



1  
00:00:55,830 --> 00:00:03,030  
hi i'm sts-130 flight engineer steve

2  
00:01:01,430 --> 00:00:58,630  
he'll hang you up dealing with too much

3  
00:01:05,670 --> 00:01:03,430  
hanging out on the couch putting on the

4  
00:01:09,270 --> 00:01:05,680  
pounds better walk run jump swim try to

5  
00:01:14,149 --> 00:01:11,590  
too much stuff

6  
00:01:20,149 --> 00:01:14,159  
here where he's down carrying around too

7  
00:01:24,950 --> 00:01:22,070  
good morning endeavor and a special good

8  
00:01:27,429 --> 00:01:24,960  
morning to you today steve

9  
00:01:29,510 --> 00:01:27,439  
good morning houston

10  
00:01:30,789 --> 00:01:29,520  
all right wake up music gilbert

11  
00:01:32,789 --> 00:01:30,799  
mcclinton

12  
00:01:35,190 --> 00:01:32,799  
good uh

13  
00:01:36,710 --> 00:01:35,200

great music to wake up by and

14

00:01:38,710 --> 00:01:36,720

thanks to

15

00:01:42,069 --> 00:01:38,720

all the good folks on the ground who

16

00:01:44,550 --> 00:01:42,079

working so hard to get us here and um

17

00:01:46,950 --> 00:01:44,560

like to share that song with our uh our

18

00:01:49,190 --> 00:01:46,960

good team that uh helped us with their

19

00:01:51,030 --> 00:01:49,200

transfer and stowage to work really hard

20

00:01:51,910 --> 00:01:51,040

behind the scenes to uh

21

00:01:53,429 --> 00:01:51,920

get all

22

00:01:55,670 --> 00:01:53,439

the things that we need to

23

00:01:58,149 --> 00:01:55,680

take over the station and bring back

24

00:02:01,030 --> 00:01:58,159

all arranged for us and

25

00:02:05,510 --> 00:02:01,040

anyway it's a great day to do an eva and

26  
00:02:11,670 --> 00:02:07,190  
and endeavor we agree with you steve

27  
00:02:15,670 --> 00:02:13,670  
the wake-up call to kick off fight day

28  
00:02:17,030 --> 00:02:15,680  
seven for the astronauts on board space

29  
00:02:20,229 --> 00:02:17,040  
shuttle endeavour

30  
00:02:22,550 --> 00:02:20,239  
song too much stuff by delbert mcclinton

31  
00:02:25,589 --> 00:02:22,560  
played by plate four mission specialist

32  
00:02:30,309 --> 00:02:27,910  
he'll be pulling his second shift as

33  
00:02:32,550 --> 00:02:30,319  
intravehicular crew member today for the

34  
00:02:34,630 --> 00:02:32,560  
second spacewalk of the flight bob

35  
00:02:35,670 --> 00:02:34,640  
behnken and nick patrick

36  
00:02:38,390 --> 00:02:35,680  
who are

37  
00:02:40,550 --> 00:02:38,400  
awakened in the quest airlock

38  
00:02:41,670 --> 00:02:40,560

will be working toward a start of their

39

00:02:43,910 --> 00:02:41,680

second

40

00:02:47,190 --> 00:02:43,920

eva in three days heading out the door

41

00:02:49,350 --> 00:02:47,200

at 809 tonight to continue the hookups

42

00:02:54,309 --> 00:02:49,360

of the tranquility module to the

43

00:02:57,910 --> 00:02:56,790

this is a look at the tranquility and

44

00:02:59,030 --> 00:02:57,920

one of

45

00:03:01,990 --> 00:02:59,040

its

46

00:03:04,149 --> 00:03:02,000

radial docking ports

47

00:03:06,630 --> 00:03:04,159

at the axial port on the end where

48

00:03:08,229 --> 00:03:06,640

cupola is currently located

49

00:03:10,390 --> 00:03:08,239

this morning the crew members had

50

00:03:12,550 --> 00:03:10,400

difficulty installing what's known as a

51  
00:03:15,910 --> 00:03:12,560  
center disk cover along the docking

52  
00:03:17,670 --> 00:03:15,920  
interface inside

53  
00:03:19,830 --> 00:03:17,680  
because the brackets that hold that

54  
00:03:22,470 --> 00:03:19,840  
cover in place were blocked from being

55  
00:03:24,869 --> 00:03:22,480  
fully engaged by some other hardware

56  
00:03:26,309 --> 00:03:24,879  
inside the cupola

57  
00:03:28,309 --> 00:03:26,319  
looking over the shoulder station

58  
00:03:31,589 --> 00:03:28,319  
commander jeff williams

59  
00:03:34,070 --> 00:03:31,599  
as the hatch into the quest airlock

60  
00:03:37,030 --> 00:03:34,080  
is now being closed

61  
00:03:39,270 --> 00:03:37,040  
spacewalkers bob benkin and nick patrick

62  
00:03:42,070 --> 00:03:39,280  
back in the airlock now accompanied by

63  
00:03:44,869 --> 00:03:42,080

shuttle commander george zamka

64

00:03:46,869 --> 00:03:44,879

and flight engineer tj creamer who will

65

00:04:23,270 --> 00:03:46,879

be assisting them in continued

66

00:04:29,030 --> 00:04:25,990

with a checklist uh completed with

67

00:04:31,430 --> 00:04:29,040

george zamka commander of endeavor

68

00:04:32,550 --> 00:04:31,440

assisting making sure that the suits are

69

00:04:34,310 --> 00:04:32,560

okay

70

00:04:36,710 --> 00:04:34,320

the two astronauts now ready to head

71

00:04:39,909 --> 00:04:36,720

outside he's handed them off to

72

00:04:41,749 --> 00:04:39,919

astronaut steve robinson veteran

73

00:04:44,070 --> 00:04:41,759

astronaut and space walker who will

74

00:04:46,550 --> 00:04:44,080

choreograph their eva

75

00:04:49,030 --> 00:04:46,560

from the flight deck of endeavor

76  
00:04:50,950 --> 00:04:49,040  
he's serving as the flight engineer

77  
00:04:52,870 --> 00:04:50,960  
throughout endeavour's mission he's also

78  
00:04:53,749 --> 00:04:52,880  
serving as the intravehicular crew

79  
00:04:58,790 --> 00:04:53,759  
member

80  
00:05:03,990 --> 00:04:58,800  
tonight spacewalk the official start

81  
00:05:08,629 --> 00:05:06,310  
bob banking the first crew member out of

82  
00:05:11,430 --> 00:05:08,639  
the hatch he's wearing a spacesuit with

83  
00:05:12,790 --> 00:05:11,440  
a red stripe around the upper portion of

84  
00:05:20,390 --> 00:05:12,800  
the

85  
00:05:22,870 --> 00:05:20,400  
will be

86  
00:05:24,390 --> 00:05:22,880  
distinguishable by his suit with no

87  
00:05:28,950 --> 00:05:24,400  
markings on it

88  
00:05:33,830 --> 00:05:31,909

we'll soon be translating over the top

89

00:05:36,469 --> 00:05:33,840

of the airlock

90

00:05:38,870 --> 00:05:36,479

node one which is named unity over to

91

00:05:40,870 --> 00:05:38,880

tranquility the newest component of the

92

00:05:50,469 --> 00:05:40,880

international space station

93

00:05:54,469 --> 00:05:52,150

this is mission control houston while

94

00:05:56,070 --> 00:05:54,479

the spacewalk is just getting underway

95

00:05:58,070 --> 00:05:56,080

on the outside of the international

96

00:05:59,909 --> 00:05:58,080

space station a number of activities

97

00:06:02,629 --> 00:05:59,919

going on inside

98

00:06:05,029 --> 00:06:02,639

uh particularly you heard just the tail

99

00:06:07,430 --> 00:06:05,039

end of a conversation between

100

00:06:09,749 --> 00:06:07,440

station commander jeff williams and the

101  
00:06:12,790 --> 00:06:09,759  
station flight control team he's been

102  
00:06:16,390 --> 00:06:12,800  
given a go to remove some

103  
00:06:18,629 --> 00:06:16,400  
non-captive bolts which

104  
00:06:20,390 --> 00:06:18,639  
have been identified as being an

105  
00:06:23,110 --> 00:06:20,400  
interference with a

106  
00:06:25,189 --> 00:06:23,120  
installation of a protective cover a

107  
00:06:27,590 --> 00:06:25,199  
thermal cover that's required to be in

108  
00:06:31,029 --> 00:06:27,600  
place before the cupola is relocated

109  
00:06:34,629 --> 00:06:31,039  
which is scheduled for sunday evening

110  
00:06:36,870 --> 00:06:34,639  
so he's off headed to the tranquility

111  
00:06:39,350 --> 00:06:36,880  
node to at least remove a couple of

112  
00:06:40,710 --> 00:06:39,360  
those bolts he identified eight

113  
00:06:42,790 --> 00:06:40,720

initially

114

00:06:45,270 --> 00:06:42,800

the ground has given him a go to remove

115

00:06:47,029 --> 00:06:45,280

two of those bolts to see if that might

116

00:06:53,990 --> 00:06:47,039

provide enough clearance

117

00:06:58,550 --> 00:06:56,550

for identify identification purposes

118

00:07:00,830 --> 00:06:58,560

with the close-up

119

00:07:04,469 --> 00:07:00,840

and personal helmet cameras

120

00:07:06,550 --> 00:07:04,479

the silhouette number 16 in the lower

121

00:07:09,670 --> 00:07:06,560

right corner will signify the helmet

122

00:07:12,790 --> 00:07:09,680

camera for astronaut bob bankin

123

00:07:15,990 --> 00:07:12,800

and the number 18 will signify the

124

00:07:19,189 --> 00:07:16,000

helmet cam for nick patrick throughout

125

00:07:21,830 --> 00:07:19,199

tonight's spacewalk

126  
00:07:24,469 --> 00:07:21,840  
you can see benkin translating all of

127  
00:07:27,270 --> 00:07:24,479  
the movements

128  
00:07:28,710 --> 00:07:27,280  
are handled by hand

129  
00:07:30,629 --> 00:07:28,720  
and the

130  
00:07:34,150 --> 00:07:30,639  
looking at the interface between the

131  
00:07:35,110 --> 00:07:34,160  
airlock and unity the first node

132  
00:07:36,950 --> 00:07:35,120  
launched

133  
00:07:38,790 --> 00:07:36,960  
to begin the assembly of the

134  
00:07:40,390 --> 00:07:38,800  
international space station you saw a

135  
00:07:42,629 --> 00:07:40,400  
brief glimpse there

136  
00:07:44,869 --> 00:07:42,639  
uh and now the uh

137  
00:07:46,150 --> 00:07:44,879  
in the far distance space shuttle

138  
00:07:49,350 --> 00:07:46,160

endeavor the

139

00:07:51,430 --> 00:07:49,360

tail of uh the orbiter

140

00:07:53,350 --> 00:07:51,440

as it is docked to the far end of the

141

00:07:58,629 --> 00:07:53,360

u.s segment of the international space

142

00:08:03,270 --> 00:08:01,909

and this the helmet cam of nick patrick

143

00:08:06,469 --> 00:08:03,280

as he uh

144

00:08:08,710 --> 00:08:06,479

begins his translation uh path as well

145

00:08:12,070 --> 00:08:08,720

opposite uh bob benkin

146

00:08:14,070 --> 00:08:12,080

they'll uh meet together over at the

147

00:08:28,230 --> 00:08:14,080

interface between the unity module and

148

00:08:37,509 --> 00:08:31,990

okay steve i'm at node three uh

149

00:08:37,519 --> 00:09:09,990

that'd be easy one

150

00:09:20,389 --> 00:09:12,070

okay the crew lock bag is ready to

151  
00:09:24,949 --> 00:09:22,790  
okay bob and uh

152  
00:09:34,070 --> 00:09:24,959  
next for you is to head over to the life

153  
00:09:38,070 --> 00:09:35,269  
this is a

154  
00:09:39,670 --> 00:09:38,080  
a good opportunity to see the size

155  
00:09:43,030 --> 00:09:39,680  
of the international space station

156  
00:09:46,070 --> 00:09:43,040  
relative to the space walkers that's

157  
00:09:48,790 --> 00:09:46,080  
just one module that nick patrick just

158  
00:09:51,430 --> 00:09:48,800  
translated across a grapple fixture

159  
00:09:53,910 --> 00:09:51,440  
the far distance and the lower right is

160  
00:10:00,470 --> 00:09:53,920  
the russian segment of the international

161  
00:10:04,790 --> 00:10:03,509  
their first task is to

162  
00:10:06,310 --> 00:10:04,800  
basically

163  
00:10:08,310 --> 00:10:06,320

lay out some

164

00:10:09,670 --> 00:10:08,320  
what's known as mli multi-layer

165

00:10:14,069 --> 00:10:09,680  
insulation

166

00:10:15,030 --> 00:10:14,079  
wrap around

167

00:10:26,310 --> 00:10:15,040  
the

168

00:10:29,430 --> 00:10:26,320  
be laying that out

169

00:10:36,949 --> 00:10:29,440  
ahead of the actual

170

00:10:36,959 --> 00:10:51,269  
becomes that last falls okay

171

00:10:54,949 --> 00:10:54,069  
i think that's uh good for now

172

00:10:56,710 --> 00:10:54,959  
okay

173

00:10:58,710 --> 00:10:56,720  
i have to tell you that the mli is

174

00:10:59,670 --> 00:10:58,720  
staying in the bag very nicely sold by

175

00:11:03,509 --> 00:10:59,680  
fold

176

00:11:08,389 --> 00:11:05,190

nick what do you think about opening up

177

00:11:11,590 --> 00:11:08,399

this uh mli just a little bit

178

00:11:29,990 --> 00:11:11,600

i think it's a great idea to

179

00:11:33,350 --> 00:11:31,509

okay steve uh

180

00:11:34,550 --> 00:11:33,360

i think we've decided to leave that gap

181

00:11:38,630 --> 00:11:34,560

spanner

182

00:11:42,550 --> 00:11:40,630

okay good job that was uh that was

183

00:11:45,750 --> 00:11:42,560

smooth and it's time to bring out the

184

00:11:50,069 --> 00:11:47,670

after that steve

185

00:11:52,790 --> 00:11:50,079

okay see if i've got a tether on the lab

186

00:11:55,269 --> 00:11:52,800

end of jumper one

187

00:11:58,470 --> 00:11:55,279

the cap sorry on the uh lab end of

188

00:11:58,480 --> 00:12:02,230

i will remove it

189

00:12:02,240 --> 00:12:05,829

copy that

190

00:12:17,030 --> 00:12:08,069

okay the cap is removed on the lap end

191

00:12:21,430 --> 00:12:19,509

before you go any further that direction

192

00:12:24,069 --> 00:12:21,440

um can you just uh

193

00:12:26,470 --> 00:12:24,079

maintain security of that end of the

194

00:12:27,990 --> 00:12:26,480

jumper so that i can kind of route it a

195

00:12:30,470 --> 00:12:28,000

little bit just uh

196

00:12:33,990 --> 00:12:30,480

it's a little bit uh unwieldy here with

197

00:12:36,829 --> 00:12:34,000

uh its size i see that so okay i've got

198

00:12:44,629 --> 00:12:41,910

uh i'm just gonna get myself uh

199

00:12:46,230 --> 00:12:44,639

relocated down here and i'll get my hand

200

00:12:47,269 --> 00:12:46,240

onto a fish stringer

201  
00:12:49,990 --> 00:12:47,279  
great

202  
00:12:52,470 --> 00:12:50,000  
the adjustable is on 111 in the

203  
00:12:55,670 --> 00:12:52,480  
line one is behind jeff spanner

204  
00:12:57,670 --> 00:12:55,680  
gamma ah that's great okay well it's

205  
00:12:59,350 --> 00:12:57,680  
basically uh same thing all over again

206  
00:13:00,550 --> 00:12:59,360  
on line number two

207  
00:13:03,030 --> 00:13:00,560  
roger

208  
00:13:05,910 --> 00:13:03,040  
this view up close and personal uh with

209  
00:13:07,509 --> 00:13:05,920  
the helmet camera of bob bankin as he's

210  
00:13:10,069 --> 00:13:07,519  
installing uh

211  
00:13:13,430 --> 00:13:10,079  
insulation around the quick disconnect

212  
00:13:17,750 --> 00:13:13,440  
after the line has been installed on the

213  
00:13:20,310 --> 00:13:19,030

how you doing

214

00:13:22,870 --> 00:13:20,320

well i'm glad we got nearly going the

215

00:13:24,470 --> 00:13:22,880

cats cap one came off really easily the

216

00:13:26,230 --> 00:13:24,480

cap on m2

217

00:13:29,110 --> 00:13:26,240

requires

218

00:13:30,870 --> 00:13:29,120

maximum force from two hands

219

00:13:31,990 --> 00:13:30,880

and

220

00:13:34,470 --> 00:13:32,000

okay

221

00:13:37,829 --> 00:13:34,480

i have a small spray of ammonia coming

222

00:13:40,310 --> 00:13:37,839

out from under the cat i've backed away

223

00:13:42,870 --> 00:13:40,320

i do have

224

00:13:45,350 --> 00:13:42,880

ammonia did come in my direction no more

225

00:13:49,110 --> 00:13:45,360

is coming out i would estimate the total

226

00:13:51,509 --> 00:13:49,120

amount to be on the order of one cc

227

00:13:53,269 --> 00:13:51,519

i saw some uh some small pieces that

228

00:13:56,550 --> 00:13:53,279

just looked like snow no continuous

229

00:13:57,269 --> 00:13:56,560

stream just uh flakes is what i saw yep

230

00:14:25,269 --> 00:13:57,279

i

231

00:14:27,670 --> 00:14:25,279

and when he removed the cap and and

232

00:14:29,509 --> 00:14:27,680

that's actually something that is uh

233

00:14:31,189 --> 00:14:29,519

anticipated

234

00:14:33,350 --> 00:14:31,199

on the space walks that deal with these

235

00:14:36,230 --> 00:14:33,360

ammonia lines and they will do an

236

00:14:37,590 --> 00:14:36,240

inspection they actually prefer for bob

237

00:14:38,870 --> 00:14:37,600

benkin to come over and do that

238

00:14:41,829 --> 00:14:38,880

inspection

239

00:14:42,790 --> 00:14:41,839  
after they move into a night pass

240

00:14:44,710 --> 00:14:42,800  
because

241

00:14:45,910 --> 00:14:44,720  
the helmet camera lights will actually

242

00:14:47,829 --> 00:14:45,920  
give him a better

243

00:14:48,710 --> 00:14:47,839  
reflective view

244

00:14:51,030 --> 00:14:48,720  
of

245

00:14:52,310 --> 00:14:51,040  
nick patrick's suit and in particular

246

00:14:55,750 --> 00:14:52,320  
his uh

247

00:14:58,710 --> 00:14:55,760  
his visor on his helmet but as he noted

248

00:15:01,590 --> 00:14:58,720  
he did not he does not see any evidence

249

00:15:03,829 --> 00:15:01,600  
of any ammonia that would be either on

250

00:15:05,430 --> 00:15:03,839  
his glove or on his

251

00:15:07,430 --> 00:15:05,440

helmet visor

252

00:15:10,710 --> 00:15:07,440

made the qd checking that the forward

253

00:15:19,829 --> 00:15:10,720

white band is now visible

254

00:15:23,350 --> 00:15:21,350

endeavor houston we concur with

255

00:15:26,150 --> 00:15:23,360

continuing our tasks and when we get

256

00:15:26,870 --> 00:15:26,160

night time and we'll take a inspection

257

00:15:31,990 --> 00:15:26,880

with

258

00:15:32,000 --> 00:15:38,069

that's great news copy houston

259

00:15:43,590 --> 00:15:41,350

bob bankin has completed the insulation

260

00:15:46,470 --> 00:15:43,600

uh covers on the qd's or the quick

261

00:15:48,790 --> 00:15:46,480

disconnects on those uh ammonia jumpers

262

00:15:50,069 --> 00:15:48,800

he's now making his way over to the

263

00:15:51,590 --> 00:15:50,079

location

264

00:15:53,110 --> 00:15:51,600

where uh

265

00:15:54,389 --> 00:15:53,120

nick patrick is

266

00:15:57,269 --> 00:15:54,399

so that he can

267

00:15:59,269 --> 00:15:57,279

on this night pass use the lights on his

268

00:16:00,550 --> 00:15:59,279

helmet camera

269

00:16:02,389 --> 00:16:00,560

to

270

00:16:03,749 --> 00:16:02,399

do a quick inspection

271

00:16:05,430 --> 00:16:03,759

of

272

00:16:20,790 --> 00:16:05,440

nick patrick

273

00:16:25,189 --> 00:16:23,350

on the plate that holds the qd's i can

274

00:16:26,069 --> 00:16:25,199

identify it and i watch it go my glove

275

00:16:28,629 --> 00:16:26,079

so it's

276

00:16:30,310 --> 00:16:28,639

not positive this is you right

277

00:16:31,110 --> 00:16:30,320

um i'm just trying to

278

00:16:32,790 --> 00:16:31,120

you

279

00:16:34,629 --> 00:16:32,800

could stand by just for a second with

280

00:16:39,990 --> 00:16:34,639

your movement so i can

281

00:16:44,310 --> 00:16:42,470

if you could lower your right arm

282

00:16:55,829 --> 00:16:44,320

just want to look at the tmg on the

283

00:17:04,069 --> 00:16:57,509

if you could slowly turn your wrist to

284

00:17:04,079 --> 00:17:07,510

slowly turn it back

285

00:17:15,029 --> 00:17:10,630

and turn it back again towards me

286

00:17:19,990 --> 00:17:17,350

look at mine i see that

287

00:17:22,309 --> 00:17:20,000

if you you're pointing at yeah and it's

288

00:17:24,230 --> 00:17:22,319

just an abrasion that's on the uh

289

00:17:26,630 --> 00:17:24,240

tng i have a couple that look like that

290

00:17:30,070 --> 00:17:26,640

as well yeah yeah can you uh show me the

291

00:17:32,789 --> 00:17:30,080

underside of your gauntlet there

292

00:17:34,549 --> 00:17:32,799

the palm side of your hand okay i don't

293

00:17:35,909 --> 00:17:34,559

see anything there as well i don't see

294

00:17:37,510 --> 00:17:35,919

anything on the front of your remaining

295

00:17:41,270 --> 00:17:37,520

workstation do you want to drop your

296

00:17:42,870 --> 00:17:41,280

remaining workstation for me absolutely

297

00:17:43,909 --> 00:17:42,880

it's just a reminder we're looking for

298

00:17:46,710 --> 00:17:43,919

any uh

299

00:17:48,150 --> 00:17:46,720

any dull white coating or or even a waxy

300

00:17:52,470 --> 00:17:48,160

like looking

301  
00:17:59,190 --> 00:17:54,390  
okay and if you could pitch towards your

302  
00:18:07,990 --> 00:18:00,710  
and uh go ahead and drop the mini

303  
00:18:12,950 --> 00:18:10,070  
okay i don't see anything on your the

304  
00:18:15,430 --> 00:18:12,960  
front of your dcm or on your helmet or

305  
00:18:17,590 --> 00:18:15,440  
on your uh

306  
00:18:21,270 --> 00:18:17,600  
your

307  
00:18:28,310 --> 00:18:21,280  
looked clean to me

308  
00:18:34,789 --> 00:18:30,070  
it sounds like the inspection is a very

309  
00:18:37,830 --> 00:18:35,830  
okay

310  
00:18:43,830 --> 00:18:37,840  
copies no visible contamination and

311  
00:18:49,510 --> 00:18:47,270  
bob benkin uh wrapping up the uh

312  
00:18:51,909 --> 00:18:49,520  
deployment the opening of the four

313  
00:18:54,230 --> 00:18:51,919

pedals uh that make up part of the

314

00:18:58,070 --> 00:18:54,240

common berthing mechanism on one of the

315

00:19:01,669 --> 00:18:58,080

ports on tranquility the nader port

316

00:19:04,310 --> 00:19:01,679

this is where the common or the cupola

317

00:19:10,390 --> 00:19:04,320

will find its permanent home

318

00:19:14,630 --> 00:19:12,310

and bob benkin has now

319

00:19:17,190 --> 00:19:14,640

installed the um

320

00:19:20,710 --> 00:19:17,200

cover over the keel pin uh mounted on

321

00:19:23,750 --> 00:19:20,720

the outside of tranquility

322

00:19:25,430 --> 00:19:23,760

starboard thanks bob okay that's uh

323

00:19:27,590 --> 00:19:25,440

that's complete then and i will uh

324

00:19:29,750 --> 00:19:27,600

continue on to

325

00:19:30,950 --> 00:19:29,760

the trunnion cover

326

00:19:31,990 --> 00:19:30,960

all right we'll see you there number

327

00:19:34,950 --> 00:19:32,000

three

328

00:19:37,270 --> 00:19:34,960

see if the event covers removed i can go

329

00:19:44,230 --> 00:19:37,280

through if i need to swap my

330

00:19:48,549 --> 00:19:45,830

i'm also going to check the o-ring and

331

00:19:50,549 --> 00:19:48,559

the station flight control control team

332

00:19:53,909 --> 00:19:50,559

giving the crew the good news that

333

00:19:57,430 --> 00:19:53,919

cooling is flowing into the

334

00:19:59,590 --> 00:19:57,440

the new module tranquility the

335

00:20:02,390 --> 00:19:59,600

team seeing the temperatures drop in the

336

00:20:03,669 --> 00:20:02,400

uh and the node so

337

00:20:05,510 --> 00:20:03,679

the ammonia

338

00:20:36,950 --> 00:20:05,520

lines obviously

339

00:20:36,960 --> 00:20:51,669

it's up

340

00:21:06,789 --> 00:20:55,029

next thing again android softbox

341

00:21:28,470 --> 00:21:09,190

it's unfortunate that the words soft

342

00:21:28,480 --> 00:21:40,310

nine ten

343

00:21:40,320 --> 00:21:55,270

green light 3.7 and 9

344

00:21:58,950 --> 00:21:56,630

nick are you thinking there should be a

345

00:22:02,230 --> 00:21:58,960

pool floor right about there this should

346

00:22:03,510 --> 00:22:02,240

be a walkthrough that's more of a pool

347

00:22:05,190 --> 00:22:03,520

yes

348

00:22:06,390 --> 00:22:05,200

several very helpful divers to swim

349

00:22:08,149 --> 00:22:06,400

around

350

00:22:09,830 --> 00:22:08,159

yeah we're missing those guys the nbl

351

00:22:12,630 --> 00:22:09,840

folks have done a fantastic job

352

00:22:14,390 --> 00:22:12,640

preparing us for this helping me

353

00:22:15,990 --> 00:22:14,400

network it's uh on their part really

354

00:22:19,190 --> 00:22:16,000

paid off

355

00:22:23,350 --> 00:22:21,029

yeah they always do a great job of

356

00:22:25,669 --> 00:22:23,360

taking such good care of us and

357

00:22:28,549 --> 00:22:25,679

you know struggling through all the

358

00:22:30,230 --> 00:22:28,559

way out challenges that

359

00:22:34,950 --> 00:22:30,240

sometimes folks have in the pool and we

360

00:22:39,270 --> 00:22:36,630

they also do a lot of the training you

361

00:22:40,390 --> 00:22:39,280

know i think that's sort of a

362

00:22:42,630 --> 00:22:40,400

not fully

363

00:22:44,710 --> 00:22:42,640

recognized on the outside how much of

364

00:22:46,549 --> 00:22:44,720

the training of eva

365

00:22:54,789 --> 00:22:46,559

astronauts are actually done by the

366

00:22:54,799 --> 00:23:14,149

give us great feedback

367

00:23:17,190 --> 00:23:15,510

this is mission control houston as you

368

00:23:18,630 --> 00:23:17,200

can see the space walker's moving back

369

00:23:20,470 --> 00:23:18,640

into the quest airlock mission

370

00:23:22,870 --> 00:23:20,480

specialist nicholas patrick and bob

371

00:23:24,549 --> 00:23:22,880

bacon having finished all their tasks on

372

00:23:25,990 --> 00:23:24,559

this spacewalk despite coming in a

373

00:23:27,270 --> 00:23:26,000

little early

374

00:23:29,909 --> 00:23:27,280

to

375

00:23:31,669 --> 00:23:29,919

deal with

376

00:23:33,110 --> 00:23:31,679

safety procedures

377

00:23:35,350 --> 00:23:33,120

as a result of

378

00:23:37,750 --> 00:23:35,360

possible contaminate contamination of

379

00:23:40,390 --> 00:23:37,760

ammonia on mission specialist nicholas

380

00:23:42,549 --> 00:23:40,400

patrick's spacesuit

381

00:23:45,029 --> 00:23:42,559

the crew is five hours and 26 minutes

382

00:23:48,230 --> 00:23:45,039

into today's spacewalk scheduled to be

383

00:23:49,590 --> 00:23:48,240

six and a half hours but despite the

384

00:23:51,269 --> 00:23:49,600

shortened amount of time they were

385

00:23:52,789 --> 00:23:51,279

staying out

386

00:24:29,669 --> 00:23:52,799

again were able to get all of their

387

00:24:34,070 --> 00:24:31,190

commander jeff williams there reporting

388

00:24:35,750 --> 00:24:34,080

on the work that he's been doing to get

389

00:24:38,230 --> 00:24:35,760

the cover of

390

00:24:39,830 --> 00:24:38,240

a protective cover for the

391

00:24:42,230 --> 00:24:39,840

hatch on the

392

00:24:44,830 --> 00:24:42,240

tranquility node that will be left

393

00:24:47,190 --> 00:24:44,840

exposed after cupola is

394

00:24:49,430 --> 00:24:47,200

relocated he's been working to get that

395

00:24:52,070 --> 00:24:49,440

installed after some problems the crew

396

00:24:54,070 --> 00:24:52,080

ran into yesterday with some

397

00:24:55,990 --> 00:24:54,080

structural interferences

398

00:24:58,549 --> 00:24:56,000

and as you heard he was able to get that

399

00:25:00,310 --> 00:24:58,559

installed this time had to vary from the

400

00:25:02,230 --> 00:25:00,320

procedure the ground came up with a

401  
00:25:03,830 --> 00:25:02,240  
little bit but

402  
00:25:05,990 --> 00:25:03,840  
believes that everything should be ready

403  
00:25:14,070 --> 00:25:06,000  
for the transfer of the cupola later in

404  
00:25:17,669 --> 00:25:15,909  
williams here giving the team on the

405  
00:25:19,750 --> 00:25:17,679  
ground a closer look at the work that

406  
00:25:21,430 --> 00:25:19,760  
he's been doing today so they can

407  
00:25:22,789 --> 00:25:21,440  
inspect everything from here in houston

408  
00:25:45,430 --> 00:25:22,799  
and make sure everything looks good to

409  
00:25:49,029 --> 00:25:46,950  
you're seeing the feet of bob banking

410  
00:25:51,350 --> 00:25:49,039  
come into view here as

411  
00:25:56,149 --> 00:25:51,360  
george zamka and tj creamer pull him out

412  
00:25:57,909 --> 00:25:56,159  
of the equipment lock of the quest

413  
00:25:59,590 --> 00:25:57,919

along with all the tools that he and

414

00:26:06,870 --> 00:25:59,600

nicolas patrick took outside during

415

00:26:11,269 --> 00:26:08,310

the entire crew is going to be over the

416

00:26:11,279 --> 00:26:22,830

steve thanks for letting us

417

00:26:28,630 --> 00:26:26,310

know samka here removing bankins safer

418

00:26:31,990 --> 00:26:28,640

which is the simplified aid for eva

419

00:26:33,990 --> 00:26:32,000

rescue eva being a nagger an acronym for

420

00:26:35,750 --> 00:26:34,000

extravehicular activity or another word

421

00:26:37,909 --> 00:26:35,760

for spacewalk

422

00:26:40,390 --> 00:26:37,919

that would be used as basically a jet

423

00:26:42,310 --> 00:26:40,400

pack in the event that the crew came

424

00:26:45,110 --> 00:26:42,320

until from the international space

425

00:26:46,789 --> 00:26:45,120

station and needed to get back to it

426  
00:26:48,470 --> 00:26:46,799  
that's never happened but they have that

427  
00:27:23,669 --> 00:26:48,480  
back up there just in case we're done

428  
00:27:27,990 --> 00:27:25,510  
now looking back into the tranquility

429  
00:27:32,630 --> 00:27:29,990  
mission specialist kay hire

430  
00:27:37,510 --> 00:27:35,029  
few photos of her

431  
00:27:39,269 --> 00:27:37,520  
commander george zamka

432  
00:27:42,310 --> 00:27:39,279  
or correction not zamka that's actually

433  
00:27:43,990 --> 00:27:42,320  
mission specialist nicholas patrick

434  
00:27:45,590 --> 00:27:44,000  
as he enjoys the

435  
00:27:47,430 --> 00:27:45,600  
open space and tranquility since it

436  
00:27:54,710 --> 00:27:47,440  
doesn't have many of its racks installed

437  
00:27:57,430 --> 00:27:55,909  
although there's quite a bit of open

438  
00:27:59,110 --> 00:27:57,440

space and tranquility at the moment it

439

00:28:01,430 --> 00:27:59,120

should be soon filled up now that an

440

00:28:03,750 --> 00:28:01,440

extra day has been added to the sts-130

441

00:28:07,590 --> 00:28:03,760

mission for the crew to give the station

442

00:28:10,950 --> 00:28:09,510

environmental life support equipment

443

00:28:15,029 --> 00:28:10,960

added into

444

00:28:19,190 --> 00:28:16,710

tranquility has

445

00:28:21,110 --> 00:28:19,200

space for a total of eight of the racks

446

00:28:23,430 --> 00:28:21,120

of equipment that

447

00:28:36,870 --> 00:28:23,440

the station uses to organize

448

00:28:40,870 --> 00:28:38,470

this is what happens when you turn a

449

00:28:47,830 --> 00:28:40,880

rotating machine on its face it spins

450

00:28:50,870 --> 00:28:49,350

we're just getting suited up here for

451  
00:28:54,070 --> 00:28:50,880  
eva number two where we have to deal

452  
00:28:54,870 --> 00:28:54,080  
with the ammonia lines and uh the uh the

453  
00:28:56,870 --> 00:28:54,880  
uh

454  
00:29:00,230 --> 00:28:56,880  
mla that goes around them

455  
00:29:01,430 --> 00:29:00,240  
there's bob ev1

456  
00:29:03,029 --> 00:29:01,440  
ready to go

457  
00:29:05,590 --> 00:29:03,039  
and uh george zamki in the middle our

458  
00:29:07,590 --> 00:29:05,600  
mission commander who's uh in charge of

459  
00:29:09,269 --> 00:29:07,600  
the suit up today with tj creamer on the

460  
00:29:10,710 --> 00:29:09,279  
left of the screen the isis flight

461  
00:29:12,950 --> 00:29:10,720  
engineer

462  
00:29:15,269 --> 00:29:12,960  
we had a great eva today and you can't

463  
00:29:17,430 --> 00:29:15,279

see our smiles yet but when we came back

464

00:29:25,990 --> 00:29:17,440

in we were really uh smiling broadly and

465

00:29:30,149 --> 00:29:28,149

so here's a view from the russian

466

00:29:31,669 --> 00:29:30,159

docking compartment one and i'll let bob

467

00:29:33,669 --> 00:29:31,679

and nick talk about the eva you can see

468

00:29:38,149 --> 00:29:33,679

the shuttle the station and there's the

469

00:29:43,430 --> 00:29:40,549

so you can see me working on a piece of

470

00:29:45,350 --> 00:29:43,440

mli that nick and i spent uh a couple

471

00:29:47,269 --> 00:29:45,360

hours today trying to wrap around some

472

00:29:49,669 --> 00:29:47,279

ammonia lines that uh eventually

473

00:29:51,990 --> 00:29:49,679

provided cooling to node three last

474

00:29:53,510 --> 00:29:52,000

night when we went by node three it was

475

00:29:55,830 --> 00:29:53,520

uh very warm

476  
00:29:58,870 --> 00:29:55,840  
and almost unpleasant to be in because

477  
00:30:00,630 --> 00:29:58,880  
it was so so warm but uh today after

478  
00:30:02,950 --> 00:30:00,640  
completing the installation of these

479  
00:30:05,430 --> 00:30:02,960  
lines and the associated mri

480  
00:30:06,789 --> 00:30:05,440  
the uh the module is cool and the lights

481  
00:30:11,909 --> 00:30:06,799  
are on and its

482  
00:30:15,830 --> 00:30:13,510  
we had some excitement today because

483  
00:30:17,190 --> 00:30:15,840  
some ammonia came out of one of the qd

484  
00:30:19,190 --> 00:30:17,200  
camps on the lab

485  
00:30:20,710 --> 00:30:19,200  
and sprayed on my faceplate

486  
00:30:22,870 --> 00:30:20,720  
bob came over and gave me an inspection

487  
00:30:24,389 --> 00:30:22,880  
and we decided to press ahead with eva i

488  
00:30:26,470 --> 00:30:24,399

think the guys only left us back on the

489

00:30:28,870 --> 00:30:26,480

station after being ammonia contaminated

490

00:30:52,630 --> 00:30:28,880

because we've done uh administering good

491

00:30:55,830 --> 00:30:54,389

and here's the view this was lunchtime

492

00:30:58,470 --> 00:30:55,840

back in the russian compartment the

493

00:30:59,509 --> 00:30:58,480

service module that's jeff williams and

494

00:31:01,269 --> 00:30:59,519

uh

495

00:31:03,830 --> 00:31:01,279

roman they're taking pictures of the

496

00:31:06,070 --> 00:31:03,840

earth and there's oleg and tj in the

497

00:31:08,149 --> 00:31:06,080

back of the service module the very aft

498

00:31:29,350 --> 00:31:08,159

end of the space station

499

00:31:35,110 --> 00:31:32,230

another nice view of earth passing over

500

00:31:36,549 --> 00:31:35,120

i think it was central asia there's some

501  
00:31:37,750 --> 00:31:36,559  
mountains there if i was right it was

502  
00:31:39,909 --> 00:31:37,760  
near iran

503  
00:31:41,830 --> 00:31:39,919  
a lot of snow it's been i think a very

504  
00:32:14,389 --> 00:31:41,840  
snowy and cold year this year on earth

505  
00:32:18,070 --> 00:32:15,509  
here's some of the work that we were

506  
00:32:19,509 --> 00:32:18,080  
doing today that's k transferring some

507  
00:32:20,789 --> 00:32:19,519  
some of the items that we brought up in

508  
00:32:22,710 --> 00:32:20,799  
node three

509  
00:32:23,909 --> 00:32:22,720  
um there's a there's an awful lot of uh

510  
00:32:25,269 --> 00:32:23,919  
stuff that we were able to bring up

511  
00:32:26,950 --> 00:32:25,279  
which helps the space station out a lot

512  
00:32:28,630 --> 00:32:26,960  
with their supplies

513  
00:32:30,470 --> 00:32:28,640

and we're patching them in between

514

00:32:31,990 --> 00:32:30,480

modules there at the time it was dark in

515

00:32:56,870 --> 00:32:32,000

the node and you can see how dark it is

516

00:33:00,070 --> 00:32:58,710

this is the a red machine the machine

517

00:33:02,549 --> 00:33:00,080

that the

518

00:33:04,310 --> 00:33:02,559

space station crew and and

519

00:33:05,909 --> 00:33:04,320

uses for exercise it's like a

520

00:33:07,590 --> 00:33:05,919

weightlifting machine

521

00:33:17,590 --> 00:33:07,600

and that has been relocated now in a

522

00:33:21,029 --> 00:33:19,590

and there's bob banking out the window

523

00:33:22,070 --> 00:33:21,039

and note 3 it was fun we were there

524

00:33:24,389 --> 00:33:22,080

working

525

00:33:34,710 --> 00:33:24,399

and kay said hey there's there's bob out

526

00:33:37,190 --> 00:33:36,149

we could hear them knocking around all

527

00:33:39,029 --> 00:33:37,200

day because they were working right

528

00:34:03,509 --> 00:33:39,039

underneath us where we were doing our

529

00:34:06,789 --> 00:34:05,430

here's george zamka coming into note 3

530

00:34:09,030 --> 00:34:06,799

one of the fun things about note 3 is

531

00:34:11,190 --> 00:34:09,040

it's so big you can put yourself in the

532

00:34:13,030 --> 00:34:11,200

middle and let go and you and

533

00:34:16,310 --> 00:34:13,040

you just float there you don't you can't

534

00:34:20,470 --> 00:34:17,510

this was jeff and i today

535

00:34:22,790 --> 00:34:20,480

troubleshooting the cupola um trying to

536

00:34:24,710 --> 00:34:22,800

help out with the uh

537

00:34:27,190 --> 00:34:24,720

uh with the clearance between a cover

538

00:34:28,950 --> 00:34:27,200

that we have to put in there and the

539

00:34:30,389 --> 00:34:28,960

cupola structure itself and the station

540

00:34:31,109 --> 00:34:30,399

so that we want to make sure that when

541

00:34:32,629 --> 00:34:31,119

we

542

00:34:34,470 --> 00:34:32,639

unattach it and then reattach it

543

00:34:35,669 --> 00:34:34,480

different location it doesn't bump in

544

00:34:37,190 --> 00:34:35,679

too much

545

00:34:38,869 --> 00:34:37,200

and jeff and i were in there working

546

00:34:40,710 --> 00:34:38,879

upside down it's very nice to be able to

547

00:34:42,069 --> 00:34:40,720

float when you work because you can

548

00:34:43,030 --> 00:34:42,079

one guy could take one side the other

549

00:34:44,629 --> 00:34:43,040

guy could take the other side and

550

00:35:11,190 --> 00:34:44,639

there's no interference because there's

551  
00:35:14,790 --> 00:35:12,790  
those are some of the new stowage

552  
00:35:17,030 --> 00:35:14,800  
platforms that we had they're empty now

553  
00:35:19,430 --> 00:35:17,040  
um a few hours before they were full of

554  
00:35:21,670 --> 00:35:19,440  
stuff and knk had been

555  
00:35:23,349 --> 00:35:21,680  
um taking all the stuff and installing

556  
00:35:24,790 --> 00:35:23,359  
it and now here we are removing those

557  
00:35:27,030 --> 00:35:24,800  
platforms

558  
00:35:28,390 --> 00:35:27,040  
and then distilling them out of the way

559  
00:35:31,430 --> 00:35:28,400  
so that we can move some of the other

560  
00:35:33,270 --> 00:35:31,440  
life support racks into those locations

561  
00:35:39,430 --> 00:35:33,280  
we had oleg was down there helping us

562  
00:35:39,440 --> 00:35:45,030  
gucci was down there all day today too

563  
00:35:55,190 --> 00:35:46,390

and there's stevie ray we decided to

564

00:36:06,150 --> 00:35:56,550

i think we're demonstrating how you can

565

00:36:09,349 --> 00:36:07,510

now we were doing pull-ups here we

566

00:36:52,470 --> 00:36:09,359

needed some exercise so uh we're doing

567

00:36:52,480 --> 00:36:57,750

another few push-ups

568

00:37:00,950 --> 00:36:59,190

so this is bob and nick when they had

569

00:37:09,109 --> 00:37:00,960

first come back in from their spacewalk

570

00:37:13,510 --> 00:37:11,589

george and tj were in there for hours

571

00:37:15,750 --> 00:37:13,520

helping them get in and and doing all