



1
00:00:02,830 --> 00:00:01,910
[Applause]

2
00:00:07,880 --> 00:00:02,840
[Music]

3
00:00:09,260 --> 00:00:07,890
[Applause]

4
00:00:27,260 --> 00:00:09,270
[Music]

5
00:00:48,730 --> 00:00:27,270
[Applause]

6
00:01:32,149 --> 00:01:10,310
[Music]

7
00:01:32,159 --> 00:01:40,630
between countries

8
00:02:01,580 --> 00:01:43,590
discovery clears the tower

9
00:02:11,830 --> 00:02:09,669
[Music]

10
00:02:13,750 --> 00:02:11,840
and starliner has performed its final

11
00:02:16,470 --> 00:02:13,760
departure burns from the international

12
00:02:17,589 --> 00:02:16,480
space station and it is on his way back

13
00:02:19,830 --> 00:02:17,599

to earth

14

00:02:22,630 --> 00:02:19,840

good afternoon and welcome to our live

15

00:02:24,309 --> 00:02:22,640

coverage of starliner's return home i'm

16

00:02:26,710 --> 00:02:24,319

lauren seabrook with boeing and i'm

17

00:02:28,390 --> 00:02:26,720

brandi dean with nasa and brandy and i

18

00:02:30,630 --> 00:02:28,400

are coming to you live from here in

19

00:02:33,110 --> 00:02:30,640

mission control in houston where we have

20

00:02:35,509 --> 00:02:33,120

just heard that we are goes across the

21

00:02:37,830 --> 00:02:35,519

board for our deorbit burn that will be

22

00:02:39,990 --> 00:02:37,840

coming up here shortly and joining us in

23

00:02:42,630 --> 00:02:40,000

just a little bit we have a team ready

24

00:02:45,190 --> 00:02:42,640

to go live from starliner's landing zone

25

00:02:47,430 --> 00:02:45,200

in the western part of the united states

26

00:02:49,190 --> 00:02:47,440

starliner's flight test began back on

27

00:02:51,190 --> 00:02:49,200

may 19th when it launched from kennedy

28

00:02:53,190 --> 00:02:51,200

space center in florida aboard an atlas

29

00:02:55,190 --> 00:02:53,200

v rocket

30

00:02:56,869 --> 00:02:55,200

there's a replay of that launch there

31

00:02:58,949 --> 00:02:56,879

after completing a series of technical

32

00:03:00,790 --> 00:02:58,959

demonstrations and engine firings to

33

00:03:02,470 --> 00:03:00,800

adjust its course starliner arrived at

34

00:03:05,509 --> 00:03:02,480

the space station and talked with the

35

00:03:07,190 --> 00:03:05,519

orbiting lab the next day on may 20th

36

00:03:09,270 --> 00:03:07,200

starliner's return to earth will mark

37

00:03:10,149 --> 00:03:09,280

the completion of this uncrewed flight

38

00:03:11,990 --> 00:03:10,159

test

39

00:03:13,589 --> 00:03:12,000
and another milestone for both boeing

40

00:03:15,270 --> 00:03:13,599
and nasa's commercial program as we work

41

00:03:17,190 --> 00:03:15,280
toward increasing our capability to

42

00:03:20,390 --> 00:03:17,200
launch humans to the space station from

43

00:03:24,470 --> 00:03:22,550
and earlier today starliner's incredible

44

00:03:25,990 --> 00:03:24,480
suite of systems powered up and the

45

00:03:28,390 --> 00:03:26,000
spacecraft began its departure

46

00:03:29,750 --> 00:03:28,400
procedures in preparation for its

47

00:03:30,789 --> 00:03:29,760
journey home

48

00:03:33,190 --> 00:03:30,799
teams here

49

00:03:34,949 --> 00:03:33,200
in houston florida and new mexico have

50

00:03:36,470 --> 00:03:34,959
been monitoring the spacecraft as it

51
00:03:38,470 --> 00:03:36,480
autonomously undocked from the

52
00:03:42,070 --> 00:03:38,480
international space station this

53
00:03:45,110 --> 00:03:42,080
afternoon around 1 36 pm central time

54
00:03:47,190 --> 00:03:45,120
and it was flying about 257 miles above

55
00:03:48,949 --> 00:03:47,200
singapore it then began a series of

56
00:03:54,149 --> 00:03:48,959
departure burns to move away from the

57
00:03:58,229 --> 00:03:55,990
great replay there

58
00:03:59,830 --> 00:03:58,239
following starliner's launch on the 19th

59
00:04:01,429 --> 00:03:59,840
the teams here on the ground did see

60
00:04:03,270 --> 00:04:01,439
some unexpected behavior from some of

61
00:04:06,149 --> 00:04:03,280
the spacecraft's orbital maneuvering and

62
00:04:07,750 --> 00:04:06,159
attitude control or omac thrusters as

63
00:04:10,229 --> 00:04:07,760

well as its reaction control system

64

00:04:11,750 --> 00:04:10,239

thrusters specifically two of the omac

65

00:04:13,830 --> 00:04:11,760

thrusters shut down early during

66

00:04:15,350 --> 00:04:13,840

starliner's orbital insertion burn and

67

00:04:18,069 --> 00:04:15,360

later in the flight a couple of reaction

68

00:04:20,150 --> 00:04:18,079

control stuff thrusters shut down early

69

00:04:23,030 --> 00:04:20,160

as well however starlander has a total

70

00:04:24,710 --> 00:04:23,040

of 20 omega engines and 28 reaction

71

00:04:27,030 --> 00:04:24,720

control system jets so there's plenty of

72

00:04:28,629 --> 00:04:27,040

redundancy to draw from

73

00:04:30,790 --> 00:04:28,639

and we still want to learn as much as we

74

00:04:33,510 --> 00:04:30,800

can about what caused those thrusters to

75

00:04:35,590 --> 00:04:33,520

shut down however so after the starliner

76

00:04:37,909 --> 00:04:35,600

exited the iss approach ellipsoid

77

00:04:39,990 --> 00:04:37,919

earlier today we sent some extra engine

78

00:04:42,070 --> 00:04:40,000

commands to try and gather just a little

79

00:04:44,070 --> 00:04:42,080

bit more data on how those thrusters are

80

00:04:46,230 --> 00:04:44,080

behaving the flight controllers had

81

00:04:48,629 --> 00:04:46,240

starliner command both of the omacs that

82

00:04:51,030 --> 00:04:48,639

shut off prematurely as well as six of

83

00:04:52,790 --> 00:04:51,040

the reaction control system thrusters

84

00:04:54,830 --> 00:04:52,800

including the two that stopped firing

85

00:04:57,270 --> 00:04:54,840

early on our first day in

86

00:04:59,189 --> 00:04:57,280

orbit after exiting the approach

87

00:05:01,350 --> 00:04:59,199

ellipsoid each engine was commanded to

88

00:05:03,590 --> 00:05:01,360

fire individually not all at once

89

00:05:06,070 --> 00:05:03,600

starting with the omax these thrusters

90

00:05:07,909 --> 00:05:06,080

are located on a service module which we

91

00:05:09,749 --> 00:05:07,919

will be jettisoning shortly after

92

00:05:11,350 --> 00:05:09,759

today's deorbit burn

93

00:05:13,270 --> 00:05:11,360

so the crew measure can then make its

94

00:05:15,189 --> 00:05:13,280

way back to the earth alone

95

00:05:17,029 --> 00:05:15,199

so this was our last chance to check

96

00:05:18,390 --> 00:05:17,039

those systems out before we got rid of

97

00:05:19,909 --> 00:05:18,400

the service module

98

00:05:23,749 --> 00:05:19,919

and those engine commands took place

99

00:05:25,830 --> 00:05:23,759

around 225 i'm sorry 325 central it

100

00:05:27,350 --> 00:05:25,840

wasn't a pass fail test but really meant

101
00:05:29,590 --> 00:05:27,360
to gain just as much data and

102
00:05:31,749 --> 00:05:29,600
understanding of the service module

103
00:05:33,909 --> 00:05:31,759
before it's allowed to burn up in the

104
00:05:35,110 --> 00:05:33,919
earth's atmosphere i'm sure that our

105
00:05:37,029 --> 00:05:35,120
engineers will appreciate the

106
00:05:39,189 --> 00:05:37,039
information as we prepare the next

107
00:05:41,029 --> 00:05:39,199
service module for our upcoming crew

108
00:05:42,950 --> 00:05:41,039
flight test

109
00:05:44,390 --> 00:05:42,960
for the orbit burn though to ensure that

110
00:05:46,550 --> 00:05:44,400
everything goes exactly as planned the

111
00:05:48,550 --> 00:05:46,560
ground teams have disabled the two omacs

112
00:05:50,070 --> 00:05:48,560
that previously shut down and will only

113
00:05:52,070 --> 00:05:50,080

use the omax that we have complete

114

00:05:53,670 --> 00:05:52,080

confidence in based on the results of

115

00:05:56,230 --> 00:05:53,680

the test however the t the flight

116

00:05:58,070 --> 00:05:56,240

controllers decided to re-enable the two

117

00:06:00,550 --> 00:05:58,080

reaction control system thrusters and we

118

00:06:43,830 --> 00:06:00,560

will have a full suite of 28 rcs's

119

00:06:46,870 --> 00:06:45,110

while there are no astronauts on board

120

00:06:49,270 --> 00:06:46,880

the starliner today the flight test

121

00:06:50,870 --> 00:06:49,280

brings us one step closer to a crude

122

00:06:52,309 --> 00:06:50,880

flight test in the coming months and we

123

00:06:53,830 --> 00:06:52,319

cannot wait to see nasa astronauts

124

00:06:55,830 --> 00:06:53,840

safely arrive at the international space

125

00:06:57,430 --> 00:06:55,840

station and then later return back to

126

00:06:59,510 --> 00:06:57,440

earth as the starliner's very first

127

00:07:01,589 --> 00:06:59,520

astronaut crew

128

00:07:04,790 --> 00:07:01,599

of course as brandy just mentioned

129

00:07:07,430 --> 00:07:04,800

because we had no astronauts on board we

130

00:07:09,189 --> 00:07:07,440

had a little extra passengers uh

131

00:07:11,510 --> 00:07:09,199

jebediah kerbel

132

00:07:13,350 --> 00:07:11,520

kerman part of the kerbal space program

133

00:07:15,510 --> 00:07:13,360

which a lot of people were excited to

134

00:07:17,029 --> 00:07:15,520

see there as our gravity indicator as

135

00:07:19,430 --> 00:07:17,039

well as rosie

136

00:07:21,270 --> 00:07:19,440

the rocketeer of course named after

137

00:07:23,830 --> 00:07:21,280

rosie the riveter

138

00:07:26,390 --> 00:07:23,840

she was our atd device and you may

139

00:07:28,790 --> 00:07:26,400

remember from our last flight she had

140

00:07:31,110 --> 00:07:28,800

many sensors that were on her and we

141

00:07:33,670 --> 00:07:31,120

were able to gather a lot of data about

142

00:07:35,670 --> 00:07:33,680

what the ride is like inside starliner

143

00:07:37,909 --> 00:07:35,680

and because we were able to get so much

144

00:07:39,430 --> 00:07:37,919

data from rosie last time

145

00:07:41,110 --> 00:07:39,440

we were actually

146

00:07:43,589 --> 00:07:41,120

able to move those sensors to other

147

00:07:45,670 --> 00:07:43,599

parts of the spacecraft this time so

148

00:07:47,430 --> 00:07:45,680

now we'll have a better idea ahead of

149

00:07:49,510 --> 00:07:47,440

our crude flight test

150

00:07:52,950 --> 00:07:49,520

how other passengers will ride in

151
00:07:57,749 --> 00:07:55,350
now once we make the final burn to get

152
00:07:59,830 --> 00:07:57,759
out of orbit today it will take about 45

153
00:08:02,469 --> 00:07:59,840
minutes for starliner to reach its final

154
00:08:04,950 --> 00:08:02,479
destination the us army's white sands

155
00:08:07,430 --> 00:08:04,960
missile range in new mexico right now

156
00:08:09,990 --> 00:08:07,440
we're told we are good weather-wise

157
00:08:12,070 --> 00:08:10,000
there are scattered clouds about 25 000

158
00:08:14,070 --> 00:08:12,080
feet above the landing zone it's pretty

159
00:08:15,589 --> 00:08:14,080
hazy with about eight miles of

160
00:08:17,270 --> 00:08:15,599
visibility

161
00:08:19,189 --> 00:08:17,280
winds are out of the southeast peaking

162
00:08:21,189 --> 00:08:19,199
around seven knots

163
00:08:22,230 --> 00:08:21,199

which is well within the acceptable

164

00:08:24,309 --> 00:08:22,240

limits

165

00:08:27,400 --> 00:08:24,319

so here's a look at our full landing

166

00:08:33,130 --> 00:08:27,410

sequence for starliner

167

00:08:52,870 --> 00:08:41,450

[Music]

168

00:08:52,880 --> 00:09:00,100

continue

169

00:09:00,110 --> 00:09:11,350

[Music]

170

00:09:15,590 --> 00:09:13,750

imagery of both the laboratory and earth

171

00:09:18,389 --> 00:09:15,600

in its background

172

00:09:25,110 --> 00:09:18,399

then 51 minutes after undocking

173

00:09:25,120 --> 00:09:29,590

speeding toward earth

174

00:09:32,250 --> 00:09:32,030

[Music]

175

00:09:40,070 --> 00:09:32,260

[Applause]

176

00:09:44,389 --> 00:09:41,829

that again was a look at the landing

177

00:09:46,470 --> 00:09:44,399

sequence sequence that's coming up we

178

00:09:48,790 --> 00:09:46,480

are now 11 minutes away from today's

179

00:09:52,230 --> 00:09:48,800

deorbit burn for for starliner that's

180

00:09:54,310 --> 00:09:52,240

coming up at 505 pm central time and

181

00:09:57,509 --> 00:09:54,320

will last about 58 seconds it's going to

182

00:09:58,389 --> 00:09:57,519

slow starliner down by 285 miles per

183

00:10:00,710 --> 00:09:58,399

hour

184

00:10:02,710 --> 00:10:00,720

which will drop it back into the earth's

185

00:10:06,310 --> 00:10:02,720

atmosphere and put it on its way to

186

00:10:11,430 --> 00:10:09,350

and we are doing our best to establish

187

00:10:14,150 --> 00:10:11,440

a good signal with our team that is out

188

00:10:16,630 --> 00:10:14,160

at white sands today it can be

189

00:10:17,670 --> 00:10:16,640

a little difficult to get a great signal

190

00:10:19,269 --> 00:10:17,680

depending on where they are in the

191

00:10:21,350 --> 00:10:19,279

desert so

192

00:10:23,509 --> 00:10:21,360

we do have a team of three people who

193

00:10:26,069 --> 00:10:23,519

will be coming to us live

194

00:10:28,310 --> 00:10:26,079

two folks from the boeing side and one

195

00:10:30,949 --> 00:10:28,320

person from the nasa side who will be

196

00:10:34,069 --> 00:10:30,959

out there in those white sands

197

00:10:35,670 --> 00:10:34,079

bringing us a look at what the convoy

198

00:10:37,350 --> 00:10:35,680

looks like they are

199

00:10:39,509 --> 00:10:37,360

setting up the convoy and actually i'm

200

00:10:41,750 --> 00:10:39,519

told now we do have them so we are going

201

00:10:44,150 --> 00:10:41,760

to go out live to our colleagues dan

202

00:10:46,470 --> 00:10:44,160

hewitt from nasa public affairs and rosa

203

00:10:49,750 --> 00:10:46,480

bonduelos and megan gessner from boeing

204

00:10:53,670 --> 00:10:51,829

hey lauren uh it's great to be with you

205

00:10:55,670 --> 00:10:53,680

we are currently again here at our

206

00:10:57,910 --> 00:10:55,680

landing site at white suns in mexico

207

00:10:59,829 --> 00:10:57,920

it's a really warm day out here but the

208

00:11:01,990 --> 00:10:59,839

team is staying hydrated as we wait for

209

00:11:04,790 --> 00:11:02,000

starliner to come back home um during

210

00:11:06,230 --> 00:11:04,800

its orbital flight test two mission um

211

00:11:07,670 --> 00:11:06,240

as you mentioned we are having a

212

00:11:10,310 --> 00:11:07,680

difficult time establishing a good

213

00:11:11,750 --> 00:11:10,320

connection but as we continue to

214

00:11:13,829 --> 00:11:11,760

troubleshoot we will come back to you

215

00:11:15,750 --> 00:11:13,839

hopefully with some live feeds um the

216

00:11:18,069 --> 00:11:15,760

team is right now getting ready in the

217

00:11:20,949 --> 00:11:18,079

conway position um we're establishing

218

00:11:22,550 --> 00:11:20,959

the different uh teams and as soon as

219

00:11:24,630 --> 00:11:22,560

that crew module lands and all of its

220

00:11:27,829 --> 00:11:24,640

parachutes and all the parts of jettison

221

00:11:30,710 --> 00:11:27,839

we will begin the recovery

222

00:11:33,509 --> 00:11:30,720

yeah we have an initial staging point

223

00:11:35,190 --> 00:11:33,519

that we were actually out here on monday

224

00:11:36,790 --> 00:11:35,200

that we were able to do some practice

225

00:11:39,430 --> 00:11:36,800

runs with the teams as they just

226

00:11:41,350 --> 00:11:39,440

continued to prepare for this moment and

227

00:11:43,990 --> 00:11:41,360

we got a late change last night it moved

228

00:11:46,230 --> 00:11:44,000

us about eight kilometers further north

229

00:11:47,670 --> 00:11:46,240

from all of our gear which was not able

230

00:11:49,910 --> 00:11:47,680

to move with us

231

00:11:51,509 --> 00:11:49,920

as early just said we'll we'll be in and

232

00:11:53,030 --> 00:11:51,519

out with video probably which you've got

233

00:11:55,269 --> 00:11:53,040

a couple of other assets that should

234

00:11:57,509 --> 00:11:55,279

allow everybody to see starliner make

235

00:11:59,590 --> 00:11:57,519

its way home and once we get in closer i

236

00:12:02,230 --> 00:11:59,600

will be able to walk you through all the

237

00:12:04,310 --> 00:12:02,240

different teams each one color coded

238

00:12:06,870 --> 00:12:04,320

with a very specific job for this

239

00:12:08,470 --> 00:12:06,880

recovery and again as we get closer

240

00:12:10,470 --> 00:12:08,480

we'll be able to break all of those down

241

00:12:11,910 --> 00:12:10,480

for you

242

00:12:14,790 --> 00:12:11,920

and again as i mentioned we'll continue

243

00:12:16,629 --> 00:12:14,800

to bring you those live views um the

244

00:12:18,870 --> 00:12:16,639

the landing recovery operations will

245

00:12:21,110 --> 00:12:18,880

begin at a 500 foot mark and then we'll

246

00:12:23,509 --> 00:12:21,120

move over to the 120 seat as we move

247

00:12:24,949 --> 00:12:23,519

forward to this new module so um again

248

00:12:26,710 --> 00:12:24,959

we'll keep bringing you some live

249

00:12:28,470 --> 00:12:26,720

updates from our landing site here at

250

00:12:32,230 --> 00:12:28,480

the white sands musical range and i'll

251
00:12:36,230 --> 00:12:34,069
rosa dan thank you so much we really

252
00:12:39,110 --> 00:12:36,240
appreciate that and uh looked like we

253
00:12:40,870 --> 00:12:39,120
did have a shot there um seeing the

254
00:12:43,350 --> 00:12:40,880
white sands yeah let's go back to it

255
00:12:45,110 --> 00:12:43,360
there um so we are seeing some of the

256
00:12:48,310 --> 00:12:45,120
convoy that will be

257
00:12:50,550 --> 00:12:48,320
lining up and headed in to be the first

258
00:12:54,230 --> 00:12:50,560
um to be on site there once starliner

259
00:12:55,829 --> 00:12:54,240
makes its landing there in new mexico

260
00:12:58,230 --> 00:12:55,839
definitely looks like a beautiful day

261
00:13:00,230 --> 00:12:58,240
for a starladder landing

262
00:13:03,030 --> 00:13:00,240
yeah really the weather they said cannot

263
00:13:04,310 --> 00:13:03,040

be better we're in a good spot

264

00:13:06,629 --> 00:13:04,320

to get in place for that landing

265

00:13:08,550 --> 00:13:06,639

starliner completed a series of

266

00:13:10,230 --> 00:13:08,560

departure burns and choreographed

267

00:13:11,910 --> 00:13:10,240

procedures as we mentioned earlier that

268

00:13:13,269 --> 00:13:11,920

slowly moved the spacecraft further and

269

00:13:15,030 --> 00:13:13,279

further away from the international

270

00:13:16,790 --> 00:13:15,040

space station

271

00:13:18,550 --> 00:13:16,800

and at this point the starliner

272

00:13:20,069 --> 00:13:18,560

spacecraft is well below the space

273

00:13:22,069 --> 00:13:20,079

station and quite a few miles ahead of

274

00:13:24,389 --> 00:13:22,079

it as well

275

00:13:26,150 --> 00:13:24,399

those initial smaller burns ensure that

276

00:13:27,190 --> 00:13:26,160

the starliner is a safe distance away

277

00:13:29,030 --> 00:13:27,200

from the space station before it

278

00:13:32,230 --> 00:13:29,040

performs a deorbit burn

279

00:13:34,150 --> 00:13:32,240

now uh seven and a half minutes away

280

00:13:35,990 --> 00:13:34,160

that's again a is going to bring it out

281

00:13:38,389 --> 00:13:36,000

of orbit and put it on track for today's

282

00:13:39,910 --> 00:13:38,399

landing

283

00:13:42,310 --> 00:13:39,920

and those graphics there in the scene

284

00:13:45,189 --> 00:13:42,320

really give you a good idea of the

285

00:13:47,670 --> 00:13:45,199

very coordinated and synchronized sort

286

00:13:49,590 --> 00:13:47,680

of dance that starliner does

287

00:13:52,150 --> 00:13:49,600

to move away from the international

288

00:13:53,829 --> 00:13:52,160

space station and start its journey home

289

00:13:55,829 --> 00:13:53,839

flight director mike lammers and his

290

00:13:58,310 --> 00:13:55,839

team are expecting starliner's orbital

291

00:14:01,189 --> 00:13:58,320

maneuvering attitude control thrusters

292

00:14:03,990 --> 00:14:01,199

which we also call omax to fire around

293

00:14:05,910 --> 00:14:04,000

505 pm central time pushing the

294

00:14:08,069 --> 00:14:05,920

spacecraft out of its orbital flight

295

00:14:09,990 --> 00:14:08,079

path and on its journey home

296

00:14:12,310 --> 00:14:10,000

this deorbit burn will set us up for a

297

00:14:15,910 --> 00:14:12,320

touchdown time of about

298

00:14:17,990 --> 00:14:15,920

5 49 central or 449 mountain time out in

299

00:14:19,829 --> 00:14:18,000

white sands new mexico

300

00:14:21,990 --> 00:14:19,839

control teams in houston will begin

301
00:14:25,269 --> 00:14:22,000
powering off starliner's radiators and

302
00:14:26,629 --> 00:14:25,279
solar arrays as the spacecraft

303
00:14:29,030 --> 00:14:26,639
will no longer

304
00:14:31,430 --> 00:14:29,040
need that it has enough

305
00:14:33,670 --> 00:14:31,440
power to get home at that point and the

306
00:14:37,030 --> 00:14:33,680
sublimators will take over cooling those

307
00:14:39,110 --> 00:14:37,040
sublimators use water to cool the cabin

308
00:14:41,350 --> 00:14:39,120
starliner is now also in the correct

309
00:14:43,509 --> 00:14:41,360
attitude for its upcoming deorbit burn

310
00:14:45,509 --> 00:14:43,519
at this point the service module and the

311
00:14:47,350 --> 00:14:45,519
crew capsule are still attached to each

312
00:14:49,829 --> 00:14:47,360
other but once again that service

313
00:14:52,310 --> 00:14:49,839

modules for orbital maneuvering and

314

00:14:55,110 --> 00:14:52,320

attitude control engines will power that

315

00:14:56,150 --> 00:14:55,120

deorbit burn allowing them to separate

316

00:14:58,069 --> 00:14:56,160

safely

317

00:15:00,310 --> 00:14:58,079

those engines are each fifteen hundred

318

00:15:02,230 --> 00:15:00,320

pound class thrusters meaning that this

319

00:15:04,629 --> 00:15:02,240

burn will take about six thousand pounds

320

00:15:06,949 --> 00:15:04,639

of thrust slowing starliner from its

321

00:15:09,670 --> 00:15:06,959

current orbital velocity and bringing it

322

00:15:11,829 --> 00:15:09,680

back to earth's atmosphere ultimately

323

00:15:13,990 --> 00:15:11,839

again touching down out there in white

324

00:15:15,430 --> 00:15:14,000

sands new mexico

325

00:15:17,509 --> 00:15:15,440

we've still got a little over five

326

00:15:19,430 --> 00:15:17,519

minutes to go before we do start that

327

00:15:24,870 --> 00:15:19,440

deorbit burn which again will last 58

328

00:15:26,870 --> 00:15:24,880

seconds right now starliner is about 264

329

00:15:29,030 --> 00:15:26,880

miles above

330

00:15:31,269 --> 00:15:29,040

the southern ocean just about to reach

331

00:15:34,310 --> 00:15:31,279

the southernmost portion of this final

332

00:15:35,350 --> 00:15:34,320

orbit around the earth a little south of

333

00:15:38,949 --> 00:15:35,360

south

334

00:15:41,189 --> 00:15:38,959

west rather of uh australia

335

00:15:44,150 --> 00:15:41,199

and on starliner's last flight we were

336

00:15:46,310 --> 00:15:44,160

able to prove some pretty major test

337

00:15:47,990 --> 00:15:46,320

objectives um that we could safely

338

00:15:50,069 --> 00:15:48,000

launch and land

339

00:15:51,829 --> 00:15:50,079

and this flight was all about kind of

340

00:15:54,470 --> 00:15:51,839

everything in between

341

00:15:57,030 --> 00:15:54,480

and we do have a long list of objectives

342

00:15:58,389 --> 00:15:57,040

that we have met so far

343

00:15:59,590 --> 00:15:58,399

let me just go through some of these

344

00:16:01,990 --> 00:15:59,600

things the

345

00:16:04,550 --> 00:16:02,000

vegetable was pressurized getting

346

00:16:06,310 --> 00:16:04,560

starliner equalized to the same pressure

347

00:16:08,790 --> 00:16:06,320

at the iss

348

00:16:11,910 --> 00:16:08,800

starliner's intravehicular activity or

349

00:16:14,310 --> 00:16:11,920

iva hatch was opened

350

00:16:15,990 --> 00:16:14,320

joint ventilation with the iss was

351
00:16:18,629 --> 00:16:16,000
established which is basically just

352
00:16:22,389 --> 00:16:18,639
pumping in air from the iss and then

353
00:16:24,389 --> 00:16:22,399
letting starliner's air flow out

354
00:16:28,550 --> 00:16:24,399
the spacecraft batteries were recharged

355
00:16:33,509 --> 00:16:30,629
docked telemetry paths and file

356
00:16:35,670 --> 00:16:33,519
transfers were verified and that gave us

357
00:16:37,110 --> 00:16:35,680
the opportunity to retrieve data while

358
00:16:39,350 --> 00:16:37,120
still there

359
00:16:41,350 --> 00:16:39,360
at the iss and docked instead of waiting

360
00:16:43,189 --> 00:16:41,360
to return home so

361
00:16:44,870 --> 00:16:43,199
really vital information that our

362
00:16:50,069 --> 00:16:44,880
engineers were able to get back here on

363
00:16:53,910 --> 00:16:51,590

it's a little more than four minutes to

364

00:16:58,470 --> 00:16:53,920

go until the orbit burn we did hear that

365

00:16:59,590 --> 00:16:58,480

uh nasa's wb-57 aircraft did arrive at

366

00:17:01,590 --> 00:16:59,600

the landing site they're now in a

367

00:17:03,829 --> 00:17:01,600

holding pattern waiting for today's

368

00:17:07,029 --> 00:17:03,839

landing which itself is about 48 minutes

369

00:17:10,069 --> 00:17:07,039

away now again that's coming up at 5 50

370

00:17:13,350 --> 00:17:10,079

5 49 p.m central time that's 4 49 there

371

00:17:15,029 --> 00:17:13,360

locally at white sands that is

372

00:17:20,949 --> 00:17:15,039

going to provide us one of what we hope

373

00:17:24,230 --> 00:17:22,309

and the teams here on the ground are

374

00:17:27,750 --> 00:17:24,240

also reporting that starliner is in a

375

00:17:30,070 --> 00:17:27,760

good configuration for the orbit burn

376

00:17:35,990 --> 00:17:30,080

still three out three minutes and 40

377

00:17:39,750 --> 00:17:37,669

and once starliner does make that

378

00:17:43,350 --> 00:17:39,760

de-orbit burn it will be about 44

379

00:17:47,029 --> 00:17:43,360

minutes from that point until

380

00:19:09,350 --> 00:17:49,350

so right now about 47 minutes away from

381

00:19:13,270 --> 00:19:11,110

just two minutes to go now until

382

00:19:15,669 --> 00:19:13,280

starliner's de-orbit burn that engine

383

00:19:18,390 --> 00:19:15,679

firing will begin at 505 pm central in

384

00:19:20,390 --> 00:19:18,400

last 58 seconds using four orbital

385

00:19:23,909 --> 00:19:20,400

maneuvering and attitude control

386

00:19:27,110 --> 00:19:23,919

thrusters slow it down by 127 meters per

387

00:19:29,430 --> 00:19:27,120

second or 285 miles per hour enough to

388

00:19:32,070 --> 00:19:29,440

drop it out of orbit back into earth's

389

00:20:09,029 --> 00:19:32,080

atmosphere and begin making a beeline to

390

00:20:09,039 --> 00:20:38,870

one minute to go until that deorbit burn

391

00:20:38,880 --> 00:20:57,990

30 seconds left

392

00:20:58,000 --> 00:21:05,110

10 seconds to the orbit burn

393

00:21:06,950 --> 00:21:05,990

three

394

00:21:16,789 --> 00:21:06,960

two

395

00:21:19,990 --> 00:21:18,230

the team here on the ground reporting

396

00:21:21,750 --> 00:21:20,000

that uh the orbital maneuvering and

397

00:21:23,510 --> 00:21:21,760

attitude control festers are firing

398

00:21:25,669 --> 00:21:23,520

slowing starliner down as the capsule

399

00:21:27,750 --> 00:21:25,679

begin its journey back to earth again

400

00:21:29,830 --> 00:21:27,760

this lasts for 58 seconds and slows

401
00:21:38,789 --> 00:21:29,840
starliner down by

402
00:21:38,799 --> 00:21:44,390
30 seconds now into the burn

403
00:21:56,149 --> 00:21:46,549
you can see here on this graphic those

404
00:21:56,159 --> 00:22:03,669
10 seconds left

405
00:22:07,190 --> 00:22:05,110
as those omega thrusters are firing

406
00:22:08,310 --> 00:22:07,200
small reaction control system thrusters

407
00:22:10,149 --> 00:22:08,320
are doing the same keeping the

408
00:22:13,750 --> 00:22:10,159
spacecraft in the correct correct

409
00:22:14,950 --> 00:22:13,760
position for the burn

410
00:22:16,630 --> 00:22:14,960
and

411
00:22:18,070 --> 00:22:16,640
confirmed engine cutoff here on the

412
00:22:20,390 --> 00:22:18,080
ground flight controllers here in the

413
00:22:27,990 --> 00:22:20,400

room are reporting a good deorbit burn

414

00:22:28,000 --> 00:22:49,350

you said they don't

415

00:22:52,549 --> 00:22:51,190

with the deorbit burn complete starliner

416

00:22:54,950 --> 00:22:52,559

is going to be moving into the correct

417

00:22:56,870 --> 00:22:54,960

attitude for the service module

418

00:22:58,870 --> 00:22:56,880

separation next

419

00:23:00,789 --> 00:22:58,880

for the orbit burn starliner moved into

420

00:23:02,630 --> 00:23:00,799

an orientation that allowed its

421

00:23:03,990 --> 00:23:02,640

thrusters to fire against the direction

422

00:23:05,990 --> 00:23:04,000

of travel like trying to swim against

423

00:23:07,510 --> 00:23:06,000

the current of a river now that that's

424

00:23:09,190 --> 00:23:07,520

done it's adjusting so that its

425

00:23:10,950 --> 00:23:09,200

thrusters will be pushing it further

426

00:23:12,549 --> 00:23:10,960

along the direction of travel and

427

00:23:14,310 --> 00:23:12,559

helping the crew module move quickly

428

00:23:16,230 --> 00:23:14,320

away from the service module once the

429

00:23:17,590 --> 00:23:16,240

service module is jettisoned

430

00:23:20,390 --> 00:23:17,600

that jettison is going to happen in just

431

00:23:22,549 --> 00:23:20,400

a couple minutes now or about a minute

432

00:24:04,710 --> 00:23:22,559

uh

433

00:24:14,630 --> 00:24:06,470

we are coming up on that service module

434

00:24:48,070 --> 00:24:16,630

you can see a starliner moving into the

435

00:24:53,110 --> 00:24:50,549

satellite handover right now that uh

436

00:24:55,430 --> 00:24:53,120

that's why the

437

00:24:56,950 --> 00:24:55,440

the text on the screen went green but we

438

00:25:34,950 --> 00:24:56,960

expect to have the service module

439

00:25:40,070 --> 00:25:38,070

and we have service module separation

440

00:25:42,310 --> 00:25:40,080

during disposal that service module will

441

00:25:44,710 --> 00:25:42,320

re-enter over the pacific ocean while

442

00:25:47,269 --> 00:25:44,720

the crew capsule continues on its path

443

00:25:49,350 --> 00:25:47,279

to new mexico where our boeing and nasa

444

00:25:51,590 --> 00:25:49,360

teams are waiting to recover it

445

00:25:54,149 --> 00:25:51,600

starliner is now angling itself and its

446

00:25:56,710 --> 00:25:54,159

heat shield for re-entry

447

00:25:59,269 --> 00:25:56,720

entry interfaces coming up next in about

448

00:26:01,190 --> 00:25:59,279

16 minutes from now that is the hottest

449

00:26:04,390 --> 00:26:01,200

part of re-entry with starliner's heat

450

00:26:05,990 --> 00:26:04,400

shield reaching 3000 degrees

451
00:26:08,149 --> 00:26:06,000
to protect starliner from those heat

452
00:26:10,870 --> 00:26:08,159
loads the spacecraft has what's called

453
00:26:13,029 --> 00:26:10,880
an ablative heat shield meaning the

454
00:26:15,430 --> 00:26:13,039
outer surface of that shield heats up to

455
00:26:17,990 --> 00:26:15,440
a gas which then carries the heat away

456
00:26:19,669 --> 00:26:18,000
from the crew module through convection

457
00:26:21,510 --> 00:26:19,679
and at entry interface the heat shield

458
00:26:24,390 --> 00:26:21,520
will handle those temperatures of about

459
00:26:26,470 --> 00:26:24,400
3000 degrees and i've heard engineers re

460
00:26:28,390 --> 00:26:26,480
refer to this as a game of threes

461
00:26:30,230 --> 00:26:28,400
because

462
00:26:32,789 --> 00:26:30,240
as i said that the heat shield will

463
00:26:35,510 --> 00:26:32,799

handle the 3000 degrees but then it will

464

00:26:38,149 --> 00:26:35,520

convert that heat to about 300 degrees

465

00:26:40,230 --> 00:26:38,159

with only three inches of ablater so if

466

00:26:42,950 --> 00:26:40,240

there were any crew on board during this

467

00:26:44,789 --> 00:26:42,960

time even the hottest part of re-entry

468

00:26:46,470 --> 00:26:44,799

the astronauts would really not feel

469

00:26:49,669 --> 00:26:46,480

anything above about room temperature

470

00:26:51,830 --> 00:26:49,679

inside the spacecraft

471

00:26:53,350 --> 00:26:51,840

when starliner returned home from our

472

00:26:56,310 --> 00:26:53,360

first orbital flight test the crew

473

00:26:58,390 --> 00:26:56,320

capsule landed with two black stripes up

474

00:27:00,789 --> 00:26:58,400

the side of it and that just indicates

475

00:27:03,029 --> 00:27:00,799

that the heat was ablated as intended so

476
00:27:05,590 --> 00:27:03,039
we do expect to see the same thing on

477
00:27:07,269 --> 00:27:05,600
the crew module again today

478
00:27:09,750 --> 00:27:07,279
also since that flight we've added a

479
00:27:12,470 --> 00:27:09,760
cover to our nasa docking system to

480
00:27:14,149 --> 00:27:12,480
protect through that re-entry so that we

481
00:28:16,389 --> 00:27:14,159
can use it over and over again on our

482
00:28:19,669 --> 00:28:18,070
while there's a few minutes of quiet we

483
00:28:21,750 --> 00:28:19,679
are going to toss to our teammates who

484
00:28:24,549 --> 00:28:21,760
are out in the new mexico desert we've

485
00:28:30,149 --> 00:28:24,559
got an update uh from them coming now

486
00:28:35,029 --> 00:28:33,190
hey thanks brandi uh rosa and i here

487
00:28:37,269 --> 00:28:35,039
we're happy to get a connection as again

488
00:28:39,430 --> 00:28:37,279

we had to do a little bit of rearranging

489

00:28:41,350 --> 00:28:39,440

uh but we're out here we're ready the

490

00:28:43,430 --> 00:28:41,360

team's very excited we've been following

491

00:28:45,430 --> 00:28:43,440

along we heard the deorbit burn happen

492

00:28:46,549 --> 00:28:45,440

and we're real excited to see starliner

493

00:28:48,389 --> 00:28:46,559

it's going to be coming in over the

494

00:28:49,669 --> 00:28:48,399

mountains just over there

495

00:28:50,950 --> 00:28:49,679

pretty soon we're going to be seeing it

496

00:28:52,389 --> 00:28:50,960

on the horizon

497

00:28:54,470 --> 00:28:52,399

that's right dan as you can see the team

498

00:28:55,590 --> 00:28:54,480

behind us is getting ready our

499

00:28:58,230 --> 00:28:55,600

individuals who will be wearing the

500

00:28:59,669 --> 00:28:58,240

hazmat suits are putting those on our

501
00:29:01,110 --> 00:28:59,679
gold team will actually be wearing these

502
00:29:02,549 --> 00:29:01,120
on as they approach the crew module

503
00:29:03,830 --> 00:29:02,559
they're going to do a visual safety

504
00:29:05,110 --> 00:29:03,840
assessment to make sure there's no

505
00:29:07,269 --> 00:29:05,120
potential

506
00:29:09,269 --> 00:29:07,279
hydrazine leaks they'll be using special

507
00:29:10,549 --> 00:29:09,279
devices to do a quick reading and then

508
00:29:12,710 --> 00:29:10,559
they will let the rest of the team know

509
00:29:14,070 --> 00:29:12,720
that it is safe to proceed the team has

510
00:29:15,669 --> 00:29:14,080
been out here for a few days um

511
00:29:17,350 --> 00:29:15,679
preparing setting up equipment they've

512
00:29:19,269 --> 00:29:17,360
done a couple mission dress rehearsals

513
00:29:21,110 --> 00:29:19,279

and and we're definitely ready to go

514

00:29:22,470 --> 00:29:21,120

again once the crew module has landed

515

00:29:25,029 --> 00:29:22,480

and all those parts have jettisoned and

516

00:29:27,590 --> 00:29:25,039

landed we will move up to the 500 foot

517

00:29:30,070 --> 00:29:27,600

mark and then proceed to 120 feet and

518

00:29:31,990 --> 00:29:30,080

then move on to the crew module yeah and

519

00:29:33,669 --> 00:29:32,000

as rosa says so gold teams first one in

520

00:29:35,350 --> 00:29:33,679

we said everybody's color coded we've

521

00:29:36,950 --> 00:29:35,360

got a silver team they're responsible

522

00:29:38,710 --> 00:29:36,960

for picking up parachutes any other

523

00:29:41,590 --> 00:29:38,720

items like the forward heat shield that

524

00:29:43,590 --> 00:29:41,600

jettisons off we've also got a red team

525

00:29:45,750 --> 00:29:43,600

they've got all of our fire rescue

526
00:29:47,269 --> 00:29:45,760
they've got the access platform

527
00:29:48,870 --> 00:29:47,279
for starliner they're also going to be

528
00:29:50,389 --> 00:29:48,880
the

529
00:29:52,789 --> 00:29:50,399
open

530
00:30:01,990 --> 00:29:52,799
master cargo folks who are also on hand

531
00:30:05,990 --> 00:30:04,389
location here at white sands space

532
00:30:07,990 --> 00:30:06,000
harbor and you know what starliner can

533
00:30:09,669 --> 00:30:08,000
now be part of that rich history as

534
00:30:12,149 --> 00:30:09,679
again we're bringing starliner home

535
00:30:14,389 --> 00:30:12,159
after being at the iss and again we're

536
00:30:15,909 --> 00:30:14,399
all very excited here it's warm but you

537
00:30:17,350 --> 00:30:15,919
know that's not

538
00:30:19,350 --> 00:30:17,360

bothering us at all we're ready to

539

00:30:21,669 --> 00:30:19,360

recover starliner i i prefer this

540

00:30:23,830 --> 00:30:21,679

immensely to last time when it was about

541

00:30:25,669 --> 00:30:23,840

19 degrees out here so this is a lot

542

00:30:27,909 --> 00:30:25,679

more manageable but

543

00:30:30,230 --> 00:30:27,919

so we're gonna get into our cars very

544

00:30:31,750 --> 00:30:30,240

quickly and the team's gonna again we're

545

00:30:33,990 --> 00:30:31,760

gonna hang out here we're kind of at the

546

00:30:39,830 --> 00:30:34,000

outside of a big circle that's cleared

547

00:30:44,310 --> 00:30:41,909

that was uh dan hewitt

548

00:30:46,630 --> 00:30:44,320

out in the new mexico desert uh giving

549

00:30:48,149 --> 00:30:46,640

us an update on on the activities that

550

00:30:51,269 --> 00:30:48,159

the landing and recovery teams are going

551
00:30:54,710 --> 00:30:51,279
through to get ready for today's 5 15 49

552
00:30:56,149 --> 00:30:54,720
p.m central time or 4 49 p.m mountain

553
00:30:59,750 --> 00:30:56,159
time landing

554
00:31:03,590 --> 00:31:01,750
technical difficulties but we do hope to

555
00:31:04,950 --> 00:31:03,600
hear more from them before the day is

556
00:31:06,310 --> 00:31:04,960
over

557
00:31:07,909 --> 00:31:06,320
yeah we will just

558
00:31:09,750 --> 00:31:07,919
hang with them a little bit go in and

559
00:31:10,870 --> 00:31:09,760
out when we can

560
00:31:12,789 --> 00:31:10,880
just those

561
00:31:14,149 --> 00:31:12,799
that signal can be difficult out there

562
00:31:16,789 --> 00:31:14,159
in the desert where there's not much

563
00:31:18,789 --> 00:31:16,799

around and so when we do have a healthy

564

00:31:20,230 --> 00:31:18,799

signal we'll go out to them and if we

565

00:31:21,509 --> 00:31:20,240

need to take

566

00:31:23,110 --> 00:31:21,519

a phone interview for them we can do

567

00:31:24,710 --> 00:31:23,120

that as well we have some options there

568

00:31:26,870 --> 00:31:24,720

so i also want to mention you may have

569

00:31:28,950 --> 00:31:26,880

noticed they had on sunglasses

570

00:31:30,389 --> 00:31:28,960

besides the fact that it just looks cool

571

00:31:34,070 --> 00:31:30,399

they are actually wearing those for

572

00:31:36,149 --> 00:31:34,080

safety today that white sand out there

573

00:31:37,750 --> 00:31:36,159

it can actually do some damage to your

574

00:31:39,750 --> 00:31:37,760

eyes so it's important that they have on

575

00:31:41,830 --> 00:31:39,760

sunglasses while they're out there and

576

00:31:44,389 --> 00:31:41,840

you can see some more of our crew there

577

00:32:15,430 --> 00:31:44,399

setting up alongside the convoy

578

00:32:18,789 --> 00:32:16,870

while we continue to see some of the

579

00:32:20,630 --> 00:32:18,799

shots i'm from landing a recovery team

580

00:32:23,029 --> 00:32:20,640

out in the desert i wanted to give you

581

00:32:25,669 --> 00:32:23,039

kind of a rundown of what to expect

582

00:32:27,350 --> 00:32:25,679

coming up between now and then to 5 49

583

00:32:28,710 --> 00:32:27,360

p.m landing

584

00:32:30,149 --> 00:32:28,720

you mentioned earlier that the next big

585

00:32:32,310 --> 00:32:30,159

milestone was going to be entry

586

00:32:33,590 --> 00:32:32,320

interface that's when uh starliner will

587

00:32:34,870 --> 00:32:33,600

begin to feel the effects of the

588

00:32:37,590 --> 00:32:34,880

atmosphere

589

00:32:40,230 --> 00:32:37,600

that is still about 17 minutes away

590

00:32:41,590 --> 00:32:40,240

should happen around 5 33 p.m

591

00:32:45,029 --> 00:32:41,600

and then the plasma should start to

592

00:32:47,750 --> 00:32:45,039

build up around 5 35 p.m we'll be

593

00:32:49,909 --> 00:32:47,760

through it by 5 40 or so and then after

594

00:32:51,509 --> 00:32:49,919

that 5 44 just five minutes before

595

00:32:54,789 --> 00:32:51,519

landing we'll see starliner jettison

596

00:32:57,990 --> 00:32:56,549

around uh

597

00:33:00,070 --> 00:32:58,000

that has been uh protecting the the

598

00:33:02,070 --> 00:33:00,080

parachutes from the intense temperatures

599

00:33:04,310 --> 00:33:02,080

of reentry then when starliner's still

600

00:33:05,990 --> 00:33:04,320

about 30 000 feet above the ground the

601
00:33:06,950 --> 00:33:06,000
spacecraft's parachute sequence will

602
00:33:10,870 --> 00:33:06,960
begin

603
00:33:12,389 --> 00:33:10,880
starliner down and then they'll detach

604
00:33:14,710 --> 00:33:12,399
and make way for the main show the three

605
00:33:16,470 --> 00:33:14,720
massive parachutes that will

606
00:33:17,830 --> 00:33:16,480
take starliner all the way through

607
00:33:19,590 --> 00:33:17,840
landing

608
00:33:20,789 --> 00:33:19,600
while they continue slowing starliner

609
00:33:22,870 --> 00:33:20,799
down

610
00:33:25,029 --> 00:33:22,880
when the spacecraft is just 3000 feet

611
00:33:27,669 --> 00:33:25,039
off the ground the base heat shield will

612
00:33:29,509 --> 00:33:27,679
jettison and expose starliner's airbags

613
00:33:31,750 --> 00:33:29,519

that touchdown those airbags absorb the

614

00:33:34,149 --> 00:33:31,760

initial force of landing cushioning the

615

00:33:35,110 --> 00:33:34,159

spacecraft for a soft safe return to

616

00:33:36,470 --> 00:33:35,120

earth

617

00:33:38,230 --> 00:33:36,480

starliner has been engineered to be a

618

00:33:41,029 --> 00:33:38,240

reusable spacecraft with a turnaround

619

00:33:42,549 --> 00:33:41,039

time from landing to launch of about six

620

00:33:44,789 --> 00:33:42,559

months and this landing on land

621

00:33:49,029 --> 00:33:44,799

capability will help boeing stay on that

622

00:33:53,110 --> 00:33:51,029

and brandy besides that turnaround time

623

00:33:55,350 --> 00:33:53,120

another major benefit of a ground

624

00:33:58,630 --> 00:33:55,360

landing is that our team has the ability

625

00:34:00,789 --> 00:33:58,640

to get crew out of starliner within

626
00:34:02,710 --> 00:34:00,799
really 30 minutes of touchdown

627
00:34:04,710 --> 00:34:02,720
and they can also get the cargo out of

628
00:34:06,950 --> 00:34:04,720
there within two hours so from a science

629
00:34:09,430 --> 00:34:06,960
perspective that means that we can get

630
00:34:11,990 --> 00:34:09,440
experiments from the space station down

631
00:34:13,909 --> 00:34:12,000
to researchers in record time

632
00:34:15,669 --> 00:34:13,919
i'm sure there are a lot of uh

633
00:34:18,230 --> 00:34:15,679
scientists who are standing by just

634
00:34:20,790 --> 00:34:18,240
waiting for that absolutely again of

635
00:34:23,190 --> 00:34:20,800
course no crew on board today but you

636
00:34:25,990 --> 00:34:23,200
will see our crews doing a lot of things

637
00:34:28,389 --> 00:34:26,000
to prepare its great practice

638
00:36:28,710 --> 00:34:28,399

on this test flight to get us ready for

639

00:36:32,950 --> 00:36:30,790

okay thank you starlin are continuing to

640

00:36:36,550 --> 00:36:32,960

make its way back toward earth following

641

00:36:38,710 --> 00:36:36,560

today's 505 pm central time deorbit burn

642

00:36:41,430 --> 00:36:38,720

everything looking good going uh

643

00:36:44,470 --> 00:36:41,440

going nice and smoothly so far starliner

644

00:36:46,069 --> 00:36:44,480

is currently about 201 miles above the

645

00:36:49,030 --> 00:36:46,079

earth moving

646

00:36:51,190 --> 00:36:49,040

at uh at about a

647

00:36:53,270 --> 00:36:51,200

relative velocity of about 24 marks

648

00:36:54,790 --> 00:36:53,280

about 17 000 miles per hour still but

649

00:36:57,589 --> 00:36:54,800

it's going to be slowing down quickly at

650

00:36:59,910 --> 00:36:57,599

this from here on out as we head towards

651
00:37:01,510 --> 00:36:59,920
the entry interface point that's when

652
00:37:03,190 --> 00:37:01,520
starliner will begin filling the earth's

653
00:37:05,910 --> 00:37:03,200
atmosphere for the first time since its

654
00:37:23,829 --> 00:37:05,920
may 19th launch that's coming up still

655
00:37:28,870 --> 00:37:25,670
starliner will be bringing back with it

656
00:37:31,670 --> 00:37:28,880
about 600 pounds of cargo from the iss

657
00:37:34,550 --> 00:37:31,680
including three nitrogen oxygen recharge

658
00:37:36,710 --> 00:37:34,560
systems are also called noise tanks

659
00:37:39,829 --> 00:37:36,720
and hardware supporting tissue

660
00:37:41,750 --> 00:37:39,839
engineering research these are

661
00:37:44,150 --> 00:37:41,760
those tanks they'll be bringing back for

662
00:37:45,030 --> 00:37:44,160
nasa as well as many other things that

663
00:37:47,589 --> 00:37:45,040

we

664

00:37:48,790 --> 00:37:47,599

set up in cargo some commemorative items

665

00:37:51,030 --> 00:37:48,800

that will be

666

00:37:52,870 --> 00:37:51,040

headed back to historically black

667

00:37:56,790 --> 00:37:52,880

colleges and universities across the

668

00:38:01,430 --> 00:37:58,950

and ahead of the hatch closure the

669

00:38:03,270 --> 00:38:01,440

astronauts on the iss actually showed us

670

00:38:05,349 --> 00:38:03,280

the american flag that they're keeping

671

00:38:07,829 --> 00:38:05,359

up there it's something we sent up on

672

00:38:10,790 --> 00:38:07,839

starliner and they will keep it there

673

00:38:13,109 --> 00:38:10,800

safely in a secure spot

674

00:39:37,990 --> 00:38:13,119

until astronauts return on starliner's

675

00:39:42,230 --> 00:39:39,910

less than 10 minutes to go before

676
00:39:44,550 --> 00:39:42,240
starliner does begin to fill the earth's

677
00:39:47,270 --> 00:39:44,560
atmosphere as we have a few minutes

678
00:39:49,270 --> 00:39:47,280
though we're going to take give you a

679
00:40:06,630 --> 00:39:49,280
a good look at what to expect in the

680
00:40:12,470 --> 00:40:08,630
now it's time to safely bring our

681
00:40:44,550 --> 00:40:28,550
[Music]

682
00:40:47,829 --> 00:40:46,390
but starliner isn't ready to hit the

683
00:40:49,829 --> 00:40:47,839
atmosphere yet

684
00:40:51,670 --> 00:40:49,839
first the disposable service module will

685
00:40:53,750 --> 00:40:51,680
separate uncovering the spacecraft's

686
00:40:55,510 --> 00:40:53,760
heat shield and preparing the crew

687
00:40:57,190 --> 00:40:55,520
module to make the final attitude

688
00:40:59,990 --> 00:40:57,200

adjustments to keep that heat shield

689

00:41:05,270 --> 00:41:00,000

pointing at exactly the right angle

690

00:41:11,109 --> 00:41:08,790

faces is of 3000 degrees fahrenheit from

691

00:41:12,550 --> 00:41:11,119

the plaza created by air friction around

692

00:41:14,950 --> 00:41:12,560

the spacecraft

693

00:41:17,349 --> 00:41:14,960

but starliner can handle the heat

694

00:41:31,670 --> 00:41:17,359

at 30 thousand feet in just 11 minutes

695

00:41:31,680 --> 00:41:56,970

parachutes will allow

696

00:42:01,270 --> 00:41:58,309

[Music]

697

00:42:01,280 --> 00:42:02,470

to make bags

698

00:42:20,630 --> 00:42:04,109

as the first

699

00:42:24,630 --> 00:42:22,470

that was a graphical depiction of what

700

00:42:26,230 --> 00:42:24,640

we hope to see live here in just the

701
00:42:28,390 --> 00:42:26,240
next few minutes we're about 22 minutes

702
00:42:30,190 --> 00:42:28,400
away from starliner's landing today and

703
00:42:33,589 --> 00:42:30,200
you're seeing here a view from nasa's

704
00:42:35,430 --> 00:42:33,599
wb-57 aircraft

705
00:42:37,349 --> 00:42:35,440
they'll be uh hopefully providing us

706
00:42:39,190 --> 00:42:37,359
live views of star redliners returned to

707
00:42:41,510 --> 00:42:39,200
earth they took off from ellington

708
00:42:44,710 --> 00:42:41,520
airport here in houston just before 3 pm

709
00:42:45,510 --> 00:42:44,720
central to make their way to white sands

710
00:42:47,030 --> 00:42:45,520
they've

711
00:42:49,030 --> 00:42:47,040
attended many

712
00:42:50,390 --> 00:42:49,040
landings now and often give us a great

713
00:42:52,710 --> 00:42:50,400

video so we're hoping to get some good

714

00:42:54,950 --> 00:42:52,720

stuff there we are still about six

715

00:42:57,510 --> 00:42:54,960

minutes away from entry interface and uh

716

00:42:59,589 --> 00:42:57,520

starliner is currently about 140 miles

717

00:43:03,910 --> 00:42:59,599

above the earth and dropping steadily

718

00:43:07,910 --> 00:43:05,510

yeah and that shot will be the very

719

00:43:09,829 --> 00:43:07,920

first time we will see starliner as it

720

00:43:12,069 --> 00:43:09,839

makes its re-entry into earth's

721

00:43:14,230 --> 00:43:12,079

atmosphere

722

00:43:16,710 --> 00:43:14,240

and before we are able to take some of

723

00:43:30,069 --> 00:43:16,720

those live views from our crews there in

724

00:43:34,309 --> 00:43:32,069

i can tell you some of the information

725

00:43:35,510 --> 00:43:34,319

we've been able to learn about the

726
00:43:37,270 --> 00:43:35,520
inside

727
00:43:38,630 --> 00:43:37,280
of the cabin right now is that the

728
00:43:39,670 --> 00:43:38,640
temperature is

729
00:44:01,589 --> 00:43:39,680
a

730
00:44:03,030 --> 00:44:01,599
whoever wins their choice of

731
00:44:17,109 --> 00:44:03,040
a little bit colder or a little bit

732
00:44:23,109 --> 00:44:18,950
starliner continuing to make its descent

733
00:44:25,190 --> 00:44:23,119
now about 127 miles above the earth

734
00:44:26,870 --> 00:44:25,200
losing altitude steadily we've still got

735
00:44:28,550 --> 00:44:26,880
about five minutes to go before we hit

736
00:44:30,950 --> 00:44:28,560
entry interface and after that it'll be

737
00:44:33,030 --> 00:44:30,960
another five minutes before we see that

738
00:44:34,550 --> 00:44:33,040

period of plasma buildup that we talked

739

00:44:37,510 --> 00:44:34,560

about earlier

740

00:44:44,309 --> 00:44:37,520

expecting that to happen around 5 40 and

741

00:44:47,589 --> 00:44:46,150

and after entry interface things will

742

00:44:48,550 --> 00:44:47,599

start happening just a little bit

743

00:44:50,390 --> 00:44:48,560

quicker

744

00:44:51,190 --> 00:44:50,400

and the closer we get to the ground the

745

00:44:52,230 --> 00:44:51,200

more

746

00:44:53,430 --> 00:44:52,240

things

747

00:44:55,670 --> 00:44:53,440

will happen

748

00:44:57,510 --> 00:44:55,680

pretty fast

749

00:44:59,270 --> 00:44:57,520

yep once we get to the heat shield

750

00:45:00,950 --> 00:44:59,280

jettison and everything is about a

751

00:45:02,230 --> 00:45:00,960

minute apart

752

00:45:38,230 --> 00:45:02,240

it's a little hard to keep up with at

753

00:45:43,349 --> 00:45:40,950

as i mentioned earlier we have been

754

00:45:45,270 --> 00:45:43,359

marking off a lot of test objectives

755

00:45:46,630 --> 00:45:45,280

that have been met during this

756

00:45:48,950 --> 00:45:46,640

flight test

757

00:45:51,510 --> 00:45:48,960

over the last few days another one the

758

00:45:53,430 --> 00:45:51,520

vision based electro optical sensor and

759

00:45:55,670 --> 00:45:53,440

tracking assembly you may have heard it

760

00:45:57,910 --> 00:45:55,680

referred to as vesta

761

00:46:01,910 --> 00:45:57,920

and flight data files transferred from

762

00:46:04,630 --> 00:46:01,920

the starliner to iss for downlink

763

00:46:07,270 --> 00:46:04,640

we really had the opportunity um to

764

00:46:09,270 --> 00:46:07,280

retrieve the data while still there on

765

00:46:10,390 --> 00:46:09,280

the iss instead of having to wait for

766

00:46:12,790 --> 00:46:10,400

return

767

00:46:15,190 --> 00:46:12,800

but this time with images that were

768

00:46:16,710 --> 00:46:15,200

taken by our vesta system

769

00:46:18,790 --> 00:46:16,720

and some of the flight controllers that

770

00:46:19,910 --> 00:46:18,800

i've talked to really say that the vesta

771

00:46:22,069 --> 00:46:19,920

system

772

00:46:23,030 --> 00:46:22,079

is one of the most interesting parts for

773

00:46:25,430 --> 00:46:23,040

them

774

00:46:29,750 --> 00:46:25,440

of starliner just the way that it is

775

00:46:31,910 --> 00:46:29,760

able to be the eyes of starliner and

776

00:46:33,349 --> 00:46:31,920

really see it as if we would see it with

777

00:46:35,510 --> 00:46:33,359

our own eyes approaching the

778

00:46:36,870 --> 00:46:35,520

international space station

779

00:46:38,870 --> 00:46:36,880

it is able to

780

00:46:40,870 --> 00:46:38,880

see markings on the space station and

781

00:46:44,230 --> 00:46:40,880

the shape of the space station

782

00:46:45,990 --> 00:46:44,240

to delicately guide starliner into that

783

00:46:52,870 --> 00:46:46,000

rendezvous process

784

00:46:58,390 --> 00:46:55,589

we were also able to evaluate onboard

785

00:47:00,230 --> 00:46:58,400

tablets to include transferring files

786

00:47:02,870 --> 00:47:00,240

from the ground to the tablet through

787

00:47:04,470 --> 00:47:02,880

the iss assets and so you can kind of

788

00:47:07,030 --> 00:47:04,480

think of this as instead of carrying

789

00:47:09,510 --> 00:47:07,040

around a big binder of a bunch of papers

790

00:47:11,589 --> 00:47:09,520

documents they're able to

791

00:47:15,270 --> 00:47:11,599

upload real-time procedures to those

792

00:47:16,550 --> 00:47:15,280

tablets so of course it's 2022 and a lot

793

00:47:19,349 --> 00:47:16,560

of things we did

794

00:47:21,349 --> 00:47:19,359

with paper in hand before but even there

795

00:47:31,750 --> 00:47:21,359

on the international space station

796

00:48:58,470 --> 00:47:33,349

and we are just under two minutes to

797

00:49:31,750 --> 00:48:59,990

30 seconds to go now until entry

798

00:49:35,589 --> 00:49:33,190

and we've reached the point of entry

799

00:49:38,309 --> 00:49:35,599

interface starliner is now 400 000 feet

800

00:49:39,589 --> 00:49:38,319

above the planet and beginning to feel

801
00:49:42,069 --> 00:49:39,599
the effects of earth's atmosphere of the

802
00:49:43,670 --> 00:49:42,079
first time since may 19th

803
00:49:45,589 --> 00:49:43,680
due to the compression and friction of

804
00:49:47,990 --> 00:49:45,599
the air the molecules generate a very

805
00:49:49,589 --> 00:49:48,000
hot plasma which creates the red orange

806
00:49:51,589 --> 00:49:49,599
glow you may have seen in post-flight

807
00:49:52,630 --> 00:49:51,599
imagery from other spacecraft

808
00:49:56,549 --> 00:49:52,640
plasma

809
00:49:58,870 --> 00:49:56,559
actually causes a momentary and expected

810
00:50:00,630 --> 00:49:58,880
communication drop with the vehicle as

811
00:50:02,710 --> 00:50:00,640
the plasma briefly gets in the way of

812
00:50:04,790 --> 00:50:02,720
satellite signals

813
00:50:06,309 --> 00:50:04,800

that period of plasma buildup lasts

814

00:50:08,790 --> 00:50:06,319

about five minutes and we should come

815

00:50:14,069 --> 00:50:08,800

out on the other side of it around 5 40

816

00:50:18,230 --> 00:50:15,750

and starliner will enter earth's

817

00:50:20,470 --> 00:50:18,240

atmosphere at 17 times the speed of

818

00:50:22,150 --> 00:50:20,480

sound so that could actually create a

819

00:50:26,950 --> 00:50:22,160

sonic boom for any folks who are living

820

00:50:31,270 --> 00:50:28,870

it will then be slowed by parachutes to

821

00:50:33,030 --> 00:50:31,280

a speed you may experience for example

822

00:50:35,030 --> 00:50:33,040

while going down an elevator inside a

823

00:50:36,390 --> 00:50:35,040

skyscraper if you can think of that

824

00:50:37,829 --> 00:50:36,400

feeling

825

00:50:39,109 --> 00:50:37,839

that is what our astronauts would be

826
00:50:41,030 --> 00:50:39,119
feeling inside

827
00:50:45,430 --> 00:50:41,040
the vehicle then comes to a safe

828
00:50:50,790 --> 00:50:49,109
and you can see in this view i i

829
00:50:53,430 --> 00:50:50,800
an idea of what a track it will be

830
00:50:56,150 --> 00:50:53,440
taking as it comes into new mexico it'll

831
00:50:59,750 --> 00:50:56,160
go over the baja peninsula and

832
00:51:02,069 --> 00:50:59,760
just uh just a small corner of mexico an

833
00:51:07,349 --> 00:51:02,079
even smaller corner of arizona before it

834
00:51:11,349 --> 00:51:09,349
we're actually probably just mexico

835
00:51:13,349 --> 00:51:11,359
looks like it will just miss arizona but

836
00:51:17,270 --> 00:51:13,359
uh but it will be going over the baja

837
00:51:20,230 --> 00:51:18,710
so if you're watching from that area you

838
00:51:32,710 --> 00:51:20,240

might be able to look up and see

839

00:51:36,950 --> 00:51:34,150

here reports that the landing and

840

00:51:39,750 --> 00:51:36,960

recovery team is uh receiving data from

841

00:51:41,589 --> 00:51:39,760

starliner at this point

842

00:51:43,270 --> 00:51:41,599

we'll have a few minutes where things

843

00:51:44,710 --> 00:51:43,280

are still reasonably quiet and then a

844

00:51:46,710 --> 00:51:44,720

lot is going to happen at once with the

845

00:51:47,990 --> 00:51:46,720

forward heat shield jettisoning to make

846

00:51:50,150 --> 00:51:48,000

way for the parachutes to begin

847

00:51:51,270 --> 00:51:50,160

deploying we're in the final stretch now

848

00:51:53,430 --> 00:51:51,280

though

849

00:51:55,910 --> 00:51:53,440

of the landing of starliner's second

850

00:52:40,470 --> 00:51:55,920

orbital flight test with landing now

851
00:52:45,510 --> 00:52:42,390
so there on your screen you're taking a

852
00:52:47,190 --> 00:52:45,520
look at that shot from the w b 57 that's

853
00:52:49,430 --> 00:52:47,200
nasa's

854
00:52:51,030 --> 00:52:49,440
space plane that will give us a great

855
00:52:53,109 --> 00:52:51,040
shot

856
00:53:10,549 --> 00:52:53,119
as soon as we're able to start seeing

857
00:53:15,190 --> 00:53:12,230
we are now about 12 minutes away from

858
00:53:16,470 --> 00:53:15,200
landing

859
00:53:18,390 --> 00:53:16,480
we're at that point in the flight where

860
00:53:19,990 --> 00:53:18,400
plasmas began to build up around

861
00:53:21,829 --> 00:53:20,000
starliner that

862
00:53:24,470 --> 00:53:21,839
will last about five minutes should be

863
00:53:26,630 --> 00:53:24,480

out of it around 5 40. in the meantime

864

00:53:28,470 --> 00:53:26,640

the flight control team had transferred

865

00:53:32,309 --> 00:53:28,480

to closed loop guardians initiation

866

00:53:36,950 --> 00:53:32,319

letting starliner have complete control

867

00:53:41,030 --> 00:53:39,349

next major uh milestone once we get out

868

00:53:43,190 --> 00:53:41,040

of the plasma

869

00:54:12,309 --> 00:53:43,200

will be the ford heat shield jettison

870

00:54:16,150 --> 00:54:14,230

seeing a shot here from ground trackers

871

00:54:17,829 --> 00:54:16,160

in new mexico this uh will be another

872

00:54:20,150 --> 00:54:17,839

one of the views we hope will show us

873

00:54:24,870 --> 00:54:20,160

starliner as it comes in for its landing

874

00:54:30,790 --> 00:54:26,549

and this uh

875

00:54:32,630 --> 00:54:30,800

uh just a view of the desert uh and uh

876

00:54:37,670 --> 00:54:32,640

this is where uh the landing and

877

00:54:41,670 --> 00:54:39,349

getting ready to deploy out to the

878

00:55:00,470 --> 00:54:41,680

landing site once starliner does touch

879

00:55:05,270 --> 00:55:02,870

and on starliner's last flight we landed

880

00:55:06,710 --> 00:55:05,280

at night in the darkness so

881

00:55:08,549 --> 00:55:06,720

this will really be the first time we'll

882

00:55:10,230 --> 00:55:08,559

have daylight views of the spacecraft

883

00:55:12,710 --> 00:55:10,240

after it reenters

884

00:55:14,950 --> 00:55:12,720

and under the canopy of its parachutes

885

00:55:18,230 --> 00:55:14,960

so it'll be a real sight for our teams

886

00:55:21,190 --> 00:55:18,240

there and for folks across the country

887

00:55:34,630 --> 00:55:21,200

our first time really to see starliner

888

00:55:37,750 --> 00:55:36,150

we also heard that the crew on board the

889

00:55:40,870 --> 00:55:37,760

international space station is going to

890

00:55:42,950 --> 00:55:40,880

be watching landing they uh of course

891

00:55:45,190 --> 00:55:42,960

spent some quality time with starliner

892

00:55:47,030 --> 00:55:45,200

since it docked to the station on

893

00:55:49,430 --> 00:55:47,040

mar may 20th

894

00:55:52,069 --> 00:55:49,440

and uh saw it off earlier today that's

895

00:55:54,150 --> 00:55:52,079

sergey korsakov oleg artemyev

896

00:55:55,670 --> 00:55:54,160

niece matiev and

897

00:55:57,829 --> 00:55:55,680

chell lindgren

898

00:56:16,470 --> 00:55:57,839

bob hines jessica watkins and samantha

899

00:56:21,190 --> 00:56:19,430

once again receiving uh data from the

900

00:56:23,030 --> 00:56:21,200

starliner now that it's passed through

901
00:56:24,870 --> 00:56:23,040
that plasma buildup

902
00:56:26,950 --> 00:56:24,880
everything going well as it makes its

903
00:56:29,589 --> 00:56:26,960
way across this uh track that you can

904
00:56:30,880 --> 00:56:29,599
see heading towards and landing in the

905
00:56:35,990 --> 00:56:30,890
new mexico desert

906
00:56:53,430 --> 00:56:37,349
teams on the ground reporting good

907
00:57:01,109 --> 00:56:55,190
and there are our very first shots of

908
00:57:05,510 --> 00:57:02,870
starliner's uh

909
00:57:08,470 --> 00:57:05,520
still got about eight minutes left in

910
00:57:10,069 --> 00:57:08,480
this flight and hasn't even

911
00:57:11,910 --> 00:57:10,079
begun deploying its heat shield yet

912
00:57:14,150 --> 00:57:11,920
that'll that'll start here in just the

913
00:57:15,910 --> 00:57:14,160

next few minutes uh still about three

914

00:57:17,510 --> 00:57:15,920

minutes away for the before the first

915

00:57:18,950 --> 00:57:17,520

parachutes begin to deploy and of course

916

00:57:23,589 --> 00:57:18,960

before that we'll see the forward heat

917

00:57:26,710 --> 00:57:25,270

but everything going well teams here on

918

00:57:29,589 --> 00:57:26,720

the ground

919

00:57:30,950 --> 00:57:29,599

seeing good data

920

00:57:46,630 --> 00:57:30,960

and hopefully we'll get a better and

921

00:57:51,670 --> 00:57:48,230

and that shot there on the left side of

922

00:57:54,230 --> 00:57:51,680

your screen now from the ground tracker

923

00:57:57,270 --> 00:57:54,240

so we have two views now of starliner as

924

00:57:59,030 --> 00:57:57,280

it makes its final approach to

925

00:58:01,829 --> 00:57:59,040

its landing zone there in white sands

926
00:58:05,990 --> 00:58:04,710
and the team here in the

927
00:58:07,670 --> 00:58:06,000
in mission control reporting that

928
00:58:09,670 --> 00:58:07,680
they've heard from the landing recovery

929
00:58:11,109 --> 00:58:09,680
teams that they're also seeing starliner

930
00:58:13,510 --> 00:58:11,119
they'll have of course the front row

931
00:58:19,349 --> 00:58:13,520
seats but we'll try and piggyback on

932
01:00:00,150 --> 00:58:21,030
we are just under seven minutes away

933
01:00:03,270 --> 01:00:01,510
switching back to this graphic for just

934
01:00:11,270 --> 01:00:03,280
a moment as we wait for the forward heat

935
01:00:15,190 --> 01:00:13,270
and we are starting to get a more clear

936
01:00:16,789 --> 01:00:15,200
view of starliner now

937
01:00:28,789 --> 01:00:16,799
we should be seeing the forward heat

938
01:00:32,150 --> 01:00:30,230

and the forward heat shield has now

939

01:00:33,670 --> 01:00:32,160

jettisoned that heat shield protected

940

01:00:35,670 --> 01:00:33,680

the spacecraft through those thermal

941

01:00:38,069 --> 01:00:35,680

loads during re-entry

942

01:00:39,829 --> 01:00:38,079

and drugs are out

943

01:00:41,510 --> 01:00:39,839

two drug parachutes slowing starliner

944

01:00:43,589 --> 01:00:41,520

speed and drag they're going to reef to

945

01:00:44,870 --> 01:00:43,599

a wider opening and start slow starliner

946

01:01:02,230 --> 01:00:44,880

down enough for the main shoots to

947

01:01:44,630 --> 01:01:04,390

main parachute deploy just about 30

948

01:01:44,640 --> 01:01:48,390

view here from the ground tracker

949

01:01:52,950 --> 01:01:50,789

and mains are now out we see three

950

01:01:54,870 --> 01:01:52,960

parachutes coming out here

951
01:01:57,109 --> 01:01:54,880
starliner has another eight thousand

952
01:01:58,950 --> 01:01:57,119
feet toward the landing

953
01:02:00,390 --> 01:01:58,960
those three parachutes are starting to

954
01:02:08,950 --> 01:02:00,400
inflate now you can see them right there

955
01:02:12,950 --> 01:02:11,109
and the main parachutes are reefing open

956
01:02:14,789 --> 01:02:12,960
right there continuous slowing

957
01:02:31,270 --> 01:02:14,799
starlighter down

958
01:02:35,270 --> 01:02:33,270
starliner will be drifting down for

959
01:02:37,349 --> 01:02:35,280
another two and a half or so minutes

960
01:02:39,029 --> 01:02:37,359
before it makes its touchdown but all

961
01:02:40,470 --> 01:02:39,039
going smoothly

962
01:02:42,789 --> 01:02:40,480
and we didn't just hear the rotation

963
01:02:47,990 --> 01:02:42,799

handle was released that will help level

964

01:02:51,270 --> 01:02:49,910

and there goes the base heat shield

965

01:02:52,950 --> 01:02:51,280

right there in front of you it just

966

01:02:55,109 --> 01:02:52,960

jettisoned you can see it falling away

967

01:02:57,029 --> 01:02:55,119

from the spacecraft it will reveal the

968

01:03:01,670 --> 01:02:57,039

airbags that will cushion starliner's

969

01:03:06,390 --> 01:03:03,829

and those airbags are now inflating

970

01:03:11,349 --> 01:03:06,400

starliner is two minutes 40 seconds from

971

01:03:11,359 --> 01:03:15,990

actually closer to two minutes now

972

01:03:19,430 --> 01:03:18,230

you can see those airbags right there on

973

01:03:23,270 --> 01:03:19,440

your screen

974

01:03:26,870 --> 01:03:24,789

those will come in real handy when we

975

01:03:29,990 --> 01:03:26,880

have crew on board for the crew flight

976

01:03:31,910 --> 01:03:30,000

test of starliner in a few months

977

01:03:33,460 --> 01:03:31,920

help ensure that the crew gets a nice

978

01:03:35,589 --> 01:03:33,470

soft touchdown

979

01:03:37,430 --> 01:03:35,599

[Music]

980

01:03:39,589 --> 01:03:37,440

and those bags are filled with nitrogen

981

01:03:49,270 --> 01:03:39,599

as they guide starliner safely back to

982

01:03:55,190 --> 01:03:50,630

flight controllers here in the room

983

01:04:05,349 --> 01:03:56,950

everything going exactly how we want to

984

01:04:08,950 --> 01:04:07,029

we are just coming up on about one

985

01:04:12,470 --> 01:04:08,960

minute away from touchdown there in

986

01:04:14,150 --> 01:04:12,480

white sands new mexico

987

01:04:15,910 --> 01:04:14,160

exact touchdown time will vary a little

988

01:04:17,589 --> 01:04:15,920

bit depending on the winds at the

989

01:04:24,710 --> 01:04:17,599

landing site but everything's going

990

01:05:01,109 --> 01:04:26,230

and i bet the teams there at the landing

991

01:05:05,910 --> 01:05:03,190

continuing to see views from the ground

992

01:05:06,829 --> 01:05:05,920

trackers on on site

993

01:05:09,109 --> 01:05:06,839

in new

994

01:05:10,710 --> 01:05:09,119

mexico just a second let's see the

995

01:05:15,190 --> 01:05:10,720

mountains coming into frame there we're

996

01:05:19,510 --> 01:05:17,910

and touchdown starliner

997

01:05:21,990 --> 01:05:19,520

we're touching down in the desert of new

998

01:05:23,750 --> 01:05:22,000

mexico marking the completion of orbital

999

01:05:27,270 --> 01:05:23,760

flight test two

1000

01:05:29,670 --> 01:05:27,280

and that touchdown coming at 5 49 pm

1001
01:05:31,029 --> 01:05:29,680
central time almost exactly six days

1002
01:05:32,950 --> 01:05:31,039
into the mission

1003
01:05:35,190 --> 01:05:32,960
just a beautiful touchdown in white

1004
01:05:37,029 --> 01:05:35,200
sands this evening

1005
01:05:38,870 --> 01:05:37,039
our landing recovery teams will now wait

1006
01:05:43,990 --> 01:05:38,880
for clearance before making their way to

1007
01:06:12,470 --> 01:05:45,510
and we can hear some clapping and

1008
01:06:16,470 --> 01:06:14,230
and we're going to go live to our team

1009
01:06:19,109 --> 01:06:16,480
now that is out there right at the

1010
01:06:21,829 --> 01:06:19,119
landing zone getting getting close and

1011
01:06:24,309 --> 01:06:21,839
we have nasa's dan hewitt and boeing's

1012
01:06:26,630 --> 01:06:24,319
rosa banuelos guys how does it look from

1013
01:06:28,789 --> 01:06:26,640

the ground

1014

01:06:30,710 --> 01:06:28,799

thanks lauren it's hard to describe the

1015

01:06:32,069 --> 01:06:30,720

feeling that the team here is going

1016

01:06:34,069 --> 01:06:32,079

through again we just saw those

1017

01:06:36,309 --> 01:06:34,079

beautiful red white and blue parachutes

1018

01:06:38,390 --> 01:06:36,319

deploy we're able to visually see the

1019

01:06:40,950 --> 01:06:38,400

ford heat shield um i'm sorry the base

1020

01:06:44,309 --> 01:06:40,960

heat shield also a jettison and and you

1021

01:06:46,309 --> 01:06:44,319

know uh open those um air bags when

1022

01:06:47,829 --> 01:06:46,319

obviously they fill the nitrogen so

1023

01:06:50,150 --> 01:06:47,839

we're on the move from the blue team

1024

01:06:52,710 --> 01:06:50,160

vehicle again we're driving in parallel

1025

01:06:55,270 --> 01:06:52,720

to the um historical runway here for the

1026

01:06:56,950 --> 01:06:55,280

columbia shuttle landing um again where

1027

01:06:59,190 --> 01:06:56,960

the first stop is going to be the 500

1028

01:07:02,069 --> 01:06:59,200

foot mark um we're driving pretty slow

1029

01:07:05,270 --> 01:07:02,079

here about 25 miles um along the white

1030

01:07:08,150 --> 01:07:05,280

sands gypsum um sand uh once you get to

1031

01:07:09,750 --> 01:07:08,160

the 500 mark um the first team will move

1032

01:07:11,990 --> 01:07:09,760

uh into the first thing that will move

1033

01:07:13,589 --> 01:07:12,000

into the 120 volt mark will be the gold

1034

01:07:15,349 --> 01:07:13,599

team and then we'll do that they will do

1035

01:07:17,430 --> 01:07:15,359

that first visual assessment before they

1036

01:07:19,750 --> 01:07:17,440

give the clear uh for the rest of the

1037

01:07:21,910 --> 01:07:19,760

team to approach the crew module after

1038

01:07:23,990 --> 01:07:21,920

that we have the silver team who will

1039

01:07:26,549 --> 01:07:24,000

strongly symbolize the vehicle um it

1040

01:07:28,470 --> 01:07:26,559

will be sent in command to power down

1041

01:07:29,270 --> 01:07:28,480

and they will also um

1042

01:07:35,829 --> 01:07:29,280

cover

1043

01:07:37,430 --> 01:07:35,839

then after that team we have um our

1044

01:07:39,430 --> 01:07:37,440

teams again we're going to try to give

1045

01:07:42,069 --> 01:07:39,440

you um some of those live looks as we

1046

01:07:43,670 --> 01:07:42,079

get closer to the cool module um and

1047

01:07:46,309 --> 01:07:43,680

then proceeding that we have the green

1048

01:07:47,670 --> 01:07:46,319

team who will uh provide ground cooling

1049

01:07:49,670 --> 01:07:47,680

to the vehicle which is really important

1050

01:07:52,390 --> 01:07:49,680

to keep those precise safe from

1051

01:07:53,589 --> 01:07:52,400

overheating um and then we have the red

1052

01:07:56,390 --> 01:07:53,599

team who is mainly made out of the

1053

01:07:58,710 --> 01:07:56,400

flowing medical personnel and then we

1054

01:08:01,750 --> 01:07:58,720

have uh the hatch opening and then any

1055

01:08:03,349 --> 01:08:01,760

of the cargo um removal again we're

1056

01:08:05,190 --> 01:08:03,359

driving pretty slow leverage for heading

1057

01:08:07,190 --> 01:08:05,200

to the pro module and it up when the two

1058

01:08:08,630 --> 01:08:07,200

module uses a hypergolic propellant that

1059

01:08:10,710 --> 01:08:08,640

when it does turn into vapor it can be

1060

01:08:12,230 --> 01:08:10,720

very toxic so we take that very

1061

01:08:14,309 --> 01:08:12,240

seriously um we

1062

01:08:16,309 --> 01:08:14,319

safety is the number one um concern and

1063

01:08:18,070 --> 01:08:16,319

priority for the flight crew and from

1064

01:08:19,910 --> 01:08:18,080

the team here on the ground so when the

1065

01:08:21,749 --> 01:08:19,920

gold team does arrive they will be

1066

01:08:23,829 --> 01:08:21,759

monitoring that throughout the whole

1067

01:08:26,470 --> 01:08:23,839

operation again the first stop is the

1068

01:08:28,149 --> 01:08:26,480

500 foot mark and um again

1069

01:08:29,590 --> 01:08:28,159

if you hear the rush of my voice you

1070

01:08:31,510 --> 01:08:29,600

definitely have a

1071

01:08:33,749 --> 01:08:31,520

sight to see um

1072

01:08:37,430 --> 01:08:33,759

for all this just uh going here it's

1073

01:08:42,470 --> 01:08:39,669

and hey i don't have a whole lot else to

1074

01:08:45,030 --> 01:08:42,480

add it was pretty surreal as uh

1075

01:08:47,510 --> 01:08:45,040

starliner just almost seemed to

1076

01:08:48,950 --> 01:08:47,520

materialize in thin air directly above

1077

01:08:51,430 --> 01:08:48,960

us we were able to see it come down

1078

01:08:53,829 --> 01:08:51,440

under both strokes see those deploy

1079

01:08:54,950 --> 01:08:53,839

uh see all three good names we were

1080

01:08:57,110 --> 01:08:54,960

treated to

1081

01:08:59,189 --> 01:08:57,120

what i believe was the sonic boom or

1082

01:09:01,030 --> 01:08:59,199

that may have been uh some of the cairo

1083

01:09:03,030 --> 01:09:01,040

events but i kind of announced

1084

01:09:04,470 --> 01:09:03,040

starliner's arrival to the desert here

1085

01:09:07,269 --> 01:09:04,480

for us

1086

01:09:08,789 --> 01:09:07,279

as rosa said we're we're on our way in

1087

01:09:10,870 --> 01:09:08,799

as we get closer we're going to get

1088

01:09:12,870 --> 01:09:10,880

closer also to a lot of our transmitting

1089

01:09:14,870 --> 01:09:12,880

hardware so we'll be able to bring less

1090

01:09:15,990 --> 01:09:14,880

because views might even have an eye in

1091

01:09:18,309 --> 01:09:16,000

the sky

1092

01:09:19,110 --> 01:09:18,319

as the teams move in around starladder

1093

01:09:23,669 --> 01:09:19,120

so

1094

01:09:25,349 --> 01:09:23,679

closer great to have starliner back on

1095

01:09:27,990 --> 01:09:25,359

planet earth can't wait to see it up

1096

01:09:29,910 --> 01:09:28,000

close uh and get the teams and it looks

1097

01:09:31,189 --> 01:09:29,920

like it's coming right into view for us

1098

01:09:32,550 --> 01:09:31,199

so we are

1099

01:09:35,349 --> 01:09:32,560

we are still

1100

01:09:37,269 --> 01:09:35,359

about a kilometer or more away i'm

1101

01:09:38,390 --> 01:09:37,279

continuing to close that

1102

01:09:42,309 --> 01:09:38,400

and we'll be

1103

01:09:46,709 --> 01:09:44,229

as dan mentioned we've kind of taken out

1104

01:09:48,470 --> 01:09:46,719

the uh these two modules right ahead of

1105

01:09:50,390 --> 01:09:48,480

us as you can visually see it and it's

1106

01:09:51,669 --> 01:09:50,400

definitely a great sight to see so

1107

01:09:52,709 --> 01:09:51,679

lauren we'll talk to back team we'll

1108

01:09:57,430 --> 01:09:52,719

come back to you as soon as we get

1109

01:10:00,630 --> 01:09:59,590

that was dan hewitt and rosa buenolis

1110

01:10:02,870 --> 01:10:00,640

from

1111

01:10:04,950 --> 01:10:02,880

nasa and boeing respectively giving us a

1112

01:10:07,750 --> 01:10:04,960

report from the convoy currently making

1113

01:10:09,350 --> 01:10:07,760

their way out to starliner as we speak

1114

01:10:11,350 --> 01:10:09,360

you heard them say that they were able

1115

01:10:14,149 --> 01:10:11,360

to hear the sonic booms as uh starliner

1116

01:10:16,070 --> 01:10:14,159

came in for its landing at 5 49 p.m

1117

01:10:17,750 --> 01:10:16,080

central and we are seeing

1118

01:10:20,070 --> 01:10:17,760

some views from

1119

01:10:22,070 --> 01:10:20,080

from cameras there on site some of the

1120

01:10:23,990 --> 01:10:22,080

same ones i think that gave us the the

1121

01:10:26,470 --> 01:10:24,000

views as it was as it was coming down as

1122

01:10:30,070 --> 01:10:28,229

and here's a piece of information that i

1123

01:10:31,750 --> 01:10:30,080

know a lot of people on our team will be

1124

01:10:33,750 --> 01:10:31,760

really happy to hear

1125

01:10:35,990 --> 01:10:33,760

we are told that starliner landed about

1126
01:10:37,350 --> 01:10:36,000
three tenths of a mile southeast of the

1127
01:10:43,750 --> 01:10:37,360
landing site

1128
01:10:47,590 --> 01:10:45,510
you bullseye see those uh

1129
01:10:50,070 --> 01:10:47,600
airbags that we talked out talked about

1130
01:10:51,830 --> 01:10:50,080
earlier that are are um

1131
01:10:55,669 --> 01:10:51,840
intended to give crew on board when we

1132
01:10:56,550 --> 01:10:55,679
have them a nice uh soft landing

1133
01:10:58,790 --> 01:10:56,560
all

1134
01:11:00,149 --> 01:10:58,800
deployed as as planned that's going to

1135
01:11:02,229 --> 01:11:00,159
be one of the things the teams are

1136
01:11:04,310 --> 01:11:02,239
checking on as they do arrive at the

1137
01:11:06,149 --> 01:11:04,320
landing site we've got as you heard um

1138
01:11:08,310 --> 01:11:06,159

them the uh

1139

01:11:09,990 --> 01:11:08,320

dan and rosa mentioning we've got a a

1140

01:11:11,590 --> 01:11:10,000

pretty big group of people who are

1141

01:11:14,630 --> 01:11:11,600

making their way out there because it's

1142

01:11:15,910 --> 01:11:14,640

a pretty big job to recover a spacecraft

1143

01:11:22,229 --> 01:11:15,920

once it is

1144

01:11:26,070 --> 01:11:24,790

and we're also hearing from here on the

1145

01:11:28,870 --> 01:11:26,080

from here in mission control that the

1146

01:11:31,110 --> 01:11:28,880

post landing power down of starliner is

1147

01:11:33,990 --> 01:11:31,120

in work

1148

01:11:36,550 --> 01:11:34,000

that's one of the key

1149

01:11:39,590 --> 01:11:36,560

milestones and getting the starliner

1150

01:11:41,189 --> 01:11:39,600

ready for its recovery

1151

01:11:43,669 --> 01:11:41,199

and our team just checked the cabin

1152

01:11:47,030 --> 01:11:43,679

temperature inside it is 74 degrees

1153

01:11:58,149 --> 01:11:48,709

much more comfortable than our team out

1154

01:12:01,350 --> 01:11:59,669

and you may have noticed just a few

1155

01:12:02,630 --> 01:12:01,360

seconds after starliner made its

1156

01:12:05,030 --> 01:12:02,640

touchdown

1157

01:12:07,189 --> 01:12:05,040

the main chutes fall away from the

1158

01:12:08,790 --> 01:12:07,199

spacecraft and that just

1159

01:12:11,110 --> 01:12:08,800

keeps those shoots from catching any

1160

01:12:13,189 --> 01:12:11,120

wind that could drag the capsule

1161

01:12:15,270 --> 01:12:13,199

which obviously makes things easier for

1162

01:12:17,030 --> 01:12:15,280

the landing team as they begin to make

1163

01:12:26,470 --> 01:12:17,040

their way toward the vehicle and start

1164

01:12:30,310 --> 01:12:28,149

once again if you missed it uh the

1165

01:12:33,030 --> 01:12:30,320

starliner touched down at 5 49 p.m

1166

01:12:34,790 --> 01:12:33,040

central time that's 4 49 pm mountain

1167

01:12:36,950 --> 01:12:34,800

time crew on board the international

1168

01:12:37,910 --> 01:12:36,960

space station was watching as it touched

1169

01:12:40,790 --> 01:12:37,920

down

1170

01:12:42,790 --> 01:12:40,800

giving it one last proper send off

1171

01:12:45,430 --> 01:12:42,800

now we are just waiting for the recovery

1172

01:12:47,270 --> 01:12:45,440

teams to get out to the vehicle

1173

01:12:50,070 --> 01:12:47,280

you can see i think uh looks like we've

1174

01:12:52,070 --> 01:12:50,080

got video from one of the cars here on

1175

01:12:54,070 --> 01:12:52,080

the bottom right hand side of the screen

1176

01:12:55,189 --> 01:12:54,080

as they're making their way out at last

1177

01:12:56,550 --> 01:12:55,199

heard from them a couple minutes ago

1178

01:12:58,709 --> 01:12:56,560

that they were still about a kilometer

1179

01:13:00,870 --> 01:12:58,719

away so they should be arriving pretty

1180

01:13:02,950 --> 01:13:00,880

quickly

1181

01:13:04,870 --> 01:13:02,960

and then they'll begin the

1182

01:13:08,070 --> 01:13:04,880

long process of

1183

01:13:22,870 --> 01:13:08,080

getting the starliner ready to

1184

01:13:27,350 --> 01:13:24,630

one of the major benefits of being able

1185

01:13:29,350 --> 01:13:27,360

to land on land like this is not having

1186

01:13:32,790 --> 01:13:29,360

to battle that uh

1187

01:13:35,830 --> 01:13:32,800

harsh salt water that could be you know

1188

01:13:37,510 --> 01:13:35,840

have an impact on the spacecraft

1189

01:13:39,350 --> 01:13:37,520

in the water

1190

01:13:42,229 --> 01:13:39,360

and of course this is a reusable

1191

01:13:56,149 --> 01:13:42,239

spacecraft we plan to reuse it up to 10

1192

01:14:00,390 --> 01:13:58,229

we place a great deal of emphasis on

1193

01:14:01,750 --> 01:14:00,400

testing our systems on the ground and in

1194

01:14:04,470 --> 01:14:01,760

space

1195

01:14:05,990 --> 01:14:04,480

before our first crude flight test so

1196

01:14:09,750 --> 01:14:06,000

our teams have learned a tremendous

1197

01:14:13,830 --> 01:14:11,990

we have also extensively tested our

1198

01:14:16,390 --> 01:14:13,840

parachutes and airbags before this

1199

01:14:18,310 --> 01:14:16,400

flight so very happy to see them

1200

01:14:34,310 --> 01:14:18,320

work nominally and

1201

01:14:43,669 --> 01:14:36,229

starting to see some of the recovery

1202

01:14:48,149 --> 01:14:45,830

the very first vehicle that we will see

1203

01:14:50,149 --> 01:14:48,159

on site is the command vehicle

1204

01:14:51,910 --> 01:14:50,159

they are at the front of the convoy and

1205

01:14:53,590 --> 01:14:51,920

where the recovery ops leader and

1206

01:14:55,350 --> 01:14:53,600

recovery director

1207

01:15:23,910 --> 01:14:55,360

who are in charge of the entire

1208

01:15:29,110 --> 01:15:27,110

power down of starliner is still uh

1209

01:15:31,830 --> 01:15:29,120

going on uh getting everything turned

1210

01:15:34,149 --> 01:15:31,840

off so that the team here in houston can

1211

01:15:35,910 --> 01:15:34,159

turn the vehicle officially the

1212

01:15:37,669 --> 01:15:35,920

spacecraft officially over to the

1213

01:15:40,310 --> 01:15:37,679

recovery team who we can see is just

1214

01:15:51,430 --> 01:15:40,320

arriving here in the top right hand

1215

01:15:55,510 --> 01:15:53,030

the recovery uh

1216

01:15:57,669 --> 01:15:55,520

recovery director is uh

1217

01:16:15,590 --> 01:15:57,679

in the command vehicle

1218

01:16:24,149 --> 01:16:17,430

now you see a lot of that team starting

1219

01:16:27,030 --> 01:16:25,910

and our gold team will be the first to

1220

01:16:36,149 --> 01:16:27,040

arrive

1221

01:16:41,030 --> 01:16:38,630

as you heard dan and rosa say they are

1222

01:16:42,550 --> 01:16:41,040

the first the vehicle so they do a sniff

1223

01:16:44,229 --> 01:16:42,560

test for hydrogen making sure that

1224

01:16:46,630 --> 01:16:44,239

there's none of that in the air that

1225

01:16:48,709 --> 01:16:46,640

could hurt um any of the recovery team

1226

01:16:51,110 --> 01:16:48,719

members they'll be wearing hazmat suits

1227

01:16:52,390 --> 01:16:51,120

to protect them from any they might find

1228

01:16:54,310 --> 01:16:52,400

hopefully that'll be clear though and

1229

01:17:04,630 --> 01:16:54,320

then the rest of the team members

1230

01:17:09,910 --> 01:17:06,790

those hazmat suits are there to prevent

1231

01:17:12,950 --> 01:17:09,920

exposure to hypergolic propellants and

1232

01:17:14,950 --> 01:17:12,960

hydrazine is used as a propellant and if

1233

01:17:16,470 --> 01:17:14,960

it turns into a vapor it can be very

1234

01:17:19,189 --> 01:17:16,480

toxic so

1235

01:17:20,870 --> 01:17:19,199

they use special sensors to sniff for it

1236

01:17:28,630 --> 01:17:20,880

and then they're able to notify the rest

1237

01:17:31,910 --> 01:17:30,229

that team will also check the wind to

1238

01:17:33,830 --> 01:17:31,920

make sure that the entire landing and

1239

01:17:35,510 --> 01:17:33,840

recovery team is staged

1240

01:17:37,189 --> 01:17:35,520

up range

1241

01:17:38,870 --> 01:17:37,199

from the direction the wind is blowing

1242

01:17:47,590 --> 01:17:38,880

just for an added

1243

01:17:47,600 --> 01:17:59,189

parties

1244

01:18:03,030 --> 01:18:01,430

we also are starting to get some photos

1245

01:18:04,709 --> 01:18:03,040

from the members of the recovery team

1246

01:18:06,790 --> 01:18:04,719

we've got one here to show from you from

1247

01:18:08,870 --> 01:18:06,800

bill ingles nasa photographer as

1248

01:18:12,310 --> 01:18:08,880

starliner was making its way down for

1249

01:18:14,229 --> 01:18:12,320

that 5 49 p.m central time landing so

1250

01:18:16,310 --> 01:18:14,239

again as one of the photos just coming

1251
01:18:18,070 --> 01:18:16,320
in from the recovery team that's a good

1252
01:18:20,310 --> 01:18:18,080
indication that they are getting set up

1253
01:18:21,590 --> 01:18:20,320
and starting to to get a good connection

1254
01:18:22,390 --> 01:18:21,600
back to us hopefully we'll get a few

1255
01:18:24,950 --> 01:18:22,400
more

1256
01:18:27,510 --> 01:18:24,960
updates from them as we go on through

1257
01:18:29,270 --> 01:18:27,520
the recovery process

1258
01:18:31,350 --> 01:18:29,280
and just a beautiful site there to see

1259
01:18:33,189 --> 01:18:31,360
those three red white and blue

1260
01:18:35,110 --> 01:18:33,199
parachutes fully open

1261
01:18:37,350 --> 01:18:35,120
that gives you a patriotic feeling to

1262
01:18:42,310 --> 01:18:37,360
see that there and and to think about

1263
01:18:43,590 --> 01:18:42,320

really um the fact that we now have a

1264

01:18:45,110 --> 01:18:43,600

successful

1265

01:18:46,070 --> 01:18:45,120

mission and

1266

01:18:48,070 --> 01:18:46,080

um

1267

01:18:49,910 --> 01:18:48,080

just kind of you know think about what

1268

01:18:50,930 --> 01:18:49,920

this means for our country

1269

01:18:55,510 --> 01:18:50,940

absolutely

1270

01:19:00,149 --> 01:18:57,189

may be able to hear some clapping here

1271

01:19:01,910 --> 01:19:00,159

in the room in mission control

1272

01:19:03,990 --> 01:19:01,920

this team definitely feeling good about

1273

01:19:06,630 --> 01:19:04,000

their uh

1274

01:19:08,310 --> 01:19:06,640

six day long mission that they've been

1275

01:19:09,669 --> 01:19:08,320

supporting getting starliner up to the

1276

01:19:11,590 --> 01:19:09,679

international space station and then

1277

01:19:12,709 --> 01:19:11,600

safely back for this landing in new

1278

01:19:15,669 --> 01:19:12,719

mexico

1279

01:19:19,189 --> 01:19:15,679

seeing here a video a shot from a drone

1280

01:19:21,189 --> 01:19:19,199

on site with the recovery team

1281

01:19:23,350 --> 01:19:21,199

much much clearer than our other view

1282

01:19:24,790 --> 01:19:23,360

very nice yeah we're getting now some

1283

01:19:27,510 --> 01:19:24,800

close-up views

1284

01:19:29,350 --> 01:19:27,520

of starliner there on the ground

1285

01:19:31,430 --> 01:19:29,360

and back with the recovery team now

1286

01:19:34,149 --> 01:19:31,440

again they are getting uh starting to

1287

01:19:37,510 --> 01:19:34,159

get staged we'll be taking control of

1288

01:19:39,270 --> 01:19:37,520

the vehicle now

1289

01:19:41,030 --> 01:19:39,280

just like we have a flight director here

1290

01:19:42,870 --> 01:19:41,040

in mission control there's a recovery

1291

01:20:30,870 --> 01:19:42,880

director on site there who will be

1292

01:20:30,880 --> 01:20:39,270

thank

1293

01:20:43,270 --> 01:20:40,790

and as i mentioned earlier when

1294

01:20:45,910 --> 01:20:43,280

starliner returned from its first flight

1295

01:20:48,390 --> 01:20:45,920

we did a notice two black stripes up the

1296

01:20:50,470 --> 01:20:48,400

sides of the spacecraft we've seen those

1297

01:20:52,870 --> 01:20:50,480

as well on this time and that just

1298

01:20:55,590 --> 01:20:52,880

indicates that the heat was ablated as

1299

01:20:57,669 --> 01:20:55,600

intended we expected to see that it's a

1300

01:21:01,590 --> 01:20:57,679

good thing to see that it means that

1301

01:21:03,669 --> 01:21:01,600

that ablative heat shield did its job

1302

01:21:05,110 --> 01:21:03,679

blade of heat shields wear away with the

1303

01:21:06,950 --> 01:21:05,120

heat and take the heat with them rather

1304

01:21:09,030 --> 01:21:06,960

than letting it transfer to the inside

1305

01:21:12,229 --> 01:21:09,040

of the crew module where the crew needs

1306

01:21:15,669 --> 01:21:13,910

and you can start to see there some of

1307

01:21:18,790 --> 01:21:15,679

the gold team making its way out of the

1308

01:21:25,990 --> 01:21:18,800

vehicle and will soon be coming over to

1309

01:21:30,229 --> 01:21:27,990

and we are going to go live now back to

1310

01:21:42,070 --> 01:21:30,239

nasa's dan hewitt and boeing's rosa

1311

01:21:47,669 --> 01:21:44,229

hewitt uh coming to you guys live now so

1312

01:21:50,070 --> 01:21:47,679

we're just about 500 feet away

1313

01:21:51,510 --> 01:21:50,080

uh and the convoy has paused and as we

1314

01:21:52,870 --> 01:21:51,520

talked about so the gold team is in

1315

01:21:55,350 --> 01:21:52,880

there right now

1316

01:21:57,910 --> 01:21:55,360

they do a sweep up close around the

1317

01:22:00,390 --> 01:21:57,920

capsule looking for any hydrazine fumes

1318

01:22:02,790 --> 01:22:00,400

a hydrazine it's a hypergolic fuel

1319

01:22:04,870 --> 01:22:02,800

the starliner capsule uses it for its

1320

01:22:07,350 --> 01:22:04,880

reaction control thrusters which are

1321

01:22:10,149 --> 01:22:07,360

only used during that re-entry period to

1322

01:22:11,750 --> 01:22:10,159

control yaw petrol they go in make sure

1323

01:22:13,430 --> 01:22:11,760

there aren't any leaks any fumes

1324

01:22:15,510 --> 01:22:13,440

anything like that before the rest of

1325

01:22:16,870 --> 01:22:15,520

the team start to make their way that's

1326

01:22:18,229 --> 01:22:16,880

right dan as you can see probably in

1327

01:22:20,390 --> 01:22:18,239

your camera views they're dressed in

1328

01:22:22,070 --> 01:22:20,400

hazmat suits and they're going to do an

1329

01:22:23,510 --> 01:22:22,080

initial sweep they're doing that right

1330

01:22:25,430 --> 01:22:23,520

now as they're walking around the crew

1331

01:22:27,189 --> 01:22:25,440

module you can see those airbags are

1332

01:22:28,870 --> 01:22:27,199

inflated and they're going to take their

1333

01:22:30,470 --> 01:22:28,880

time to do that obviously it is we want

1334

01:22:32,550 --> 01:22:30,480

to keep the team safe and once they do

1335

01:22:35,110 --> 01:22:32,560

that they're going to give the next team

1336

01:22:36,310 --> 01:22:35,120

that go to proceed which is going to be

1337

01:22:38,070 --> 01:22:36,320

the silver team and again they're going

1338

01:22:39,990 --> 01:22:38,080

to ground and stabilize the vehicle and

1339

01:22:42,950 --> 01:22:40,000

make it safe for the crew to actually

1340

01:22:44,870 --> 01:22:42,960

touch touch the crew module as well um

1341

01:22:46,870 --> 01:22:44,880

so we're going to continue to see this

1342

01:22:49,110 --> 01:22:46,880

live as you can see the parachutes are

1343

01:22:51,189 --> 01:22:49,120

to our direction to the left here and

1344

01:22:53,189 --> 01:22:51,199

the team that will be safeing and

1345

01:22:54,790 --> 01:22:53,199

recovering those parachutes will be the

1346

01:22:56,229 --> 01:22:54,800

silver team as well so when it's their

1347

01:22:57,830 --> 01:22:56,239

turn to come in you'll see them working

1348

01:22:59,830 --> 01:22:57,840

off to the side gathering those

1349

01:23:00,629 --> 01:22:59,840

parachutes and doing their assessment as

1350

01:23:02,149 --> 01:23:00,639

well

1351

01:23:04,310 --> 01:23:02,159

yeah and they're going to be collecting

1352

01:23:05,350 --> 01:23:04,320

up that base heat shield which actually

1353

01:23:07,750 --> 01:23:05,360

landed

1354

01:23:10,790 --> 01:23:07,760

probably only about 200 feet off to our

1355

01:23:12,470 --> 01:23:10,800

right so that's super close so uh if

1356

01:23:14,870 --> 01:23:12,480

we were able to get some views of that

1357

01:23:16,950 --> 01:23:14,880

on off one and we'll do our best to get

1358

01:23:18,550 --> 01:23:16,960

you some views of that as well so after

1359

01:23:20,470 --> 01:23:18,560

silver team is able to do that you're

1360

01:23:23,430 --> 01:23:20,480

going to start to see a lot of the

1361

01:23:24,950 --> 01:23:23,440

convoy moving in we've got a green team

1362

01:23:26,790 --> 01:23:24,960

which i don't know if we've touched on

1363

01:23:28,470 --> 01:23:26,800

yet but they're bringing a lot of

1364

01:23:31,510 --> 01:23:28,480

equipment with them they're going to put

1365

01:23:33,750 --> 01:23:31,520

up an environmental enclosure it kind of

1366

01:23:36,229 --> 01:23:33,760

looks like a bounce house it's just to

1367

01:23:37,910 --> 01:23:36,239

go around starliner helps to provide it

1368

01:23:39,350 --> 01:23:37,920

some extra cooling

1369

01:23:41,590 --> 01:23:39,360

and also just protect it from the

1370

01:23:43,830 --> 01:23:41,600

elements as we're out here as again this

1371

01:23:45,910 --> 01:23:43,840

vehicle is going to be reused any steps

1372

01:23:47,590 --> 01:23:45,920

we can take to just kind of isolate it

1373

01:23:49,750 --> 01:23:47,600

from the environment will help in that

1374

01:23:52,550 --> 01:23:49,760

refurbishment and they're also

1375

01:23:54,870 --> 01:23:52,560

going to be setting up an hvac system

1376

01:23:57,189 --> 01:23:54,880

providing some active cooling to the

1377

01:23:59,110 --> 01:23:57,199

capsule as once it's powered down it's

1378

01:24:01,510 --> 01:23:59,120

not using any of that active cooling on

1379

01:24:02,950 --> 01:24:01,520

board and i did just get word that we

1380

01:24:05,110 --> 01:24:02,960

are going to have the silver team move

1381

01:24:06,790 --> 01:24:05,120

in to cut the riser and that is that

1382

01:24:08,229 --> 01:24:06,800

connection that is still connected to

1383

01:24:10,229 --> 01:24:08,239

the parachute so you will probably see

1384

01:24:11,990 --> 01:24:10,239

that in your shot um

1385

01:24:13,590 --> 01:24:12,000

it's practically like a string and they

1386

01:24:16,149 --> 01:24:13,600

will be going in there and doing that

1387

01:24:18,390 --> 01:24:16,159

procedure um as part of their recovering

1388

01:24:20,149 --> 01:24:18,400

operations recovery operations as well

1389

01:24:22,229 --> 01:24:20,159

so we're going to continue to see the

1390

01:24:24,790 --> 01:24:22,239

different teams do their

1391

01:24:26,790 --> 01:24:24,800

different procedures and we'll report as

1392

01:24:29,030 --> 01:24:26,800

we see different

1393

01:24:31,350 --> 01:24:29,040

different steps here yeah we've got a

1394

01:24:33,270 --> 01:24:31,360

big squad also the red team they'll be

1395

01:24:35,189 --> 01:24:33,280

bringing in probably some of the most

1396

01:24:37,990 --> 01:24:35,199

visual hardware a lot of the really big

1397

01:24:40,629 --> 01:24:38,000

stuff they've got what's called a map a

1398

01:24:42,550 --> 01:24:40,639

mobile access platform it will look very

1399

01:24:44,390 --> 01:24:42,560

similar to just a big yellow platform

1400

01:24:47,350 --> 01:24:44,400

with some stairs that's what's going to

1401

01:24:49,990 --> 01:24:47,360

give them direct access to that hatch as

1402

01:24:52,229 --> 01:24:50,000

your hatch lead is also on the red team

1403

01:24:53,590 --> 01:24:52,239

they're also going to be driving up the

1404

01:24:54,870 --> 01:24:53,600

medical truck

1405

01:24:55,990 --> 01:24:54,880

obviously we don't have any crew on

1406

01:24:57,350 --> 01:24:56,000

board today

1407

01:24:59,189 --> 01:24:57,360

but we're going through all of the

1408

01:25:01,030 --> 01:24:59,199

motions of this

1409

01:25:02,550 --> 01:25:01,040

to practice just for when we are flying

1410

01:25:04,149 --> 01:25:02,560

crew and so we'll back that medical

1411

01:25:07,669 --> 01:25:04,159

truck up and that's what we're going to

1412

01:25:09,030 --> 01:25:07,679

be using uh once we have crew on board

1413

01:25:11,030 --> 01:25:09,040

that's going to be kind of their first

1414

01:25:13,669 --> 01:25:11,040

steps out of the capsule and into there

1415

01:25:15,750 --> 01:25:13,679

also um the hazmat has been complete

1416

01:25:17,430 --> 01:25:15,760

everything is nominal again this team

1417

01:25:19,030 --> 01:25:17,440

did that first initial assessment and

1418

01:25:21,189 --> 01:25:19,040

they're going to continue to monitor for

1419

01:25:23,110 --> 01:25:21,199

any potential hypergolic leaks again

1420

01:25:25,430 --> 01:25:23,120

making sure the team is safe out there

1421

01:25:27,110 --> 01:25:25,440

um from the crew module and so

1422

01:25:28,950 --> 01:25:27,120

everything's looking great out here it's

1423

01:25:30,390 --> 01:25:28,960

still very warm as you saw us before

1424

01:25:32,229 --> 01:25:30,400

we're wearing sunglasses it's really

1425

01:25:34,310 --> 01:25:32,239

bright out here and um so we're

1426
01:25:35,910 --> 01:25:34,320
protecting our eyes we're keeping safe

1427
01:25:38,070 --> 01:25:35,920
drinking lots of water

1428
01:25:52,830 --> 01:25:38,080
as we uh again welcome starliner home

1429
01:25:57,270 --> 01:25:55,030
too right i don't know if you're still

1430
01:25:58,709 --> 01:25:57,280
with us but

1431
01:26:00,870 --> 01:25:58,719
we're we're going to go ahead and toss

1432
01:26:02,629 --> 01:26:00,880
it on back as they're completing that

1433
01:26:03,990 --> 01:26:02,639
assessment uh we're going to get back

1434
01:26:05,990 --> 01:26:04,000
into our cars and be able to move in a

1435
01:26:06,709 --> 01:26:06,000
little bit closer and then we'll rejoin

1436
01:26:15,430 --> 01:26:06,719
you

1437
01:26:17,830 --> 01:26:15,440
as that drone flies over the face heat

1438
01:26:20,470 --> 01:26:17,840

shield that really dropped away not too

1439

01:26:21,669 --> 01:26:20,480

far from where starliner landed you may

1440

01:26:23,510 --> 01:26:21,679

have heard a lot of clapping in the

1441

01:26:25,110 --> 01:26:23,520

background here boeing and nasa

1442

01:26:27,430 --> 01:26:25,120

leadership have made their way into

1443

01:26:29,189 --> 01:26:27,440

mission control and there is quite the

1444

01:26:31,590 --> 01:26:29,199

celebration going on in here flight

1445

01:26:33,830 --> 01:26:31,600

director mike lammers congratulating his

1446

01:26:36,629 --> 01:26:33,840

team on a successful flight and

1447

01:26:46,229 --> 01:26:36,639

touchdown again that came at 5 49

1448

01:26:51,910 --> 01:26:48,310

and you can see our team in the hazmat

1449

01:26:53,910 --> 01:26:51,920

suits there as part of the gold team

1450

01:26:55,830 --> 01:26:53,920

again they are making their way up

1451

01:26:57,910 --> 01:26:55,840

to do the sniff test

1452

01:26:59,430 --> 01:26:57,920

a lot of times when you hear sniff test

1453

01:27:01,270 --> 01:26:59,440

you imagine they will actually be

1454

01:27:02,390 --> 01:27:01,280

sniffing with their own nose that is not

1455

01:27:03,990 --> 01:27:02,400

the case

1456

01:27:06,470 --> 01:27:04,000

there is a reason they are in hazmat

1457

01:27:22,149 --> 01:27:06,480

suits they have a device that actually

1458

01:27:26,310 --> 01:27:23,750

as dan hewitt mentioned the ground team

1459

01:27:28,390 --> 01:27:26,320

is now often moving in closer with that

1460

01:27:34,629 --> 01:27:28,400

sniff test coming through

1461

01:27:34,639 --> 01:27:38,950

you can see them performing that now

1462

01:27:43,110 --> 01:27:41,110

once they do uh move in i think the

1463

01:27:45,030 --> 01:27:43,120

silver team is up next right

1464

01:27:46,950 --> 01:27:45,040

yeah that's right it's the silver team's

1465

01:27:48,709 --> 01:27:46,960

job to ground the vehicle

1466

01:27:50,709 --> 01:27:48,719

starliner will be powered down but there

1467

01:27:53,030 --> 01:27:50,719

could be some residual

1468

01:27:54,709 --> 01:27:53,040

electricity so before anyone can touch

1469

01:28:05,510 --> 01:27:54,719

the vehicle they will ground and

1470

01:28:10,550 --> 01:28:07,270

just a great shot there as i mentioned

1471

01:28:13,030 --> 01:28:10,560

earlier during our last flight we landed

1472

01:28:14,709 --> 01:28:13,040

during the dark and

1473

01:28:15,990 --> 01:28:14,719

in the middle of the night and so this

1474

01:28:19,030 --> 01:28:16,000

is the first time that we've been able

1475

01:28:21,350 --> 01:28:19,040

to see just such clear pictures of

1476

01:28:23,669 --> 01:28:21,360

starliner's crew capsule they're in the

1477

01:28:26,310 --> 01:28:23,679

desert of white sands you can see that

1478

01:28:28,629 --> 01:28:26,320

black stripe i mentioned which is just

1479

01:28:30,470 --> 01:28:28,639

kind of a badge of honor it

1480

01:28:32,629 --> 01:28:30,480

lets us know that

1481

01:28:34,550 --> 01:28:32,639

the engineering done to protect that

1482

01:28:36,070 --> 01:28:34,560

spacecraft during the hottest part of

1483

01:28:44,070 --> 01:28:36,080

its reentry

1484

01:28:47,750 --> 01:28:46,229

another photo coming in from that uh i

1485

01:28:49,830 --> 01:28:47,760

guess the blue team which is the

1486

01:28:51,750 --> 01:28:49,840

communications team that's on site this

1487

01:28:54,149 --> 01:28:51,760

one again from bill inkles a nasa

1488

01:28:56,950 --> 01:28:54,159

photographer who was part of that uh the

1489

01:28:58,709 --> 01:28:56,960

landing convoy getting uh looks like a

1490

01:29:00,070 --> 01:28:58,719

photo just seconds before touchdown

1491

01:29:01,750 --> 01:29:00,080

there

1492

01:29:04,629 --> 01:29:01,760

and a beautiful sight just to see

1493

01:29:06,070 --> 01:29:04,639

starliner there um with the backdrop of

1494

01:29:07,590 --> 01:29:06,080

the mountains

1495

01:29:09,350 --> 01:29:07,600

i have a feeling this is a picture that

1496

01:29:17,120 --> 01:29:09,360

a lot of people will have up on their

1497

01:29:17,130 --> 01:29:20,790

[Music]

1498

01:29:25,990 --> 01:29:23,750

we will stay with our team out on the

1499

01:29:27,189 --> 01:29:26,000

at the landing site until

1500

01:29:28,709 --> 01:29:27,199

the

1501

01:29:30,390 --> 01:29:28,719

hatch is opened

1502

01:29:32,149 --> 01:29:30,400

that will be done by the red team so

1503

01:29:33,030 --> 01:29:32,159

that's the team we'll pay most attention

1504

01:29:35,510 --> 01:29:33,040

to

1505

01:29:39,189 --> 01:29:35,520

and they're mostly made up of fire

1506

01:29:41,110 --> 01:29:39,199

rescue boeing's fire rescue

1507

01:29:43,030 --> 01:29:41,120

the mobile access platform will get

1508

01:29:45,669 --> 01:29:43,040

backed up to the hatch on the crew

1509

01:29:48,629 --> 01:29:45,679

module and that's able to give the team

1510

01:29:52,870 --> 01:29:50,629

if we did have astronauts on board today

1511

01:29:54,790 --> 01:29:52,880

this is the part when they would start

1512

01:29:56,470 --> 01:29:54,800

to exit and be taken directly into the

1513

01:30:02,229 --> 01:29:56,480

medical truck for

1514

01:30:06,390 --> 01:30:03,830

i think butch wilmore is there with the

1515

01:30:08,390 --> 01:30:06,400

team he's uh one of the first up

1516

01:30:11,189 --> 01:30:08,400

to to fly on board starliner getting a

1517

01:30:15,189 --> 01:30:11,199

good look at what he could expect from a

1518

01:30:18,870 --> 01:30:17,270

butch telling us that he was very

1519

01:30:20,629 --> 01:30:18,880

jealous of rosie

1520

01:30:22,709 --> 01:30:20,639

getting to ride in the commander's seat

1521

01:30:24,950 --> 01:30:22,719

today and

1522

01:30:26,550 --> 01:30:24,960

i'm sure he will have some more words

1523

01:30:27,669 --> 01:30:26,560

for her once he

1524

01:30:35,110 --> 01:30:27,679

gets to

1525

01:30:45,030 --> 01:30:36,470

definitely seeing some of those teams

1526

01:30:48,149 --> 01:30:46,310

you may be able to tell some of the

1527

01:30:49,110 --> 01:30:48,159

flags that are on each of those trucks

1528

01:30:50,950 --> 01:30:49,120

that

1529

01:30:52,950 --> 01:30:50,960

differentiate which team we're talking

1530

01:30:53,990 --> 01:30:52,960

about as we've mentioned many times they

1531

01:30:55,990 --> 01:30:54,000

are

1532

01:30:57,110 --> 01:30:56,000

designated by color

1533

01:31:00,149 --> 01:30:57,120

and so that'll give you a good

1534

01:31:02,709 --> 01:31:00,159

indication of which team's turn it is to

1535

01:31:05,510 --> 01:31:02,719

come in and do their part to get the

1536

01:31:43,110 --> 01:31:05,520

spacecraft ready for more folks to come

1537

01:31:46,629 --> 01:31:45,110

it's only been 26 minutes now since

1538

01:31:49,270 --> 01:31:46,639

starliner touched down so you can get an

1539

01:31:51,430 --> 01:31:49,280

idea of how quickly those uh that

1540

01:31:54,070 --> 01:31:51,440

landing and recovery team can move in

1541

01:31:55,990 --> 01:31:54,080

for a land recovery

1542

01:31:57,830 --> 01:31:56,000

already through that hydrazine sniff

1543

01:31:59,510 --> 01:31:57,840

test that we've been talking about and

1544

01:32:02,310 --> 01:31:59,520

getting ready to move on to the to the

1545

01:32:05,750 --> 01:32:02,320

silver team's grounding electrical test

1546

01:32:09,750 --> 01:32:07,910

team here in the room has already handed

1547

01:32:11,270 --> 01:32:09,760

control over to the recovery director

1548

01:32:21,110 --> 01:32:11,280

who is on site now they've got

1549

01:32:25,910 --> 01:32:23,750

spacecraft landed just three tenths of a

1550

01:32:27,590 --> 01:32:25,920

mile southeast of the landing site today

1551
01:32:29,270 --> 01:32:27,600
which they consider pretty much a

1552
01:32:30,310 --> 01:32:29,280
bullseye exactly where we want to put

1553
01:32:32,390 --> 01:32:30,320
her down

1554
01:32:34,229 --> 01:32:32,400
in the desert of course being so

1555
01:32:36,310 --> 01:32:34,239
important that we're able to

1556
01:32:38,229 --> 01:32:36,320
show that our autonomous

1557
01:37:07,350 --> 01:32:38,239
spacecraft can

1558
01:37:11,270 --> 01:37:08,950
and we have confirmation now that the

1559
01:37:12,550 --> 01:37:11,280
silver team has been able to ground the

1560
01:37:14,229 --> 01:37:12,560
vehicle

1561
01:37:47,830 --> 01:37:14,239
and ground cooling has now been

1562
01:37:51,830 --> 01:37:50,149
our nasa and boeing

1563
01:37:53,990 --> 01:37:51,840

colleagues are still in a holding

1564

01:37:55,910 --> 01:37:54,000

pattern right now as they wait to

1565

01:37:58,149 --> 01:37:55,920

get the go-ahead that it is safe to move

1566

01:38:01,590 --> 01:37:58,159

closer to the spacecraft and once they

1567

01:38:03,030 --> 01:38:01,600

do that and we establish a

1568

01:38:05,109 --> 01:38:03,040

shot with them we will go back out to

1569

01:45:57,510 --> 01:38:05,119

them live to get an update on what they

1570

01:46:00,709 --> 01:45:59,350

and you may have noticed there that our

1571

01:46:02,149 --> 01:46:00,719

teams have backed away from the

1572

01:46:04,629 --> 01:46:02,159

spacecraft

1573

01:46:09,270 --> 01:46:04,639

they are doing so after detecting a very

1574

01:46:13,750 --> 01:46:11,590

we're just giving it time to burn off

1575

01:46:15,830 --> 01:46:13,760

and then our teams will move back in

1576

01:46:19,830 --> 01:46:15,840

when it's safe and begin those

1577

01:46:25,270 --> 01:46:22,950

again starliner landed at 5 49 central 4

1578

01:46:27,669 --> 01:46:25,280

49 mountain time today

1579

01:46:33,189 --> 01:46:27,679

just about 41 minutes ago in the deserts

1580

01:46:38,870 --> 01:46:35,030

we have several teams that will be

1581

01:46:43,430 --> 01:46:38,880

moving in shortly to go through

1582

01:46:48,229 --> 01:46:46,310

starting with the gold team

1583

01:46:50,390 --> 01:46:48,239

that's the team that we did see just a

1584

01:46:53,189 --> 01:46:50,400

short time ago doing that sniff test for

1585

01:46:54,950 --> 01:46:53,199

the hydrazine

1586

01:46:56,709 --> 01:46:54,960

they do this with a

1587

01:46:58,390 --> 01:46:56,719

device

1588

01:47:00,310 --> 01:46:58,400

while wearing protective gear known as

1589

01:47:02,709 --> 01:47:00,320

hazmat suits just to prevent any

1590

01:47:04,470 --> 01:47:02,719

exposure to that hypergolic

1591

01:47:06,790 --> 01:47:04,480

propellants

1592

01:47:09,189 --> 01:47:06,800

hydrazine is used as a propellant and if

1593

01:47:11,910 --> 01:47:09,199

it turns into vapor it can be very toxic

1594

01:47:13,109 --> 01:47:11,920

so we use special sensors to sniff for

1595

01:47:14,629 --> 01:47:13,119

it

1596

01:47:17,430 --> 01:47:14,639

and then they will notify the rest of

1597

01:47:19,189 --> 01:47:17,440

the team when it's safe to move in

1598

01:47:21,030 --> 01:47:19,199

they also check to see

1599

01:47:22,390 --> 01:47:21,040

which direction the winds are blowing so

1600

01:47:25,109 --> 01:47:22,400

that they can make sure and set that

1601
01:47:40,310 --> 01:47:25,119
entire landing team up

1602
01:47:44,229 --> 01:47:42,470
our team is a safe distance away from

1603
01:47:46,470 --> 01:47:44,239
the spacecraft right now

1604
01:47:49,750 --> 01:47:46,480
and everyone that is near the spacecraft

1605
01:47:51,990 --> 01:47:49,760
is wearing hazmat suits

1606
01:47:55,270 --> 01:47:52,000
of course was the gold team that we did

1607
01:47:57,510 --> 01:47:55,280
see wearing those hazmat suits

1608
01:47:59,109 --> 01:47:57,520
we have a live look from the drone again

1609
01:48:00,470 --> 01:47:59,119
up in the right hand corner of your

1610
01:48:05,669 --> 01:48:00,480
screen

1611
01:48:09,910 --> 01:48:07,189
and you may see an ambulance down there

1612
01:48:11,910 --> 01:48:09,920
on the bottom of your screen that is

1613
01:48:13,750 --> 01:48:11,920

a normal part of the convoy

1614

01:48:15,990 --> 01:48:13,760

when we do have astronauts on board they

1615

01:48:18,629 --> 01:48:16,000

will be getting medical checkups as soon

1616

01:48:21,030 --> 01:48:18,639

as they land

1617

01:48:22,070 --> 01:48:21,040

and a lot of practice is going into this

1618

01:48:23,750 --> 01:48:22,080

time even though we don't have

1619

01:48:25,830 --> 01:48:23,760

astronauts on board there are a lot of

1620

01:48:28,550 --> 01:48:25,840

things that our team is running through

1621

01:48:30,310 --> 01:48:28,560

as if we do so that they get some extra

1622

01:48:51,830 --> 01:48:30,320

practice in before that crude flight

1623

01:48:56,550 --> 01:48:54,550

after the sniff test is performed the

1624

01:49:00,629 --> 01:48:56,560

silver team will move in to ground the

1625

01:49:05,510 --> 01:49:02,550

we did already have confirmation that

1626

01:49:07,510 --> 01:49:05,520

the vehicle was grounded

1627

01:49:08,709 --> 01:49:07,520

of course starliner was powered down

1628

01:49:10,149 --> 01:49:08,719

already but

1629

01:49:11,910 --> 01:49:10,159

because there can be some residual

1630

01:49:22,550 --> 01:49:11,920

electricity it is important for that

1631

01:49:25,669 --> 01:49:24,149

you can see a look back in here at

1632

01:49:28,310 --> 01:49:25,679

mission control

1633

01:49:30,390 --> 01:49:28,320

where a lot of the nasa and boeing team

1634

01:49:31,990 --> 01:49:30,400

members and leadership have

1635

01:49:33,510 --> 01:49:32,000

moved their way in to congratulate the

1636

01:49:36,229 --> 01:49:33,520

flight controllers

1637

01:49:41,270 --> 01:49:38,790

flight director matt lambers

1638

01:49:43,510 --> 01:49:41,280

you can see there

1639

01:49:44,709 --> 01:49:43,520

right in the bottom

1640

01:49:47,430 --> 01:49:44,719

left-hand corner of the screen here

1641

01:49:50,790 --> 01:49:47,440

talking to steve stitch the commercial

1642

01:49:55,430 --> 01:49:53,109

lammers has officially handed over

1643

01:49:57,990 --> 01:49:55,440

control of the vehicle so his uh his

1644

01:49:59,750 --> 01:49:58,000

part today is done he's now

1645

01:50:00,870 --> 01:49:59,760

enjoying handshakes around the room the

1646

01:50:03,430 --> 01:50:00,880

team has

1647

01:50:06,229 --> 01:50:03,440

has really uh

1648

01:50:08,149 --> 01:50:06,239

been happy to see starliner safely home

1649

01:50:09,189 --> 01:50:08,159

all feeling good about the the work

1650

01:50:17,910 --> 01:50:09,199

they've done over the course of this

1651
01:50:21,589 --> 01:50:19,910
steve stitch was asked the other day how

1652
01:50:23,350 --> 01:50:21,599
he would describe the starliner

1653
01:50:24,550 --> 01:50:23,360
spacecraft and he described it as

1654
01:50:26,070 --> 01:50:24,560
patient

1655
01:50:27,510 --> 01:50:26,080
which i think we are

1656
01:50:30,070 --> 01:50:27,520
all experiencing right now we're

1657
01:50:31,830 --> 01:50:30,080
practicing our patients as we wait for

1658
01:50:33,430 --> 01:50:31,840
the crews to

1659
01:50:35,430 --> 01:50:33,440
be able to safely move back toward the

1660
01:50:37,750 --> 01:50:35,440
spacecraft and finish out some of those

1661
01:50:59,109 --> 01:50:37,760
closing procedures before we see

1662
01:51:04,070 --> 01:51:01,669
once our team is back on site and they

1663
01:51:05,990 --> 01:51:04,080

do perform that sniff test once again to

1664

01:51:08,470 --> 01:51:06,000

make sure that

1665

01:51:11,270 --> 01:51:08,480

there's been time for the gas to burn

1666

01:51:13,510 --> 01:51:11,280

off from the hydrazine

1667

01:51:15,669 --> 01:51:13,520

the green team will move in and they

1668

01:51:17,830 --> 01:51:15,679

will hook up the hvac trailers to the

1669

01:51:21,030 --> 01:51:17,840

crew module to get that ground cooling

1670

01:51:24,070 --> 01:51:22,390

but their first job is to put an

1671

01:51:26,229 --> 01:51:24,080

environmental enclosure on the crew

1672

01:51:27,669 --> 01:51:26,239

module you may have heard our teams

1673

01:51:29,830 --> 01:51:27,679

talking about that earlier that it kind

1674

01:51:31,030 --> 01:51:29,840

of looks like a big inflatable or a big

1675

01:51:32,709 --> 01:51:31,040

bounce house

1676
01:51:34,629 --> 01:51:32,719
that goes up around the crew module

1677
01:51:36,550 --> 01:51:34,639
there

1678
01:51:38,390 --> 01:51:36,560
they will wrap it around and get cool

1679
01:51:40,070 --> 01:51:38,400
air into

1680
01:51:41,990 --> 01:51:40,080
the module to make sure that the vehicle

1681
01:51:49,510 --> 01:51:42,000
and its critical systems don't overheat

1682
01:51:53,270 --> 01:51:51,589
once again we have a live view from our

1683
01:51:54,950 --> 01:51:53,280
drone

1684
01:51:55,990 --> 01:51:54,960
looking over the landing site you can

1685
01:52:01,189 --> 01:51:56,000
see

1686
01:52:03,109 --> 01:52:01,199
parachutes that were cut away

1687
01:52:05,350 --> 01:52:03,119
as soon as we landed

1688
01:52:07,910 --> 01:52:05,360

after a few seconds

1689

01:52:11,270 --> 01:52:07,920

and there in the middle of that screen

1690

01:52:14,390 --> 01:52:11,280

you can see the base heat shield that

1691

01:52:16,149 --> 01:52:14,400

was jettisoned and

1692

01:52:18,390 --> 01:52:16,159

fell to

1693

01:53:48,870 --> 01:52:18,400

the desert ground just

1694

01:53:54,310 --> 01:53:51,669

this being a flight test our teams have

1695

01:53:57,990 --> 01:53:54,320

really learned a tremendous amount of

1696

01:53:59,750 --> 01:53:58,000

vital information about starliner

1697

01:54:01,350 --> 01:53:59,760

as we

1698

01:54:03,510 --> 01:54:01,360

had our first rendezvous with the

1699

01:54:05,189 --> 01:54:03,520

international space station

1700

01:54:06,950 --> 01:54:05,199

and then docked with the international

1701

01:54:09,270 --> 01:54:06,960

space station

1702

01:54:12,550 --> 01:54:09,280

spent a few days up there with

1703

01:54:14,310 --> 01:54:12,560

the astronauts who are able to move in

1704

01:54:16,070 --> 01:54:14,320

and

1705

01:54:18,310 --> 01:54:16,080

take some of the cargo out

1706

01:54:21,990 --> 01:54:18,320

and

1707

01:54:23,350 --> 01:54:22,000

repack some of that cargo for us

1708

01:54:25,430 --> 01:54:23,360

before

1709

01:54:26,390 --> 01:54:25,440

starliner undocked a little bit earlier

1710

01:54:28,470 --> 01:54:26,400

today

1711

01:54:38,310 --> 01:54:28,480

and made its way back home

1712

01:54:38,320 --> 01:54:58,390

yes

1713

01:55:01,750 --> 01:54:59,910

and you can see the gold team there

1714

01:55:03,669 --> 01:55:01,760

moving back toward the spacecraft to

1715

01:55:11,030 --> 01:55:03,679

perform another sniff test with that

1716

01:55:16,149 --> 01:55:12,070

you can see them wearing their

1717

01:56:34,470 --> 01:55:18,070

that of course to protect them from any

1718

01:56:38,629 --> 01:56:36,790

while we wait to hear the results of

1719

01:56:40,390 --> 01:56:38,639

this latest sniff test we're going to

1720

01:56:42,550 --> 01:56:40,400

toss it back to dan and rosa who are

1721

01:56:49,109 --> 01:56:42,560

there on site a safe distance away to

1722

01:56:54,950 --> 01:56:51,109

hey thanks brandi yeah we're still at

1723

01:56:56,629 --> 01:56:54,960

about the 500 foot point

1724

01:56:57,510 --> 01:56:56,639

and hopefully you guys can hear me right

1725

01:57:00,310 --> 01:56:57,520

now

1726

01:57:02,310 --> 01:57:00,320

so we're still at 500 feet away

1727

01:57:03,589 --> 01:57:02,320

as you saw everybody did back away from

1728

01:57:06,229 --> 01:57:03,599

the capsule

1729

01:57:08,070 --> 01:57:06,239

and that was by design so the gold team

1730

01:57:09,430 --> 01:57:08,080

was in they detected a fake choice of

1731

01:57:10,790 --> 01:57:09,440

hydrazine

1732

01:57:12,149 --> 01:57:10,800

so this is

1733

01:57:13,350 --> 01:57:12,159

trained for this is something they

1734

01:57:15,350 --> 01:57:13,360

prepare for

1735

01:57:17,189 --> 01:57:15,360

they gave the go for everybody not

1736

01:57:19,109 --> 01:57:17,199

wearing those kind of hazmat suits to

1737

01:57:20,870 --> 01:57:19,119

back away from the capsule

1738

01:57:23,189 --> 01:57:20,880

while they can while they continue to

1739

01:57:25,750 --> 01:57:23,199

troubleshoot and we just got word that

1740

01:57:27,350 --> 01:57:25,760

we are detecting zero um now so

1741

01:57:29,109 --> 01:57:27,360

everything looks like it's going in the

1742

01:57:30,790 --> 01:57:29,119

right direction again as you mentioned

1743

01:57:33,350 --> 01:57:30,800

this team has trained for many years

1744

01:57:34,390 --> 01:57:33,360

it's part of our our procedures um again

1745

01:57:36,709 --> 01:57:34,400

they're still going to continue to

1746

01:57:38,310 --> 01:57:36,719

monitor those levels but all is looking

1747

01:57:40,149 --> 01:57:38,320

nominal now that we've gotten that read

1748

01:57:41,750 --> 01:57:40,159

for zero and you know something great

1749

01:57:43,350 --> 01:57:41,760

about this team is that they are made

1750

01:57:45,189 --> 01:57:43,360

this team is made up of many disciplines

1751

01:57:47,830 --> 01:57:45,199

we have um most of our teammates are

1752

01:57:49,189 --> 01:57:47,840

from all over the country so again uh

1753

01:57:50,550 --> 01:57:49,199

experts in what they do they've been

1754

01:57:53,030 --> 01:57:50,560

training for a number of years they've

1755

01:57:54,950 --> 01:57:53,040

been here again for a few days um doing

1756

01:57:57,270 --> 01:57:54,960

a few mission just rehearsals and so we

1757

01:57:58,870 --> 01:57:57,280

are you know ready to you know deal with

1758

01:58:00,149 --> 01:57:58,880

these things that come up and we again

1759

01:58:02,149 --> 01:58:00,159

will continue to go through our normal

1760

01:58:03,910 --> 01:58:02,159

procedures yeah and i just i just got

1761

01:58:05,750 --> 01:58:03,920

the the word where it's zero parts per

1762

01:58:07,750 --> 01:58:05,760

million so you're not getting even the

1763

01:58:09,510 --> 01:58:07,760

faintest of traces of hydrazine at this

1764

01:58:11,910 --> 01:58:09,520

point so we'd already gone through a

1765

01:58:14,870 --> 01:58:11,920

couple of the steps after they went in

1766

01:58:16,310 --> 01:58:14,880

and hadn't detected any initially uh the

1767

01:58:18,870 --> 01:58:16,320

one of the steps that the gold team

1768

01:58:21,030 --> 01:58:18,880

actually takes is to install some covers

1769

01:58:22,870 --> 01:58:21,040

on those thrusters that use that

1770

01:58:24,550 --> 01:58:22,880

hydrogen propellant

1771

01:58:26,870 --> 01:58:24,560

so after that was detected they were

1772

01:58:28,950 --> 01:58:26,880

able to go through uh double check those

1773

01:58:31,109 --> 01:58:28,960

and now we're back down to

1774

01:58:32,950 --> 01:58:31,119

essentially zero so

1775

01:58:35,750 --> 01:58:32,960

you guys have also been reporting so we

1776

01:58:37,030 --> 01:58:35,760

did successfully complete the grounding

1777

01:58:39,030 --> 01:58:37,040

of the capsule

1778

01:58:40,790 --> 01:58:39,040

and the green team was able to establish

1779

01:58:43,589 --> 01:58:40,800

that ground cooling

1780

01:58:44,310 --> 01:58:43,599

so again had we had crew inside

1781

01:58:49,669 --> 01:58:44,320

the

1782

01:58:51,030 --> 01:58:49,679

hydrazine leaks outside and at this

1783

01:58:52,390 --> 01:58:51,040

point we've already established that

1784

01:58:54,709 --> 01:58:52,400

ground cooling

1785

01:58:56,709 --> 01:58:54,719

so should any of crew been inside they

1786

01:58:58,149 --> 01:58:56,719

would not have been in any danger from

1787

01:59:00,470 --> 01:58:58,159

that hydrazine

1788

01:59:01,830 --> 01:59:00,480

and they would be adequately cooled with

1789

01:59:04,149 --> 01:59:01,840

that ground support hardware that's

1790

01:59:06,229 --> 01:59:04,159

already in place and that hatch is

1791

01:59:09,030 --> 01:59:06,239

stabilized and grounded um again the

1792

01:59:10,550 --> 01:59:09,040

silver team uh it leads that what that's

1793

01:59:12,229 --> 01:59:10,560

one of the initial steps to grounding

1794

01:59:14,070 --> 01:59:12,239

stabilize the vehicle making it safe for

1795

01:59:16,550 --> 01:59:14,080

the team to be able to approach it and

1796

01:59:18,950 --> 01:59:16,560

touch the vehicle so again we still see

1797

01:59:20,149 --> 01:59:18,960

some of the procedures going on in front

1798

01:59:22,229 --> 01:59:20,159

of us right now and we're going to

1799

01:59:24,390 --> 01:59:22,239

continue to give you those updates as we

1800

01:59:26,870 --> 01:59:24,400

receive them here on uh the landing site

1801
01:59:29,030 --> 01:59:26,880
at white sands new mexico yeah and so

1802
01:59:31,030 --> 01:59:29,040
now that we're we're at that

1803
01:59:32,550 --> 01:59:31,040
point where we'll start to

1804
01:59:34,870 --> 01:59:32,560
uh we'll start to move in and i'm

1805
01:59:36,070 --> 01:59:34,880
getting the the signal now that it looks

1806
01:59:37,910 --> 01:59:36,080
like we're about to start rolling so

1807
01:59:39,990 --> 01:59:37,920
we're going to toss it back to the team

1808
01:59:41,589 --> 01:59:40,000
in houston and hopefully the next time

1809
01:59:43,350 --> 01:59:41,599
you hear from us we'll just be about 100

1810
01:59:45,109 --> 01:59:43,360
feet away from the capsule over to you

1811
01:59:46,709 --> 01:59:45,119
guys

1812
01:59:48,470 --> 01:59:46,719
all right that is great news and we are

1813
01:59:50,229 --> 01:59:48,480

looking forward to checking back in with

1814

01:59:52,149 --> 01:59:50,239

you when you get up close

1815

01:59:54,870 --> 01:59:52,159

and we just have a beautiful sight from

1816

01:59:57,910 --> 01:59:54,880

the drone here really up close look at

1817

02:00:01,030 --> 01:59:57,920

those hazmat crews um doing their job

1818

02:00:02,870 --> 02:00:01,040

they are member again of the gold team

1819

02:00:04,709 --> 02:00:02,880

and this is something they practice

1820

02:00:05,589 --> 02:00:04,719

extensively for

1821

02:00:07,109 --> 02:00:05,599

and

1822

02:00:09,270 --> 02:00:07,119

really everything just worked out

1823

02:00:10,310 --> 02:00:09,280

perfectly the way it's supposed to

1824

02:00:12,470 --> 02:00:10,320

they

1825

02:00:15,189 --> 02:00:12,480

made their way up there and

1826
02:00:17,910 --> 02:00:15,199
we're now told that they have a zero

1827
02:00:19,589 --> 02:00:17,920
reading so they will be giving the go

1828
02:00:21,990 --> 02:00:19,599
ahead for the rest of the teams to start

1829
02:00:23,589 --> 02:00:22,000
making their way back over

1830
02:00:25,350 --> 02:00:23,599
there were some operations that were

1831
02:00:28,390 --> 02:00:25,360
able to be complete

1832
02:00:29,910 --> 02:00:28,400
earlier we know that the vehicle was

1833
02:00:31,510 --> 02:00:29,920
grounded

1834
02:00:33,510 --> 02:00:31,520
meaning that they were able to make sure

1835
02:00:36,550 --> 02:00:33,520
that there was no residual electricity

1836
02:00:38,070 --> 02:00:36,560
you may have noticed the hazmat team was

1837
02:00:39,430 --> 02:00:38,080
touching the vehicle

1838
02:00:42,070 --> 02:00:39,440

that is something they were able to

1839

02:00:43,910 --> 02:00:42,080

safely do because that grounding did

1840

02:00:46,470 --> 02:00:43,920

occur earlier

1841

02:01:21,430 --> 02:00:48,310

we will have the green team moving back

1842

02:01:25,830 --> 02:01:23,030

the next thing that we'll be seeing here

1843

02:01:27,510 --> 02:01:25,840

shortly is the green team coming in to

1844

02:01:29,270 --> 02:01:27,520

set up the

1845

02:01:31,589 --> 02:01:29,280

environmental enclosure that will go

1846

02:01:35,030 --> 02:01:31,599

over the crew module

1847

02:01:37,270 --> 02:01:35,040

looks like a big inflatable it will just

1848

02:01:39,350 --> 02:01:37,280

set down nicely right over the top of

1849

02:01:41,669 --> 02:01:39,360

the vehicle

1850

02:01:44,470 --> 02:01:41,679

and that will be to help them get cool

1851

02:01:46,149 --> 02:01:44,480

air around it and inside of it and

1852

02:01:48,709 --> 02:01:46,159

make sure that the vehicle's critical

1853

02:01:51,510 --> 02:01:48,719

systems do not overheat of course

1854

02:01:54,310 --> 02:01:51,520

very hot out there in the desert

1855

02:01:56,790 --> 02:01:54,320

an interesting swing from what our crews

1856

02:01:57,830 --> 02:01:56,800

experienced during the last flight when

1857

02:02:01,189 --> 02:01:57,840

they

1858

02:02:03,270 --> 02:02:01,199

landed at night time in the darkness and

1859

02:02:05,510 --> 02:02:03,280

also in the winter time it was quite

1860

02:02:50,550 --> 02:02:05,520

cold i believe it was only about 16

1861

02:02:56,229 --> 02:02:52,870

when starliner landed around 5 49

1862

02:03:00,950 --> 02:02:56,239

central 449 mountain time today it did

1863

02:03:06,550 --> 02:03:00,960

land under three good main parachutes

1864

02:03:09,589 --> 02:03:07,830

and these capabilities are just

1865

02:03:12,070 --> 02:03:09,599

something that help us turn the vehicle

1866

02:03:15,350 --> 02:03:12,080

around in a much quicker time frame of

1867

02:03:17,910 --> 02:03:15,360

course this is a reusable crew module

1868

02:03:20,070 --> 02:03:17,920

can be used up to 10 times

1869

02:03:30,629 --> 02:03:20,080

with at least a six-month turnaround

1870

02:03:36,709 --> 02:03:32,950

you can see the nds cover at the top of

1871

02:03:38,229 --> 02:03:36,719

the crew module that is the nasa docking

1872

02:03:40,310 --> 02:03:38,239

system cover

1873

02:03:42,950 --> 02:03:40,320

and that has been added to our vehicle

1874

02:03:45,830 --> 02:03:42,960

since the last flight to

1875

02:03:48,790 --> 02:03:45,840

further protect the nasa docking system

1876

02:03:50,950 --> 02:03:48,800

during those hot loads as

1877

02:03:52,870 --> 02:03:50,960

starlander makes its way back down to

1878

02:04:18,629 --> 02:03:52,880

earth through

1879

02:04:22,149 --> 02:04:20,950

we do also see exactly what we expected

1880

02:04:25,189 --> 02:04:22,159

to see

1881

02:04:26,310 --> 02:04:25,199

with the crew module

1882

02:04:28,870 --> 02:04:26,320

returning

1883

02:04:31,109 --> 02:04:28,880

through that hot entry interface

1884

02:04:32,550 --> 02:04:31,119

you can see that black marking there on

1885

02:04:34,950 --> 02:04:32,560

the left side of it there's another one

1886

02:04:37,270 --> 02:04:34,960

on the exact opposite side

1887

02:04:38,790 --> 02:04:37,280

and it's the same thing we saw after our

1888

02:04:42,069 --> 02:04:38,800

last flight

1889

02:04:43,990 --> 02:04:42,079

these are just proof that the ablative

1890

02:04:47,109 --> 02:04:44,000

material that is wrapping around

1891

02:04:49,030 --> 02:04:47,119

starliner is doing its job when it

1892

02:04:51,270 --> 02:04:49,040

is able to

1893

02:04:54,229 --> 02:04:51,280

protect the crew module as it comes back

1894

02:04:54,239 --> 02:05:21,830

the hottest part of its ride home

1895

02:05:25,589 --> 02:05:23,830

continuing to see live views from the

1896

02:05:27,350 --> 02:05:25,599

new mexico desert an hour after

1897

02:05:29,910 --> 02:05:27,360

starliner's 5

1898

02:05:32,310 --> 02:05:29,920

49 p.m central touchdown

1899

02:05:35,189 --> 02:05:32,320

starliner came in for a landing across

1900

02:05:36,709 --> 02:05:35,199

baja peninsula and

1901

02:05:39,589 --> 02:05:36,719

the

1902

02:05:41,750 --> 02:05:39,599

northwestern corner of mexico before

1903

02:05:43,510 --> 02:05:41,760

making it to new mexico and teams there

1904

02:05:48,870 --> 02:05:43,520

on the ground reported they did hear the

1905

02:05:53,270 --> 02:05:50,790

making their way steadily now

1906

02:05:55,270 --> 02:05:53,280

through uh these uh recovery steps looks

1907

02:05:56,870 --> 02:05:55,280

like the green team might be getting

1908

02:05:59,109 --> 02:05:56,880

close to wrapping up they'll be followed

1909

02:06:00,950 --> 02:05:59,119

by the red team which will uh

1910

02:06:26,470 --> 02:06:00,960

we'll see open the the hatch on

1911

02:06:30,069 --> 02:06:28,069

you can see the gold team now moving

1912

02:06:32,950 --> 02:06:30,079

away from the spacecraft of course when

1913

02:06:35,270 --> 02:06:32,960

we spoke with rose and dan just a short

1914

02:06:37,669 --> 02:06:35,280

time ago they did report that there was

1915

02:06:42,830 --> 02:06:40,149

zero hydrazine

1916

02:06:46,390 --> 02:06:42,840

on the meters so a good sniff

1917

02:06:48,390 --> 02:06:46,400

test and we do expect to see

1918

02:07:07,270 --> 02:06:48,400

them alert the other teams to start

1919

02:07:11,189 --> 02:07:09,589

and all the teams uh looks like now

1920

02:07:12,709 --> 02:07:11,199

getting that go ahead to start moving in

1921

02:07:15,910 --> 02:07:12,719

again no hazmat

1922

02:07:17,270 --> 02:07:15,920

suits necessary at this point

1923

02:07:36,709 --> 02:07:17,280

and they can keep working through those

1924

02:07:40,709 --> 02:07:38,550

so this is the silver team that has

1925

02:07:44,149 --> 02:07:40,719

moved in now

1926

02:07:45,750 --> 02:07:44,159

safely after that sniff test was done

1927

02:07:47,910 --> 02:07:45,760

they were able to ground the vehicle

1928

02:07:51,750 --> 02:07:47,920

which is part of their job they did that

1929

02:07:54,790 --> 02:07:52,950

and that's just to make sure that

1930

02:07:57,750 --> 02:07:54,800

there's no residual electricity of

1931

02:11:31,350 --> 02:07:57,760

course darling was already powered down

1932

02:11:34,950 --> 02:11:33,350

and we're starting to see the green team

1933

02:11:45,430 --> 02:11:34,960

work to

1934

02:11:49,350 --> 02:11:47,030

and on the right side of your screen the

1935

02:11:50,790 --> 02:11:49,360

red team is moving in and that's the

1936

02:11:52,550 --> 02:11:50,800

team that we really want to pay most

1937

02:11:54,950 --> 02:11:52,560

attention to because they will be

1938

02:11:57,430 --> 02:11:54,960

opening the hatch a team is made up

1939

02:11:59,350 --> 02:11:57,440

mostly of boeing fire rescue

1940

02:12:02,069 --> 02:11:59,360

and as you can see there they're moving

1941

02:12:04,629 --> 02:12:02,079

that mobile access platform in right up

1942

02:12:06,790 --> 02:12:04,639

to the hatch on the crew module

1943

02:12:08,069 --> 02:12:06,800

just so they can have the closest access

1944

02:12:11,030 --> 02:12:08,079

to

1945

02:12:15,350 --> 02:12:13,189

and of course this is the team

1946

02:12:17,910 --> 02:12:15,360

had we had

1947

02:12:20,229 --> 02:12:17,920

astronauts on board that would be

1948

02:12:21,669 --> 02:12:20,239

getting them out and moving them over to

1949

02:13:02,310 --> 02:12:21,679

the medical truck where they would get

1950

02:13:05,910 --> 02:13:04,149

we're ready now to take you back to the

1951

02:13:08,790 --> 02:13:05,920

landing site to hear more from dan

1952

02:13:10,870 --> 02:13:08,800

hewitt and rosa buenos

1953

02:13:19,510 --> 02:13:10,880

to give you uh the latest information on

1954

02:13:22,870 --> 02:13:21,270

thanks brandi again it's great to be

1955

02:13:25,189 --> 02:13:22,880

with you again from our landing site

1956

02:13:27,669 --> 02:13:25,199

here at white sands new mexico it's been

1957

02:13:28,790 --> 02:13:27,679

quite the eventful day we continue to go

1958

02:13:32,149 --> 02:13:28,800

through the landing and recovery

1959

02:13:34,470 --> 02:13:32,159

operations as a team has been now where

1960

02:13:36,310 --> 02:13:34,480

we see the mobile box platform behind us

1961

02:13:38,790 --> 02:13:36,320

um the medevac has been backed up to the

1962

02:13:39,910 --> 02:13:38,800

crew module and we will keep uh moving

1963

02:13:42,310 --> 02:13:39,920

forward with the different procedures

1964

02:13:44,390 --> 02:13:42,320

here for the recovery effort yeah we had

1965

02:13:46,149 --> 02:13:44,400

a little bit longer wait at the 500 foot

1966

02:13:47,270 --> 02:13:46,159

part so everybody's been following along

1967

02:13:50,310 --> 02:13:47,280

and again

1968

02:13:53,030 --> 02:13:50,320

um that they were able to continue to to

1969

02:13:54,950 --> 02:13:53,040

sweep around no hydrogen's been detected

1970

02:13:57,350 --> 02:13:54,960

that's why you uh obviously see

1971

02:13:59,510 --> 02:13:57,360

everybody has moved in now to continue

1972

02:14:01,750 --> 02:13:59,520

through our operations we should be

1973

02:14:03,830 --> 02:14:01,760

getting you some close-up views i hope

1974

02:14:06,229 --> 02:14:03,840

uh of the capsule and the recovery as

1975

02:14:08,229 --> 02:14:06,239

it's unfolding um you could see so as

1976

02:14:10,149 --> 02:14:08,239

rosa said the mobile access platforms

1977

02:14:12,069 --> 02:14:10,159

getting into place now this kind of the

1978

02:14:12,870 --> 02:14:12,079

yellow stairs

1979

02:14:15,030 --> 02:14:12,880

and

1980

02:14:16,950 --> 02:14:15,040

we are going to be able to use that to

1981

02:14:19,669 --> 02:14:16,960

get access to the hatch

1982

02:14:21,830 --> 02:14:19,679

and all of the other items

1983

02:14:22,870 --> 02:14:21,840

all the hatch operations

1984

02:14:24,229 --> 02:14:22,880

and then

1985

02:14:26,149 --> 02:14:24,239

you may not be able to see it in every

1986

02:14:27,990 --> 02:14:26,159

single view but there's a large truck

1987

02:14:30,390 --> 02:14:28,000

just to the right of the capsule from

1988

02:14:32,550 --> 02:14:30,400

our viewpoint uh with a big star liner

1989

02:14:35,270 --> 02:14:32,560

on the side that's the medical truck so

1990

02:14:36,790 --> 02:14:35,280

it doesn't have a purpose today with no

1991

02:14:38,629 --> 02:14:36,800

crew on board but we're still going

1992

02:14:40,950 --> 02:14:38,639

through all of the operations as we

1993

02:14:42,790 --> 02:14:40,960

would if a crew were flying on starliner

1994

02:14:44,550 --> 02:14:42,800

and that's going to get backed up

1995

02:14:47,109 --> 02:14:44,560

and that'll be really kind of the first

1996

02:14:49,350 --> 02:14:47,119

place on planet earth that the crew goes

1997

02:14:51,270 --> 02:14:49,360

after they return in a trip on starliner

1998

02:14:53,350 --> 02:14:51,280

so we'll see that back up and then we'll

1999

02:14:54,790 --> 02:14:53,360

get into some of the hatch ups and off

2000

02:14:56,390 --> 02:14:54,800

to your left now i'm not sure if you can

2001
02:14:58,069 --> 02:14:56,400
see this in the camera we do see those

2002
02:15:01,669 --> 02:14:58,079
again beautiful red white and blue

2003
02:15:03,990 --> 02:15:01,679
parachutes again the silver team will be

2004
02:15:06,069 --> 02:15:04,000
safe in those it will be taking care of

2005
02:15:08,310 --> 02:15:06,079
collecting any of the other jettison

2006
02:15:11,270 --> 02:15:08,320
parts into our right also not in your

2007
02:15:13,750 --> 02:15:11,280
camera view is our decontamination tent

2008
02:15:16,069 --> 02:15:13,760
um it sets it up again for

2009
02:15:18,390 --> 02:15:16,079
any potential exposures to the hazards

2010
02:15:19,990 --> 02:15:18,400
it has not been used but it is here um

2011
02:15:22,550 --> 02:15:20,000
ready to uh

2012
02:15:24,870 --> 02:15:22,560
be used in case of anything um so again

2013
02:15:27,030 --> 02:15:24,880

we are uh still moving forward with that

2014

02:15:30,709 --> 02:15:27,040

uh putting up that mobile access

2015

02:15:32,550 --> 02:15:30,719

platform um and the team is still now uh

2016

02:15:34,550 --> 02:15:32,560

it looks like they're adding some of the

2017

02:15:39,350 --> 02:15:34,560

uh connecting some of the tubing for the

2018

02:15:42,629 --> 02:15:40,870

and then we're taking a look so yeah you

2019

02:15:45,350 --> 02:15:42,639

can see it it almost looks like a moon

2020

02:15:48,069 --> 02:15:45,360

rover but that's just part of that again

2021

02:15:49,589 --> 02:15:48,079

that hvac system that they're using to

2022

02:15:51,669 --> 02:15:49,599

provide some purge some positive

2023

02:15:53,589 --> 02:15:51,679

pressure inside of the capsule

2024

02:15:55,189 --> 02:15:53,599

but we also have again like an hvac

2025

02:15:57,510 --> 02:15:55,199

cooling system already hooked up to

2026

02:15:59,270 --> 02:15:57,520

provide cooling inside the capsule

2027

02:16:00,790 --> 02:15:59,280

and you're going to be able to see a lot

2028

02:16:02,470 --> 02:16:00,800

of the red team

2029

02:16:04,149 --> 02:16:02,480

through all this action

2030

02:16:06,950 --> 02:16:04,159

and we've already got somebody up on the

2031

02:16:08,550 --> 02:16:06,960

map uh getting some of that gypsum sand

2032

02:16:10,149 --> 02:16:08,560

that

2033

02:16:12,310 --> 02:16:10,159

is everywhere

2034

02:16:14,310 --> 02:16:12,320

um getting that off and

2035

02:16:15,510 --> 02:16:14,320

everybody's color coded by our vests the

2036

02:16:18,310 --> 02:16:15,520

red team

2037

02:16:19,189 --> 02:16:18,320

again that's a mix of boeing medical

2038

02:16:21,030 --> 02:16:19,199

fire

2039

02:16:23,189 --> 02:16:21,040

a lot of different professionals one of

2040

02:16:25,430 --> 02:16:23,199

the key boeing people on the red team is

2041

02:16:26,870 --> 02:16:25,440

going to be doing the hatch operations

2042

02:16:28,870 --> 02:16:26,880

the we're going to be going in through

2043

02:16:31,030 --> 02:16:28,880

the side hatch so again boeing has two

2044

02:16:32,469 --> 02:16:31,040

hatches on starliner you've got the side

2045

02:16:34,070 --> 02:16:32,479

hatch and you've got the what's called

2046

02:16:35,270 --> 02:16:34,080

the iva it's essentially the hatch at

2047

02:16:37,110 --> 02:16:35,280

the very top

2048

02:16:38,629 --> 02:16:37,120

we use that whenever

2049

02:16:40,150 --> 02:16:38,639

a starliner is docked to the space

2050

02:16:42,309 --> 02:16:40,160

station but for all of our ground

2051
02:16:43,669 --> 02:16:42,319
operations we're using that side hatch

2052
02:16:45,910 --> 02:16:43,679
it's been closed

2053
02:16:47,270 --> 02:16:45,920
since it was on the pad out in florida

2054
02:16:49,349 --> 02:16:47,280
and it's going to get open for the first

2055
02:16:51,509 --> 02:16:49,359
time here in just a little bit

2056
02:16:53,349 --> 02:16:51,519
that's right as you mentioned that mars

2057
02:16:55,190 --> 02:16:53,359
rover looking car to the left actually

2058
02:16:56,950 --> 02:16:55,200
is a humidifier and again that's

2059
02:16:59,110 --> 02:16:56,960
providing some of that positive air into

2060
02:17:00,870 --> 02:16:59,120
the crew module and keeping any of that

2061
02:17:02,870 --> 02:17:00,880
dust outside and that's part of the

2062
02:17:05,190 --> 02:17:02,880
purge system it's really critical to

2063
02:17:07,349 --> 02:17:05,200

keep the humidity levels at a stable

2064

02:17:09,349 --> 02:17:07,359

condition inside the crew module as we

2065

02:17:10,709 --> 02:17:09,359

are getting ready to open that hatch um

2066

02:17:12,389 --> 02:17:10,719

so we're seeing some great views on our

2067

02:17:13,429 --> 02:17:12,399

side here again the team continues to

2068

02:17:17,509 --> 02:17:13,439

work

2069

02:17:19,110 --> 02:17:17,519

different systems that mobile platform

2070

02:17:34,070 --> 02:17:19,120

looks like it's ready the team is up

2071

02:17:37,669 --> 02:17:35,910

looks like we have some technical

2072

02:17:38,950 --> 02:17:37,679

difficulties may have lost dan and rosa

2073

02:17:40,309 --> 02:17:38,960

for the moment but we'll hang on to see

2074

02:17:42,950 --> 02:17:40,319

if we can get them back in a little bit

2075

02:17:45,030 --> 02:17:42,960

later but as you as a rosa was saying

2076
02:17:47,110 --> 02:17:45,040
the mobile platform mobile platforms

2077
02:17:49,190 --> 02:17:47,120
moving in for the hatch opening of

2078
02:17:51,030 --> 02:17:49,200
starliner

2079
02:17:55,830 --> 02:17:51,040
so the teams can begin

2080
02:17:58,870 --> 02:17:57,349
rosie and of course our gravity

2081
02:18:00,070 --> 02:17:58,880
indicator

2082
02:18:01,429 --> 02:18:00,080
jeb or

2083
02:18:04,230 --> 02:18:01,439
jebediah

2084
02:18:06,309 --> 02:18:04,240
part of the kerbal space program

2085
02:18:08,070 --> 02:18:06,319
he was a bit of a surprise for some

2086
02:18:09,349 --> 02:18:08,080
folks once we

2087
02:18:11,509 --> 02:18:09,359
talked to the international space

2088
02:18:13,509 --> 02:18:11,519

station we started getting views of him

2089

02:18:15,270 --> 02:18:13,519

doing his job as the

2090

02:18:16,870 --> 02:18:15,280

gravity indicator and there on your

2091

02:18:19,429 --> 02:18:16,880

screen you can see the red team which is

2092

02:18:20,469 --> 02:18:19,439

made up of mostly boeing fire and rescue

2093

02:18:22,709 --> 02:18:20,479

crews

2094

02:18:27,030 --> 02:18:22,719

they are working to get the hatch open

2095

02:18:31,190 --> 02:18:28,469

all right we are going to try and get

2096

02:18:37,349 --> 02:18:31,200

back out to dan and rosa now guys do we

2097

02:18:40,709 --> 02:18:39,110

hey brandi yeah hopefully you can hear

2098

02:18:42,709 --> 02:18:40,719

me now uh

2099

02:18:45,190 --> 02:18:42,719

one of the joys of working from a really

2100

02:18:47,190 --> 02:18:45,200

remote location is you do run into some

2101
02:18:48,070 --> 02:18:47,200
occasional technical hiccups i will say

2102
02:18:49,990 --> 02:18:48,080
we've

2103
02:18:51,750 --> 02:18:50,000
got a bunch of certified wizards on the

2104
02:18:53,270 --> 02:18:51,760
blue team here today

2105
02:18:55,990 --> 02:18:53,280
who are bringing us all of these

2106
02:18:58,070 --> 02:18:56,000
different views for folks around to take

2107
02:19:00,389 --> 02:18:58,080
a look but again we're getting into our

2108
02:19:02,629 --> 02:19:00,399
hatch operations so the access panel on

2109
02:19:05,190 --> 02:19:02,639
the hatch is getting opened up there's a

2110
02:19:07,190 --> 02:19:05,200
special tool that our our lead hatch ops

2111
02:19:09,030 --> 02:19:07,200
engineer is going to be using to get

2112
02:19:10,389 --> 02:19:09,040
that open um

2113
02:19:12,709 --> 02:19:10,399

the hatch can

2114

02:19:14,870 --> 02:19:12,719

operate within a pretty small range of

2115

02:19:16,950 --> 02:19:14,880

psi differentials on either side

2116

02:19:19,190 --> 02:19:16,960

basically just meaning we need to make

2117

02:19:21,750 --> 02:19:19,200

sure that the pressure inserts inside of

2118

02:19:23,669 --> 02:19:21,760

starliner is relatively the same as the

2119

02:19:25,669 --> 02:19:23,679

pressure out here and after they get

2120

02:19:26,950 --> 02:19:25,679

that confirmed i will be able to get the

2121

02:19:28,309 --> 02:19:26,960

hatch opened

2122

02:19:29,990 --> 02:19:28,319

that's right dan and once we're done

2123

02:19:31,669 --> 02:19:30,000

with this hatch opening procedure we

2124

02:19:33,990 --> 02:19:31,679

will be going through the close out um

2125

02:19:35,750 --> 02:19:34,000

starliner will actually stay overnight

2126

02:19:38,230 --> 02:19:35,760

it will be sent to a processing center

2127

02:19:39,830 --> 02:19:38,240

and then make its way back to florida um

2128

02:19:41,349 --> 02:19:39,840

so we certainly will we will be

2129

02:19:42,469 --> 02:19:41,359

remaining here in new mexico for a few

2130

02:19:44,870 --> 02:19:42,479

more days as we go through those

2131

02:19:46,870 --> 02:19:44,880

procedures um but again we're very happy

2132

02:19:49,429 --> 02:19:46,880

that we have standard back home here in

2133

02:19:51,510 --> 02:19:49,439

new mexico and again that we've had a

2134

02:19:53,750 --> 02:19:51,520

successful test flight and preparation

2135

02:19:55,510 --> 02:19:53,760

for our next crew flight test

2136

02:19:56,870 --> 02:19:55,520

and one of the operations we're going to

2137

02:19:59,750 --> 02:19:56,880

be carrying out here is going to be

2138

02:20:02,070 --> 02:19:59,760

cargo we have some of the nasa cargo

2139

02:20:03,270 --> 02:20:02,080

teams out here with the crews and

2140

02:20:04,710 --> 02:20:03,280

they're going to be able to move in once

2141

02:20:06,710 --> 02:20:04,720

we get the hatch open

2142

02:20:08,389 --> 02:20:06,720

we've got a small amount of

2143

02:20:09,990 --> 02:20:08,399

really time critical cargo that's going

2144

02:20:11,030 --> 02:20:10,000

to come off including some radiation

2145

02:20:12,790 --> 02:20:11,040

monitors

2146

02:20:15,429 --> 02:20:12,800

and a couple of utilization items from

2147

02:20:16,790 --> 02:20:15,439

our nanoracks modules on board and then

2148

02:20:18,630 --> 02:20:16,800

they're going to bring out a couple of

2149

02:20:20,550 --> 02:20:18,640

other items just to test

2150

02:20:22,950 --> 02:20:20,560

that real-time crew car or that

2151
02:20:25,110 --> 02:20:22,960
real-time cargo retrieval when crew

2152
02:20:27,750 --> 02:20:25,120
members are returning on starliner

2153
02:20:29,429 --> 02:20:27,760
they're going to be bringing

2154
02:20:31,429 --> 02:20:29,439
essentially pieces of themselves home

2155
02:20:33,830 --> 02:20:31,439
with them the crew will take

2156
02:20:35,429 --> 02:20:33,840
a number of different

2157
02:20:37,750 --> 02:20:35,439
blood samples other things like that

2158
02:20:39,910 --> 02:20:37,760
just prior to their return and those get

2159
02:20:42,630 --> 02:20:39,920
sewed into cold bags

2160
02:20:44,870 --> 02:20:42,640
or cold powered cargo containers on

2161
02:20:46,790 --> 02:20:44,880
board the vehicle and that's one of the

2162
02:20:49,030 --> 02:20:46,800
really critical science items that we

2163
02:20:50,630 --> 02:20:49,040

return from the space station and that's

2164

02:20:53,190 --> 02:20:50,640

one of the reasons we're really excited

2165

02:20:56,469 --> 02:20:53,200

to have starliner come on board and add

2166

02:20:57,510 --> 02:20:56,479

another cargo delivery service back to

2167

02:20:59,110 --> 02:20:57,520

earth

2168

02:21:01,190 --> 02:20:59,120

is it's we definitely have a lot of

2169

02:21:04,070 --> 02:21:01,200

vehicles bringing cargo up but it's a

2170

02:21:06,150 --> 02:21:04,080

much smaller number of vehicles that's

2171

02:21:08,230 --> 02:21:06,160

able to return that cargo down

2172

02:21:10,469 --> 02:21:08,240

so some of that time-sensitive cargo

2173

02:21:12,870 --> 02:21:10,479

will get brought off board today the

2174

02:21:15,030 --> 02:21:12,880

rest will remain on onboard starliner

2175

02:21:17,590 --> 02:21:15,040

until it gets to a processing facility

2176

02:21:19,830 --> 02:21:17,600

uh including our large cargo items that

2177

02:21:21,670 --> 02:21:19,840

are coming back today uh those three

2178

02:21:24,469 --> 02:21:21,680

norris tanks as people have heard about

2179

02:21:26,469 --> 02:21:24,479

the nitrogen oxygen recharge system that

2180

02:21:29,030 --> 02:21:26,479

we use to essentially recharge the

2181

02:21:30,389 --> 02:21:29,040

atmosphere on board the space station

2182

02:21:32,309 --> 02:21:30,399

that's right dana and i'm sure a lot of

2183

02:21:34,150 --> 02:21:32,319

you are wondering if rosie will be uh

2184

02:21:35,990 --> 02:21:34,160

exiting the crew module but she will not

2185

02:21:37,510 --> 02:21:36,000

she will be staying in here as well with

2186

02:21:40,150 --> 02:21:37,520

the norse tanks

2187

02:21:41,830 --> 02:21:40,160

and make her way back to florida again

2188

02:21:44,309 --> 02:21:41,840

the the team is still working here on

2189

02:21:45,429 --> 02:21:44,319

opening that hatch as you can see them

2190

02:21:46,950 --> 02:21:45,439

going through their procedures they're

2191

02:21:48,870 --> 02:21:46,960

on top of the mobile platform and

2192

02:21:50,469 --> 02:21:48,880

there's a good look there at those

2193

02:21:52,070 --> 02:21:50,479

airbags again those fill up with

2194

02:21:53,990 --> 02:21:52,080

nitrogen and to provide that soft

2195

02:21:56,309 --> 02:21:54,000

landing for starliner and again a very

2196

02:21:58,710 --> 02:21:56,319

soft landing for our crew for the next

2197

02:22:00,790 --> 02:21:58,720

crew flight test um so again a great day

2198

02:22:02,710 --> 02:22:00,800

here for the whole starliner team um you

2199

02:22:04,150 --> 02:22:02,720

know as a native new mexican and myself

2200

02:22:05,990 --> 02:22:04,160

i could definitely say i'm proud to be

2201

02:22:07,590 --> 02:22:06,000

part of this orbital flight test too and

2202

02:22:08,950 --> 02:22:07,600

i know i share that same feeling with

2203

02:22:10,790 --> 02:22:08,960

everybody here on the ground and

2204

02:22:12,870 --> 02:22:10,800

everybody around the country and our

2205

02:22:15,270 --> 02:22:12,880

teams in houston and florida

2206

02:22:16,710 --> 02:22:15,280

yeah it was it was i think i said it

2207

02:22:20,230 --> 02:22:16,720

earlier it was pretty surreal for

2208

02:22:21,990 --> 02:22:20,240

starliner to just appear in the air

2209

02:22:23,670 --> 02:22:22,000

at first it feels like it's almost above

2210

02:22:25,990 --> 02:22:23,680

you even though several kilometers

2211

02:22:27,830 --> 02:22:26,000

downrange from us those airbags are

2212

02:22:30,230 --> 02:22:27,840

really cool there's essentially an

2213

02:22:33,750 --> 02:22:30,240

airbag inside of each airbag as it

2214

02:22:36,630 --> 02:22:33,760

inflates there's also a central airbag

2215

02:22:39,110 --> 02:22:36,640

the very center of the capsule

2216

02:22:41,190 --> 02:22:39,120

that only gets used if starliner is in a

2217

02:22:43,429 --> 02:22:41,200

water landing that can help

2218

02:22:45,349 --> 02:22:43,439

with the operating system on board the

2219

02:22:48,309 --> 02:22:45,359

capsule so obviously now you see and we

2220

02:22:50,309 --> 02:22:48,319

see the hatch is open it is

2221

02:22:52,630 --> 02:22:50,319

fantastic news again the team is now

2222

02:22:54,070 --> 02:22:52,640

going to be making their way into the

2223

02:22:55,670 --> 02:22:54,080

hatch to do some of those close-up

2224

02:22:57,590 --> 02:22:55,680

procedures we're going to have again

2225

02:23:00,550 --> 02:22:57,600

some of our team from the the red team

2226

02:23:02,469 --> 02:23:00,560

start going into the cabin and again

2227

02:23:04,230 --> 02:23:02,479

doing some initial assessments and then

2228

02:23:05,910 --> 02:23:04,240

again continue with those procedures for

2229

02:23:09,670 --> 02:23:05,920

that red team

2230

02:23:13,990 --> 02:23:09,680

all right so 606 mountain 706

2231

02:23:15,990 --> 02:23:14,000

central 806 pm eastern starliner hatch

2232

02:23:18,070 --> 02:23:16,000

is open so

2233

02:23:19,750 --> 02:23:18,080

they'll get their first look inside and

2234

02:23:22,150 --> 02:23:19,760

again we've got some cargo specialists

2235

02:23:23,990 --> 02:23:22,160

that'll be allowed to to move up close

2236

02:23:25,670 --> 02:23:24,000

uh pretty soon

2237

02:23:27,590 --> 02:23:25,680

and they'll be able to start to offload

2238

02:23:41,830 --> 02:23:27,600

some of the items that starliners

2239

02:23:47,429 --> 02:23:44,070

and we just got word that while

2240

02:23:50,230 --> 02:23:47,439

starliner was landing in white sands new

2241

02:23:52,230 --> 02:23:50,240

mexico it was landing at about 26 feet

2242

02:23:54,550 --> 02:23:52,240

per second which is

2243

02:23:56,309 --> 02:23:54,560

right what we expected

2244

02:24:00,790 --> 02:23:56,319

a very comfortable ride if we had

2245

02:25:05,429 --> 02:24:02,630

and then of course cushioned by those

2246

02:25:09,190 --> 02:25:06,870

but a brief cut out there but we are

2247

02:25:11,110 --> 02:25:09,200

going to go back now to rosa who is with

2248

02:25:17,590 --> 02:25:11,120

mark nappy she's going to get a few uh

2249

02:25:21,190 --> 02:25:19,349

hey there it's actually megan gessner

2250

02:25:23,429 --> 02:25:21,200

out here in the field with mark mappy

2251
02:25:25,030 --> 02:25:23,439
and mark you know we did experience a

2252
02:25:27,110 --> 02:25:25,040
little bit of the delay there at the

2253
02:25:28,950 --> 02:25:27,120
beginning with the hydrazine link can

2254
02:25:31,110 --> 02:25:28,960
you talk to us a little bit about that

2255
02:25:32,790 --> 02:25:31,120
okay well the team comes in

2256
02:25:35,110 --> 02:25:32,800
and has to check the vehicle out to make

2257
02:25:36,630 --> 02:25:35,120
sure it's safe for others to approach

2258
02:25:38,150 --> 02:25:36,640
when they got in they

2259
02:25:39,990 --> 02:25:38,160
have these things called sniffers that

2260
02:25:42,870 --> 02:25:40,000
come in and check for

2261
02:25:44,790 --> 02:25:42,880
hazardous gases such as hydrazine

2262
02:25:46,710 --> 02:25:44,800
they came in the thruster covers were

2263
02:25:48,710 --> 02:25:46,720

put on and they got a little bit of a

2264

02:25:51,030 --> 02:25:48,720

high reading so they fell back like they

2265

02:25:52,790 --> 02:25:51,040

were supposed to and

2266

02:25:55,110 --> 02:25:52,800

made sure that they could

2267

02:25:57,590 --> 02:25:55,120

assure that the area was safe they went

2268

02:25:59,590 --> 02:25:57,600

back checked again and all of it had

2269

02:26:01,030 --> 02:25:59,600

dissipated so everything was safe so the

2270

02:26:02,309 --> 02:26:01,040

team reacted just like they were

2271

02:26:04,389 --> 02:26:02,319

supposed to

2272

02:26:06,710 --> 02:26:04,399

it was a sort of a nominal

2273

02:26:08,550 --> 02:26:06,720

situation that we sometimes encounter

2274

02:26:10,230 --> 02:26:08,560

and uh everything's back to normal and

2275

02:26:12,309 --> 02:26:10,240

the team is off getting the vehicle

2276

02:26:14,389 --> 02:26:12,319

saved and that's why it's so important

2277

02:26:15,990 --> 02:26:14,399

that we practice these types of things

2278

02:26:18,389 --> 02:26:16,000

to ensure the safety of everyone that's

2279

02:26:20,389 --> 02:26:18,399

here absolutely and today was just a

2280

02:26:21,510 --> 02:26:20,399

perfect example of how well this team is

2281

02:26:23,830 --> 02:26:21,520

really trained

2282

02:26:26,309 --> 02:26:23,840

absolutely and you know today's been a

2283

02:26:28,469 --> 02:26:26,319

long time coming it's now finally landed

2284

02:26:31,510 --> 02:26:28,479

how do you feel i feel great there's

2285

02:26:33,270 --> 02:26:31,520

lots of emotion um first of all really

2286

02:26:35,990 --> 02:26:33,280

happy for this team so many people have

2287

02:26:38,070 --> 02:26:36,000

been working on this for 10 years and

2288

02:26:39,429 --> 02:26:38,080

you know just waiting for today to be to

2289

02:26:42,070 --> 02:26:39,439

be here so that we could have a

2290

02:26:43,590 --> 02:26:42,080

successful mission uh you've got i'm

2291

02:26:45,830 --> 02:26:43,600

proud of the team because they've just

2292

02:26:48,389 --> 02:26:45,840

put so much work and effort into this

2293

02:26:49,990 --> 02:26:48,399

and then i'm really humbled because

2294

02:26:51,429 --> 02:26:50,000

you know i'm standing on the backs of

2295

02:26:53,349 --> 02:26:51,439

two really

2296

02:26:54,710 --> 02:26:53,359

excellent program managers that got us

2297

02:26:57,190 --> 02:26:54,720

here and john mulholland and john

2298

02:26:59,429 --> 02:26:57,200

vollmer uh they they have to be sitting

2299

02:27:01,270 --> 02:26:59,439

home with big ol smiles on their face oh

2300

02:27:03,110 --> 02:27:01,280

i'm sure they are as is a lot of the

2301
02:27:05,110 --> 02:27:03,120
team that's here today have you had a

2302
02:27:07,190 --> 02:27:05,120
chance to talk to anybody any of the the

2303
02:27:09,270 --> 02:27:07,200
ground crews just yet oh a lot of folks

2304
02:27:09,910 --> 02:27:09,280
um they're just ecstatic you know this

2305
02:27:11,429 --> 02:27:09,920
is

2306
02:27:14,309 --> 02:27:11,439
was really something seeing the vehicle

2307
02:27:16,950 --> 02:27:14,319
come in and just gently come back to

2308
02:27:18,230 --> 02:27:16,960
earth and and settle down on the on the

2309
02:27:20,309 --> 02:27:18,240
uh

2310
02:27:22,230 --> 02:27:20,319
on the lake bed here so it's just been

2311
02:27:24,070 --> 02:27:22,240
incredible people are really feeling

2312
02:27:25,429 --> 02:27:24,080
good absolutely it was definitely a

2313
02:27:27,270 --> 02:27:25,439

beautiful sight watching it come down

2314

02:27:29,110 --> 02:27:27,280

and i know we'll hear a little bit more

2315

02:27:30,309 --> 02:27:29,120

from you a little later today i believe

2316

02:27:31,349 --> 02:27:30,319

you're going to be a part of that post

2317

02:27:32,630 --> 02:27:31,359

landing

2318

02:27:35,510 --> 02:27:32,640

conference that's going to happen on

2319

02:27:37,349 --> 02:27:35,520

nasa tv a little later today and for now

2320

02:27:40,630 --> 02:27:37,359

we're going to send it back to our

2321

02:27:42,830 --> 02:27:40,640

friends over at uh ksc or jsc i'm not

2322

02:27:46,230 --> 02:27:42,840

sure where y'all are at lauren

2323

02:27:47,510 --> 02:27:46,240

brady thanks so much megan yes here

2324

02:27:51,510 --> 02:27:47,520

coming from

2325

02:27:53,349 --> 02:27:51,520

live from houston in uh mission control

2326

02:27:54,309 --> 02:27:53,359

great to hear from mark nappy our

2327

02:27:57,030 --> 02:27:54,319

program

2328

02:27:59,349 --> 02:27:57,040

leader the leader of our starliner team

2329

02:28:01,110 --> 02:27:59,359

and really pretty awesome for him to be

2330

02:28:02,150 --> 02:28:01,120

out there at the landing site with our

2331

02:28:03,750 --> 02:28:02,160

crews

2332

02:28:06,230 --> 02:28:03,760

i'm sure it was a very exciting moment

2333

02:28:09,349 --> 02:28:06,240

for him and everyone else to see

2334

02:28:11,830 --> 02:28:09,359

starliner land so delicately there

2335

02:28:51,349 --> 02:28:11,840

at about 4 49 mountain time this

2336

02:28:54,630 --> 02:28:52,630

we're going to keep sticking with

2337

02:28:56,630 --> 02:28:54,640

coverage for a little while longer as uh

2338

02:28:58,550 --> 02:28:56,640

the teams make their way through the

2339

02:29:00,550 --> 02:28:58,560

post landing recovery

2340

02:29:02,630 --> 02:29:00,560

checklist

2341

02:29:04,309 --> 02:29:02,640

as you heard there from dan and rosa

2342

02:29:05,750 --> 02:29:04,319

earlier they and as you can see here on

2343

02:29:10,630 --> 02:29:05,760

your screen they do have the hatches

2344

02:29:15,750 --> 02:29:12,950

still got about two hours left until

2345

02:29:21,270 --> 02:29:15,760

sunset in new mexico so they've got

2346

02:29:24,790 --> 02:29:23,190

and as megan was talking to mark nappy

2347

02:29:26,790 --> 02:29:24,800

we did get a peek inside the crew

2348

02:29:27,750 --> 02:29:26,800

capsule we could see rosie there in her

2349

02:29:29,349 --> 02:29:27,760

seat

2350

02:29:31,590 --> 02:29:29,359

everything looked good she looked

2351

02:29:34,389 --> 02:29:31,600

exactly in the place that

2352

02:29:35,750 --> 02:29:34,399

the crew on the iss left her

2353

02:29:45,750 --> 02:29:35,760

just this morning

2354

02:29:48,150 --> 02:29:46,870

we're hoping that in the next few

2355

02:29:50,150 --> 02:29:48,160

minutes we'll get to hear a little bit

2356

02:29:51,990 --> 02:29:50,160

from astronaut butch wilmore who is at

2357

02:29:54,230 --> 02:29:52,000

the scene along with the recovery team

2358

02:29:56,950 --> 02:29:54,240

he of course expects to

2359

02:29:58,710 --> 02:29:56,960

be in the capsule for this scene next

2360

02:30:01,190 --> 02:29:58,720

time it comes around so be great to get

2361

02:30:04,070 --> 02:30:01,200

here his perspective

2362

02:30:05,830 --> 02:30:04,080

lots of activity still to uh to observe

2363

02:30:07,590 --> 02:30:05,840

is

2364

02:31:38,630 --> 02:30:07,600

as we make our way through these uh

2365

02:31:43,910 --> 02:31:41,110

and we're gonna go back now to megan

2366

02:31:54,230 --> 02:31:43,920

gessner to hear a little bit from our

2367

02:31:58,790 --> 02:31:57,030

okay it looks like we're live butch

2368

02:32:00,309 --> 02:31:58,800

so good to see you here today i know you

2369

02:32:03,510 --> 02:32:00,319

weren't able to make it out here for

2370

02:32:05,030 --> 02:32:03,520

off-1 but today you are here in person

2371

02:32:06,389 --> 02:32:05,040

what are you feeling

2372

02:32:07,270 --> 02:32:06,399

oh bye

2373

02:32:08,950 --> 02:32:07,280

i mean

2374

02:32:10,070 --> 02:32:08,960

we all tracked towards the from the

2375

02:32:12,070 --> 02:32:10,080

beginning from launch all the way

2376

02:32:13,590 --> 02:32:12,080

through the mission and this is what we

2377

02:32:15,030 --> 02:32:13,600

were hoping for at the end right i mean

2378

02:32:17,349 --> 02:32:15,040

a soft uh

2379

02:32:19,030 --> 02:32:17,359

safe landing culmination of all the hard

2380

02:32:20,950 --> 02:32:19,040

work i mean you've got to give a huge

2381

02:32:22,550 --> 02:32:20,960

congratulations to the folks at boeing

2382

02:32:24,389 --> 02:32:22,560

all with martin dabney all the way down

2383

02:32:25,349 --> 02:32:24,399

everybody that's worked the program

2384

02:32:27,190 --> 02:32:25,359

um

2385

02:32:29,590 --> 02:32:27,200

gone through some some difficult

2386

02:32:31,030 --> 02:32:29,600

situations and now to culminate in this

2387

02:32:32,389 --> 02:32:31,040

after a wonderful it's wonderfully

2388

02:32:34,870 --> 02:32:32,399

successful mission i mean you can ask

2389

02:32:36,630 --> 02:32:34,880

for more absolutely definitely takes a

2390

02:32:39,830 --> 02:32:36,640

big team effort to have all this happen

2391

02:32:41,990 --> 02:32:39,840

you know now as as a a casual observer

2392

02:32:49,910 --> 02:32:42,000

you know i see one thing when i see a

2393

02:32:53,590 --> 02:32:51,830

and as we mentioned earlier we have had

2394

02:32:55,510 --> 02:32:53,600

some trouble with the signal going in

2395

02:32:58,469 --> 02:32:55,520

and out with our live crews there on the

2396

02:33:01,510 --> 02:32:58,479

scene so if we can get them um back up

2397

02:33:03,349 --> 02:33:01,520

we will and if not um

2398

02:33:05,110 --> 02:33:03,359

we will probably get one more check in

2399

02:33:58,309 --> 02:33:05,120

with our crew before we wrap things up

2400

02:34:03,030 --> 02:34:00,389

and you are seeing live pictures of our

2401
02:34:05,670 --> 02:34:03,040
crews that are performing many of the

2402
02:34:07,190 --> 02:34:05,680
closeout procedures and

2403
02:34:09,750 --> 02:34:07,200
landing

2404
02:34:11,110 --> 02:34:09,760
procedures that we've been talking about

2405
02:34:13,429 --> 02:34:11,120
making their way through that crew

2406
02:34:16,630 --> 02:34:13,439
capsule

2407
02:34:20,230 --> 02:34:16,640
after a 449 mountain time landing this

2408
02:34:21,750 --> 02:34:20,240
afternoon 5 49 central

2409
02:34:23,429 --> 02:34:21,760
and it sounds like we do have the signal

2410
02:34:26,070 --> 02:34:23,439
back so we are going to go back out live

2411
02:34:52,790 --> 02:34:26,080
to megan gessner and astronaut butch

2412
02:34:56,309 --> 02:34:54,389
sounds like we are not going to get

2413
02:34:58,230 --> 02:34:56,319

megan and butch back but we're gonna

2414

02:35:00,630 --> 02:34:58,240

hang with this uh this view a little

2415

02:37:00,630 --> 02:35:00,640

while longer see if we can get another

2416

02:37:05,270 --> 02:37:03,510

we promised you one more last update

2417

02:37:06,790 --> 02:37:05,280

from the scene in new mexico and now's

2418

02:37:09,190 --> 02:37:06,800

the time so we're going to go back to

2419

02:37:11,510 --> 02:37:09,200

nasa's dan hewitt and boeing's rosa

2420

02:37:16,790 --> 02:37:11,520

buenuellos to give us one final report

2421

02:37:20,950 --> 02:37:18,870

hey thanks brandi yeah we'll we'll get

2422

02:37:23,349 --> 02:37:20,960

through it quick just in case we drop

2423

02:37:25,590 --> 02:37:23,359

out so uh all the hatch operations have

2424

02:37:27,270 --> 02:37:25,600

continued uh they're moving inside the

2425

02:37:29,030 --> 02:37:27,280

capsule now so we're about to get into

2426

02:37:30,389 --> 02:37:29,040

the cargo operations again we've got a

2427

02:37:32,309 --> 02:37:30,399

small amount of cargo that's going to

2428

02:37:33,910 --> 02:37:32,319

come off some radiation monitors and

2429

02:37:36,150 --> 02:37:33,920

then a couple of other utilization or

2430

02:37:37,830 --> 02:37:36,160

science items and then one test that's

2431

02:37:39,429 --> 02:37:37,840

going to be coming up in a little bit as

2432

02:37:41,349 --> 02:37:39,439

with some of the safety hardware that's

2433

02:37:42,950 --> 02:37:41,359

on board so the crew will actually have

2434

02:37:44,710 --> 02:37:42,960

a satellite phone that they can plug

2435

02:37:47,270 --> 02:37:44,720

into the cm or the command module

2436

02:37:48,790 --> 02:37:47,280

systems that uses its antennas that they

2437

02:37:51,030 --> 02:37:48,800

can then make a satellite call if they

2438

02:37:52,950 --> 02:37:51,040

land somewhere in a remote area without

2439

02:37:54,710 --> 02:37:52,960

a recovery team so we're going to do

2440

02:37:56,790 --> 02:37:54,720

that tesla in a little while a plane is

2441

02:37:58,790 --> 02:37:56,800

going to fly overhead to test it out and

2442

02:38:01,110 --> 02:37:58,800

then that'll largely wrap it up for most

2443

02:38:02,790 --> 02:38:01,120

of the team before we head back in

2444

02:38:04,550 --> 02:38:02,800

that's right dan and again we've uh

2445

02:38:06,309 --> 02:38:04,560

taken quite a bit of time and really

2446

02:38:08,309 --> 02:38:06,319

carefully gone through these procedures

2447

02:38:10,309 --> 02:38:08,319

um this crew module is reusable up to 10

2448

02:38:12,070 --> 02:38:10,319

times so we want to make sure it is

2449

02:38:13,750 --> 02:38:12,080

in good condition and so we could expand

2450

02:38:15,750 --> 02:38:13,760

the lifetime again this crew module will

2451

02:38:17,990 --> 02:38:15,760

be used for a post certification mission

2452

02:38:20,469 --> 02:38:18,000

and so again after um tonight it will

2453

02:38:22,309 --> 02:38:20,479

stay here and then we will uh take it to

2454

02:38:24,630 --> 02:38:22,319

a processing center and then take it

2455

02:38:26,309 --> 02:38:24,640

back in a vehicle to uh back to kennedy

2456

02:38:28,070 --> 02:38:26,319

space center so again it's been a

2457

02:38:29,510 --> 02:38:28,080

fantastic day and the sun is starting to

2458

02:38:31,349 --> 02:38:29,520

go down we probably will see a sunset

2459

02:38:33,429 --> 02:38:31,359

tour right here in a little bit um but

2460

02:38:35,030 --> 02:38:33,439

again we it's been a little warm but

2461

02:38:37,270 --> 02:38:35,040

again we're hanging in there everybody

2462

02:38:39,429 --> 02:38:37,280

is still uh you know excited to be part

2463

02:38:41,190 --> 02:38:39,439

of this mission and again as myself i'm

2464

02:38:43,830 --> 02:38:41,200

excited as well to be here and so it's

2465

02:38:45,670 --> 02:38:43,840

been a fantastic day yeah it's been an

2466

02:38:46,469 --> 02:38:45,680

absolute pleasure to see starliner come

2467

02:38:48,309 --> 02:38:46,479

down

2468

02:38:49,349 --> 02:38:48,319

to see all the operations watch the team

2469

02:38:51,750 --> 02:38:49,359

walk through

2470

02:38:53,910 --> 02:38:51,760

everything uh even when we hit a little

2471

02:38:56,550 --> 02:38:53,920

bit of adversity they overcame the

2472

02:38:58,710 --> 02:38:56,560

capsule's safe now and welcome home

2473

02:39:00,309 --> 02:38:58,720

starliner yes welcome home that'll do it

2474

02:39:01,910 --> 02:39:00,319

for us here in the desert thanks

2475

02:39:03,429 --> 02:39:01,920

everybody who's been following along and

2476

02:39:05,990 --> 02:39:03,439

watching we hope we showed you a little

2477

02:39:08,070 --> 02:39:06,000

bit of the the magic the excitement of

2478

02:39:09,830 --> 02:39:08,080

human space flight looking forward to

2479

02:39:12,070 --> 02:39:09,840

the next time when we're out here and

2480

02:39:14,950 --> 02:39:12,080

there are humans coming out of starliner

2481

02:39:16,950 --> 02:39:14,960

thank you back to you brandi and lauren

2482

02:39:18,630 --> 02:39:16,960

thank you so much to our entire team out

2483

02:39:20,630 --> 02:39:18,640

there and thank you of course to our

2484

02:39:23,270 --> 02:39:20,640

partners at nasa as well as our partners

2485

02:39:26,230 --> 02:39:23,280

at ula for that safe launch just a few

2486

02:39:28,309 --> 02:39:26,240

days ago it has been a big day for human

2487

02:39:30,790 --> 02:39:28,319

space flight and it has just been a

2488

02:39:32,630 --> 02:39:30,800

wonderful journey to watch starliner

2489

02:39:33,910 --> 02:39:32,640

launch from the space coast and

2490

02:39:35,590 --> 02:39:33,920

rendezvous then dock with the

2491

02:39:37,910 --> 02:39:35,600

international space station and then

2492

02:39:40,389 --> 02:39:37,920

make that beautiful landing today

2493

02:39:42,550 --> 02:39:40,399

just a little while ago in the desert of

2494

02:39:44,070 --> 02:39:42,560

white sands new mexico

2495

02:39:50,790 --> 02:39:44,080

just like they said we cannot wait to

2496

02:39:54,550 --> 02:39:52,550

thank you so much for joining us for

2497

02:39:55,910 --> 02:39:54,560

both uh today's coverage and the entire

2498

02:39:57,590 --> 02:39:55,920

mission but you are going to want to

2499

02:39:59,990 --> 02:39:57,600

stick around just a little bit longer we

2500

02:40:02,389 --> 02:40:00,000

do have coming up for you at 8 00 p.m

2501

02:40:04,150 --> 02:40:02,399

central time the post landing news

2502

02:40:06,630 --> 02:40:04,160

conference where we'll have nasa and

2503

02:40:10,150 --> 02:40:06,640

boeing officials give you one final look

2504

02:40:11,830 --> 02:40:10,160

at the orbital flight test 2 mission

2505

02:40:15,030 --> 02:40:11,840

again that's going to be coming up at 8

2506

02:40:16,309 --> 02:40:15,040

pm central time here on nasa tv but with

2507

02:40:18,630 --> 02:40:16,319

that we are going to wrap up our

2508

02:40:20,469 --> 02:40:18,640

coverage for today so thanks again and

2509

02:40:29,380 --> 02:40:20,479

this is mission control houston good