



1  
00:00:08,549 --> 00:00:05,550  
good morning and welcome to today's

2  
00:00:10,270 --> 00:00:08,559  
sts-134 mission status briefing

3  
00:00:12,709 --> 00:00:10,280  
with us today is gary horlock our

4  
00:00:14,950 --> 00:00:12,719  
sts-134 lead flight director who's just

5  
00:00:16,790 --> 00:00:14,960  
coming off this orbit one shift

6  
00:00:17,830 --> 00:00:16,800  
gary i'll turn it over to you great

7  
00:00:19,910 --> 00:00:17,840  
thank you

8  
00:00:21,750 --> 00:00:19,920  
well folks it's really uh outstanding to

9  
00:00:23,349 --> 00:00:21,760  
be with you here today obviously we had

10  
00:00:25,910 --> 00:00:23,359  
a just absolutely beautiful launch

11  
00:00:28,470 --> 00:00:25,920  
yesterday and a great climb to orbit

12  
00:00:29,990 --> 00:00:28,480  
uh launch was on time and

13  
00:00:33,030 --> 00:00:30,000

once we got to orbit the crew had about

14

00:00:34,069 --> 00:00:33,040

five hours of timeline available to uh

15

00:00:36,549 --> 00:00:34,079

spend mo

16

00:00:38,150 --> 00:00:36,559

mo mainly converting the vehicle from a

17

00:00:40,630 --> 00:00:38,160

launch vehicle to an orbit orbiting

18

00:00:42,389 --> 00:00:40,640

spacecraft and also key item was to get

19

00:00:43,750 --> 00:00:42,399

the robotic arm checked out in

20

00:00:45,910 --> 00:00:43,760

preparation for today's survey

21

00:00:46,950 --> 00:00:45,920

activities

22

00:00:50,310 --> 00:00:46,960

they were able to get everything

23

00:00:51,990 --> 00:00:50,320

accomplished and got to bed on time and

24

00:00:54,790 --> 00:00:52,000

as we sit here today the cruise about

25

00:00:57,590 --> 00:00:54,800

halfway through flight day two

26

00:01:00,150 --> 00:00:57,600

we did get the starboard and nose cap

27

00:01:02,549 --> 00:01:00,160

tps inspections complete prior to my

28

00:01:04,710 --> 00:01:02,559

walking over here and the port survey

29

00:01:07,190 --> 00:01:04,720

was uh in progress and

30

00:01:09,350 --> 00:01:07,200

and mostly complete

31

00:01:11,350 --> 00:01:09,360

once the surveys are finished up they're

32

00:01:14,630 --> 00:01:11,360

going to go ahead and stow the orbiter

33

00:01:17,109 --> 00:01:14,640

orbiting boom sensor system the obss

34

00:01:19,350 --> 00:01:17,119

and then go ahead and grapple the

35

00:01:22,390 --> 00:01:19,360

elc payload in preparation for the

36

00:01:24,630 --> 00:01:22,400

install after docking tomorrow

37

00:01:26,390 --> 00:01:24,640

the crew is also currently in

38

00:01:27,990 --> 00:01:26,400

progress checking out both of the

39

00:01:30,310 --> 00:01:28,000

spacesuits that we use for the four

40

00:01:32,230 --> 00:01:30,320

spacewalks and we'll get everything

41

00:01:35,350 --> 00:01:32,240

prepared and ready to transfer over to

42

00:01:37,270 --> 00:01:35,360

the space station after docking as well

43

00:01:40,069 --> 00:01:37,280

the final key items for today will be to

44

00:01:43,990 --> 00:01:40,079

get the rendezvous and storm tool sensor

45

00:01:45,350 --> 00:01:44,000

checkouts completing and have all that

46

00:01:47,990 --> 00:01:45,360

systems all set up and ready for the

47

00:01:50,149 --> 00:01:48,000

rendezvous and docking tomorrow as well

48

00:01:51,990 --> 00:01:50,159

and we do have one more final rendezvous

49

00:01:54,069 --> 00:01:52,000

burn to accomplish before the crew goes

50

00:01:56,149 --> 00:01:54,079

to bed tonight and then we'll set us up

51  
00:01:59,109 --> 00:01:56,159  
for a good trajectory for the for the

52  
00:02:00,630 --> 00:01:59,119  
docking tomorrow as well

53  
00:02:02,630 --> 00:02:00,640  
finally today we also did get some of

54  
00:02:05,270 --> 00:02:02,640  
the mid deck payloads

55  
00:02:07,510 --> 00:02:05,280  
activated and accomplished as well

56  
00:02:08,869 --> 00:02:07,520  
the ams folks

57  
00:02:10,550 --> 00:02:08,879  
they got powered up after getting to

58  
00:02:11,990 --> 00:02:10,560  
orbit yesterday and have been working on

59  
00:02:13,510 --> 00:02:12,000  
their checkout to the payload and

60  
00:02:17,110 --> 00:02:13,520  
everything is going uh extremely well

61  
00:02:19,350 --> 00:02:17,120  
with with the ams payload as well

62  
00:02:21,270 --> 00:02:19,360  
and uh you know finally endeavors

63  
00:02:22,550 --> 00:02:21,280

performing absolutely flawlessly we're

64

00:02:24,630 --> 00:02:22,560

tracking no significant issues

65

00:02:27,589 --> 00:02:24,640

whatsoever with the vehicle and the crew

66

00:02:30,150 --> 00:02:27,599

is doing outstanding as well

67

00:02:32,790 --> 00:02:30,160

as for the docking tomorrow got a couple

68

00:02:34,150 --> 00:02:32,800

couple uh milestone times that might be

69

00:02:37,030 --> 00:02:34,160

of interest the

70

00:02:40,390 --> 00:02:37,040

rpm window open the rendezvous pitch

71

00:02:41,830 --> 00:02:40,400

maneuver window open time will be 4 401

72

00:02:43,509 --> 00:02:41,840

a.m central

73

00:02:47,509 --> 00:02:43,519

and then the actual docking should occur

74

00:02:49,509 --> 00:02:47,519

around 5 16 central time tomorrow

75

00:02:50,470 --> 00:02:49,519

and that pretty much wraps up where we

76

00:02:52,869 --> 00:02:50,480

are

77

00:02:55,030 --> 00:02:52,879

from launch yesterday through today and

78

00:02:56,550 --> 00:02:55,040

uh getting ready to to get uh hooked up

79

00:02:58,470 --> 00:02:56,560

with space station tomorrow and start

80

00:03:00,309 --> 00:02:58,480

the docked mission

81

00:03:02,390 --> 00:03:00,319

so that's all i have if we'll

82

00:03:04,790 --> 00:03:02,400

take any questions folks might have

83

00:03:06,390 --> 00:03:04,800

great thank you very much gary

84

00:03:08,390 --> 00:03:06,400

here in houston we have some new

85

00:03:10,710 --> 00:03:08,400

procedures in effect we won't be

86

00:03:13,110 --> 00:03:10,720

bringing the microphone around to you

87

00:03:14,149 --> 00:03:13,120

today instead we'll be using installed

88

00:03:16,309 --> 00:03:14,159

mics

89

00:03:17,430 --> 00:03:16,319

they'll be directed by our audio control

90

00:03:19,110 --> 00:03:17,440

room

91

00:03:20,869 --> 00:03:19,120

once you've been recognized please

92

00:03:22,710 --> 00:03:20,879

remember to tell us your name and your

93

00:03:24,390 --> 00:03:22,720

affiliation

94

00:03:27,830 --> 00:03:24,400

and that's especially important today to

95

00:03:29,589 --> 00:03:27,840

give our audio control folks a chance to

96

00:03:31,270 --> 00:03:29,599

get you focused in on the mics you'll be

97

00:03:32,470 --> 00:03:31,280

dealing with

98

00:03:34,309 --> 00:03:32,480

question here

99

00:03:37,110 --> 00:03:34,319

go ahead phillips loss with nasa

100

00:03:40,390 --> 00:03:37,120

spaceflight.com a couple questions

101  
00:03:41,270 --> 00:03:40,400  
about the rendezvous timeline tomorrow

102  
00:03:44,470 --> 00:03:41,280  
first

103  
00:03:46,070 --> 00:03:44,480  
the burns prior to the ti burn

104  
00:03:47,990 --> 00:03:46,080  
are you going to be doing an nh burn

105  
00:03:49,910 --> 00:03:48,000  
prior to the nc4 burn

106  
00:03:51,430 --> 00:03:49,920  
did you go through the sequence up to

107  
00:03:54,869 --> 00:03:51,440  
the ti burn

108  
00:03:56,309 --> 00:03:54,879  
sure we got the nc3 burn this evening

109  
00:03:58,390 --> 00:03:56,319  
prior to the crew going to bed that's a

110  
00:03:59,589 --> 00:03:58,400  
very small burn about just over two foot

111  
00:04:01,110 --> 00:03:59,599  
per second

112  
00:04:04,309 --> 00:04:01,120  
and then we will have

113  
00:04:05,589 --> 00:04:04,319

nh burn a ti burn and then the standard

114

00:04:07,350 --> 00:04:05,599

uh

115

00:04:09,110 --> 00:04:07,360

mid-course correction burns as we

116

00:04:11,990 --> 00:04:09,120

getting close to the station and and get

117

00:04:16,310 --> 00:04:12,000

set up for the rpm

118

00:04:18,069 --> 00:04:16,320

and then on the on the storm sensors

119

00:04:20,789 --> 00:04:18,079

where in the rendezvous timeline will

120

00:04:24,310 --> 00:04:20,799

they be activated tomorrow

121

00:04:26,790 --> 00:04:24,320

they will be activated prior to ti

122

00:04:29,110 --> 00:04:26,800

in preparation for

123

00:04:30,310 --> 00:04:29,120

they they first start acquiring about 20

124

00:04:32,230 --> 00:04:30,320

000 feet

125

00:04:34,550 --> 00:04:32,240

uh on our approach so that'll be after

126

00:04:35,670 --> 00:04:34,560

the ti ti is about 40 000 feet from

127

00:04:36,950 --> 00:04:35,680

station

128

00:04:39,590 --> 00:04:36,960

so they'll be powered up and ready to

129

00:04:41,350 --> 00:04:39,600

support that acquisition um after the ti

130

00:04:44,390 --> 00:04:41,360

burn and then they'll be tracking all

131

00:04:45,749 --> 00:04:44,400

the way into the actual docking

132

00:04:46,870 --> 00:04:45,759

okay any further questions here in

133

00:04:48,469 --> 00:04:46,880

houston

134

00:04:50,790 --> 00:04:48,479

uh seeing none i believe we have some

135

00:04:52,950 --> 00:04:50,800

reporters on the phone bridge uh

136

00:04:55,990 --> 00:04:52,960

mackerel are you out there

137

00:04:58,070 --> 00:04:56,000

yes i am mark caro for aviation week and

138

00:04:59,350 --> 00:04:58,080

i wonder if you might

139

00:05:01,270 --> 00:04:59,360

sort of

140

00:05:03,430 --> 00:05:01,280

walk us through the time frame that's

141

00:05:05,590 --> 00:05:03,440

required to

142

00:05:08,150 --> 00:05:05,600

assess the imagery that you're gathering

143

00:05:12,710 --> 00:05:08,160

today on the wings and nose cap as well

144

00:05:15,110 --> 00:05:12,720

as from the the rpm maneuver tomorrow

145

00:05:18,629 --> 00:05:15,120

at what point at what day in the mission

146

00:05:20,710 --> 00:05:18,639

do you sort of hope to uh or expect to

147

00:05:22,390 --> 00:05:20,720

be through through with the tps

148

00:05:23,189 --> 00:05:22,400

assessment

149

00:05:24,790 --> 00:05:23,199

okay

150

00:05:27,430 --> 00:05:24,800

mark yeah that's it's a good question

151

00:05:29,430 --> 00:05:27,440

the the data we're collecting today

152

00:05:31,510 --> 00:05:29,440

the majority of its focus on the uh

153

00:05:33,110 --> 00:05:31,520

reinforced carbon carbon parts of the

154

00:05:35,029 --> 00:05:33,120

vehicle the wing leading edges as well

155

00:05:37,830 --> 00:05:35,039

as the nose cap those are the areas that

156

00:05:40,390 --> 00:05:37,840

see the highest temperatures in re-entry

157

00:05:43,029 --> 00:05:40,400

we also got some other exterior images

158

00:05:44,550 --> 00:05:43,039

as well today and the remaining

159

00:05:46,390 --> 00:05:44,560

collection of images will be captured

160

00:05:47,749 --> 00:05:46,400

tomorrow during the rpm it's mainly the

161

00:05:48,629 --> 00:05:47,759

underside of the vehicle but we will

162

00:05:51,350 --> 00:05:48,639

take

163

00:05:52,950 --> 00:05:51,360

detailed resolution photos of the entire

164

00:05:54,390 --> 00:05:52,960

external surfaces of the of the

165

00:05:56,309 --> 00:05:54,400

spacecraft

166

00:05:57,990 --> 00:05:56,319

and so the the data we're collecting

167

00:05:59,909 --> 00:05:58,000

today is actually being processed as we

168

00:06:02,230 --> 00:05:59,919

speak and it will it will continue to be

169

00:06:03,990 --> 00:06:02,240

processed while the crew sleeps

170

00:06:05,670 --> 00:06:04,000

and uh hopefully that they'll get most

171

00:06:08,710 --> 00:06:05,680

of that behind them by by the time the

172

00:06:10,710 --> 00:06:08,720

rpm data becomes available tomorrow

173

00:06:12,309 --> 00:06:10,720

once all that's in

174

00:06:14,390 --> 00:06:12,319

if everything goes well we expect to

175

00:06:15,830 --> 00:06:14,400

hear initial feedback

176

00:06:18,469 --> 00:06:15,840

probably right after the crew goes to

177

00:06:20,469 --> 00:06:18,479

sleep tomorrow after the docking

178

00:06:22,230 --> 00:06:20,479

and hopefully we'll have a good

179

00:06:24,790 --> 00:06:22,240

indication that focus inspection will

180

00:06:26,309 --> 00:06:24,800

not be required but again hopefully uh

181

00:06:28,629 --> 00:06:26,319

shortly after crew sleep tomorrow i have

182

00:06:31,749 --> 00:06:28,639

our first indication of

183

00:06:34,390 --> 00:06:31,759

of uh how all the data looks

184

00:06:37,189 --> 00:06:34,400

and um i had a follow-up question during

185

00:06:39,110 --> 00:06:37,199

the uh the space suit checkout this

186

00:06:40,309 --> 00:06:39,120

morning there were a couple questions

187

00:06:42,950 --> 00:06:40,319

about the

188

00:06:44,870 --> 00:06:42,960

communications for for one of the suits

189

00:06:47,270 --> 00:06:44,880

and i just wondered if you heard enough

190

00:06:49,350 --> 00:06:47,280

to know if any of that is

191

00:06:51,589 --> 00:06:49,360

is is um

192

00:06:54,070 --> 00:06:51,599

is stuff you can work around if you have

193

00:06:55,670 --> 00:06:54,080

to or that that would have any sort of

194

00:06:57,110 --> 00:06:55,680

impact

195

00:06:58,870 --> 00:06:57,120

yeah they were just starting to talk

196

00:07:00,710 --> 00:06:58,880

that when i uh had to leave and come

197

00:07:03,029 --> 00:07:00,720

over here but but just prior to my

198

00:07:05,350 --> 00:07:03,039

coming over here they did have good uh

199

00:07:06,870 --> 00:07:05,360

comp checks on both suits so

200

00:07:08,309 --> 00:07:06,880

um

201  
00:07:09,670 --> 00:07:08,319  
you know it's a little premature since i

202  
00:07:11,510 --> 00:07:09,680  
wasn't actually plugged in at the time

203  
00:07:15,990 --> 00:07:11,520  
but i believe both suits are so far

204  
00:07:19,189 --> 00:07:18,150  
okay mark is that it for you yes sir

205  
00:07:22,550 --> 00:07:19,199  
thank you

206  
00:07:24,390 --> 00:07:22,560  
uh let's go to irene klotz

207  
00:07:26,790 --> 00:07:24,400  
thanks very much um irene fox with

208  
00:07:29,189 --> 00:07:26,800  
reuters two quick questions the first is

209  
00:07:31,670 --> 00:07:29,199  
did anything pop out during the obsess

210  
00:07:35,749 --> 00:07:31,680  
scans that are already completed

211  
00:07:37,830 --> 00:07:35,759  
uh nothing nothing uh unusual um

212  
00:07:39,510 --> 00:07:37,840  
that i could identify of course you know

213  
00:07:41,670 --> 00:07:39,520

a lot of the a lot of the issues that

214

00:07:43,830 --> 00:07:41,680

can occur in the rcc are not you know

215

00:07:45,830 --> 00:07:43,840

visible to the to the eye so the

216

00:07:47,350 --> 00:07:45,840

engineers really have to take good hard

217

00:07:50,230 --> 00:07:47,360

look at the data once it's on the ground

218

00:07:52,070 --> 00:07:50,240

but everything looked really good today

219

00:07:54,309 --> 00:07:52,080

thanks and did i hear you right that

220

00:07:55,909 --> 00:07:54,319

there's just two suits and that those

221

00:07:57,749 --> 00:07:55,919

two are going to be used

222

00:07:59,430 --> 00:07:57,759

amongst all three of the eva crew

223

00:08:01,589 --> 00:07:59,440

members

224

00:08:02,950 --> 00:08:01,599

um yeah we have two suits on the orbiter

225

00:08:05,430 --> 00:08:02,960

of course there's several suits on

226

00:08:07,029 --> 00:08:05,440

station as well so between the the full

227

00:08:08,710 --> 00:08:07,039

complement we're gonna we're gonna have

228

00:08:11,990 --> 00:08:08,720

the suits for the three crew members to

229

00:08:13,589 --> 00:08:12,000

do all four space walks

230

00:08:15,589 --> 00:08:13,599

thank you um i actually had one other

231

00:08:17,830 --> 00:08:15,599

one but this probably is for more for

232

00:08:20,790 --> 00:08:17,840

the mt but had you heard anything about

233

00:08:23,189 --> 00:08:20,800

any uh launch pad damage from the from

234

00:08:25,749 --> 00:08:23,199

the um liftoff uh

235

00:08:27,110 --> 00:08:25,759

yesterday morning i've not heard any any

236

00:08:28,309 --> 00:08:27,120

details about the launch pad at this

237

00:08:29,909 --> 00:08:28,319

time

238

00:08:31,749 --> 00:08:29,919

okay thanks very much

239

00:08:33,670 --> 00:08:31,759

welcome and i believe we have seth

240

00:08:36,630 --> 00:08:33,680

bornstein with us from kennedy space

241

00:08:39,909 --> 00:08:37,909

yes thanks

242

00:08:42,149 --> 00:08:39,919

um just again i might have missed this

243

00:08:44,310 --> 00:08:42,159

uh was there any

244

00:08:45,750 --> 00:08:44,320

over time um the last few hours has

245

00:08:46,710 --> 00:08:45,760

there been anything new coming from the

246

00:08:48,630 --> 00:08:46,720

video

247

00:08:50,150 --> 00:08:48,640

does it all still look as good as it did

248

00:08:51,509 --> 00:08:50,160

in you know the initial

249

00:08:54,790 --> 00:08:51,519

preliminary video

250

00:08:57,110 --> 00:08:54,800

for uh phone damage

251  
00:09:00,470 --> 00:08:57,120  
um yeah there's no new information that

252  
00:09:02,070 --> 00:09:00,480  
that i heard during my shift uh today

253  
00:09:04,070 --> 00:09:02,080  
everything i heard the ride to ride to

254  
00:09:05,509 --> 00:09:04,080  
orbit went great very very little

255  
00:09:07,030 --> 00:09:05,519  
concern whatsoever and then of course

256  
00:09:09,190 --> 00:09:07,040  
all the imagery we took today was

257  
00:09:10,949 --> 00:09:09,200  
looking really really good too so

258  
00:09:15,030 --> 00:09:10,959  
so far i'm not aware of any concerns at

259  
00:09:17,990 --> 00:09:16,949  
and on the on back to the suits for one

260  
00:09:19,910 --> 00:09:18,000  
second

261  
00:09:22,070 --> 00:09:19,920  
you're saying it's the comms are working

262  
00:09:23,750 --> 00:09:22,080  
com is working now fine now but that it

263  
00:09:25,190 --> 00:09:23,760

was a calm issue at first i just want to

264

00:09:26,630 --> 00:09:25,200

make sure i was right uh heard that

265

00:09:29,190 --> 00:09:26,640

right is that is that correct it was a

266

00:09:30,870 --> 00:09:29,200

calm issue in that you've overcome it

267

00:09:32,790 --> 00:09:30,880

i believe the initial report had to do

268

00:09:35,030 --> 00:09:32,800

with a communication problem but like i

269

00:09:36,550 --> 00:09:35,040

said they uh they did have successful

270

00:09:37,590 --> 00:09:36,560

checkouts right before i walked over

271

00:09:42,949 --> 00:09:37,600

here so

272

00:09:47,269 --> 00:09:44,630

okay you understand that's all from

273

00:09:49,509 --> 00:09:47,279

kennedy bill harwood are you there

274

00:09:51,110 --> 00:09:49,519

i am here but the three questions that i

275

00:09:53,509 --> 00:09:51,120

had have been answered so thank you very

276

00:09:53,519 --> 00:09:57,670

okay and tom halverson are you with us

277

00:10:03,110 --> 00:10:00,630

i am thanks very much uh tom halverson

278

00:10:06,710 --> 00:10:03,120

of florida today

279

00:10:09,350 --> 00:10:06,720

i was wondering about the uh right

280

00:10:12,470 --> 00:10:09,360

nose wheel landing gear tire pressure

281

00:10:15,670 --> 00:10:12,480

ii instrumentation uh funny that you

282

00:10:18,550 --> 00:10:15,680

guys had is that indicative of a

283

00:10:22,230 --> 00:10:18,560

real problem or is that more than likely

284

00:10:24,710 --> 00:10:22,240

just something with instrumentation

285

00:10:26,630 --> 00:10:24,720

yeah that's a um it's a intermittent

286

00:10:29,430 --> 00:10:26,640

instrumentation issue

287

00:10:31,110 --> 00:10:29,440

it's been sporadic since we got to orbit

288

00:10:33,509 --> 00:10:31,120

and we're just going to keep an eye on

289

00:10:35,829 --> 00:10:33,519

it should be no impact whatsoever but we

290

00:10:37,990 --> 00:10:35,839

we do see transducers

291

00:10:39,350 --> 00:10:38,000

periodically have have some issues like

292

00:10:42,470 --> 00:10:39,360

this so

293

00:10:46,150 --> 00:10:42,480

it's no big concern at this time

294

00:10:49,670 --> 00:10:46,160

thanks and um i'm also curious about a

295

00:10:53,190 --> 00:10:49,680

focus inspection if it were required

296

00:10:59,430 --> 00:10:53,200

uh how would that affect the

297

00:11:05,110 --> 00:11:02,710

yeah so we um we have the

298

00:11:07,350 --> 00:11:05,120

ability to go ahead and

299

00:11:08,630 --> 00:11:07,360

um incorporate a focus inspection i

300

00:11:10,949 --> 00:11:08,640

believe we have up to four hours

301  
00:11:13,190 --> 00:11:10,959  
available on flight day six that we

302  
00:11:15,030 --> 00:11:13,200  
would work in if focus inspection is

303  
00:11:17,030 --> 00:11:15,040  
deemed to be required

304  
00:11:18,550 --> 00:11:17,040  
and again if we need more time than that

305  
00:11:20,550 --> 00:11:18,560  
we'll we'll shuffle things around to

306  
00:11:21,910 --> 00:11:20,560  
make it happen but

307  
00:11:23,190 --> 00:11:21,920  
but we can accommodate a focus

308  
00:11:25,750 --> 00:11:23,200  
inspection that would occur on flight

309  
00:11:27,670 --> 00:11:25,760  
day six pending no other changes to the

310  
00:11:30,310 --> 00:11:27,680  
timeline and we would be losing no

311  
00:11:33,750 --> 00:11:30,320  
content by doing that as well

312  
00:11:35,990 --> 00:11:33,760  
okay thanks it's all for me john ira

313  
00:11:37,430 --> 00:11:36,000

okay thank you ton uh

314

00:11:38,870 --> 00:11:37,440

i believe that's it for the phone bridge

315

00:11:45,190 --> 00:11:38,880

do we have other questions in here

316

00:11:48,790 --> 00:11:47,509

just a bookkeeping question about the

317

00:11:50,710 --> 00:11:48,800

asset data

318

00:11:51,990 --> 00:11:50,720

has that all been downlinked uh to the

319

00:11:53,590 --> 00:11:52,000

ground by now

320

00:11:55,910 --> 00:11:53,600

yes all the asset data is on the ground

321

00:11:57,269 --> 00:11:55,920

that's correct okay thank you very much

322

00:11:58,949 --> 00:11:57,279

you bet

323

00:12:00,790 --> 00:11:58,959

very good with that i believe we'll wrap

324

00:12:03,110 --> 00:12:00,800

up the briefing uh gary thank you very

325

00:12:05,150 --> 00:12:03,120

much we appreciate you being here uh

326

00:12:07,670 --> 00:12:05,160

reminder that you can follow the

327

00:12:10,470 --> 00:12:07,680

sts-134 mission of endeavor at