uh

287
00:10:57,590 --> 00:10:55,839
those days

288
00:10:59,670 --> 00:10:57,600

uh we just we have to go back to the

289
00:11:01,990 --> 00:10:59,680
network and and negotiate those kinds of

290
00:11:03,750 --> 00:11:02,000
things we understand the constraints

291
00:11:06,150 --> 00:11:03,760
with the navy and the recovery

292
00:11:09,509 --> 00:11:06,160
operations so those are pretty well

293
00:11:11,269 --> 00:11:09,519
uh understood but they are all

294
00:11:12,870 --> 00:11:11,279
you know fundamentally new negotiations

295
00:11:15,509 --> 00:11:12,880
that happen as we get further in the

296
00:11:16,949 --> 00:11:15,519
window

297
00:11:19,110 --> 00:11:16,959
go ahead

298
00:11:20,230 --> 00:11:19,120
hi i'm craig cavall with aerospace

299
00:11:23,350 --> 00:11:20,240
america

300
00:11:26,150 --> 00:11:23,360
and a little more on the valves please

301
00:11:27,990 --> 00:11:26,160
how large are they

302
00:11:29,670 --> 00:11:28,000
are they rotating ball valves or

303
00:11:31,750 --> 00:11:29,680
something quite different

304
00:11:34,710 --> 00:11:31,760
and i just want to be sure where they're

305
00:11:36,949 --> 00:11:34,720
exchanging hydrogen between

306
00:11:39,030 --> 00:11:36,959
sure uh we'll start with uh what they're

307
00:11:43,190 --> 00:11:39,040
doing these are fill and drain valves

308
00:11:46,790 --> 00:11:43,200
that are on the vehicle side uh and they

309
00:11:49,430 --> 00:11:46,800
uh their their job is uh very shortly

310
00:11:51,990 --> 00:11:49,440
after we pick up terminal count uh these

311
00:11:53,430 --> 00:11:52,000
valve close and then never operate again

312
00:11:55,350 --> 00:11:53,440
so they're they're there while we're

313
00:12:00,949 --> 00:11:55,360

filling the tanks once they're

314
00:12:03,910 --> 00:12:00,959
full uh they they stay uh static for the

315
00:12:05,430 --> 00:12:03,920
entire rest of the mission uh

316
00:12:08,310 --> 00:12:05,440
i don't want it they're they're right

317
00:12:10,310 --> 00:12:08,320
they are relatively large valves i don't

318
00:12:12,550 --> 00:12:10,320
want to give you an exact diameter but

319
00:12:14,389 --> 00:12:12,560
you know somewhere in the 8 to 10 inch

320
00:12:15,509 --> 00:12:14,399
diameter

321
00:12:16,710 --> 00:12:15,519
type of

322
00:12:20,790 --> 00:12:16,720
a range

323
00:12:25,910 --> 00:12:22,629
yes

324
00:12:28,629 --> 00:12:25,920
randy siegel wstu radio uh

325
00:12:31,030 --> 00:12:28,639
follow up on the valves is it because of

326
00:12:32,790 --> 00:12:31,040
the cold from the

327
00:12:35,030 --> 00:12:32,800
hydrogen and oxygen that caused the

328
00:12:37,590 --> 00:12:35,040
valves apparently to stick and not allow

329
00:12:39,829 --> 00:12:37,600
them to move properly

330
00:12:41,110 --> 00:12:39,839
well let me uh

331
00:12:43,590 --> 00:12:41,120
yes

332
00:12:45,829 --> 00:12:43,600
a little bit of a clarification

333
00:12:47,910 --> 00:12:45,839
our locks valves all perform nominally

334
00:12:48,870 --> 00:12:47,920
through the entire count today

335
00:12:51,910 --> 00:12:48,880
uh

336
00:12:53,670 --> 00:12:51,920
our two of our hydrogen valves and you

337
00:12:56,550 --> 00:12:53,680
may expect that hydrogen being

338
00:12:57,910 --> 00:12:56,560

significantly colder uh they they were

339
00:13:01,430 --> 00:12:57,920
the ones that were

340
00:13:02,310 --> 00:13:01,440
sticking and so uh we believe that's the

341
00:13:03,910 --> 00:13:02,320
case

342
00:13:06,710 --> 00:13:03,920
the reason we believe that is that's

343
00:13:08,470 --> 00:13:06,720
what we found the last time we ran into

344
00:13:10,470 --> 00:13:08,480
this issue

345
00:13:12,790 --> 00:13:10,480
but we're going to let the data tell us

346
00:13:15,030 --> 00:13:12,800
exactly what was going on today and

347
00:13:15,910 --> 00:13:15,040
that's what the engineering team is

348
00:13:16,790 --> 00:13:15,920
over

349
00:13:20,870 --> 00:13:16,800
in the

350
00:13:23,430 --> 00:13:20,880
and looking to see if they're you know

351
00:13:25,269 --> 00:13:23,440
what are the proper tests to run today

352
00:13:27,750 --> 00:13:25,279
to make sure that we absolutely

353
00:13:29,750 --> 00:13:27,760
understand what happened today and not

354
00:13:32,069 --> 00:13:29,760
make any assumptions about what the

355
00:13:33,910 --> 00:13:32,079
history has uh shown us so today will

356
00:13:35,430 --> 00:13:33,920
stand on its own and we'll move forward

357
00:13:37,829 --> 00:13:35,440
based on the right moves from what we

358
00:13:40,230 --> 00:13:37,839
see today

359
00:13:42,069 --> 00:13:40,240
amy green wmfe public radio i just

360
00:13:43,990 --> 00:13:42,079
wanted to clarify a couple of things

361
00:13:47,590 --> 00:13:44,000
first of all i wanted to clarify was the

362
00:13:49,350 --> 00:13:47,600
boat in restricted space or not and also

363
00:13:50,150 --> 00:13:49,360

i wanted to clarify

364
00:13:58,069 --> 00:13:50,160
the

365
00:13:59,189 --> 00:13:58,079
could explain in just very layman's

366
00:14:01,829 --> 00:13:59,199
terms

367
00:14:03,829 --> 00:14:01,839
what that malfunction was and was it the

368
00:14:06,230 --> 00:14:03,839
valve issue that ultimately scrubbed the

369
00:14:07,750 --> 00:14:06,240
issue or the mission or are you saying

370
00:14:11,350 --> 00:14:07,760
that the winds would have scrubbed the

371
00:14:14,150 --> 00:14:11,360
mission either way okay

372
00:14:16,550 --> 00:14:14,160
i would i would like you to

373
00:14:20,230 --> 00:14:16,560
if if you would please i'm not a range

374
00:14:21,509 --> 00:14:20,240
expert i i i have my belief on where the

375
00:14:27,509 --> 00:14:21,519
boat was

376
00:14:29,670 --> 00:14:27,519
uh based on all of the data that goes

377
00:14:31,750 --> 00:14:29,680
into determining whether we're safe to

378
00:14:33,750 --> 00:14:31,760
fly or not and that's really what the

379
00:14:36,069 --> 00:14:33,760
range determined what we know as the

380
00:14:38,150 --> 00:14:36,079
user of the range is that the range did

381
00:14:40,870 --> 00:14:38,160
their job determined that it was safe to

382
00:14:43,189 --> 00:14:40,880
launch and they gave us the go ahead

383
00:14:46,230 --> 00:14:43,199
ultimately today's launch was

384
00:14:49,910 --> 00:14:46,240
scrubbed because of the valve behavior

385
00:14:51,030 --> 00:14:49,920
that we saw during the count

386
00:14:52,790 --> 00:14:51,040
the

387
00:14:55,350 --> 00:14:52,800
wind

388
00:14:57,430 --> 00:14:55,360

scrubbed us on our first two attempts

389
00:14:59,590 --> 00:14:57,440
that's what knocked us out and on the

390
00:15:02,389 --> 00:14:59,600
third attempt it was scrubbed because of

391
00:15:04,710 --> 00:15:02,399
the valve had the valve and all other

392
00:15:06,550 --> 00:15:04,720
parts of the rocket performed nominally

393
00:15:10,629 --> 00:15:06,560
the winds were green during the third

394
00:15:13,829 --> 00:15:12,310
thank you uh tarek malik with the

395
00:15:15,350 --> 00:15:13,839
space.com i just had actually a

396
00:15:17,990 --> 00:15:15,360
follow-up to marsha's question i think

397
00:15:20,550 --> 00:15:18,000
maybe for uh mark just looking ahead to

398
00:15:22,710 --> 00:15:20,560
tomorrow and and possibly saturday i

399
00:15:24,710 --> 00:15:22,720
think that the weather does not look as

400
00:15:26,069 --> 00:15:24,720
much as as good as it did today i think

401
00:15:28,310 --> 00:15:26,079
it's like 60

402
00:15:30,470 --> 00:15:28,320
you know no go um how will you be

403
00:15:32,310 --> 00:15:30,480
tracking that in real time you decide

404
00:15:33,749 --> 00:15:32,320
you know and when can you decide

405
00:15:35,749 --> 00:15:33,759
tomorrow whether or not to shift a

406
00:15:37,269 --> 00:15:35,759
saturday uh and do you expect kind of

407
00:15:39,189 --> 00:15:37,279
the same conditions on saturday i think

408
00:15:42,150 --> 00:15:39,199
dan den talked about that the

409
00:15:43,910 --> 00:15:42,160
while the the percentage is higher the

410
00:15:45,749 --> 00:15:43,920
the wind direction

411
00:15:48,230 --> 00:15:45,759
actually is better for us so even though

412
00:15:49,829 --> 00:15:48,240
it's a higher wind speed the direction

413
00:15:51,509 --> 00:15:49,839

is in a better direction so we actually

414
00:15:53,350 --> 00:15:51,519
have higher uh

415
00:15:55,110 --> 00:15:53,360
margin in that case so it looks like it

416
00:15:57,110 --> 00:15:55,120
actually will be about a push for us

417
00:15:58,310 --> 00:15:57,120
tomorrow so that's good news

418
00:15:59,910 --> 00:15:58,320
um

419
00:16:01,749 --> 00:15:59,920
i'd say that's the key for tomorrow

420
00:16:04,150 --> 00:16:01,759
we'll we will track it and as dan said

421
00:16:05,590 --> 00:16:04,160
we're going to look at it before we tank

422
00:16:07,749 --> 00:16:05,600
because we know that that's kind of

423
00:16:09,269 --> 00:16:07,759
starts the clock on

424
00:16:11,110 --> 00:16:09,279
getting these valves cool so we're going

425
00:16:12,550 --> 00:16:11,120
to make that decision prior to tanking

426
00:16:14,710 --> 00:16:12,560
and if it looks reasonable then we're

427
00:16:16,230 --> 00:16:14,720
going to proceed

428
00:16:18,230 --> 00:16:16,240
and we have other constraints on orion

429
00:16:20,829 --> 00:16:18,240
too as far as the cycling of the battery

430
00:16:23,509 --> 00:16:20,839
so that's all part of we'll talk about

431
00:16:25,509 --> 00:16:23,519
yeah hi jared hayworth with space flight

432
00:16:27,670 --> 00:16:25,519
insider this is a question for dan how

433
00:16:31,110 --> 00:16:27,680
well defined are the rules for switching

434
00:16:33,189 --> 00:16:31,120
from the automatic win the ground wind

435
00:16:34,870 --> 00:16:33,199
abort to the manual and how much

436
00:16:36,470 --> 00:16:34,880
confidence do you have in the launch

437
00:16:38,629 --> 00:16:36,480
team that i guess when you go to manual

438
00:16:40,069 --> 00:16:38,639

that they'll make the right call and and

439
00:16:42,629 --> 00:16:40,079
actually call the abort in the win

440
00:16:44,949 --> 00:16:42,639
conditions sure so uh

441
00:16:46,310 --> 00:16:44,959
the process for changing

442
00:16:48,230 --> 00:16:46,320
uh

443
00:16:51,189 --> 00:16:48,240
requirements during a turn during

444
00:16:53,910 --> 00:16:51,199
account is a very very well laid out and

445
00:16:55,749 --> 00:16:53,920
disciplined process and that well laid

446
00:16:58,870 --> 00:16:55,759
out discipline process gives us

447
00:17:01,590 --> 00:16:58,880
extremely high confidence that by using

448
00:17:03,749 --> 00:17:01,600
that process if we do decide to make a

449
00:17:05,990 --> 00:17:03,759
change that we are going to be able to

450
00:17:07,510 --> 00:17:06,000
execute it

451
00:17:09,909 --> 00:17:07,520
with the

452
00:17:11,829 --> 00:17:09,919
very very high

453
00:17:14,949 --> 00:17:11,839
requirement for mission success that we

454
00:17:16,390 --> 00:17:14,959
have so uh very very confident in the

455
00:17:18,549 --> 00:17:16,400
process

456
00:17:21,270 --> 00:17:18,559
we had decided that if we were to have

457
00:17:23,990 --> 00:17:21,280
made a fourth attempt and the winds were

458
00:17:25,350 --> 00:17:24,000
uh in that same area that they could be

459
00:17:27,110 --> 00:17:25,360
a problem that we would have gone to

460
00:17:29,430 --> 00:17:27,120
manual uh

461
00:17:32,710 --> 00:17:29,440
we are currently set up looking at

462
00:17:35,990 --> 00:17:32,720
tomorrow to start out with the uh the

463
00:17:38,870 --> 00:17:36,000

automated system as our baseline uh

464
00:17:42,390 --> 00:17:38,880
should we find ourselves in a situation

465
00:17:46,150 --> 00:17:42,400
where we believe there's a benefit to uh

466
00:17:47,830 --> 00:17:46,160
to going to the manual uh

467
00:17:51,270 --> 00:17:47,840
i'm trying to think of not getting the

468
00:17:53,590 --> 00:17:51,280
right world manual uh

469
00:17:56,950 --> 00:17:53,600
monitoring monitoring thank you of the

470
00:18:00,310 --> 00:17:56,960
uh of the wins um that we will be able

471
00:18:02,470 --> 00:18:00,320
to do that in fact that was the baseline

472
00:18:05,830 --> 00:18:02,480
the manual monitoring the winds up until

473
00:18:07,990 --> 00:18:05,840
about two years ago so going back to it

474
00:18:11,190 --> 00:18:08,000
is going back to something that we know

475
00:18:14,310 --> 00:18:12,310
looks like we've got one back and i know

476
00:18:16,870 --> 00:18:14,320
we've got one on the phone as well so uh

477
00:18:18,950 --> 00:18:16,880
lee roop with the huntsvilletimesal.com

478
00:18:20,950 --> 00:18:18,960
uh also for dan

479
00:18:23,669 --> 00:18:20,960
how old is that rocket out there i've

480
00:18:25,590 --> 00:18:23,679
heard eight years old is is that right

481
00:18:26,549 --> 00:18:25,600
and could its age be a factor in the

482
00:18:29,510 --> 00:18:26,559
valves

483
00:18:31,270 --> 00:18:29,520
it is definitely not eight years old uh

484
00:18:33,190 --> 00:18:31,280
the question is how long has that rock

485
00:18:34,630 --> 00:18:33,200
have been out there i believe it went on

486
00:18:38,230 --> 00:18:34,640
the stand

487
00:18:40,470 --> 00:18:38,240
november first no um

488
00:18:42,950 --> 00:18:40,480

about two months rather than trying to

489
00:18:45,590 --> 00:18:42,960
be specific but that that rocket's been

490
00:18:48,470 --> 00:18:45,600
out on the stand i believe about 60 days

491
00:18:51,909 --> 00:18:48,480
now uh maybe a little bit longer

492
00:18:53,669 --> 00:18:51,919
it was built uh completion of all three

493
00:18:55,669 --> 00:18:53,679
of the common booster cores in the upper

494
00:18:59,590 --> 00:18:55,679
stage were this year

495
00:19:02,390 --> 00:18:59,600
so it's a very very fresh hardware and i

496
00:19:08,870 --> 00:19:02,400
don't believe that the rockets age had

497
00:19:12,310 --> 00:19:11,110
okay um we're going to go to a question

498
00:19:14,230 --> 00:19:12,320
on the phone real quick while we get the

499
00:19:15,669 --> 00:19:14,240
microphone reset i think we have stan in

500
00:19:18,549 --> 00:19:15,679
gold online

501
00:19:21,270 --> 00:19:18,559
yes stan in gold alabama public radio

502
00:19:23,110 --> 00:19:21,280
uh my question is well the ordeal today

503
00:19:25,750 --> 00:19:23,120
um does that impact your confidence at

504
00:19:27,110 --> 00:19:25,760
all in the delta heavies or also any

505
00:19:29,350 --> 00:19:27,120
changes that could lead to the with the

506
00:19:30,390 --> 00:19:29,360
atlas rockets

507
00:19:31,909 --> 00:19:30,400
well

508
00:19:33,590 --> 00:19:31,919
go ahead it doesn't change our

509
00:19:34,789 --> 00:19:33,600
confidence in the rocket we it's a great

510
00:19:36,230 --> 00:19:34,799
rocket

511
00:19:37,270 --> 00:19:36,240
we've seen we've worked with this team

512
00:19:38,870 --> 00:19:37,280
from the beginning they've done an

513
00:19:40,630 --> 00:19:38,880

outstanding job i think they made good

514
00:19:43,029 --> 00:19:40,640
choices today and it was a complex

515
00:19:45,270 --> 00:19:43,039
complex day so it doesn't change our

516
00:19:46,310 --> 00:19:45,280
confidence at all i would just like to

517
00:19:47,110 --> 00:19:46,320
um

518
00:19:49,590 --> 00:19:47,120
you know

519
00:19:51,270 --> 00:19:49,600
talk about today

520
00:19:54,470 --> 00:19:51,280
you used a term that i would disagree

521
00:19:56,070 --> 00:19:54,480
with today was a very very disciplined

522
00:19:58,070 --> 00:19:56,080
uh process

523
00:19:59,990 --> 00:19:58,080
uh our team

524
00:20:03,190 --> 00:20:00,000
has built an amazing record of mission

525
00:20:06,950 --> 00:20:03,200
success uh because our our team knows

526
00:20:07,830 --> 00:20:06,960
our rocket very very well and the team

527
00:20:09,990 --> 00:20:07,840
was

528
00:20:11,750 --> 00:20:10,000
absolutely on their game

529
00:20:14,149 --> 00:20:11,760
listening to everything the rocket was

530
00:20:17,990 --> 00:20:14,159
telling us and it ultimately told us it

531
00:20:19,510 --> 00:20:18,000
wasn't ready to go today and so we will

532
00:20:21,590 --> 00:20:19,520
we'll go make sure we've got a happy

533
00:20:23,110 --> 00:20:21,600
rocket and as soon as we do that we're

534
00:20:25,430 --> 00:20:23,120
going to get back to the pad and send

535
00:20:26,950 --> 00:20:25,440
orion off to a very very successful test

536
00:20:29,590 --> 00:20:26,960
flight and we're looking forward to

537
00:20:33,750 --> 00:20:31,590
okay hi kent kramer for universe today

538
00:20:35,430 --> 00:20:33,760

in america space a question about both

539
00:20:37,830 --> 00:20:35,440
the batteries and the valves how how

540
00:20:40,710 --> 00:20:37,840
long will it take you to determine what

541
00:20:42,630 --> 00:20:40,720
the problem is and if you did have to

542
00:20:44,549 --> 00:20:42,640
make any change outs you know what

543
00:20:47,990 --> 00:20:44,559
what's the impact of that

544
00:20:51,430 --> 00:20:48,000
a certain scrub how long would it take

545
00:20:53,110 --> 00:20:51,440
i will i'll you guys if if chime in if

546
00:20:56,070 --> 00:20:53,120
you want to help but uh

547
00:21:00,470 --> 00:20:59,190
just just the way you had planned it huh

548
00:21:02,870 --> 00:21:00,480
very good questions but very

549
00:21:05,510 --> 00:21:02,880
hypothetical uh it's always hard to know

550
00:21:08,149 --> 00:21:05,520
exactly uh how quickly we're going to be

551
00:21:10,710 --> 00:21:08,159
able to process the data and and

552
00:21:12,870 --> 00:21:10,720
understand exactly what happened i'll

553
00:21:14,070 --> 00:21:12,880
tell you my gut feel tells me this

554
00:21:15,990 --> 00:21:14,080
afternoon

555
00:21:18,149 --> 00:21:16,000
we'll have a pretty darn good idea and

556
00:21:20,230 --> 00:21:18,159
then we'll convene all of the uh the

557
00:21:23,110 --> 00:21:20,240
right people from the different aspects

558
00:21:25,669 --> 00:21:23,120
of the team and get our go forward plan

559
00:21:27,669 --> 00:21:25,679
potted in a very integrated sense

560
00:21:30,230 --> 00:21:27,679
uh how long it would take to change

561
00:21:32,549 --> 00:21:30,240
things out depends completely on how

562
00:21:35,990 --> 00:21:32,559
long it would take what it is we were

563
00:21:39,510 --> 00:21:36,000

changing out uh and so it's a very very

564
00:21:41,669 --> 00:21:39,520
difficult you know question to answer uh

565
00:21:42,470 --> 00:21:41,679
again i i you know probably the thing i

566
00:21:44,390 --> 00:21:42,480
can

567
00:21:46,630 --> 00:21:44,400
give you some guidance with

568
00:21:49,190 --> 00:21:46,640
when we've seen similar behavior in the

569
00:21:51,909 --> 00:21:49,200
past we we did not need to change out

570
00:21:52,950 --> 00:21:51,919
any hardware we were able to come up

571
00:21:56,470 --> 00:21:52,960
with

572
00:22:01,750 --> 00:21:59,990
procedures to mitigate that risk and we

573
00:22:04,390 --> 00:22:01,760
have many of those options at our

574
00:22:06,630 --> 00:22:04,400
disposal so i think the most likely path

575
00:22:08,870 --> 00:22:06,640
forward and there's you never say never

576
00:22:10,549 --> 00:22:08,880
in this business but the most likely

577
00:22:13,669 --> 00:22:10,559
path forward would be that we would

578
00:22:16,549 --> 00:22:13,679
employ some type of operational

579
00:22:19,270 --> 00:22:16,559
procedure in order to mitigate the risk

580
00:22:22,310 --> 00:22:19,280
of this happening again

581
00:22:25,510 --> 00:22:24,070
well there's a couple battery issues

582
00:22:27,430 --> 00:22:25,520
that our engineering teams are off

583
00:22:29,110 --> 00:22:27,440
looking at and and the

584
00:22:31,590 --> 00:22:29,120
real determination there is how many

585
00:22:32,630 --> 00:22:31,600
cycles can we do and

586
00:22:34,230 --> 00:22:32,640
uh

587
00:22:36,310 --> 00:22:34,240
depending on you know when an account

588
00:22:38,390 --> 00:22:36,320

like i say that we go to internal power

589
00:22:39,750 --> 00:22:38,400
at launch minus nine minutes in the

590
00:22:42,149 --> 00:22:39,760
normal flow

591
00:22:45,190 --> 00:22:42,159
so we've done assessments of how long we

592
00:22:47,029 --> 00:22:45,200
stayed in that situation

593
00:22:48,870 --> 00:22:47,039
and how long it would take us to charge

594
00:22:51,430 --> 00:22:48,880
batteries back up

595
00:22:53,029 --> 00:22:51,440
we also collect data during that time so

596
00:22:55,110 --> 00:22:53,039
there's a data recorder that could get

597
00:22:57,750 --> 00:22:55,120
filled up but we would have to

598
00:22:59,430 --> 00:22:57,760
to also do something to process but

599
00:23:00,710 --> 00:22:59,440
we're working to make sure that we

600
00:23:01,990 --> 00:23:00,720
understand all those constraints right

601
00:23:02,950 --> 00:23:02,000
now that's what the engineering teams

602
00:23:05,350 --> 00:23:02,960
are doing

603
00:23:07,430 --> 00:23:05,360
and there's a battery issue with uh on

604
00:23:09,270 --> 00:23:07,440
the rocket side too that we're

605
00:23:12,549 --> 00:23:09,280
understanding and working with it has to

606
00:23:14,950 --> 00:23:12,559
do with instrumentation as well and uh

607
00:23:16,789 --> 00:23:14,960
but non-uh none of the instrumentation

608
00:23:19,430 --> 00:23:16,799
plays into the control systems of the

609
00:23:23,029 --> 00:23:19,440
rocket so they're uh what we would call

610
00:23:24,630 --> 00:23:23,039
required assets not mandatory so again

611
00:23:25,750 --> 00:23:24,640
we'll the team will work through that

612
00:23:28,310 --> 00:23:25,760
and i think we'll be ready to give it

613
00:23:31,029 --> 00:23:28,320

another try here very soon

614
00:23:32,549 --> 00:23:31,039
yes brent houston with the tacoma voice

615
00:23:34,549 --> 00:23:32,559
since the valves have had a problem

616
00:23:37,669 --> 00:23:34,559
before and now they have a problem that

617
00:23:39,669 --> 00:23:37,679
scrubbed today's launch would would that

618
00:23:42,070 --> 00:23:39,679
warrant some kind of redesign of the

619
00:23:44,149 --> 00:23:42,080
valve itself

620
00:23:45,350 --> 00:23:44,159
the valves have worked many times very

621
00:23:47,510 --> 00:23:45,360
very well

622
00:23:49,909 --> 00:23:47,520
but it's a great question that the team

623
00:23:53,750 --> 00:23:49,919
will be asking and looking at

624
00:23:55,669 --> 00:23:53,760
again similar to the previous answer

625
00:23:59,750 --> 00:23:55,679
i think there are probably

626
00:24:07,350 --> 00:24:02,950
fixes that would be employed prior to us

627
00:24:07,360 --> 00:24:12,390
we had one in the middle here

628
00:24:15,590 --> 00:24:13,350
thank you

629
00:24:17,590 --> 00:24:15,600
jane wells with cnbc a couple questions

630
00:24:19,590 --> 00:24:17,600
did the valve three questions did the

631
00:24:20,710 --> 00:24:19,600
valves close during the first two

632
00:24:23,830 --> 00:24:20,720
attempts

633
00:24:24,710 --> 00:24:23,840
is the cost of today's scrubbing being

634
00:24:26,870 --> 00:24:24,720
added

635
00:24:28,470 --> 00:24:26,880
beyond the 370 million or is that all

636
00:24:29,990 --> 00:24:28,480
incorporated in that sort of you're

637
00:24:31,430 --> 00:24:30,000
you're nodding yes okay did the valves

638
00:24:34,070 --> 00:24:31,440

go and third

639
00:24:36,630 --> 00:24:34,080
uh there are some who have said the ship

640
00:24:39,029 --> 00:24:36,640
was a cruise ship is that true

641
00:24:41,430 --> 00:24:39,039
so let's see the first one was in the

642
00:24:44,710 --> 00:24:41,440
first two attempts we did not get to

643
00:24:45,590 --> 00:24:44,720
send the command to close the valves

644
00:24:47,590 --> 00:24:45,600
so

645
00:24:50,870 --> 00:24:47,600
there was no attempt and therefore they

646
00:24:53,430 --> 00:24:50,880
they were not active uh when the winds

647
00:24:57,269 --> 00:24:53,440
scrubbed those attempts you've asked i

648
00:25:00,950 --> 00:24:57,279
think the second has been answered uh

649
00:25:02,710 --> 00:25:00,960
i don't uh what i heard on the net was a

650
00:25:06,070 --> 00:25:02,720
cargo ship

651
00:25:08,149 --> 00:25:06,080
so uh that's the information i have

652
00:25:09,990 --> 00:25:08,159
again uh you know that's the range is

653
00:25:11,590 --> 00:25:10,000
responsibility and i probably should be

654
00:25:16,390 --> 00:25:11,600
careful about answering from them but

655
00:25:20,549 --> 00:25:18,149
okay i think um

656
00:25:21,909 --> 00:25:20,559
don't see any more questions oh one more

657
00:25:28,070 --> 00:25:21,919
from james dane and i think that'll be

658
00:25:31,269 --> 00:25:29,909
dean florida today and i might regret

659
00:25:32,870 --> 00:25:31,279
asking uh

660
00:25:35,029 --> 00:25:32,880
what might seem like a quite a silly

661
00:25:36,070 --> 00:25:35,039
question but you got a real heavy rocket

662
00:25:37,909 --> 00:25:36,080
on the pad i wondered if you wouldn't

663
00:25:39,510 --> 00:25:37,919

mind just mine explaining

664
00:25:41,350 --> 00:25:39,520
you know what is the threat that a stiff

665
00:25:43,430 --> 00:25:41,360
breeze poses to

666
00:25:45,029 --> 00:25:43,440
this million and a half pound rocket and

667
00:25:46,070 --> 00:25:45,039
you know why is it that

668
00:25:48,950 --> 00:25:46,080
a little bit different direction

669
00:25:50,470 --> 00:25:48,960
tomorrow might make such a difference

670
00:25:52,630 --> 00:25:50,480
actually uh

671
00:25:55,110 --> 00:25:52,640
no problem at all

672
00:25:57,669 --> 00:25:55,120
as the rocket lifts off

673
00:26:00,549 --> 00:25:57,679
a wind can push the rocket you look at

674
00:26:02,390 --> 00:26:00,559
the sail area of a heavy and a wind from

675
00:26:03,830 --> 00:26:02,400
a certain direction

676
00:26:04,789 --> 00:26:03,840
you get a

677
00:26:07,190 --> 00:26:04,799
you know

678
00:26:08,789 --> 00:26:07,200
one profile this way and another profile

679
00:26:10,870 --> 00:26:08,799
this way and so

680
00:26:13,269 --> 00:26:10,880
which side of that rocket the wind's

681
00:26:15,190 --> 00:26:13,279
blowing on it's kind of either blowing

682
00:26:17,510 --> 00:26:15,200
on a knife or it's blowing on a garage

683
00:26:19,190 --> 00:26:17,520
door makes a big difference

684
00:26:21,590 --> 00:26:19,200
the other part is

685
00:26:23,669 --> 00:26:21,600
where is the rocket being blown to as

686
00:26:26,230 --> 00:26:23,679
the rocket comes up if there is a wind

687
00:26:28,710 --> 00:26:26,240
it will drift if it starts to drift

688
00:26:31,430 --> 00:26:28,720

towards the fixed umbilical tower which

689
00:26:33,750 --> 00:26:31,440
is the structure that holds

690
00:26:35,669 --> 00:26:33,760
the swing arms

691
00:26:38,149 --> 00:26:35,679
then obviously

692
00:26:39,990 --> 00:26:38,159
you can't drift as far in that direction

693
00:26:41,830 --> 00:26:40,000
as you can in other directions where

694
00:26:44,950 --> 00:26:41,840
there are no other structures in the

695
00:26:46,950 --> 00:26:44,960
area so the reason the wind direction

696
00:26:48,549 --> 00:26:46,960
the wind's important is it does push the

697
00:26:50,710 --> 00:26:48,559
rocket as you're coming up off the

698
00:26:52,710 --> 00:26:50,720
launch pad and the reason the direction

699
00:26:54,789 --> 00:26:52,720
is important is because there are

700
00:26:57,190 --> 00:26:54,799
structures near the rocket that need to

701
00:27:01,110 --> 00:26:57,200
be there to accommodate the launch and

702
00:27:06,070 --> 00:27:03,510
okay i think we will wrap up there

703
00:27:08,789 --> 00:27:06,080
we'll try again tomorrow at 7 05 a.m

704
00:27:11,269 --> 00:27:08,799
eastern time again but tomorrow our nasa

705
00:27:12,390 --> 00:27:11,279
tv coverage of the event will start at 6

706
00:27:13,750 --> 00:27:12,400
a.m

707
00:27:16,230 --> 00:27:13,760
eastern time

708
00:27:19,269 --> 00:27:16,240
you can check up on on the status of

709
00:27:21,350 --> 00:27:19,279
events in the meantime at nasa.gov orion

710
00:27:22,950 --> 00:27:21,360
to keep up with what exactly is going on

711
00:27:25,029 --> 00:27:22,960
so we'll hopefully i'll see you all

712
00:27:27,350 --> 00:27:25,039
there tomorrow and then hopefully have a