



20

1
00:01:14,550 --> 00:00:03,590
hi i'm mike fink on the sts-134 crew and

2
00:01:21,350 --> 00:01:16,469
good morning endeavor and a special good

3
00:01:24,789 --> 00:01:22,870
thanks shannon

4
00:01:29,510 --> 00:01:24,799
that's a rocking song one of my

5
00:01:32,069 --> 00:01:29,520
favorites real world by matchbox 20.

6
00:01:35,590 --> 00:01:32,079
this is a nice view out looking at the

7
00:01:38,390 --> 00:01:35,600
outside of the airlock quest

8
00:01:39,590 --> 00:01:38,400
delivered to the station it had a mass

9
00:01:40,710 --> 00:01:39,600
in space

10
00:01:46,230 --> 00:01:40,720
of

11
00:01:56,389 --> 00:01:47,109
the

12
00:01:58,789 --> 00:01:56,399
much narrower cylindrical area which is

13
00:02:01,190 --> 00:01:58,799

where the two crew members are moved a

14

00:02:03,030 --> 00:02:01,200

hatch can be closed sealing them into

15

00:02:05,109 --> 00:02:03,040

that smaller area

16

00:02:06,870 --> 00:02:05,119

that's the section that is depressurized

17

00:02:09,350 --> 00:02:06,880

to the vacuum of space and then there's

18

00:02:10,710 --> 00:02:09,360

a hatch that is opened

19

00:02:13,350 --> 00:02:10,720

to expose

20

00:02:16,070 --> 00:02:13,360

the what's known as the crew lock to the

21

00:02:17,910 --> 00:02:16,080

space environment and that's the exit

22

00:02:21,350 --> 00:02:17,920

and entry point for all of the

23

00:02:23,030 --> 00:02:21,360

station-based spacewalks also you see on

24

00:02:25,990 --> 00:02:23,040

the outside of the

25

00:02:27,030 --> 00:02:26,000

equipment lock the larger diameter area

26

00:02:29,750 --> 00:02:27,040

the

27

00:02:32,869 --> 00:02:29,760

large high pressurized gas tanks that's

28

00:02:38,150 --> 00:02:32,879

where the nitrogen and oxygen is stored

29

00:02:42,550 --> 00:02:40,390

this camera view looks directly into the

30

00:02:44,309 --> 00:02:42,560

quest airlock quest

31

00:02:47,430 --> 00:02:44,319

launched aboard space shuttle atlantis

32

00:02:48,949 --> 00:02:47,440

in in july of 2001

33

00:02:59,190 --> 00:02:48,959

the

34

00:03:00,790 --> 00:02:59,200

just floating out of view along with

35

00:03:02,790 --> 00:03:00,800

drew feustel that were the two

36

00:03:06,229 --> 00:03:02,800

astronauts that will perform the third

37

00:03:07,589 --> 00:03:06,239

spacewalk and as usual they are being

38

00:03:10,149 --> 00:03:07,599

assisted

39

00:03:12,710 --> 00:03:10,159

with all of the preparatory work for

40

00:03:15,270 --> 00:03:12,720

their spacewalk by

41

00:03:20,390 --> 00:03:15,280

shuttle commander mark kelly

42

00:03:21,990 --> 00:03:20,400

and station flight engineer ron garan

43

00:03:25,110 --> 00:03:22,000

and mike fink called down just a moment

44

00:03:27,030 --> 00:03:25,120

ago referencing the acronym aisle which

45

00:03:29,270 --> 00:03:27,040

is a new

46

00:03:33,750 --> 00:03:29,280

exercise protocol

47

00:03:36,550 --> 00:03:33,760

known as in-suit light exercise

48

00:03:38,149 --> 00:03:36,560

this new procedure is aimed at cutting

49

00:03:40,149 --> 00:03:38,159

down

50

00:03:42,390 --> 00:03:40,159

the amount of oxygen

51
00:03:44,789 --> 00:03:42,400
that the crew members use

52
00:03:48,070 --> 00:03:44,799
during spacewalk preps rather than spend

53
00:03:50,149 --> 00:03:48,080
the night inside the quest airlock

54
00:03:52,550 --> 00:03:50,159
they actually wait until the morning of

55
00:03:54,070 --> 00:03:52,560
their spacewalk to begin getting ready

56
00:03:55,990 --> 00:03:54,080
they

57
00:03:57,589 --> 00:03:56,000
will pre-breathe pure oxygen through air

58
00:03:59,830 --> 00:03:57,599
mass for an hour

59
00:04:02,309 --> 00:03:59,840
as the air pressure inside quest is

60
00:04:03,750 --> 00:04:02,319
lowered from the 14.7

61
00:04:05,589 --> 00:04:03,760
pounds per square inch which is

62
00:04:09,030 --> 00:04:05,599
essentially what you would feel here on

63
00:04:10,309 --> 00:04:09,040

earth at sea level to 10.2 pounds per

64

00:04:12,470 --> 00:04:10,319

square inch

65

00:04:14,949 --> 00:04:12,480

the air pressure that you would feel at

66

00:04:16,629 --> 00:04:14,959

an altitude of about 10 000 feet

67

00:04:18,629 --> 00:04:16,639

once they reduce the air pressure to

68

00:04:20,629 --> 00:04:18,639

10.2 psi

69

00:04:22,710 --> 00:04:20,639

they will then be able to put on their

70

00:04:24,950 --> 00:04:22,720

suits and then perform some light

71

00:04:25,749 --> 00:04:24,960

exercise

72

00:04:27,110 --> 00:04:25,759

that

73

00:04:29,909 --> 00:04:27,120

will be

74

00:04:32,390 --> 00:04:29,919

conducted for about 50 minutes

75

00:04:33,670 --> 00:04:32,400

to raise their metabolic rate and then

76

00:04:34,710 --> 00:04:33,680

that will

77

00:04:36,870 --> 00:04:34,720

hasten

78

00:04:39,110 --> 00:04:36,880

the purge of nitrogen from their blood

79

00:04:41,909 --> 00:04:39,120

streams so it's a little bit of a new

80

00:04:45,189 --> 00:04:41,919

approach that's going to be tried on eba

81

00:04:50,310 --> 00:04:47,590

and then they'll

82

00:04:51,830 --> 00:04:50,320

review the data from that after the eva

83

00:04:53,909 --> 00:04:51,840

but

84

00:04:55,590 --> 00:04:53,919

so the in-suit light exercise is part of

85

00:04:57,909 --> 00:04:55,600

the protocol

86

00:05:13,110 --> 00:04:57,919

tonight and for their spacewalk

87

00:05:18,310 --> 00:05:15,510

drew feustel in this view will uh wear a

88

00:05:20,790 --> 00:05:18,320

suit with a red stripe around his pant

89

00:05:23,110 --> 00:05:20,800

legs and mike fink will again wear a

90

00:05:24,390 --> 00:05:23,120

suit with no markings

91

00:05:28,390 --> 00:05:24,400

the major

92

00:05:30,710 --> 00:05:28,400

task for the day is to install a new

93

00:05:32,550 --> 00:05:30,720

power and data grapple fixture on the

94

00:05:35,350 --> 00:05:32,560

outside of the russian segment of the

95

00:05:36,150 --> 00:05:35,360

international space station specifically

96

00:05:46,550 --> 00:05:36,160

the

97

00:05:49,189 --> 00:05:46,560

this uh you can see very clearly a

98

00:05:50,950 --> 00:05:49,199

fairly large piece of equipment

99

00:05:53,110 --> 00:05:50,960

that

100

00:05:56,950 --> 00:05:53,120

we'll be going out the hatch with the

101
00:06:01,590 --> 00:05:59,510
for installation on the uh what's known

102
00:06:03,749 --> 00:06:01,600
as the fgb or the

103
00:06:05,830 --> 00:06:03,759
zarya control module the first element

104
00:06:08,870 --> 00:06:05,840
of the international space station that

105
00:06:14,950 --> 00:06:08,880
was launched atop a russian proton

106
00:06:19,590 --> 00:06:16,550
this is mission control houston the

107
00:06:24,070 --> 00:06:19,600
official start time of the spacewalk 12

108
00:06:28,230 --> 00:06:24,080
43 a.m central 1 43 this morning eastern

109
00:06:33,189 --> 00:06:31,029
all right uh ev1 ev2 get a comp check

110
00:06:35,510 --> 00:06:33,199
with your task iv

111
00:06:37,029 --> 00:06:35,520
81.

112
00:06:38,150 --> 00:06:37,039
bad and clear how many drafts that

113
00:06:39,909 --> 00:06:38,160

you're saying

114

00:06:41,029 --> 00:06:39,919

hey greg i heard you loud and clear how

115

00:06:43,590 --> 00:06:41,039

do you read me

116

00:06:45,350 --> 00:06:43,600

i hear you great silent clear tell me

117

00:06:48,390 --> 00:06:45,360

all right taz you got it i'll be over in

118

00:06:50,550 --> 00:06:48,400

a minute all right great

119

00:06:53,430 --> 00:06:50,560

so uh shuttle commander mark kelly with

120

00:06:55,589 --> 00:06:53,440

all of the uh choreography before the

121

00:06:58,870 --> 00:06:55,599

space walk begins has now handed over

122

00:07:00,950 --> 00:06:58,880

that uh internal or iv choreography to

123

00:07:02,390 --> 00:07:00,960

uh greg shamatoff who's up on the

124

00:07:03,990 --> 00:07:02,400

shuttle flight deck

125

00:07:05,909 --> 00:07:04,000

so he'll be working with the two

126
00:07:08,230 --> 00:07:05,919
astronauts outside going through all of

127
00:07:10,070 --> 00:07:08,240
the procedures to install a power and

128
00:07:12,309 --> 00:07:10,080
data grapple fixture on the russian

129
00:07:14,550 --> 00:07:12,319
segment of the station for use by the

130
00:07:16,390 --> 00:07:14,560
canadian robotic arm of the

131
00:07:18,790 --> 00:07:16,400
international space station

132
00:07:22,150 --> 00:07:18,800
and associated with that installation is

133
00:07:24,230 --> 00:07:22,160
a quite a bit of uh cabling

134
00:07:26,070 --> 00:07:24,240
and rerouting of cabling that will take

135
00:07:29,309 --> 00:07:26,080
place throughout this six and a half

136
00:07:30,870 --> 00:07:29,319
hour long planned spacewalk which is the

137
00:07:33,270 --> 00:07:30,880
247th

138
00:07:35,990 --> 00:07:33,280

spacewalk conducted by us astronauts and

139

00:07:45,189 --> 00:07:36,000

the 158th in support of space station

140

00:07:48,629 --> 00:07:46,790

you want drew to get there first

141

00:07:50,309 --> 00:07:48,639

obviously yeah and i'll be following him

142

00:07:52,390 --> 00:07:50,319

from over the top

143

00:07:55,189 --> 00:07:52,400

that's right

144

00:08:10,469 --> 00:07:55,199

it's re-twisted on the first wire tie

145

00:08:15,189 --> 00:08:12,309

the helmet cam that you're looking

146

00:08:16,629 --> 00:08:15,199

through is mike finks he will have

147

00:08:18,550 --> 00:08:16,639

the view with the

148

00:08:19,830 --> 00:08:18,560

silhouette number 20 in the lower right

149

00:08:21,270 --> 00:08:19,840

hand corner

150

00:08:41,350 --> 00:08:21,280

drew feustel

151

00:08:46,790 --> 00:08:44,389

now that the work site

152

00:08:49,430 --> 00:08:46,800

is prepared the two astronauts are back

153

00:08:51,670 --> 00:08:49,440

at the airlock they'll be retrieving the

154

00:08:55,190 --> 00:08:51,680

uh the the new power and data grapple

155

00:08:56,949 --> 00:08:55,200

fixture in its supporting structure

156

00:08:58,710 --> 00:08:56,959

thermal cover is coming open

157

00:09:00,470 --> 00:08:58,720

got the time thanks

158

00:09:03,509 --> 00:09:00,480

because it's such a large piece of

159

00:09:04,790 --> 00:09:03,519

equipment uh that it'll require

160

00:09:06,070 --> 00:09:04,800

the

161

00:09:08,790 --> 00:09:06,080

hands of both

162

00:09:10,470 --> 00:09:08,800

crew members to assist with translating

163

00:09:26,790 --> 00:09:10,480

it back from the

164

00:09:32,310 --> 00:09:29,910

hey rama is out of the airlock

165

00:09:34,949 --> 00:09:32,320

all right

166

00:09:37,269 --> 00:09:34,959

there's foot three

167

00:09:39,269 --> 00:09:37,279

i have a good weight feather on it

168

00:09:41,430 --> 00:09:39,279

closed locks and i confirm it's three i

169

00:09:43,829 --> 00:09:41,440

can hold on to the rammer okay

170

00:09:51,190 --> 00:09:43,839

it's much lighter than the neutral

171

00:09:55,509 --> 00:09:54,389

you're dropping your green on 119 on the

172

00:09:58,470 --> 00:09:55,519

note 1

173

00:09:59,990 --> 00:09:58,480

imports dungeon

174

00:10:15,269 --> 00:10:00,000

okay drew i have it

175

00:10:15,279 --> 00:10:43,590

yeah i have it you have it

176

00:10:43,600 --> 00:10:59,430

right i have it there you have it

177

00:11:04,470 --> 00:11:01,509

they might as well come one more

178

00:11:04,480 --> 00:11:16,069

okay i have it you have it

179

00:11:16,079 --> 00:11:20,790

we've been a long singing our song okay

180

00:11:20,800 --> 00:11:32,230

okay i have a habit

181

00:11:32,240 --> 00:11:43,190

and move some more

182

00:11:43,200 --> 00:11:48,630

a little bit more

183

00:11:48,640 --> 00:11:51,430

there you go

184

00:11:51,440 --> 00:11:54,629

it works me

185

00:11:54,639 --> 00:12:00,629

hey i'm ready to receive i have it

186

00:12:04,230 --> 00:12:02,790

and i'm gonna bring it down into a rough

187

00:12:06,310 --> 00:12:04,240

position

188

00:12:08,310 --> 00:12:06,320

okay i'm right here

189

00:12:10,949 --> 00:12:08,320

one here

190

00:12:13,350 --> 00:12:10,959

i'm around three okay a little bit more

191

00:12:14,790 --> 00:12:13,360

to your entire feet

192

00:12:17,509 --> 00:12:14,800

there he goes there yeah so grab the

193

00:12:20,629 --> 00:12:17,519

other hand oh sorry there we go okay

194

00:12:23,190 --> 00:12:20,639

there we go all right i was missing one

195

00:12:25,670 --> 00:12:23,200

looking good okay guys there are three

196

00:12:27,829 --> 00:12:25,680

attach points for this new uh power and

197

00:12:30,389 --> 00:12:27,839

data grapple fixture

198

00:12:31,750 --> 00:12:30,399

together clear excellent put one is in

199

00:12:34,790 --> 00:12:31,760

the feet

200

00:12:36,829 --> 00:12:34,800

working on foot three just for a quick

201

00:12:38,710 --> 00:12:36,839

sd part three

202

00:12:41,430 --> 00:12:38,720

and

203

00:12:42,949 --> 00:12:41,440

here on the work site from four foot two

204

00:12:44,710 --> 00:12:42,959

try not to bump it

205

00:12:46,150 --> 00:12:44,720

okay i've got a hold of it

206

00:12:48,310 --> 00:12:46,160

as long as fun one is english the

207

00:12:51,829 --> 00:12:48,320

orientation is correct we have foot one

208

00:12:53,750 --> 00:12:51,839

zeno and we have the other feet matching

209

00:12:54,949 --> 00:12:53,760

all right so then you can soft talk in

210

00:12:57,430 --> 00:12:54,959

any order

211

00:13:01,350 --> 00:12:57,440

hand tighten and i'm holding it right

212

00:13:01,360 --> 00:13:15,590

to be three to four turns to a hard stop

213

00:13:19,269 --> 00:13:17,509

i'm not sure i'm getting the dredge just

214

00:13:21,509 --> 00:13:19,279

right on this one

215

00:13:23,990 --> 00:13:21,519

so we'll just keep working it till we do

216

00:13:28,949 --> 00:13:26,389

there we go i got two with a few threads

217

00:13:43,509 --> 00:13:28,959

on it okay or shotgun you hold it down

218

00:13:55,110 --> 00:13:45,430

number two snugged up

219

00:13:59,189 --> 00:13:56,550

drew you should be able to reach this

220

00:14:03,189 --> 00:14:01,350

i've got it okay

221

00:14:05,990 --> 00:14:03,199

and i can reach it

222

00:14:08,230 --> 00:14:06,000

our plan is coming together

223

00:14:11,590 --> 00:14:08,240

nice when that happens

224

00:14:13,910 --> 00:14:11,600

amen all right so uh greg the secondary

225

00:14:15,750 --> 00:14:13,920

lock on foot number two closed and

226

00:14:18,150 --> 00:14:15,760

locked

227

00:14:20,230 --> 00:14:18,160

giving you wvs views of everything you

228

00:14:22,629 --> 00:14:20,240

can see everything's nice and smash no

229

00:14:24,069 --> 00:14:22,639

cross threading no troubles okay great

230

00:14:25,750 --> 00:14:24,079

i'm looking at number two i see that

231

00:14:27,750 --> 00:14:25,760

very well and i'll give you the same on

232

00:14:29,750 --> 00:14:27,760

number three

233

00:14:32,230 --> 00:14:29,760

the foot number one is complete as well

234

00:14:33,110 --> 00:14:32,240

secondary locking gh black on black with

235

00:14:38,550 --> 00:14:33,120

a good

236

00:14:42,550 --> 00:14:40,150

crew members

237

00:14:46,550 --> 00:14:42,560

mike fink and drew feustel now will move

238

00:14:49,110 --> 00:14:46,560

on to the task of beginning the

239

00:14:51,430 --> 00:14:49,120

cable connections associated with the

240

00:14:54,150 --> 00:14:51,440

power and a data grapple fixture and

241

00:14:55,189 --> 00:14:54,160

also with some additional cabling that

242

00:14:57,509 --> 00:14:55,199

will uh

243

00:14:59,269 --> 00:14:57,519

provide some redundancy to the

244

00:15:01,269 --> 00:14:59,279

electrical systems

245

00:15:03,590 --> 00:15:01,279

electrical power transfer from the u.s

246

00:15:05,750 --> 00:15:03,600

segment to the russian segment take your

247

00:15:07,990 --> 00:15:05,760

time because if we can get that soft

248

00:15:10,790 --> 00:15:08,000

drop then i can go back rearrange my

249

00:15:14,790 --> 00:15:10,800

feathers and get the bgt okay let's take

250

00:15:18,470 --> 00:15:16,629

and make sure you guys inspect the

251
00:15:19,590 --> 00:15:18,480
mounting bracket on the bottom and the

252
00:15:21,430 --> 00:15:19,600
connectors

253
00:15:22,710 --> 00:15:21,440
yeah we see uh the mounting bracket on

254
00:15:25,509 --> 00:15:22,720
the

255
00:15:26,949 --> 00:15:25,519
fgb side looks good

256
00:15:29,910 --> 00:15:26,959
you guys can see that also if you're

257
00:15:33,189 --> 00:15:29,920
watching on wbs yep i see that and

258
00:15:37,749 --> 00:15:33,199
you're watching nasa tv

259
00:15:37,759 --> 00:15:42,230
okay excellent

260
00:15:45,990 --> 00:15:43,670
yeah those curved handrails are kind of

261
00:15:48,550 --> 00:15:46,000
handy sometimes

262
00:15:50,550 --> 00:15:48,560
in this case they're very handy

263
00:15:52,790 --> 00:15:50,560

okay you want me to grab the vfc from

264

00:15:55,430 --> 00:15:52,800

you yes i do and if we can soft dock it

265

00:15:57,509 --> 00:15:55,440

or get it secure

266

00:16:00,150 --> 00:15:57,519

that'll be helpful so if you want it out

267

00:16:05,590 --> 00:16:00,160

of the mli right yes so you got it

268

00:16:11,670 --> 00:16:08,710

and i can hold the mli there how about

269

00:16:18,230 --> 00:16:11,680

if i hold this and you feel the mlio you

270

00:16:22,470 --> 00:16:20,389

mli going back to the bag okay right now

271

00:16:25,030 --> 00:16:22,480

you see the tether on it

272

00:16:26,870 --> 00:16:25,040

i can firm the header the

273

00:16:29,269 --> 00:16:26,880

two and three are going up one and four

274

00:16:31,030 --> 00:16:29,279

are going down that is correct

275

00:16:32,310 --> 00:16:31,040

and i am

276

00:16:34,310 --> 00:16:32,320

soft

277

00:16:37,189 --> 00:16:34,320

and i saw we did a good inspection of

278

00:16:41,269 --> 00:16:37,199

the bottom yep and it's just magnets so

279

00:16:45,749 --> 00:16:43,350

this view of drew feustel's

280

00:16:48,870 --> 00:16:45,759

helmet camera as he works through the

281

00:16:52,230 --> 00:16:48,880

second task which is to install

282

00:16:55,269 --> 00:16:52,240

a video signal converter on the zarya

283

00:17:00,310 --> 00:16:55,279

module he's in the process of mating the

284

00:17:04,549 --> 00:17:02,550

two hours 32 minutes into the space walk

285

00:17:06,630 --> 00:17:04,559

you're looking after feustel

286

00:17:08,630 --> 00:17:06,640

very good representation of the size of

287

00:17:10,309 --> 00:17:08,640

the international space station

288

00:17:12,230 --> 00:17:10,319

as he

289

00:17:13,829 --> 00:17:12,240

continues his work to

290

00:17:17,110 --> 00:17:13,839

reroute some

291

00:17:19,669 --> 00:17:17,120

jumpers some cables associated with

292

00:17:20,949 --> 00:17:19,679

providing some redundancy on the power

293

00:17:23,189 --> 00:17:20,959

system the

294

00:17:26,390 --> 00:17:23,199

american to russian converter units that

295

00:17:28,150 --> 00:17:26,400

transfer power from the u.s segment over

296

00:17:30,390 --> 00:17:28,160

to the russian segment of the station

297

00:17:34,710 --> 00:17:30,400

this is the bulk of the remaining tasks

298

00:17:36,070 --> 00:17:34,720

of the eva make sure it's secured

299

00:17:37,830 --> 00:17:36,080

as required

300

00:17:40,630 --> 00:17:37,840

and even another adjustable you can use

301
00:17:41,669 --> 00:17:40,640
another one okay i'm clearing it from

302
00:17:50,950 --> 00:17:41,679
the

303
00:17:57,350 --> 00:17:53,270
that view was uh drew feustel over on

304
00:18:01,909 --> 00:17:57,360
the u.s laboratory destiny he's

305
00:18:04,070 --> 00:18:01,919
identifiable by the red stripe on his uh

306
00:18:06,789 --> 00:18:04,080
lower torso

307
00:18:08,310 --> 00:18:06,799
and up on the backpack

308
00:18:10,150 --> 00:18:08,320
okay everybody will have to watch that's

309
00:18:11,590 --> 00:18:10,160
right right at it we'll uh we'll get you

310
00:18:20,789 --> 00:18:11,600
there at daylight yeah it should be

311
00:18:25,190 --> 00:18:22,710
you're looking over the

312
00:18:27,750 --> 00:18:25,200
shoulder if you will of the helmet cam

313
00:18:30,310 --> 00:18:27,760

of mike fink as

314

00:18:33,110 --> 00:18:30,320

has gathered the tools necessary to uh

315

00:18:36,150 --> 00:18:33,120

perform the next task in the

316

00:18:38,470 --> 00:18:36,160

timeline for eva number three this to uh

317

00:18:40,390 --> 00:18:38,480

put your feet down hold on i want to

318

00:18:42,070 --> 00:18:40,400

install a cable associated with the

319

00:18:45,430 --> 00:18:42,080

external wireless

320

00:18:47,990 --> 00:18:45,440

system on the us laboratory destiny

321

00:18:49,830 --> 00:18:48,000

this task was originally scheduled on

322

00:18:53,310 --> 00:18:49,840

eva one

323

00:18:56,310 --> 00:18:53,320

and was deferred to uh eva

324

00:18:59,430 --> 00:18:56,320

three right right

325

00:19:05,430 --> 00:19:02,070

he and drew feustel are

326

00:19:07,590 --> 00:19:05,440

above the shuttle's payload bay at the

327

00:19:08,710 --> 00:19:07,600

interface between the u.s laboratory

328

00:19:13,669 --> 00:19:08,720

destiny

329

00:19:13,679 --> 00:19:20,390

i need to get my advisor up

330

00:19:36,070 --> 00:19:21,909

a nice view of the planet right there

331

00:19:41,270 --> 00:19:38,630

drew feustel's helmet cam looking over

332

00:19:44,549 --> 00:19:41,280

at uh mike fink

333

00:19:46,710 --> 00:19:44,559

and uh mark my uh green rope is uh back

334

00:19:49,430 --> 00:19:46,720

on the stage together back closed and

335

00:19:50,789 --> 00:19:49,440

locked both wheels unlocked

336

00:19:52,789 --> 00:19:50,799

cop is thinking

337

00:19:54,470 --> 00:19:52,799

and i'm heading back to dear luck

338

00:19:59,590 --> 00:19:54,480

all right

339

00:20:06,870 --> 00:20:02,630

i'll uh be sure to um

340

00:20:15,510 --> 00:20:06,880

bear lead my safety tether back

341

00:20:19,669 --> 00:20:17,590

spanky you're going to drop off the crew

342

00:20:21,029 --> 00:20:19,679

luck bag near the airlock

343

00:20:23,430 --> 00:20:21,039

coffee

344

00:20:25,350 --> 00:20:23,440

it's a view from fossils helmet camera

345

00:20:28,390 --> 00:20:25,360

you can see mission specialist mike fink

346

00:20:29,909 --> 00:20:28,400

making his way back to the airlock to

347

00:20:35,909 --> 00:20:29,919

put away some tools and get ready for

348

00:20:39,909 --> 00:20:38,310

put the cabling

349

00:20:41,510 --> 00:20:39,919

exactly so we don't

350

00:20:45,510 --> 00:20:41,520

get it over your

351
00:20:53,590 --> 00:20:46,950
exactly have to route it under as you

352
00:21:01,270 --> 00:20:56,549
from here fink is going to be moving

353
00:21:05,029 --> 00:21:02,789
to begin uh

354
00:21:06,470 --> 00:21:05,039
restringing some this new cable on the

355
00:21:07,909 --> 00:21:06,480
starboard side this time as opposed to

356
00:21:10,710 --> 00:21:07,919
the port where he was working last time

357
00:21:12,549 --> 00:21:10,720
while feustel will be moving back to the

358
00:21:14,630 --> 00:21:12,559
zarya module for that end of the

359
00:21:16,070 --> 00:21:14,640
installation

360
00:21:18,149 --> 00:21:16,080
view here from mission specialist drew

361
00:21:19,510 --> 00:21:18,159
feustel's helmet camera as he begins

362
00:21:22,390 --> 00:21:19,520
working with some of the cables that

363
00:21:24,950 --> 00:21:22,400

have to be connected on the uh

364

00:21:27,990 --> 00:21:24,960

russian end while uh mission specialist

365

00:21:32,390 --> 00:21:28,000

mike fink has moved on to begin routing

366

00:21:33,909 --> 00:21:32,400

the cable that uh comes from the

367

00:21:36,390 --> 00:21:33,919

unity node end

368

00:21:40,390 --> 00:21:38,390

as he does that he's uh demating some

369

00:21:42,070 --> 00:21:40,400

old cables that

370

00:21:44,710 --> 00:21:42,080

that this new cable will replace again

371

00:21:50,630 --> 00:21:44,720

this adds redundancy to the russian

372

00:21:53,669 --> 00:21:52,630

okay guys i think i have a plan to get

373

00:21:55,350 --> 00:21:53,679

in there

374

00:21:57,669 --> 00:21:55,360

an alternate route but uh

375

00:21:58,710 --> 00:21:57,679

looks clear that's just between the two

376

00:22:00,710 --> 00:21:58,720

uh

377

00:22:02,230 --> 00:22:00,720

the two modules

378

00:22:05,190 --> 00:22:02,240

a lot clearer than it was in other

379

00:22:07,510 --> 00:22:05,200

places so we'll see what we can do

380

00:22:11,669 --> 00:22:07,520

okay we're watching

381

00:22:15,510 --> 00:22:13,750

i don't want to pull any uh

382

00:22:21,510 --> 00:22:15,520

connectors apart that we don't need to

383

00:22:25,590 --> 00:22:23,669

the rats nest living up to its name as

384

00:22:27,590 --> 00:22:25,600

mike fink tries to work around some

385

00:22:31,590 --> 00:22:27,600

existing cables as he tries to teammate

386

00:22:36,390 --> 00:22:34,149

but i'm getting close

387

00:22:38,149 --> 00:22:36,400

i think i'll be able to get to it i see

388

00:22:40,789 --> 00:22:38,159

638

389

00:22:43,830 --> 00:22:40,799

you can see it my wvs there's this spot

390

00:22:46,710 --> 00:22:43,840

right here in my right where my head is

391

00:22:49,029 --> 00:22:46,720

yeah that's uh there's these cables here

392

00:22:51,190 --> 00:22:49,039

they're uh very um

393

00:22:52,710 --> 00:22:51,200

not loose but there's a lot of slack in

394

00:22:55,750 --> 00:22:52,720

them and i think i can just put my head

395

00:22:58,870 --> 00:22:55,760

in and reach for 6 38 and get it without

396

00:22:58,880 --> 00:23:03,350

yeah can you imagine getting in here

397

00:23:07,990 --> 00:23:06,310

okay here comes the cap

398

00:23:15,590 --> 00:23:08,000

right side left side there we go left

399

00:23:20,710 --> 00:23:18,070

and again if you can hold my feet up or

400

00:23:23,590 --> 00:23:20,720

paper like you were good but okay no

401
00:23:28,310 --> 00:23:23,600
worries appreciate all the help buddy

402
00:23:33,510 --> 00:23:30,950
this is a tough uh task here like give

403
00:23:35,430 --> 00:23:33,520
me one second oh you got all the time

404
00:23:48,549 --> 00:23:35,440
well you got four hours until my oxygen

405
00:23:48,559 --> 00:23:55,110
a little bit more

406
00:23:55,120 --> 00:24:08,390
something like that

407
00:24:13,269 --> 00:24:10,789
looking good keep it turning

408
00:24:16,830 --> 00:24:13,279
got it you got it

409
00:24:20,149 --> 00:24:16,840
if these were raised okay now

410
00:24:22,149 --> 00:24:20,159
yeah all right now i'm gonna

411
00:24:28,070 --> 00:24:22,159
go slowly out

412
00:24:33,350 --> 00:24:30,070
mission specialist mike fink began now

413
00:24:37,269 --> 00:24:33,360

uh given the go to begin mating his

414

00:24:40,470 --> 00:24:39,269

since feustel has finished his setup

415

00:24:41,750 --> 00:24:40,480

work at the

416

00:24:44,230 --> 00:24:41,760

russian segment of the station at the

417

00:24:48,390 --> 00:24:44,240

zarya module

418

00:24:51,350 --> 00:24:49,710

it's the

419

00:24:53,269 --> 00:24:51,360

p138j638

420

00:24:55,350 --> 00:24:53,279

no five good pins

421

00:25:08,870 --> 00:24:55,360

and gdmi damn

422

00:25:13,590 --> 00:25:11,029

drew you're routing the team cable under

423

00:25:16,710 --> 00:25:13,600

the uh towards the pdgf yeah i'll get

424

00:25:19,669 --> 00:25:16,720

this here's the second one

425

00:25:21,510 --> 00:25:19,679

and greg that j138a is successfully

426

00:25:23,750 --> 00:25:21,520

mated good news

427

00:25:25,909 --> 00:25:23,760

excellent

428

00:25:27,590 --> 00:25:25,919

um so mike uh

429

00:25:28,549 --> 00:25:27,600

you can wire do the wired ties on your

430

00:25:30,390 --> 00:25:28,559

way back

431

00:25:31,669 --> 00:25:30,400

okay i've completed the first wire tie

432

00:25:34,470 --> 00:25:31,679

which is handle

433

00:25:38,630 --> 00:25:34,480

137 i believe

434

00:25:41,190 --> 00:25:38,640

uh 130 maybe one uh no in this case uh

435

00:25:44,149 --> 00:25:41,200

130 was uh ploppered by somebody else's

436

00:25:45,669 --> 00:25:44,159

actually yeah 137 is an optional

437

00:25:47,269 --> 00:25:45,679

connector for that one that's that's a

438

00:25:48,390 --> 00:25:47,279

good one okay and then the next one is

439

00:25:52,870 --> 00:25:48,400

130.

440

00:25:56,390 --> 00:25:54,310

feustel and

441

00:25:58,230 --> 00:25:56,400

fink now both finished up with all their

442

00:25:59,830 --> 00:25:58,240

work that was uh officially scheduled

443

00:26:01,990 --> 00:25:59,840

for this spacewalk there was one other

444

00:26:03,510 --> 00:26:02,000

get ahead they were going to

445

00:26:05,909 --> 00:26:03,520

had originally been in that plan but had

446

00:26:07,190 --> 00:26:05,919

been uh pushed aside since they are

447

00:26:09,590 --> 00:26:07,200

finishing up some work from the first

448

00:26:11,350 --> 00:26:09,600

spacewalk and that was a data cable

449

00:26:12,549 --> 00:26:11,360

installation that would finish up the

450

00:26:14,149 --> 00:26:12,559

installation of the power and data

451

00:26:16,230 --> 00:26:14,159

grapple fixture they

452

00:26:19,269 --> 00:26:16,240

added to the russian segment of the

453

00:26:21,190 --> 00:26:19,279

station earlier in today's spacewalk

454

00:26:23,269 --> 00:26:21,200

there was an option of possibly going

455

00:26:25,669 --> 00:26:23,279

ahead and getting that test done as well

456

00:26:26,549 --> 00:26:25,679

but the team uh here on the ground and

457

00:26:29,510 --> 00:26:26,559

uh

458

00:26:31,350 --> 00:26:29,520

the crew on space station decided not to

459

00:26:34,549 --> 00:26:31,360

not to attempt that today and just go

460

00:26:36,630 --> 00:26:34,559

with the success that they've had so far

461

00:26:38,630 --> 00:26:36,640

currently six hours and 22 minutes into

462

00:26:58,070 --> 00:26:38,640

today's spacewalk and heading back

463

00:27:02,230 --> 00:27:00,070

hatch is now open as you can see inside

464

00:27:03,909 --> 00:27:02,240

the quest air lock allowing the crew to

465

00:27:05,750 --> 00:27:03,919

move back in

466

00:27:07,029 --> 00:27:05,760

out of the crew lock portion they're

467

00:27:08,070 --> 00:27:07,039

logging into the equipment lock where

468

00:27:09,350 --> 00:27:08,080

they'll be able to get out of their

469

00:27:12,070 --> 00:27:09,360

spacesuits

470

00:27:14,149 --> 00:27:12,080

getting some help here from ron garan

471

00:27:16,950 --> 00:27:14,159

and mission specialist or commander mark

472

00:27:21,430 --> 00:27:19,510

first in mission specialist mike fink in

473

00:27:25,350 --> 00:27:21,440

his all-white space suit

474

00:27:27,110 --> 00:27:25,360

now with eight spacesuit walks conducted

475

00:27:28,310 --> 00:27:27,120

and one more to go for him on this

476
00:27:31,430 --> 00:27:28,320
mission

477
00:27:33,590 --> 00:27:31,440
this was his second u.s spacewalk the

478
00:27:36,310 --> 00:27:33,600
previous

479
00:27:38,630 --> 00:27:36,320
six have been

480
00:27:40,630 --> 00:27:38,640
in russian orlan spacesuits

481
00:27:42,230 --> 00:27:40,640
mission specialist drew feustel also now

482
00:27:43,830 --> 00:27:42,240
out and being moved into place so that

483
00:27:48,149 --> 00:27:43,840
he can begin

484
00:27:50,389 --> 00:27:48,159
taking off that spacesuit as well

485
00:27:52,470 --> 00:27:50,399
was his sixth space walk his third at

486
00:27:55,750 --> 00:27:52,480
the international space station and for

487
00:27:57,830 --> 00:27:55,760
the sts-134 mission

488
00:27:59,590 --> 00:27:57,840

and he adds that number to three that he