1
00:00:09,350 --> 00:00:06,269
good afternoon and welcome back to the

2
00:00:10,790 --> 00:00:09,360
sts-133 pre-flight briefings here this

3
00:00:12,629 --> 00:00:10,800
hour we're going to be talking about the

4
00:00:14,070 --> 00:00:12,639
two spacewalks planned for discovery's

5
00:00:15,509 --> 00:00:14,080
mission and to tell us about them we

6
00:00:17,750 --> 00:00:15,519
have the leed space

7
00:00:20,070 --> 00:00:17,760
space walk officer for the mission art

8
00:00:21,830 --> 00:00:20,080
thomason we'll let art talk art start

9
00:00:23,349 --> 00:00:21,840
with opening remarks and then we'll take

10
00:00:25,589 --> 00:00:23,359
questions

11
00:00:27,349 --> 00:00:25,599
hello my name is art thomason today i'll

12
00:00:30,070 --> 00:00:27,359
be walking through the two spacewalks

13
00:00:31,509 --> 00:00:30,080

that we have planned for sts-133

14
00:00:33,670 --> 00:00:31,519
but before we roll the video for that

15
00:00:35,030 --> 00:00:33,680
i'd like to introduce the eva team and

16
00:00:39,030 --> 00:00:35,040
can i get the graphics for the crew

17
00:00:43,030 --> 00:00:40,709
our lead spacewalker for the mission

18
00:00:44,950 --> 00:00:43,040
will be tim copra

19
00:00:46,229 --> 00:00:44,960
tim this will be tim's second set of

20
00:00:47,910 --> 00:00:46,239
evas

21
00:00:50,549 --> 00:00:47,920
he'll be wearing the suit with the red

22
00:00:52,310 --> 00:00:50,559
stripes designating him as ev1 or the

23
00:00:55,110 --> 00:00:52,320
lead spacewalker

24
00:00:57,270 --> 00:00:55,120
alvin drew will be our ev2 this will be

25
00:00:58,950 --> 00:00:57,280
al's second flight this will actually be

26
00:01:01,189 --> 00:00:58,960
his first time to venture out the door

27
00:01:03,590 --> 00:01:01,199
on a spacewalk i'll be wearing the suit

28
00:01:05,509 --> 00:01:03,600
with the white stripes

29
00:01:07,670 --> 00:01:05,519
inside the shuttle we'll have nicole

30
00:01:09,670 --> 00:01:07,680
stott she'll be managing the spacewalk

31
00:01:10,950 --> 00:01:09,680
and she'll be reading tim and al's

32
00:01:13,429 --> 00:01:10,960
procedures walking them through the

33
00:01:17,190 --> 00:01:13,439
steps of their task nicole has previous

34
00:01:19,830 --> 00:01:17,200
eva experience on sts-128

35
00:01:21,109 --> 00:01:19,840
also inside will be mike barrett mike

36
00:01:22,789 --> 00:01:21,119
will be helping the crew members get

37
00:01:23,990 --> 00:01:22,799
suited up and out the door before each

38
00:01:25,670 --> 00:01:24,000

eva

39
00:01:27,990 --> 00:01:25,680
mike will also be operating the space

40
00:01:31,109 --> 00:01:28,000
station robotic arm in support of both

41
00:01:33,030 --> 00:01:31,119
eva 1 and eva2

42
00:01:34,390 --> 00:01:33,040
i'd also like to introduce the team that

43
00:01:36,230 --> 00:01:34,400
i'll be working with on the ground

44
00:01:37,749 --> 00:01:36,240
during the spacewalks got one of the

45
00:01:41,429 --> 00:01:37,759
best teams in the business i'll have

46
00:01:43,350 --> 00:01:41,439
ernie bell devin bulch joni davidson jay

47
00:01:45,510 --> 00:01:43,360
burger and scott ray

48
00:01:46,950 --> 00:01:45,520
and now for sts-133

49
00:01:49,429 --> 00:01:46,960
we've had quite a few changes this

50
00:01:50,870 --> 00:01:49,439
started out as a no eva mission about

51
00:01:51,910 --> 00:01:50,880
halfway through the training flow we

52
00:01:53,670 --> 00:01:51,920
picked up

53
00:01:54,950 --> 00:01:53,680
two space walks and then about three

54
00:01:57,350 --> 00:01:54,960
fourths of the way through the training

55
00:01:59,749 --> 00:01:57,360
flow we changed the content quite a bit

56
00:02:00,950 --> 00:01:59,759
due to the pump module failure on space

57
00:02:02,469 --> 00:02:00,960
station

58
00:02:04,469 --> 00:02:02,479
as a result the team has done an

59
00:02:06,789 --> 00:02:04,479
outstanding job of adapting to all the

60
00:02:09,350 --> 00:02:06,799
changes that have come their way so i'd

61
00:02:10,869 --> 00:02:09,360
just like to thank the crew and the eva

62
00:02:12,550 --> 00:02:10,879
team for all the hard work and long

63
00:02:14,630 --> 00:02:12,560

hours that they've put in to get us to

64
00:02:16,150 --> 00:02:14,640
the point where we are today

65
00:02:20,869 --> 00:02:16,160
with that i would like to roll the video

66
00:02:26,390 --> 00:02:22,470
both crew members will be starting out

67
00:02:27,750 --> 00:02:26,400
outside the u.s joint airlock

68
00:02:29,350 --> 00:02:27,760
they'll head out the nest they'll hand

69
00:02:30,949 --> 00:02:29,360
out the necessary bags that are required

70
00:02:32,470 --> 00:02:30,959
for the eva

71
00:02:34,150 --> 00:02:32,480
and then they'll get to work on the

72
00:02:36,150 --> 00:02:34,160
native side of the space station they'll

73
00:02:37,750 --> 00:02:36,160
be working between the u.s laboratory

74
00:02:40,150 --> 00:02:37,760
and node one

75
00:02:41,750 --> 00:02:40,160
they'll be installing an extension cable

76
00:02:45,110 --> 00:02:41,760
this will provide an extension to the

77
00:02:47,110 --> 00:02:45,120
power outlet j612

78
00:02:49,509 --> 00:02:47,120
this extension is important because you

79
00:02:51,110 --> 00:02:49,519
won't be able to access this port

80
00:02:53,350 --> 00:02:51,120
as it is today once the permanent

81
00:02:54,949 --> 00:02:53,360
multi-purpose module is installed after

82
00:02:56,869 --> 00:02:54,959
the cva

83
00:02:59,670 --> 00:02:56,879
we also want access to this to provide

84
00:03:01,030 --> 00:02:59,680
contingency power to node 3 in the event

85
00:03:05,509 --> 00:03:01,040
that needs to be demated for a

86
00:03:08,790 --> 00:03:07,030
from there both crew members will head

87
00:03:10,550 --> 00:03:08,800
off and start preparing

88
00:03:15,350 --> 00:03:10,560

to return the failed pump module to

89
00:03:19,990 --> 00:03:16,869
tim will begin setting up the space

90
00:03:22,630 --> 00:03:21,190
and off in the distance there on the

91
00:03:24,470 --> 00:03:22,640
mobile transporter you can see the

92
00:03:26,470 --> 00:03:24,480
failed pump module that will be returned

93
00:03:28,070 --> 00:03:26,480
later in the eva

94
00:03:30,789 --> 00:03:28,080
tim will be installing a portable foot

95
00:03:32,710 --> 00:03:30,799
restraint on the end of the robotic arm

96
00:03:37,430 --> 00:03:32,720
he'll then ingress that foot restraint

97
00:03:41,430 --> 00:03:39,270
meanwhile i'll be working on the port

98
00:03:43,589 --> 00:03:41,440
cedar cart while he'll be retrieving two

99
00:03:46,550 --> 00:03:43,599
bags that were left outside on the pump

100
00:03:50,309 --> 00:03:46,560
module evas he'll stall instead he will

101
00:03:58,869 --> 00:03:52,149
and then carry that bundle down to

102
00:04:03,509 --> 00:04:01,270
now this is the permanent home for the

103
00:04:08,710 --> 00:04:03,519
pump module external storage platform 2

104
00:04:12,710 --> 00:04:10,710
once al gets back to external storage

105
00:04:15,110 --> 00:04:12,720
platform 2

106
00:04:16,789 --> 00:04:15,120
he'll stow the portable foot restraint

107
00:04:18,469 --> 00:04:16,799
and then begin routing the vent tool and

108
00:04:20,469 --> 00:04:18,479
vent tool extender

109
00:04:22,550 --> 00:04:20,479
that was contained in one of those bags

110
00:04:23,830 --> 00:04:22,560
this will allow them to vent the 10

111
00:04:28,469 --> 00:04:23,840
pounds of ammonia that's currently in

112
00:04:30,790 --> 00:04:28,479
the pump module at the beginning of eva2

113
00:04:32,390 --> 00:04:30,800

meanwhile a tim will have translated up

114
00:04:34,550 --> 00:04:32,400
to the mobile transporter and will

115
00:04:35,909 --> 00:04:34,560
retrieve the failed pump module he'll

116
00:04:37,830 --> 00:04:35,919
reorient it

117
00:04:39,270 --> 00:04:37,840
to get it in the correct orientation to

118
00:04:43,350 --> 00:04:39,280
be installed on external stowage

119
00:04:46,790 --> 00:04:45,030
here you can see tim working the neutral

120
00:04:48,150 --> 00:04:46,800
buoyancy lab with the mock-up that we

121
00:04:50,230 --> 00:04:48,160
train with

122
00:04:52,790 --> 00:04:50,240
the real pump module weigh about 800

123
00:04:56,150 --> 00:04:54,310
tim and i will work together to get this

124
00:04:58,070 --> 00:04:56,160
partially installed at which point

125
00:05:00,390 --> 00:04:58,080
they'll remove the adjustable grapple

126
00:05:03,029 --> 00:05:00,400
bar and temp stow that the adjustable

127
00:05:04,390 --> 00:05:03,039
grapple bar was used to temporarily stow

128
00:05:05,830 --> 00:05:04,400
the pump module on the mobile

129
00:05:07,909 --> 00:05:05,840
transporter

130
00:05:09,909 --> 00:05:07,919
i'll then drive four bolts to secure the

131
00:05:12,230 --> 00:05:09,919
pump module into place mate the vent

132
00:05:17,670 --> 00:05:12,240
tool and close the thermal blanket over

133
00:05:21,430 --> 00:05:19,430
tim and i will then work together to

134
00:05:24,790 --> 00:05:21,440
stow the adjustable grapple bar on the

135
00:05:26,629 --> 00:05:24,800
flex hose rotary coupler

136
00:05:28,310 --> 00:05:26,639
this is the permanent stowage location

137
00:05:31,830 --> 00:05:28,320
for this tool until it's needed on a

138
00:05:34,710 --> 00:05:33,670

from there the crew members

139
00:05:37,270 --> 00:05:34,720
will

140
00:05:39,189 --> 00:05:37,280
begin to tear down the arm

141
00:05:41,270 --> 00:05:39,199
tim will remove the portable foot

142
00:05:44,469 --> 00:05:41,280
restraint and stow it on as external

143
00:05:48,950 --> 00:05:44,479
stowage platform 2 for use on eva2 when

144
00:05:53,029 --> 00:05:50,629
and then owl will retrieve the portable

145
00:05:55,270 --> 00:05:53,039
foot restraint that he got from the

146
00:05:56,550 --> 00:05:55,280
cedar cart earlier now he'll be playing

147
00:05:59,270 --> 00:05:56,560
a bit of a shell game with foot

148
00:06:00,870 --> 00:05:59,280
restraints here once he arrives at z1

149
00:06:03,189 --> 00:06:00,880
he'll stow the foot restraint from the

150
00:06:05,189 --> 00:06:03,199
seat of cart he'll then take some time

151
00:06:08,309 --> 00:06:05,199
to open two thermal blankets that are

152
00:06:10,070 --> 00:06:08,319
covering orbital replacement units

153
00:06:12,390 --> 00:06:10,080
by opening the thermal blankets it will

154
00:06:14,390 --> 00:06:12,400
provide dexter access in case these

155
00:06:16,790 --> 00:06:14,400
orbital replacement units need to be

156
00:06:18,550 --> 00:06:16,800
changed out robotically by dexter

157
00:06:19,830 --> 00:06:18,560
he'll then remove a tool stanchion from

158
00:06:21,909 --> 00:06:19,840
the portable foot restraint that's going

159
00:06:23,909 --> 00:06:21,919
to need to come inside move it over to

160
00:06:25,510 --> 00:06:23,919
the one he just brought up

161
00:06:27,749 --> 00:06:25,520
and he'll retrieve

162
00:06:29,749 --> 00:06:27,759
a portable foot restraint that contains

163
00:06:31,749 --> 00:06:29,759

a heat shield on the bottom this heat

164
00:06:32,870 --> 00:06:31,759
shield prevents this foot restraint from

165
00:06:34,950 --> 00:06:32,880
being installed in some of the work

166
00:06:36,230 --> 00:06:34,960
worksite interfaces on the outside of

167
00:06:38,230 --> 00:06:36,240
space station

168
00:06:40,390 --> 00:06:38,240
this is the last foot restraint that has

169
00:06:42,710 --> 00:06:40,400
its heat shield so i'll take it put it

170
00:06:44,390 --> 00:06:42,720
back in the air lock and between evas

171
00:06:49,110 --> 00:06:44,400
they'll remove this heat shield bring it

172
00:06:53,510 --> 00:06:51,029
from there both crew members will head

173
00:06:55,830 --> 00:06:53,520
out to the starboard truss near express

174
00:06:57,749 --> 00:06:55,840
logistics carrier number four that was

175
00:06:59,350 --> 00:06:57,759
installed earlier in the mission

176
00:07:01,990 --> 00:06:59,360
there they'll be installing a camera

177
00:07:04,390 --> 00:07:02,000
wedge this wedge will can't the camera

178
00:07:07,029 --> 00:07:04,400
and camera stanchion inboard to allow

179
00:07:08,390 --> 00:07:07,039
access to the orbital replacement unit

180
00:07:11,110 --> 00:07:08,400
site that you see in the background

181
00:07:14,150 --> 00:07:12,469
here you can see them removing the

182
00:07:16,150 --> 00:07:14,160
camera and stanchion in the neutral

183
00:07:17,749 --> 00:07:16,160
buoyancy lab

184
00:07:21,350 --> 00:07:17,759
once that's removed tim will hold the

185
00:07:23,749 --> 00:07:21,360
camera steady while al installs a wedge

186
00:07:27,029 --> 00:07:23,759
in the installation location they'll

187
00:07:28,870 --> 00:07:27,039
then reinstall the camera to the wedge

188
00:07:31,029 --> 00:07:28,880

as you see them doing here and now it'll

189
00:07:33,350 --> 00:07:31,039
be in it's a new configuration canted

190
00:07:35,110 --> 00:07:33,360
outboard with plenty of room to still

191
00:07:37,110 --> 00:07:35,120
open replacement units on these fram

192
00:07:39,189 --> 00:07:37,120
sites

193
00:07:41,189 --> 00:07:39,199
at this point if everything's going well

194
00:07:43,270 --> 00:07:41,199
we think we'll have time to perform a

195
00:07:44,390 --> 00:07:43,280
couple of get aheads the primary get

196
00:07:45,749 --> 00:07:44,400
ahead that we would like to get

197
00:07:46,790 --> 00:07:45,759
accomplished on this flight is

198
00:07:49,270 --> 00:07:46,800
installing

199
00:07:51,029 --> 00:07:49,280
rail stubs

200
00:07:53,350 --> 00:07:51,039
these stubs will extend the rails that

201
00:07:55,830 --> 00:07:53,360
the ceda card and mobile transporter

202
00:07:58,469 --> 00:07:55,840
translate on and will allow them to go

203
00:08:01,189 --> 00:07:58,479
to the starboard most work site this

204
00:08:04,070 --> 00:08:01,199
will allow robotics operations farther

205
00:08:05,350 --> 00:08:04,080
outboard on the starboard truss

206
00:08:09,990 --> 00:08:05,360
here you can see them installing the

207
00:08:14,150 --> 00:08:11,749
and there's also a zenith stub that

208
00:08:16,309 --> 00:08:14,160
they'll be installing

209
00:08:17,909 --> 00:08:16,319
now the nader stub has a built-in stop

210
00:08:20,070 --> 00:08:17,919
on it this stop will prevent the

211
00:08:22,469 --> 00:08:20,080
acetocard and mobile transporter from

212
00:08:25,110 --> 00:08:22,479
traveling too far outboard off the end

213
00:08:29,830 --> 00:08:27,430

currently there are in place two stops

214
00:08:31,510 --> 00:08:29,840
that can now be released

215
00:08:34,230 --> 00:08:31,520
this is also a get ahead task that we

216
00:08:36,230 --> 00:08:34,240
hope to get done

217
00:08:38,389 --> 00:08:36,240
there's the tether shuttle stop that

218
00:08:39,589 --> 00:08:38,399
prevents an eva tool from going too far

219
00:08:41,750 --> 00:08:39,599
outboard

220
00:08:44,870 --> 00:08:41,760
here you can see

221
00:08:46,310 --> 00:08:44,880
tim rotating out the tether shuttle stop

222
00:08:49,030 --> 00:08:46,320
and then we also have the mobile

223
00:08:52,150 --> 00:08:49,040
transporter stop or mt stop and that we

224
00:08:57,670 --> 00:08:53,750
this prevents the seat of cars or mobile

225
00:08:58,949 --> 00:08:57,680
transporter from going too far outboard

226
00:09:00,710 --> 00:08:58,959
with that both crew members will

227
00:09:02,630 --> 00:09:00,720
translate back to the us joint airlock

228
00:09:04,870 --> 00:09:02,640
and perform their final task this is

229
00:09:07,110 --> 00:09:04,880
jax's message in a bottle they'll use

230
00:09:10,949 --> 00:09:07,120
this to capture the vacuum of space and

231
00:09:15,110 --> 00:09:13,269
okay i mentioned on eva 1 that they will

232
00:09:17,590 --> 00:09:15,120
be setting up a vent tool and vent tool

233
00:09:19,750 --> 00:09:17,600
extender this will be used to

234
00:09:22,389 --> 00:09:19,760
vent the 10 pounds of ammonia that's

235
00:09:25,269 --> 00:09:22,399
currently inside the pump module now the

236
00:09:27,190 --> 00:09:25,279
reason we have this tool is to uh

237
00:09:28,550 --> 00:09:27,200
is to protect the crew from the actual

238
00:09:30,630 --> 00:09:28,560

venting that takes place and from the

239
00:09:34,310 --> 00:09:30,640
ammonia so you can see this end is going

240
00:09:37,030 --> 00:09:35,509
and once it's attached to the pump

241
00:09:38,790 --> 00:09:37,040
module

242
00:09:40,949 --> 00:09:38,800
we'll have another end this is called

243
00:09:42,550 --> 00:09:40,959
the vent tool and then we'll have the

244
00:09:45,190 --> 00:09:42,560
this end will attach to the vent tool

245
00:09:48,870 --> 00:09:45,200
extender you can see the two pieces mate

246
00:09:50,949 --> 00:09:48,880
here they'll be locked into place

247
00:09:53,030 --> 00:09:50,959
and then we have approximately 15 feet

248
00:09:54,710 --> 00:09:53,040
total of length

249
00:09:56,310 --> 00:09:54,720
and this will be the nozzle

250
00:09:59,350 --> 00:09:56,320
that's at the end the ammonia will be

251
00:10:01,509 --> 00:09:59,360
vented from and so this nozzle we have

252
00:10:03,430 --> 00:10:01,519
the option of clocking it in many

253
00:10:05,430 --> 00:10:03,440
different directions in 30 degree

254
00:10:07,509 --> 00:10:05,440
increments with an eva change out

255
00:10:09,430 --> 00:10:07,519
mechanism or ecom fitting

256
00:10:11,750 --> 00:10:09,440
and that will connect to a handrail

257
00:10:13,269 --> 00:10:11,760
outside of the lab using a mutt end

258
00:10:17,509 --> 00:10:13,279
effector

259
00:10:19,829 --> 00:10:17,519
see these jaws will then clamp around a

260
00:10:21,910 --> 00:10:19,839
handrail on the outside of space station

261
00:10:23,670 --> 00:10:21,920
and so again this is used to

262
00:10:25,750 --> 00:10:23,680
protect the crew and sensitive hardware

263
00:10:27,350 --> 00:10:25,760

on the space station

264
00:10:29,110 --> 00:10:27,360
from ammonia

265
00:10:31,509 --> 00:10:29,120
and so with that that leads us into our

266
00:10:35,829 --> 00:10:31,519
first task for eva2 so let's roll the

267
00:10:40,230 --> 00:10:37,269
both crew members will be starting out

268
00:10:41,829 --> 00:10:40,240
outside the u.s joint airlock once again

269
00:10:45,590 --> 00:10:41,839
they'll retrieve the necessary bags for

270
00:10:49,110 --> 00:10:47,430
and then tim will grab the portable foot

271
00:10:51,430 --> 00:10:49,120
restraint that had the heat shield

272
00:10:52,470 --> 00:10:51,440
removed during the eva or between the

273
00:10:54,389 --> 00:10:52,480
evas

274
00:10:55,990 --> 00:10:54,399
he'll stow that foot restraint outside

275
00:10:57,590 --> 00:10:56,000
and now it will be able to be installed

276
00:10:59,590 --> 00:10:57,600
in any of the worksite interfaces

277
00:11:01,509 --> 00:10:59,600
outside of space station

278
00:11:03,990 --> 00:11:01,519
i will head over to the pump module and

279
00:11:07,269 --> 00:11:04,000
get ready for the venting task

280
00:11:08,710 --> 00:11:07,279
he'll ingress a portable foot restraint

281
00:11:11,829 --> 00:11:08,720
and open the thermal blanket on the

282
00:11:15,750 --> 00:11:13,509
then he'll throw the bail on the vent

283
00:11:17,590 --> 00:11:15,760
tool and we expect all the ammonia to be

284
00:11:19,030 --> 00:11:17,600
vented out in approximately 10 seconds

285
00:11:20,150 --> 00:11:19,040
but we're going to leave the veil the

286
00:11:21,829 --> 00:11:20,160
valve open

287
00:11:25,750 --> 00:11:21,839
for two minutes just to make sure that

288
00:11:29,430 --> 00:11:27,190

at that point al will start cleaning up

289
00:11:32,710 --> 00:11:29,440
the vent tool and vent tool extender

290
00:11:34,310 --> 00:11:32,720
he'll put them in their appropriate bags

291
00:11:36,389 --> 00:11:34,320
and he'll return those bags to the

292
00:11:37,750 --> 00:11:36,399
zenith side of the airlock

293
00:11:39,509 --> 00:11:37,760
the second bag that you see here

294
00:11:41,350 --> 00:11:39,519
contains the pump module jumper that was

295
00:11:47,350 --> 00:11:41,360
used during the increment pump module

296
00:11:52,470 --> 00:11:49,670
here you can see al stowing those bags

297
00:11:54,230 --> 00:11:52,480
on the zenith side of the joint airlock

298
00:11:57,430 --> 00:11:54,240
he'll then translate out starboard to

299
00:11:58,949 --> 00:11:57,440
express logistics carrier number four

300
00:12:01,509 --> 00:11:58,959
and there he'll be removing a thermal

301
00:12:03,030 --> 00:12:01,519
blanket that was required for launch but

302
00:12:04,710 --> 00:12:03,040
now that

303
00:12:06,230 --> 00:12:04,720
this oru is receiving our orbital

304
00:12:08,230 --> 00:12:06,240
replacement unit is receiving space

305
00:12:10,470 --> 00:12:08,240
station power this blanket is no longer

306
00:12:13,990 --> 00:12:10,480
required so he'll roll that up and stow

307
00:12:17,509 --> 00:12:15,509
meanwhile tim will be setting up the

308
00:12:21,269 --> 00:12:17,519
space station robotic arm on the

309
00:12:24,870 --> 00:12:22,710
there he'll be installing a portable

310
00:12:26,470 --> 00:12:24,880
foot restraint

311
00:12:28,790 --> 00:12:26,480
and he'll get ready to remove the

312
00:12:36,870 --> 00:12:28,800
lightweight adapter plate assembly from

313
00:12:40,870 --> 00:12:38,790

so here you can see tim

314
00:12:42,310 --> 00:12:40,880
working in the neutral buoyancy lab

315
00:12:44,389 --> 00:12:42,320
he'll have to rotate this lightweight

316
00:12:45,670 --> 00:12:44,399
adapter plate assembly 180 degrees in

317
00:12:47,829 --> 00:12:45,680
order to get it in the correct

318
00:12:50,069 --> 00:12:47,839
orientation to be stowed in the shuttle

319
00:12:52,150 --> 00:12:50,079
payload bay

320
00:12:54,310 --> 00:12:52,160
now this was part of a material science

321
00:12:57,030 --> 00:12:54,320
experiment the other two components have

322
00:12:58,550 --> 00:12:57,040
been brought down this is the third and

323
00:13:00,629 --> 00:12:58,560
final component that needs to be brought

324
00:13:02,389 --> 00:13:00,639
to the ground and contains about 10 of

325
00:13:04,069 --> 00:13:02,399
the data for the experiment

326
00:13:06,470 --> 00:13:04,079
this experiment was originally launched

327
00:13:08,069 --> 00:13:06,480
on sts-123

328
00:13:10,310 --> 00:13:08,079
here you can see tim

329
00:13:12,150 --> 00:13:10,320
riding the arm into the payload bay

330
00:13:14,310 --> 00:13:12,160
he'll drive a single bolt to secure the

331
00:13:18,310 --> 00:13:14,320
lightweight adapter plate assembly to

332
00:13:22,470 --> 00:13:19,590
he'll then ride the space station

333
00:13:23,910 --> 00:13:22,480
robotic arm over to dexter

334
00:13:25,430 --> 00:13:23,920
canada's robot

335
00:13:30,550 --> 00:13:25,440
here you see a view out of the cupola

336
00:13:33,910 --> 00:13:32,069
once he arrives at dexter he'll be

337
00:13:35,590 --> 00:13:33,920
installing a camera

338
00:13:39,750 --> 00:13:35,600

this will be the final component to

339
00:13:43,509 --> 00:13:41,350
he'll then remove a thermal blanket on

340
00:13:46,310 --> 00:13:43,519
dexter this blanket was needed for

341
00:13:47,509 --> 00:13:46,320
launch but now if dexter's working hard

342
00:13:49,030 --> 00:13:47,519
on a given day

343
00:13:53,430 --> 00:13:49,040
may cause things to get too warm so

344
00:14:00,949 --> 00:13:55,189
from there he'll ride the robotic arm

345
00:14:05,670 --> 00:14:03,110
see the arm translation path here coming

346
00:14:07,990 --> 00:14:05,680
past the orbiter

347
00:14:11,430 --> 00:14:08,000
once he's back at columbus he'll remove

348
00:14:16,230 --> 00:14:13,189
and reconfigure his tethers and be

349
00:14:17,590 --> 00:14:16,240
tethered back to space station

350
00:14:21,910 --> 00:14:17,600
he'll install that portable foot

351
00:14:25,430 --> 00:14:23,430
and then you'll head back to the robotic

352
00:14:27,430 --> 00:14:25,440
arm one more time where he'll install a

353
00:14:29,670 --> 00:14:27,440
lens cover on one of the cameras on the

354
00:14:31,430 --> 00:14:29,680
elbow of the arm now this cover will

355
00:14:33,590 --> 00:14:31,440
protect the lens from the plumes of

356
00:14:39,110 --> 00:14:33,600
visiting vehicles when they arrive and

357
00:14:42,949 --> 00:14:41,430
meanwhile al will translate over to the

358
00:14:44,710 --> 00:14:42,959
port truss

359
00:14:46,069 --> 00:14:44,720
al has quite a translation path he goes

360
00:14:49,990 --> 00:14:46,079
almost all the way starboard then all

361
00:14:53,189 --> 00:14:51,110
here on the porch truss he'll be

362
00:14:57,990 --> 00:14:53,199
installing a light this light will

363
00:14:59,509 --> 00:14:58,000

illuminate the solar alpha rotary joint

364
00:15:01,030 --> 00:14:59,519
we'll provide lighting during night

365
00:15:03,269 --> 00:15:01,040
passes for the eb crew when they're

366
00:15:05,030 --> 00:15:03,279
working in this area

367
00:15:06,870 --> 00:15:05,040
and then translate up to the zenith part

368
00:15:08,949 --> 00:15:06,880
of the truss

369
00:15:10,550 --> 00:15:08,959
once he gets there he'll be reinstalling

370
00:15:12,470 --> 00:15:10,560
a thermal bootie

371
00:15:13,670 --> 00:15:12,480
over a fluid quick disconnect

372
00:15:15,350 --> 00:15:13,680
this is something that was noticed that

373
00:15:17,350 --> 00:15:15,360
was out of configuration so he'll

374
00:15:19,110 --> 00:15:17,360
reinstall that to maintain the

375
00:15:20,629 --> 00:15:19,120
appropriate temperature for this fluid

376
00:15:22,629 --> 00:15:20,639
quick disconnect

377
00:15:24,470 --> 00:15:22,639
he'll then translate down

378
00:15:25,670 --> 00:15:24,480
to the nader side of the radiator where

379
00:15:28,150 --> 00:15:25,680
he'll be

380
00:15:29,749 --> 00:15:28,160
troubleshooting two radiator grapple

381
00:15:31,430 --> 00:15:29,759
stow beams that were installed on

382
00:15:32,550 --> 00:15:31,440
sts-131

383
00:15:34,310 --> 00:15:32,560
and when these were installed they

384
00:15:35,670 --> 00:15:34,320
weren't as secure as we expected them to

385
00:15:37,189 --> 00:15:35,680
be so i'll be going through some

386
00:15:39,189 --> 00:15:37,199
troubleshooting steps to get them

387
00:15:40,949 --> 00:15:39,199
re-secured

388
00:15:42,230 --> 00:15:40,959

these would be used in the event that we

389
00:15:45,110 --> 00:15:42,240
needed to

390
00:15:47,430 --> 00:15:45,120
change out a radiator

391
00:15:48,870 --> 00:15:47,440
i will then head over to node three

392
00:15:51,350 --> 00:15:48,880
there he'll be removing a thermal

393
00:15:53,189 --> 00:15:51,360
blanket now this blanket has a couple of

394
00:15:55,670 --> 00:15:53,199
connectors underneath it that have

395
00:15:57,110 --> 00:15:55,680
created a tent and because of this tint

396
00:15:59,509 --> 00:15:57,120
configuration

397
00:16:01,030 --> 00:15:59,519
we're worried that it could get too hot

398
00:16:02,470 --> 00:16:01,040
the connectors can get too warm so by

399
00:16:05,430 --> 00:16:02,480
removing this blanket we're mitigating

400
00:16:08,470 --> 00:16:06,710
from there both crew members will head

401
00:16:10,389 --> 00:16:08,480
off to their final task

402
00:16:13,749 --> 00:16:10,399
tim will head over to dexter where he'll

403
00:16:15,590 --> 00:16:13,759
be installing a lens cover on dexter

404
00:16:17,350 --> 00:16:15,600
again to protect

405
00:16:22,870 --> 00:16:17,360
this camera and lens

406
00:16:27,990 --> 00:16:25,670
an owl head to the mobile transporter

407
00:16:29,509 --> 00:16:28,000
or the poa as we call it the payload oru

408
00:16:31,110 --> 00:16:29,519
accommodation

409
00:16:36,230 --> 00:16:31,120
and he'll be installing a lens cover in

410
00:16:40,710 --> 00:16:37,990
from there both crew members will head

411
00:16:42,230 --> 00:16:40,720
back to the u.s joint airlock

412
00:16:48,470 --> 00:16:42,240
where they'll ingress and complete their

413
00:16:51,910 --> 00:16:50,389

that completes my briefing for today i'd

414
00:16:52,949 --> 00:16:51,920
like to hand things back over to the

415
00:16:54,710 --> 00:16:52,959
moderator

416
00:16:57,350 --> 00:16:54,720
okay we'll take questions now starting

417
00:16:58,949 --> 00:16:57,360
here at jsc first and then moving on to

418
00:17:00,949 --> 00:16:58,959
kennedy space center and nasa

419
00:17:02,550 --> 00:17:00,959
headquarters uh just a

420
00:17:06,710 --> 00:17:02,560
reminder to state your name and

421
00:17:12,789 --> 00:17:10,069
uh mark caro for aviation week the

422
00:17:15,029 --> 00:17:12,799
the power cord that gets installed uh

423
00:17:18,150 --> 00:17:15,039
early in the first eva i guess i was a

424
00:17:20,470 --> 00:17:18,160
little confused as to

425
00:17:21,990 --> 00:17:20,480
who's getting the emergency power and

426
00:17:25,110 --> 00:17:22,000
then you mentioned something about in

427
00:17:27,429 --> 00:17:25,120
case of a contingency uh spacewalk

428
00:17:29,430 --> 00:17:27,439
and it almost sounded like you were

429
00:17:31,590 --> 00:17:29,440
talking about if they had to remove

430
00:17:33,029 --> 00:17:31,600
one of the nodes or something for that

431
00:17:35,590 --> 00:17:33,039
and i i just wonder if you could connect

432
00:17:38,310 --> 00:17:35,600
those dots sure so

433
00:17:39,430 --> 00:17:38,320
j612 currently powers the airlock shell

434
00:17:40,710 --> 00:17:39,440
heaters

435
00:17:42,710 --> 00:17:40,720
so what's going to happen is that

436
00:17:44,630 --> 00:17:42,720
they're going to re remove the airlock

437
00:17:47,110 --> 00:17:44,640
shell heater power and install an

438
00:17:48,710 --> 00:17:47,120

extension cable and connect airlock

439
00:17:51,029 --> 00:17:48,720
shell heater back to that extension

440
00:17:52,710 --> 00:17:51,039
cable so as far as power is concerned

441
00:17:54,630 --> 00:17:52,720
it's going to be the same configuration

442
00:17:56,789 --> 00:17:54,640
but now at this point you have a cable

443
00:17:58,310 --> 00:17:56,799
that you're able to access in case you

444
00:17:59,750 --> 00:17:58,320
need to connect to it so you have to

445
00:18:01,750 --> 00:17:59,760
break the connection with the airlock

446
00:18:04,870 --> 00:18:01,760
shell heater power and reconnect and the

447
00:18:06,789 --> 00:18:04,880
reason we want this is when node 3

448
00:18:08,950 --> 00:18:06,799
was brought to space station

449
00:18:11,029 --> 00:18:08,960
it actually had two launch to activation

450
00:18:11,750 --> 00:18:11,039
cables that provided temporary power for

451
00:18:13,510 --> 00:18:11,760
it

452
00:18:16,150 --> 00:18:13,520
there is a case where we would have to

453
00:18:18,390 --> 00:18:16,160
change out a heat exchanger and if that

454
00:18:19,909 --> 00:18:18,400
happened we'd have to demate node three

455
00:18:22,150 --> 00:18:19,919
and would at which point it would have

456
00:18:23,990 --> 00:18:22,160
no power so we would use this launched

457
00:18:29,990 --> 00:18:24,000
activation cable to repower it during

458
00:18:35,590 --> 00:18:32,870
hi robert perlman with collectspace.com

459
00:18:38,310 --> 00:18:35,600
with regards to message in the bottle um

460
00:18:40,310 --> 00:18:38,320
i realize it's a it's an educational or

461
00:18:42,870 --> 00:18:40,320
symbolic activity

462
00:18:44,950 --> 00:18:42,880
so how does it has it rank in terms of

463
00:18:47,510 --> 00:18:44,960

importance in terms of nasa's agreement

464
00:18:50,710 --> 00:18:47,520
with jaxa to have it done if you run

465
00:18:53,110 --> 00:18:50,720
into a length of time another task

466
00:18:55,430 --> 00:18:53,120
does that just get pushed off the table

467
00:18:57,590 --> 00:18:55,440
and um and following up on that since

468
00:18:59,510 --> 00:18:57,600
this it seems to be pretty rare that an

469
00:19:01,190 --> 00:18:59,520
educational or symbolic activities are

470
00:19:03,110 --> 00:19:01,200
scheduled during an eva

471
00:19:04,630 --> 00:19:03,120
can you think of any other examples from

472
00:19:05,830 --> 00:19:04,640
recent time that

473
00:19:07,909 --> 00:19:05,840
they've done something like this in

474
00:19:09,669 --> 00:19:07,919
space thanks i can't think of any other

475
00:19:10,630 --> 00:19:09,679
recent examples

476
00:19:12,710 --> 00:19:10,640
it is

477
00:19:15,029 --> 00:19:12,720
a relatively high priority task and that

478
00:19:16,710 --> 00:19:15,039
we plan to get it done on this mission

479
00:19:18,070 --> 00:19:16,720
if we don't have time to get it done at

480
00:19:20,310 --> 00:19:18,080
the beginning of eva 1 then we'll

481
00:19:22,150 --> 00:19:20,320
perform it first thing on eva 2 and it

482
00:19:24,150 --> 00:19:22,160
is a very quick task

483
00:19:26,070 --> 00:19:24,160
just probably about 10-15 minutes at

484
00:19:27,830 --> 00:19:26,080
most they'll close the valve on it and

485
00:19:30,950 --> 00:19:27,840
take a photo so

486
00:19:34,310 --> 00:19:32,789
um i was confused bill harwood cbs i was

487
00:19:35,750 --> 00:19:34,320
confused about the timing of the ammonia

488
00:19:38,950 --> 00:19:35,760

building is that yes when does that

489
00:19:40,710 --> 00:19:38,960
happen that happens first thing on eva2

490
00:19:42,870 --> 00:19:40,720
and the uh

491
00:19:44,549 --> 00:19:42,880
the tool where where did you say that

492
00:19:46,390 --> 00:19:44,559
the jet would be pointed toward i don't

493
00:19:52,549 --> 00:19:46,400
understand it will be appointed nader

494
00:19:55,590 --> 00:19:53,830
let me ask one more i'm sure along those

495
00:19:57,110 --> 00:19:55,600
same lines though um where will the eva

496
00:19:59,830 --> 00:19:57,120
ev guys be

497
00:20:02,149 --> 00:19:59,840
when the stuff starts spewing

498
00:20:03,830 --> 00:20:02,159
well tim ev1 he's going to be on the lab

499
00:20:05,590 --> 00:20:03,840
and translating out to columbus at that

500
00:20:07,669 --> 00:20:05,600
point and then i will be right near the

501
00:20:09,830 --> 00:20:07,679
pump module so the pump module will be

502
00:20:11,190 --> 00:20:09,840
used to kind of shield him uh from the

503
00:20:14,870 --> 00:20:11,200
plume but the plane will be pointed

504
00:20:18,149 --> 00:20:16,390
mark kirkman of the interspace news just

505
00:20:19,590 --> 00:20:18,159
to follow up on that one questioning um

506
00:20:21,350 --> 00:20:19,600
you said it take you expect it today

507
00:20:23,029 --> 00:20:21,360
about 10 seconds uh you may have also

508
00:20:24,390 --> 00:20:23,039
mentioned what i'm trying to find out is

509
00:20:28,149 --> 00:20:24,400
how much ammonia do you think is in

510
00:20:29,350 --> 00:20:28,159
there it's about 10 pounds 10 pounds

511
00:20:30,950 --> 00:20:29,360
that was it

512
00:20:32,549 --> 00:20:30,960
okay i think that's all the questions

513
00:20:34,870 --> 00:20:32,559

here in the room for now so we'll go

514
00:20:38,549 --> 00:20:34,880
next to

515
00:20:44,149 --> 00:20:38,559
nasa headquarters for questions there

516
00:20:48,149 --> 00:20:45,590
hello this is marcia dunham the

517
00:20:51,510 --> 00:20:48,159
associated press you mentioned that the

518
00:20:53,990 --> 00:20:51,520
vent tool has a 15 foot

519
00:20:56,630 --> 00:20:54,000
give on it is it going to be

520
00:20:58,630 --> 00:20:56,640
unreal to its full length or how will

521
00:21:00,070 --> 00:20:58,640
that work yeah it will be extended to

522
00:21:02,710 --> 00:21:00,080
pretty much its full length it will be

523
00:21:05,590 --> 00:21:02,720
routed along external stowage platform 2

524
00:21:09,350 --> 00:21:05,600
and then over to the lab handrail 237 i

525
00:21:14,230 --> 00:21:12,310
and and how close uh i i'm sorry i sort

526
00:21:16,630 --> 00:21:14,240
of missed part of the explanation for

527
00:21:19,669 --> 00:21:16,640
how all this is going to work el drew is

528
00:21:21,430 --> 00:21:19,679
in charge at this point so he will be 15

529
00:21:23,110 --> 00:21:21,440
feet away um

530
00:21:24,950 --> 00:21:23,120
operating the tool but then you

531
00:21:27,750 --> 00:21:24,960
mentioned he's going to be behind the

532
00:21:29,669 --> 00:21:27,760
pump so i'm visually not getting this

533
00:21:31,830 --> 00:21:29,679
at the pump module where one end is

534
00:21:33,669 --> 00:21:31,840
connected and the other end will be

535
00:21:35,669 --> 00:21:33,679
about 15 feet away

536
00:21:36,950 --> 00:21:35,679
and that will be connected to the lab

537
00:21:38,470 --> 00:21:36,960
that's where the actual plume is going

538
00:21:40,310 --> 00:21:38,480

to be coming out so the ammonia will

539
00:21:43,430 --> 00:21:40,320
travel down the tube out to out the

540
00:21:46,630 --> 00:21:44,870
and so you think there's very very

541
00:21:48,390 --> 00:21:46,640
little um

542
00:21:50,789 --> 00:21:48,400
opportunity for either sensitive

543
00:21:52,710 --> 00:21:50,799
equipment or a spacewalker to walker to

544
00:21:54,789 --> 00:21:52,720
get sprayed and just in case are you

545
00:21:56,470 --> 00:21:54,799
going to use your usual clean off plans

546
00:21:58,310 --> 00:21:56,480
if that happens that's correct we'll be

547
00:22:00,630 --> 00:21:58,320
we're prepared for the ammonia

548
00:22:02,230 --> 00:22:00,640
decontamination if that's needed

549
00:22:03,430 --> 00:22:02,240
and of course that's any time you're

550
00:22:05,510 --> 00:22:03,440
dealing with pneumonia that's always a

551
00:22:08,310 --> 00:22:05,520
possibility using the vent tool and vent

552
00:22:13,590 --> 00:22:08,320
tool extender we are reducing the risk

553
00:22:16,950 --> 00:22:15,270
okay i think that's the last of the

554
00:22:21,350 --> 00:22:16,960
questions that kennedy space center will

555
00:22:25,430 --> 00:22:23,830
hi this is denise ciao from space.com my

556
00:22:27,430 --> 00:22:25,440
question is sort of related to marsha's

557
00:22:29,110 --> 00:22:27,440
but um just wanted to know what the main

558
00:22:31,029 --> 00:22:29,120
risks are with the venting of the

559
00:22:33,110 --> 00:22:31,039
ammonia is it um

560
00:22:35,190 --> 00:22:33,120
the plume is it leaks in the hose or

561
00:22:37,110 --> 00:22:35,200
what are the main concerns there

562
00:22:38,950 --> 00:22:37,120
i think the main concern is is the plume

563
00:22:40,470 --> 00:22:38,960

and also cleaning up the vent tool and

564
00:22:42,710 --> 00:22:40,480
vent tool extender after it's done if

565
00:22:44,070 --> 00:22:42,720
there's any residual ammonia and so if

566
00:22:45,590 --> 00:22:44,080
the crew members do get ammonia on them

567
00:22:46,630 --> 00:22:45,600
it's something that's happened before we

568
00:22:49,029 --> 00:22:46,640
just want to make sure we don't bring

569
00:22:50,710 --> 00:22:49,039
that inside so we have procedures to

570
00:22:52,470 --> 00:22:50,720
make sure that we don't do that we'll

571
00:22:54,230 --> 00:22:52,480
have one crew member come over do the

572
00:22:56,870 --> 00:22:54,240
inspection of the affected crew member

573
00:22:58,710 --> 00:22:56,880
if they see any ammonia they'll then use

574
00:23:00,230 --> 00:22:58,720
a warm metal tool to sublimate any

575
00:23:01,750 --> 00:23:00,240
ammonia off

576
00:23:02,950 --> 00:23:01,760
at that point we'll start a bake out

577
00:23:05,350 --> 00:23:02,960
calculator

578
00:23:07,270 --> 00:23:05,360
this will allow enough time for the any

579
00:23:08,789 --> 00:23:07,280
residual ammonia to bake off the crew

580
00:23:10,310 --> 00:23:08,799
member and so that'll depend on the

581
00:23:12,070 --> 00:23:10,320
locations they're at outside of space

582
00:23:13,909 --> 00:23:12,080
station as to how long this actually

583
00:23:15,190 --> 00:23:13,919
this bake out needs to happen but uh

584
00:23:17,430 --> 00:23:15,200
they'll be able to perform their their

585
00:23:19,190 --> 00:23:17,440
nominal eba tasks during this time and

586
00:23:20,870 --> 00:23:19,200
when they come back inside

587
00:23:22,870 --> 00:23:20,880
they'll perform a test where they have a

588
00:23:25,990 --> 00:23:22,880

drager tube that will record the amount

589
00:23:27,830 --> 00:23:26,000
of ammonia in the airlock and if it's

590
00:23:29,750 --> 00:23:27,840
not within acceptable limits i will have

591
00:23:31,909 --> 00:23:29,760
the crew come back outside and perform

592
00:23:33,430 --> 00:23:31,919
an additional bake out so all this takes

593
00:23:34,390 --> 00:23:33,440
time we'll make sure to protect enough

594
00:23:35,990 --> 00:23:34,400
time

595
00:23:39,669 --> 00:23:36,000
for the worst case to happen and get

596
00:23:41,350 --> 00:23:39,679
this additional bake out done if needed

597
00:23:42,789 --> 00:23:41,360
okay i think that was in the questions

598
00:23:44,789 --> 00:23:42,799
at headquarters any other questions here

599
00:23:46,390 --> 00:23:44,799
in the room

600
00:23:49,029 --> 00:23:46,400
okay i think that will wrap up our

601
00:23:51,310 --> 00:23:49,039
briefing then coming up next on nasa tv

602
00:23:53,029 --> 00:23:51,320
we'll be showing some b-roll from the

603
00:23:55,510 --> 00:23:53,039
sts-133

604
00:23:57,029 --> 00:23:55,520
pre-flight materials and then coming up

605
00:23:59,350 --> 00:23:57,039
at

606
00:24:01,029 --> 00:23:59,360
1 pm central time we'll be back with a

607
00:24:03,269 --> 00:24:01,039
look at the station's first robotic crew

608
00:24:05,909 --> 00:24:03,279
member robonaut 2. that'll be followed

609
00:24:07,669 --> 00:24:05,919
at 2 pm by the sts-133 crew news

610
00:24:09,830 --> 00:24:07,679
conference and of course you can find

611
00:24:10,830 --> 00:24:09,840
out about all of these activities online

612
00:24:13,269 --> 00:24:10,840
at