



1
00:00:03,750 --> 00:00:01,829
flight director today he is at the helm

2
00:00:08,230 --> 00:00:03,760
and will be pulling his team here for a

3
00:00:09,910 --> 00:00:08,240
go no-go decision in about 16 minutes

4
00:00:12,470 --> 00:00:09,920
assuming all continues on track

5
00:00:15,190 --> 00:00:12,480
starliner's orbital maneuvering and out

6
00:00:18,390 --> 00:00:15,200
and attitude control thrusters or omax

7
00:00:20,310 --> 00:00:18,400
will fire up at 6 23 a.m central time

8
00:00:23,109 --> 00:00:20,320
and that will drop the spacecraft back

9
00:00:25,029 --> 00:00:23,119
out of orbit and begin the journey home

10
00:00:26,870 --> 00:00:25,039
given that starliner should touch down

11
00:00:29,669 --> 00:00:26,880
for historic first landing at white

12
00:00:31,109 --> 00:00:29,679
sands space harbor in new mexico at 6

13
00:00:33,830 --> 00:00:31,119

57.

14

00:00:35,350 --> 00:00:33,840

at the moment though nasa is uh

15

00:00:37,590 --> 00:00:35,360

the team here in the mission control

16

00:00:39,510 --> 00:00:37,600

room is uh still got a lot of

17

00:00:41,510 --> 00:00:39,520

work to do to finish preparing for that

18

00:00:43,590 --> 00:00:41,520

launch

19

00:00:46,709 --> 00:00:43,600

and earlier in this shift this team got

20

00:00:49,110 --> 00:00:46,719

a briefing on the weather at white sands

21

00:00:51,029 --> 00:00:49,120

which is looking promising today it's

22

00:00:52,549 --> 00:00:51,039

definitely going to be chilly for the

23

00:00:54,950 --> 00:00:52,559

landing team heading out to meet

24

00:00:57,510 --> 00:00:54,960

starliner temperatures are expected to

25

00:00:59,670 --> 00:00:57,520

drop down to around 22 or 23 degrees

26

00:01:02,310 --> 00:00:59,680

fahrenheit

27

00:01:05,030 --> 00:01:02,320

right before sunrise which is when

28

00:01:06,710 --> 00:01:05,040

starliner is going to come down

29

00:01:08,789 --> 00:01:06,720

and that's about the

30

00:01:10,630 --> 00:01:08,799

and then their clouds are scattered but

31

00:01:12,630 --> 00:01:10,640

the wind should be light all in all

32

00:01:14,550 --> 00:01:12,640

it'll look pretty good

33

00:01:15,990 --> 00:01:14,560

unfortunately though we have chosen the

34

00:01:18,390 --> 00:01:16,000

longest night of the year to bring

35

00:01:19,350 --> 00:01:18,400

starliner home happy winter solstice to

36

00:01:21,510 --> 00:01:19,360

everyone

37

00:01:23,109 --> 00:01:21,520

it's going to be about 5 57 a.m mountain

38

00:01:25,670 --> 00:01:23,119

time there in new mexico and the sun

39

00:01:27,670 --> 00:01:25,680

won't be up until 704 so we will have

40

00:01:29,830 --> 00:01:27,680

some cameras out there and you can see

41

00:01:32,069 --> 00:01:29,840

the landing team gathering here what it

42

00:01:34,149 --> 00:01:32,079

looks like now i will show you as much

43

00:01:36,230 --> 00:01:34,159

as possible but it will it will be dark

44

00:01:38,149 --> 00:01:36,240

for a little while so

45

00:01:40,870 --> 00:01:38,159

so we have a lot coming up to show you

46

00:01:42,789 --> 00:01:40,880

here on nasa tv but before we get too

47

00:01:44,710 --> 00:01:42,799

far into the landing operations we do

48

00:01:46,230 --> 00:01:44,720

want to look back at friday's launch of

49

00:01:48,149 --> 00:01:46,240

starliner

50

00:01:49,910 --> 00:01:48,159

heading into a

51
00:01:51,749 --> 00:01:49,920
lunch replay to take a look at that

52
00:01:59,749 --> 00:01:51,759
brilliant morning liftoff from cape

53
00:01:59,759 --> 00:02:18,550
now 10 seconds into flight

54
00:02:21,990 --> 00:02:20,229
so there you see the united launch

55
00:02:23,670 --> 00:02:22,000
alliance atlas 5

56
00:02:27,510 --> 00:02:23,680
heading into the skies above cape

57
00:02:32,869 --> 00:02:29,190
crowds there gathered to watch it as it

58
00:02:37,270 --> 00:02:35,350
lunch was of course time to catch up

59
00:03:10,710 --> 00:02:37,280
precisely to the international space

60
00:03:10,720 --> 00:03:14,390
one minute 20 seconds into flight

61
00:03:19,990 --> 00:03:15,910
body rate responses on the vehicle look

62
00:03:25,350 --> 00:03:22,149
one minute 30 seconds in standing by for

63
00:03:29,830 --> 00:03:27,030

and we have burnout on both solid rocket

64

00:03:31,509 --> 00:03:29,840

boosters atlas will hold on to the srbs

65

00:03:32,789 --> 00:03:31,519

for an additional 48 seconds prior to

66

00:03:34,949 --> 00:03:32,799

jettison

67

00:03:39,910 --> 00:03:34,959

rd180 has gone back up to full thrust as

68

00:03:45,670 --> 00:03:42,710

one minute 50 seconds in

69

00:03:47,110 --> 00:03:45,680

atlas is now 17 miles in altitude 11 and

70

00:03:50,070 --> 00:03:47,120

a half miles downrange distance

71

00:03:53,030 --> 00:03:50,080

traveling at 2 300 miles per hour

72

00:03:54,789 --> 00:03:53,040

now passing two minutes into flight

73

00:04:02,149 --> 00:03:54,799

rd-180 engine operating parameters

74

00:04:05,670 --> 00:04:03,750

and at two minutes 11 seconds into

75

00:04:13,589 --> 00:04:05,680

flight the atlas rocket now weighs just

76

00:04:17,030 --> 00:04:15,350

so it really was a beautiful launch and

77

00:04:18,870 --> 00:04:17,040

despite the fact that we're not going to

78

00:04:20,710 --> 00:04:18,880

be visiting the space station we are

79

00:04:22,390 --> 00:04:20,720

still accomplishing a lot of starliner's

80

00:04:23,909 --> 00:04:22,400

mission objectives

81

00:04:25,590 --> 00:04:23,919

that's right first up there was the

82

00:04:27,510 --> 00:04:25,600

launch itself which confirmed the human

83

00:04:29,189 --> 00:04:27,520

rating for the atlas v rocket then

84

00:04:30,790 --> 00:04:29,199

yesterday starliner was able to

85

00:04:33,030 --> 00:04:30,800

establish a connection with the space

86

00:04:35,270 --> 00:04:33,040

station while the station was about 500

87

00:04:37,030 --> 00:04:35,280

kilometers away to test out sending

88

00:04:38,390 --> 00:04:37,040

commands from the ground through the

89

00:04:39,830 --> 00:04:38,400

space station

90

00:04:42,070 --> 00:04:39,840

we also got a good report card on

91

00:04:44,310 --> 00:04:42,080

starliner's state and attitude knowledge

92

00:04:46,710 --> 00:04:44,320

demonstration the three cities or the

93

00:04:49,189 --> 00:04:46,720

space integrated gps and international

94

00:04:51,590 --> 00:04:49,199

navigation system units were able to

95

00:04:53,749 --> 00:04:51,600

provide really good navigation

96

00:04:55,350 --> 00:04:53,759

and we were also able to perform a good

97

00:04:56,870 --> 00:04:55,360

checkout of the system that would have

98

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

allowed us to connect to the space

99

00:05:01,430 --> 00:04:58,800

station's docking adapter

100

00:05:03,830 --> 00:05:01,440

and our anthropomorphic anthropometric

101

00:05:05,830 --> 00:05:03,840

test article rosie the rocketeer is

102

00:05:08,070 --> 00:05:05,840

still strapped in the commander's seat

103

00:05:09,990 --> 00:05:08,080

and collecting data for us we can't wait

104

00:05:12,150 --> 00:05:10,000

to see what she has to tell us when she

105

00:05:13,270 --> 00:05:12,160

gets back of course there's been a lot

106

00:05:17,189 --> 00:05:13,280

of

107

00:05:25,749 --> 00:05:17,199

and

108

00:05:28,070 --> 00:05:25,759

uh

109

00:05:29,590 --> 00:05:28,080

one hour in five minutes now

110

00:05:31,189 --> 00:05:29,600

but a lot still has to happen before

111

00:05:36,310 --> 00:05:31,199

touchdown so we're going to take a look

112

00:05:45,189 --> 00:05:38,230

3.5 g acceleration limit engine

113

00:05:45,199 --> 00:05:53,510

3 minutes 55 seconds into flight

114

00:06:00,550 --> 00:05:54,950
and centaur's begun the boost phase

115

00:06:23,029 --> 00:06:03,909
and lift off the rise of starliner and a

116

00:06:23,039 --> 00:07:03,110
so

117

00:07:03,120 --> 00:07:17,589
yes

118

00:07:17,599 --> 00:08:12,550
pictures

119

00:08:16,070 --> 00:08:13,589
and

120

00:08:16,950 --> 00:08:16,080
flight director richard jones has given

121

00:08:21,589 --> 00:08:16,960
a

122

00:08:24,230 --> 00:08:21,599
prescribed time

123

00:08:25,830 --> 00:08:24,240
coming up for uh setting the course for

124

00:08:27,990 --> 00:08:25,840
a landing by star liner out in new

125

00:08:30,150 --> 00:08:28,000
mexico an hour and two minutes from now

126

00:08:32,469 --> 00:08:30,160

richard jones pulled his team

127

00:08:35,190 --> 00:08:32,479

and everyone is go

128

00:08:36,550 --> 00:08:35,200

that is spending one last uh bit of work

129

00:08:39,509 --> 00:08:36,560

that needs to be done on the propulsion

130

00:08:42,230 --> 00:08:39,519

officer's side just making sure that

131

00:08:44,949 --> 00:08:42,240

manifold valve is open on the orbital

132

00:08:46,710 --> 00:08:44,959

maneuvering and attitude control system

133

00:08:50,070 --> 00:08:46,720

that should happen about 10 minutes

134

00:08:55,350 --> 00:08:52,550

so the first step in uh in getting there

135

00:08:56,470 --> 00:08:55,360

of course and getting back to new mexico

136

00:08:58,070 --> 00:08:56,480

is the

137

00:09:01,590 --> 00:08:58,080

deorbit burn

138

00:09:07,670 --> 00:09:01,600

and that is that is coming up at 6 23

139

00:09:14,949 --> 00:09:11,350

and that is going to be a

140

00:09:17,190 --> 00:09:14,959

55 second burn using uh firing using

141

00:09:20,310 --> 00:09:17,200

four of the orbital maneuvering and

142

00:09:21,910 --> 00:09:20,320

control engines on starliner

143

00:09:23,670 --> 00:09:21,920

to get ready for that the team here on

144

00:09:25,750 --> 00:09:23,680

the ground is disconnecting starliner

145

00:09:28,070 --> 00:09:25,760

solar rays and radiators the spacecraft

146

00:09:46,949 --> 00:09:28,080

has enough power to get home now and its

147

00:09:51,910 --> 00:09:48,710

and as we promised we have a number of

148

00:09:53,350 --> 00:09:51,920

teams around around america

149

00:09:54,710 --> 00:09:53,360

taking part in today's landing

150

00:09:57,190 --> 00:09:54,720

operations one of those teams is of

151
00:09:59,269 --> 00:09:57,200
course down at white sands new mexico at

152
00:10:02,069 --> 00:09:59,279
the landing site and we're going out

153
00:10:03,190 --> 00:10:02,079
there now to boeing's josh barrett and

154
00:10:04,389 --> 00:10:03,200
nasa's

155
00:10:06,389 --> 00:10:04,399
dan hewitt

156
00:10:08,389 --> 00:10:06,399
her landings i imagine this setup looks

157
00:10:10,389 --> 00:10:08,399
like quite a lot different

158
00:10:12,470 --> 00:10:10,399
how do you expect this to go yeah it is

159
00:10:13,750 --> 00:10:12,480
vastly different i mean uh if you're if

160
00:10:14,870 --> 00:10:13,760
you follow the international space

161
00:10:16,790 --> 00:10:14,880
station we've been landing our

162
00:10:18,949 --> 00:10:16,800
astronauts in kazakhstan in the soyuz

163
00:10:21,750 --> 00:10:18,959

for several years now and that it's a

164

00:10:24,150 --> 00:10:21,760

lot of airborne assets it's an extremely

165

00:10:26,710 --> 00:10:24,160

remote area so there's no way to really

166

00:10:28,150 --> 00:10:26,720

drive on except in limited vehicles

167

00:10:30,230 --> 00:10:28,160

one of the nice things about bringing

168

00:10:31,990 --> 00:10:30,240

landings like this back to america is

169

00:10:33,990 --> 00:10:32,000

we're much closer to cities much better

170

00:10:36,389 --> 00:10:34,000

infrastructure things like that so it's

171

00:10:39,030 --> 00:10:36,399

great to see the convoy lined up we've

172

00:10:41,350 --> 00:10:39,040

had a lot of exercises with the teams

173

00:10:42,790 --> 00:10:41,360

out here just over the last year or so

174

00:10:44,310 --> 00:10:42,800

as they've refined all of their

175

00:10:46,230 --> 00:10:44,320

procedures and everything to get ready

176

00:10:48,470 --> 00:10:46,240

for this landing it's running like a

177

00:10:50,230 --> 00:10:48,480

well-oiled machine now there's a bunch

178

00:10:52,389 --> 00:10:50,240

of different teams everybody's color

179

00:10:55,829 --> 00:10:52,399

coded so they all have their specific

180

00:10:57,350 --> 00:10:55,839

jobs uh but it's great to see uh why

181

00:10:58,630 --> 00:10:57,360

don't we walk through some of the teams

182

00:11:00,870 --> 00:10:58,640

and what they're going to be doing yeah

183

00:11:02,389 --> 00:11:00,880

so let's start over here jim one or tim

184

00:11:03,910 --> 00:11:02,399

why don't you follow me

185

00:11:05,829 --> 00:11:03,920

so let's go

186

00:11:07,990 --> 00:11:05,839

up here we'll kind of go line by line

187

00:11:10,069 --> 00:11:08,000

for the convoy so we have our command

188

00:11:12,310 --> 00:11:10,079

vehicle up front here that's where our

189

00:11:14,150 --> 00:11:12,320

recovery operations leader is and our

190

00:11:15,910 --> 00:11:14,160

recovery director those are the two guys

191

00:11:18,150 --> 00:11:15,920

who are really in charge of this whole

192

00:11:19,829 --> 00:11:18,160

operation make sure the procedures go

193

00:11:21,590 --> 00:11:19,839

exactly as planned

194

00:11:24,069 --> 00:11:21,600

right behind them we have our gold team

195

00:11:25,910 --> 00:11:24,079

they have a very important job they're

196

00:11:28,389 --> 00:11:25,920

the first to the vehicle and they

197

00:11:30,230 --> 00:11:28,399

actually sniff for hydrazine now the

198

00:11:32,630 --> 00:11:30,240

crew module uses

199

00:11:34,710 --> 00:11:32,640

hydrazine as a propellant and if it does

200

00:11:36,069 --> 00:11:34,720

turn into a vapor it can be very toxic

201
00:11:38,710 --> 00:11:36,079
and damaging to your health if you

202
00:11:41,269 --> 00:11:38,720
inhale it so they will be full up in an

203
00:11:43,269 --> 00:11:41,279
escape hazmat style suits protected from

204
00:11:45,509 --> 00:11:43,279
that hydrazine they use these special

205
00:11:47,829 --> 00:11:45,519
sensors to sniff for it and make sure

206
00:11:50,310 --> 00:11:47,839
the rest of the recovery

207
00:11:52,710 --> 00:11:50,320
convoy can come up to the vehicle

208
00:11:54,949 --> 00:11:52,720
now going over here the next line

209
00:11:56,949 --> 00:11:54,959
we have our silver team they're right

210
00:11:59,190 --> 00:11:56,959
behind goal team after gold team clears

211
00:12:01,509 --> 00:11:59,200
it their first job is to ground the

212
00:12:03,590 --> 00:12:01,519
vehicle so the vehicle will be powered

213
00:12:05,910 --> 00:12:03,600

down but there could be some residual

214

00:12:07,670 --> 00:12:05,920

electricity on it and so before anyone

215

00:12:08,949 --> 00:12:07,680

can touch the vehicle they're actually

216

00:12:11,910 --> 00:12:08,959

going to ground the vehicle and

217

00:12:12,629 --> 00:12:11,920

discharge any electricity from it

218

00:12:15,030 --> 00:12:12,639

then

219

00:12:17,190 --> 00:12:15,040

up next is blue team that's us or the

220

00:12:19,350 --> 00:12:17,200

blue vest we're in charge of showing

221

00:12:21,910 --> 00:12:19,360

everyone what's going on we've got

222

00:12:23,509 --> 00:12:21,920

situational awareness cameras

223

00:12:25,509 --> 00:12:23,519

all of the microwave equipment to get

224

00:12:27,190 --> 00:12:25,519

back to our satellite uplink and make

225

00:12:29,509 --> 00:12:27,200

sure you guys can see this recovery

226
00:12:31,269 --> 00:12:29,519
effort

227
00:12:32,629 --> 00:12:31,279
next we're going over here to the green

228
00:12:34,150 --> 00:12:32,639
team

229
00:12:36,310 --> 00:12:34,160
so you see these big

230
00:12:38,790 --> 00:12:36,320
hvac trailers right here they're going

231
00:12:41,030 --> 00:12:38,800
to hook those up to the crew module to

232
00:12:43,190 --> 00:12:41,040
get some ground cooling on it but their

233
00:12:45,269 --> 00:12:43,200
very first job since it's so cold it's

234
00:12:47,269 --> 00:12:45,279
22 degrees they're going to put an

235
00:12:49,190 --> 00:12:47,279
environmental enclosure on the crew

236
00:12:51,990 --> 00:12:49,200
module it looks kind of like a big

237
00:12:53,350 --> 00:12:52,000
inflatable crew module size bouncy house

238
00:12:54,870 --> 00:12:53,360

but it's going to wrap around the

239

00:12:56,790 --> 00:12:54,880

vehicle hug it and we're going to get

240

00:12:58,230 --> 00:12:56,800

some warm air on the crew module and

241

00:12:59,829 --> 00:12:58,240

make sure the propellant lines don't

242

00:13:01,430 --> 00:12:59,839

freeze

243

00:13:03,430 --> 00:13:01,440

and then after them is the red team

244

00:13:08,710 --> 00:13:03,440

they're a lot of fun to watch they are

245

00:13:10,150 --> 00:13:08,720

mostly boeing fire rescue employees

246

00:13:14,949 --> 00:13:10,160

let's go up here and so i can show you

247

00:13:18,550 --> 00:13:17,190

so here that platform will get backed up

248

00:13:20,470 --> 00:13:18,560

to the hatch

249

00:13:22,310 --> 00:13:20,480

on the crew module that gives our teams

250

00:13:23,110 --> 00:13:22,320

access to the hatch

251
00:13:25,030 --> 00:13:23,120
uh

252
00:13:26,629 --> 00:13:25,040
right now since there's no astronauts on

253
00:13:27,910 --> 00:13:26,639
board we're just going to open up the

254
00:13:29,829 --> 00:13:27,920
hatch

255
00:13:31,350 --> 00:13:29,839
one of our engineers selena doe part is

256
00:13:32,230 --> 00:13:31,360
going to go inside and run a couple of

257
00:13:33,030 --> 00:13:32,240
tests

258
00:13:35,590 --> 00:13:33,040
but

259
00:13:37,670 --> 00:13:35,600
on a crew landing that's where the crew

260
00:13:38,629 --> 00:13:37,680
will come out of the vehicle and be

261
00:13:40,150 --> 00:13:38,639
taken

262
00:13:42,230 --> 00:13:40,160
into this medical truck right here

263
00:13:44,230 --> 00:13:42,240

behind me for their initial post landing

264

00:13:46,389 --> 00:13:44,240

medical checkups and that's pretty much

265

00:13:49,509 --> 00:13:46,399

the convoy so i'm gonna go back here

266

00:13:51,990 --> 00:13:49,519

over with dan

267

00:13:53,590 --> 00:13:52,000

yeah thanks josh great breakthrough and

268

00:13:55,030 --> 00:13:53,600

as you can tell he's really wanting to

269

00:13:57,030 --> 00:13:55,040

keep moving because it is pretty cold

270

00:13:58,710 --> 00:13:57,040

out here for the teams today

271

00:14:00,150 --> 00:13:58,720

we are on the blue team and we are going

272

00:14:02,150 --> 00:14:00,160

to be bringing you guys a couple of

273

00:14:04,150 --> 00:14:02,160

different views hopefully of the castle

274

00:14:06,629 --> 00:14:04,160

today there's a bunch of assets out here

275

00:14:08,470 --> 00:14:06,639

one of which is just about 100 yards or

276

00:14:10,470 --> 00:14:08,480

so away from us there's some tracker

277

00:14:13,590 --> 00:14:10,480

cameras on one of the main trucks that

278

00:14:16,230 --> 00:14:13,600

drive out here the md tv the

279

00:14:18,550 --> 00:14:16,240

and the andy the mlcc so we have our

280

00:14:21,509 --> 00:14:18,560

mdtv that's mobile data and tracking

281

00:14:23,110 --> 00:14:21,519

vehicle it's got three cameras on it two

282

00:14:25,030 --> 00:14:23,120

of them are visible one of them is

283

00:14:27,590 --> 00:14:25,040

infrared and since it's so dark out

284

00:14:29,189 --> 00:14:27,600

that's probably what we'll be relying on

285

00:14:31,430 --> 00:14:29,199

and then next to it we have our mobile

286

00:14:32,710 --> 00:14:31,440

command vehicle the mobile landing

287

00:14:35,910 --> 00:14:32,720

control center

288

00:14:37,990 --> 00:14:35,920

those guys are looped in with houston

289

00:14:40,629 --> 00:14:38,000

and uh you know that's really our link

290

00:14:41,430 --> 00:14:40,639

back to mission control that is where

291

00:14:47,110 --> 00:14:41,440

the

292

00:14:48,790 --> 00:14:47,120

that to us on our field radios and this

293

00:14:51,189 --> 00:14:48,800

whole thing's going to get moving

294

00:14:52,790 --> 00:14:51,199

yeah and so in addition to those assets

295

00:14:54,550 --> 00:14:52,800

we'll have a couple more ground track

296

00:14:56,870 --> 00:14:54,560

cameras that we'll be looking to bring

297

00:14:59,189 --> 00:14:56,880

views of starliner coming down for and

298

00:15:01,110 --> 00:14:59,199

once again we're going to have a wb 57

299

00:15:03,110 --> 00:15:01,120

in the air hopefully getting some views

300

00:15:04,550 --> 00:15:03,120

of starliner as it's doing that entry

301
00:15:06,389 --> 00:15:04,560
interface so plunging through the

302
00:15:07,910 --> 00:15:06,399
earth's atmosphere and then watching the

303
00:15:10,310 --> 00:15:07,920
parachutes come out the heat shield

304
00:15:11,990 --> 00:15:10,320
jettison a number of different things so

305
00:15:14,230 --> 00:15:12,000
we are working to bring you all those

306
00:15:16,150 --> 00:15:14,240
views during the live coverage today it

307
00:15:17,590 --> 00:15:16,160
is dark so it's not going to be the

308
00:15:19,269 --> 00:15:17,600
prettiest picture but we should have

309
00:15:20,949 --> 00:15:19,279
some great shots of starliner coming

310
00:15:22,790 --> 00:15:20,959
down and i do want to reiterate the

311
00:15:24,310 --> 00:15:22,800
teams we have trained actually it was a

312
00:15:26,470 --> 00:15:24,320
couple months ago we were right here at

313
00:15:28,310 --> 00:15:26,480

this very landing site training and

314

00:15:29,590 --> 00:15:28,320

pitch black conditions we were recording

315

00:15:32,790 --> 00:15:29,600

at one a.m

316

00:15:34,629 --> 00:15:32,800

it was quite a bit warmer it was it was

317

00:15:36,150 --> 00:15:34,639

you know we're ready for this here uh

318

00:15:38,150 --> 00:15:36,160

the team's ready for it we've been on

319

00:15:41,030 --> 00:15:38,160

site since 1am they are locked in and

320

00:15:42,550 --> 00:15:41,040

ready to execute and ready to recover

321

00:15:44,389 --> 00:15:42,560

the first american orbital capsule to

322

00:15:46,629 --> 00:15:44,399

land on land yeah and there's going to

323

00:15:48,150 --> 00:15:46,639

be a couple of events on the way down

324

00:15:50,069 --> 00:15:48,160

and i know steve and brandy are going to

325

00:15:51,110 --> 00:15:50,079

walk you guys through this quite a bit

326

00:15:53,269 --> 00:15:51,120

but we're going to be looking for a

327

00:15:54,470 --> 00:15:53,279

couple of key things after that entry

328

00:15:56,389 --> 00:15:54,480

interface so once they're through the

329

00:15:57,749 --> 00:15:56,399

atmosphere that forward heat shield is

330

00:15:59,590 --> 00:15:57,759

going to come off and descend under

331

00:16:01,189 --> 00:15:59,600

parachutes the drogue chutes are going

332

00:16:03,110 --> 00:16:01,199

to come out once those have done the

333

00:16:05,269 --> 00:16:03,120

initial studying of the vehicle the

334

00:16:07,269 --> 00:16:05,279

pilots will deploy and then bring out

335

00:16:09,670 --> 00:16:07,279

the main parachutes which is going to do

336

00:16:11,509 --> 00:16:09,680

the vast bulk of the slowing and then

337

00:16:13,189 --> 00:16:11,519

once we get down a little bit lower i

338

00:16:15,829 --> 00:16:13,199

think a couple thousand feet off the

339

00:16:17,590 --> 00:16:15,839

ground still about 3 000 yeah 3 000 that

340

00:16:18,870 --> 00:16:17,600

heat shield is going to pop off and

341

00:16:21,030 --> 00:16:18,880

that's going to

342

00:16:23,509 --> 00:16:21,040

reveal the landing airbags which will

343

00:16:25,509 --> 00:16:23,519

inflate and then allow starliner to come

344

00:16:27,509 --> 00:16:25,519

down nice and soft on the ground what's

345

00:16:29,430 --> 00:16:27,519

that final speed as we touch down again

346

00:16:31,030 --> 00:16:29,440

josh it's about 28 feet per second i

347

00:16:33,990 --> 00:16:31,040

know you asked for miles an hour about

348

00:16:35,670 --> 00:16:34,000

19 miles an hour but that's still a very

349

00:16:37,990 --> 00:16:35,680

soft landing especially under those

350

00:16:40,150 --> 00:16:38,000

airbags all the testing we've done even

351
00:16:42,230 --> 00:16:40,160
on worst case scenarios with airbags out

352
00:16:44,949 --> 00:16:42,240
coming down faster than we predicted the

353
00:16:47,189 --> 00:16:44,959
loads on the crew were actually uh lower

354
00:16:49,269 --> 00:16:47,199
than we did in our than we predicted in

355
00:16:51,990 --> 00:16:49,279
our analyses so that's a good surprise

356
00:16:53,590 --> 00:16:52,000
to have yeah and a lot of the operations

357
00:16:56,069 --> 00:16:53,600
that we're going to see today will be

358
00:16:58,230 --> 00:16:56,079
very close to the exact same as when we

359
00:16:59,110 --> 00:16:58,240
have a crew on board some of the obvious

360
00:17:00,389 --> 00:16:59,120
things that will be different is we're

361
00:17:02,870 --> 00:17:00,399
not going to be pulling anybody out of

362
00:17:04,630 --> 00:17:02,880
the castle today we don't quite have all

363
00:17:05,429 --> 00:17:04,640

of the same medical personnel that would

364

00:17:07,590 --> 00:17:05,439

come

365

00:17:09,510 --> 00:17:07,600

if you've ever seen a soyuz landing it's

366

00:17:11,110 --> 00:17:09,520

very common for the crew to come out and

367

00:17:12,470 --> 00:17:11,120

then they always have a flight doctor

368

00:17:14,470 --> 00:17:12,480

with them a flight surgeon that's

369

00:17:16,549 --> 00:17:14,480

somebody who's assigned to a crew member

370

00:17:18,789 --> 00:17:16,559

before their flight during flight and

371

00:17:20,470 --> 00:17:18,799

after just to provide that medical care

372

00:17:22,789 --> 00:17:20,480

nurses and a number of other personnel

373

00:17:24,870 --> 00:17:22,799

who are just kind of there on location

374

00:17:26,630 --> 00:17:24,880

for the crew we know coming home from

375

00:17:28,710 --> 00:17:26,640

space after six months is a little

376

00:17:30,390 --> 00:17:28,720

jarring on the body so we make sure and

377

00:17:32,310 --> 00:17:30,400

do the best we can to take care of these

378

00:17:33,270 --> 00:17:32,320

crew members once they're back on terra

379

00:17:35,350 --> 00:17:33,280

firma

380

00:17:37,590 --> 00:17:35,360

yeah um you know you watch a lot of

381

00:17:39,750 --> 00:17:37,600

those russian landings the crew members

382

00:17:42,549 --> 00:17:39,760

are assisted out and that's actually why

383

00:17:44,950 --> 00:17:42,559

we tapped our fire rescue boeing fire

384

00:17:47,830 --> 00:17:44,960

teams here they're trained in enclosed

385

00:17:49,750 --> 00:17:47,840

uh area rescue uh they're gonna actually

386

00:17:51,029 --> 00:17:49,760

go in and extricate those crew members

387

00:17:52,470 --> 00:17:51,039

and that's actually a word i learned

388

00:17:53,990 --> 00:17:52,480

recently there's a difference between

389

00:17:55,990 --> 00:17:54,000

extrication

390

00:17:57,669 --> 00:17:56,000

and evacuation

391

00:17:59,190 --> 00:17:57,679

extrication is actually going in and

392

00:18:01,669 --> 00:17:59,200

pulling someone out of a vehicle so

393

00:18:04,549 --> 00:18:01,679

that's what our fire firefighters will

394

00:18:06,549 --> 00:18:04,559

be doing and uh i will say they're

395

00:18:08,630 --> 00:18:06,559

they're fantastic to watch these guys

396

00:18:10,470 --> 00:18:08,640

work so well together going pulling that

397

00:18:11,830 --> 00:18:10,480

platform up to the crew module opening

398

00:18:13,510 --> 00:18:11,840

up that hatch and getting access to

399

00:18:15,350 --> 00:18:13,520

those crew members i know everyone's

400

00:18:17,669 --> 00:18:15,360

curious about how rosie's doing we're

401
00:18:19,590 --> 00:18:17,679
not going to see her get pulled out of

402
00:18:21,270 --> 00:18:19,600
the vehicle today she's actually pretty

403
00:18:23,270 --> 00:18:21,280
heavy

404
00:18:25,110 --> 00:18:23,280
anthropometric test devices are loaded

405
00:18:26,710 --> 00:18:25,120
down with a lot of weights and sensors

406
00:18:29,110 --> 00:18:26,720
and stuff so

407
00:18:30,310 --> 00:18:29,120
it'll be a work to get her out so we're

408
00:18:31,590 --> 00:18:30,320
going to leave her there for now but

409
00:18:33,750 --> 00:18:31,600
she's all right

410
00:18:35,430 --> 00:18:33,760
uh yeah and we do have some of those

411
00:18:37,110 --> 00:18:35,440
crew members that are going to be flying

412
00:18:40,070 --> 00:18:37,120
on starliner they are here with the

413
00:18:42,470 --> 00:18:40,080

teams of observing all of the

414

00:18:44,390 --> 00:18:42,480

operations today among them the the crew

415

00:18:46,230 --> 00:18:44,400

flight test so the first astronauts are

416

00:18:47,830 --> 00:18:46,240

going to fly on starliner chris ferguson

417

00:18:51,110 --> 00:18:47,840

from boeing and then nicole mann and

418

00:18:54,070 --> 00:18:51,120

mike fink from nasa we also have

419

00:18:55,909 --> 00:18:54,080

sunny williams on site with us and she's

420

00:18:58,710 --> 00:18:55,919

going to be actually flying in this

421

00:19:00,070 --> 00:18:58,720

starliner that's coming home today yeah

422

00:19:02,230 --> 00:19:00,080

so i'm sure this is a really special

423

00:19:04,070 --> 00:19:02,240

moment for her seeing her her

424

00:19:06,630 --> 00:19:04,080

spacecraft come down but we've got a lot

425

00:19:08,310 --> 00:19:06,640

to get through as uh you know our senior

426

00:19:10,630 --> 00:19:08,320

vice president jim chilton said

427

00:19:12,310 --> 00:19:10,640

yesterday to the media this stuff is not

428

00:19:14,870 --> 00:19:12,320

for the faint of heart we have a lot to

429

00:19:16,310 --> 00:19:14,880

prove here and landing there's no point

430

00:19:18,230 --> 00:19:16,320

in sending people to space if you can't

431

00:19:21,110 --> 00:19:18,240

bring them home safely so this is a very

432

00:19:23,350 --> 00:19:21,120

critical operation yeah well we're gonna

433

00:19:25,750 --> 00:19:23,360

bring you as much video as we possibly

434

00:19:27,350 --> 00:19:25,760

can on the way out we're going to have

435

00:19:29,029 --> 00:19:27,360

some cameras rigged up and we'll be on

436

00:19:31,270 --> 00:19:29,039

the ground with the capsule once it's

437

00:19:33,190 --> 00:19:31,280

down and again we'll be looking for some

438

00:19:35,350 --> 00:19:33,200

airborne and some ground tracker cameras

439

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

to provide views probably an infrared

440

00:19:40,710 --> 00:19:38,160

because pitch black outside of starliner

441

00:19:43,510 --> 00:19:40,720

as it re-enters and we're we're locked

442

00:19:45,590 --> 00:19:43,520

in and loaded here and we're ready to go

443

00:19:47,110 --> 00:19:45,600

yeah so steven brandy uh we'll go back

444

00:19:48,710 --> 00:19:47,120

to you guys for updates from the flight

445

00:19:52,950 --> 00:19:48,720

control team that deorbit burn should be

446

00:19:56,230 --> 00:19:54,630

thanks so much josh and dan we really

447

00:19:57,830 --> 00:19:56,240

appreciate y'all braving the cold to

448

00:19:58,870 --> 00:19:57,840

bring us those views and we really are

449

00:20:01,110 --> 00:19:58,880

looking forward to what you're going to

450

00:20:03,110 --> 00:20:01,120

show us a little bit later

451
00:20:06,549 --> 00:20:03,120
and uh at this point speaking of things

452
00:20:08,950 --> 00:20:06,559
that are coming up starliner is over the

453
00:20:11,750 --> 00:20:08,960
south indian ocean heading

454
00:20:13,830 --> 00:20:11,760
heading below australia before it

455
00:20:15,830 --> 00:20:13,840
comes over the pacific where it will

456
00:20:19,350 --> 00:20:15,840
perform the deorbit burn

457
00:20:22,149 --> 00:20:19,360
in about 16 minutes and 18 seconds and

458
00:20:24,310 --> 00:20:22,159
at that point uh after the deorbit burn

459
00:20:27,029 --> 00:20:24,320
of course the service module that is on

460
00:20:29,190 --> 00:20:27,039
the uh attached to the crew module will

461
00:20:31,830 --> 00:20:29,200
separate and that will

462
00:20:33,590 --> 00:20:31,840
re-enter on its own it will not uh will

463
00:20:36,390 --> 00:20:33,600

not it's basically going to be disposed

464

00:20:37,190 --> 00:20:36,400

of and the crew module is what will fly

465

00:20:39,190 --> 00:20:37,200

then

466

00:20:44,149 --> 00:20:39,200

through the uh through the heat of

467

00:20:47,110 --> 00:20:44,159

reentry and on over the skies of uh

468

00:20:49,270 --> 00:20:47,120

of new mexico where where dan and josh

469

00:20:50,630 --> 00:20:49,280

are waiting to retrieve it

470

00:20:53,190 --> 00:20:50,640

and that will all get kicked off with

471

00:20:55,510 --> 00:20:53,200

the deorbit burn coming up in uh 15

472

00:20:57,669 --> 00:20:55,520

minutes now but while we wait for uh

473

00:20:59,830 --> 00:20:57,679

that to take place we are going to talk

474

00:21:00,950 --> 00:20:59,840

now with starliner engineer jim may

475

00:21:02,710 --> 00:21:00,960

who's been standing by to tell us a

476

00:21:03,909 --> 00:21:02,720

little bit more about the deorbit

477

00:21:12,310 --> 00:21:03,919

process and what we've already

478

00:21:16,310 --> 00:21:14,230

responsibility on this program is making

479

00:21:18,230 --> 00:21:16,320

sure that the way we train is safe

480

00:21:19,510 --> 00:21:18,240

enough for us to fly

481

00:21:21,510 --> 00:21:19,520

the astronauts are actually pretty easy

482

00:21:22,870 --> 00:21:21,520

to work with so we make their flight

483

00:21:24,149 --> 00:21:22,880

more difficult nominally we want a

484

00:21:25,750 --> 00:21:24,159

flight to go

485

00:21:27,830 --> 00:21:25,760

fully autonomous all the way to station

486

00:21:29,669 --> 00:21:27,840

with no problems but in the event of an

487

00:21:31,590 --> 00:21:29,679

emergency we have to train the crew to

488

00:21:34,149 --> 00:21:31,600

be able to react to those emergencies in

489

00:21:35,909 --> 00:21:34,159

a safely and timely manner so we make

490

00:21:37,430 --> 00:21:35,919

their job as hard as possible by adding

491

00:21:39,510 --> 00:21:37,440

as many problems as we can during the

492

00:21:41,510 --> 00:21:39,520

training sessions chris ferguson was my

493

00:21:43,190 --> 00:21:41,520

hiring manager he was the first person i

494

00:21:45,830 --> 00:21:43,200

talked to on this program when i got

495

00:21:47,110 --> 00:21:45,840

started and so making sure both your

496

00:21:49,669 --> 00:21:47,120

friend

497

00:21:51,110 --> 00:21:49,679

your manager

498

00:21:52,070 --> 00:21:51,120

your your astronauts representing your

499

00:21:54,390 --> 00:21:52,080

country

500

00:22:01,270 --> 00:21:54,400

making sure that they're safe is very

501
00:22:04,789 --> 00:22:03,270
welcome jim

502
00:22:06,549 --> 00:22:04,799
morning

503
00:22:08,870 --> 00:22:06,559
jim one of the questions we've been

504
00:22:10,789 --> 00:22:08,880
asked is whether the mission elapsed

505
00:22:13,430 --> 00:22:10,799
time problem that crept into the orbital

506
00:22:15,430 --> 00:22:13,440
insertion burn could cause an issue

507
00:22:17,510 --> 00:22:15,440
today during this during this phase

508
00:22:19,430 --> 00:22:17,520
during this deorbit landing phase tell

509
00:22:21,190 --> 00:22:19,440
us how the software has been tested in

510
00:22:22,470 --> 00:22:21,200
the past two days to confirm that this

511
00:22:23,350 --> 00:22:22,480
problem is not going to show itself

512
00:22:25,270 --> 00:22:23,360
again

513
00:22:26,549 --> 00:22:25,280

sure so the mission elapsed time has

514

00:22:28,230 --> 00:22:26,559

been updated

515

00:22:29,909 --> 00:22:28,240

the flight control team richard jones

516

00:22:31,190 --> 00:22:29,919

they recognized that were able to

517

00:22:32,630 --> 00:22:31,200

command the vehicle to change its

518

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

mission elapsed time

519

00:22:35,590 --> 00:22:34,240

which then goes into all of the flight

520

00:22:36,870 --> 00:22:35,600

management computers so all the

521

00:22:38,630 --> 00:22:36,880

computers are now in agreement with what

522

00:22:41,190 --> 00:22:38,640

the mission elapsed time should be and

523

00:22:42,549 --> 00:22:41,200

all of the continuing automated flight

524

00:22:43,830 --> 00:22:42,559

features that use that time are going to

525

00:22:45,430 --> 00:22:43,840

follow it

526

00:22:49,909 --> 00:22:45,440

and been have been successfully

527

00:22:54,070 --> 00:22:51,430

that's great news

528

00:22:56,470 --> 00:22:54,080

so i know that um the software is is

529

00:22:58,310 --> 00:22:56,480

really able to do a lot for starliner

530

00:23:00,310 --> 00:22:58,320

and handles a lot of the mission events

531

00:23:02,149 --> 00:23:00,320

but how how does that interact with the

532

00:23:04,230 --> 00:23:02,159

team here in mission control

533

00:23:05,990 --> 00:23:04,240

the team in mission control is watching

534

00:23:08,470 --> 00:23:06,000

what the flight control system is going

535

00:23:10,549 --> 00:23:08,480

to tell the vehicle what to do so there

536

00:23:12,630 --> 00:23:10,559

are parts of the spacecraft inside of

537

00:23:14,070 --> 00:23:12,640

the flight software that say hey this is

538

00:23:15,590 --> 00:23:14,080

where the vehicle needs to point and

539

00:23:17,750 --> 00:23:15,600

this is where the vehicle is going to

540

00:23:18,950 --> 00:23:17,760

need to go to in the future in order to

541

00:23:21,350 --> 00:23:18,960

do things like

542

00:23:22,950 --> 00:23:21,360

deorbit or rendezvous and things of that

543

00:23:24,870 --> 00:23:22,960

nature so the flight control team on the

544

00:23:26,310 --> 00:23:24,880

ground is looking at that data and maybe

545

00:23:27,590 --> 00:23:26,320

making updates to it should they be

546

00:23:29,270 --> 00:23:27,600

wanting to make any changes to the

547

00:23:30,630 --> 00:23:29,280

flight plan in the future but the ground

548

00:23:31,909 --> 00:23:30,640

control team always knows where the

549

00:23:33,590 --> 00:23:31,919

vehicle is going to be pointed where

550

00:23:36,870 --> 00:23:33,600

it's pointed now and everything that it

551
00:23:39,750 --> 00:23:36,880
wants to do to remain on the flight plan

552
00:23:41,669 --> 00:23:39,760
as as as designed

553
00:23:43,750 --> 00:23:41,679
and jim you've been working this program

554
00:23:45,029 --> 00:23:43,760
for uh for a while tell me about some of

555
00:23:46,710 --> 00:23:45,039
the things

556
00:23:49,029 --> 00:23:46,720
how are you feeling with the with the

557
00:23:50,470 --> 00:23:49,039
way i mean just to see that starliner is

558
00:23:51,990 --> 00:23:50,480
up in space and now it's getting ready

559
00:23:53,350 --> 00:23:52,000
to come home what are some of the things

560
00:23:54,470 --> 00:23:53,360
going through your going through your

561
00:23:55,909 --> 00:23:54,480
mind now

562
00:23:57,269 --> 00:23:55,919
you know this this next phase of flight

563
00:23:59,909 --> 00:23:57,279

is very critical one it's one that we

564

00:24:01,669 --> 00:23:59,919

actually train a lot of the crew for um

565

00:24:04,230 --> 00:24:01,679

most extensively and so i'm looking

566

00:24:06,710 --> 00:24:04,240

forward to seeing the spacecraft fly the

567

00:24:07,830 --> 00:24:06,720

automated re-entry plan just as we

568

00:24:09,669 --> 00:24:07,840

designed

569

00:24:10,950 --> 00:24:09,679

because you know that's that's all we

570

00:24:12,870 --> 00:24:10,960

care about the most thing we care about

571

00:24:14,950 --> 00:24:12,880

the most is the safety of the crew

572

00:24:17,269 --> 00:24:14,960

so seeing that the automated flight plan

573

00:24:18,870 --> 00:24:17,279

can go as expected is great because we

574

00:24:20,149 --> 00:24:18,880

are also training the flight crews to be

575

00:24:21,510 --> 00:24:20,159

able to take over should there ever be

576

00:24:28,710 --> 00:24:21,520

any issues

577

00:24:33,110 --> 00:24:31,190

and jim when you when you look at some

578

00:24:35,590 --> 00:24:33,120

of the uh at some of the other aspects

579

00:24:38,710 --> 00:24:35,600

of this flight um you know the brilliant

580

00:24:40,630 --> 00:24:38,720

launch yesterday and how how tough uh

581

00:24:42,070 --> 00:24:40,640

how tough was it for the team to execute

582

00:24:43,750 --> 00:24:42,080

some of those demonstrations that were

583

00:24:46,390 --> 00:24:43,760

performed was that a problem at all or

584

00:24:48,549 --> 00:24:46,400

spacecraft really perform the way it was

585

00:24:49,830 --> 00:24:48,559

supposed to you know once we've got once

586

00:24:51,350 --> 00:24:49,840

we have the spacecraft in the stable

587

00:24:52,310 --> 00:24:51,360

orbit we've been able to perform the

588

00:24:53,750 --> 00:24:52,320

demos

589

00:24:54,870 --> 00:24:53,760

just like we planned just at a slightly

590

00:24:56,470 --> 00:24:54,880

different orbit

591

00:24:58,950 --> 00:24:56,480

so being able to test the propulsion

592

00:25:00,950 --> 00:24:58,960

systems looking at the the vision the

593

00:25:02,470 --> 00:25:00,960

navigation system being able to check

594

00:25:04,470 --> 00:25:02,480

out the star tracker which is telling

595

00:25:06,149 --> 00:25:04,480

the vehicle where it is relative to the

596

00:25:07,190 --> 00:25:06,159

stars although the sun

597

00:25:08,470 --> 00:25:07,200

all of those things have been working

598

00:25:10,390 --> 00:25:08,480

just as plain and the flight control

599

00:25:12,149 --> 00:25:10,400

team has been able to follow the flight

600

00:25:14,470 --> 00:25:12,159

plan for each of the demos exactly as we

601
00:25:15,830 --> 00:25:14,480
wanted to do it so every all the systems

602
00:25:17,909 --> 00:25:15,840
have been working nominally since then

603
00:25:19,430 --> 00:25:17,919
um and doing everything we need to need

604
00:25:20,470 --> 00:25:19,440
to do to check out the vehicle for crude

605
00:25:21,990 --> 00:25:20,480
flight

606
00:25:23,669 --> 00:25:22,000
and i guess coming up will be another

607
00:25:26,549 --> 00:25:23,679
big demonstration with starliner making

608
00:25:27,830 --> 00:25:26,559
its way back to earth exactly

609
00:25:29,510 --> 00:25:27,840
can you walk us through some of the

610
00:25:31,510 --> 00:25:29,520
events that that will be that we'll be

611
00:25:33,269 --> 00:25:31,520
seeing over the course of the deorbit

612
00:25:35,110 --> 00:25:33,279
and landing sure so

613
00:25:37,590 --> 00:25:35,120

we're going to do a deorbit burn which

614

00:25:40,390 --> 00:25:37,600

is going to take the starliner at the

615

00:25:42,310 --> 00:25:40,400

altitude that it's at and lower it up

616

00:25:44,549 --> 00:25:42,320

lower the future altitude so it actually

617

00:25:45,990 --> 00:25:44,559

comes into the atmosphere where it comes

618

00:25:47,510 --> 00:25:46,000

into the atmosphere is a place called

619

00:25:49,110 --> 00:25:47,520

entry interface

620

00:25:50,789 --> 00:25:49,120

once the spacecraft enters the

621

00:25:53,990 --> 00:25:50,799

atmosphere it is then going to start

622

00:25:55,990 --> 00:25:54,000

controlling itself by doing turns

623

00:25:59,029 --> 00:25:56,000

and firing its thrusters to keep the

624

00:26:01,590 --> 00:25:59,039

spacecraft um coming down towards our

625

00:26:05,190 --> 00:26:01,600

preferred landing zone uh in and at

626
00:26:07,990 --> 00:26:05,200
white sands and so while the spacecraft

627
00:26:09,269 --> 00:26:08,000
is maneuvering it can change how far

628
00:26:11,269 --> 00:26:09,279
left or right it's going to go it can

629
00:26:13,029 --> 00:26:11,279
change how far or how close it's going

630
00:26:15,110 --> 00:26:13,039
to come down on the ground and all those

631
00:26:17,750 --> 00:26:15,120
things that are going to be done by the

632
00:26:19,350 --> 00:26:17,760
automated flight system

633
00:26:20,630 --> 00:26:19,360
once we have come through the atmosphere

634
00:26:22,870 --> 00:26:20,640
and slowed ourselves down enough we're

635
00:26:25,669 --> 00:26:22,880
actually going to fire some some

636
00:26:27,669 --> 00:26:25,679
drug parachutes to slow the vehicle down

637
00:26:29,510 --> 00:26:27,679
from there we'll pop out the heat shield

638
00:26:30,789 --> 00:26:29,520

pull out the airbags and then we'll pull

639

00:26:34,230 --> 00:26:30,799

out the main parachutes come down in a

640

00:26:36,070 --> 00:26:34,240

nice soft landing in west in white sands

641

00:26:39,190 --> 00:26:36,080

and jim you know

642

00:26:40,950 --> 00:26:39,200

we had the the early difficulty with the

643

00:26:41,990 --> 00:26:40,960

mission elapsed timer

644

00:26:44,149 --> 00:26:42,000

um

645

00:26:46,149 --> 00:26:44,159

and it's it's really

646

00:26:48,950 --> 00:26:46,159

all the teams have been working very

647

00:26:50,390 --> 00:26:48,960

hard since then and of course uh none of

648

00:26:53,430 --> 00:26:50,400

the past uh

649

00:26:55,190 --> 00:26:53,440

couple of days have have been um

650

00:26:56,549 --> 00:26:55,200

you know have been

651
00:26:57,510 --> 00:26:56,559
the teams have been working the whole

652
00:26:59,510 --> 00:26:57,520
time

653
00:27:00,710 --> 00:26:59,520
give us a little bit a little bit more

654
00:27:02,789 --> 00:27:00,720
insight we touched on this earlier it

655
00:27:05,590 --> 00:27:02,799
gives us a little bit more insight into

656
00:27:09,029 --> 00:27:05,600
uh into what that evaluation process has

657
00:27:11,190 --> 00:27:09,039
been and and uh y'all are dealing with a

658
00:27:13,269 --> 00:27:11,200
lower orbit than expected

659
00:27:14,950 --> 00:27:13,279
but it is still something that is

660
00:27:16,870 --> 00:27:14,960
manageable am i understanding that

661
00:27:18,710 --> 00:27:16,880
correctly correct so starlander is

662
00:27:20,470 --> 00:27:18,720
designed to fly

663
00:27:21,590 --> 00:27:20,480

anywhere in low-earth orbit so the fact

664

00:27:23,190 --> 00:27:21,600

that we're at a slightly lower than

665

00:27:25,269 --> 00:27:23,200

planned orbit um does not mean the

666

00:27:27,029 --> 00:27:25,279

vehicle can't perform um like a

667

00:27:29,669 --> 00:27:27,039

spacecraft that can automate that can

668

00:27:31,430 --> 00:27:29,679

fly automated on its own uh so the

669

00:27:32,870 --> 00:27:31,440

processes we've been going through um

670

00:27:35,110 --> 00:27:32,880

work the exact same way as if we were at

671

00:27:37,110 --> 00:27:35,120

a slightly slightly higher orbit it just

672

00:27:38,389 --> 00:27:37,120

that we have a um you know we go around

673

00:27:39,190 --> 00:27:38,399

the earth a little bit faster because

674

00:27:41,110 --> 00:27:39,200

our

675

00:27:42,310 --> 00:27:41,120

altitude is a little bit lower but the

676
00:27:43,750 --> 00:27:42,320
teams have been able to operate the

677
00:27:46,950 --> 00:27:43,760
spacecraft using the exact same

678
00:27:48,630 --> 00:27:46,960
commanding the exact same plan for the

679
00:27:49,830 --> 00:27:48,640
order of things that they're going to do

680
00:27:52,549 --> 00:27:49,840
than they would have done for the normal

681
00:27:53,909 --> 00:27:52,559
mission profile

682
00:27:55,430 --> 00:27:53,919
and i guess uh it will have just a

683
00:27:57,669 --> 00:27:55,440
little bit shorter journey normally it

684
00:27:59,510 --> 00:27:57,679
takes about what 45 minutes for

685
00:28:01,269 --> 00:27:59,520
starliner to get down after its deorbit

686
00:28:03,350 --> 00:28:01,279
burn but it's a little closer to 30 this

687
00:28:05,110 --> 00:28:03,360
time that's correct that just has to do

688
00:28:07,750 --> 00:28:05,120

with how long it takes from the deorbit

689

00:28:09,510 --> 00:28:07,760

burn uh for the altitude to slowly come

690

00:28:11,190 --> 00:28:09,520

down because our trajectory is no longer

691

00:28:13,430 --> 00:28:11,200

a circular trajectory around the earth

692

00:28:15,590 --> 00:28:13,440

it's a going to be coming down in a

693

00:28:17,590 --> 00:28:15,600

lower path

694

00:28:20,549 --> 00:28:17,600

and we can see from our monitors here in

695

00:28:22,549 --> 00:28:20,559

mission control that uh starliner is uh

696

00:28:24,310 --> 00:28:22,559

going through the orientation steps

697

00:28:27,190 --> 00:28:24,320

ahead of this deorbit burn it's coming

698

00:28:30,549 --> 00:28:27,200

up in just a few minutes

699

00:28:32,470 --> 00:28:30,559

jim you've um you're watching this um

700

00:28:33,830 --> 00:28:32,480

you're watching this closely what are

701

00:28:35,269 --> 00:28:33,840

you thinking so far

702

00:28:36,470 --> 00:28:35,279

everything's looking good right now

703

00:28:38,950 --> 00:28:36,480

we've got the vehicle pointed where we

704

00:28:39,990 --> 00:28:38,960

need to to do the deorbit burn um you

705

00:28:41,510 --> 00:28:40,000

know it looks like the flight control

706

00:28:44,070 --> 00:28:41,520

team is all happy

707

00:28:46,070 --> 00:28:44,080

gnc you know my background from school i

708

00:28:47,990 --> 00:28:46,080

i'm happy now because uh that's the type

709

00:28:51,269 --> 00:28:48,000

of thing that i really studied for so um

710

00:28:52,630 --> 00:28:51,279

we're looking good for the deorbit burn

711

00:28:54,870 --> 00:28:52,640

we're hearing here in mission control

712

00:28:56,310 --> 00:28:54,880

that uh the starliner is on its way to

713

00:29:00,149 --> 00:28:56,320

burn attitude

714

00:29:02,789 --> 00:29:00,159

us in in place for the new orbit burn

715

00:29:06,870 --> 00:29:02,799

coming up just uh seven minutes and

716

00:29:11,350 --> 00:29:09,830

and at this point starliner is crossing

717

00:29:14,710 --> 00:29:11,360

below

718

00:29:18,389 --> 00:29:14,720

australia on its uh on its way

719

00:29:20,710 --> 00:29:18,399

over the pacific it is going to fly back

720

00:29:22,470 --> 00:29:20,720

on what is called an ascending node

721

00:29:24,950 --> 00:29:22,480

which basically means it's coming up

722

00:29:26,389 --> 00:29:24,960

from south to north on this pass

723

00:29:30,389 --> 00:29:26,399

going over

724

00:29:43,669 --> 00:29:30,399

baja california and then over new mexico

725

00:29:47,510 --> 00:29:45,590

part of the part of the team here of

726

00:29:50,230 --> 00:29:47,520

course that's been working throughout

727

00:29:52,630 --> 00:29:50,240

this mission the flight directors they

728

00:29:53,510 --> 00:29:52,640

each have their own teams and the on

729

00:29:56,230 --> 00:29:53,520

orbit

730

00:29:57,430 --> 00:29:56,240

team is led by bob dempsey bob dempsey

731

00:30:00,549 --> 00:29:57,440

is uh

732

00:30:02,549 --> 00:30:00,559

astronomer at first and has is a veteran

733

00:30:05,190 --> 00:30:02,559

flight controller for

734

00:30:08,789 --> 00:30:07,269

for space station and now for starliner

735

00:30:17,110 --> 00:30:08,799

here's a look at

736

00:30:22,470 --> 00:30:20,070

that nasa was doing you know space

737

00:30:23,750 --> 00:30:22,480

shuttle probes around jupiter and stuff

738

00:30:25,750 --> 00:30:23,760

like that

739

00:30:27,510 --> 00:30:25,760

but when i came here and became a flight

740

00:30:29,909 --> 00:30:27,520

director i realized it's not the

741

00:30:32,710 --> 00:30:29,919

technology it's the people

742

00:30:35,190 --> 00:30:32,720

my call sign and therefore my team name

743

00:30:38,070 --> 00:30:35,200

is galileo flight

744

00:30:40,310 --> 00:30:38,080

that's an homage to the fact that i'm by

745

00:30:42,149 --> 00:30:40,320

training an astronomer so i had that

746

00:30:44,789 --> 00:30:42,159

heritage coming in here

747

00:30:46,149 --> 00:30:44,799

always interested in exploring

748

00:30:48,789 --> 00:30:46,159

when the chief of the flight director's

749

00:30:51,990 --> 00:30:48,799

office called me

750

00:30:53,510 --> 00:30:52,000

i was uh very surprised and you know of

751
00:30:55,350 --> 00:30:53,520
course i applied and hoped to be

752
00:30:58,630 --> 00:30:55,360
selected but i really thought the odds

753
00:31:00,870 --> 00:30:58,640
were pretty limited because it's it's a

754
00:31:02,549 --> 00:31:00,880
it's a small contingent of people in

755
00:31:04,789 --> 00:31:02,559
fact there's been less flight directors

756
00:31:12,070 --> 00:31:04,799
than astronauts

757
00:31:15,430 --> 00:31:13,750
and as we mentioned richard jones is

758
00:31:16,950 --> 00:31:15,440
back on console today to bring us in for

759
00:31:18,710 --> 00:31:16,960
a landing here's a look at what he had

760
00:31:20,630 --> 00:31:18,720
to say

761
00:31:22,789 --> 00:31:20,640
the role of the flight director

762
00:31:25,590 --> 00:31:22,799
to put it simply the flight director

763
00:31:27,590 --> 00:31:25,600

makes decisions i make decisions

764

00:31:29,430 --> 00:31:27,600

and as the mission is continuing

765

00:31:32,470 --> 00:31:29,440

whatever timeline that we're following

766

00:31:34,310 --> 00:31:32,480

whether it's pre-launch ascent on orbit

767

00:31:35,990 --> 00:31:34,320

docked

768

00:31:37,590 --> 00:31:36,000

during entry

769

00:31:39,669 --> 00:31:37,600

a lot of questions come up in terms of

770

00:31:42,070 --> 00:31:39,679

how we want to proceed because sometimes

771

00:31:43,990 --> 00:31:42,080

the script isn't always written

772

00:31:45,669 --> 00:31:44,000

for whatever we're doing at the time we

773

00:31:47,830 --> 00:31:45,679

may suffer a failure

774

00:31:49,990 --> 00:31:47,840

we may have to react to different

775

00:31:53,190 --> 00:31:50,000

priorities whatever is changing

776

00:31:55,110 --> 00:31:53,200

and so the flight director's role is to

777

00:31:55,830 --> 00:31:55,120

take all of that information in

778

00:31:58,389 --> 00:31:55,840

and

779

00:32:07,509 --> 00:31:58,399

all of the systems information the human

780

00:32:07,519 --> 00:32:14,950

so it's really just about decisions

781

00:32:18,549 --> 00:32:16,470

the other members of our star team of

782

00:32:20,789 --> 00:32:18,559

flight directors are ed van size who was

783

00:32:23,269 --> 00:32:20,799

covering the uh the what we call the

784

00:32:24,789 --> 00:32:23,279

third shift and also uh mike lammers who

785

00:32:26,630 --> 00:32:24,799

was sitting with richard jones today

786

00:32:29,029 --> 00:32:26,640

he's been kind of the weather flight

787

00:32:31,110 --> 00:32:29,039

director for both launch and landing

788

00:32:33,830 --> 00:32:31,120

also um at the flight control console

789

00:32:36,149 --> 00:32:33,840

you've got a couple of capcoms on uh

790

00:32:39,830 --> 00:32:36,159

on a shift with us we have tracy

791

00:32:42,470 --> 00:32:39,840

caldwell dyson and josh casada josh is

792

00:32:44,389 --> 00:32:42,480

actually scheduled to take his own uh

793

00:32:45,990 --> 00:32:44,399

flight on this starliner that is

794

00:32:50,950 --> 00:32:46,000

currently in space now he'll be on the

795

00:32:54,870 --> 00:32:52,070

each of those

796

00:32:57,029 --> 00:32:54,880

hours in mission control at a time with

797

00:32:58,710 --> 00:32:57,039

one hour on either end of the shift

798

00:33:00,549 --> 00:32:58,720

devoted to handover for the oncoming

799

00:33:02,070 --> 00:33:00,559

team together these teams have seen

800

00:33:03,509 --> 00:33:02,080

starliner safely through the mission

801
00:33:06,710 --> 00:33:03,519
thus far put it in the best

802
00:33:11,190 --> 00:33:06,720
configuration for a successful landing

803
00:33:13,750 --> 00:33:11,200
coming up in just 37 minutes now

804
00:33:15,269 --> 00:33:13,760
37 minutes down to new mexico

805
00:33:18,070 --> 00:33:15,279
the uh

806
00:33:20,630 --> 00:33:18,080
gnc position here reports that uh

807
00:33:22,549 --> 00:33:20,640
starliner is in the correct attitude for

808
00:33:24,789 --> 00:33:22,559
its deorbit burn that is coming up at

809
00:33:26,310 --> 00:33:24,799
this at this point the service module

810
00:33:27,269 --> 00:33:26,320
and the crew module are both still

811
00:33:28,470 --> 00:33:27,279
attached

812
00:33:30,789 --> 00:33:28,480
to each other

813
00:33:33,110 --> 00:33:30,799

it will be the service modules omac

814

00:33:35,350 --> 00:33:33,120

engines four of them the orbital

815

00:33:38,870 --> 00:33:35,360

maneuvering and control engines that

816

00:33:42,870 --> 00:33:38,880

will uh power the de-orbit burn they are

817

00:33:45,590 --> 00:33:42,880

each 1500 pound glass thrusters meaning

818

00:33:48,310 --> 00:33:45,600

that uh this 55 second burn will be

819

00:33:50,070 --> 00:33:48,320

about 6 000 pounds of thrust that will

820

00:33:51,750 --> 00:33:50,080

uh slow

821

00:33:54,230 --> 00:33:51,760

starliner from its current orbital

822

00:33:57,350 --> 00:33:54,240

velocity and let it uh

823

00:33:59,430 --> 00:33:57,360

fall into the atmosphere

824

00:34:01,590 --> 00:33:59,440

and ultimately fly uh

825

00:34:03,269 --> 00:34:01,600

fly to new mexico and touch down in

826

00:34:05,350 --> 00:34:03,279

white sands

827

00:34:07,110 --> 00:34:05,360

those omax are just about done with

828

00:34:09,909 --> 00:34:07,120

their uh their duty for this mission but

829

00:34:12,389 --> 00:34:09,919

they will also help us uh move the um

830

00:34:14,550 --> 00:34:12,399

the surface module away from

831

00:34:25,750 --> 00:34:14,560

the crew module once the two of them

832

00:34:29,430 --> 00:34:27,669

that burns coming up in just a little

833

00:34:31,270 --> 00:34:29,440

over two minutes now

834

00:34:33,270 --> 00:34:31,280

everything uh still

835

00:34:34,629 --> 00:34:33,280

still looking good here in the room

836

00:34:36,950 --> 00:34:34,639

everyone quiet working through their

837

00:34:38,869 --> 00:34:36,960

last steps to get ready for it

838

00:34:40,869 --> 00:34:38,879

and after the de-orbit burn we'll be

839

00:34:42,550 --> 00:34:40,879

looking at a what is called entry

840

00:34:43,750 --> 00:34:42,560

interface which is basically the point

841

00:34:45,990 --> 00:34:43,760

at which the

842

00:34:47,270 --> 00:34:46,000

hottest part of atmospheric re-entry

843

00:34:49,109 --> 00:34:47,280

begins this is the point when

844

00:34:51,909 --> 00:34:49,119

starliner's heat shield

845

00:34:54,629 --> 00:34:51,919

will be uh will face its biggest test

846

00:34:56,550 --> 00:34:54,639

it's going to get up to 3000 degrees and

847

00:34:59,109 --> 00:34:56,560

and the plasma will form around the

848

00:35:01,349 --> 00:34:59,119

spacecraft the heat shield is going to

849

00:35:04,630 --> 00:35:01,359

provide a barrier to that it's an

850

00:35:06,230 --> 00:35:04,640

ablative heat shield of boeing's design

851
00:35:08,150 --> 00:35:06,240
and that's going to protect starliner

852
00:35:09,910 --> 00:35:08,160
and all of its systems

853
00:35:12,390 --> 00:35:09,920
that's a lot to protect it from 3000

854
00:35:14,870 --> 00:35:12,400
degrees is almost 1 000 degrees hotter

855
00:35:17,510 --> 00:35:14,880
than lava so it's got quite a job ahead

856
00:35:20,710 --> 00:35:17,520
of it and all that takes place about 75

857
00:35:24,870 --> 00:35:23,510
so we are about a minute 13 seconds away

858
00:35:28,630 --> 00:35:24,880
from the

859
00:35:31,430 --> 00:35:28,640
deorbit burn here watching this will be

860
00:36:05,030 --> 00:35:31,440
starliner's 33rd orbit of the earth that

861
00:36:09,190 --> 00:36:06,950
30 seconds to go now until the deorbit

862
00:36:24,870 --> 00:36:09,200
burn begins again it will last about 55

863
00:36:29,270 --> 00:36:28,390

ten seconds to deorbit burn eight seven

864

00:36:30,230 --> 00:36:29,280

six

865

00:36:31,270 --> 00:36:30,240

five

866

00:36:32,310 --> 00:36:31,280

four

867

00:36:33,829 --> 00:36:32,320

three

868

00:36:41,990 --> 00:36:33,839

two

869

00:36:42,000 --> 00:36:46,230

deorbit burn in progress

870

00:36:46,240 --> 00:36:51,670

good control reported

871

00:36:55,990 --> 00:36:53,990

40 mac thrusters firing for about 55

872

00:37:01,349 --> 00:36:56,000

seconds to slow starliner down to begin

873

00:37:01,359 --> 00:37:14,310

all looking good thus far

874

00:37:19,990 --> 00:37:17,430

40 seconds in about 15 more to go

875

00:37:21,349 --> 00:37:20,000

star liner we can see is maintaining its

876

00:37:23,589 --> 00:37:21,359

attitude

877

00:37:26,069 --> 00:37:23,599

mac thrusters are firing smaller rcs

878

00:37:37,349 --> 00:37:26,079

thrusters are keeping the spacecraft in

879

00:37:41,750 --> 00:37:40,150

good burn reported engines cut off

880

00:37:43,910 --> 00:37:41,760

we are on our way to white sands richard

881

00:37:47,349 --> 00:37:43,920

jones tells his team

882

00:37:49,190 --> 00:37:47,359

starliner's ready to come home now

883

00:37:50,950 --> 00:37:49,200

next up as we were just talking about is

884

00:37:53,030 --> 00:37:50,960

the entry interface that'll be coming up

885

00:37:55,190 --> 00:37:53,040

in about 16 minutes but before that uh

886

00:37:57,750 --> 00:37:55,200

starlander does want to get rid of the

887

00:37:59,510 --> 00:37:57,760

service module so that this the

888

00:38:01,109 --> 00:37:59,520

command mod the crew module can make its

889

00:38:02,870 --> 00:38:01,119

way home on its own

890

00:38:04,470 --> 00:38:02,880

and it clears the way for that heat

891

00:38:05,430 --> 00:38:04,480

shield and eventually the parachutes

892

00:38:14,150 --> 00:38:05,440

that will

893

00:38:18,630 --> 00:38:16,310

so starliner is on a path coming home

894

00:38:19,750 --> 00:38:18,640

now its speed is

895

00:38:22,310 --> 00:38:19,760

dropping

896

00:38:24,390 --> 00:38:22,320

and we will soon be

897

00:38:26,310 --> 00:38:24,400

will soon be jettisoning the

898

00:38:28,230 --> 00:38:26,320

service module as noted but we are

899

00:38:30,710 --> 00:38:28,240

definitely on the way home to white

900

00:38:51,750 --> 00:38:32,230

moving into attitude to get rid of the

901
00:38:55,589 --> 00:38:53,510
and flight controllers report that we

902
00:38:57,430 --> 00:38:55,599
are in the right attitude and service

903
00:38:59,430 --> 00:38:57,440
module has jettisoned

904
00:39:01,430 --> 00:38:59,440
crew module is flying on its own service

905
00:39:04,710 --> 00:39:01,440
module will be disposed of while it

906
00:39:06,550 --> 00:39:04,720
re-enters over the pacific

907
00:39:08,870 --> 00:39:06,560
while the crew module continues on a

908
00:39:10,790 --> 00:39:08,880
flight path to white sands new mexico

909
00:39:12,870 --> 00:39:10,800
where our boeing and nasa teams are

910
00:39:14,470 --> 00:39:12,880
waiting to recover

911
00:39:16,230 --> 00:39:14,480
right now it's up to the reaction

912
00:39:18,470 --> 00:39:16,240
control system on the camera module to

913
00:39:20,230 --> 00:39:18,480

flip the crew module back around

914

00:39:23,190 --> 00:39:20,240

get its heat shield pointing into what

915

00:40:35,109 --> 00:39:23,200

will soon become a very hot spot

916

00:40:38,950 --> 00:40:36,950

at starliner mission control in houston

917

00:40:41,030 --> 00:40:38,960

we continue to monitor the progress of

918

00:40:42,950 --> 00:40:41,040

starliner as it flies

919

00:40:44,710 --> 00:40:42,960

back to white sands new mexico all

920

00:40:47,030 --> 00:40:44,720

systems are looking just like they're

921

00:40:49,510 --> 00:40:47,040

supposed to everything is looking good

922

00:40:50,309 --> 00:40:49,520

crew module is positioning itself for

923

00:40:53,109 --> 00:40:50,319

the

924

00:41:52,630 --> 00:40:53,119

re-entry we have entry interface coming

925

00:41:56,870 --> 00:41:54,790

and another starliner engineer joining

926

00:41:59,349 --> 00:41:56,880

us this morning

927

00:42:00,710 --> 00:41:59,359

is tori wills pedrotty

928

00:42:02,550 --> 00:42:00,720

you might remember from our launch

929

00:42:05,430 --> 00:42:02,560

coverage a couple days ago

930

00:42:07,030 --> 00:42:05,440

torrey is a an expert on the heat shield

931

00:42:08,390 --> 00:42:07,040

of starliner and many of the other

932

00:42:10,150 --> 00:42:08,400

systems

933

00:42:12,470 --> 00:42:10,160

tori what are you thinking what are you

934

00:42:15,190 --> 00:42:12,480

thinking right now as as we proceed

935

00:42:16,550 --> 00:42:15,200

towards this reentry with with starliner

936

00:42:18,150 --> 00:42:16,560

in a good attitude

937

00:42:19,829 --> 00:42:18,160

and heading over the pacific on the way

938

00:42:21,910 --> 00:42:19,839

to white sands

939

00:42:24,150 --> 00:42:21,920

so thanks steve this is this is a really

940

00:42:26,870 --> 00:42:24,160

exciting morning right for starliner to

941

00:42:29,270 --> 00:42:26,880

be able to show not only a good sm

942

00:42:31,190 --> 00:42:29,280

separation but also a good attitude

943

00:42:32,870 --> 00:42:31,200

coming down into white sands so

944

00:42:35,030 --> 00:42:32,880

this is just a really good place to be

945

00:42:36,550 --> 00:42:35,040

in for the vehicle and it's going to be

946

00:42:38,710 --> 00:42:36,560

upcoming here soon then we're going to

947

00:42:40,870 --> 00:42:38,720

get to test the heat shield we have

948

00:42:42,390 --> 00:42:40,880

tested that heat shield here

949

00:42:44,870 --> 00:42:42,400

in the atmosphere

950

00:42:47,109 --> 00:42:44,880

at ames with nasa a couple different

951
00:42:49,190 --> 00:42:47,119
times in an arc jet uh which is really

952
00:42:52,069 --> 00:42:49,200
cool and as close as we can get to those

953
00:42:53,670 --> 00:42:52,079
really hot atmospheric temperatures on

954
00:42:55,990 --> 00:42:53,680
earth but there's nothing like a flight

955
00:42:57,430 --> 00:42:56,000
test to prove the safety and reliability

956
00:42:59,109 --> 00:42:57,440
of something as important as the heat

957
00:43:01,349 --> 00:42:59,119
shield

958
00:43:03,829 --> 00:43:01,359
and now that we are let's see 11 and a

959
00:43:05,910 --> 00:43:03,839
half minutes away from uh from beginning

960
00:43:07,750 --> 00:43:05,920
to experience entry interface it's

961
00:43:08,950 --> 00:43:07,760
really coming down to the to the crunch

962
00:43:10,630 --> 00:43:08,960
time

963
00:43:12,630 --> 00:43:10,640

yeah it is and

964

00:43:14,790 --> 00:43:12,640

again this is just really exciting and

965

00:43:16,790 --> 00:43:14,800

it's going to be a really good test of

966

00:43:18,309 --> 00:43:16,800

that heat shield now a good thing to

967

00:43:20,870 --> 00:43:18,319

remember about the heat shield is that

968

00:43:23,670 --> 00:43:20,880

it's a game of threes so the heat shield

969

00:43:25,030 --> 00:43:23,680

is going to see about 3000 degrees at

970

00:43:28,390 --> 00:43:25,040

entry interface and it's going to

971

00:43:31,510 --> 00:43:28,400

convert that heat to about 300 degrees

972

00:43:33,829 --> 00:43:31,520

on the interior of that inner mold line

973

00:43:35,670 --> 00:43:33,839

with about three inches of ablater so

974

00:43:37,349 --> 00:43:35,680

it's a really great technology that

975

00:43:38,950 --> 00:43:37,359

boeing has developed the boeing

976

00:43:42,470 --> 00:43:38,960

lightweight ablator that we have on the

977

00:43:45,349 --> 00:43:42,480

vehicle so it's it's really exciting to

978

00:43:47,030 --> 00:43:45,359

be able to test it here and also we have

979

00:43:48,790 --> 00:43:47,040

seen some successful parts of this test

980

00:43:50,870 --> 00:43:48,800

already during pad abort we saw a very

981

00:43:53,990 --> 00:43:50,880

successful base heat shield jettison

982

00:43:55,430 --> 00:43:54,000

which happens at about 3 000 feet so

983

00:43:56,950 --> 00:43:55,440

some parts of this we've already seen

984

00:43:59,030 --> 00:43:56,960

but right now we're just really looking

985

00:44:00,790 --> 00:43:59,040

to see how the ablator

986

00:44:02,309 --> 00:44:00,800

performs during this uncrewed flight

987

00:44:04,870 --> 00:44:02,319

test

988

00:44:06,550 --> 00:44:04,880

hopefully it'll all go just as expected

989

00:44:08,150 --> 00:44:06,560

um assuming that

990

00:44:10,470 --> 00:44:08,160

we're back it does go expecting we're

991

00:44:12,630 --> 00:44:10,480

back next time with crew on board what

992

00:44:14,550 --> 00:44:12,640

would they be feeling at this point

993

00:44:15,990 --> 00:44:14,560

so at this point from a thermal

994

00:44:17,750 --> 00:44:16,000

perspective they would not be feeling

995

00:44:19,430 --> 00:44:17,760

anything different than what they would

996

00:44:21,109 --> 00:44:19,440

feel during the rest of the rest of the

997

00:44:24,069 --> 00:44:21,119

trip the interior of the vehicle is

998

00:44:26,309 --> 00:44:24,079

around 70 to 75 degrees and is very

999

00:44:28,550 --> 00:44:26,319

comfortable for the crew

1000

00:44:30,309 --> 00:44:28,560

it's all in the exterior of the vehicle

1001
00:44:32,710 --> 00:44:30,319
that they would that you would see those

1002
00:44:35,109 --> 00:44:32,720
really high heat waves those heat loads

1003
00:44:36,950 --> 00:44:35,119
they would be seeing a very cool light

1004
00:44:38,390 --> 00:44:36,960
show outside of their window right now

1005
00:44:40,309 --> 00:44:38,400
as some of that

1006
00:44:42,630 --> 00:44:40,319
that thermal effects start to take place

1007
00:44:45,670 --> 00:44:42,640
and you start to see the aero heating

1008
00:44:47,990 --> 00:44:45,680
sphere occur around the vehicle

1009
00:44:49,430 --> 00:44:48,000
and tori the the heat shield for star

1010
00:44:50,710 --> 00:44:49,440
liner of course you have the base heat

1011
00:44:52,630 --> 00:44:50,720
shield which is the main thing that

1012
00:44:54,870 --> 00:44:52,640
we're talking about but the uh

1013
00:44:56,550 --> 00:44:54,880

the whole vehicle has the has a thermal

1014

00:44:57,829 --> 00:44:56,560

protection is that right yes that's

1015

00:45:00,309 --> 00:44:57,839

correct so

1016

00:45:02,150 --> 00:45:00,319

uh the quilted looking blanket that is

1017

00:45:04,069 --> 00:45:02,160

on the top of starliner that has that

1018

00:45:06,470 --> 00:45:04,079

gray color is

1019

00:45:08,550 --> 00:45:06,480

is actually a type of thermal protection

1020

00:45:11,430 --> 00:45:08,560

system a tps so that is a thermal

1021

00:45:13,109 --> 00:45:11,440

blanket made out of a bunch of different

1022

00:45:15,349 --> 00:45:13,119

uh

1023

00:45:17,270 --> 00:45:15,359

layers and thicknesses of a quilted

1024

00:45:19,670 --> 00:45:17,280

material that is actually sewn together

1025

00:45:21,430 --> 00:45:19,680

and then epoxied onto the outside of

1026

00:45:22,790 --> 00:45:21,440

starliner and

1027

00:45:24,790 --> 00:45:22,800

while those

1028

00:45:26,790 --> 00:45:24,800

that part of the vehicle will not see

1029

00:45:27,750 --> 00:45:26,800

the high heat that the base heat shield

1030

00:45:30,630 --> 00:45:27,760

will

1031

00:45:33,190 --> 00:45:30,640

that gray color and the density of that

1032

00:45:35,510 --> 00:45:33,200

tps still protects the vehicle not only

1033

00:45:37,430 --> 00:45:35,520

from the high heat of re-entry but also

1034

00:45:39,270 --> 00:45:37,440

from the really cold temperatures when

1035

00:45:40,550 --> 00:45:39,280

we're on orbit so both of those are

1036

00:45:42,550 --> 00:45:40,560

important when we think about thermal

1037

00:45:44,550 --> 00:45:42,560

protection systems

1038

00:45:46,230 --> 00:45:44,560

outstanding point tori

1039

00:45:48,309 --> 00:45:46,240

at starliner mission control we are

1040

00:45:50,309 --> 00:45:48,319

eight minutes 50 seconds away from entry

1041

00:45:51,829 --> 00:45:50,319

interface which is the point at which

1042

00:45:54,550 --> 00:45:51,839

starliner starts to encounter the

1043

00:45:56,710 --> 00:45:54,560

hottest parts of re-entry starliner is

1044

00:45:58,870 --> 00:45:56,720

in its current uh is in the proper

1045

00:46:01,829 --> 00:45:58,880

attitude currently its base heat shield

1046

00:46:03,829 --> 00:46:01,839

pointed in its direction of travel

1047

00:46:05,910 --> 00:46:03,839

tory entry interface it's something

1048

00:46:08,309 --> 00:46:05,920

you've been looking at for a long time

1049

00:46:10,710 --> 00:46:08,319

and now we're coming up to it

1050

00:46:12,710 --> 00:46:10,720

yes so when we did analysis on the heat

1051
00:46:15,030 --> 00:46:12,720
shield and when we were designing and

1052
00:46:17,270 --> 00:46:15,040
you know testing it entry interface is

1053
00:46:18,870 --> 00:46:17,280
really when we would start caring about

1054
00:46:20,950 --> 00:46:18,880
the thermal loads the heat shield would

1055
00:46:22,790 --> 00:46:20,960
see before that the heat shield is

1056
00:46:24,150 --> 00:46:22,800
protected by the sm

1057
00:46:26,230 --> 00:46:24,160
because

1058
00:46:28,950 --> 00:46:26,240
we don't want it to be affected by any

1059
00:46:30,710 --> 00:46:28,960
micro meteor debris or anything like

1060
00:46:32,150 --> 00:46:30,720
that so having the sm cover the heat

1061
00:46:34,710 --> 00:46:32,160
shield is really important until we're

1062
00:46:36,870 --> 00:46:34,720
ready to use it because we want it to be

1063
00:46:38,550 --> 00:46:36,880

at the exact thickness that we analyzed

1064

00:46:41,670 --> 00:46:38,560

to so it's able to perform its job to

1065

00:46:45,910 --> 00:46:43,670

can you give us an idea of how how

1066

00:46:49,270 --> 00:46:45,920

precisely that analysis goes

1067

00:46:51,430 --> 00:46:49,280

yes so each area of the heat shield is

1068

00:46:54,309 --> 00:46:51,440

actually lofted so if you look at the

1069

00:46:55,510 --> 00:46:54,319

heat shield as you know it as a layer of

1070

00:46:57,589 --> 00:46:55,520

like a grid

1071

00:47:01,270 --> 00:46:57,599

each point on that grid is at a

1072

00:47:02,870 --> 00:47:01,280

different thickness to be able to cover

1073

00:47:05,510 --> 00:47:02,880

all of the heating that we would see

1074

00:47:08,470 --> 00:47:05,520

during multiple different re-entry

1075

00:47:10,230 --> 00:47:08,480

trajectories but also able to have it as

1076
00:47:13,670 --> 00:47:10,240
thin as possible to be as lightweight as

1077
00:47:15,349 --> 00:47:13,680
possible so we really worked to um

1078
00:47:16,950 --> 00:47:15,359
make the heat shield the most efficient

1079
00:47:18,230 --> 00:47:16,960
it could be while also being as the

1080
00:47:21,910 --> 00:47:18,240
lightweight as it could be so that we're

1081
00:47:25,349 --> 00:47:21,920
able to carry more cargo or more crew

1082
00:47:27,030 --> 00:47:25,359
to station when we eventually go there

1083
00:47:28,390 --> 00:47:27,040
well how long after entry interface

1084
00:47:30,630 --> 00:47:28,400
would you say that the heat chill has

1085
00:47:32,150 --> 00:47:30,640
kind of done its job when when will you

1086
00:47:34,470 --> 00:47:32,160
sigh with relief

1087
00:47:36,710 --> 00:47:34,480
so when we release the drug parachutes

1088
00:47:39,430 --> 00:47:36,720

at that point the heat shield has taken

1089

00:47:41,109 --> 00:47:39,440

the brunt of the heat forces and by the

1090

00:47:43,030 --> 00:47:41,119

time that we're ready to release those

1091

00:47:45,510 --> 00:47:43,040

drugs the heat shield has done almost

1092

00:47:47,109 --> 00:47:45,520

all of its work we performed analysis

1093

00:47:49,829 --> 00:47:47,119

all the way up until the heat shield

1094

00:47:50,710 --> 00:47:49,839

will actually drop at about 3000 feet

1095

00:47:52,630 --> 00:47:50,720

but

1096

00:47:53,990 --> 00:47:52,640

once we start releasing those parachutes

1097

00:47:55,430 --> 00:47:54,000

i'm going to have a big old sigh of

1098

00:47:56,950 --> 00:47:55,440

relief now

1099

00:47:58,710 --> 00:47:56,960

when the vehicle comes back and if we

1100

00:48:00,549 --> 00:47:58,720

get any shots of that the ablater is

1101
00:48:02,870 --> 00:48:00,559
going to look black it's going to be

1102
00:48:05,190 --> 00:48:02,880
charred it's going to have that sort of

1103
00:48:08,069 --> 00:48:05,200
crusty looking appearance and that is

1104
00:48:09,829 --> 00:48:08,079
exactly what we expect because

1105
00:48:11,990 --> 00:48:09,839
when how an ablater works is it

1106
00:48:14,710 --> 00:48:12,000
transfers heat into gas and by doing

1107
00:48:17,190 --> 00:48:14,720
that it charges the material so

1108
00:48:18,710 --> 00:48:17,200
when the material is uh when it's new

1109
00:48:20,950 --> 00:48:18,720
and when it hasn't seen any heat yet

1110
00:48:22,069 --> 00:48:20,960
it's white but if we see it's black as

1111
00:48:23,270 --> 00:48:22,079
it's coming back that means that it

1112
00:48:25,430 --> 00:48:23,280
actually worked and we've transferred

1113
00:48:28,470 --> 00:48:25,440

that heat into gas

1114

00:48:31,910 --> 00:48:28,480

and dory you're of course uh an expert

1115

00:48:33,349 --> 00:48:31,920

on another starliner system the interior

1116

00:48:34,710 --> 00:48:33,359

camera system

1117

00:48:36,470 --> 00:48:34,720

we of course

1118

00:48:38,710 --> 00:48:36,480

have had a lot of

1119

00:48:40,470 --> 00:48:38,720

a lot of interest on that but but as we

1120

00:48:42,470 --> 00:48:40,480

understand it

1121

00:48:45,030 --> 00:48:42,480

we think we'll be able to uh to have

1122

00:48:46,390 --> 00:48:45,040

those interior views of rosie and the

1123

00:48:49,109 --> 00:48:46,400

commander's seat

1124

00:48:51,430 --> 00:48:49,119

throughout from from this mission

1125

00:48:54,309 --> 00:48:51,440

yes that's correct steve so uh the

1126

00:48:56,549 --> 00:48:54,319

interior system for the camera uh for

1127

00:48:58,390 --> 00:48:56,559

oft it's recorded alm it was supposed to

1128

00:49:00,790 --> 00:48:58,400

record the entire flight we definitely

1129

00:49:02,230 --> 00:49:00,800

got all of the uphill and then when we

1130

00:49:03,829 --> 00:49:02,240

got into our orbit and we were

1131

00:49:05,670 --> 00:49:03,839

stationary we did you have to do some

1132

00:49:07,510 --> 00:49:05,680

powering down so the camera system was

1133

00:49:09,270 --> 00:49:07,520

powered down for a short amount of time

1134

00:49:11,670 --> 00:49:09,280

but then it came back on and we powered

1135

00:49:14,069 --> 00:49:11,680

it back on as we started to do uh

1136

00:49:17,270 --> 00:49:14,079

reentry so we'll be able to see rosie

1137

00:49:18,870 --> 00:49:17,280

and snoopy not only on the uphill ride

1138

00:49:20,150 --> 00:49:18,880

and as we orbit a little bit but also

1139

00:49:22,390 --> 00:49:20,160

during this re-entry so that's going to

1140

00:49:24,710 --> 00:49:22,400

be really valuable engineering data for

1141

00:49:26,710 --> 00:49:24,720

the teams to be able to see

1142

00:49:28,069 --> 00:49:26,720

how rosie is affected as well as using

1143

00:49:30,069 --> 00:49:28,079

her sensor data

1144

00:49:32,069 --> 00:49:30,079

but also it's going to be great to be

1145

00:49:34,069 --> 00:49:32,079

able to show the american public

1146

00:49:37,109 --> 00:49:34,079

what sort of ride they expect we have

1147

00:49:38,710 --> 00:49:37,119

four cameras in the vehicle um and one

1148

00:49:40,470 --> 00:49:38,720

one of those is actually pointed out the

1149

00:49:42,470 --> 00:49:40,480

window so you're gonna see some really

1150

00:49:45,190 --> 00:49:42,480

cool uh hopefully views of the earth and

1151
00:49:46,230 --> 00:49:45,200
then um you know that that heat that we

1152
00:49:49,109 --> 00:49:46,240
expect around the heat shield during

1153
00:49:50,710 --> 00:49:49,119
re-entry so excited to to get that off

1154
00:49:53,030 --> 00:49:50,720
the vehicle when it gets home

1155
00:49:55,270 --> 00:49:53,040
it's an exciting time we did have a

1156
00:49:58,069 --> 00:49:55,280
starliner performance deorbit burn at 6

1157
00:49:59,829 --> 00:49:58,079
23 am central today putting it on its

1158
00:50:02,710 --> 00:49:59,839
journey back towards a landing in new

1159
00:50:04,150 --> 00:50:02,720
mexico just 20 minutes away from now um

1160
00:50:05,349 --> 00:50:04,160
we'll be coming up on that entry

1161
00:50:07,510 --> 00:50:05,359
interface that we've been talking about

1162
00:50:08,790 --> 00:50:07,520
in about four and a half minutes but

1163
00:50:10,710 --> 00:50:08,800

we'll keep talking with tori for a

1164

00:50:13,349 --> 00:50:10,720

little longer

1165

00:50:16,790 --> 00:50:13,359

victoria speaking of the camera system

1166

00:50:18,790 --> 00:50:16,800

um it's of course made for uh made for

1167

00:50:21,270 --> 00:50:18,800

the crew that's going to be flying this

1168

00:50:23,349 --> 00:50:21,280

same vehicle after pcm and of course

1169

00:50:25,510 --> 00:50:23,359

before that there'll be the crude flight

1170

00:50:28,230 --> 00:50:25,520

test mission with boeing astronaut chris

1171

00:50:29,349 --> 00:50:28,240

ferguson and s astronaut nicole mann

1172

00:50:32,309 --> 00:50:29,359

and uh

1173

00:50:33,829 --> 00:50:32,319

mike fink um what are what are some of

1174

00:50:37,430 --> 00:50:33,839

what are some of the models that you

1175

00:50:39,910 --> 00:50:37,440

followed before for um for really

1176
00:50:42,150 --> 00:50:39,920
what the crew wants to uh for what the

1177
00:50:44,710 --> 00:50:42,160
crew wants to show what uh

1178
00:50:47,030 --> 00:50:44,720
what's important to them to be seen

1179
00:50:49,349 --> 00:50:47,040
so we designed this camera system

1180
00:50:51,510 --> 00:50:49,359
extensively working with chris ferguson

1181
00:50:54,630 --> 00:50:51,520
and making sure that he was comfortable

1182
00:50:56,309 --> 00:50:54,640
with the views and also with um with how

1183
00:50:59,109 --> 00:50:56,319
close and up up close and personal we

1184
00:51:00,710 --> 00:50:59,119
would be inside the crew cabin so

1185
00:51:02,390 --> 00:51:00,720
that sort of data that we're going to be

1186
00:51:04,150 --> 00:51:02,400
able to get from four different camera

1187
00:51:06,230 --> 00:51:04,160
views on the interior of the starliner

1188
00:51:08,230 --> 00:51:06,240

is going to be really valuable to

1189

00:51:10,470 --> 00:51:08,240

training astronauts and how to use our

1190

00:51:12,069 --> 00:51:10,480

systems down the road and also to

1191

00:51:13,030 --> 00:51:12,079

sharing the starliner story with the

1192

00:51:14,790 --> 00:51:13,040

public

1193

00:51:17,030 --> 00:51:14,800

now for cft we're going to have some

1194

00:51:18,390 --> 00:51:17,040

enhanced capability uh we're going to be

1195

00:51:21,109 --> 00:51:18,400

able to show

1196

00:51:22,870 --> 00:51:21,119

uh docking live through the iss you'll

1197

00:51:25,109 --> 00:51:22,880

be able to see the hatch opening

1198

00:51:28,390 --> 00:51:25,119

ceremony and the crew

1199

00:51:30,230 --> 00:51:28,400

greeting the iss crew for cft so

1200

00:51:33,030 --> 00:51:30,240

that sort of being moments of being able

1201
00:51:35,510 --> 00:51:33,040
to capture is not only important for the

1202
00:51:37,430 --> 00:51:35,520
crew you know to be able to

1203
00:51:39,430 --> 00:51:37,440
to understand how the systems work and

1204
00:51:41,910 --> 00:51:39,440
to be able to train others past them but

1205
00:51:44,150 --> 00:51:41,920
also to just be able to share the story

1206
00:51:46,630 --> 00:51:44,160
and show everyone you know that we've

1207
00:51:48,790 --> 00:51:46,640
had a successful docking

1208
00:51:50,870 --> 00:51:48,800
thank you tori we are less than three

1209
00:51:53,030 --> 00:51:50,880
minutes away from starliner's entry

1210
00:51:56,309 --> 00:51:53,040
interface with the atmosphere two

1211
00:51:59,270 --> 00:51:56,319
minutes 43 seconds this puts us at 18

1212
00:52:02,630 --> 00:51:59,280
minutes 31 seconds from landing at white

1213
00:52:07,430 --> 00:52:04,710

we're already beginning to see the uh

1214

00:52:10,309 --> 00:52:07,440

the altitude drop for starliner really

1215

00:52:11,750 --> 00:52:10,319

steadily about 95 miles above the earth

1216

00:52:16,069 --> 00:52:11,760

right now and uh

1217

00:52:19,349 --> 00:52:17,750

flight director richard jones and his

1218

00:52:27,670 --> 00:52:19,359

team of mission controllers are

1219

00:52:27,680 --> 00:52:34,870

currently starliner reports 147 000 feet

1220

00:52:38,309 --> 00:52:37,109

moving under the mach 25 orbital

1221

00:53:52,549 --> 00:52:38,319

velocity

1222

00:53:58,710 --> 00:53:54,470

and at starliner mission control in

1223

00:54:04,150 --> 00:54:01,349

we are 40 seconds away from entry

1224

00:54:07,510 --> 00:54:04,160

interface now 34 seconds starliner

1225

00:54:12,630 --> 00:54:07,520

continues in the proper attitude

1226
00:54:16,790 --> 00:54:12,640
altitude 127 000 feet at 127 000 meters

1227
00:54:18,630 --> 00:54:16,800
apologies 126 000 meters

1228
00:54:20,549 --> 00:54:18,640
and we are right uh right on top of that

1229
00:54:22,150 --> 00:54:20,559
entry interface this is when starliner

1230
00:54:24,390 --> 00:54:22,160
would be seeing those 3000 degrees

1231
00:54:26,390 --> 00:54:24,400
fahrenheit temperatures

1232
00:54:28,069 --> 00:54:26,400
should be just about 75 miles above the

1233
00:54:30,069 --> 00:54:28,079
earth at this point

1234
00:54:31,510 --> 00:54:30,079
we did want to make sure as people are

1235
00:54:33,430 --> 00:54:31,520
tuning in that they are aware that

1236
00:54:35,750 --> 00:54:33,440
following uh starlander's touchdown we

1237
00:54:38,069 --> 00:54:35,760
will be hosting a post landing news

1238
00:54:39,990 --> 00:54:38,079

conference here on nasa tv at 9 00 am

1239

00:54:41,589 --> 00:54:40,000

central time

1240

00:54:43,349 --> 00:54:41,599

that's going to feature jim bridenstine

1241

00:54:45,349 --> 00:54:43,359

the nasa administrator

1242

00:54:52,549 --> 00:54:45,359

jim tilton from boeing and steve stitch

1243

00:54:52,559 --> 00:55:32,710

the incorrect

1244

00:55:37,510 --> 00:55:34,710

and starliner is

1245

00:55:39,430 --> 00:55:37,520

a minute into entry interface into that

1246

00:55:41,910 --> 00:55:39,440

phase of

1247

00:55:43,750 --> 00:55:41,920

maximum heating during this uh

1248

00:55:45,910 --> 00:55:43,760

re-entry

1249

00:55:48,950 --> 00:55:45,920

back over the pacific

1250

00:55:51,109 --> 00:55:48,960

starliner is flying as a crew module

1251
00:55:52,470 --> 00:55:51,119
alone the service module has been

1252
00:55:58,390 --> 00:55:52,480
jettisoned

1253
00:56:04,069 --> 00:56:01,990
altitude 104 000 meters

1254
00:56:05,750 --> 00:56:04,079
entire team here in the room is uh

1255
00:56:07,430 --> 00:56:05,760
quietly watching

1256
00:56:09,670 --> 00:56:07,440
making sure all the systems continue to

1257
00:56:12,390 --> 00:56:09,680
look good we've also got a number of

1258
00:56:13,510 --> 00:56:12,400
vips in the viewing room as well

1259
00:56:15,910 --> 00:56:13,520
we've got

1260
00:56:18,870 --> 00:56:15,920
nasa's administrator jim breidenstein as

1261
00:56:21,589 --> 00:56:18,880
well as boeing's jim chilton and

1262
00:56:29,430 --> 00:56:21,599
the the boeing defense in space ceo

1263
00:56:32,470 --> 00:56:31,510

and we are seeing now on the landing

1264

00:56:34,230 --> 00:56:32,480

track

1265

00:56:39,510 --> 00:56:34,240

here in mission control

1266

00:56:39,520 --> 00:57:00,470

as starliner moves over the pacific

1267

00:57:04,549 --> 00:57:03,349

starliner is 13 minutes 27 seconds from

1268

00:57:30,470 --> 00:57:04,559

landing

1269

00:57:35,750 --> 00:57:32,950

starliner is entering the

1270

00:57:38,630 --> 00:57:35,760

expected blackout region when the plasma

1271

00:57:39,750 --> 00:57:38,640

forms over the spacecraft and the

1272

00:57:41,829 --> 00:57:39,760

antennas

1273

00:57:43,990 --> 00:57:41,839

cannot adequately

1274

00:57:48,150 --> 00:57:44,000

communicate with the

1275

00:57:52,950 --> 00:57:51,510

currently 51 miles above the earth still

1276

00:57:54,150 --> 00:57:52,960

heading in

1277

00:57:55,829 --> 00:57:54,160

making its way through that entry

1278

00:57:58,150 --> 00:57:55,839

interface about three minutes into it at

1279

00:57:59,750 --> 00:57:58,160

this point the next uh next milestone

1280

00:58:03,030 --> 00:57:59,760

we'll be looking for is the forward heat

1281

00:58:06,710 --> 00:58:03,040

shield jettison that should be coming up

1282

00:58:10,950 --> 00:58:08,789

controllers report good attitude good

1283

00:58:18,789 --> 00:58:10,960

roll to the

1284

00:58:18,799 --> 00:58:47,510

starliner at 75 000 meters

1285

00:58:47,520 --> 00:58:50,630

jesus

1286

00:58:54,390 --> 00:58:52,230

starliner moving through earth's

1287

00:58:55,910 --> 00:58:54,400

atmosphere going through the

1288

00:58:58,069 --> 00:58:55,920

injury phase

1289

00:59:01,109 --> 00:58:58,079

11 minutes 30 seconds to landing at

1290

00:59:02,950 --> 00:59:01,119

white sands where a team of

1291

00:59:05,349 --> 00:59:02,960

specialists are

1292

00:59:07,990 --> 00:59:05,359

waiting to recover the vehicle

1293

00:59:10,710 --> 00:59:08,000

this vehicle will be reused after this

1294

00:59:13,109 --> 00:59:10,720

mission it'll be taken to the starliner

1295

00:59:23,910 --> 00:59:13,119

factory in florida and refurbished

1296

00:59:49,109 --> 00:59:25,670

it will be flown

1297

00:59:55,030 --> 00:59:51,829

five minutes into entry interface we are

1298

00:59:57,910 --> 00:59:55,040

now 10 minutes 34 seconds before landing

1299

01:00:00,950 --> 00:59:57,920

at white sands new mexico starliner is

1300

01:00:12,630 --> 01:00:00,960

controllers report the spacecraft is in

1301

01:00:16,069 --> 01:00:14,549

about five minutes away what from when

1302

01:00:17,829 --> 01:00:16,079

we expect that forward heat shield

1303

01:00:19,270 --> 01:00:17,839

jettison the first of the heat shields

1304

01:00:21,190 --> 01:00:19,280

that will be jettisoned

1305

01:00:22,710 --> 01:00:21,200

in the meantime we've got uh 10 minutes

1306

01:00:24,069 --> 01:00:22,720

until landing and the starliner will be

1307

01:00:25,910 --> 01:00:24,079

heading in the next few minutes over the

1308

01:00:28,630 --> 01:00:25,920

baja peninsula

1309

01:00:31,109 --> 01:00:28,640

part of mexico and then into new new

1310

01:00:33,109 --> 01:00:31,119

mexico in the white house white sands

1311

01:00:35,190 --> 01:00:33,119

space harbor

1312

01:00:37,349 --> 01:00:35,200

and we have confirmation that the

1313

01:00:40,309 --> 01:00:37,359

on-site vehicle at white sands the

1314

01:00:54,069 --> 01:00:40,319

tracking vehicle is tracking starliner

1315

01:00:54,079 --> 01:01:18,870

9 minutes 30 seconds to landing

1316

01:01:22,950 --> 01:01:21,829

and fido reports that starliner is on

1317

01:01:24,870 --> 01:01:22,960

track

1318

01:01:27,270 --> 01:01:24,880

continuing its descent

1319

01:01:28,470 --> 01:01:27,280

to white sands new mexico altitude 51

1320

01:01:30,789 --> 01:01:28,480

000 meters

1321

01:02:03,109 --> 01:01:30,799

it's about 32 miles above mexico at the

1322

01:02:03,119 --> 01:02:07,910

here

1323

01:02:12,470 --> 01:02:10,390

i'm getting our first views

1324

01:02:15,589 --> 01:02:12,480

we are getting our first views from the

1325

01:02:17,829 --> 01:02:15,599

nasa wb-57 we see

1326

01:02:19,589 --> 01:02:17,839

we see their starliner continuing its

1327

01:02:21,510 --> 01:02:19,599

plunge through the atmosphere we are

1328

01:02:24,710 --> 01:02:21,520

eight minutes and eight seconds from

1329

01:02:28,630 --> 01:02:27,190

that image is infrared because of it

1330

01:02:31,990 --> 01:02:28,640

being

1331

01:02:34,870 --> 01:02:32,000

dark of course over the skies of uh

1332

01:02:37,990 --> 01:02:34,880

of new mexico right now

1333

01:02:40,309 --> 01:02:38,000

still about 28 miles above the earth

1334

01:02:41,910 --> 01:02:40,319

as it continues making its way uh just

1335

01:02:43,109 --> 01:02:41,920

about crossing over the new mexico

1336

01:02:44,630 --> 01:02:43,119

border now

1337

01:02:47,190 --> 01:02:44,640

this video again coming from one of

1338

01:02:51,109 --> 01:02:47,200

nasa's wb-57 planes using infrared

1339

01:02:55,670 --> 01:02:53,190

all systems are reported

1340

01:03:00,230 --> 01:02:55,680

doing well spacecraft is doing well

1341

01:03:03,270 --> 01:03:01,910

seven half minutes till landing and just

1342

01:03:05,029 --> 01:03:03,280

a couple minutes now until we should

1343

01:03:21,270 --> 01:03:05,039

hear about the forward heat shield

1344

01:03:25,510 --> 01:03:23,349

great view here you can't see much since

1345

01:03:28,789 --> 01:03:25,520

it's dark but uh it's good to know that

1346

01:03:30,630 --> 01:03:28,799

starliner is on its way home and and

1347

01:03:32,630 --> 01:03:30,640

this is actually a little little better

1348

01:03:36,309 --> 01:03:32,640

than i was hoping considering that it's

1349

01:03:40,230 --> 01:03:37,990

very good to see this very good to see

1350

01:03:43,990 --> 01:03:40,240

this everything is looking

1351

01:03:46,150 --> 01:03:44,000

that image is exactly what we expect

1352

01:03:47,750 --> 01:03:46,160

the thermal protection system on

1353

01:03:52,549 --> 01:03:47,760

starliner of course protecting the

1354

01:03:57,190 --> 01:03:52,559

spacecraft from the heat of of entry

1355

01:03:59,430 --> 01:03:57,200

slowing speed down now mach 3.5

1356

01:04:01,829 --> 01:03:59,440

of course orbital velocity is mach 25 so

1357

01:04:04,710 --> 01:04:01,839

that gives you an idea of the velocity

1358

01:04:04,720 --> 01:04:25,829

now 17 miles above new mexico

1359

01:04:28,710 --> 01:04:27,430

six minutes to landing at white sands

1360

01:04:30,470 --> 01:04:28,720

new mexico

1361

01:04:37,190 --> 01:04:30,480

starliner remains

1362

01:05:19,270 --> 01:04:39,670

speed mach 1.1

1363

01:05:36,069 --> 01:05:21,349

landing recovery team has visual on

1364

01:05:36,079 --> 01:05:40,549

ten thousand feet

1365

01:05:44,789 --> 01:05:42,789

it's about 6.2 miles still above new

1366

01:05:47,029 --> 01:05:44,799

mexico but uh

1367

01:05:48,470 --> 01:05:47,039

we did just forward heat shield deploy

1368

01:05:52,230 --> 01:05:48,480

confirmation of that forward heat shield

1369

01:05:58,150 --> 01:05:52,240

deploy everything drugs out

1370

01:06:02,069 --> 01:05:59,990

the drugs will start stabilizing the

1371

01:06:05,910 --> 01:06:02,079

starliner and slowing it down before the

1372

01:06:05,920 --> 01:06:11,109

main parachutes rather not each shield

1373

01:06:21,029 --> 01:06:13,589

vehicle is slowing rapidly

1374

01:06:32,710 --> 01:06:23,190

and landing site reports the sonic booms

1375

01:06:36,470 --> 01:06:34,950

and we can see on that image the uh the

1376

01:06:57,510 --> 01:06:36,480

two pilot shoots

1377

01:07:18,789 --> 01:07:01,430

three minutes 30 seconds from landing

1378

01:07:22,870 --> 01:07:20,950

and we see three main shoots

1379

01:07:31,670 --> 01:07:22,880

three main shoots

1380

01:07:34,309 --> 01:07:31,680

and blue as

1381

01:07:40,870 --> 01:07:34,319

starliner descends

1382

01:07:46,630 --> 01:07:43,029

and the rotation handle has deployed

1383

01:07:48,549 --> 01:07:46,640

that will level starliner as it descends

1384

01:07:51,750 --> 01:07:48,559

basic shield has jettison that is the

1385

01:07:53,990 --> 01:07:51,760

base heat shield falling away as planned

1386

01:07:55,510 --> 01:07:54,000

airbags are inflating

1387

01:07:57,510 --> 01:07:55,520

and that is the last of the milestones

1388

01:07:59,029 --> 01:07:57,520

so now all left is for starliner to

1389

01:08:01,589 --> 01:07:59,039

float down to the

1390

01:08:03,910 --> 01:08:01,599

surface of the desert in new mexico

1391

01:08:05,750 --> 01:08:03,920

everything continuing to look good uh on

1392

01:08:07,349 --> 01:08:05,760

this camera that we're getting from the

1393

01:08:10,390 --> 01:08:07,359

wp57

1394

01:08:11,349 --> 01:08:10,400

uh cameras infrared cameras

1395

01:08:12,870 --> 01:08:11,359

giving us

1396

01:08:15,750 --> 01:08:12,880

as good of view as we could expect at

1397

01:08:19,269 --> 01:08:17,430

two minutes 12 seconds to landing

1398

01:08:44,309 --> 01:08:19,279

starliner descending under three good

1399

01:08:48,870 --> 01:08:46,229

all six airbags are confirmed to have

1400

01:08:50,829 --> 01:08:48,880

deployed and they are fully inflated as

1401
01:08:53,990 --> 01:08:50,839
starliner

1402
01:08:57,349 --> 01:08:54,000
descends the desert down in white sands

1403
01:09:03,430 --> 01:08:57,359
just about 800 meters left to go

1404
01:09:29,910 --> 01:09:05,749
great great imagery there of it

1405
01:09:33,430 --> 01:09:31,669
less than one minute to landing less

1406
01:09:36,070 --> 01:09:33,440
than one minute to touchdown at white

1407
01:09:37,990 --> 01:09:36,080
sands new mexico starliner

1408
01:09:59,110 --> 01:09:38,000
floating smoothly and softly under three

1409
01:10:04,229 --> 01:10:02,070
just 300 meters left to go that's 984

1410
01:10:07,990 --> 01:10:04,239
feet

1411
01:10:49,350 --> 01:10:10,310
20 seconds 20 seconds to landing the

1412
01:10:52,149 --> 01:10:50,229
and

1413
01:10:54,310 --> 01:10:52,159

starliner touches down in the desert in

1414

01:10:56,149 --> 01:10:54,320

new mexico and historic landing in white

1415

01:10:57,590 --> 01:10:56,159

sands new mexico concludes the first

1416

01:10:59,350 --> 01:10:57,600

flight test of boeing starliner

1417

01:11:01,669 --> 01:10:59,360

spacecraft the first time an

1418

01:11:04,470 --> 01:11:01,679

american-made human-rated capsule has

1419

01:11:08,229 --> 01:11:04,480

landed on land that took place right at

1420

01:11:11,990 --> 01:11:08,239

6 58 a.m central time two days one hours

1421

01:11:13,830 --> 01:11:12,000

and 21 minutes into starliner's mission

1422

01:11:16,470 --> 01:11:13,840

congratulations starliner

1423

01:11:18,870 --> 01:11:16,480

congratulations indeed

1424

01:11:20,870 --> 01:11:18,880

flawless flight back to earth

1425

01:11:22,229 --> 01:11:20,880

good landing this morning now the

1426

01:11:23,110 --> 01:11:22,239

spotlight is going to shift a little bit

1427

01:11:25,189 --> 01:11:23,120

to the

1428

01:11:27,110 --> 01:11:25,199

landing recovery team waiting for it out

1429

01:11:29,110 --> 01:11:27,120

there in new mexico they have to wait

1430

01:11:30,950 --> 01:11:29,120

for clearance before they

1431

01:11:33,590 --> 01:11:30,960

start heading over to the vehicle but

1432

01:11:37,430 --> 01:11:33,600

starliner has touched down at white

1433

01:11:41,270 --> 01:11:39,510

main shoots are jettisoned

1434

01:11:43,430 --> 01:11:41,280

that'll keep those shoots from pulling

1435

01:11:45,270 --> 01:11:43,440

uh starliner away as the landing

1436

01:11:56,070 --> 01:11:45,280

recovery team is

1437

01:12:02,709 --> 01:11:58,550

once again today's landing time was uh 6

1438

01:12:05,110 --> 01:12:02,719

58 a.m central time or 5 58 a.m mountain

1439

01:12:08,390 --> 01:12:05,120

time local for starliner

1440

01:12:10,390 --> 01:12:08,400

that again was two days one hour and 21

1441

01:12:13,510 --> 01:12:10,400

minutes into starliner's

1442

01:12:15,510 --> 01:12:13,520

historic orbital flight test

1443

01:12:17,590 --> 01:12:15,520

and starliner systems have switched to

1444

01:12:19,270 --> 01:12:17,600

ground mode

1445

01:12:21,110 --> 01:12:19,280

right now that means the

1446

01:12:23,110 --> 01:12:21,120

vehicle is taking the steps it needs

1447

01:12:27,669 --> 01:12:23,120

mission control remains in command of

1448

01:12:33,669 --> 01:12:30,070

we will soon see the landing recovery

1449

01:12:38,229 --> 01:12:36,070

and we're going now to uh boeing's josh

1450

01:12:39,669 --> 01:12:38,239

barrett out with the landing recovery

1451

01:12:41,270 --> 01:12:39,679

team josh it was a beautiful landing

1452

01:12:45,189 --> 01:12:41,280

from here i can only imagine how it is

1453

01:12:49,189 --> 01:12:47,189

steve it was a beautiful landing from

1454

01:12:50,310 --> 01:12:49,199

here we had a spotlight on the ground we

1455

01:12:51,990 --> 01:12:50,320

could actually see some of those

1456

01:12:53,430 --> 01:12:52,000

ordinance fires up in the upper

1457

01:12:55,669 --> 01:12:53,440

atmosphere when that ford heat shield

1458

01:12:57,270 --> 01:12:55,679

was deploying we could see the strobing

1459

01:12:59,590 --> 01:12:57,280

light on the vehicle all the way down

1460

01:13:01,750 --> 01:12:59,600

and then when those parachutes deployed

1461

01:13:03,990 --> 01:13:01,760

in the spotlight it looked almost

1462

01:13:06,310 --> 01:13:04,000

ghostly as it drifted down and touched

1463

01:13:08,709 --> 01:13:06,320

down at 558 here as you can see we are

1464

01:13:11,189 --> 01:13:08,719
moving in the convoy right now

1465

01:13:12,630 --> 01:13:11,199
we've got our h2 which is actually the

1466

01:13:14,149 --> 01:13:12,640
connection that i'm talking to you guys

1467

01:13:15,590 --> 01:13:14,159
back from right now

1468

01:13:17,669 --> 01:13:15,600
right in front of us

1469

01:13:19,669 --> 01:13:17,679
our recovery operations leader we call

1470

01:13:21,830 --> 01:13:19,679
him roll he's in contact with the

1471

01:13:23,830 --> 01:13:21,840
recovery operations coordinator that's

1472

01:13:25,669 --> 01:13:23,840
rock and roll for you

1473

01:13:26,709 --> 01:13:25,679
they are leading us out to the crew

1474

01:13:28,630 --> 01:13:26,719
module

1475

01:13:31,189 --> 01:13:28,640
i can actually see it strobing out in

1476

01:13:33,270 --> 01:13:31,199

the distance on the horizon we have the

1477

01:13:35,270 --> 01:13:33,280

gps coordinates locked in

1478

01:13:36,709 --> 01:13:35,280

that strobe is still going on so we're

1479

01:13:38,790 --> 01:13:36,719

just going to follow that all the way

1480

01:13:40,630 --> 01:13:38,800

into the crew module and then once again

1481

01:13:42,709 --> 01:13:40,640

gold team will be the first to approach

1482

01:13:44,709 --> 01:13:42,719

the vehicle we heard the radio call that

1483

01:13:47,510 --> 01:13:44,719

there's no hazardous conditions for the

1484

01:13:49,030 --> 01:13:47,520

lrt that's the landing and recovery team

1485

01:13:50,630 --> 01:13:49,040

but we still want to make sure that

1486

01:13:52,709 --> 01:13:50,640

everything is safe before the teams get

1487

01:13:54,790 --> 01:13:52,719

around the vehicle so again gold team is

1488

01:13:56,790 --> 01:13:54,800

going to approach the vehicle sniff out

1489

01:13:59,030 --> 01:13:56,800

make sure there's no residual hydrazine

1490

01:14:00,870 --> 01:13:59,040

on the outside or there's no propellant

1491

01:14:02,870 --> 01:14:00,880

leaks silver team's going to go in and

1492

01:14:05,110 --> 01:14:02,880

discharge the vehicle and then green

1493

01:14:06,630 --> 01:14:05,120

team is going to go to go in and start

1494

01:14:07,510 --> 01:14:06,640

getting that environmental closure

1495

01:14:09,110 --> 01:14:07,520

around

1496

01:14:10,550 --> 01:14:09,120

the vehicle and

1497

01:14:11,910 --> 01:14:10,560

get some ground heating to it because

1498

01:14:14,149 --> 01:14:11,920

it's so cold we want to make sure those

1499

01:14:15,189 --> 01:14:14,159

propellant lines don't freeze and then

1500

01:14:17,510 --> 01:14:15,199

um

1501

01:14:19,030 --> 01:14:17,520

the red team moves in gets access to the

1502

01:14:21,030 --> 01:14:19,040

hatch

1503

01:14:22,790 --> 01:14:21,040

and then i think we'll probably wrap up

1504

01:14:23,910 --> 01:14:22,800

this broadcast right around hatch closer

1505

01:14:25,270 --> 01:14:23,920

when there's crew members in there

1506

01:14:27,110 --> 01:14:25,280

obviously we'll stick around until

1507

01:14:28,790 --> 01:14:27,120

everybody's out but you know today

1508

01:14:31,030 --> 01:14:28,800

getting that hatch open and getting

1509

01:14:33,110 --> 01:14:31,040

access to the interior is really uh the

1510

01:14:35,270 --> 01:14:33,120

final big milestone for the landing and

1511

01:14:37,110 --> 01:14:35,280

recovery team you know over to our east

1512

01:14:38,790 --> 01:14:37,120

we're starting to see the sun come up so

1513

01:14:40,470 --> 01:14:38,800

uh hopefully we'll have a little better

1514

01:14:42,709 --> 01:14:40,480

lighting for you as we get into these

1515

01:14:44,390 --> 01:14:42,719

operations but

1516

01:14:46,870 --> 01:14:44,400

you know just a great feeling out here

1517

01:14:48,470 --> 01:14:46,880

hearing crew module touchdown

1518

01:14:50,630 --> 01:14:48,480

on the radios just gave everyone here

1519

01:14:52,149 --> 01:14:50,640

chills there's a lot of cheers

1520

01:14:54,870 --> 01:14:52,159

very happy team and they're ready to

1521

01:14:56,950 --> 01:14:54,880

rock so back to you guys steve

1522

01:14:59,189 --> 01:14:56,960

thank you josh so great to hear that

1523

01:15:00,870 --> 01:14:59,199

richard jones flight director here at

1524

01:15:02,630 --> 01:15:00,880

mission control

1525

01:15:04,950 --> 01:15:02,640

said that uh looks like it's going to be

1526

01:15:07,669 --> 01:15:04,960

a smooth ride for cft judging by how

1527

01:15:09,350 --> 01:15:07,679

softly and smoothly this oft vehicle

1528

01:15:10,870 --> 01:15:09,360

this orbital flight test vehicle came

1529

01:15:13,110 --> 01:15:10,880

down this morning

1530

01:15:15,030 --> 01:15:13,120

i'm sure the uh the astronauts on their

1531

01:15:17,350 --> 01:15:15,040

way to see it will will get their own

1532

01:15:19,990 --> 01:15:17,360

their assessments as well hopefully uh

1533

01:15:22,390 --> 01:15:20,000

be just as enthusiastic as that i know

1534

01:15:24,149 --> 01:15:22,400

they're excited to be there um just a

1535

01:15:26,229 --> 01:15:24,159

reminder we've got a lot of work left

1536

01:15:29,270 --> 01:15:26,239

for this team here in the in the room

1537

01:15:32,630 --> 01:15:29,280

but um in just a little while we will be

1538

01:15:34,070 --> 01:15:32,640

going to a post landing news conference

1539

01:15:35,270 --> 01:15:34,080

uh that's going to be at 9 00 a.m

1540

01:15:37,189 --> 01:15:35,280

central time so we've still got a couple

1541

01:15:39,350 --> 01:15:37,199

of hours to to follow along with

1542

01:15:40,790 --> 01:15:39,360

starliner activities here on the ground

1543

01:15:43,270 --> 01:15:40,800

but we will be hearing from jim

1544

01:15:46,229 --> 01:15:43,280

bridenstine jim chilton and steve stitch

1545

01:15:47,750 --> 01:15:46,239

at that time again 9 a.m central

1546

01:15:49,750 --> 01:15:47,760

and also the

1547

01:15:52,550 --> 01:15:49,760

landing team there in new mexico there

1548

01:15:55,110 --> 01:15:52,560

in white sands reports that quote we hit

1549

01:15:57,590 --> 01:15:55,120

the bullseye so starliner came down

1550

01:15:59,910 --> 01:15:57,600

exactly where it was supposed to right

1551
01:16:03,430 --> 01:15:59,920
at white sands right where it needed to

1552
01:16:04,390 --> 01:16:03,440
be it was a spectacular spectacular

1553
01:16:08,630 --> 01:16:04,400
entry

1554
01:16:15,430 --> 01:16:11,510
remarkable images coming down

1555
01:16:20,390 --> 01:16:17,510
we're also getting our first uh our

1556
01:16:22,790 --> 01:16:20,400
first look through the darkness at the

1557
01:16:25,189 --> 01:16:22,800
starliner capsule as it sits on the

1558
01:16:27,189 --> 01:16:25,199
desert floor there in white sands

1559
01:16:30,390 --> 01:16:27,199
this picture is from our

1560
01:16:40,310 --> 01:16:30,400
recovery team as they move out towards

1561
01:16:45,590 --> 01:16:42,070
and you heard a little bit earlier from

1562
01:16:50,550 --> 01:16:45,600
two of our starliner engineers jim may

1563
01:16:58,550 --> 01:16:53,510

they are standing by in the

1564

01:17:02,630 --> 01:16:59,510

jim

1565

01:17:04,630 --> 01:17:02,640

and tori

1566

01:17:07,189 --> 01:17:04,640

look great from here new mexico reports

1567

01:17:09,189 --> 01:17:07,199

it looked good i can only imagine the uh

1568

01:17:11,669 --> 01:17:09,199

this the uh feelings that you all have

1569

01:17:14,709 --> 01:17:11,679

experienced this morning

1570

01:17:17,189 --> 01:17:14,719

thanks steve it has been an absolutely

1571

01:17:18,470 --> 01:17:17,199

amazing morning um

1572

01:17:19,669 --> 01:17:18,480

really trying just to keep it together

1573

01:17:23,669 --> 01:17:19,679

and not cry

1574

01:17:25,830 --> 01:17:23,679

online tv but um it it is a fulfillment

1575

01:17:27,830 --> 01:17:25,840

of seven and a half years of work to see

1576

01:17:30,470 --> 01:17:27,840

this happen and happen so successfully

1577

01:17:31,830 --> 01:17:30,480

and make it look so easy so this is this

1578

01:17:32,950 --> 01:17:31,840

is just an absolutely great morning for

1579

01:17:34,709 --> 01:17:32,960

me

1580

01:17:37,350 --> 01:17:34,719

that's you know i

1581

01:17:38,870 --> 01:17:37,360

i feel the same way

1582

01:17:41,189 --> 01:17:38,880

you know we've been training it's not

1583

01:17:42,950 --> 01:17:41,199

just us as engineers but um you know

1584

01:17:44,709 --> 01:17:42,960

we've put a lot of work into training

1585

01:17:46,550 --> 01:17:44,719

all of the flight crew

1586

01:17:49,110 --> 01:17:46,560

and the mission controllers as well

1587

01:17:50,709 --> 01:17:49,120

you know so being able to get them ready

1588

01:17:52,470 --> 01:17:50,719

for this flight and have them control

1589

01:17:54,870 --> 01:17:52,480

the vehicle command the vehicle to come

1590

01:17:56,709 --> 01:17:54,880

down safely in the desert

1591

01:17:58,709 --> 01:17:56,719

means good things looking forward for

1592

01:18:01,510 --> 01:17:58,719

our future crude missions as well yeah

1593

01:18:02,550 --> 01:18:01,520

and jim it's such a great synergy

1594

01:18:05,030 --> 01:18:02,560

between

1595

01:18:06,790 --> 01:18:05,040

not only the the technical systems right

1596

01:18:08,870 --> 01:18:06,800

but also our people systems we have such

1597

01:18:10,470 --> 01:18:08,880

great people on console we've had such

1598

01:18:12,550 --> 01:18:10,480

great people out in the desert and we

1599

01:18:13,910 --> 01:18:12,560

also have a a really great technical

1600

01:18:15,910 --> 01:18:13,920

vehicle so like seeing all of these

1601
01:18:18,229 --> 01:18:15,920
things happen together is because of the

1602
01:18:20,070 --> 01:18:18,239
team that really made this happen so

1603
01:18:22,149 --> 01:18:20,080
it's just excellent to see exactly the

1604
01:18:23,830 --> 01:18:22,159
team effort's great

1605
01:18:26,310 --> 01:18:23,840
and for those just joining us about

1606
01:18:29,430 --> 01:18:26,320
eight minutes ago starliner touched down

1607
01:18:30,550 --> 01:18:29,440
on the sands of white sands new mexico

1608
01:18:33,990 --> 01:18:30,560
at uh

1609
01:18:36,550 --> 01:18:34,000
6 58 a.m central time 5 58

1610
01:18:39,430 --> 01:18:36,560
a.m local mountain time out in out at

1611
01:18:44,070 --> 01:18:41,750
seeing a replay here of that touchdown

1612
01:18:45,910 --> 01:18:44,080
again it uh everything happened right on

1613
01:18:48,950 --> 01:18:45,920

time all the milestones the heat shield

1614

01:18:51,830 --> 01:18:48,960

jettisons the parachutes deployment the

1615

01:18:53,430 --> 01:18:51,840

uh airbags filling up everything

1616

01:18:57,830 --> 01:18:53,440

everything giving good indications for

1617

01:19:02,870 --> 01:19:00,950

a lot of a lot of activities of course

1618

01:19:04,149 --> 01:19:02,880

took took place the spacecraft in

1619

01:19:05,830 --> 01:19:04,159

control

1620

01:19:09,270 --> 01:19:05,840

of them

1621

01:19:11,590 --> 01:19:09,280

during that final descent tori and jim a

1622

01:19:13,830 --> 01:19:11,600

lot of things for the spacecraft to do

1623

01:19:15,669 --> 01:19:13,840

and it but it went really really well it

1624

01:19:18,149 --> 01:19:15,679

looked like from your

1625

01:19:20,070 --> 01:19:18,159

technical knowledge

1626

01:19:22,070 --> 01:19:20,080

what do you think

1627

01:19:23,990 --> 01:19:22,080

so i i just have to say that heat shield

1628

01:19:26,709 --> 01:19:24,000

jettison was one of the most beautiful

1629

01:19:28,950 --> 01:19:26,719

things i've ever seen uh it it looked

1630

01:19:31,669 --> 01:19:28,960

really good um from this end i'm really

1631

01:19:33,189 --> 01:19:31,679

excited to see some of the more up close

1632

01:19:35,669 --> 01:19:33,199

images that i'm sure we're going to get

1633

01:19:37,910 --> 01:19:35,679

from the ground team and also be able to

1634

01:19:39,510 --> 01:19:37,920

uh to really dig into the data from the

1635

01:19:41,030 --> 01:19:39,520

vehicle now that it's back here on earth

1636

01:19:42,390 --> 01:19:41,040

i i don't think we could have had a

1637

01:19:44,390 --> 01:19:42,400

better flight

1638

01:19:46,390 --> 01:19:44,400

yeah and you know the vehicle we

1639

01:19:48,070 --> 01:19:46,400

simulate this re-entry especially with

1640

01:19:49,430 --> 01:19:48,080

the the actual flight crews and the

1641

01:19:50,390 --> 01:19:49,440

mission controllers for the uncrewed

1642

01:19:53,110 --> 01:19:50,400

flight

1643

01:19:55,030 --> 01:19:53,120

but seeing the vehicle nail the bullseye

1644

01:19:56,709 --> 01:19:55,040

all of the separation and ordinance

1645

01:19:58,390 --> 01:19:56,719

events happening exactly when they plan

1646

01:20:00,550 --> 01:19:58,400

to means that we've done a really good

1647

01:20:02,070 --> 01:20:00,560

job of modeling and planning for our

1648

01:20:03,990 --> 01:20:02,080

flight with our simulations the way that

1649

01:20:06,310 --> 01:20:04,000

we train everybody so seeing that work

1650

01:20:07,830 --> 01:20:06,320

just as we plan means that we've got a

1651
01:20:10,070 --> 01:20:07,840
good background moving forward into our

1652
01:20:13,110 --> 01:20:10,080
future flights

1653
01:20:14,790 --> 01:20:13,120
and just a reminder that

1654
01:20:17,189 --> 01:20:14,800
here we are about 10 minutes after

1655
01:20:19,430 --> 01:20:17,199
landing and the starliner landing

1656
01:20:22,229 --> 01:20:19,440
recovery team is making their way out to

1657
01:20:25,189 --> 01:20:22,239
the spacecraft we will hear more from

1658
01:20:27,270 --> 01:20:25,199
from josh barrett and nasa's dan hewitt

1659
01:20:29,990 --> 01:20:27,280
as they as they get closer to the

1660
01:20:32,390 --> 01:20:30,000
spacecraft coming a little bit later we

1661
01:20:34,950 --> 01:20:32,400
are talking right now with uh boeing's

1662
01:20:38,310 --> 01:20:34,960
tory wills pedrotty

1663
01:20:40,310 --> 01:20:38,320

and jim may both engineers um

1664

01:20:42,390 --> 01:20:40,320

in the starliner systems we're also

1665

01:20:44,950 --> 01:20:42,400

you're also seeing some of the uh

1666

01:20:47,510 --> 01:20:44,960

the replays of starliners

1667

01:20:51,350 --> 01:20:47,520

very successful very smooth landing this

1668

01:20:55,590 --> 01:20:53,590

jim you have the um

1669

01:20:58,870 --> 01:20:55,600

you worked uh you've both of course been

1670

01:21:00,870 --> 01:20:58,880

working throughout the last couple days

1671

01:21:02,390 --> 01:21:00,880

when did you uh jim when did you first

1672

01:21:04,149 --> 01:21:02,400

breathe your sigh of relief as you

1673

01:21:06,070 --> 01:21:04,159

watched it come down this morning uh you

1674

01:21:08,070 --> 01:21:06,080

know i don't think i really

1675

01:21:09,750 --> 01:21:08,080

let myself start deeply breathing until

1676

01:21:11,030 --> 01:21:09,760

we get to landing um

1677

01:21:12,870 --> 01:21:11,040

you know when when the mains came out

1678

01:21:14,390 --> 01:21:12,880

that means we're coming down slowly but

1679

01:21:16,149 --> 01:21:14,400

you know you really want to make sure

1680

01:21:18,070 --> 01:21:16,159

that the vehicle comes down soft and

1681

01:21:20,070 --> 01:21:18,080

safely because that means soft and safe

1682

01:21:21,110 --> 01:21:20,080

for the crew and so i once i hit the

1683

01:21:22,709 --> 01:21:21,120

ground i

1684

01:21:24,870 --> 01:21:22,719

let out a deep sigh

1685

01:21:27,110 --> 01:21:24,880

but a happy one i mean this is also just

1686

01:21:29,990 --> 01:21:27,120

a big moment right because we landed an

1687

01:21:32,550 --> 01:21:30,000

american capsule on land with a with an

1688

01:21:34,870 --> 01:21:32,560

airbag system that's like the first time

1689

01:21:36,629 --> 01:21:34,880

we've anybody has done this so this is

1690

01:21:38,950 --> 01:21:36,639

this is just really exciting to be a

1691

01:21:40,550 --> 01:21:38,960

part of this right and you know us

1692

01:21:42,390 --> 01:21:40,560

coming down safely on land means that

1693

01:21:45,110 --> 01:21:42,400

we're going to have the vehicle safe and

1694

01:21:47,189 --> 01:21:45,120

ready for sunny williams to fly on her

1695

01:21:48,310 --> 01:21:47,199

next mission

1696

01:21:49,110 --> 01:21:48,320

that and

1697

01:21:50,550 --> 01:21:49,120

you know

1698

01:21:53,030 --> 01:21:50,560

that means that we can safely bring back

1699

01:21:54,550 --> 01:21:53,040

the cargo that we're planning on uh

1700

01:21:57,350 --> 01:21:54,560

bringing back from station on the future

1701

01:21:59,030 --> 01:21:57,360

flights so we can get the research

1702

01:22:02,550 --> 01:21:59,040

continuing you know immediately after

1703

01:22:05,990 --> 01:22:04,390

we're hearing that uh richard jones here

1704

01:22:07,510 --> 01:22:06,000

in the flight control team has handed

1705

01:22:11,350 --> 01:22:07,520

authority of the vehicle over to the

1706

01:22:13,110 --> 01:22:11,360

landing recovery team um for for for

1707

01:22:14,709 --> 01:22:13,120

torrey and jim

1708

01:22:16,390 --> 01:22:14,719

you know i i know that you would

1709

01:22:18,070 --> 01:22:16,400

probably love to be there what would you

1710

01:22:19,750 --> 01:22:18,080

be looking for if you were able to be on

1711

01:22:21,990 --> 01:22:19,760

site

1712

01:22:25,030 --> 01:22:22,000

so i would probably be in an atv trying

1713

01:22:26,629 --> 01:22:25,040

to go pick up my heat shield from uh

1714

01:22:28,149 --> 01:22:26,639

from somewhere off in the desert now

1715

01:22:29,910 --> 01:22:28,159

it's going to be really important that

1716

01:22:31,110 --> 01:22:29,920

we that we pick up parts of the pieces

1717

01:22:32,870 --> 01:22:31,120

that we jettison because that's how

1718

01:22:34,310 --> 01:22:32,880

we're going to base our models going

1719

01:22:36,550 --> 01:22:34,320

forward right we've done a lot of

1720

01:22:38,470 --> 01:22:36,560

analysis on this vehicle but it's

1721

01:22:40,070 --> 01:22:38,480

getting that data and seeing those

1722

01:22:41,669 --> 01:22:40,080

systems now that we've actually gone

1723

01:22:43,430 --> 01:22:41,679

through re-entry which is really going

1724

01:22:45,110 --> 01:22:43,440

to put us in a great place for when crew

1725

01:22:48,390 --> 01:22:45,120

gets on the vehicle

1726
01:22:49,910 --> 01:22:48,400
and you know i've been working on the

1727
01:22:51,270 --> 01:22:49,920
training systems

1728
01:22:53,189 --> 01:22:51,280
and the simulations that we used to

1729
01:22:55,110 --> 01:22:53,199
train everybody so specifically i'm

1730
01:22:56,790 --> 01:22:55,120
looking to get um some of the flight

1731
01:22:58,629 --> 01:22:56,800
data recorder data

1732
01:23:01,189 --> 01:22:58,639
and the data that rosie the rocketeer

1733
01:23:03,110 --> 01:23:01,199
has so we can take what we've learned

1734
01:23:04,629 --> 01:23:03,120
from exactly how the vehicle flies and

1735
01:23:07,510 --> 01:23:04,639
turn that back into a better training

1736
01:23:09,830 --> 01:23:07,520
product for the future

1737
01:23:11,750 --> 01:23:09,840
and speaking of speaking of rosie the

1738
01:23:13,990 --> 01:23:11,760

rocketeer um

1739

01:23:16,550 --> 01:23:14,000

you know we were expecting before this

1740

01:23:18,629 --> 01:23:16,560

that that starliner would be coming down

1741

01:23:20,390 --> 01:23:18,639

about the about the speed of an express

1742

01:23:21,910 --> 01:23:20,400

elevator and a skyscraper

1743

01:23:24,790 --> 01:23:21,920

is that kind of um

1744

01:23:26,390 --> 01:23:24,800

realizing that you're that you're not

1745

01:23:27,990 --> 01:23:26,400

in the control room but i mean is that

1746

01:23:30,310 --> 01:23:28,000

kind of the way it looked to you that's

1747

01:23:32,470 --> 01:23:30,320

the way

1748

01:23:34,950 --> 01:23:32,480

it seemed to be yes the landing looked

1749

01:23:36,470 --> 01:23:34,960

exactly like we had in the simulations

1750

01:23:38,470 --> 01:23:36,480

so everything looked great nice soft

1751

01:23:40,070 --> 01:23:38,480

landing for for rosie

1752

01:23:43,110 --> 01:23:40,080

i can't wait to

1753

01:23:44,790 --> 01:23:43,120

to see that uh that data i'm sure

1754

01:23:46,709 --> 01:23:44,800

looks like we're starting to get some

1755

01:23:49,030 --> 01:23:46,719

clearer pictures out at the landing side

1756

01:23:51,990 --> 01:23:49,040

as the teams move in

1757

01:23:54,870 --> 01:23:52,000

again we've just landed in new mexico

1758

01:23:55,990 --> 01:23:54,880

about 13 minutes ago 6 58 a.m central

1759

01:23:57,669 --> 01:23:56,000

for those

1760

01:23:59,110 --> 01:23:57,679

who might just be joining he missed a

1761

01:24:02,390 --> 01:23:59,120

lot of the good stuff but we still got a

1762

01:24:04,470 --> 01:24:02,400

little bit to show you

1763

01:24:06,790 --> 01:24:04,480

and one of their first tasks will be to

1764

01:24:09,750 --> 01:24:06,800

put an environmental enclosure around

1765

01:24:11,590 --> 01:24:09,760

starliner we can see the the images

1766

01:24:13,990 --> 01:24:11,600

there that's the infrared views of the

1767

01:24:40,149 --> 01:24:14,000

landing recovery team convoy of vehicles

1768

01:24:40,159 --> 01:24:55,030

we have dead air

1769

01:24:59,430 --> 01:24:56,790

and a quick reminder that we will be

1770

01:25:01,350 --> 01:24:59,440

going out we hope to be going out to uh

1771

01:25:03,430 --> 01:25:01,360

boeing's josh barrett shortly with the

1772

01:25:05,590 --> 01:25:03,440

landing recovery team

1773

01:25:07,350 --> 01:25:05,600

he's uh in that convoy of vehicles he is

1774

01:25:09,750 --> 01:25:07,360

part of the blue team

1775

01:25:11,510 --> 01:25:09,760

as they're known they're divided into uh

1776
01:25:45,430 --> 01:25:11,520
different teams of specialists depending

1777
01:25:48,870 --> 01:25:47,189
15 minutes after the landing of

1778
01:25:51,350 --> 01:25:48,880
starliner

1779
01:25:54,550 --> 01:25:51,360
out in white sands new mexico

1780
01:26:04,950 --> 01:25:54,560
starliner landed after 33 orbits of the

1781
01:26:09,270 --> 01:26:06,390
during that time it was able to check

1782
01:26:11,270 --> 01:26:09,280
off the number of uh

1783
01:26:12,550 --> 01:26:11,280
mission objectives although didn't quite

1784
01:26:14,709 --> 01:26:12,560
make it to the international space

1785
01:26:18,790 --> 01:26:14,719
station was able to prove out some of

1786
01:26:21,350 --> 01:26:18,800
the um the not only the the launch

1787
01:26:22,790 --> 01:26:21,360
on the atlas v rocket and of course all

1788
01:26:25,350 --> 01:26:22,800

the landing systems that we saw in

1789

01:26:27,350 --> 01:26:25,360

action today but a number of the systems

1790

01:26:29,510 --> 01:26:27,360

that would be useful during future

1791

01:26:32,550 --> 01:26:29,520

rendezvous with the space station

1792

01:26:36,229 --> 01:26:32,560

a number of the navigation system

1793

01:26:38,629 --> 01:26:36,239

demonstrations were accomplished

1794

01:26:43,510 --> 01:26:38,639

mission controllers of course

1795

01:26:48,870 --> 01:26:45,750

the kid executed their operations all

1796

01:26:50,390 --> 01:26:48,880

while keeping an eye on starliner

1797

01:26:52,310 --> 01:26:50,400

and starliner in fact was able to

1798

01:26:54,070 --> 01:26:52,320

connect with the international space

1799

01:26:55,990 --> 01:26:54,080

space station though it didn't visit and

1800

01:26:57,189 --> 01:26:56,000

uh teams here on the ground were able to

1801
01:27:04,070 --> 01:26:57,199
send commands

1802
01:27:07,750 --> 01:27:06,149
once again a reminder that uh coming up

1803
01:27:09,669 --> 01:27:07,760
in uh

1804
01:27:12,149 --> 01:27:09,679
about an hour and 45 minutes and we're

1805
01:27:14,470 --> 01:27:12,159
aiming for 9 a.m central time we will

1806
01:27:16,709 --> 01:27:14,480
have that post landing briefing when we

1807
01:28:04,550 --> 01:27:16,719
expect to hear from jim bridenstine jim

1808
01:28:08,629 --> 01:28:06,229
here in mission control houston we've

1809
01:28:10,629 --> 01:28:08,639
got a number of uh special guests coming

1810
01:28:12,870 --> 01:28:10,639
in to say hi who have been watching from

1811
01:28:16,470 --> 01:28:12,880
the viewing room including nasa

1812
01:28:18,550 --> 01:28:16,480
administrator jim bridenstine uh johnson

1813
01:28:20,870 --> 01:28:18,560

space center director

1814

01:28:21,669 --> 01:28:20,880

mark guyer we're starting at high fives

1815

01:28:24,070 --> 01:28:21,679

here

1816

01:28:27,030 --> 01:28:24,080

lots of excitement and smiles

1817

01:28:34,149 --> 01:28:27,040

and this all follows a lot of work

1818

01:28:38,550 --> 01:28:36,629

also joining breidenstein

1819

01:28:41,669 --> 01:28:38,560

mass administrator jim bridenstine this

1820

01:28:45,830 --> 01:28:43,830

boeing's leanne corette

1821

01:28:47,350 --> 01:28:45,840

and jim chilton

1822

01:28:49,189 --> 01:28:47,360

they are both uh

1823

01:28:51,270 --> 01:28:49,199

congratulating the

1824

01:28:55,189 --> 01:28:51,280

mission control team here in houston for

1825

01:28:57,430 --> 01:28:55,199

the work that uh went into this morning

1826
01:28:59,189 --> 01:28:57,440
and we did mention earlier that the team

1827
01:29:01,590 --> 01:28:59,199
here in mission control handing a handed

1828
01:29:03,830 --> 01:29:01,600
authority already over to the landing

1829
01:29:06,229 --> 01:29:03,840
and recovery team on site with starliner

1830
01:29:09,430 --> 01:29:06,239
so they're able to relax a little bit

1831
01:29:11,270 --> 01:29:09,440
and start some of the celebrations

1832
01:29:13,270 --> 01:29:11,280
and we also have a report from the

1833
01:29:16,070 --> 01:29:13,280
landing team quote the vehicle looks

1834
01:29:20,229 --> 01:29:17,990
we hope to uh hear more from them coming

1835
01:29:21,669 --> 01:29:20,239
up soon we're standing by to to get some

1836
01:29:24,950 --> 01:29:21,679
more updates from

1837
01:29:26,149 --> 01:29:24,960
uh josh barrett and dan hewitt on site

1838
01:29:27,830 --> 01:29:26,159

there

1839

01:29:28,870 --> 01:29:27,840

and as you can see from the screen

1840

01:29:30,950 --> 01:29:28,880

nasa's

1841

01:29:34,149 --> 01:29:30,960

jim bridenstine and johnson space center

1842

01:29:36,470 --> 01:29:34,159

director mark guyer joined by

1843

01:29:39,189 --> 01:29:36,480

boeing space and launch senior vice

1844

01:29:41,430 --> 01:29:39,199

president jim chilton and leanne corette

1845

01:29:42,310 --> 01:29:41,440

who is the president and ceo

1846

01:29:59,030 --> 01:29:42,320

of

1847

01:30:03,990 --> 01:30:01,990

again for that uh post la close landing

1848

01:30:05,590 --> 01:30:04,000

uh news conference that's coming up at 9

1849

01:30:06,870 --> 01:30:05,600

a.m central time and they'll also be

1850

01:30:09,350 --> 01:30:06,880

joined by

1851
01:30:10,950 --> 01:30:09,360
steve stitch who is the deputy director

1852
01:30:15,590 --> 01:30:10,960
of the commercial group crew program for

1853
01:30:19,270 --> 01:30:17,189
so as you can

1854
01:30:23,830 --> 01:30:19,280
probably tell there's a lot of a lot of

1855
01:30:29,270 --> 01:30:25,990
there we see leanne with flight director

1856
01:30:40,870 --> 01:30:29,280
richard jones and mike lammers and bob

1857
01:30:45,189 --> 01:30:42,709
more team members continuing to fall

1858
01:30:46,950 --> 01:30:45,199
into the room i don't think the

1859
01:30:52,149 --> 01:30:46,960
the congrats are going to stop anytime

1860
01:30:56,229 --> 01:30:54,070
it's been 20 minutes now since uh

1861
01:30:58,709 --> 01:30:56,239
starliner landed in new mexico that took

1862
01:31:03,270 --> 01:30:58,719
place again at 6 58 a.m central time or

1863
01:31:06,950 --> 01:31:03,280

5 58 a.m mountain there in new mexico

1864

01:31:23,430 --> 01:31:06,960

and took place at 7 58 eastern time

1865

01:31:23,440 --> 01:31:38,629

so

1866

01:31:42,950 --> 01:31:41,110

once again we've got a number of vips uh

1867

01:31:44,950 --> 01:31:42,960

piling into the room uh some of them

1868

01:31:46,790 --> 01:31:44,960

that you might recognize uh

1869

01:31:48,550 --> 01:31:46,800

nasa administrator jim bridenstine as

1870

01:31:51,030 --> 01:31:48,560

well as his deputy administrator jim

1871

01:31:53,430 --> 01:31:51,040

moreheart and uh jim chilton a number of

1872

01:31:55,270 --> 01:31:53,440

gems in the room today uh chilton senior

1873

01:31:59,750 --> 01:31:55,280

vice president of space and launch for

1874

01:32:02,629 --> 01:31:59,760

boeing uh also uh lean

1875

01:32:05,110 --> 01:32:02,639

correct uh leanne corette the boeing

1876

01:32:07,590 --> 01:32:05,120

defense and space ceo

1877

01:32:10,390 --> 01:32:07,600

uh center director mark guyer and we've

1878

01:32:12,390 --> 01:32:10,400

got i think all of the

1879

01:32:14,310 --> 01:32:12,400

all of the starliner flight directors i

1880

01:32:16,470 --> 01:32:14,320

believe in here uh

1881

01:32:19,270 --> 01:32:16,480

richard jones of course who was on

1882

01:32:21,830 --> 01:32:19,280

console for landing and the launch as

1883

01:32:24,070 --> 01:32:21,840

well as uh mike lambers who was next to

1884

01:32:26,870 --> 01:32:24,080

him as the weather flight director

1885

01:32:29,590 --> 01:32:26,880

um also milling around ed van sice and

1886

01:32:32,229 --> 01:32:29,600

bob dempsey all all uh taking part in

1887

01:32:34,390 --> 01:32:32,239

the congrats

1888

01:32:36,790 --> 01:32:34,400

meanwhile out at white sands new mexico

1889

01:32:39,750 --> 01:32:36,800

the landing recovery team is getting

1890

01:32:41,350 --> 01:32:39,760

closer to the starliner vehicle

1891

01:32:43,750 --> 01:32:41,360

they will be putting an environmental

1892

01:32:45,350 --> 01:32:43,760

enclosure

1893

01:32:47,270 --> 01:32:45,360

up over the vehicle it is of course

1894

01:33:26,390 --> 01:32:47,280

below freezing out in white sands this

1895

01:33:31,750 --> 01:33:29,910

and we are seeing some imagery some

1896

01:33:36,390 --> 01:33:31,760

regular imagery coming from white sands

1897

01:34:03,910 --> 01:33:37,750

the team of course brings a lot of

1898

01:34:08,709 --> 01:34:06,550

and we are hoping to reconnect with the

1899

01:34:11,750 --> 01:34:08,719

blue team part of the landing recovery

1900

01:34:15,750 --> 01:34:13,430

we're just waiting for the

1901

01:34:17,590 --> 01:34:15,760

communications link to be uh

1902

01:34:19,910 --> 01:34:17,600

completed

1903

01:34:23,430 --> 01:34:19,920

starliner is in very good shape landed

1904

01:35:02,310 --> 01:34:23,440

23 almost 24 minutes ago white sands new

1905

01:35:02,320 --> 01:35:08,709

and we also have a report from

1906

01:35:12,550 --> 01:35:10,790

we have a report from the landing zone

1907

01:35:14,390 --> 01:35:12,560

confirming that all the parachutes

1908

01:35:15,990 --> 01:35:14,400

detached after landing to prevent the

1909

01:35:18,550 --> 01:35:16,000

parachutes from pulling the vehicle over

1910

01:35:21,510 --> 01:35:18,560

in high winds

1911

01:35:25,189 --> 01:35:21,520

the vehicle is looking good

1912

01:35:29,669 --> 01:35:27,030

the landing went very smoothly today i

1913

01:35:31,270 --> 01:35:29,679

think i think the

1914

01:35:37,590 --> 01:35:31,280

team will be very pleased with the way

1915

01:35:42,390 --> 01:35:39,510

want to sneak in another reminder of our

1916

01:35:44,070 --> 01:35:42,400

upcoming post landing news conference

1917

01:35:46,070 --> 01:35:44,080

that'll be at 9 00 a.m central time

1918

01:35:48,550 --> 01:35:46,080

that's what we're targeting media who

1919

01:35:50,390 --> 01:35:48,560

are interested in taking part in the in

1920

01:35:54,950 --> 01:35:50,400

the news conference can call the johnson

1921

01:35:59,910 --> 01:35:57,030

one 281-483-5111 call the johnson space

1922

01:36:03,430 --> 01:35:59,920

center newsroom to take part uh for

1923

01:36:05,109 --> 01:36:03,440

media to take part in that uh in that

1924

01:36:07,189 --> 01:36:05,119

news conference coming up at 9 00 a.m

1925

01:36:11,189 --> 01:36:07,199

central time again it'll feature jim

1926

01:36:13,030 --> 01:36:11,199

bridenstine jim chilton and steve stitch

1927

01:36:14,870 --> 01:36:13,040

and we are now getting some new views

1928

01:36:17,109 --> 01:36:14,880

from the landing side great view of

1929

01:36:19,430 --> 01:36:17,119

starliner there you can see the detail

1930

01:36:21,750 --> 01:36:19,440

of the side hatch the the color the

1931

01:37:07,510 --> 01:36:21,760

colors outlining the different parts of

1932

01:37:11,189 --> 01:37:09,350

and what we're seeing is the

1933

01:37:13,350 --> 01:37:11,199

first members of the landing recovery

1934

01:37:15,590 --> 01:37:13,360

team moving out to the vehicle they are

1935

01:37:17,510 --> 01:37:15,600

just making sure that the atmosphere

1936

01:37:18,950 --> 01:37:17,520

that the environment is safe around

1937

01:37:22,709 --> 01:37:18,960

starliner

1938

01:37:25,109 --> 01:37:22,719

through the atmosphere with the

1939

01:37:26,550 --> 01:37:25,119

maneuvering fuel it jettisons quite a

1940

01:37:28,149 --> 01:37:26,560

bit of it on the

1941

01:37:30,870 --> 01:37:28,159

on the way down but they do need to

1942

01:37:34,390 --> 01:37:30,880

confirm before the whole teams get there

1943

01:37:36,550 --> 01:37:34,400

that the environment is safe for the for

1944

01:37:39,510 --> 01:37:36,560

the landing recovery team you can also

1945

01:37:41,750 --> 01:37:39,520

see in this in this the

1946

01:37:43,830 --> 01:37:41,760

partially deflated airbags

1947

01:37:46,310 --> 01:37:43,840

they of course have vents on them to

1948

01:37:47,669 --> 01:37:46,320

cushion just like a car airbag to

1949

01:37:50,149 --> 01:37:47,679

cushion the

1950

01:37:52,149 --> 01:37:50,159

touchdown impact

1951

01:37:54,390 --> 01:37:52,159

it's supposed to come down at about 18

1952

01:37:56,629 --> 01:37:54,400

miles per hour i think right so

1953

01:37:58,550 --> 01:37:56,639

not not nearly as fast as when it starts

1954

01:38:02,229 --> 01:37:58,560

its journey but you still like a little

1955

01:38:06,709 --> 01:38:04,390

all indications of the loads on landing

1956

01:38:08,870 --> 01:38:06,719

are that it was extremely smooth

1957

01:38:10,790 --> 01:38:08,880

and again richard jones flight director

1958

01:38:12,870 --> 01:38:10,800

richard jones his comment was looks like

1959

01:38:15,270 --> 01:38:12,880

it's going to be a smooth

1960

01:38:18,390 --> 01:38:15,280

a smooth landing when the cft crew when

1961

01:38:21,350 --> 01:38:18,400

the astronauts of the crude flight test

1962

01:38:23,109 --> 01:38:21,360

make their flight into space

1963

01:38:25,510 --> 01:38:23,119

the next crew that will be on board is

1964

01:38:27,590 --> 01:38:25,520

out at the landing site that's uh

1965

01:38:29,189 --> 01:38:27,600

nasa's mike fink and nicole mann and

1966

01:38:31,350 --> 01:38:29,199

boeing's chris ferguson they're all

1967

01:38:33,189 --> 01:38:31,360

going to be uh getting that first look

1968

01:38:35,590 --> 01:38:33,199

at starliner here in just a moment as

1969

01:38:36,870 --> 01:38:35,600

the as the teams are allowed to move in

1970

01:38:40,470 --> 01:38:36,880

we're hoping to hear a little bit from

1971

01:38:42,870 --> 01:38:40,480

them uh as uh as we're able to

1972

01:38:45,750 --> 01:38:42,880

get uh dan hewitt and josh barrett up

1973

01:38:47,750 --> 01:38:45,760

and running

1974

01:38:49,830 --> 01:38:47,760

and one more note about the landing

1975

01:38:52,149 --> 01:38:49,840

recovery team of course we're going to

1976

01:38:54,310 --> 01:38:52,159

stay focused on the capsule there are

1977

01:38:57,109 --> 01:38:54,320

other other parts of the teams that go

1978

01:38:58,629 --> 01:38:57,119

out and recover the base heat shield

1979

01:39:02,229 --> 01:38:58,639

and the forward heat shield in the

1980

01:39:06,390 --> 01:39:04,629

the spacecraft itself will be taken over

1981

01:39:11,510 --> 01:39:06,400

to

1982

01:39:35,189 --> 01:39:11,520

refurbished the base heat shield does

1983

01:39:41,109 --> 01:39:37,830

and this spacecraft will be used again

1984

01:39:42,790 --> 01:39:41,119

it can be reused up to 10 times

1985

01:39:44,870 --> 01:39:42,800

this vehicle

1986

01:39:46,709 --> 01:39:44,880

of course comes down on land we designed

1987

01:39:48,709 --> 01:39:46,719

it to land on land just to get that

1988

01:40:01,430 --> 01:39:48,719

reusable ability that you don't get when

1989

01:41:27,430 --> 01:40:04,229

landing teams continuing to

1990

01:41:27,440 --> 01:43:06,790

hey

1991

01:43:06,800 --> 01:45:12,229

we're going to get

1992

01:45:16,709 --> 01:45:14,550

yes administrator jim breinstein just

1993

01:45:18,790 --> 01:45:16,719

wrapping up some encouraging words to

1994

01:45:20,950 --> 01:45:18,800

the team here in the room he uh had a

1995

01:45:23,430 --> 01:45:20,960

lot to say starting with congratulations

1996

01:45:25,350 --> 01:45:23,440

he said the last 48 hours weren't easy

1997

01:45:26,310 --> 01:45:25,360

but the takeaway was a successful test

1998

01:45:28,229 --> 01:45:26,320

flight

1999

01:45:30,070 --> 01:45:28,239

and he pointed out that we've learned a

2000

01:45:32,470 --> 01:45:30,080

lot from this we've learned a lot about

2001

01:45:54,870 --> 01:45:32,480

a lot of different aspects of flying it

2002

01:45:58,950 --> 01:45:56,950

and nasa administrator jim breinstein

2003

01:46:00,950 --> 01:45:58,960

told the room watching the landing was a

2004

01:46:03,669 --> 01:46:00,960

thing of beauty today

2005

01:46:05,310 --> 01:46:03,679

he was very encouraged by what he saw

2006

01:46:08,149 --> 01:46:05,320

reported that

2007

01:46:09,910 --> 01:46:08,159

a lot of tasks were accomplished during

2008

01:46:13,030 --> 01:46:09,920

this flight we learned a lot that's why

2009

01:46:14,709 --> 01:46:13,040

you test

2010

01:46:16,550 --> 01:46:14,719

and this was a challenge for the flight

2011

01:46:17,270 --> 01:46:16,560

team because you you know you had to do

2012

01:46:18,709 --> 01:46:17,280

uh

2013

01:46:21,350 --> 01:46:18,719

some of the flying

2014

01:46:24,310 --> 01:46:21,360

in a non-optimum situation but they

2015

01:46:25,910 --> 01:46:24,320

still managed to do a lot of things

2016

01:46:29,109 --> 01:46:25,920

right and we learned a lot about this

2017

01:46:31,189 --> 01:46:29,119

vehicle this is the first of the space

2018

01:46:33,669 --> 01:46:31,199

proven models of the starliner

2019

01:46:35,750 --> 01:46:33,679

spacecraft we have

2020

01:46:37,350 --> 01:46:35,760

a crude flight test version

2021

01:46:39,910 --> 01:46:37,360

back in florida that's being prepared

2022

01:46:42,070 --> 01:46:39,920

for the crude flight test to carry

2023

01:46:44,870 --> 01:46:42,080

astronauts and we have a pad abort test

2024

01:46:47,910 --> 01:46:44,880

vehicle also so it's a

2025

01:46:49,990 --> 01:46:47,920

the fleet now has a vehicle that is gone

2026

01:46:52,870 --> 01:46:50,000

orbited the earth 33 times and landed

2027

01:46:55,590 --> 01:46:52,880

back in new mexico

2028

01:46:57,750 --> 01:46:55,600

that's a great start uh feinstein also

2029

01:46:59,669 --> 01:46:57,760

mentioned that he uh called vice

2030

01:47:00,470 --> 01:46:59,679

president mike pence from this room and

2031

01:47:04,790 --> 01:47:00,480

uh

2032

01:47:06,870 --> 01:47:04,800

just made history here so

2033

01:47:09,350 --> 01:47:06,880

kudos coming in from from all over the

2034

01:47:11,910 --> 01:47:09,360

place at the moment we are also

2035

01:47:13,990 --> 01:47:11,920

able to get uh one of the first uh still

2036

01:47:15,350 --> 01:47:14,000

photographs from our nasa

2037

01:47:18,070 --> 01:47:15,360

one of our nasa

2038

01:47:19,669 --> 01:47:18,080

uh photographers in the field um

2039

01:47:21,990 --> 01:47:19,679

we have to show for you here this uh

2040

01:47:24,070 --> 01:47:22,000

came from aubrey jiminy one of our nasa

2041

01:47:26,390 --> 01:47:24,080

photographers taken of starliner making

2042

01:47:29,990 --> 01:47:26,400

its way down to to its landing in new

2043

01:47:32,149 --> 01:47:30,000

mexico at 6 58 a.m central time

2044

01:47:34,149 --> 01:47:32,159

and you can see there that starliner is

2045

01:47:35,189 --> 01:47:34,159

the

2046

01:47:40,550 --> 01:47:35,199

small

2047

01:47:41,990 --> 01:47:40,560

three main parachutes and in fact this

2048

01:47:44,550 --> 01:47:42,000

image comes to

2049

01:47:46,390 --> 01:47:44,560

came through of the base heat shield as

2050

01:47:48,070 --> 01:47:46,400

it jettisoned

2051
01:47:51,270 --> 01:47:48,080
of course base heat shield protecting it

2052
01:47:52,470 --> 01:47:51,280
from the 3000 degrees of

2053
01:47:55,750 --> 01:47:52,480
re-entry

2054
01:48:08,229 --> 01:47:55,760
and then it's work done jettisons and

2055
01:48:13,669 --> 01:48:09,990
team here in the room is about to uh

2056
01:48:15,830 --> 01:48:13,679
take a a group photo but before they did

2057
01:48:18,310 --> 01:48:15,840
flight director richard jones gave his

2058
01:48:20,790 --> 01:48:18,320
flight controllers the ahead to consider

2059
01:48:26,149 --> 01:48:20,800
themselves done with the mission and

2060
01:48:30,709 --> 01:48:28,550
and indeed they've all the mission

2061
01:48:33,030 --> 01:48:30,719
controllers have been doing

2062
01:48:39,990 --> 01:48:33,040
a lot of work during the duration of

2063
01:48:43,830 --> 01:48:42,070

still waiting uh for our counterparts

2064

01:48:46,070 --> 01:48:43,840

there on the ground in white sands to be

2065

01:48:47,669 --> 01:48:46,080

able to get into position to to give us

2066

01:48:49,910 --> 01:48:47,679

another update we're hoping that we'll

2067

01:48:51,109 --> 01:48:49,920

come pretty soon but in the meantime i'm

2068

01:48:52,790 --> 01:48:51,119

going to give you another reminder that

2069

01:48:54,390 --> 01:48:52,800

we've got a post

2070

01:48:56,470 --> 01:48:54,400

landing uh

2071

01:48:57,830 --> 01:48:56,480

news conference coming up at 9 00 a.m

2072

01:48:59,750 --> 01:48:57,840

central time

2073

01:49:02,229 --> 01:48:59,760

that's going to feature

2074

01:49:05,030 --> 01:49:02,239

nasa administrator jim bridenstine

2075

01:49:06,310 --> 01:49:05,040

senior vp of space and launch jim

2076

01:49:08,229 --> 01:49:06,320

chilton

2077

01:49:10,310 --> 01:49:08,239

and also uh the

2078

01:49:12,629 --> 01:49:10,320

deputy director of commercial crew steve

2079

01:49:14,550 --> 01:49:12,639

stitch they'll all be giving us

2080

01:49:16,470 --> 01:49:14,560

the final word on the mission at least

2081

01:49:18,149 --> 01:49:16,480

for now uh media who would like to

2082

01:49:20,830 --> 01:49:18,159

participate can call the johnson space

2083

01:49:23,350 --> 01:49:20,840

center newsroom at

2084

01:49:27,030 --> 01:49:23,360

281-483-5111 again that will be

2085

01:49:29,189 --> 01:49:27,040

targeted to begin at 9am central

2086

01:49:31,589 --> 01:49:29,199

and while we have tory wills pedrotty

2087

01:49:32,629 --> 01:49:31,599

and jim may over in the studio

2088

01:49:34,149 --> 01:49:32,639

um

2089

01:49:36,149 --> 01:49:34,159

tori and jim you're seeing now the

2090

01:49:37,990 --> 01:49:36,159

visual light imagery coming in from

2091

01:49:39,910 --> 01:49:38,000

white sands we see the

2092

01:49:41,430 --> 01:49:39,920

landing recovery team the first elements

2093

01:49:42,470 --> 01:49:41,440

getting close to the vehicle but you've

2094

01:49:44,790 --> 01:49:42,480

seen the

2095

01:49:46,229 --> 01:49:44,800

details of the hatch the details of the

2096

01:49:49,589 --> 01:49:46,239

upper structure

2097

01:49:52,390 --> 01:49:49,599

what are you thinking as you see this

2098

01:49:54,870 --> 01:49:52,400

you know the vehicle looks clean

2099

01:49:56,550 --> 01:49:54,880

meaning we had a great re-entry profile

2100

01:49:57,669 --> 01:49:56,560

just like we planned

2101
01:49:59,030 --> 01:49:57,679
and you know you see the vehicle sitting

2102
01:50:01,910 --> 01:49:59,040
there on its inner air bags cushioned

2103
01:50:04,390 --> 01:50:01,920
off the ground uh meaning we've got

2104
01:50:05,430 --> 01:50:04,400
our analysis on the landing recovery

2105
01:50:07,270 --> 01:50:05,440
system

2106
01:50:09,189 --> 01:50:07,280
seems to be great so the vehicle is in

2107
01:50:10,790 --> 01:50:09,199
safe hands now on the ground

2108
01:50:12,550 --> 01:50:10,800
and i have to say that

2109
01:50:14,310 --> 01:50:12,560
i am i'm very impressed with the way

2110
01:50:15,270 --> 01:50:14,320
that that the heat shield performed but

2111
01:50:16,950 --> 01:50:15,280
also

2112
01:50:18,950 --> 01:50:16,960
looking at this and looking at how we

2113
01:50:21,189 --> 01:50:18,960

landed i think it's uh it's going to be

2114

01:50:24,149 --> 01:50:21,199

really great for sonny's first ride here

2115

01:50:26,149 --> 01:50:24,159

in uh for pcm one so that reusability of

2116

01:50:27,510 --> 01:50:26,159

that capsule is is critical for us and

2117

01:50:29,669 --> 01:50:27,520

that's great to see

2118

01:50:31,669 --> 01:50:29,679

such a clean landing

2119

01:50:33,910 --> 01:50:31,679

settings crewmate josh casadas stopped

2120

01:50:36,070 --> 01:50:33,920

by our console here mission control just

2121

01:50:37,910 --> 01:50:36,080

a moment ago just give it a thumbs up he

2122

01:50:51,430 --> 01:50:37,920

looks super excited and i think ready to

2123

01:50:55,669 --> 01:50:53,669

and we can see their members of the

2124

01:50:56,629 --> 01:50:55,679

landing recovery team moving around the

2125

01:50:58,470 --> 01:50:56,639

vehicle

2126
01:51:01,510 --> 01:50:58,480
doing their checks we

2127
01:51:02,790 --> 01:51:01,520
hope to hear from from the blue team who

2128
01:52:17,750 --> 01:51:02,800
are

2129
01:52:19,350 --> 01:52:17,760
joining us

2130
01:52:21,990 --> 01:52:19,360
the uh

2131
01:52:23,109 --> 01:52:22,000
starliner orbital flight test ended with

2132
01:53:39,189 --> 01:52:23,119
a

2133
01:53:42,390 --> 01:53:39,199
touched down on

2134
01:53:45,109 --> 01:53:42,400
six inflated airbags very smooth landing

2135
01:53:46,709 --> 01:53:45,119
touchdown time was 6 58 central time

2136
01:53:49,750 --> 01:53:46,719
here at mission control

2137
01:53:53,270 --> 01:53:49,760
558 mountain time the landing site

2138
01:53:57,990 --> 01:53:53,280

and 7 58 eastern time where it launched

2139

01:54:02,709 --> 01:53:59,430

we can see that they're moving the

2140

01:54:07,030 --> 01:54:02,719

platform into place for on starliner to

2141

01:54:07,040 --> 01:54:30,950

all access

2142

01:54:30,960 --> 01:54:45,109

we likely won't be on

2143

01:54:48,229 --> 01:54:46,629

and we have

2144

01:54:50,070 --> 01:54:48,239

boeing's josh

2145

01:54:51,830 --> 01:54:50,080

barrett at the landing site in white

2146

01:54:54,550 --> 01:54:51,840

sands he is joining us by phone we're

2147

01:54:57,189 --> 01:54:54,560

going to stay on this image of starliner

2148

01:54:58,070 --> 01:54:57,199

out on the desert floor

2149

01:55:00,390 --> 01:54:58,080

josh

2150

01:55:03,510 --> 01:55:00,400

how was it from your side

2151
01:55:06,390 --> 01:55:03,520
hey steve uh it looks beautiful looking

2152
01:55:07,830 --> 01:55:06,400
at starliner with my own two eyes

2153
01:55:09,910 --> 01:55:07,840
we're working on getting some better

2154
01:55:11,510 --> 01:55:09,920
video uplinks we have our situational

2155
01:55:13,510 --> 01:55:11,520
awareness camera up but we're working on

2156
01:55:14,629 --> 01:55:13,520
getting our closer handheld cameras up

2157
01:55:16,709 --> 01:55:14,639
for you hopefully we can get that

2158
01:55:18,310 --> 01:55:16,719
working for you soon and so you can get

2159
01:55:20,149 --> 01:55:18,320
some good up close views right now the

2160
01:55:22,470 --> 01:55:20,159
boeing fire rescue teams are moving the

2161
01:55:24,950 --> 01:55:22,480
platform in front of the crew module

2162
01:55:26,629 --> 01:55:24,960
green team is working on inflating the

2163
01:55:28,229 --> 01:55:26,639

environmental enclosure

2164

01:55:29,990 --> 01:55:28,239

that's uh if you can kind of see what's

2165

01:55:31,830 --> 01:55:30,000

going on behind the crew module from the

2166

01:55:33,510 --> 01:55:31,840

perspective of the situational awareness

2167

01:55:34,709 --> 01:55:33,520

camera they're inflating that

2168

01:55:37,030 --> 01:55:34,719

in between

2169

01:55:38,390 --> 01:55:37,040

that hvac trailer there

2170

01:55:39,510 --> 01:55:38,400

so you'll see kind of that big

2171

01:55:41,830 --> 01:55:39,520

inflatable

2172

01:55:43,750 --> 01:55:41,840

enclosure kind of hug the vehicle and

2173

01:55:45,189 --> 01:55:43,760

they're going to start getting some heat

2174

01:55:47,990 --> 01:55:45,199

on there again to make sure those

2175

01:55:50,149 --> 01:55:48,000

propulsion lines don't freeze gold team

2176
01:55:51,910 --> 01:55:50,159
has moved in and done their assessment

2177
01:55:53,750 --> 01:55:51,920
everything is healthy on the vehicle

2178
01:55:55,669 --> 01:55:53,760
silver team has grounded the vehicle and

2179
01:55:57,350 --> 01:55:55,679
now they've moved on to recovering the

2180
01:56:00,709 --> 01:55:57,360
parachutes

2181
01:56:03,669 --> 01:56:00,719
there's a beautiful pink orange horizon

2182
01:56:04,870 --> 01:56:03,679
to the east as the sun is coming up

2183
01:56:06,950 --> 01:56:04,880
uh

2184
01:56:08,070 --> 01:56:06,960
really a beautiful day here out in the

2185
01:56:09,750 --> 01:56:08,080
desert

2186
01:56:11,430 --> 01:56:09,760
although it is still pretty cold but the

2187
01:56:12,870 --> 01:56:11,440
teams are working hard they're working

2188
01:56:14,390 --> 01:56:12,880

through the cold

2189

01:56:16,310 --> 01:56:14,400

um

2190

01:56:18,470 --> 01:56:16,320

next up you should see the medical truck

2191

01:56:21,750 --> 01:56:18,480

start to move into place beside that

2192

01:56:23,750 --> 01:56:21,760

that mobile access platform

2193

01:56:26,950 --> 01:56:23,760

that is just an exercise for today that

2194

01:56:28,709 --> 01:56:26,960

medical truck won't be used today

2195

01:56:30,870 --> 01:56:28,719

the crew is actually just getting out of

2196

01:56:32,629 --> 01:56:30,880

the the trucks in front of me here you

2197

01:56:34,470 --> 01:56:32,639

might see them

2198

01:56:36,950 --> 01:56:34,480

start uh appearing in the essay camera

2199

01:56:38,709 --> 01:56:36,960

in their pink vests um

2200

01:56:41,830 --> 01:56:38,719

but really

2201

01:56:44,470 --> 01:56:41,840

just overall a great morning the team is

2202

01:56:47,189 --> 01:56:44,480

executing exactly what they have trained

2203

01:56:49,350 --> 01:56:47,199

for over and over and over again

2204

01:56:50,790 --> 01:56:49,360

uh and um

2205

01:56:52,229 --> 01:56:50,800

hopefully we can get some better views

2206

01:56:53,189 --> 01:56:52,239

as our as our camera guys move in a

2207

01:56:54,790 --> 01:56:53,199

little closer we're trying to

2208

01:56:56,390 --> 01:56:54,800

re-establish a microwave link to our

2209

01:56:57,990 --> 01:56:56,400

satellite feed

2210

01:56:59,189 --> 01:56:58,000

we think maybe on the drive out here one

2211

01:57:00,950 --> 01:56:59,199

of our connections might have got

2212

01:57:02,310 --> 01:57:00,960

jostled out but we want to get you some

2213

01:57:04,310 --> 01:57:02,320

better views soon but we're glad you're

2214

01:57:06,550 --> 01:57:04,320

getting a look at starliner on the

2215

01:57:09,030 --> 01:57:06,560

ground so i'll let you guys take it from

2216

01:57:14,310 --> 01:57:11,430

thank you josh this has been an exciting

2217

01:57:18,229 --> 01:57:16,310

certainly one that that we've not seen

2218

01:57:20,149 --> 01:57:18,239

before with an american

2219

01:57:24,390 --> 01:57:20,159

human rated capsule touching down on

2220

01:57:26,310 --> 01:57:24,400

land i can't i can't hear you

2221

01:57:28,149 --> 01:57:26,320

we can see the environmental enclosure

2222

01:57:30,229 --> 01:57:28,159

being put into place they're going to

2223

01:57:31,669 --> 01:57:30,239

put that over the starliner vehicle as

2224

01:57:33,030 --> 01:57:31,679

josh just mentioned

2225

01:57:37,030 --> 01:57:33,040

and that's going to

2226

01:57:38,629 --> 01:57:37,040

clear the way to open the side hatch

2227

01:57:40,629 --> 01:57:38,639

the environmental enclosure of course

2228

01:57:42,470 --> 01:57:40,639

protects the vehicle and its complex

2229

01:57:44,790 --> 01:57:42,480

systems

2230

01:57:47,589 --> 01:57:44,800

from the uh from the cold of course

2231

01:57:49,830 --> 01:57:47,599

starliner has been through an extreme

2232

01:57:51,430 --> 01:57:49,840

environment during this uh the orbit

2233

01:57:53,270 --> 01:57:51,440

burn having gone through thousand

2234

01:57:54,470 --> 01:57:53,280

degrees of heat

2235

01:57:56,550 --> 01:57:54,480

before

2236

01:57:59,109 --> 01:57:56,560

coming down softly under three main

2237

01:58:00,070 --> 01:57:59,119

parachutes and landing on

2238

01:58:03,430 --> 01:58:00,080

six

2239

01:58:19,109 --> 01:58:03,440

airbags in a flawless

2240

01:58:22,870 --> 01:58:20,790

steve while we wait for hear back more

2241

01:58:24,709 --> 01:58:22,880

from the um from the landing team tell

2242

01:58:26,470 --> 01:58:24,719

us a little bit about how uh starliner

2243

01:58:27,910 --> 01:58:26,480

gets back to florida what what is that

2244

01:58:30,229 --> 01:58:27,920

journey like

2245

01:58:32,470 --> 01:58:30,239

well they'll move uh though basically

2246

01:58:34,870 --> 01:58:32,480

after they get starliner safe on the

2247

01:58:37,350 --> 01:58:34,880

ground they will

2248

01:58:38,149 --> 01:58:37,360

they will put it on a on a truck inside

2249

01:58:51,270 --> 01:58:38,159

a

2250

01:58:56,149 --> 01:58:53,189

where the um

2251

01:58:58,390 --> 01:58:56,159

where the engineers will pour through it

2252

01:59:00,550 --> 01:58:58,400

and ultimately refurbish it and we're

2253

01:59:02,629 --> 01:59:00,560

going to fly it again we are not only

2254

01:59:03,910 --> 01:59:02,639

using these capsules one time each of

2255

01:59:06,229 --> 01:59:03,920

these capsules

2256

01:59:07,830 --> 01:59:06,239

is designed for ten times

2257

01:59:09,189 --> 01:59:07,840

to go in space

2258

01:59:13,910 --> 01:59:09,199

look forward to seeing this one land on

2259

01:59:17,750 --> 01:59:16,229

and it sounds like we have uh josh of

2260

01:59:19,510 --> 01:59:17,760

ready again to give us another update

2261

01:59:22,070 --> 01:59:19,520

josh can you hear us

2262

01:59:23,990 --> 01:59:22,080

hey brandi yes i'm still here uh you can

2263

01:59:26,229 --> 01:59:24,000

see the green team has just got that

2264

01:59:28,229 --> 01:59:26,239

environmental enclosure in place

2265

01:59:30,870 --> 01:59:28,239

so now the red team will continue

2266

01:59:32,470 --> 01:59:30,880

backing up that mobile access platform

2267

01:59:34,390 --> 01:59:32,480

right up to the hatch

2268

01:59:36,390 --> 01:59:34,400

they'll extend a little bit of that

2269

01:59:37,830 --> 01:59:36,400

almost touching uh the hatch but we

2270

01:59:39,510 --> 01:59:37,840

don't want to make contact with the

2271

01:59:41,510 --> 01:59:39,520

vehicle and potentially damage the

2272

01:59:43,589 --> 01:59:41,520

thermal protection system

2273

01:59:46,070 --> 01:59:43,599

because uh as you guys just mentioned

2274

01:59:48,229 --> 01:59:46,080

this vehicle will be reused the thermal

2275

01:59:51,030 --> 01:59:48,239

protection system needs to be

2276

01:59:52,550 --> 01:59:51,040

uh maintain integrity we will replace

2277

01:59:54,709 --> 01:59:52,560

the ford heat shield and the base heat

2278

01:59:56,470 --> 01:59:54,719

shield actually uh the ford heat shield

2279

01:59:58,709 --> 01:59:56,480

landed probably

2280

02:00:00,709 --> 01:59:58,719

about 600 feet away from the capsule i'm

2281

02:00:03,750 --> 02:00:00,719

looking at it right now it landed on its

2282

02:00:05,750 --> 02:00:03,760

nose um i haven't found the base heat

2283

02:00:07,589 --> 02:00:05,760

shield yet but uh i'm sure it's around

2284

02:00:09,589 --> 02:00:07,599

here somewhere

2285

02:00:11,910 --> 02:00:09,599

um the crew you can see that that's the

2286

02:00:13,830 --> 02:00:11,920

astronaut crew and their pink vests now

2287

02:00:16,070 --> 02:00:13,840

uh you might not have heard me about

2288

02:00:17,589 --> 02:00:16,080

talk about pink team pink team is just

2289

02:00:19,189 --> 02:00:17,599

kind of the observers they don't have an

2290

02:00:20,950 --> 02:00:19,199

operational role

2291

02:00:23,270 --> 02:00:20,960

but they are in brightly colored pink

2292

02:00:25,669 --> 02:00:23,280

vests just to make sure uh

2293

02:00:29,189 --> 02:00:25,679

you know they're visible and

2294

02:00:31,830 --> 02:00:29,199

the operational teams kind of

2295

02:00:33,270 --> 02:00:31,840

avoid them

2296

02:00:34,709 --> 02:00:33,280

they avoid the operational teams and

2297

02:00:37,030 --> 02:00:34,719

don't don't get in the way of the

2298

02:00:38,870 --> 02:00:37,040

operation but um

2299

02:00:40,229 --> 02:00:38,880

again that environmental enclosure

2300

02:00:42,070 --> 02:00:40,239

they're just kind of adjusting it a

2301

02:00:44,950 --> 02:00:42,080

little bit right now

2302

02:00:45,830 --> 02:00:44,960

to give red team to the hatch

2303

02:00:47,910 --> 02:00:45,840

uh

2304

02:00:50,390 --> 02:00:47,920

there you see the mobile access platform

2305

02:00:52,149 --> 02:00:50,400

backing ever so slowly they're being

2306

02:00:53,430 --> 02:00:52,159

very careful

2307

02:00:56,870 --> 02:00:53,440

not to damage

2308

02:00:58,229 --> 02:00:56,880

that thermal protection system

2309

02:01:00,149 --> 02:00:58,239

josh have you had a chance to talk with

2310

02:01:02,870 --> 02:01:00,159

any of the astronauts get any of any of

2311

02:01:05,350 --> 02:01:02,880

their thoughts on watching the landing

2312

02:01:06,629 --> 02:01:05,360

i have not they uh got out of the car

2313

02:01:08,149 --> 02:01:06,639

and walked straight up to the vehicle

2314

02:01:10,550 --> 02:01:08,159

while we're trying to get this video

2315

02:01:13,910 --> 02:01:10,560

linked back up for you guys but i will

2316

02:01:15,430 --> 02:01:13,920

be sure to grab them as soon as i can

2317

02:01:17,350 --> 02:01:15,440

understandable if they want to hurry

2318

02:01:19,669 --> 02:01:17,360

over

2319

02:01:22,950 --> 02:01:19,679

yeah i know uh i know josh is back in

2320

02:01:25,030 --> 02:01:22,960

houston watching and sunny's here and uh

2321

02:01:27,350 --> 02:01:25,040

i'm sure she's extremely pleased seeing

2322

02:01:30,550 --> 02:01:27,360

her ride back on her safely you know

2323

02:01:33,030 --> 02:01:30,560

executing a pretty flawless landing

2324

02:01:35,030 --> 02:01:33,040

three two drops three main parachutes

2325

02:01:38,149 --> 02:01:35,040

six airbags

2326

02:01:40,229 --> 02:01:38,159

that's what we want to see every time

2327

02:01:45,189 --> 02:01:40,239

and josh how does this look compared to

2328

02:01:49,510 --> 02:01:47,589

uh so i i

2329

02:01:51,669 --> 02:01:49,520

was honestly expecting a little bit of a

2330

02:01:53,510 --> 02:01:51,679

kind of thermal scorch marks almost on

2331

02:01:55,030 --> 02:01:53,520

the vehicle but it looks almost as good

2332

02:01:56,149 --> 02:01:55,040

as the day it left the factory in

2333

02:01:57,270 --> 02:01:56,159

florida

2334

02:01:58,310 --> 02:01:57,280

um

2335

02:02:00,390 --> 02:01:58,320

it was

2336

02:02:02,790 --> 02:02:00,400

you know even the all the logos the nasa

2337

02:02:04,470 --> 02:02:02,800

logo the boeing logos kind of the hash

2338

02:02:06,149 --> 02:02:04,480

marks we have around the top where the

2339

02:02:09,510 --> 02:02:06,159

ford heat shield meets the vehicle those

2340

02:02:12,070 --> 02:02:09,520

are all 100 perfectly intact

2341

02:02:14,629 --> 02:02:12,080

um now you can see the medical trucks

2342

02:02:16,470 --> 02:02:14,639

starting to back up so we actually

2343

02:02:20,390 --> 02:02:16,480

custom designed those medical trucks

2344

02:02:23,270 --> 02:02:20,400

those were surplus army five ton trucks

2345

02:02:25,189 --> 02:02:23,280

and we kind of outfitted it with uh that

2346

02:02:27,030 --> 02:02:25,199

platform you might be able to see on the

2347

02:02:29,030 --> 02:02:27,040

back of the truck and the interior was

2348

02:02:31,350 --> 02:02:29,040

completely refitted to the

2349

02:02:32,550 --> 02:02:31,360

um pretty state-of-the-art field medical

2350

02:02:34,470 --> 02:02:32,560

facility

2351
02:02:36,070 --> 02:02:34,480
it's once again when the astronauts come

2352
02:02:37,669 --> 02:02:36,080
out of the hatch

2353
02:02:39,910 --> 02:02:37,679
they're

2354
02:02:41,510 --> 02:02:39,920
going straight into that medical truck

2355
02:02:47,030 --> 02:02:41,520
just to make sure that they're healthy

2356
02:02:50,629 --> 02:02:48,629
um

2357
02:02:52,790 --> 02:02:50,639
once again you see the

2358
02:02:55,109 --> 02:02:52,800
red team establishing access to the

2359
02:02:57,669 --> 02:02:55,119
hatch once they

2360
02:03:00,310 --> 02:02:57,679
lower that uh

2361
02:03:02,310 --> 02:03:00,320
lower those stairs uh selena doe part

2362
02:03:04,709 --> 02:03:02,320
one of our human factors engineers will

2363
02:03:06,709 --> 02:03:04,719

go up and actually open the hatch

2364

02:03:08,950 --> 02:03:06,719

she's actually i can see her standing to

2365

02:03:12,470 --> 02:03:08,960

the left of the platform

2366

02:03:16,870 --> 02:03:14,870

and josh i know just like um tell us a

2367

02:03:18,550 --> 02:03:16,880

little bit about some of the

2368

02:03:21,030 --> 02:03:18,560

practice stuff this is what i'm getting

2369

02:03:22,790 --> 02:03:21,040

at is just like the flight control team

2370

02:03:25,350 --> 02:03:22,800

does simulations just like the launch

2371

02:03:26,229 --> 02:03:25,360

team does simulations the landing team

2372

02:03:27,910 --> 02:03:26,239

has

2373

02:03:30,310 --> 02:03:27,920

walked through this a number of times

2374

02:03:31,990 --> 02:03:30,320

out in white sands correct

2375

02:03:35,350 --> 02:03:32,000

yeah they have done it about four or

2376

02:03:37,189 --> 02:03:35,360

five times as a full team and that's

2377

02:03:38,149 --> 02:03:37,199

four or five separate times when the

2378

02:03:39,830 --> 02:03:38,159

whole

2379

02:03:42,709 --> 02:03:39,840

uh you know the fire rescue teams come

2380

02:03:44,310 --> 02:03:42,719

from charleston seattle a lot of the

2381

02:03:45,830 --> 02:03:44,320

major you know california a lot of the

2382

02:03:47,589 --> 02:03:45,840

major boeing facilities across the

2383

02:03:49,270 --> 02:03:47,599

country and then the starliner program

2384

02:03:51,990 --> 02:03:49,280

teams come from

2385

02:03:53,669 --> 02:03:52,000

uh houston and florida mostly so they

2386

02:03:55,350 --> 02:03:53,679

have taken over the past couple years

2387

02:03:57,830 --> 02:03:55,360

four or five times they all come

2388

02:03:59,510 --> 02:03:57,840

together and run through these exercises

2389

02:04:01,430 --> 02:03:59,520

and then individually each team kind of

2390

02:04:03,430 --> 02:04:01,440

practices their routines

2391

02:04:05,510 --> 02:04:03,440

multiple times throughout the year make

2392

02:04:07,350 --> 02:04:05,520

sure everyone stays fresh knows exactly

2393

02:04:09,350 --> 02:04:07,360

what they're doing

2394

02:04:11,189 --> 02:04:09,360

pretty delicate operation

2395

02:04:12,790 --> 02:04:11,199

and you know there's some very time

2396

02:04:15,030 --> 02:04:12,800

critical elements to it especially when

2397

02:04:16,550 --> 02:04:15,040

we get crew on board this time it's

2398

02:04:18,149 --> 02:04:16,560

since it's the first time the team is

2399

02:04:19,189 --> 02:04:18,159

actually doing it for real we're taking

2400

02:04:21,350 --> 02:04:19,199

our time

2401
02:04:22,790 --> 02:04:21,360
there's not crew inside but we do have a

2402
02:04:26,229 --> 02:04:22,800
requirement to get crew out of the

2403
02:04:27,189 --> 02:04:26,239
vehicle an hour after touchdown

2404
02:04:29,109 --> 02:04:27,199
but

2405
02:04:30,550 --> 02:04:29,119
this time the vehicle landed and powered

2406
02:04:32,629 --> 02:04:30,560
itself off

2407
02:04:34,390 --> 02:04:32,639
and so that kind of gave the team plenty

2408
02:04:36,310 --> 02:04:34,400
of time to make sure that they're doing

2409
02:04:38,950 --> 02:04:36,320
this right they're doing it deliberately

2410
02:04:40,229 --> 02:04:38,960
and intentionally and you know really

2411
02:04:41,750 --> 02:04:40,239
the biggest time critical thing was

2412
02:04:43,990 --> 02:04:41,760
getting that environmental enclosure

2413
02:04:45,669 --> 02:04:44,000

over the vehicle and uh

2414

02:04:48,390 --> 02:04:45,679

heating it up a little bit in this kind

2415

02:04:51,350 --> 02:04:48,400

of frigid desert air

2416

02:04:54,149 --> 02:04:51,360

and josh we do have a um

2417

02:04:56,550 --> 02:04:54,159

we do have a report that goes along with

2418

02:04:57,430 --> 02:04:56,560

your uh no scorch marks observation

2419

02:04:59,510 --> 02:04:57,440

there

2420

02:05:02,069 --> 02:04:59,520

uh the re-entry cabin heating was

2421

02:05:04,149 --> 02:05:02,079

notably lower was a notably lower change

2422

02:05:05,430 --> 02:05:04,159

in temperatures which indicates a better

2423

02:05:07,270 --> 02:05:05,440

than expected performance of the

2424

02:05:09,510 --> 02:05:07,280

re-entry system

2425

02:05:10,790 --> 02:05:09,520

that is that's really good news and i

2426

02:05:12,709 --> 02:05:10,800

think uh

2427

02:05:14,229 --> 02:05:12,719

i think this is gonna it sounds like

2428

02:05:15,750 --> 02:05:14,239

it's going to

2429

02:05:17,990 --> 02:05:15,760

make it an easier refurbishment

2430

02:05:20,310 --> 02:05:18,000

operation you're the one who

2431

02:05:22,069 --> 02:05:20,320

is out there in florida all the time

2432

02:05:24,229 --> 02:05:22,079

with the uh with the factory and with

2433

02:05:27,030 --> 02:05:24,239

the refurbishment does that uh

2434

02:05:29,189 --> 02:05:27,040

does that make sense to you

2435

02:05:30,149 --> 02:05:29,199

yeah i i actually it'll be really great

2436

02:05:31,830 --> 02:05:30,159

to see

2437

02:05:33,910 --> 02:05:31,840

this vehicle back in florida because

2438

02:05:36,229 --> 02:05:33,920

right now we have our other two

2439

02:05:37,830 --> 02:05:36,239

spacecraft the paddleboard vehicle is in

2440

02:05:39,270 --> 02:05:37,840

the factory as well as the crew flight

2441

02:05:40,709 --> 02:05:39,280

test vehicle

2442

02:05:42,550 --> 02:05:40,719

and you know back when i first joined

2443

02:05:44,470 --> 02:05:42,560

the program about two years ago it was

2444

02:05:47,030 --> 02:05:44,480

really awesome seeing three vehicles in

2445

02:05:49,109 --> 02:05:47,040

flow so when this comes back to florida

2446

02:05:51,189 --> 02:05:49,119

and they start processing it for

2447

02:05:52,550 --> 02:05:51,199

sunny and josh's flight plus the few

2448

02:05:54,229 --> 02:05:52,560

international astronauts that are

2449

02:05:56,390 --> 02:05:54,239

assigned to the vehicle

2450

02:06:00,069 --> 02:05:56,400

um it'll be nice to see it it'll be kind

2451
02:06:01,669 --> 02:06:00,079
of like getting the family back together

2452
02:06:05,030 --> 02:06:01,679
and better a lot of people are going to

2453
02:06:07,589 --> 02:06:05,040
be excited to see it back in florida

2454
02:06:09,430 --> 02:06:07,599
yeah that's right and uh you know in the

2455
02:06:11,430 --> 02:06:09,440
meantime while uh

2456
02:06:13,109 --> 02:06:11,440
we test and process and refurbish this

2457
02:06:15,430 --> 02:06:13,119
vehicle for the next flight uh the crew

2458
02:06:17,830 --> 02:06:15,440
flight test vehicle is going through

2459
02:06:18,870 --> 02:06:17,840
kind of final processing right now

2460
02:06:20,870 --> 02:06:18,880
um

2461
02:06:22,709 --> 02:06:20,880
the paddle board vehicle we actually uh

2462
02:06:24,870 --> 02:06:22,719
will not fly that to space but we will

2463
02:06:26,709 --> 02:06:24,880

keep it around um

2464

02:06:27,830 --> 02:06:26,719

just in case we need any spare parts

2465

02:06:30,229 --> 02:06:27,840

from it

2466

02:06:32,709 --> 02:06:30,239

so uh that we'll have that in florida as

2467

02:06:35,350 --> 02:06:32,719

well for a while um but that was that

2468

02:06:36,709 --> 02:06:35,360

was really cool seeing it come back um

2469

02:06:38,470 --> 02:06:36,719

if you watched the paddleboard test you

2470

02:06:40,709 --> 02:06:38,480

might have seen the all the signatures

2471

02:06:42,629 --> 02:06:40,719

from everyone who worked so hard on it

2472

02:06:44,550 --> 02:06:42,639

we couldn't find this vehicle against

2473

02:06:46,870 --> 02:06:44,560

the thermal protection system kind of

2474

02:06:48,310 --> 02:06:46,880

inhibited us from putting sharpie marker

2475

02:06:49,669 --> 02:06:48,320

on it but

2476

02:06:51,589 --> 02:06:49,679

um

2477

02:06:54,069 --> 02:06:51,599

still a beautiful vehicle it's kind of a

2478

02:06:55,910 --> 02:06:54,079

shame the environmental enclosures

2479

02:06:57,910 --> 02:06:55,920

covered it up right now but

2480

02:06:59,750 --> 02:06:57,920

again we're just doing that to make sure

2481

02:07:01,669 --> 02:06:59,760

the vehicle stays safe and healthy so we

2482

02:07:03,750 --> 02:07:01,679

can use it again

2483

02:07:06,550 --> 02:07:03,760

and josh we want you to stand by we want

2484

02:07:08,310 --> 02:07:06,560

to go to uh torrey wills pedrotty who's

2485

02:07:10,310 --> 02:07:08,320

one of the engineers who worked with

2486

02:07:12,390 --> 02:07:10,320

this heat shield and

2487

02:07:14,550 --> 02:07:12,400

tori you've heard josh's description of

2488

02:07:16,709 --> 02:07:14,560

the spacecraft uh you know light light

2489

02:07:18,069 --> 02:07:16,719

scorch marks nothing it looks a lot like

2490

02:07:19,750 --> 02:07:18,079

the way it did

2491

02:07:37,270 --> 02:07:19,760

um when it went into space what does

2492

02:07:40,470 --> 02:07:39,270

you know anything during landing but in

2493

02:07:42,550 --> 02:07:40,480

re-entry but

2494

02:07:44,069 --> 02:07:42,560

seeing it and hearing that the inside of

2495

02:07:46,229 --> 02:07:44,079

the vehicle was even better than we

2496

02:07:48,550 --> 02:07:46,239

expected just is it's such a great

2497

02:07:50,790 --> 02:07:48,560

feeling to know that we did

2498

02:07:52,310 --> 02:07:50,800

we not only did our job but better than

2499

02:07:54,310 --> 02:07:52,320

better than we hoped it would perform so

2500

02:07:55,669 --> 02:07:54,320

that's uh that's really really good to

2501

02:07:57,510 --> 02:07:55,679

hear and i think that puts a lot of

2502

02:08:00,310 --> 02:07:57,520

confidence uh in these systems going

2503

02:08:03,669 --> 02:08:01,669

tori i think we lost the first part of

2504

02:08:06,550 --> 02:08:03,679

your question can we get you to run back

2505

02:08:09,589 --> 02:08:06,560

over it uh yeah of course um so i was

2506

02:08:11,510 --> 02:08:09,599

just saying that listening to josh and

2507

02:08:12,950 --> 02:08:11,520

uh and seeing that the the vehicle was

2508

02:08:14,149 --> 02:08:12,960

as clean as it was and jimmy and i were

2509

02:08:16,229 --> 02:08:14,159

talking about it in the studio just a

2510

02:08:17,990 --> 02:08:16,239

few minutes ago that the vehicle looks

2511

02:08:20,950 --> 02:08:18,000

fantastic on the ground there right

2512

02:08:22,310 --> 02:08:20,960

white clean way better than uh than what

2513

02:08:23,750 --> 02:08:22,320

we were expecting to see expect to see

2514

02:08:25,990 --> 02:08:23,760

some shower marks maybe a little are you

2515

02:08:28,310 --> 02:08:26,000

calling through the wi-fi so it's uh

2516

02:08:31,030 --> 02:08:28,320

it's really good looking out there and

2517

02:08:32,709 --> 02:08:31,040

it really just puts confidence in

2518

02:08:34,570 --> 02:08:32,719

the analysis that we've done and the

2519

02:08:37,430 --> 02:08:34,580

models that we have

2520

02:08:39,109 --> 02:08:37,440

[Music]

2521

02:08:41,189 --> 02:08:39,119

jim does this look the way uh the way

2522

02:08:42,629 --> 02:08:41,199

that you expected it to

2523

02:08:45,350 --> 02:08:42,639

you know it looked better than i

2524

02:08:47,350 --> 02:08:45,360

expected it to so i was really

2525

02:08:48,709 --> 02:08:47,360

i was really thinking that we were that

2526

02:08:50,069 --> 02:08:48,719

we were going to see at least a little

2527

02:08:52,550 --> 02:08:50,079

bit of scorching right around where the

2528

02:08:54,149 --> 02:08:52,560

shoulder comes up onto the vehicle but

2529

02:08:55,990 --> 02:08:54,159

those tiles are in all of the right

2530

02:08:57,990 --> 02:08:56,000

places and they look just like they did

2531

02:09:01,109 --> 02:08:58,000

when they left the factory so that is

2532

02:09:05,189 --> 02:09:01,119

that is a phenomenal thing to see

2533

02:09:07,589 --> 02:09:05,199

hey uh where where where we got it

2534

02:09:08,790 --> 02:09:07,599

thank you tori and jim you're seeing uh

2535

02:09:12,470 --> 02:09:08,800

you're seeing all this you're seeing

2536

02:09:17,189 --> 02:09:14,629

what are you thinking right now

2537

02:09:18,550 --> 02:09:17,199

so for the crew involvement um one the

2538

02:09:20,550 --> 02:09:18,560

vehicle looking the way it does means

2539

02:09:22,149 --> 02:09:20,560

good things for them coming back but it

2540

02:09:23,350 --> 02:09:22,159

also means good things for the parts on

2541

02:09:25,189 --> 02:09:23,360

the inside of the spacecraft that

2542

02:09:28,629 --> 02:09:25,199

they're going to reuse as well

2543

02:09:30,790 --> 02:09:28,639

so we are going to reuse things like the

2544

02:09:33,510 --> 02:09:30,800

tablets that we're using to do the crew

2545

02:09:35,750 --> 02:09:33,520

procedures and also um using for some of

2546

02:09:37,430 --> 02:09:35,760

their um training while they're up on

2547

02:09:39,669 --> 02:09:37,440

orbit things of that nature

2548

02:09:41,830 --> 02:09:39,679

that are inside of the spacecraft

2549

02:09:43,030 --> 02:09:41,840

that are going to be coming back as well

2550

02:09:44,069 --> 02:09:43,040

are going to be reused on later flights

2551

02:09:46,709 --> 02:09:44,079

so that's a good thing seeing the

2552

02:09:48,790 --> 02:09:46,719

vehicle the way it is

2553

02:09:50,950 --> 02:09:48,800

and we are seeing really good imagery

2554

02:09:52,790 --> 02:09:50,960

now of the

2555

02:09:57,510 --> 02:09:52,800

of the team coming out josh do we still

2556

02:10:01,030 --> 02:09:58,950

again starliner

2557

02:10:02,950 --> 02:10:01,040

engineer selena doper working on opening

2558

02:10:04,629 --> 02:10:02,960

the hatch

2559

02:10:07,270 --> 02:10:04,639

so

2560

02:10:09,189 --> 02:10:07,280

right now she is uh she's got a couple

2561

02:10:10,550 --> 02:10:09,199

of different tools so the the hatch

2562

02:10:13,750 --> 02:10:10,560

seals itself

2563

02:10:15,990 --> 02:10:13,760

um it is actually a little difficult to

2564

02:10:17,430 --> 02:10:16,000

open it's kind of like two suction cups

2565

02:10:19,830 --> 02:10:17,440

stuck together

2566

02:10:22,790 --> 02:10:19,840

um and so she's working on what's called

2567

02:10:25,990 --> 02:10:22,800

burping the seal so she's kind of

2568

02:10:28,550 --> 02:10:26,000

opening up a valve to uh allow a little

2569

02:10:30,149 --> 02:10:28,560

bit of air into the seal

2570

02:10:32,229 --> 02:10:30,159

and hopefully that'll just give her

2571

02:10:33,430 --> 02:10:32,239

enough uh

2572

02:10:35,270 --> 02:10:33,440

enough give

2573

02:10:36,950 --> 02:10:35,280

to get that hatch open she's already

2574

02:10:39,750 --> 02:10:36,960

kind of cranked the latch

2575

02:10:43,589 --> 02:10:39,760

to unhook it so she's again working on

2576

02:10:45,350 --> 02:10:43,599

burping the seal right now um if that

2577

02:10:46,870 --> 02:10:45,360

doesn't quite work there's another

2578

02:10:49,189 --> 02:10:46,880

release valve that she will kind of use

2579

02:10:51,350 --> 02:10:49,199

to pop the seal

2580

02:10:52,950 --> 02:10:51,360

and uh that's if they start working on

2581

02:10:54,629 --> 02:10:52,960

something kind of in the middle of the

2582

02:10:56,790 --> 02:10:54,639

hatch that's what they'll be working on

2583

02:10:59,030 --> 02:10:56,800

it looks like that might be what they're

2584

02:11:01,589 --> 02:10:59,040

doing right now

2585

02:11:03,430 --> 02:11:01,599

yeah you look great man

2586

02:11:05,589 --> 02:11:03,440

for a while now she's still working on

2587

02:11:07,990 --> 02:11:05,599

that lower valve

2588

02:11:10,229 --> 02:11:08,000

been trying to

2589

02:11:12,390 --> 02:11:10,239

burp that seal yes that is the technical

2590

02:11:14,149 --> 02:11:12,400

term

2591

02:11:15,910 --> 02:11:14,159

it's very descriptive

2592

02:11:19,350 --> 02:11:15,920

what what will happen after that once

2593

02:11:21,430 --> 02:11:19,360

they do have that that still burped

2594

02:11:22,390 --> 02:11:21,440

so again if they can uh if that gets

2595

02:11:25,510 --> 02:11:22,400

enough

2596

02:11:27,910 --> 02:11:25,520

uh air into that seal they'll be able to

2597

02:11:30,310 --> 02:11:27,920

you know release the hatch seal and then

2598

02:11:31,589 --> 02:11:30,320

they can open up the hatch

2599

02:11:40,470 --> 02:11:31,599

so that's what they're working on right

2600

02:11:43,990 --> 02:11:42,629

um

2601
02:11:45,669 --> 02:11:44,000
we're getting really good views right

2602
02:11:47,990 --> 02:11:45,679
over the shoulder so these are great

2603
02:11:52,069 --> 02:11:50,470
yeah i wish we got it a little earlier

2604
02:11:53,830 --> 02:11:52,079
because the fire rescue team when

2605
02:11:55,830 --> 02:11:53,840
they're putting that platform into place

2606
02:11:57,430 --> 02:11:55,840
i mean they they work together so well

2607
02:11:58,870 --> 02:11:57,440
hearing kind of their their calls as

2608
02:12:01,270 --> 02:11:58,880
they

2609
02:12:03,830 --> 02:12:01,280
orchestrate the operation is is really

2610
02:12:06,149 --> 02:12:03,840
uh fun to watch there

2611
02:12:08,390 --> 02:12:06,159
we got to see that and the environmental

2612
02:12:10,870 --> 02:12:08,400
enclosure go on just not from quite this

2613
02:12:17,910 --> 02:12:12,550

hopefully for later fights we'll get all

2614

02:12:22,629 --> 02:12:21,030

and uh getting a tv signal

2615

02:12:24,470 --> 02:12:22,639

out of a remote landing site in the

2616

02:12:25,910 --> 02:12:24,480

desert presents its own set of technical

2617

02:12:27,350 --> 02:12:25,920

challenges but i'm glad we're getting

2618

02:12:29,030 --> 02:12:27,360

this view right now again this is

2619

02:12:31,510 --> 02:12:29,040

opening up the hatch

2620

02:12:33,669 --> 02:12:31,520

and josh we do have confirmation that it

2621

02:12:35,030 --> 02:12:33,679

appears they've relieved the pressure on

2622

02:12:37,270 --> 02:12:35,040

the seal looks like they're getting

2623

02:12:47,189 --> 02:12:37,280

close to

2624

02:12:51,510 --> 02:12:48,870

all right well while they work on that

2625

02:12:53,589 --> 02:12:51,520

steven brandy i'm going to step away we

2626
02:12:55,510 --> 02:12:53,599
are going to go find the crew members

2627
02:12:57,270 --> 02:12:55,520
and hear from them here

2628
02:13:00,149 --> 02:12:57,280
uh from their perspective of how that

2629
02:13:02,629 --> 02:13:00,159
went and we'll get them on camera um for

2630
02:13:03,910 --> 02:13:02,639
you guys here momentarily we'll stand by

2631
02:13:05,910 --> 02:13:03,920
thank you

2632
02:13:07,589 --> 02:13:05,920
and since we are uh just hitting the top

2633
02:13:09,910 --> 02:13:07,599
of the hour i wanted to run everybody

2634
02:13:12,149 --> 02:13:09,920
that in about an hour at 9am central is

2635
02:13:14,709 --> 02:13:12,159
our target time we are planning to have

2636
02:13:17,189 --> 02:13:14,719
our post landing news conference that's

2637
02:13:19,589 --> 02:13:17,199
going to feature nasa administrator jim

2638
02:13:22,390 --> 02:13:19,599

bridenstine uh boeing's senior vice

2639

02:13:26,870 --> 02:13:22,400

president of space and launch uh jim

2640

02:13:28,790 --> 02:13:26,880

chilton and nasa's uh deputy director of

2641

02:13:30,790 --> 02:13:28,800

the commercial crew program steve stitch

2642

02:13:32,149 --> 02:13:30,800

they'll be joining us at 9am central

2643

02:13:34,310 --> 02:13:32,159

time for a post

2644

02:13:36,229 --> 02:13:34,320

landing news conference

2645

02:13:38,069 --> 02:13:36,239

media who want to participate in that

2646

02:13:46,629 --> 02:13:38,079

can call the johnson space center

2647

02:14:00,390 --> 02:13:48,390

and for those just joining us here at

2648

02:14:07,350 --> 02:14:03,030

and we do have views now the hatch is

2649

02:14:10,470 --> 02:14:07,360

open starliner's oft hatch is open

2650

02:14:11,589 --> 02:14:10,480

rosie snoopy inside rosie the rocketeer

2651
02:14:15,189 --> 02:14:11,599
and the

2652
02:14:17,189 --> 02:14:15,199
low gravity indicator snoopy both made

2653
02:14:20,470 --> 02:14:17,199
the trip along with uh

2654
02:14:22,950 --> 02:14:20,480
along with a lot of commemorative cargo

2655
02:14:24,790 --> 02:14:22,960
flags coins and even tree seeds that'll

2656
02:14:26,149 --> 02:14:24,800
be planted

2657
02:14:28,550 --> 02:14:26,159
in in

2658
02:14:30,229 --> 02:14:28,560
commemoration of this mission

2659
02:14:31,350 --> 02:14:30,239
of course a lot of things were learned

2660
02:14:32,709 --> 02:14:31,360
on this flight

2661
02:14:34,870 --> 02:14:32,719
it is the first

2662
02:14:39,109 --> 02:14:34,880
flight test of boeing's starliner

2663
02:14:52,310 --> 02:14:40,709

ground crews getting their first look

2664

02:14:57,030 --> 02:14:54,950

and the frame that you saw push pushed

2665

02:14:58,390 --> 02:14:57,040

into place there in the hatches is

2666

02:15:00,470 --> 02:14:58,400

actually a

2667

02:15:02,550 --> 02:15:00,480

cover for those same seals that they

2668

02:15:15,430 --> 02:15:02,560

were just relieving the pressure on

2669

02:15:15,440 --> 02:15:22,390

is

2670

02:15:26,149 --> 02:15:23,830

and we can see the ground team going

2671

02:15:27,830 --> 02:15:26,159

through their carefully planned steps as

2672

02:15:29,990 --> 02:15:27,840

they prepare

2673

02:15:31,669 --> 02:15:30,000

the spacecraft putting a cover over that

2674

02:15:35,510 --> 02:15:31,679

over that hatch that they just opened a

2675

02:15:41,350 --> 02:15:37,430

first they're going to confirm that the

2676

02:15:45,990 --> 02:15:43,910

this flight test produced a lot of data

2677

02:15:50,310 --> 02:15:46,000

for engineers a lot of

2678

02:15:52,310 --> 02:15:50,320

information and a lot of um

2679

02:15:54,470 --> 02:15:52,320

operational process

2680

02:15:56,709 --> 02:15:54,480

processes

2681

02:15:59,750 --> 02:15:56,719

to see how it

2682

02:16:01,189 --> 02:15:59,760

performs in space

2683

02:16:03,589 --> 02:16:01,199

and of course

2684

02:16:05,589 --> 02:16:03,599

two of the big parts of that are the

2685

02:16:07,350 --> 02:16:05,599

launch and then they return to earth

2686

02:16:09,030 --> 02:16:07,360

these are very dynamic events shouldn't

2687

02:16:10,790 --> 02:16:09,040

be overlooked

2688

02:16:12,950 --> 02:16:10,800

and we see

2689

02:16:27,430 --> 02:16:12,960

right now that starliner

2690

02:16:30,870 --> 02:16:29,669

and we have our first landing recovery

2691

02:16:32,950 --> 02:16:30,880

team

2692

02:16:35,830 --> 02:16:32,960

engineer about to go inside the

2693

02:16:38,389 --> 02:16:35,840

starliner vehicle

2694

02:16:46,150 --> 02:16:38,399

selena doe part

2695

02:16:49,830 --> 02:16:48,070

for those who are just joining us

2696

02:16:52,150 --> 02:16:49,840

boeing's starliner spacecraft touched

2697

02:16:54,309 --> 02:16:52,160

down in white sands new mexico an hour

2698

02:16:56,070 --> 02:16:54,319

and six minutes ago

2699

02:16:58,389 --> 02:16:56,080

came down under three

2700

02:17:01,429 --> 02:16:58,399

main parachutes

2701

02:17:03,429 --> 02:17:01,439

touchdown on six airbags

2702

02:17:05,589 --> 02:17:03,439

now we see selena doe part of the

2703

02:17:07,990 --> 02:17:05,599

landing recovery team moving into the

2704

02:17:11,349 --> 02:17:08,000

starliner vehicle

2705

02:17:13,110 --> 02:17:11,359

this mission was without a crew

2706

02:17:20,150 --> 02:17:13,120

as the first

2707

02:17:24,309 --> 02:17:22,150

but we do have rosie the rocketeer in

2708

02:17:25,589 --> 02:17:24,319

the commander's seat an anthropometric

2709

02:17:27,589 --> 02:17:25,599

test device

2710

02:17:29,110 --> 02:17:27,599

gathering all sorts of data she's

2711

02:17:30,790 --> 02:17:29,120

outfitted with

2712

02:17:33,349 --> 02:17:30,800

all kinds of instruments that's going to

2713

02:17:35,669 --> 02:17:33,359

tell us exactly what the crew can expect

2714

02:17:36,870 --> 02:17:35,679

early indications are the crew can

2715

02:17:44,230 --> 02:17:36,880

expect

2716

02:17:44,240 --> 02:18:09,030

is

2717

02:18:09,040 --> 02:18:26,790

down to okay

2718

02:18:26,800 --> 02:18:40,709

those guys

2719

02:18:40,719 --> 02:19:04,230

oh

2720

02:19:07,669 --> 02:19:06,950

ortio

2721

02:19:12,709 --> 02:19:07,679

and

2722

02:19:14,389 --> 02:19:12,719

recovery team that rosie the rocketeer

2723

02:19:32,709 --> 02:19:14,399

is still strapped in in the commander's

2724

02:19:45,190 --> 02:19:34,389

it's in her vehicle detection of where

2725

02:19:50,230 --> 02:19:46,870

well we're standing by on this we do

2726
02:19:52,070 --> 02:19:50,240
have another photo that came in after uh

2727
02:20:15,270 --> 02:19:52,080
after starliners touched down from our

2728
02:20:18,870 --> 02:20:16,950
uh we've got what comes out of it we

2729
02:20:21,190 --> 02:20:18,880
can't do anything to it okay

2730
02:20:26,070 --> 02:20:24,469
i'm done with it just belong to drive

2731
02:20:27,990 --> 02:20:26,080
sorry slight delay there but there's

2732
02:20:29,270 --> 02:20:28,000
that uh photo i was promising this again

2733
02:20:31,349 --> 02:20:29,280
taken by

2734
02:20:33,990 --> 02:20:31,359
the uh nasa photographers on the scene

2735
02:20:37,270 --> 02:20:34,000
and uh there's uh the one that we got

2736
02:20:40,870 --> 02:20:37,280
from starliner just after it landed

2737
02:20:43,270 --> 02:20:40,880
at five uh 5 58 a.m mountain time 6 58

2738
02:20:45,030 --> 02:20:43,280

a.m central time you can see that that

2739

02:20:46,389 --> 02:20:45,040

is right at landing because of the

2740

02:20:50,309 --> 02:20:46,399

position of the

2741

02:20:52,070 --> 02:20:50,319

this photog those photographs coming in

2742

02:20:54,389 --> 02:20:52,080

from aubrey

2743

02:20:55,990 --> 02:20:54,399

jiminy nasa photographer there on the

2744

02:20:58,950 --> 02:20:56,000

scene

2745

02:21:00,870 --> 02:20:58,960

it really was a great view this morning

2746

02:21:02,710 --> 02:21:00,880

as a starliner touched down about an

2747

02:21:04,950 --> 02:21:02,720

hour and ten minutes ago now we're back

2748

02:21:07,910 --> 02:21:04,960

to live imagery of the landing recovery

2749

02:21:57,190 --> 02:21:07,920

team as they look in on the hatch

2750

02:22:02,070 --> 02:21:59,270

we expect to hear momentarily from the

2751
02:22:03,110 --> 02:22:02,080
landing team there on site who

2752
02:22:04,870 --> 02:22:03,120
we

2753
02:22:07,670 --> 02:22:04,880
think are just about to get into place

2754
02:22:09,510 --> 02:22:07,680
with the next crew to fly on a starliner

2755
02:22:11,990 --> 02:22:09,520
for the first crew to fly out of style

2756
02:22:13,590 --> 02:22:12,000
nasa's mike fake and nicole man along

2757
02:22:15,910 --> 02:22:13,600
with boeing's uh

2758
02:22:17,830 --> 02:22:15,920
chris ferguson expect to hear from them

2759
02:22:19,030 --> 02:22:17,840
uh just momentarily i think uh there's

2760
02:22:21,429 --> 02:22:19,040
they're still getting into place but

2761
02:22:40,469 --> 02:22:21,439
we're gonna hold on and and

2762
02:22:46,150 --> 02:22:43,110
and just a note on the interior cabin

2763
02:22:48,630 --> 02:22:46,160

conditions as they were reported

2764

02:22:50,630 --> 02:22:48,640

the inside humidity was 51 percent

2765

02:22:53,429 --> 02:22:50,640

temperature internally

2766

02:22:55,349 --> 02:22:53,439

around 54 degrees so this spacecraft

2767

02:22:56,550 --> 02:22:55,359

handled very very well

2768

02:22:58,469 --> 02:22:56,560

in fact

2769

02:23:55,349 --> 02:22:58,479

better performance

2770

02:23:59,030 --> 02:23:57,030

and we're looking now at some of the

2771

02:24:00,230 --> 02:23:59,040

astronauts there in the blue pants and

2772

02:24:09,590 --> 02:24:00,240

their

2773

02:24:14,790 --> 02:24:13,030

they flew out to new mexico to

2774

02:24:16,550 --> 02:24:14,800

follow starliner's

2775

02:24:20,309 --> 02:24:16,560

return to earth

2776

02:24:21,830 --> 02:24:20,319

we see two more coming down

2777

02:24:23,910 --> 02:24:21,840

joining the uh

2778

02:24:25,830 --> 02:24:23,920

joining the group they're within within

2779

02:24:38,710 --> 02:24:25,840

a few feet

2780

02:24:47,190 --> 02:24:40,550

so right now we're looking at the

2781

02:24:51,110 --> 02:24:49,190

as they shuffle around with the landing

2782

02:24:52,630 --> 02:24:51,120

recovery team

2783

02:25:06,870 --> 02:24:52,640

there's a lot of activity out by that

2784

02:25:10,550 --> 02:25:08,630

and there's a lot of activity around the

2785

02:25:12,230 --> 02:25:10,560

capsule this uh this is a little bit

2786

02:25:14,309 --> 02:25:12,240

reminiscent of the shuttle days when

2787

02:25:17,110 --> 02:25:14,319

everybody would gather around the

2788

02:25:19,590 --> 02:25:17,120

shuttle after it landed and uh of course

2789

02:25:22,469 --> 02:25:19,600

you have crews come in with the soyuz

2790

02:25:23,670 --> 02:25:22,479

landing in kazakhstan yeah this is a

2791

02:25:24,870 --> 02:25:23,680

little

2792

02:25:26,550 --> 02:25:24,880

less remote than the shuttle but a

2793

02:25:29,030 --> 02:25:26,560

little more remote or not quite as

2794

02:25:30,790 --> 02:25:29,040

remote as the kazakhstan landing still

2795

02:25:32,469 --> 02:25:30,800

it does start to look familiar and it

2796

02:25:34,870 --> 02:25:32,479

looks like we may be getting close to

2797

02:25:37,270 --> 02:25:34,880

having the crew ready to talk with us

2798

02:25:38,950 --> 02:25:37,280

in fact i'm going to toss right on to

2799

02:25:45,030 --> 02:25:38,960

dan hewitt who is in the field how are

2800

02:25:49,110 --> 02:25:47,750

hey dan i don't think has his program

2801
02:25:50,950 --> 02:25:49,120
line working so i'm going to take it

2802
02:25:52,790 --> 02:25:50,960
from here but uh you know we're here

2803
02:25:55,910 --> 02:25:52,800
with nasa's nicole man boeing's chris

2804
02:25:57,990 --> 02:25:55,920
ferguson and nasa's mike fink guys uh

2805
02:25:59,349 --> 02:25:58,000
nicole i'll start with you seeing i'm

2806
02:26:00,630 --> 02:25:59,359
guessing this is your first spacecraft

2807
02:26:04,630 --> 02:26:00,640
landing

2808
02:26:06,309 --> 02:26:04,640
was incredible and see we're so excited

2809
02:26:07,670 --> 02:26:06,319
for the boeing and nasa team and the

2810
02:26:09,670 --> 02:26:07,680
recovery forces today just did an

2811
02:26:11,510 --> 02:26:09,680
incredible job

2812
02:26:14,550 --> 02:26:11,520
crystal clear day you could see it from

2813
02:26:16,230 --> 02:26:14,560

about 300 kilometers away a good double

2814

02:26:18,309 --> 02:26:16,240

sonic boom

2815

02:26:20,389 --> 02:26:18,319

watched all of the pyrotechnic ordnance

2816

02:26:22,070 --> 02:26:20,399

that deployed the parachutes

2817

02:26:23,750 --> 02:26:22,080

you know take care of itself on the way

2818

02:26:26,070 --> 02:26:23,760

down and we saw it all the touchdown

2819

02:26:27,910 --> 02:26:26,080

even on just a crystal clear but cold

2820

02:26:29,830 --> 02:26:27,920

morning work great

2821

02:26:31,670 --> 02:26:29,840

and mike here

2822

02:26:33,190 --> 02:26:31,680

three parachutes

2823

02:26:35,830 --> 02:26:33,200

six uh

2824

02:26:37,990 --> 02:26:35,840

airbags and a beautiful soft landing

2825

02:26:40,389 --> 02:26:38,000

can't wait to try it out

2826

02:26:41,670 --> 02:26:40,399

so we we had a flawless launch we had a

2827

02:26:43,590 --> 02:26:41,680

couple issues once we were up there

2828

02:26:45,429 --> 02:26:43,600

what's it mean now to see this vehicle

2829

02:26:47,670 --> 02:26:45,439

come down you know almost picture

2830

02:26:49,510 --> 02:26:47,680

perfect flight test data flight test

2831

02:26:52,870 --> 02:26:49,520

data flight test data we've got a lot of

2832

02:26:54,870 --> 02:26:52,880

data on the the launch the orbital uh

2833

02:26:56,230 --> 02:26:54,880

portion of the flight the eclipse system

2834

02:26:58,150 --> 02:26:56,240

that's environmental control life

2835

02:26:59,830 --> 02:26:58,160

support uh everything's worked worked

2836

02:27:01,670 --> 02:26:59,840

great and then we brought it home and

2837

02:27:03,750 --> 02:27:01,680

everything worked it was uh it was great

2838

02:27:05,910 --> 02:27:03,760

data and we're going to analyze it and

2839

02:27:07,429 --> 02:27:05,920

and we're going to see

2840

02:27:09,990 --> 02:27:07,439

anything that we need to fix for the

2841

02:27:12,389 --> 02:27:10,000

next flight but it's looking good

2842

02:27:14,150 --> 02:27:12,399

now chris i remember when i was with uh

2843

02:27:15,590 --> 02:27:14,160

you down in the simulator in houston you

2844

02:27:17,190 --> 02:27:15,600

talked about how much different this is

2845

02:27:18,150 --> 02:27:17,200

going to be coming back than the shuttle

2846

02:27:19,510 --> 02:27:18,160

because you're almost coming in

2847

02:27:20,550 --> 02:27:19,520

backwards can you talk a little bit

2848

02:27:22,950 --> 02:27:20,560

about that

2849

02:27:25,190 --> 02:27:22,960

yeah i what really impressed me was uh

2850

02:27:27,830 --> 02:27:25,200

you know the shuttle sort of uh glided

2851
02:27:29,590 --> 02:27:27,840
into the atmosphere and uh yeah at the

2852
02:27:32,070 --> 02:27:29,600
sort of in the end game

2853
02:27:34,070 --> 02:27:32,080
it was pretty steep this was really

2854
02:27:35,429 --> 02:27:34,080
steep so it almost looked like it was

2855
02:27:37,030 --> 02:27:35,439
going to overshoot the landing site and

2856
02:27:39,270 --> 02:27:37,040
at the last minute you know gravity sort

2857
02:27:41,110 --> 02:27:39,280
of took over and it pretty much came

2858
02:27:42,870 --> 02:27:41,120
straight on down so

2859
02:27:44,469 --> 02:27:42,880
i was a little curious about the boom we

2860
02:27:47,190 --> 02:27:44,479
got a nice double boom out of it i would

2861
02:27:48,790 --> 02:27:47,200
say it was real loud but other than that

2862
02:27:50,790 --> 02:27:48,800
being able to just watch the entire

2863
02:27:53,429 --> 02:27:50,800

sequence from the ground on down

2864

02:27:55,590 --> 02:27:53,439

was uh was just fantastic i heard

2865

02:27:57,190 --> 02:27:55,600

the our radar team picked up lock right

2866

02:27:59,190 --> 02:27:57,200

over the mountains as it was

2867

02:28:01,910 --> 02:27:59,200

mountain rise which is great i heard

2868

02:28:02,630 --> 02:28:01,920

that the wb-57 with reconnaissance and

2869

02:28:04,790 --> 02:28:02,640

and

2870

02:28:06,230 --> 02:28:04,800

telemetry data picked up a lot of

2871

02:28:09,429 --> 02:28:06,240

a lot as well so we're going to have a

2872

02:28:11,190 --> 02:28:09,439

lot to look at uh a really clean landing

2873

02:28:13,510 --> 02:28:11,200

now the reason we took a little bit to

2874

02:28:15,110 --> 02:28:13,520

get you guys over here we had to go

2875

02:28:16,950 --> 02:28:15,120

get you away from that base heat shield

2876
02:28:19,110 --> 02:28:16,960
you were examining that you know nicole

2877
02:28:20,550 --> 02:28:19,120
uh seeing the the crew module on the

2878
02:28:22,309 --> 02:28:20,560
heat shields around here you know what

2879
02:28:24,389 --> 02:28:22,319
did it look like seeing the hardware on

2880
02:28:26,150 --> 02:28:24,399
the ground to you it was amazing to me i

2881
02:28:27,910 --> 02:28:26,160
couldn't imagine that it had just come

2882
02:28:29,670 --> 02:28:27,920
through the atmosphere at incredible

2883
02:28:31,510 --> 02:28:29,680
temperatures it looked like it was in

2884
02:28:33,349 --> 02:28:31,520
great shape um you could see when it

2885
02:28:34,710 --> 02:28:33,359
impacted the ground and that it had a

2886
02:28:37,110 --> 02:28:34,720
little damage but other than that you

2887
02:28:38,309 --> 02:28:37,120
know it really looked uniform and it was

2888
02:28:39,830 --> 02:28:38,319

in really in great shape i think we're

2889

02:28:41,190 --> 02:28:39,840

going to get a lot of great data from

2890

02:28:43,750 --> 02:28:41,200

recovering those

2891

02:28:46,630 --> 02:28:43,760

well i know it's pretty cold out here um

2892

02:28:48,550 --> 02:28:46,640

we might let you guys bundle back up

2893

02:28:50,630 --> 02:28:48,560

and toss it back to you guys brandi and

2894

02:28:53,750 --> 02:28:50,640

steve out in houston and uh i want to

2895

02:28:55,670 --> 02:28:53,760

bundle back up too it's freezing

2896

02:28:57,590 --> 02:28:55,680

thanks so much josh and great to see the

2897

02:29:00,070 --> 02:28:57,600

crew out there and as you can see we are

2898

02:29:02,230 --> 02:29:00,080

now joined by uh flight director richard

2899

02:29:04,230 --> 02:29:02,240

jones coming off a great landing welcome

2900

02:29:06,150 --> 02:29:04,240

richard thank you so much thanks so much

2901

02:29:07,750 --> 02:29:06,160

for joining us um

2902

02:29:10,790 --> 02:29:07,760

how does it feel to be has gotten to

2903

02:29:12,950 --> 02:29:10,800

this point oh it's a it's a relief uh

2904

02:29:14,630 --> 02:29:12,960

but excitement at the same time you know

2905

02:29:16,309 --> 02:29:14,640

it was a lot of people are looking at

2906

02:29:18,630 --> 02:29:16,319

this mission that we didn't get

2907

02:29:22,070 --> 02:29:18,640

everything that we should have but in my

2908

02:29:24,550 --> 02:29:22,080

eyes it was a huge success huge success

2909

02:29:26,070 --> 02:29:24,560

and uh you heard the nasa administrator

2910

02:29:28,389 --> 02:29:26,080

soon after talking about how much

2911

02:29:30,230 --> 02:29:28,399

information is coming from this mission

2912

02:29:32,710 --> 02:29:30,240

talk a little bit about some of some of

2913

02:29:34,630 --> 02:29:32,720

the things you you and your team

2914

02:29:35,990 --> 02:29:34,640

work through issues at the beginning but

2915

02:29:37,910 --> 02:29:36,000

then you got a lot of stuff done and of

2916

02:29:40,710 --> 02:29:37,920

course today's landing was

2917

02:29:43,030 --> 02:29:40,720

was just beautiful yeah we you know aft

2918

02:29:45,030 --> 02:29:43,040

we proved clearly the ascent and entry

2919

02:29:46,630 --> 02:29:45,040

systems worked great but we also had the

2920

02:29:48,630 --> 02:29:46,640

opportunity to fly underneath the

2921

02:29:51,510 --> 02:29:48,640

station the space station

2922

02:29:53,270 --> 02:29:51,520

we made voice communications with them

2923

02:29:55,349 --> 02:29:53,280

not necessarily through a voice

2924

02:29:57,429 --> 02:29:55,359

communication but we had a positive link

2925

02:30:00,230 --> 02:29:57,439

where we tested commands

2926

02:30:02,389 --> 02:30:00,240

so we got some objectives done

2927

02:30:03,830 --> 02:30:02,399

talk a little bit about your team you

2928

02:30:06,230 --> 02:30:03,840

you have you don't do all this by

2929

02:30:10,070 --> 02:30:06,240

yourself no no none of us do all this by

2930

02:30:11,750 --> 02:30:10,080

ourselves no i am definitely a a part of

2931

02:30:13,750 --> 02:30:11,760

one of the most exceptional teams that

2932

02:30:16,790 --> 02:30:13,760

i've been a part of you know it's

2933

02:30:19,349 --> 02:30:16,800

we we accomplished so much uh with this

2934

02:30:21,270 --> 02:30:19,359

with this flight the team members they

2935

02:30:23,510 --> 02:30:21,280

every single one

2936

02:30:26,309 --> 02:30:23,520

contributed in their own in their own

2937

02:30:28,070 --> 02:30:26,319

way and uh contributed the successful

2938

02:30:30,070 --> 02:30:28,080

outcome of this mission so very proud to

2939

02:30:32,630 --> 02:30:30,080

be a part of that i feel like a lot of

2940

02:30:34,150 --> 02:30:32,640

the successes are probably due to a

2941

02:30:36,309 --> 02:30:34,160

whole lot of training on the front end

2942

02:30:37,990 --> 02:30:36,319

on your side yeah no we've been training

2943

02:30:39,510 --> 02:30:38,000

for over a year now we've had a lot of

2944

02:30:40,469 --> 02:30:39,520

simulations going through all of these

2945

02:30:41,910 --> 02:30:40,479

things

2946

02:30:44,230 --> 02:30:41,920

and it's kind of built into the flight

2947

02:30:46,309 --> 02:30:44,240

control elements that we all are trying

2948

02:30:47,429 --> 02:30:46,319

to hone our skills to do and it's just

2949

02:30:49,590 --> 02:30:47,439

to

2950

02:30:51,349 --> 02:30:49,600

perform under the sometimes the face of

2951

02:30:53,750 --> 02:30:51,359

adversity and perform

2952

02:30:55,990 --> 02:30:53,760

uh when everything is calm so you know

2953

02:30:57,750 --> 02:30:56,000

it's just it's part of what we do you

2954

02:30:59,429 --> 02:30:57,760

all seem very calm the whole time we

2955

02:31:00,710 --> 02:30:59,439

were right here with you and it was

2956

02:31:03,270 --> 02:31:00,720

amazing to us

2957

02:31:05,270 --> 02:31:03,280

well it was you know it's almost like a

2958

02:31:07,830 --> 02:31:05,280

duck with their feet paddling underwater

2959

02:31:09,590 --> 02:31:07,840

we were working really hard uh trying to

2960

02:31:12,389 --> 02:31:09,600

get through some really difficult

2961

02:31:15,270 --> 02:31:12,399

uh challenges but uh on the surface yeah

2962

02:31:16,790 --> 02:31:15,280

that's that's our demeanor

2963

02:31:18,710 --> 02:31:16,800

when um

2964

02:31:20,790 --> 02:31:18,720

you had of course this great seat where

2965

02:31:23,349 --> 02:31:20,800

you saw the telemetry of the vehicle as

2966

02:31:24,550 --> 02:31:23,359

it came down as it landed

2967

02:31:26,870 --> 02:31:24,560

looked

2968

02:31:29,349 --> 02:31:26,880

stable as a table to us came down soft

2969

02:31:31,830 --> 02:31:29,359

as could be you saw the

2970

02:31:35,110 --> 02:31:31,840

numbers how did that look to you no the

2971

02:31:36,950 --> 02:31:35,120

the data looked i mean just great

2972

02:31:37,750 --> 02:31:36,960

and uh

2973

02:31:39,910 --> 02:31:37,760

we

2974

02:31:41,590 --> 02:31:39,920

there was a period during reentry where

2975

02:31:43,429 --> 02:31:41,600

we had a little bit of a blackout but it

2976
02:31:44,630 --> 02:31:43,439
happened exactly where it should have

2977
02:31:46,710 --> 02:31:44,640
been

2978
02:31:48,710 --> 02:31:46,720
all of the systems were performing

2979
02:31:49,510 --> 02:31:48,720
exactly like what we predicted in fact a

2980
02:31:50,790 --> 02:31:49,520
lot

2981
02:31:52,870 --> 02:31:50,800
performed better than what we were

2982
02:31:54,230 --> 02:31:52,880
expecting and so it was it was really

2983
02:31:56,550 --> 02:31:54,240
good to see the vehicle behave the way

2984
02:31:58,230 --> 02:31:56,560
it did and we are we're seeing right now

2985
02:32:00,230 --> 02:31:58,240
some live views of the astronauts

2986
02:32:03,190 --> 02:32:00,240
getting a look inside the vehicle

2987
02:32:05,030 --> 02:32:03,200
um i know you had a good seat but

2988
02:32:07,429 --> 02:32:05,040

it's hard to compete with that one no no

2989

02:32:09,110 --> 02:32:07,439

no uh you're right i cannot compete with

2990

02:32:11,990 --> 02:32:09,120

that it's going to be really exciting to

2991

02:32:13,990 --> 02:32:12,000

see the cft crew get into

2992

02:32:15,510 --> 02:32:14,000

not necessarily this vehicle but its

2993

02:32:17,349 --> 02:32:15,520

vehicle their vehicle that they're going

2994

02:32:19,670 --> 02:32:17,359

to fly to the space station it's going

2995

02:32:22,070 --> 02:32:19,680

to be a great day to see that happen

2996

02:32:25,190 --> 02:32:22,080

how do you think rosie the rocketeer did

2997

02:32:26,870 --> 02:32:25,200

during this flight i'm sure she did just

2998

02:32:28,710 --> 02:32:26,880

fine

2999

02:32:32,230 --> 02:32:28,720

you know she got a great ride during

3000

02:32:34,790 --> 02:32:32,240

ascent the atlas v performed flawlessly

3001
02:32:35,910 --> 02:32:34,800
once we got on orbit she got to see how

3002
02:32:43,349 --> 02:32:35,920
the

3003
02:32:46,230 --> 02:32:43,359
she she probably had it's it's like a

3004
02:32:50,230 --> 02:32:46,240
southwest flight to

3005
02:32:53,510 --> 02:32:50,240
her hometown it was just that easy

3006
02:32:54,790 --> 02:32:53,520
when um when you look back at this

3007
02:32:56,230 --> 02:32:54,800
mission

3008
02:32:58,070 --> 02:32:56,240
what uh what are some of the days that

3009
02:33:00,150 --> 02:32:58,080
are going to stand out to you

3010
02:33:02,469 --> 02:33:00,160
oh every single day you know it's not

3011
02:33:04,230 --> 02:33:02,479
more of the days it was i will look back

3012
02:33:06,469 --> 02:33:04,240
on this and just remember the people

3013
02:33:09,110 --> 02:33:06,479

that were a part of it

3014

02:33:10,630 --> 02:33:09,120

there were just so many people not just

3015

02:33:12,630 --> 02:33:10,640

in this room

3016

02:33:14,469 --> 02:33:12,640

the engineering team whether they were

3017

02:33:17,190 --> 02:33:14,479

just down the hall

3018

02:33:19,429 --> 02:33:17,200

in florida the ula team members that we

3019

02:33:21,750 --> 02:33:19,439

had the mission management team meetings

3020

02:33:24,710 --> 02:33:21,760

that we had

3021

02:33:26,469 --> 02:33:24,720

it's uh it's really special to see so

3022

02:33:28,790 --> 02:33:26,479

many people from

3023

02:33:30,309 --> 02:33:28,800

different backgrounds just come together

3024

02:33:32,309 --> 02:33:30,319

and just perform

3025

02:33:35,590 --> 02:33:32,319

flawlessly that's what i'm going to

3026

02:33:39,590 --> 02:33:37,429

images from inside the cabin of

3027

02:33:42,070 --> 02:33:39,600

starliner richard you're seeing these

3028

02:33:44,230 --> 02:33:42,080

fresh just as we are

3029

02:33:45,110 --> 02:33:44,240

what are you thinking gosh you know it

3030

02:33:46,950 --> 02:33:45,120

looks

3031

02:33:49,270 --> 02:33:46,960

i'm looking inside that

3032

02:33:51,990 --> 02:33:49,280

that cabin it looks like all of

3033

02:33:53,990 --> 02:33:52,000

the cargo did just fine

3034

02:33:55,590 --> 02:33:54,000

it's i would love to see rosie just

3035

02:33:58,230 --> 02:33:55,600

sitting there just to see

3036

02:34:00,550 --> 02:33:58,240

how uh how rosie did but boy it looks

3037

02:34:03,270 --> 02:34:00,560

like they had a really smooth ride

3038

02:34:05,670 --> 02:34:03,280

that's what it looks like to me

3039

02:34:07,190 --> 02:34:05,680

lots of good news today

3040

02:34:08,870 --> 02:34:07,200

you can see just a little bit of rosie

3041

02:34:09,990 --> 02:34:08,880

there on the left side of the screen i

3042

02:34:10,870 --> 02:34:10,000

do see her

3043

02:34:16,150 --> 02:34:10,880

yeah

3044

02:34:18,870 --> 02:34:16,160

looks like she had a great ride

3045

02:34:21,510 --> 02:34:18,880

well and richard returning to kind of

3046

02:34:23,510 --> 02:34:21,520

your journey so far you were on hand for

3047

02:34:25,510 --> 02:34:23,520

the last flight of the space shuttle and

3048

02:34:27,190 --> 02:34:25,520

now the first flight yes of this new

3049

02:34:28,309 --> 02:34:27,200

vehicle that's that's some interesting

3050

02:34:31,590 --> 02:34:28,319

book ends

3051
02:34:33,429 --> 02:34:31,600
it is and um it you know being a part of

3052
02:34:35,110 --> 02:34:33,439
sts-135

3053
02:34:36,790 --> 02:34:35,120
shutting down the shuttle program with

3054
02:34:38,150 --> 02:34:36,800
that mission it was very special it was

3055
02:34:40,309 --> 02:34:38,160
very emotional

3056
02:34:41,910 --> 02:34:40,319
um chris ferguson was a part of that

3057
02:34:42,790 --> 02:34:41,920
that mission so i'm paired with him

3058
02:34:45,590 --> 02:34:42,800
again

3059
02:34:47,830 --> 02:34:45,600
coming up on this upcoming cft mission

3060
02:34:50,309 --> 02:34:47,840
but to start up a new program like this

3061
02:34:52,309 --> 02:34:50,319
from the ground up all of the the years

3062
02:34:53,270 --> 02:34:52,319
of hard work that many many people put

3063
02:34:55,270 --> 02:34:53,280

into this

3064

02:34:58,630 --> 02:34:55,280

uh it's very special how i will always

3065

02:35:01,190 --> 02:34:58,640

remember that yeah i'm sure what would

3066

02:35:02,790 --> 02:35:01,200

you say that this team needs to do and

3067

02:35:04,950 --> 02:35:02,800

get ready for between now and the next

3068

02:35:06,950 --> 02:35:04,960

mission you know what we need to do is

3069

02:35:09,349 --> 02:35:06,960

we need to look at the data right we're

3070

02:35:11,030 --> 02:35:09,359

going to grab all the data that we we

3071

02:35:13,750 --> 02:35:11,040

collected during this flight break it

3072

02:35:15,110 --> 02:35:13,760

down look where things can be improved

3073

02:35:17,030 --> 02:35:15,120

look where things don't need to be

3074

02:35:18,070 --> 02:35:17,040

improved because there's a lot of areas

3075

02:35:21,830 --> 02:35:18,080

that

3076

02:35:24,150 --> 02:35:21,840

categories and

3077

02:35:27,590 --> 02:35:24,160

really look at it with the eye in terms

3078

02:35:29,910 --> 02:35:27,600

of what really has to happen

3079

02:35:32,630 --> 02:35:29,920

uh in terms of changing before we go fly

3080

02:35:33,990 --> 02:35:32,640

cft that's what we need to go do

3081

02:35:35,270 --> 02:35:34,000

well richard thank you so much for

3082

02:35:37,030 --> 02:35:35,280

joining us i really appreciate it i

3083

02:35:40,230 --> 02:35:37,040

think actually we are now i'm going to

3084

02:35:42,150 --> 02:35:40,240

go back to the field and hear from suni

3085

02:35:58,469 --> 02:35:42,160

williams who's going to be on this

3086

02:36:02,230 --> 02:36:00,389

and i think they may not quite have hurt

3087

02:36:06,630 --> 02:36:02,240

us so i'm going to try again

3088

02:36:11,830 --> 02:36:09,190

hey hey we can hear you now yeah i am

3089

02:36:14,870 --> 02:36:11,840

here with sunny williams she is going to

3090

02:36:17,590 --> 02:36:14,880

be the first post certification

3091

02:36:20,230 --> 02:36:17,600

uh mission commander of the ship that's

3092

02:36:21,910 --> 02:36:20,240

behind us here uh sunny i've been in a

3093

02:36:23,590 --> 02:36:21,920

lot of flight test readiness reviews

3094

02:36:25,830 --> 02:36:23,600

with you i've seen you interacting with

3095

02:36:28,790 --> 02:36:25,840

our employees i saw you at the landing

3096

02:36:30,870 --> 02:36:28,800

and recovery uh pre brief meeting

3097

02:36:32,950 --> 02:36:30,880

every time you're like you have got to

3098

02:36:36,070 --> 02:36:32,960

bring this back home so i can get

3099

02:36:37,830 --> 02:36:36,080

into space with josh and fly it again so

3100

02:36:39,750 --> 02:36:37,840

give us a recap of how you're feeling

3101
02:36:41,830 --> 02:36:39,760
watching you know starliner return from

3102
02:36:43,910 --> 02:36:41,840
space out here yeah it was really pretty

3103
02:36:45,429 --> 02:36:43,920
unbelievable it was picture perfect

3104
02:36:47,590 --> 02:36:45,439
everything about it was just amazing

3105
02:36:48,870 --> 02:36:47,600
from seeing the tail as it flew in well

3106
02:36:51,190 --> 02:36:48,880
first of all seeing the space station

3107
02:36:53,990 --> 02:36:51,200
fly over that was cool seeing the tail

3108
02:36:56,389 --> 02:36:54,000
of the spacecraft fly uh fly over see

3109
02:36:58,070 --> 02:36:56,399
all of the pieces and parts start to

3110
02:36:59,830 --> 02:36:58,080
come off the forward forward heat shield

3111
02:37:01,670 --> 02:36:59,840
the base heat shield see the parachutes

3112
02:37:04,550 --> 02:37:01,680
open up i mean it was just picture

3113
02:37:06,469 --> 02:37:04,560

perfect we had a beautiful amazing team

3114

02:37:08,469 --> 02:37:06,479

all out here ready to support everybody

3115

02:37:10,469 --> 02:37:08,479

was pumped everybody was cheering it was

3116

02:37:12,710 --> 02:37:10,479

it was spectacular i mean it's she's

3117

02:37:16,389 --> 02:37:12,720

back she's home yeah

3118

02:37:19,030 --> 02:37:16,399

so sunny dating back to mercury gemini

3119

02:37:21,429 --> 02:37:19,040

and apollo all of the commanders of

3120

02:37:24,230 --> 02:37:21,439

their space capsules have had the

3121

02:37:25,910 --> 02:37:24,240

ability to name their spaceships and so

3122

02:37:27,110 --> 02:37:25,920

on behalf of the boeing company we would

3123

02:37:29,270 --> 02:37:27,120

really love for you to name that

3124

02:37:32,710 --> 02:37:29,280

spaceship behind us any thoughts on a

3125

02:37:36,070 --> 02:37:32,720

name yeah i have an idea you know um

3126

02:37:38,950 --> 02:37:36,080

a little homage to other exp explorers

3127

02:37:41,110 --> 02:37:38,960

and uh the ships that they uh rode on i

3128

02:37:43,270 --> 02:37:41,120

think we're going to call her calypso

3129

02:37:45,590 --> 02:37:43,280

calypso so let's let's think about this

3130

02:37:47,110 --> 02:37:45,600

right uh ship uh

3131

02:37:49,750 --> 02:37:47,120

jacques cousteau

3132

02:37:52,790 --> 02:37:49,760

yeah his ship calypso and so you're an

3133

02:37:54,469 --> 02:37:52,800

avid diver right so walk me through

3134

02:37:55,910 --> 02:37:54,479

why you think that name is fitting yeah

3135

02:37:57,670 --> 02:37:55,920

of course i love the ocean i love what

3136

02:37:59,750 --> 02:37:57,680

the ocean means to this planet we would

3137

02:38:01,590 --> 02:37:59,760

not be this planet without the ocean

3138

02:38:03,670 --> 02:38:01,600

there's so much to discover in the ocean

3139

02:38:05,590 --> 02:38:03,680

and there's so much to discover in space

3140

02:38:07,429 --> 02:38:05,600

just seemed like a natural marriage

3141

02:38:09,349 --> 02:38:07,439

we love it thank you so much for being

3142

02:38:11,590 --> 02:38:09,359

here and we can't wait to get you on

3143

02:38:14,150 --> 02:38:11,600

that vehicle flying to the international

3144

02:38:17,429 --> 02:38:14,160

space station and back to brandy and

3145

02:38:19,750 --> 02:38:17,439

stephen houston thanks everyone

3146

02:38:22,230 --> 02:38:19,760

the good ship calypso we have a name now

3147

02:38:24,710 --> 02:38:22,240

for the starliner spacecraft that has

3148

02:38:26,309 --> 02:38:24,720

returned today to the sands of new

3149

02:38:28,150 --> 02:38:26,319

mexico

3150

02:38:30,550 --> 02:38:28,160

calypso named by astronaut sunny

3151

02:38:32,950 --> 02:38:30,560

williams who along with uh her crewmate

3152

02:38:35,190 --> 02:38:32,960

josh casada and uh and a few more yet to

3153

02:38:38,469 --> 02:38:35,200

be named will be flying on this very

3154

02:38:40,070 --> 02:38:38,479

vehicle the next time it goes to space

3155

02:38:41,590 --> 02:38:40,080

so a lot of activity out at the

3156

02:38:44,950 --> 02:38:41,600

spacecraft

3157

02:38:47,910 --> 02:38:46,070

yeah it'll be a little while before

3158

02:38:50,230 --> 02:38:47,920

these screws are able to come back in uh

3159

02:38:52,710 --> 02:38:50,240

one more reminder though we do have that

3160

02:38:54,710 --> 02:38:52,720

9 am central time post landing news

3161

02:38:56,790 --> 02:38:54,720

conference coming up

3162

02:38:58,550 --> 02:38:56,800

that's a little over half an hour away

3163

02:39:00,710 --> 02:38:58,560

you'll get a chance to hear from nasa

3164

02:39:02,309 --> 02:39:00,720

administrator jim bridenstine

3165

02:39:04,309 --> 02:39:02,319

jim chilton who's the senior vice

3166

02:39:07,110 --> 02:39:04,319

president of space and launch for boeing

3167

02:39:09,990 --> 02:39:07,120

and our commercial crew deputy

3168

02:40:39,269 --> 02:39:10,000

director steve stitch again 9am central

3169

02:40:46,389 --> 02:40:41,429

and

3170

02:40:49,429 --> 02:40:46,399

williams look into the

3171

02:40:51,349 --> 02:40:49,439

cabin of star liner that is

3172

02:40:53,830 --> 02:40:51,359

her ship next that is the good ship

3173

02:40:56,230 --> 02:40:53,840

calypso named by

3174

02:40:58,150 --> 02:40:56,240

nasa astronaut sunny williams who will

3175

02:40:59,670 --> 02:40:58,160

command it on its first operational

3176
02:41:01,670 --> 02:40:59,680
mission to the international space

3177
02:41:04,230 --> 02:41:01,680
station of course before she does that

3178
02:41:07,990 --> 02:41:04,240
will be the crude flight test

3179
02:41:10,950 --> 02:41:08,000
that'll be with nasa's chris ferguson

3180
02:41:13,110 --> 02:41:10,960
boeing's chris ferguson apologies

3181
02:41:16,070 --> 02:41:13,120
and nasa's mike fink

3182
02:41:17,510 --> 02:41:16,080
and nicole mann

3183
02:41:19,750 --> 02:41:17,520
there on hand

3184
02:41:21,190 --> 02:41:19,760
taking a look at the vehicle and all uh

3185
02:41:28,150 --> 02:41:21,200
very eager

3186
02:41:31,190 --> 02:41:29,429
and of course

3187
02:41:32,870 --> 02:41:31,200
the

3188
02:41:34,389 --> 02:41:32,880

first thing anybody asks about is how's

3189

02:41:35,750 --> 02:41:34,399

rosie we are pleased to report that

3190

02:41:38,070 --> 02:41:35,760

rosie is

3191

02:44:20,550 --> 02:41:38,080

strapped in just like she was when she

3192

02:44:25,510 --> 02:44:23,190

and as we look at these

3193

02:44:28,150 --> 02:44:25,520

live images from white sands new mexico

3194

02:44:31,349 --> 02:44:28,160

where starliner is touched down

3195

02:44:33,750 --> 02:44:31,359

about an hour and 34 minutes ago

3196

02:44:36,710 --> 02:44:33,760

this mission started back in florida on

3197

02:44:38,710 --> 02:44:36,720

friday lifting off at 5 36 a.m

3198

02:44:40,790 --> 02:44:38,720

central time

3199

02:44:43,190 --> 02:44:40,800

going up and uh

3200

02:44:45,910 --> 02:44:43,200

ran into the difficulty at orbit

3201
02:44:48,309 --> 02:44:45,920
insertion but managed to get into a safe

3202
02:44:51,110 --> 02:44:48,319
stable orbit accomplished numerous

3203
02:44:52,870 --> 02:44:51,120
mission objectives

3204
02:44:54,630 --> 02:44:52,880
and then position the spacecraft for a

3205
02:44:56,950 --> 02:44:54,640
return home

3206
02:45:00,469 --> 02:44:56,960
that's right and it turned returned home

3207
02:45:01,670 --> 02:45:00,479
right on time at 6 58 a.m central time

3208
02:45:04,710 --> 02:45:01,680
today that was

3209
02:45:08,389 --> 02:45:04,720
5 58 a.m mountain time there in the new

3210
02:45:10,630 --> 02:45:08,399
mexico desert some video there from

3211
02:45:12,550 --> 02:45:10,640
the landing as the spacecraft was

3212
02:45:15,429 --> 02:45:12,560
floating under its three main parachutes

3213
02:45:18,550 --> 02:45:15,439

that was uh two days one hour and 21

3214

02:45:20,950 --> 02:45:18,560

minutes into starliner's first mission

3215

02:45:22,550 --> 02:45:20,960

and it floated down to a perfect landing

3216

02:45:24,550 --> 02:45:22,560

as you've been seeing leaving the

3217

02:45:25,990 --> 02:45:24,560

spacecraft in great shape we're just

3218

02:45:27,110 --> 02:45:26,000

about done with our coverage today but

3219

02:45:28,389 --> 02:45:27,120

we did want to give you one more

3220

02:45:30,150 --> 02:45:28,399

reminder

3221

02:45:31,429 --> 02:45:30,160

about the upcoming news conference that

3222

02:45:33,910 --> 02:45:31,439

should be coming up at the top of the

3223

02:45:35,990 --> 02:45:33,920

hour 9 a.m central time with nasa

3224

02:45:38,550 --> 02:45:36,000

administrator jim breidenstein

3225

02:45:42,070 --> 02:45:38,560

senior vp of space and launch for boeing

3226

02:45:45,190 --> 02:45:42,080

jim chilton and nasa's commercial crew

3227

02:45:46,870 --> 02:45:45,200

deputy director steve stitch again that

3228

02:45:49,190 --> 02:45:46,880

will be taking place at 9 a.m central

3229

02:45:51,429 --> 02:45:49,200

time here from the johnson space center

3230

02:45:52,790 --> 02:45:51,439

in houston media who would like to

3231

02:45:58,790 --> 02:45:52,800

participate and call johnson space

3232

02:46:03,030 --> 02:46:01,030

so at the conclusion of this first

3233

02:46:05,269 --> 02:46:03,040

flight test of starliner

3234

02:46:06,710 --> 02:46:05,279

thank you for joining us this morning

3235

02:46:09,030 --> 02:46:06,720

i'm steve seislov from boeing

3236

02:46:10,389 --> 02:46:09,040

communications i'm brandi dean from nasa