1
00:00:10,870 --> 00:00:09,190
good morning thank you for joining us

2
00:00:13,070 --> 00:00:10,880
here at nasa's kennedy space center in

3
00:00:15,669 --> 00:00:13,080
florida for space shuttle endeavour's

4
00:00:17,910 --> 00:00:15,679
sts-134 countdown status briefing

5
00:00:19,189 --> 00:00:17,920
joining me today is jeff spalding nasa

6
00:00:20,950 --> 00:00:19,199
test director

7
00:00:24,710 --> 00:00:20,960
good morning

8
00:00:26,390 --> 00:00:24,720
joe duly sts-134 payload manager

9
00:00:27,830 --> 00:00:26,400
good morning

10
00:00:30,790 --> 00:00:27,840
and kathy winters shuttle weather

11
00:00:32,389 --> 00:00:30,800
officer good morning

12
00:00:34,470 --> 00:00:32,399
we'll hear from our panelists and then

13
00:00:36,389 --> 00:00:34,480

we'll take questions jeff all right

14
00:00:38,310 --> 00:00:36,399
thank you kendra and good morning to

15
00:00:40,470 --> 00:00:38,320
everyone and i'm really happy to back

16
00:00:42,549 --> 00:00:40,480
here today as we are back officially

17
00:00:44,310 --> 00:00:42,559
into the launch countdown we did just

18
00:00:46,470 --> 00:00:44,320
pick up the clock a few hours ago and we

19
00:00:47,910 --> 00:00:46,480
are accounting and working on some of

20
00:00:49,190 --> 00:00:47,920
our avionics checkouts right in the

21
00:00:51,510 --> 00:00:49,200
beginning of the count as we normally do

22
00:00:53,750 --> 00:00:51,520
so real pleased to be back here again to

23
00:00:55,029 --> 00:00:53,760
ready the vehicle for monday's launch of

24
00:00:57,029 --> 00:00:55,039
the space shuttle endeavour on the

25
00:00:59,029 --> 00:00:57,039
sts-134 mission

26
00:01:01,189 --> 00:00:59,039
it was two weeks ago today actually that

27
00:01:02,950 --> 00:01:01,199
we had our last launch attempt and we

28
00:01:05,030 --> 00:01:02,960
needed to stand down we did have uh and

29
00:01:07,350 --> 00:01:05,040
found up an issue with our auxiliary

30
00:01:09,750 --> 00:01:07,360
power unit number one the the be heater

31
00:01:12,149 --> 00:01:09,760
system associated with that auxiliary

32
00:01:13,750 --> 00:01:12,159
power unit wasn't functioning properly

33
00:01:15,510 --> 00:01:13,760
so we did end up scrubbing that launch

34
00:01:16,710 --> 00:01:15,520
and backing out of the count and start

35
00:01:18,950 --> 00:01:16,720
working some of our troubleshooting over

36
00:01:20,550 --> 00:01:18,960
the last couple of weeks which

37
00:01:22,070 --> 00:01:20,560
is now complete

38
00:01:24,310 --> 00:01:22,080

during that time frame we ended up

39
00:01:26,630 --> 00:01:24,320
removing and replacing a load controller

40
00:01:28,230 --> 00:01:26,640
assembly in the aft fuselage

41
00:01:29,749 --> 00:01:28,240
that was number two

42
00:01:31,670 --> 00:01:29,759
over that boxes

43
00:01:33,429 --> 00:01:31,680
we replaced that we did also replace a

44
00:01:34,870 --> 00:01:33,439
wire that goes from that box up to the

45
00:01:36,789 --> 00:01:34,880
the heater string

46
00:01:37,910 --> 00:01:36,799
in question that we had an issue with as

47
00:01:39,190 --> 00:01:37,920
well as a couple of splices and

48
00:01:40,390 --> 00:01:39,200
thermostats during that time frame

49
00:01:42,069 --> 00:01:40,400
because our troubleshooting let us down

50
00:01:44,149 --> 00:01:42,079
that path

51
00:01:45,910 --> 00:01:44,159
indicating that the the issue was along

52
00:01:47,190 --> 00:01:45,920
that uh that wiring path that we had

53
00:01:49,590 --> 00:01:47,200
there so all of those things have been

54
00:01:51,590 --> 00:01:49,600
changed out all of the re-tests of all

55
00:01:53,670 --> 00:01:51,600
of those systems are complete we had to

56
00:01:55,990 --> 00:01:53,680
do quite a bit of other re-tests and and

57
00:01:58,230 --> 00:01:56,000
reconfiguration and um of the systems in

58
00:01:59,830 --> 00:01:58,240
order to get to that box as well as once

59
00:02:01,030 --> 00:01:59,840
we uh took it apart and replaced it with

60
00:02:02,709 --> 00:02:01,040
there were a number of other systems

61
00:02:04,789 --> 00:02:02,719
that we had to do a test and checkout on

62
00:02:06,310 --> 00:02:04,799
and and that's all complete and

63
00:02:07,990 --> 00:02:06,320

is good and we're ready to go from that

64
00:02:09,910 --> 00:02:08,000
perspective

65
00:02:11,830 --> 00:02:09,920
uh let's see our countdown clock as i

66
00:02:13,430 --> 00:02:11,840
mentioned picked up just about seven

67
00:02:15,589 --> 00:02:13,440
o'clock this morning and right now we're

68
00:02:17,110 --> 00:02:15,599
working uh those preparations and

69
00:02:18,790 --> 00:02:17,120
throughout the day in anticipation

70
00:02:20,309 --> 00:02:18,800
tonight of getting into a pad clear on

71
00:02:22,070 --> 00:02:20,319
11 o'clock once we get done with all the

72
00:02:23,430 --> 00:02:22,080
checkouts of the boxes and the other

73
00:02:25,670 --> 00:02:23,440
preps we need to get into those

74
00:02:27,510 --> 00:02:25,680
operations and at that point we'll start

75
00:02:29,190 --> 00:02:27,520
our checkout of our ground pyrotechnic

76
00:02:31,350 --> 00:02:29,200
systems

77
00:02:33,430 --> 00:02:31,360
and then later on uh early morning on

78
00:02:34,710 --> 00:02:33,440
saturday we'll begin loading the onboard

79
00:02:36,550 --> 00:02:34,720
cryo tanks

80
00:02:37,830 --> 00:02:36,560
with cryogenics

81
00:02:39,030 --> 00:02:37,840
at about 4 30 in the morning as i

82
00:02:40,630 --> 00:02:39,040
mentioned

83
00:02:43,350 --> 00:02:40,640
once that's done that requires a pad

84
00:02:45,509 --> 00:02:43,360
clear we'll reopen the pad around 1 30

85
00:02:46,630 --> 00:02:45,519
in the afternoon work some more preps

86
00:02:48,830 --> 00:02:46,640
towards

87
00:02:51,270 --> 00:02:48,840
the checkout of our space shuttle

88
00:02:53,030 --> 00:02:51,280

engines um in the afternoon and some of

89
00:02:54,309 --> 00:02:53,040
the planned inspections of our external

90
00:02:55,990 --> 00:02:54,319
tank and boosters will start about seven

91
00:02:57,430 --> 00:02:56,000
o'clock on saturday so we'll have a

92
00:03:00,630 --> 00:02:57,440
pretty full day on saturday once we get

93
00:03:02,229 --> 00:03:00,640
back in the pad getting back into work

94
00:03:03,509 --> 00:03:02,239
once we work throughout the night and

95
00:03:05,110 --> 00:03:03,519
then on sunday we're going to power up

96
00:03:06,630 --> 00:03:05,120
our orbiter ground communication network

97
00:03:08,470 --> 00:03:06,640
as we always do and do an end-to-end

98
00:03:11,030 --> 00:03:08,480
test of all the systems

99
00:03:13,030 --> 00:03:11,040
from the orbiter itself back to kennedy

100
00:03:14,710 --> 00:03:13,040
here and also to the other centers

101
00:03:16,869 --> 00:03:14,720
and that will happen about 6 30 in the

102
00:03:18,790 --> 00:03:16,879
morning on sunday followed by our final

103
00:03:20,790 --> 00:03:18,800
flight crew equipment stowage operations

104
00:03:22,390 --> 00:03:20,800
which is about 8 30. we'll work our

105
00:03:23,750 --> 00:03:22,400
preps throughout the rest of that

106
00:03:25,350 --> 00:03:23,760
morning and we're going to retract the

107
00:03:27,990 --> 00:03:25,360
rotating service structure back away

108
00:03:28,949 --> 00:03:28,000
from the vehicle at about 12 noon on

109
00:03:30,390 --> 00:03:28,959
sunday

110
00:03:31,509 --> 00:03:30,400
and then we'll continue

111
00:03:32,710 --> 00:03:31,519
working and configuring a lot of our

112
00:03:34,070 --> 00:03:32,720
other ground and flight systems

113
00:03:35,990 --> 00:03:34,080

throughout the day

114
00:03:38,390 --> 00:03:36,000
in anticipation of our initial pad clear

115
00:03:41,190 --> 00:03:38,400
about 6 30 on sunday evening and then

116
00:03:43,589 --> 00:03:41,200
we'll work our earliest tanking at 11 36

117
00:03:45,030 --> 00:03:43,599
sunday night so as you've noticed as

118
00:03:46,470 --> 00:03:45,040
we've moved a couple of weeks here our

119
00:03:48,710 --> 00:03:46,480
launch times have gotten quite a bit

120
00:03:50,789 --> 00:03:48,720
earlier than they were

121
00:03:51,830 --> 00:03:50,799
the last time

122
00:03:53,270 --> 00:03:51,840
once we get done with our tanking

123
00:03:54,550 --> 00:03:53,280
operation that lasts about three hours

124
00:03:56,070 --> 00:03:54,560
as you recall

125
00:03:57,429 --> 00:03:56,080
we'll send our ground crews into the pad

126
00:03:59,670 --> 00:03:57,439
and ready the cockpit for the cruise

127
00:04:01,429 --> 00:03:59,680
arrival which is about 5 30 a.m on

128
00:04:03,670 --> 00:04:01,439
monday morning

129
00:04:06,309 --> 00:04:03,680
our launch window this time opens at 8

130
00:04:08,070 --> 00:04:06,319
56 a.m on monday and that does actually

131
00:04:10,309 --> 00:04:08,080
correlate to our preferred time it'll be

132
00:04:13,270 --> 00:04:10,319
a few seconds difference there from the

133
00:04:14,550 --> 00:04:13,280
actual a5600 time and we'll do that

134
00:04:16,310 --> 00:04:14,560
adjust

135
00:04:17,670 --> 00:04:16,320
but we will be right at the preferred

136
00:04:19,270 --> 00:04:17,680
time this time

137
00:04:21,749 --> 00:04:19,280
as far as our launch availability go we

138
00:04:23,110 --> 00:04:21,759

currently have the 16th which is monday

139
00:04:25,110 --> 00:04:23,120
as a launch date

140
00:04:27,350 --> 00:04:25,120
through the 26th of may before we would

141
00:04:28,390 --> 00:04:27,360
need to stand down for the soyuz 27s

142
00:04:30,950 --> 00:04:28,400
launch which is

143
00:04:32,870 --> 00:04:30,960
out there at the beginning of june

144
00:04:35,189 --> 00:04:32,880
right in the middle of that uh campaign

145
00:04:38,950 --> 00:04:35,199
there between the 16th and 26th we do

146
00:04:41,110 --> 00:04:38,960
have a planned undocked of the soyuz 25s

147
00:04:43,030 --> 00:04:41,120
from the station which is on the 23rd

148
00:04:45,510 --> 00:04:43,040
and with their undock on the 23rd that

149
00:04:47,430 --> 00:04:45,520
means the 21st as a launch date is not

150
00:04:48,629 --> 00:04:47,440
available to us because that would put

151
00:04:50,710 --> 00:04:48,639
our docking and their undocking

152
00:04:53,510 --> 00:04:50,720
essentially on the same day so that date

153
00:04:55,270 --> 00:04:53,520
is not available to us as a launch date

154
00:04:57,270 --> 00:04:55,280
and additionally we're doing

155
00:04:59,749 --> 00:04:57,280
working to try to deconflict any issues

156
00:05:01,189 --> 00:04:59,759
on the 20th or 22nd the days on either

157
00:05:03,029 --> 00:05:01,199
side of that

158
00:05:05,110 --> 00:05:03,039
21st date to make sure there's no crew

159
00:05:06,629 --> 00:05:05,120
workload issues on the 20th or any

160
00:05:08,950 --> 00:05:06,639
relative motions between those other two

161
00:05:10,310 --> 00:05:08,960
vehicles on the 22nd so we're hoping to

162
00:05:12,469 --> 00:05:10,320
deconflict both of those and make those

163
00:05:13,670 --> 00:05:12,479

available launch dates to us as well

164
00:05:15,510 --> 00:05:13,680
currently we have

165
00:05:17,990 --> 00:05:15,520
seven days of liquid hydrogen and 12

166
00:05:19,350 --> 00:05:18,000
days of liquid oxygen prsd hold times

167
00:05:20,790 --> 00:05:19,360
which are

168
00:05:23,350 --> 00:05:20,800
plentiful for us so we don't have to do

169
00:05:25,670 --> 00:05:23,360
one top off during that entire campaign

170
00:05:27,909 --> 00:05:25,680
that i mentioned on those dates

171
00:05:30,070 --> 00:05:27,919
it is a 16 day mission and are zero

172
00:05:31,749 --> 00:05:30,080
contingency days and two weather days

173
00:05:33,670 --> 00:05:31,759
available to us and that would put our

174
00:05:36,390 --> 00:05:33,680
end to mission landing on wednesday june

175
00:05:38,550 --> 00:05:36,400
the 1st at 2 30 or so in the morning if

176
00:05:40,310 --> 00:05:38,560
we had to go an extra day for whatever

177
00:05:43,029 --> 00:05:40,320
reason that would put us at about 1 20

178
00:05:45,350 --> 00:05:43,039
a.m on thursday the second

179
00:05:47,110 --> 00:05:45,360
so i just want to say that i am really

180
00:05:48,790 --> 00:05:47,120
proud of our teams

181
00:05:50,629 --> 00:05:48,800
working so hard over the last couple of

182
00:05:51,830 --> 00:05:50,639
weeks the last two weeks

183
00:05:52,870 --> 00:05:51,840
all the teams here at kennedy and all

184
00:05:54,550 --> 00:05:52,880
the other centers have done an

185
00:05:55,430 --> 00:05:54,560
outstanding job to get us ready for this

186
00:05:57,430 --> 00:05:55,440
launch

187
00:05:59,830 --> 00:05:57,440
on a historic and final flight of the

188
00:06:01,590 --> 00:05:59,840

space shuttle endeavor thanks

189
00:06:03,110 --> 00:06:01,600
thank you joe

190
00:06:04,710 --> 00:06:03,120
okay thank you

191
00:06:07,110 --> 00:06:04,720
well it is like jeff said it's going to

192
00:06:08,390 --> 00:06:07,120
be back here um we're very proud of the

193
00:06:10,469 --> 00:06:08,400
team

194
00:06:13,029 --> 00:06:10,479
our payloads ams

195
00:06:14,950 --> 00:06:13,039
elc 3 with its oius

196
00:06:17,510 --> 00:06:14,960
and experiments the

197
00:06:19,110 --> 00:06:17,520
storm payload and the missy we're

198
00:06:20,309 --> 00:06:19,120
ready to support this launch we can't

199
00:06:21,909 --> 00:06:20,319
wait

200
00:06:23,670 --> 00:06:21,919
we will start our

201
00:06:25,110 --> 00:06:23,680
we call our mid-deck waves you know

202
00:06:26,790 --> 00:06:25,120
because of the uh

203
00:06:28,309 --> 00:06:26,800
the scrub from the last mission we went

204
00:06:30,150 --> 00:06:28,319
ahead and took out all our research

205
00:06:33,029 --> 00:06:30,160
payloads there were nine

206
00:06:34,870 --> 00:06:33,039
passive and uh two

207
00:06:37,749 --> 00:06:34,880
two powered so we removed those turn

208
00:06:39,430 --> 00:06:37,759
them over to the principal investigators

209
00:06:40,710 --> 00:06:39,440
they went through their refurbishment

210
00:06:42,710 --> 00:06:40,720
process

211
00:06:44,870 --> 00:06:42,720
and uh they're back here and ready to

212
00:06:47,990 --> 00:06:44,880
support us and we'll start that upload

213
00:06:49,430 --> 00:06:48,000

around 5 30 a.m on sunday and we should

214
00:06:50,870 --> 00:06:49,440
finish around a little bit after lunch

215
00:06:52,710 --> 00:06:50,880
so we're excited

216
00:06:54,790 --> 00:06:52,720
there's nothing that we are tracking on

217
00:06:55,749 --> 00:06:54,800
the payloads everything is is in good

218
00:06:57,830 --> 00:06:55,759
order

219
00:06:59,189 --> 00:06:57,840
and we look forward to this launch thank

220
00:07:02,390 --> 00:06:59,199
you

221
00:07:04,230 --> 00:07:02,400
well the weather has been a pretty good

222
00:07:05,990 --> 00:07:04,240
the last several days um we have had

223
00:07:07,110 --> 00:07:06,000
some isolated thunderstorms inland

224
00:07:08,550 --> 00:07:07,120
things are going to change a little bit

225
00:07:10,390 --> 00:07:08,560
though over the next couple of days we

226
00:07:11,749 --> 00:07:10,400
could see some of those thunderstorms

227
00:07:14,230 --> 00:07:11,759
get a little bit closer to us on the

228
00:07:15,749 --> 00:07:14,240
coast here today and then tomorrow is

229
00:07:17,270 --> 00:07:15,759
looks like they'll any inland

230
00:07:18,150 --> 00:07:17,280
thunderstorms would migrate towards the

231
00:07:19,990 --> 00:07:18,160
coast

232
00:07:21,909 --> 00:07:20,000
so we'll be watching for that then on

233
00:07:24,070 --> 00:07:21,919
sunday we actually have a trough that's

234
00:07:25,990 --> 00:07:24,080
going to roll through and as that does

235
00:07:27,909 --> 00:07:26,000
it could cause some concerns for rss

236
00:07:29,670 --> 00:07:27,919
retract operations so it's all going to

237
00:07:32,150 --> 00:07:29,680
be about the timing of that of that

238
00:07:34,230 --> 00:07:32,160

trough by monday that that front moves

239
00:07:35,830 --> 00:07:34,240
off to the east and we're going to

240
00:07:37,430 --> 00:07:35,840
actually clear out by lunchtime the

241
00:07:40,230 --> 00:07:37,440
weather should all be off to the east

242
00:07:41,749 --> 00:07:40,240
and southeast and we so we expect the

243
00:07:44,309 --> 00:07:41,759
conditions to improve we are concerned a

244
00:07:45,909 --> 00:07:44,319
little bit about a crosswind uh about a

245
00:07:48,869 --> 00:07:45,919
crossing at the shuttle landing facility

246
00:07:50,070 --> 00:07:48,879
the winds are across on the slf but they

247
00:07:52,230 --> 00:07:50,080
are going to look like right now they're

248
00:07:54,230 --> 00:07:52,240
going to be within limits so right now

249
00:07:56,309 --> 00:07:54,240
we're forecasting a 30 percent chance of

250
00:07:57,909 --> 00:07:56,319
ksc weather prohibiting launch

251
00:07:59,830 --> 00:07:57,919
looking at the satellite picture you can

252
00:08:01,589 --> 00:07:59,840
see there's a pretty good trough moving

253
00:08:03,589 --> 00:08:01,599
into in through the gulf of mexico right

254
00:08:05,029 --> 00:08:03,599
now that's actually not going to have

255
00:08:06,869 --> 00:08:05,039
too much effect on us because we have a

256
00:08:09,350 --> 00:08:06,879
strong blocking ridge in the upper

257
00:08:11,110 --> 00:08:09,360
levels of our area but as we get into

258
00:08:12,710 --> 00:08:11,120
sunday we start

259
00:08:14,710 --> 00:08:12,720
what we'll start seeing is a an upper

260
00:08:17,189 --> 00:08:14,720
level trough dig into the eastern u.s

261
00:08:19,029 --> 00:08:17,199
and a low will actually sit in that area

262
00:08:20,710 --> 00:08:19,039
for an upper level low for for several

263
00:08:22,469 --> 00:08:20,720

days and so we're going to be trying to

264
00:08:24,469 --> 00:08:22,479
time out the troughs associated with the

265
00:08:25,909 --> 00:08:24,479
upper level low and so right now it

266
00:08:28,070 --> 00:08:25,919
looks like the one that moves through

267
00:08:31,589 --> 00:08:28,080
sunday will move off by launch time but

268
00:08:33,269 --> 00:08:31,599
then if we happen to delay to tuesday

269
00:08:35,829 --> 00:08:33,279
then we could see another trough come

270
00:08:37,589 --> 00:08:35,839
into the area and affect us again

271
00:08:39,750 --> 00:08:37,599
so let's go ahead and get into our

272
00:08:41,909 --> 00:08:39,760
forecast by tanking time looks like that

273
00:08:44,149 --> 00:08:41,919
front will be pushed through and off to

274
00:08:45,829 --> 00:08:44,159
the south and we may see some lingering

275
00:08:48,389 --> 00:08:45,839
showers in the area

276
00:08:50,070 --> 00:08:48,399
a lot of cloud cover but not expecting

277
00:08:52,310 --> 00:08:50,080
right now predominantly to be

278
00:08:53,990 --> 00:08:52,320
forecasting any constraint violations

279
00:08:54,870 --> 00:08:54,000
however if that trough happened to slow

280
00:08:56,470 --> 00:08:54,880
down

281
00:08:58,070 --> 00:08:56,480
then that could cause us some concern so

282
00:09:00,230 --> 00:08:58,080
just in the event that occurred we'd go

283
00:09:01,750 --> 00:09:00,240
with the 20 percent chance of ksc

284
00:09:04,630 --> 00:09:01,760
weather prohibiting tanking due to a

285
00:09:05,910 --> 00:09:04,640
threat of lightning in the area

286
00:09:07,670 --> 00:09:05,920
for the launch forecast the weather

287
00:09:09,350 --> 00:09:07,680
should be all pushed off to the

288
00:09:11,350 --> 00:09:09,360

east and southeast winds though are

289
00:09:12,630 --> 00:09:11,360
expected to be crossed from 10 gusting

290
00:09:14,230 --> 00:09:12,640
to 15.

291
00:09:15,829 --> 00:09:14,240
that is not a violation but it's right

292
00:09:17,509 --> 00:09:15,839
on the edge and so with that we have a

293
00:09:18,710 --> 00:09:17,519
30 percent chance of kc weather

294
00:09:20,150 --> 00:09:18,720
prohibiting launch there's also an

295
00:09:21,990 --> 00:09:20,160
outside chance of some lingering cloud

296
00:09:25,430 --> 00:09:22,000
cover on this morning as well but

297
00:09:27,030 --> 00:09:25,440
overall it looks favorable

298
00:09:28,310 --> 00:09:27,040
for the solid rocket booster recovery

299
00:09:30,310 --> 00:09:28,320
forecast some it's going to be a little

300
00:09:31,910 --> 00:09:30,320
bit choppy as they go out to the area

301
00:09:33,590 --> 00:09:31,920
but as they're they get out there and we

302
00:09:35,750 --> 00:09:33,600
get to launch time as that front moves

303
00:09:37,829 --> 00:09:35,760
away the conditions start improving and

304
00:09:39,509 --> 00:09:37,839
seas are about four to six feet

305
00:09:40,470 --> 00:09:39,519
they should decrease through that day

306
00:09:42,310 --> 00:09:40,480
while they're out there and the winds

307
00:09:43,430 --> 00:09:42,320
should also start coming down through

308
00:09:44,949 --> 00:09:43,440
the day as they're going through their

309
00:09:49,110 --> 00:09:44,959
recovery operations but at launch time

310
00:09:52,470 --> 00:09:51,110
and then as we go into our abort landing

311
00:09:53,829 --> 00:09:52,480
sites in the u.s space flight

312
00:09:56,070 --> 00:09:53,839
meteorology group is forecasting good

313
00:09:57,750 --> 00:09:56,080

conditions at both edwards and northrop

314
00:10:00,550 --> 00:09:57,760
field it's just a little bit breezy but

315
00:10:02,470 --> 00:10:00,560
not violating any constraints

316
00:10:04,069 --> 00:10:02,480
and for overseas abort landing sites

317
00:10:06,230 --> 00:10:04,079
estrus is the only concern is a low

318
00:10:07,829 --> 00:10:06,240
pressure area off to the east of estrus

319
00:10:09,829 --> 00:10:07,839
and putting a tight pressure gradient

320
00:10:12,630 --> 00:10:09,839
over that area with that

321
00:10:14,790 --> 00:10:12,640
there's a peak wind of 33 knots expected

322
00:10:17,350 --> 00:10:14,800
and that is a headwind violation of 32

323
00:10:19,990 --> 00:10:17,360
knots so but zaragoza and roman both

324
00:10:23,509 --> 00:10:21,829
if we happen to delay 24 hours this is

325
00:10:25,430 --> 00:10:23,519
where the next trough looks to be timing

326
00:10:26,790 --> 00:10:25,440
out to be coming into the area and we

327
00:10:28,949 --> 00:10:26,800
didn't get too pessimistic yet on the

328
00:10:31,110 --> 00:10:28,959
number i mean we saw we went with 40

329
00:10:32,310 --> 00:10:31,120
chance on this day because of the fact

330
00:10:33,750 --> 00:10:32,320
that the timing of this is still a

331
00:10:35,030 --> 00:10:33,760
little bit uncertain

332
00:10:37,110 --> 00:10:35,040
if it continues to look like it's going

333
00:10:38,710 --> 00:10:37,120
to be over the area on this on tuesday

334
00:10:40,230 --> 00:10:38,720
morning we may have to up this number

335
00:10:42,069 --> 00:10:40,240
tomorrow right now we're going with a

336
00:10:44,710 --> 00:10:42,079
low cloud ceiling

337
00:10:47,509 --> 00:10:44,720
winds a crosswind violation of 230

338
00:10:49,430 --> 00:10:47,519

degrees 12 peaking at 19 knots and also

339
00:10:50,949 --> 00:10:49,440
showers in the area so with that right

340
00:10:52,389 --> 00:10:50,959
now we're going with a 40 percent chance

341
00:10:55,030 --> 00:10:52,399
on tuesday morning of ksc weather

342
00:10:57,110 --> 00:10:55,040
prohibiting launch

343
00:10:58,790 --> 00:10:57,120
for the abort landing sites in the u.s

344
00:11:00,790 --> 00:10:58,800
weather does look good again still a

345
00:11:03,750 --> 00:11:00,800
little bit breezy out there but no

346
00:11:05,110 --> 00:11:03,760
violations to any of the constraints

347
00:11:06,870 --> 00:11:05,120
and spaceflight meteorology group is

348
00:11:07,670 --> 00:11:06,880
forecasting all three tile sites to be

349
00:11:09,910 --> 00:11:07,680
good

350
00:11:12,550 --> 00:11:09,920
on tuesday morning with just scattered

351
00:11:14,470 --> 00:11:12,560
skies and both zaragoza and marone or

352
00:11:16,310 --> 00:11:14,480
just few are scattered and then at

353
00:11:18,790 --> 00:11:16,320
israel's just a ceiling at 20 000 feet

354
00:11:20,630 --> 00:11:18,800
no concerns there

355
00:11:22,550 --> 00:11:20,640
if we happen to delay 48 hours the

356
00:11:23,990 --> 00:11:22,560
weather looks to be moving off

357
00:11:25,750 --> 00:11:24,000
to the east and so there's still a

358
00:11:27,750 --> 00:11:25,760
little bit of a crosswind concern with

359
00:11:29,670 --> 00:11:27,760
winds from the west 10 peaking to 16

360
00:11:31,190 --> 00:11:29,680
knots there's also a little concern that

361
00:11:33,269 --> 00:11:31,200
you know the models might be moving out

362
00:11:35,430 --> 00:11:33,279
too fast because sometimes they tend to

363
00:11:37,110 --> 00:11:35,440

to do that with upper level lows and so

364
00:11:40,790 --> 00:11:37,120
with that we're still keeping a 20

365
00:11:42,389 --> 00:11:40,800
chance of ksu weather prohibiting launch

366
00:11:43,829 --> 00:11:42,399
for the abort landing sites in the u.s

367
00:11:45,670 --> 00:11:43,839
on the day three the weather looks good

368
00:11:46,870 --> 00:11:45,680
at both locations

369
00:11:48,870 --> 00:11:46,880
and space flight meteorology groups

370
00:11:51,190 --> 00:11:48,880
forecasting three good taos sites also

371
00:11:53,190 --> 00:11:51,200
on day three

372
00:11:54,550 --> 00:11:53,200
and so overall we have a 30 chance on

373
00:11:55,829 --> 00:11:54,560
monday morning of ksc weather

374
00:11:57,829 --> 00:11:55,839
prohibiting launch and we have two good

375
00:11:59,670 --> 00:11:57,839
tile sites

376
00:12:01,190 --> 00:11:59,680
thank you we'll now take questions when

377
00:12:02,949 --> 00:12:01,200
the microphone comes your way please

378
00:12:04,470 --> 00:12:02,959
state your name affiliation and to whom

379
00:12:05,750 --> 00:12:04,480
you're addressing your question i'll

380
00:12:07,670 --> 00:12:05,760
start with marcia

381
00:12:09,269 --> 00:12:07,680
marcia done associated press two

382
00:12:11,350 --> 00:12:09,279
questions for jeff the first is do you

383
00:12:12,870 --> 00:12:11,360
have any kind of early crowd count on

384
00:12:13,990 --> 00:12:12,880
how many people you're expecting monday

385
00:12:16,150 --> 00:12:14,000
morning

386
00:12:17,590 --> 00:12:16,160
we don't have any real specifics um we

387
00:12:20,069 --> 00:12:17,600
are expecting probably slightly less

388
00:12:21,750 --> 00:12:20,079

than than before just due to the timing

389
00:12:23,110 --> 00:12:21,760
and the middle of the week type of

390
00:12:25,030 --> 00:12:23,120
launch monday not being necessary in the

391
00:12:27,190 --> 00:12:25,040
middle but a weekday versus you know

392
00:12:28,550 --> 00:12:27,200
where we were on a friday afternoon

393
00:12:30,870 --> 00:12:28,560
um you know they were anticipating

394
00:12:32,870 --> 00:12:30,880
somewhere around 700 000 before it

395
00:12:35,269 --> 00:12:32,880
probably may you know be down closer to

396
00:12:38,069 --> 00:12:35,279
about 500 000 or so this time those are

397
00:12:39,750 --> 00:12:38,079
all rough estimates obviously

398
00:12:41,350 --> 00:12:39,760
but right now it should be slightly less

399
00:12:43,430 --> 00:12:41,360
i think than it was last time

400
00:12:45,430 --> 00:12:43,440
and are you any closer to having a root

401
00:12:47,030 --> 00:12:45,440
cause to what went wrong two weeks ago

402
00:12:48,470 --> 00:12:47,040
or is that still

403
00:12:50,629 --> 00:12:48,480
under analysis

404
00:12:52,150 --> 00:12:50,639
well we we kind of what we did was we

405
00:12:53,829 --> 00:12:52,160
when we went through all of the analysis

406
00:12:54,790 --> 00:12:53,839
of all the different portions of the

407
00:12:57,030 --> 00:12:54,800
system

408
00:12:58,310 --> 00:12:57,040
we came down to the most likely

409
00:13:01,110 --> 00:12:58,320
culprit on the event which was a

410
00:13:04,230 --> 00:13:01,120
thermostat that we saw

411
00:13:05,910 --> 00:13:04,240
some high current on and testing that

412
00:13:07,430 --> 00:13:05,920
we didn't notice at the time because it

413
00:13:09,430 --> 00:13:07,440

was during the testing it kind of got

414
00:13:11,030 --> 00:13:09,440
filtered in with the the normal cycling

415
00:13:12,550 --> 00:13:11,040
of the um

416
00:13:14,949 --> 00:13:12,560
the heater itself but we saw that back

417
00:13:16,470 --> 00:13:14,959
in last year in june um when we were

418
00:13:19,269 --> 00:13:16,480
doing some testing on this particular

419
00:13:20,629 --> 00:13:19,279
heater thermostat on the s12b

420
00:13:22,230 --> 00:13:20,639
and we saw a current spike that had

421
00:13:24,230 --> 00:13:22,240
lasted for a very short period of time

422
00:13:26,069 --> 00:13:24,240
but it was 18 amps or so that could

423
00:13:28,069 --> 00:13:26,079
induce the event that we saw

424
00:13:30,710 --> 00:13:28,079
as far as the the driver inside of the

425
00:13:31,750 --> 00:13:30,720
box um not working properly and it was

426
00:13:32,710 --> 00:13:31,760
actually um

427
00:13:34,629 --> 00:13:32,720
you know we had some things that were

428
00:13:36,550 --> 00:13:34,639
blown inside of there as far as a hybrid

429
00:13:38,629 --> 00:13:36,560
driver goes so right now that looks like

430
00:13:40,230 --> 00:13:38,639
it's the main culprit um all of the

431
00:13:42,069 --> 00:13:40,240
other ones that

432
00:13:43,590 --> 00:13:42,079
were involved with the the discussion

433
00:13:45,110 --> 00:13:43,600
that could be potential candidates were

434
00:13:46,150 --> 00:13:45,120
far less likely than this one so that's

435
00:13:47,670 --> 00:13:46,160
where we're probably going to end up and

436
00:13:49,750 --> 00:13:47,680
we went through with when we went to the

437
00:13:53,590 --> 00:13:49,760
ua board and the discussions at the prcb

438
00:13:56,230 --> 00:13:55,030

yes we did change out that one and we

439
00:13:59,030 --> 00:13:56,240
have checked out the new one and it's

440
00:14:00,470 --> 00:13:59,040
functioning perfectly

441
00:14:01,269 --> 00:14:00,480
ken

442
00:14:03,430 --> 00:14:01,279
hi

443
00:14:06,629 --> 00:14:03,440
ken kramer for space flight magazine uh

444
00:14:08,790 --> 00:14:06,639
for um jeff please i think um are there

445
00:14:10,389 --> 00:14:08,800
going to be any are there any heating

446
00:14:12,389 --> 00:14:10,399
checks of that heater earlier in the

447
00:14:15,350 --> 00:14:12,399
countdown so you would know before t

448
00:14:18,069 --> 00:14:15,360
minus four hours or so and also i'm

449
00:14:19,910 --> 00:14:18,079
wondering about the uh the rss retract

450
00:14:21,829 --> 00:14:19,920
how how long do we have

451
00:14:23,350 --> 00:14:21,839
uh in case you have to delay it again

452
00:14:25,590 --> 00:14:23,360
because of bad weather like like the

453
00:14:27,590 --> 00:14:25,600
first time and how close were we

454
00:14:29,350 --> 00:14:27,600
last time to being at the end of that

455
00:14:30,870 --> 00:14:29,360
possibility thank you let's see the

456
00:14:32,550 --> 00:14:30,880
first part of the question

457
00:14:34,629 --> 00:14:32,560
uh

458
00:14:35,829 --> 00:14:34,639
we only have one additional

459
00:14:37,110 --> 00:14:35,839
difference or delta that we're going to

460
00:14:38,949 --> 00:14:37,120
do in the account associated with the

461
00:14:40,710 --> 00:14:38,959
heaters we normally start out on that

462
00:14:44,150 --> 00:14:40,720
particular heater stream when we before

463
00:14:45,590 --> 00:14:44,160

we get into our external tanking

464
00:14:47,110 --> 00:14:45,600
and it's during that time frame that you

465
00:14:48,550 --> 00:14:47,120
would expect to see the heater cycling's

466
00:14:50,389 --> 00:14:48,560
as the temperature in the air fuselage

467
00:14:51,590 --> 00:14:50,399
goes down and it gets to a certain set

468
00:14:53,509 --> 00:14:51,600
point then you would expect the heaters

469
00:14:54,870 --> 00:14:53,519
to be cycling at that point we will get

470
00:14:57,189 --> 00:14:54,880
that data and see that the heaters are

471
00:14:58,550 --> 00:14:57,199
functioning appropriately we'll do one

472
00:15:00,310 --> 00:14:58,560
additional check we're going to swap

473
00:15:01,990 --> 00:15:00,320
over to the a string heaters which we

474
00:15:03,269 --> 00:15:02,000
normally do not do and that's kind of

475
00:15:05,189 --> 00:15:03,279
the delta that we're going to do just do

476
00:15:06,550 --> 00:15:05,199
one final check on that side as well to

477
00:15:08,310 --> 00:15:06,560
make sure we have full redundancy on

478
00:15:09,509 --> 00:15:08,320
both systems and then we'll switch back

479
00:15:10,790 --> 00:15:09,519
to the b side and that'll be during

480
00:15:12,790 --> 00:15:10,800
tanking that will do that so that's only

481
00:15:14,470 --> 00:15:12,800
one additional item that we're doing the

482
00:15:16,310 --> 00:15:14,480
rest we kind of get as we go through the

483
00:15:17,509 --> 00:15:16,320
operation because you will be able to

484
00:15:19,110 --> 00:15:17,519
identify

485
00:15:20,790 --> 00:15:19,120
very readily that the heaters are either

486
00:15:22,389 --> 00:15:20,800
functioning or they're not

487
00:15:23,990 --> 00:15:22,399
and then the second part of that was on

488
00:15:25,750 --> 00:15:24,000

the rotating service structure retract

489
00:15:27,990 --> 00:15:25,760
as as kathy mentioned we do expect some

490
00:15:30,389 --> 00:15:28,000
weather on sunday

491
00:15:32,069 --> 00:15:30,399
last time we were almost five hours late

492
00:15:34,310 --> 00:15:32,079
as you may recall

493
00:15:35,749 --> 00:15:34,320
in getting that in b and because we had

494
00:15:37,670 --> 00:15:35,759
a pretty good heads up on the weather we

495
00:15:39,749 --> 00:15:37,680
were able to pull quite a bit of work in

496
00:15:42,150 --> 00:15:39,759
from the backside of that operation and

497
00:15:44,069 --> 00:15:42,160
do it earlier which which allowed us to

498
00:15:45,509 --> 00:15:44,079
get ahead of the at least the bow wave

499
00:15:48,470 --> 00:15:45,519
work that would normally occur on the

500
00:15:50,790 --> 00:15:48,480
back side of the rss

501
00:15:52,550 --> 00:15:50,800
we were very close to not getting to

502
00:15:54,150 --> 00:15:52,560
on-time tanking

503
00:15:57,110 --> 00:15:54,160
certainly we can tank a little bit late

504
00:15:59,110 --> 00:15:57,120
and and not um disrupt our launch time

505
00:16:00,949 --> 00:15:59,120
um but we were able to make it at the

506
00:16:02,389 --> 00:16:00,959
end through a valiant effort by all the

507
00:16:03,590 --> 00:16:02,399
folks that were involved with that

508
00:16:04,470 --> 00:16:03,600
operation

509
00:16:05,990 --> 00:16:04,480
um

510
00:16:07,590 --> 00:16:06,000
i don't like to say that five hours is a

511
00:16:09,189 --> 00:16:07,600
standard number because it is not by any

512
00:16:11,110 --> 00:16:09,199
means that we could go that late and

513
00:16:12,550 --> 00:16:11,120

make it each and every time but because

514
00:16:14,069 --> 00:16:12,560
the way things lined up and we were able

515
00:16:15,590 --> 00:16:14,079
to get in and do some of the different

516
00:16:17,030 --> 00:16:15,600
things that we did

517
00:16:19,670 --> 00:16:17,040
it worked out that we were able to do it

518
00:16:22,470 --> 00:16:19,680
at that time generally about four is is

519
00:16:24,150 --> 00:16:22,480
our limit and we are looking right now

520
00:16:26,389 --> 00:16:24,160
at where the weather lies and what

521
00:16:28,870 --> 00:16:26,399
additional work we can again kind of

522
00:16:30,790 --> 00:16:28,880
resequence to make sure if we come up on

523
00:16:32,949 --> 00:16:30,800
that same scenario that we've done as

524
00:16:35,269 --> 00:16:32,959
much as we can prior to the rss so we

525
00:16:36,790 --> 00:16:35,279
have less to do afterwards

526
00:16:37,590 --> 00:16:36,800
so we're trying to at least manage the

527
00:16:40,069 --> 00:16:37,600
weather a little bit from that

528
00:16:42,150 --> 00:16:40,079
perspective

529
00:16:44,310 --> 00:16:42,160
bill bill harwood cbs for

530
00:16:45,670 --> 00:16:44,320
jeff just a clarification of your answer

531
00:16:47,030 --> 00:16:45,680
to marcia

532
00:16:48,790 --> 00:16:47,040
the thermostat in question was an

533
00:16:52,310 --> 00:16:48,800
exposed conductor i think you guys found

534
00:16:54,389 --> 00:16:52,320
right on the thermostat which which most

535
00:16:55,910 --> 00:16:54,399
likely led to the event which caused the

536
00:16:57,189 --> 00:16:55,920
the current spike that they saw on the

537
00:16:58,629 --> 00:16:57,199
thermostat

538
00:16:59,990 --> 00:16:58,639

that was my real question the most

539
00:17:01,430 --> 00:17:00,000
likely cause you guys haven't been able

540
00:17:02,389 --> 00:17:01,440
to prove that it's still an unexplained

541
00:17:03,910 --> 00:17:02,399
anomaly

542
00:17:05,750 --> 00:17:03,920
that's why we but right now it's still

543
00:17:08,230 --> 00:17:05,760
the most likely candidate but it is

544
00:17:10,390 --> 00:17:08,240
unexplained because um

545
00:17:13,189 --> 00:17:10,400
not all of the data said that that was

546
00:17:15,510 --> 00:17:13,199
in fact the the culprit but certainly

547
00:17:16,829 --> 00:17:15,520
there's an awful lot of uh you know data

548
00:17:20,230 --> 00:17:16,839
that's there that says it

549
00:17:22,549 --> 00:17:20,240
is okay james

550
00:17:24,309 --> 00:17:22,559
james dean with florida today uh jeff

551
00:17:26,150 --> 00:17:24,319
you got some unusual launch windows it

552
00:17:27,750 --> 00:17:26,160
looks like um

553
00:17:29,350 --> 00:17:27,760
on monday i think it's only five minutes

554
00:17:31,190 --> 00:17:29,360
for flight day three

555
00:17:33,430 --> 00:17:31,200
rendezvous and i think it's that way

556
00:17:35,750 --> 00:17:33,440
every other day but not every day could

557
00:17:36,470 --> 00:17:35,760
you just explain like why is that and is

558
00:17:37,990 --> 00:17:36,480
that

559
00:17:39,990 --> 00:17:38,000
more of a challenge when you have a

560
00:17:41,909 --> 00:17:40,000
shorter window like that i guess

561
00:17:43,830 --> 00:17:41,919
it's not more of a challenge

562
00:17:45,110 --> 00:17:43,840
we normally don't use the first part of

563
00:17:46,870 --> 00:17:45,120

the window as you know we generally

564
00:17:48,870 --> 00:17:46,880
launch it preferred we have that ability

565
00:17:51,590 --> 00:17:48,880
to launch a window open which normally

566
00:17:53,750 --> 00:17:51,600
is around 10 minutes in length

567
00:17:55,830 --> 00:17:53,760
we do occasionally as we go through the

568
00:17:57,270 --> 00:17:55,840
cycle end up on these days where we have

569
00:17:58,710 --> 00:17:57,280
minimum phasing angle meaning the

570
00:18:01,350 --> 00:17:58,720
station is a lot closer to going right

571
00:18:03,270 --> 00:18:01,360
overhead at the time of our launch so

572
00:18:05,350 --> 00:18:03,280
the amount of phasing that we have to do

573
00:18:07,669 --> 00:18:05,360
to get in the same

574
00:18:10,070 --> 00:18:07,679
plane as with the the station as we're

575
00:18:11,750 --> 00:18:10,080
going up the hill is far less and so as

576
00:18:12,950 --> 00:18:11,760
a result of that

577
00:18:15,669 --> 00:18:12,960
your window the first part of your

578
00:18:17,750 --> 00:18:15,679
window you no longer have so

579
00:18:19,430 --> 00:18:17,760
it comes down to steering and a lot of

580
00:18:21,350 --> 00:18:19,440
the other things but we will at this

581
00:18:22,870 --> 00:18:21,360
point have you know the five minutes or

582
00:18:24,950 --> 00:18:22,880
even longer

583
00:18:27,190 --> 00:18:24,960
you know based on some other

584
00:18:28,789 --> 00:18:27,200
parameters as well that the the jsc mld

585
00:18:30,150 --> 00:18:28,799
folks are managing uh they may actually

586
00:18:32,070 --> 00:18:30,160
give us more than five minutes but we

587
00:18:34,070 --> 00:18:32,080
will be almost right at

588
00:18:36,150 --> 00:18:34,080

the preferred launch time with our as we

589
00:18:38,150 --> 00:18:36,160
plan to our window open time and that

590
00:18:39,590 --> 00:18:38,160
number will get slightly larger each day

591
00:18:42,230 --> 00:18:39,600
as far as the difference between window

592
00:18:43,990 --> 00:18:42,240
open and and

593
00:18:44,950 --> 00:18:44,000
the preferred time probably won't see it

594
00:18:47,029 --> 00:18:44,960
it'll be in the noise because it'll

595
00:18:48,470 --> 00:18:47,039
generally be in seconds but it does tend

596
00:18:52,070 --> 00:18:48,480
to cycle that way as the station

597
00:19:01,669 --> 00:18:55,669
are there any other questions

598
00:19:04,230 --> 00:19:02,710
um

599
00:19:06,150 --> 00:19:04,240
for jeff again i'm just wondering about

600
00:19:08,549 --> 00:19:06,160
this may 21

601
00:19:09,590 --> 00:19:08,559
launch window cut out

602
00:19:11,750 --> 00:19:09,600
um

603
00:19:13,830 --> 00:19:11,760
that rendezvous is what on flight day

604
00:19:15,830 --> 00:19:13,840
three is there any possibility to do a

605
00:19:18,310 --> 00:19:15,840
flight day four rendezvous and

606
00:19:20,230 --> 00:19:18,320
recover that as a as a window well right

607
00:19:21,750 --> 00:19:20,240
now the program is not electing to use

608
00:19:23,350 --> 00:19:21,760
any of our flight day fours because they

609
00:19:24,710 --> 00:19:23,360
want to protect the mission content on

610
00:19:26,710 --> 00:19:24,720
this mission because there's an awful

611
00:19:28,150 --> 00:19:26,720
lot to do on it and by going to flight

612
00:19:30,789 --> 00:19:28,160
day four you lose a day of mission

613
00:19:32,549 --> 00:19:30,799

content and so um that was undesirable

614
00:19:34,230 --> 00:19:32,559
then to them to want to do that and they

615
00:19:35,350 --> 00:19:34,240
would rather hold off on a date at this

616
00:19:38,150 --> 00:19:35,360
point

617
00:19:42,789 --> 00:19:38,160
on that particular day then then lose a

618
00:19:46,710 --> 00:19:44,390
that will conclude today's countdown

619
00:19:49,190 --> 00:19:46,720
status briefing please join us tomorrow

620
00:19:51,830 --> 00:19:49,200
at 4 pm eastern time here live on nasa

621
00:19:54,070 --> 00:19:51,840
television for the sts-134 pre-launch

622
00:19:56,150 --> 00:19:54,080
news conference for more information on