



1
00:02:00,000 --> 00:02:10,469
good morning endeavor

2
00:02:10,479 --> 00:02:15,430
hey good morning tom

3
00:02:19,670 --> 00:02:17,670
sorry good morning carl

4
00:02:22,150 --> 00:02:19,680
oh that's better thanks music selection

5
00:02:23,750 --> 00:02:22,160
we'll try to go out and live up to it

6
00:02:25,030 --> 00:02:23,760
okay i'm sure you will

7
00:04:38,870 --> 00:02:25,040
and could you get the tips on if you're

8
00:06:20,390 --> 00:04:40,310
and endeavor we're on board the middeck

9
00:06:24,629 --> 00:06:22,710
and every houston one minute to a tdrs

10
00:06:26,950 --> 00:06:24,639
handover and i have the

11
00:06:55,590 --> 00:06:26,960
sfu thermal bailout attitude when you're

12
00:07:00,150 --> 00:06:58,790
tom go ahead with the attitude

13
00:07:03,430 --> 00:07:00,160

target 4

14

00:07:12,629 --> 00:07:03,440

body vector 5 pitch one four

15

00:07:19,189 --> 00:07:15,350

target four body vector five pitch zero

16

00:07:20,870 --> 00:07:19,199

one four yaw zero omicron two seven zero

17

00:07:30,070 --> 00:07:20,880

good copy and i've got an adjustment to

18

00:07:30,080 --> 00:09:03,590

hello quiche

19

00:09:08,550 --> 00:09:05,350

okay

20

00:09:10,630 --> 00:09:08,560

coming up and

21

00:09:11,829 --> 00:09:10,640

deborah houston free v leroy we see you

22

00:09:20,389 --> 00:09:11,839

coming out

23

00:09:24,310 --> 00:09:22,550

endeavor get you back at two zero zero

24

00:09:25,990 --> 00:09:24,320

nine ten minutes of ratty calm off the

25

00:09:26,710 --> 00:09:26,000

tail when we come back

26

00:09:32,070 --> 00:09:26,720

here

27

00:09:48,870 --> 00:09:33,509

how am i doing dan

28

00:09:52,949 --> 00:09:51,269

get your back at two zero zero nine ten

29

00:09:55,990 --> 00:09:52,959

minutes of calm off the tail when we

30

00:09:56,000 --> 00:09:59,590

yeah i'll do that dance clear

31

00:10:17,030 --> 00:10:01,670

as a second i'm gonna

32

00:10:17,040 --> 00:10:20,870

year two seems to work pretty good

33

00:10:20,880 --> 00:10:25,110

good

34

00:10:28,630 --> 00:10:26,790

hey i'm gonna come up top now this is

35

00:10:30,310 --> 00:10:28,640

where we may have to go standby

36

00:10:58,949 --> 00:10:30,320

tell you up so all right

37

00:10:58,959 --> 00:11:05,509

passing over right now

38

00:11:08,230 --> 00:11:06,710

hey leeway what do you want me to do

39

00:11:09,030 --> 00:11:08,240

with the arm in the meantime okay go

40

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

ahead

41

00:11:23,030 --> 00:11:11,200

i'm done with the arm you can go back to

42

00:11:23,040 --> 00:11:27,110

houston for dan you're over australia

43

00:11:27,120 --> 00:11:31,509

well thanks tom it's an incredible fight

44

00:11:31,519 --> 00:11:40,069

i'm envious

45

00:11:44,870 --> 00:11:42,949

remember the pin is inverted to your

46

00:11:48,230 --> 00:11:44,880

point of view

47

00:11:49,910 --> 00:11:48,240

right i know dan i'm i'm in i'm

48

00:11:51,990 --> 00:11:49,920

loaded

49

00:11:54,310 --> 00:11:52,000

okay i'm just seeing the roll being like

50

00:11:56,470 --> 00:11:54,320

180 degrees off it looks good don't

51
00:11:57,750 --> 00:11:56,480
worry okay but it's supposed to be okay

52
00:12:00,870 --> 00:11:57,760
you about three more inches you'll be

53
00:12:03,750 --> 00:12:00,880
dead center three more inches forward

54
00:12:07,350 --> 00:12:05,110
you're a dead center you just come

55
00:12:13,430 --> 00:12:07,360
straight in and defector mode

56
00:12:17,670 --> 00:12:14,949
i can put it in from here if you want to

57
00:12:19,030 --> 00:12:17,680
roll it around okay uh dan where the

58
00:12:20,870 --> 00:12:19,040
roll is exactly where it's supposed to

59
00:12:22,550 --> 00:12:20,880
be i'm going to go when you give me a go

60
00:12:26,870 --> 00:12:22,560
i'm going to go for capture

61
00:12:31,110 --> 00:12:27,829
and the camera is right where it's

62
00:12:31,120 --> 00:12:34,470
i'm showing the um

63
00:12:38,870 --> 00:12:36,550

the parts of the

64

00:12:39,910 --> 00:12:38,880

end effector that go into the

65

00:12:42,550 --> 00:12:39,920

uh

66

00:12:44,389 --> 00:12:42,560

they go into the um

67

00:12:46,470 --> 00:12:44,399

outside pieces the three

68

00:13:01,190 --> 00:12:46,480

pieces each at 120 degrees to each other

69

00:13:01,200 --> 00:13:13,750

okay we have a great view brian thanks

70

00:13:18,710 --> 00:13:15,670

and ever brent uh pdris is looking at

71

00:13:20,870 --> 00:13:18,720

this just one moment

72

00:13:22,470 --> 00:13:20,880

hey we're standing by

73

00:13:26,710 --> 00:13:22,480

okay let me know when we go for uh

74

00:13:31,509 --> 00:13:29,110

i saw a good capture i saw the snares

75

00:13:32,790 --> 00:13:31,519

nice okay i got good capture dan let

76
00:13:35,509 --> 00:13:32,800
me know when you go for rich you're go

77
00:13:37,590 --> 00:13:35,519
for rigid here comes ridgid i'm waiting

78
00:13:40,069 --> 00:13:37,600
i see it rigidizing

79
00:13:42,710 --> 00:13:40,079
we've got ridgid great fantastic good

80
00:13:45,190 --> 00:13:42,720
job guys okay now brent if you could uh

81
00:13:46,949 --> 00:13:45,200
come uh straight toward me a little bit

82
00:13:48,790 --> 00:13:46,959
stand by dan i'm waiting for the ridgid

83
00:13:50,790 --> 00:13:48,800
back okay i'm sorry

84
00:13:53,190 --> 00:13:50,800
and um okay

85
00:13:54,629 --> 00:13:53,200
winston if you could tell me again um

86
00:13:57,750 --> 00:13:54,639
uh

87
00:13:59,350 --> 00:13:57,760
where to hook the tether to um

88
00:14:00,470 --> 00:13:59,360

which end of the end effector hurts each

89

00:14:03,030 --> 00:14:00,480

other too

90

00:14:05,590 --> 00:14:03,040

okay dad you're going to hook the uh

91

00:14:07,590 --> 00:14:05,600

that to the yellow end of the infector

92

00:14:09,269 --> 00:14:07,600

okay and then move it down towards you

93

00:14:10,949 --> 00:14:09,279

okay i stand by just one second but i

94

00:14:13,269 --> 00:14:10,959

have to because because of the

95

00:14:18,069 --> 00:14:13,279

reconfigure i have to move leo's tether

96

00:14:24,069 --> 00:14:19,350

all right we need to remember to rotate

97

00:14:28,069 --> 00:14:25,829

okay you're looking good both feet are

98

00:14:31,189 --> 00:14:28,079

uh your right foot is almost there right

99

00:14:33,430 --> 00:14:31,199

foot's in the loop you need your heel to

100

00:14:34,389 --> 00:14:33,440

move there you go your left spin

101

00:14:38,389 --> 00:14:34,399

your right

102

00:14:40,629 --> 00:14:38,399

you're right then what a sunrise look at

103

00:14:42,629 --> 00:14:40,639

that but you know what leroy your right

104

00:14:44,629 --> 00:14:42,639

is above the uh you know how that angle

105

00:14:46,069 --> 00:14:44,639

is okay let me try again have that now

106

00:14:49,030 --> 00:14:46,079

you're in properly and you're right and

107

00:14:50,310 --> 00:14:49,040

your left is in beautifully right

108

00:14:51,509 --> 00:14:50,320

okay you're looking good for been here

109

00:14:53,430 --> 00:14:51,519

leroy

110

00:14:55,350 --> 00:14:53,440

verify again that you are temporarily

111

00:14:56,550 --> 00:14:55,360

attached uh leroy's slide while state

112

00:15:09,030 --> 00:14:56,560

settles in london

113

00:15:15,030 --> 00:15:12,550

okay that works super

114

00:15:18,710 --> 00:15:15,040

okay access and operate the pfrws

115

00:15:22,710 --> 00:15:20,790

that i'm heading over to the um

116

00:15:24,829 --> 00:15:22,720

are you

117

00:15:34,230 --> 00:15:24,839

okay

118

00:15:34,240 --> 00:15:37,030

we're watching

119

00:15:41,590 --> 00:15:39,670

okay pitch control works fine

120

00:15:46,870 --> 00:15:41,600

okay leo you want to access and operate

121

00:15:51,910 --> 00:15:48,710

spindle works fine

122

00:15:58,310 --> 00:15:55,829

nice and smooth action

123

00:16:05,110 --> 00:15:58,320

okay accessing operate the yaw control

124

00:16:10,870 --> 00:16:08,470

okay and uh

125

00:16:13,910 --> 00:16:10,880

that works fine general comment on the

126

00:16:15,590 --> 00:16:13,920

workstation the

127

00:16:17,430 --> 00:16:15,600

handles are a little low they're fine

128

00:16:19,590 --> 00:16:17,440

for me but someone tall

129

00:16:20,870 --> 00:16:19,600

taller would uh might be

130

00:16:22,389 --> 00:16:20,880

a bit of a stretch

131

00:16:25,350 --> 00:16:22,399

so i've had that problem in the wet up

132

00:16:25,360 --> 00:16:34,829

probably i guess that's most of the

133

00:16:41,030 --> 00:16:38,230

officers overall the pwp is

134

00:16:56,790 --> 00:16:41,040

pretty user friendly

135

00:17:00,629 --> 00:16:58,470

goddamn look at the look at the earth

136

00:17:02,389 --> 00:17:00,639

there

137

00:17:04,549 --> 00:17:02,399

watch the thermal tube yeah i'm

138

00:17:07,350 --> 00:17:04,559

underneath

139

00:17:16,230 --> 00:17:07,360

take a look over the phil if you can

140

00:17:16,240 --> 00:17:23,029

that looks good yep

141

00:17:27,590 --> 00:17:25,429

they're coming back in plain

142

00:17:30,630 --> 00:17:27,600

oh god

143

00:17:33,110 --> 00:17:30,640

came off real easy hold on i've got it

144

00:17:34,230 --> 00:17:33,120

hold on i got it okay

145

00:17:36,230 --> 00:17:34,240

i got it

146

00:17:43,510 --> 00:17:36,240

okay

147

00:17:47,669 --> 00:17:45,350

endeavor houston on air to ground two

148

00:17:50,870 --> 00:17:47,679

for the flight deck

149

00:17:52,150 --> 00:17:50,880

hey lee roy moving up and out of the bay

150

00:17:54,230 --> 00:17:52,160

well i don't think that'll be a big

151
00:17:56,150 --> 00:17:54,240
problem so i'm gonna go uh to the other

152
00:17:57,909 --> 00:17:56,160
end and continue

153
00:18:04,070 --> 00:17:57,919
endeavor houston on the west i've got

154
00:18:06,870 --> 00:18:05,590
thank you coming down

155
00:18:08,470 --> 00:18:06,880
well you know what i'm going to say

156
00:18:10,150 --> 00:18:08,480
ketchup

157
00:18:11,430 --> 00:18:10,160
alignment mark

158
00:18:13,990 --> 00:18:11,440
unless you all can see that from the

159
00:18:15,990 --> 00:18:14,000
window

160
00:18:19,990 --> 00:18:16,000
for the flight deck we'd like to supply

161
00:18:24,029 --> 00:18:20,000
water dump using fest on 5-9r using fest

162
00:18:28,950 --> 00:18:27,110
okay keep going keep going you're almost

163
00:18:31,909 --> 00:18:28,960

at it you're at the latch okay it's

164

00:18:34,150 --> 00:18:31,919

latched okay you can see how badly the

165

00:18:35,669 --> 00:18:34,160

uh cables are bound the cables are bound

166

00:18:36,870 --> 00:18:35,679

up you know

167

00:18:39,110 --> 00:18:36,880

actually i'm going to take a picture of

168

00:18:54,830 --> 00:18:39,120

that for the ground

169

00:18:54,840 --> 00:19:13,669

uh getting tied up against each other

170

00:19:17,350 --> 00:19:15,110

hey guys yeah you probably see we're

171

00:19:27,750 --> 00:19:17,360

moving in the darkness

172

00:19:31,750 --> 00:19:30,070

whips are pretty tight

173

00:19:34,390 --> 00:19:31,760

okay uh let's

174

00:19:37,270 --> 00:19:34,400

start translating along the ru

175

00:19:38,630 --> 00:19:37,280

and let's see if you can

176

00:19:45,750 --> 00:19:38,640

yeah that's great you're doing great

177

00:19:50,870 --> 00:19:47,750

you connect us to the surf and this is a

178

00:20:01,110 --> 00:19:50,880

very difficult sequence one two three

179

00:20:01,120 --> 00:20:43,830

okay keep going

180

00:20:53,110 --> 00:20:45,909

do a couple other axes for you there go

181

00:20:53,120 --> 00:21:11,270

stopping

182

00:21:11,280 --> 00:21:16,950

okay dad i got me that

183

00:21:21,029 --> 00:21:19,110

and every houston no action on the pdrs

184

00:21:24,149 --> 00:21:21,039

slip that's due to the ingress uh from

185

00:21:24,159 --> 00:21:31,669

how can we copy that

186

00:21:34,789 --> 00:21:33,029

endeavor for the flight tech did you

187

00:21:37,190 --> 00:21:34,799

call on interground two is uh to

188

00:21:38,950 --> 00:21:37,200

evaluate vp for your enroll by using

189

00:21:44,230 --> 00:21:38,960

your waste tether

190

00:21:47,669 --> 00:21:46,710

worst extension is that the

191

00:21:51,029 --> 00:21:47,679

um

192

00:21:53,430 --> 00:21:51,039

actuator pitching your actuators are too

193

00:22:02,070 --> 00:21:55,029

okay endeavor houston on air to ground

194

00:22:02,080 --> 00:22:23,350

okay copy that dave

195

00:22:27,669 --> 00:22:25,990

okay i've completed the

196

00:22:29,510 --> 00:22:27,679

evaluation of the yaw and now i'm

197

00:22:31,830 --> 00:22:29,520

getting ready to move on to the

198

00:22:33,909 --> 00:22:31,840

evaluation of the roll

199

00:22:36,390 --> 00:22:33,919

and uh

200

00:22:37,909 --> 00:22:36,400

pretty spectacular here up over the bay

201
00:22:45,270 --> 00:22:37,919
looking down on the shuttle in the earth

202
00:23:03,510 --> 00:22:47,510
the coordination of the uh the yaw and

203
00:23:21,110 --> 00:23:05,830
and i'm right over the uh the tube which

204
00:23:24,470 --> 00:23:22,390
2 where

205
00:23:29,430 --> 00:23:24,480
90 seconds from the zoe gets you back at

206
00:23:34,149 --> 00:23:32,149
yeah ev1 is feeling great

207
00:23:36,950 --> 00:23:34,159
i've not had to use the glove

208
00:23:40,310 --> 00:23:36,960
i've been adjusting my thermal fitting

209
00:23:42,549 --> 00:23:40,320
somewhere around you know six

210
00:23:43,830 --> 00:23:42,559
so uh no problem with the heat loads or

211
00:23:46,470 --> 00:23:43,840
cool loads

212
00:23:48,950 --> 00:23:46,480
that's also true for uh ev2 i've not

213
00:23:50,870 --> 00:23:48,960

used the thermal gloves and i'm feeling

214

00:23:53,029 --> 00:23:50,880

just as comfortable as could be the

215

00:23:54,630 --> 00:23:53,039

temperature's just right there was one

216

00:23:56,549 --> 00:23:54,640

point um

217

00:23:58,789 --> 00:23:56,559

when my feet were getting a little cold

218

00:24:00,470 --> 00:23:58,799

but i just went all the way to lcdg

219

00:24:02,630 --> 00:24:00,480

bypass and

220

00:24:04,870 --> 00:24:02,640

even in the night time with a little bit

221

00:24:08,149 --> 00:24:04,880

of activity my feet uh warmed right up

222

00:24:09,590 --> 00:24:08,159

so i'm feeling great

223

00:24:14,070 --> 00:24:09,600

now you two are looking great too thanks

224

00:24:22,230 --> 00:24:16,830

okay roll towards me dan a little

225

00:24:26,070 --> 00:24:24,230

okay complete

226

00:24:27,669 --> 00:24:26,080

okay remove a biblical chatty from the

227

00:24:29,750 --> 00:24:27,679

sidewall carrier and you're going to do

228

00:24:34,549 --> 00:24:29,760

that virus sweep the tip in from the lat

229

00:24:34,559 --> 00:25:13,350

then you release the latch

230

00:25:20,549 --> 00:25:14,950

could you confirm the limits of into

231

00:25:44,950 --> 00:25:40,470

copy

232

00:25:46,630 --> 00:25:44,960

and verify along with this with the

233

00:25:48,710 --> 00:25:46,640

strut that leroy copied you want to

234

00:25:50,549 --> 00:25:48,720

start getting some clean-up items if uh

235

00:25:56,149 --> 00:25:50,559

houston you concur then we'll have

236

00:25:56,159 --> 00:26:00,390

winston that's a good plan

237

00:26:04,630 --> 00:26:01,590

okay

238

00:26:06,870 --> 00:26:04,640

listen what's my next step

239

00:26:11,669 --> 00:26:06,880

okay dan you want to unclamp the gang

240

00:26:43,029 --> 00:26:13,350

three individual line clamps securing

241

00:27:03,190 --> 00:26:44,470

let me turn off the helmet lights for

242

00:27:03,200 --> 00:27:11,029

oh that's gonna come out great

243

00:27:29,430 --> 00:27:13,269

good from a relay yeah they got somebody

244

00:27:29,440 --> 00:27:46,950

make sure

245

00:27:52,870 --> 00:27:49,510

okay i'm inside winston

246

00:27:55,029 --> 00:27:52,880

okay the next step is for uh db1 sent

247

00:27:56,630 --> 00:27:55,039

you wanted to off and eb2 said you

248

00:27:58,149 --> 00:27:56,640

wanted to off

249

00:28:07,190 --> 00:27:58,159

okay

250

00:28:14,870 --> 00:28:09,350

you can close the thermal cover close

251

00:28:19,830 --> 00:28:16,870

and uh you would you could perform the

252

00:28:21,830 --> 00:28:19,840

ecc operations check

253

00:28:24,470 --> 00:28:21,840

okay and that's simply to verify that

254

00:28:27,269 --> 00:28:24,480

the display is readable

255

00:28:29,350 --> 00:28:27,279

i'm showing this um on my phd timer

256

00:28:31,269 --> 00:28:29,360

we're a little over six hours