

Expedition 53 Spacewalkers

U.S. SPACEWALK 44



RANDY BRESNIK
COMMANDER
EV1



MARK VANDE HEI
FLIGHT ENGINEER
EV2

1
00:00:04,003 --> 00:00:07,407
>> GOOD AFTERNOON AND WELCOME TO

2
00:00:07,407 --> 00:00:09,142
NASA's JOHNSON's SPACE CENTER

3
00:00:09,142 --> 00:00:11,077
WHEN WHERE WE ARE GETTING READY

4
00:00:11,077 --> 00:00:12,746
FOR 3 UPCOMING SPACE WALKS, THE

5
00:00:12,746 --> 00:00:14,948
FIRST OF WHICH WILL KICK OFF ON

6
00:00:14,948 --> 00:00:15,615
THURSDAY THIS WEEK.

7
00:00:15,615 --> 00:00:17,083
HERE TO TELL YOU ABOUT

8
00:00:17,083 --> 00:00:19,652
EVERYTHING THAT THE CREW ON

9
00:00:19,652 --> 00:00:21,287
BOARD INTERNATIONAL SPACE

10
00:00:21,287 --> 00:00:22,522
STATION WILL BE GETTING READY TO

11
00:00:22,522 --> 00:00:24,958
DO WE HAVE A GREAT PAN NOTL OF

12
00:00:24,958 --> 00:00:25,291
EXPERTS.

13
00:00:25,291 --> 00:00:27,761

FIRST HERE TO MY LEFT IS THE

14

00:00:27,761 --> 00:00:28,561

OPERATIONS AND INTEGRATION

15

00:00:28,561 --> 00:00:31,131

MANAGER TO THE INTERNATIONAL

16

00:00:31,131 --> 00:00:31,965

SPACE STATION.

17

00:00:31,965 --> 00:00:35,468

DOWN THE LINE WE HAVE JUDD

18

00:00:35,468 --> 00:00:36,236

FREELY, SPACE STATION FLIGHT

19

00:00:36,236 --> 00:00:37,704

DOCTOR DIRECTOR WHO WILL BE

20

00:00:37,704 --> 00:00:41,708

OVERSEEING A COUPLE OF THE SPACE

21

00:00:41,708 --> 00:00:43,877

WALKS AND NEXT TO HIM TIM

22

00:00:43,877 --> 00:00:45,745

PWRAEUTSDZ WAIT, THE PROGRAM

23

00:00:45,745 --> 00:00:50,784

LIAISON FOR THE CANADIAN SPACE

24

00:00:50,784 --> 00:00:55,188

AGENCY, AND THEN IF FINALLY OUR

25

00:00:55,188 --> 00:00:58,725

TWO SPACE WALK OFFICERS MISSION

26
00:00:58,725 --> 00:00:59,926
CONTROL, FIRST JACQUELINE WILL

27
00:00:59,926 --> 00:01:02,896
BE THE SPACE WALK OFFICER FOR

28
00:01:02,896 --> 00:01:04,597
FIRST SPACE WALK.

29
00:01:04,597 --> 00:01:06,099
AND GLENDA BROWN WHO WILL BE IN

30
00:01:06,099 --> 00:01:08,468
MISSION CONTROL FOR SECOND AND

31
00:01:08,468 --> 00:01:10,737
THIRD EXCURSIONS.

32
00:01:10,737 --> 00:01:12,138
WE'LL START OFF WITH AN OVERVIEW

33
00:01:12,138 --> 00:01:14,040
FROM EACH OF THESE FOLKS AND

34
00:01:14,040 --> 00:01:15,475
THEN WE'LL TAKE QUESTIONS BOTH

35
00:01:15,475 --> 00:01:17,143
HERE IN THE ROOM AND ON SOCIAL

36
00:01:17,143 --> 00:01:18,545
MEDIA IF YOU'RE WATCHING SO THAT

37
00:01:18,545 --> 00:01:19,879
WAY YOU CAN SEND IN YOUR

38
00:01:19,879 --> 00:01:24,083

QUESTIONS USING THE #ASKNASA.

39

00:01:24,083 --> 00:01:24,384

KENNY?

40

00:01:24,384 --> 00:01:25,819

>> THANKS, BRANDY.

41

00:01:25,819 --> 00:01:27,520

GOOD AFTERNOON EVERY ONE AND

42

00:01:27,520 --> 00:01:30,290

IT'S GREAT TO SEE YOU AND GREAT

43

00:01:30,290 --> 00:01:31,491

TO BE HERE. WE'LL TALK A LITTLE

44

00:01:31,491 --> 00:01:33,326

BIT ABOUT THE E.V.A's TODAY BUT

45

00:01:33,326 --> 00:01:34,194

WHEN YOU ARE TALKING ABOUT SOME

46

00:01:34,194 --> 00:01:36,663

OF THE THINGS GOING ON AROUND

47

00:01:36,663 --> 00:01:38,731

THESE, I FIGURED I'D KIND OF

48

00:01:38,731 --> 00:01:40,233

GIVE YOU AN UPDATE ON WHAT'S

49

00:01:40,233 --> 00:01:42,035

GOING ON ON BOARD.

50

00:01:42,035 --> 00:01:46,806

CREW HAS BEEN BUSY THE MONTH OF

51
00:01:46,806 --> 00:01:47,173
SEPTEMBER.

52
00:01:47,173 --> 00:01:51,911
WE BROUGHT HOME PEGGY WHITSON

53
00:01:51,911 --> 00:01:52,645
AND JACK FISCHER.

54
00:01:52,645 --> 00:01:53,780
AROUND THE MIDDLE OF SEPTEMBER

55
00:01:53,780 --> 00:01:55,682
WE WERE ABLE TO WELCOME A NEW

56
00:01:55,682 --> 00:02:00,453
CREW ON BOARD ALEXANDER AND JOE

57
00:02:00,453 --> 00:02:02,121
AND MARK.

58
00:02:02,121 --> 00:02:04,791
IT WAS GREAT TO GET THE USOS

59
00:02:04,791 --> 00:02:07,794
CREW UP TO 4 WHERE WE'LL BE SOME

60
00:02:07,794 --> 00:02:08,828
SOMETIME GOING FORWARD.

61
00:02:08,828 --> 00:02:11,131
THE CREW'S BEEN BUSY THIS LAST

62
00:02:11,131 --> 00:02:12,665
COUPLE OF WEEKS.

63
00:02:12,665 --> 00:02:15,602

PRIMARILY TRYING TO GET

64

00:02:15,602 --> 00:02:16,936

COMPLETED WITH THE SpaceX 12

65

00:02:16,936 --> 00:02:18,204

MISSION AND GET THAT CARGO

66

00:02:18,204 --> 00:02:19,472

SAFELY BACK TO THE BROWNE AND

67

00:02:19,472 --> 00:02:20,940

HAPPY TO REPORT THAT EVERYTHING

68

00:02:20,940 --> 00:02:24,777

WAS NOMINAL IN THAT REGARD, ALL

69

00:02:24,777 --> 00:02:26,246

THE SCIENCE RETURN HOME SAFELY

70

00:02:26,246 --> 00:02:27,847

AND DELIVERED TO A BUNCH OF

71

00:02:27,847 --> 00:02:29,516

PRINCIPAL INVESTIGATORS WHO ARE

72

00:02:29,516 --> 00:02:33,286

EXTREMELY HAPPY WITH THE

73

00:02:33,286 --> 00:02:34,120

RESULTS.

74

00:02:34,120 --> 00:02:35,788

PART OF LAST WEEK AND THIS WEEK

75

00:02:35,788 --> 00:02:37,690

HAS BEEN DEDICATED TO TRYING TO

76

00:02:37,690 --> 00:02:39,392

GET READY FOR THESE E.V.A's.

77

00:02:39,392 --> 00:02:41,494

AS YOU CAN IMAGINE THERE IS A

78

00:02:41,494 --> 00:02:44,030

LOT OF WORK DOING THE PREP FOR

79

00:02:44,030 --> 00:02:46,065

THESE E.V.A's.

80

00:02:46,065 --> 00:02:48,468

THE FOLKS TO MY LEFT WILL BE

81

00:02:48,468 --> 00:02:49,936

TALKING ABOUT SOME OF THE MORE

82

00:02:49,936 --> 00:02:51,538

DETAILED PARTS OF GETTING READY

83

00:02:51,538 --> 00:02:55,942

TO DO THE E.V.A.

84

00:02:55,942 --> 00:02:58,845

RANDY BRESNIK AND PAULY AND JOE

85

00:02:58,845 --> 00:03:02,181

AND MARK HAVE BEEN DOING A

86

00:03:02,181 --> 00:03:03,249

FANTASTIC JOB AT TAKING CARE OF

87

00:03:03,249 --> 00:03:07,153

THE USOS AND SERGEY ALEXANDER

88

00:03:07,153 --> 00:03:08,354

AGAIN DOING A VERY NICE JOB ON

89

00:03:08,354 --> 00:03:10,323

THE RUSSIAN SEGMENT.

90

00:03:10,323 --> 00:03:11,591

OVERALL THE STATION'S IN VERY

91

00:03:11,591 --> 00:03:12,058

GOOD SHAPE.

92

00:03:12,058 --> 00:03:14,727

WHEN WE LOOK FORWARD TO THE NEXT

93

00:03:14,727 --> 00:03:16,696

3 MONTHS, TAKING US OUT TO THE

94

00:03:16,696 --> 00:03:20,500

END OF THE YEAR, AS I SAID, THE

95

00:03:20,500 --> 00:03:22,902

E.V.A.'S COMING UP THE NEXT 2 TO

96

00:03:22,902 --> 00:03:24,637

3 WEEKS WE'LL PLAN DO E.V.A.'S ON

97

00:03:24,637 --> 00:03:26,706

THE FIFTH OF OCTOBER AND 10TH OF

98

00:03:26,706 --> 00:03:31,477

OCTOBER AND AGAIN ON THE 18TH.

99

00:03:31,477 --> 00:03:33,780

WE ALSO HAVE SOME ROBOTIC

100

00:03:33,780 --> 00:03:35,248

ACTIVITIES IN AND AROUND THE

101
00:03:35,248 --> 00:03:38,918
TIME FRAME ONCE WE GET IT UP TO

102
00:03:38,918 --> 00:03:41,621
ITS FULL AND RECOVERED

103
00:03:41,621 --> 00:03:42,021
CAPABILITY.

104
00:03:42,021 --> 00:03:44,757
AND IN ADDITION WE GOT OUR USUAL

105
00:03:44,757 --> 00:03:46,793
SUSPECTS WHEN IT COMES TO

106
00:03:46,793 --> 00:03:47,193
SCIENCE.

107
00:03:47,193 --> 00:03:50,697
WE'RE DOING A LOT OF HUMAN

108
00:03:50,697 --> 00:03:55,168
RESEARCH AND WE GOT SOME CRYSTAL

109
00:03:55,168 --> 00:03:56,102
PROTEIN GOING.

110
00:03:56,102 --> 00:03:58,037
A LOT OF SCIENCE GOING IN.

111
00:03:58,037 --> 00:03:59,839
THERE IS AGAIN PLENTY TO DO HERE

112
00:03:59,839 --> 00:04:00,840
IN OCTOBER.

113
00:04:00,840 --> 00:04:03,743

ONCE WE TURN THE CORNER INTO

114

00:04:03,743 --> 00:04:05,645

NOVEMBER, WE'RE GOING TO BE

115

00:04:05,645 --> 00:04:08,848

LOOKING HARD AND GETTING READY

116

00:04:08,848 --> 00:04:13,419

FOR THE O8A MISSION WHICH IS A

117

00:04:13,419 --> 00:04:15,421

CRS FLIGHT BRINGING INTO HUNDRED

118

00:04:15,421 --> 00:04:16,956

KILOGRAMS WORTH OF CARGO.

119

00:04:16,956 --> 00:04:19,192

WE'RE ALSO EXCITED WHEN WE GET A

120

00:04:19,192 --> 00:04:20,793

VISITING VEHICLE ON BOARD AND

121

00:04:20,793 --> 00:04:22,929

USUALLY GET SOME GOODIES FOR THE

122

00:04:22,929 --> 00:04:23,863

CREW AND ALL AROUND GOOD THING

123

00:04:23,863 --> 00:04:25,832

WHEN WE GET NEW VEHICLES ON

124

00:04:25,832 --> 00:04:27,033

BOARD.

125

00:04:27,033 --> 00:04:28,134

ANYWAY, THAT VEHICLE IS GOING TO

126
00:04:28,134 --> 00:04:30,970
LAUNCH ON THE 10TH OF NOVEMBER

127
00:04:30,970 --> 00:04:33,740
AND WE'LL PROBABLY TRY TO TURN

128
00:04:33,740 --> 00:04:35,775
THAT VEHICLE AROUND IN 3 WEEKS.

129
00:04:35,775 --> 00:04:36,876
IF EVERYTHING WORKS OUT RIGHT

130
00:04:36,876 --> 00:04:39,112
WE'LL UNLOAD IT AND GET IT

131
00:04:39,112 --> 00:04:41,814
PACKED BACK UP AND SET IT FREE

132
00:04:41,814 --> 00:04:44,517
PROBABLY AROUND THE FIRST WEEK

133
00:04:44,517 --> 00:04:45,218
OF DECEMBER.

134
00:04:45,218 --> 00:04:47,286
ALONG THE END OF THE MONTH,

135
00:04:47,286 --> 00:04:48,021
AROUND THE 28TH OF NOVEMBER,

136
00:04:48,021 --> 00:04:51,090
WE'RE SCHEDULED TO SEE THE SPACE

137
00:04:51,090 --> 00:04:53,526
EXPORT TEAM LAUNCH FOLLOWED BY

138
00:04:53,526 --> 00:04:55,528

BERTHING A COUPLE OF DAYS AFTER.

139

00:04:55,528 --> 00:04:58,297

SO A COUPLE OF WEEKS THERE WILL

140

00:04:58,297 --> 00:05:02,168

BE DOING A DUAL CARGO VISITING

141

00:05:02,168 --> 00:05:04,570

VEHICLE CONFIGURATION WHICH

142

00:05:04,570 --> 00:05:06,406

TYPICALLY -- YOU KNOW AGAIN,

143

00:05:06,406 --> 00:05:07,807

THAT PRESENTS CHALLENGES BUT

144

00:05:07,807 --> 00:05:08,808

CHALLENGES WE'VE DEALT WITH

145

00:05:08,808 --> 00:05:10,777

BEFORE AND AGAIN, I DON'T SEE

146

00:05:10,777 --> 00:05:12,512

ANYTHING INSURMOUNTABLE THERE.

147

00:05:12,512 --> 00:05:15,415

SO WE HAVE TO JUST MAKE SURE WE

148

00:05:15,415 --> 00:05:19,485

GET ALL THAT WORK DONE.

149

00:05:19,485 --> 00:05:20,286

WHEN IT COMES TO DECEMBER, WE'RE

150

00:05:20,286 --> 00:05:23,022

GOING TO BE TRYING TO FINISH UP

151

00:05:23,022 --> 00:05:24,090

THE SpaceX 13 MISSION.

152

00:05:24,090 --> 00:05:25,425

BY THE END OF DECEMBER, AND

153

00:05:25,425 --> 00:05:26,693

ABOUT THE MIDDLE OF THE MONTH IS

154

00:05:26,693 --> 00:05:29,562

WHEN WE'RE GOING TO DO A CREW

155

00:05:29,562 --> 00:05:31,330

ROTATION SO THAT WILL BE

156

00:05:31,330 --> 00:05:32,899

SOMETHING WE'LL DEAL WITH IN THE

157

00:05:32,899 --> 00:05:34,067

MIDDLE OF DECEMBER WHEN WE'LL

158

00:05:34,067 --> 00:05:37,437

SEE RANDY AND PAULO COME HOME

159

00:05:37,437 --> 00:05:40,740

AND THEN A FEW DAYS LATER WE'LL

160

00:05:40,740 --> 00:05:42,875

WELCOME THE NEXT CREW ABOARD.

161

00:05:42,875 --> 00:05:47,380

SO, ANYWAY, WE'LL -- WE WON'T BE

162

00:05:47,380 --> 00:05:48,181

DOWN VERY LONG.

163

00:05:48,181 --> 00:05:50,216

WE'LL ONLY BE DOWN 3 OR 4 DAYS

164

00:05:50,216 --> 00:05:52,719

FROM THE STANDPOINT OF A SMALLER

165

00:05:52,719 --> 00:05:55,688

CREW AND JUMP BACK UP TO 6

166

00:05:55,688 --> 00:05:57,090

PRETTY QUICK IN THE MIDDLE OF

167

00:05:57,090 --> 00:05:57,457

DECEMBER.

168

00:05:57,457 --> 00:05:58,825

THE FIRSTDOM MINE NO THAT HAS

169

00:05:58,825 --> 00:06:00,660

GOT TO FALL IS THIS TRIPLE

170

00:06:00,660 --> 00:06:02,295

E.V.A's THAT WE'RE HERE TO TALK

171

00:06:02,295 --> 00:06:04,897

ABOUT TODAY.

172

00:06:04,897 --> 00:06:07,033

OUR PRIMARY OBJECTIVE IS TO MAKE

173

00:06:07,033 --> 00:06:10,536

SURE WE GET THE SRR MESS

174

00:06:10,536 --> 00:06:12,472

RECOVERED AND FULLY FUNCTIONAL.

175

00:06:12,472 --> 00:06:17,910

AND AS MOST OF YOU KNOW, THE SRR

176
00:06:17,910 --> 00:06:19,712
PLAYED A CRITICAL ROLE BUT I'LL

177
00:06:19,712 --> 00:06:22,415
TELL YOU IT'S PLAYING JUST AS

178
00:06:22,415 --> 00:06:23,416
CRITICAL ROLE TODAY IN THE

179
00:06:23,416 --> 00:06:24,851
OVERALL EXECUTION OF THE PROGRAM

180
00:06:24,851 --> 00:06:26,853
WHEN IT COMES TO SCIENCE, WHEN

181
00:06:26,853 --> 00:06:28,988
IT COMES TO INSPECTIONS AND WHEN

182
00:06:28,988 --> 00:06:30,890
IT COMES TO PUTTING VISITING

183
00:06:30,890 --> 00:06:32,191
VEHICLES ON STATION.

184
00:06:32,191 --> 00:06:34,527
IT'S JUST AN ABSOLUTE CRITICAL

185
00:06:34,527 --> 00:06:36,696
ASSET THAT OUR CANADIAN PARTNERS

186
00:06:36,696 --> 00:06:37,797
HAVE CONTRIBUTED.

187
00:06:37,797 --> 00:06:40,867
SO, ANYWAY, WE'RE VERY EXCITED

188
00:06:40,867 --> 00:06:43,336

ABOUT GETTING OUT AND GETTING IT

189

00:06:43,336 --> 00:06:47,740

FULLY RECOVERED AND FUNCTIONAL.

190

00:06:47,740 --> 00:06:50,109

AND OUR ORIGINAL PLAN GOING OUT

191

00:06:50,109 --> 00:06:53,513

FOR THIS E.V.A WAS ACTUALLY TO

192

00:06:53,513 --> 00:06:56,783

DO A DIFFERENT END OF THE -- WE

193

00:06:56,783 --> 00:06:57,617

GOING TO GO OUT AND CHANGE THE

194

00:06:57,617 --> 00:06:58,284

DIFFERENT END OF THE ARM.

195

00:06:58,284 --> 00:06:59,485

THIS WAS A CONCERN THAT WAS

196

00:06:59,485 --> 00:07:01,120

BROUGHT TO US A COUPLE OF MONTHS

197

00:07:01,120 --> 00:07:05,191

AGO BY OUR CANADIAN PARTNERS

198

00:07:05,191 --> 00:07:06,659

AFTER LOOKING AT SOME IMAGERY OF

199

00:07:06,659 --> 00:07:09,195

ONE END OF THE ARM AND THEY

200

00:07:09,195 --> 00:07:10,696

NOTICED WHAT I'LL CALL MORE OF A

201
00:07:10,696 --> 00:07:12,498
WEAR AND TEAR TYPE OF CONCERN

202
00:07:12,498 --> 00:07:13,666
AND THEY BROUGHT THE

203
00:07:13,666 --> 00:07:14,967
RECOMMENDATION THAT IT WOULD

204
00:07:14,967 --> 00:07:19,705
PROBABLY GOOD TO CHANGE OUT THE

205
00:07:19,705 --> 00:07:21,941
LATCHING END DEFECTOR TO AGAIN

206
00:07:21,941 --> 00:07:23,976
MAKE THEM MORE ROBUST GOING

207
00:07:23,976 --> 00:07:24,343
FORWARD.

208
00:07:24,343 --> 00:07:25,812
AS PROGRAM WE ALL AGREED TO THAT

209
00:07:25,812 --> 00:07:27,780
AND WE FOUND A HOME FOR IT IN

210
00:07:27,780 --> 00:07:32,618
THE SET OF TRIPLE E.V.A's THAT

211
00:07:32,618 --> 00:07:36,122
WE'RE DOING HERE. SUBSEQUENT TO

212
00:07:36,122 --> 00:07:38,090
THAT, THEY HAD -- WE HAD AN

213
00:07:38,090 --> 00:07:39,892

ISSUE WITH THE OTHER END OF THE

214

00:07:39,892 --> 00:07:42,895

ARM AND THAT PARTICULAR ISSUE

215

00:07:42,895 --> 00:07:44,463

ONCE WE LOOKED AT IT CLOSER GAVE

216

00:07:44,463 --> 00:07:47,633

US MORE CAUSE FOR CONCERN GOING

217

00:07:47,633 --> 00:07:50,403

FORWARD AND SO, WE MADE THE

218

00:07:50,403 --> 00:07:51,537

DECISION AS PROGRAM HERE SEVERAL

219

00:07:51,537 --> 00:07:54,273

WEEKS AGO TO JUST CHANGE THE

220

00:07:54,273 --> 00:07:56,075

OPERATION INSTEAD OF CHANGING

221

00:07:56,075 --> 00:07:57,710

THE ORIGINAL LEAD WE'LL GO TO

222

00:07:57,710 --> 00:07:59,178

THE OTHER END AND CHANGE OUT THE

223

00:07:59,178 --> 00:08:02,982

ONE THAT GIVES US MORE CAUSE FOR

224

00:08:02,982 --> 00:08:04,383

CONCERN AND THE ONE THAT WE

225

00:08:04,383 --> 00:08:06,052

ORIGINALLY WERE PLANNING TO

226

00:08:06,052 --> 00:08:07,086

CHANGE OUT WE'LL CHANGE THAT OUT

227

00:08:07,086 --> 00:08:08,588

AFTER THE FIRST OF THE YEAR.

228

00:08:08,588 --> 00:08:10,323

AGAIN, THAT'S MORE OF A WEAR AND

229

00:08:10,323 --> 00:08:11,858

TEAR ISSUE AND WE HAVE SOME

230

00:08:11,858 --> 00:08:12,558

RUNWAY TO DO THAT.

231

00:08:12,558 --> 00:08:15,328

SO WE HAVE A COUPLE OF E.V.A's

232

00:08:15,328 --> 00:08:19,098

WE'LL DO IN THE JANUARY AND

233

00:08:19,098 --> 00:08:20,132

FEBRUARY TIME FRAME.

234

00:08:20,132 --> 00:08:24,136

FIRST AND FOREMOST WE WANT TO

235

00:08:24,136 --> 00:08:26,272

SWAP OUT THE ONE THAT GIVES US

236

00:08:26,272 --> 00:08:27,540

THE HIGHEST CONCERN.

237

00:08:27,540 --> 00:08:29,742

THE PROBLEM THAT POPPED ITS HEAD

238

00:08:29,742 --> 00:08:30,977

UP A FEW WEEKS AGO AND THE TEAM

239

00:08:30,977 --> 00:08:32,411

IS READY TO DO THAT.

240

00:08:32,411 --> 00:08:34,013

I DON'T ANTICIPATE ANY ISSUES

241

00:08:34,013 --> 00:08:37,884

WITH THAT GOING FORWARD INTO THE

242

00:08:37,884 --> 00:08:38,384

E.V.A.

243

00:08:38,384 --> 00:08:41,754

THAT WILL BE OUR FIRST E.V.A

244

00:08:41,754 --> 00:08:42,788

AS FAR AS THE REST OF THE THINGS

245

00:08:42,788 --> 00:08:44,991

I PUT THEM IN THE CATS AND DOG

246

00:08:44,991 --> 00:08:46,425

SORT OF CAREGOER.

247

00:08:46,425 --> 00:08:48,728

YOU'LL HEAR THE GUYS AND GALS

248

00:08:48,728 --> 00:08:50,663

CHANGING OUT THE CAMERAS THAT

249

00:08:50,663 --> 00:08:52,031

HAVE GIVEN US PROBLEMS OVER THE

250

00:08:52,031 --> 00:08:54,834

LAST FEW YEARS, BUT AGAIN,

251
00:08:54,834 --> 00:08:56,168
THAT'S SOMETHING THAT WE NEED TO

252
00:08:56,168 --> 00:08:59,171
GO DO AND IT A'S A GOOD

253
00:08:59,171 --> 00:09:00,539
OPPORTUNITY TO GO DO IT AND

254
00:09:00,539 --> 00:09:04,043
WE'LL GET THAT WORK BEHIND US.

255
00:09:04,043 --> 00:09:06,245
AS FAR AS THE READINESS TO DO

256
00:09:06,245 --> 00:09:10,216
THE E.V.A'S SUITS ARE IN GOOD

257
00:09:10,216 --> 00:09:10,516
SHAPE.

258
00:09:10,516 --> 00:09:14,720
WE THINK WE GOT A COUPLE OF GOOD

259
00:09:14,720 --> 00:09:21,694
HEALTHY SUITS WE'RE READY TO GO.

260
00:09:21,694 --> 00:09:22,728
THEY'RE LEANING THIS DIRECTION

261
00:09:22,728 --> 00:09:24,530
WITH THEIR STUDIES AND PROCEDURE

262
00:09:24,530 --> 00:09:27,133
REVIEWS AND WORKING WITH THE

263
00:09:27,133 --> 00:09:28,200

GROUND AND ALL THAT.

264

00:09:28,200 --> 00:09:32,438
ON WEDNESDAY WE'LL DO A MISSION

265

00:09:32,438 --> 00:09:42,114
MANAGEMENT I'LL TOSS IT TO JUDD

266

00:09:42,114 --> 00:09:43,616
AND LET HIM TALK TO YOU ABOUT

267

00:09:43,616 --> 00:09:45,518
THE SPECIFICS OF THE E.V.A

268

00:09:45,518 --> 00:09:47,853
>> I'M JUDD ON THE LEAD FLIGHT

269

00:09:47,853 --> 00:09:48,621
DIRECTOR FOR THE SECOND TWO

270

00:09:48,621 --> 00:09:50,756
SPACE WALKS IN THE SERIES.

271

00:09:50,756 --> 00:09:52,925
THE FIRST SPACE WALK WILL BE

272

00:09:52,925 --> 00:09:54,660
LEAD BY TONY.

273

00:09:54,660 --> 00:09:57,229
IN THAT FIRST SPACE WALK WILL BE

274

00:09:57,229 --> 00:09:59,899
THIS THURSDAY, OCTOBER THE

275

00:09:59,899 --> 00:10:02,301
FIFTH, STARTING AS SCHEDULED

276
00:10:02,301 --> 00:10:04,203
7:10:00 A.M. CENTRAL TIME EGRESS

277
00:10:04,203 --> 00:10:06,839
FROM THE QUEST AIR LOCK.

278
00:10:06,839 --> 00:10:10,042
THE CREW GOING OUTSIDE WILL

279
00:10:10,042 --> 00:10:13,079
CONSIST OF RANDY BRESNIK AND

280
00:10:13,079 --> 00:10:13,379
MARK.

281
00:10:13,379 --> 00:10:16,048
THIS WILL BE RANDY'S THIRD E.V.A

282
00:10:16,048 --> 00:10:19,051
AND MARK'S FIRST.

283
00:10:19,051 --> 00:10:21,787
ON THE GROUND WE'LL HAVE IV CAP

284
00:10:21,787 --> 00:10:23,522
COME AND NASA ASTRONAUT MIKE

285
00:10:23,522 --> 00:10:25,791
HOPKINS AND ON BOARD HELPING OUT

286
00:10:25,791 --> 00:10:28,661
RANDY AND MARK WILL BE NASA

287
00:10:28,661 --> 00:10:32,498
ASTRONAUT JOE AND EUROPEAN SPACE

288
00:10:32,498 --> 00:10:33,366

STATION ASTRONAUT.

289

00:10:33,366 --> 00:10:34,767

THEY'LL BE HELPING RANDY AND

290

00:10:34,767 --> 00:10:37,136

MARK SUIT UP THERE.

291

00:10:37,136 --> 00:10:39,572

ADDITIONALLY PAULO WILL BE

292

00:10:39,572 --> 00:10:42,641

OPERATING THE CANADA ARM TOO

293

00:10:42,641 --> 00:10:44,143

DURING THAT SPACE WALK.

294

00:10:44,143 --> 00:10:45,811

AS KENNY MENTIONED THE MAJOR

295

00:10:45,811 --> 00:10:47,213

OBJECTIVE OF THIS FIRST SPACE

296

00:10:47,213 --> 00:10:52,418

WHACK WALK IS TO SWAP OUT THE

297

00:10:52,418 --> 00:10:55,521

DEGRADED LATCHING ENTER NEXT

298

00:10:55,521 --> 00:10:58,657

WITH AN IDENTICAL UNIT THAT IS

299

00:10:58,657 --> 00:11:01,160

LOCATED ON THE MOBILE

300

00:11:01,160 --> 00:11:01,560

TRANSFORMER.

301
00:11:01,560 --> 00:11:04,096
PART OF THE REASON CHANGING THIS

302
00:11:04,096 --> 00:11:07,099
INWOULD OUT, AUGUST 22ND AND 23

303
00:11:07,099 --> 00:11:08,734
READY D TIME FRAME WHEN WE WERE

304
00:11:08,734 --> 00:11:10,136
ATTEMPTING TO WALK OFF TO THE

305
00:11:10,136 --> 00:11:14,306
MOBILE TRANSPORTER THE LATCHES

306
00:11:14,306 --> 00:11:16,308
ON THAT THAT ENABLE ALL THE

307
00:11:16,308 --> 00:11:18,978
POWER AND DATA TO GO TO THE

308
00:11:18,978 --> 00:11:20,679
CORRESPONDING GRAPPLE FIXTURE,

309
00:11:20,679 --> 00:11:23,482
THOSE LATCHES STALLED OUT.

310
00:11:23,482 --> 00:11:25,317
THEY HAD REQUIRED A LITTLE MORE

311
00:11:25,317 --> 00:11:26,652
FORCE THAN NORMAL TO EXEND IT.

312
00:11:26,652 --> 00:11:29,889
THAT'S WHY WE'RE CHANGING THAT

313
00:11:29,889 --> 00:11:31,023

OUT FIRST.

314

00:11:31,023 --> 00:11:32,758

THE SECOND E.V.A OR SECOND SPACE

315

00:11:32,758 --> 00:11:34,660

WALK IN THE SERIES WILL BE

316

00:11:34,660 --> 00:11:37,763

CONDUCTED TUESDAY, OCTOBER 10TH.

317

00:11:37,763 --> 00:11:43,002

AGAIN WITH A 7:10:00 A.M. EGRESS

318

00:11:43,002 --> 00:11:43,302

TIME.

319

00:11:43,302 --> 00:11:46,806

WE'LL HAVE THE SAME NASA

320

00:11:46,806 --> 00:11:47,907

ASTRONAUTS GOING OUTSIDE, RANDY

321

00:11:47,907 --> 00:11:49,075

AND MARK.

322

00:11:49,075 --> 00:11:50,142

THIS WILL BE RANDY'S FOURTH

323

00:11:50,142 --> 00:11:52,078

E.V.A AND MARK'S SECOND.

324

00:11:52,078 --> 00:11:53,846

THE GROUND ON THE GROUND WE'LL

325

00:11:53,846 --> 00:11:55,614

HAVE OUR CAP COME WILL BE KATE

326
00:11:55,614 --> 00:12:03,489
UENSEN

327
00:12:03,489 --> 00:12:03,823
RUBINS.

328
00:12:03,823 --> 00:12:07,793
AND ONCE AGAIN, PAULO WILL BE

329
00:12:07,793 --> 00:12:09,195
OPERATING THE ARM 2 WITH JOE

330
00:12:09,195 --> 00:12:11,764
ASSISTING PAULO IN THOSE

331
00:12:11,764 --> 00:12:12,164
SITUATIONS.

332
00:12:12,164 --> 00:12:15,501
THE OBJECTIVES OF THIS SECOND

333
00:12:15,501 --> 00:12:19,939
SPACE WALK INCLUDE ROTATING A

334
00:12:19,939 --> 00:12:23,676
SPARE PUMP SUBASSEMBLY THAT IS

335
00:12:23,676 --> 00:12:24,810
ON PLATFORM 1 AND THAT'S TO SET

336
00:12:24,810 --> 00:12:27,446
UP TO ARE A FUTURE AMMONIA VENT

337
00:12:27,446 --> 00:12:30,850
OF THAT UNIT AND EVENTUAL

338
00:12:30,850 --> 00:12:31,250

RELOCATION.

339

00:12:31,250 --> 00:12:33,152

WE'LL ALSO BE REPLACING ONE OF

340

00:12:33,152 --> 00:12:35,354

THE CAMERAS OUTSIDE.

341

00:12:35,354 --> 00:12:37,790

IT'S THE PORT LOWER OUTBOARD

342

00:12:37,790 --> 00:12:38,190

CAMERA.

343

00:12:38,190 --> 00:12:42,228

THAT'S ONE THAT WE CURRENTLY

344

00:12:42,228 --> 00:12:46,432

HAVE A PINK HEW ON AT THIS POINT

345

00:12:46,432 --> 00:12:48,534

IN TIME.

346

00:12:48,534 --> 00:12:50,636

AGAIN, IN HELPING THE ONE THAT

347

00:12:50,636 --> 00:12:55,541

WAS JUST CHANGED OUT ON CANNON

348

00:12:55,541 --> 00:12:58,244

ARM TWO WE'LL BE LUBRICATING THE

349

00:12:58,244 --> 00:12:59,745

CENTER BALL SCREW THAT NEW

350

00:12:59,745 --> 00:13:02,047

LATCHING INFECTOR THAT WAS JUST

351
00:13:02,047 --> 00:13:05,417
IS CHANGED OUT ON THE E.V.A OR

352
00:13:05,417 --> 00:13:07,520
SPACE WALK NUMBER 44.

353
00:13:07,520 --> 00:13:11,757
ALSO, WE WILL BE REPLACING A

354
00:13:11,757 --> 00:13:14,627
CAMERA OUT ON THE MOBILE

355
00:13:14,627 --> 00:13:16,629
TRANSPORTER, REPLACING A LENS

356
00:13:16,629 --> 00:13:18,497
COVER THAT WE SUSPECT HAS THE

357
00:13:18,497 --> 00:13:20,199
CURRENT LENS COVER HAS A SMUDGE

358
00:13:20,199 --> 00:13:20,633
ON THERE.

359
00:13:20,633 --> 00:13:22,735
SO WE'LL BE CHANGING THAT OUT

360
00:13:22,735 --> 00:13:24,470
AND IN PREPARATION FOR A FUTURE

361
00:13:24,470 --> 00:13:26,405
SPACE WALK, WE'LL BE REMOVING

362
00:13:26,405 --> 00:13:30,276
TWO HANDRAILS FROM THE

363
00:13:30,276 --> 00:13:34,046

TRANQUILITY MODULE THAT'S NODE 3

364

00:13:34,046 --> 00:13:35,581
FOR FUTURE INSTALLATION.

365

00:13:35,581 --> 00:13:36,582
THE THIRD SPACE WALK IN THE

366

00:13:36,582 --> 00:13:38,951
SERIES WILL BE WEDNESDAY,

367

00:13:38,951 --> 00:13:39,652
OCTOBER 18TH.

368

00:13:39,652 --> 00:13:42,688
AGAIN, PLANNED EGRESS IS

369

00:13:42,688 --> 00:13:44,089
7:10:00 A.M. AND CENTRAL TIME

370

00:13:44,089 --> 00:13:47,927
FROM THE QUEST AIR LOCK AND THIS

371

00:13:47,927 --> 00:13:50,429
TIME THE E.V.A CREW WILL BE

372

00:13:50,429 --> 00:13:50,896
RANDY AND JOE.

373

00:13:50,896 --> 00:13:53,465
THIS WILL BE RANDY'S FIFTH SPACE

374

00:13:53,465 --> 00:13:54,867
WALK AND JOE'S THIRD.

375

00:13:54,867 --> 00:13:58,270
ON THE GROUND, WE'LL HAVE CAP

376
00:13:58,270 --> 00:14:04,610
COME AND NASA ASTRONAUT NICOLE

377
00:14:04,610 --> 00:14:04,910
MANIN.

378
00:14:04,910 --> 00:14:07,246
AND AN BOARD THEY'LL BE HELPING

379
00:14:07,246 --> 00:14:08,881
RANDY AND JOE SUIT UP AND PAULO

380
00:14:08,881 --> 00:14:11,350
WILL BE MANNING THE ARM 2 AND

381
00:14:11,350 --> 00:14:13,786
THIS TIME WITH MARK ASSISTING

382
00:14:13,786 --> 00:14:14,086
PAULO.

383
00:14:14,086 --> 00:14:16,855
THE OBJECTIVES FOR THIS LAST

384
00:14:16,855 --> 00:14:20,125
SPACE WALK IN THE SERIES ARE TO

385
00:14:20,125 --> 00:14:21,694
REPLACE A REDUNDANT FAILED FUSE

386
00:14:21,694 --> 00:14:24,630
ON THE EXTERNAL PLATFORM THAT'S

387
00:14:24,630 --> 00:14:29,101
LOCATED ON DEXTER THE SPECIAL

388
00:14:29,101 --> 00:14:33,572

MANIPULATOR AND ADDING A HI-DEF

389

00:14:33,572 --> 00:14:35,507

CAMERA TO THE LOWER OUTBOARD

390

00:14:35,507 --> 00:14:41,380

CAMERA GROUP AND REPLACING THE

391

00:14:41,380 --> 00:14:42,381

STARBOARD CAMERA THAT HAS A WHY

392

00:14:42,381 --> 00:14:48,487

HE WILL OH HEW TO IT.

393

00:14:48,487 --> 00:14:49,755

CONTINUING OUT THE LUBRICATION

394

00:14:49,755 --> 00:14:54,093

OF THE NEWLY INSTALLED WE'LL BE

395

00:14:54,093 --> 00:14:56,295

LUBRICATING THE LATCH BALL CREW

396

00:14:56,295 --> 00:14:56,895

SCREWS.

397

00:14:56,895 --> 00:14:59,465

THE ONES THAT EFFECT THE LATCH

398

00:14:59,465 --> 00:15:02,401

OPERATIONS AND WE'LL ALSO BE

399

00:15:02,401 --> 00:15:04,370

REMOVING SOME THERMAL BLANKETS

400

00:15:04,370 --> 00:15:06,438

ON A MAIN SWITCHING UNIT THAT'S

401
00:15:06,438 --> 00:15:09,008
A SPARE THAT WILL MAKE IT

402
00:15:09,008 --> 00:15:12,011
USEABLE AND COMPATIBLE WITH

403
00:15:12,011 --> 00:15:13,479
DETECTIVETER OPERATIONS IN THE

404
00:15:13,479 --> 00:15:13,812
FUTURE.

405
00:15:13,812 --> 00:15:15,281
THOSE ARE THE MAIN OBJECTIVES SO

406
00:15:15,281 --> 00:15:16,749
I'LL HAND IT OVER TO TIM TO LET

407
00:15:16,749 --> 00:15:21,387
YOU KNOW A LITTLE BIT ABOUT THE

408
00:15:21,387 --> 00:15:21,654
ARM.

409
00:15:21,654 --> 00:15:24,323
>> THANK YOU, JED.

410
00:15:24,323 --> 00:15:26,425
SO THE CANADIAN SPACE AGENCY IS

411
00:15:26,425 --> 00:15:32,965
PLEASED TO BE HERE TODAY WITH

412
00:15:32,965 --> 00:15:34,767
OUR PARTNER NASA TO LAY OUT THIS

413
00:15:34,767 --> 00:15:35,067

PLAN.

414

00:15:35,067 --> 00:15:37,970

IT'S BUSY TIMES FOR ROBOTICS FOR

415

00:15:37,970 --> 00:15:41,040

SPACE STATION AND WE'RE DOING

416

00:15:41,040 --> 00:15:47,646

MORE THAN THE YEAR BEFORE AND

417

00:15:47,646 --> 00:15:49,882

ATARBING RELEASING OR UNLOADING

418

00:15:49,882 --> 00:15:53,185

NEW FREE FLYING CARGO VEHICLES.

419

00:15:53,185 --> 00:15:55,688

NOW, SINCE ARM 2 WAS LAUNCHED IN

420

00:15:55,688 --> 00:15:57,556

2001, WE ARE MORE THAN 16 YEARS

421

00:15:57,556 --> 00:16:00,759

INTO THE LIFE OF OUR SYSTEM.

422

00:16:00,759 --> 00:16:03,028

THE ARM HARDWARE IS DIVIDED INTO

423

00:16:03,028 --> 00:16:05,931

COMPONENTS THAT CAN BE REPLACED

424

00:16:05,931 --> 00:16:08,133

ON ORBIT.

425

00:16:08,133 --> 00:16:10,169

SO EACH OF THE TWO AND EACH OF

426

00:16:10,169 --> 00:16:13,439

THE 7 ARMED JOINTS OR THE AVONIC

427

00:16:13,439 --> 00:16:15,708

BOX DZ OR THE CAMERAS THOSE ARE

428

00:16:15,708 --> 00:16:18,410

ALL INDIVIDUALLY REPLACEABLE ON

429

00:16:18,410 --> 00:16:21,113

ORBIT EITHER ROBOT IT

430

00:16:21,113 --> 00:16:25,751

PARTICULARLY OR BY SPACE WALKING

431

00:16:25,751 --> 00:16:29,621

ASTRONAUTS.

432

00:16:29,621 --> 00:16:31,557

WE'LL BE REPLACING THE END

433

00:16:31,557 --> 00:16:33,625

DETECTOR AT 2 ENDS A AND B AND

434

00:16:33,625 --> 00:16:36,328

SWAPPING THAT WITH SIMILAR UNIT

435

00:16:36,328 --> 00:16:38,397

ON OUR MOBILE BASE SYSTEM ON THE

436

00:16:38,397 --> 00:16:40,933

MOBILE TRANSPORTER.

437

00:16:40,933 --> 00:16:46,338

NOW THE LEE WITH LATCHING END

438

00:16:46,338 --> 00:16:48,707

DEFECTOR WE CALL IT THE LEE.

439

00:16:48,707 --> 00:16:50,576

IT DOES ALL THE HEAVY LIFTING

440

00:16:50,576 --> 00:16:52,845

AND MECHANICAL ATTACHMENT WHEN

441

00:16:52,845 --> 00:16:55,647

THE ARM WALKS END OVER END AND

442

00:16:55,647 --> 00:16:59,017

ESTABLISHES A NEW BASE POINT AND

443

00:16:59,017 --> 00:17:00,986

PICKS UP OUR TWO ARMED DECKS

444

00:17:00,986 --> 00:17:03,789

ITTER OR CATCHES OR RELEASES

445

00:17:03,789 --> 00:17:05,290

FREE FLYING CARGO VEHICLES.

446

00:17:05,290 --> 00:17:08,961

THE THE LEE ITSELF IS A VERY

447

00:17:08,961 --> 00:17:09,928

COMPLEX PACKAGE.

448

00:17:09,928 --> 00:17:12,264

THERE ARE A LOT OF MECHANISMS

449

00:17:12,264 --> 00:17:14,867

AND LOTS OF ON BOARD AVIONICS

450

00:17:14,867 --> 00:17:18,370

AND CAMERA AND SENSOR, ALL IN

451
00:17:18,370 --> 00:17:21,774
HERE. AND MAYBE ONE OF THE MOST

452
00:17:21,774 --> 00:17:24,109
COMPLEX PACKAGES WE'VE FLOWN IN

453
00:17:24,109 --> 00:17:24,410
SPACE.

454
00:17:24,410 --> 00:17:32,251
THE FLIGHT UNIT WAYS MORE THAN

455
00:17:32,251 --> 00:17:33,986
200 KILL OH GRAMS.

456
00:17:33,986 --> 00:17:37,156
THERE IS ONE ON DEXTER AND ONE

457
00:17:37,156 --> 00:17:39,958
ON THE MOBILE BASE WHICH WE USE

458
00:17:39,958 --> 00:17:41,860
AS TEMPORARY STOWAGE POINT FOR

459
00:17:41,860 --> 00:17:45,431
LARGE ITEMS.

460
00:17:45,431 --> 00:17:47,833
AS WHEN WE REPLACE A BUNCH OF

461
00:17:47,833 --> 00:17:49,401
STATION BATTERIES BACK IN

462
00:17:49,401 --> 00:17:49,735
JANUARY.

463
00:17:49,735 --> 00:17:53,272

THE PALLET WAS PLACED ON THAT

464

00:17:53,272 --> 00:17:55,707

MOBILE BASE WHILE ALL THAT WORK

465

00:17:55,707 --> 00:17:57,042

WAS DONE.

466

00:17:57,042 --> 00:17:59,111

NOW, AS KENNY MENTIONED WE'VE

467

00:17:59,111 --> 00:18:02,714

BEEN TRACKING DEGRADATION IN THE

468

00:18:02,714 --> 00:18:06,919

CAN ON ARM 2 ACTUALLY FOR YEARS

469

00:18:06,919 --> 00:18:07,186

NOW.

470

00:18:07,186 --> 00:18:10,022

SINCE THESE COMPONENTS ARE WELL

471

00:18:10,022 --> 00:18:11,690

ONED THEIR DESIGN LIFE THIS

472

00:18:11,690 --> 00:18:13,859

REALLY IS EXPECTED WEAR AND TEAR

473

00:18:13,859 --> 00:18:16,662

ON THE ARM, AND IT'S BEEN

474

00:18:16,662 --> 00:18:19,198

MANIFESTING ITSELF PARTLY AS

475

00:18:19,198 --> 00:18:24,236

INCREASED MOTOR CURRENTS IN THE

476
00:18:24,236 --> 00:18:25,103
AMERICA

477
00:18:25,103 --> 00:18:25,838
MECHANISMS ON BOARD AND THE

478
00:18:25,838 --> 00:18:26,205
LATCHES.

479
00:18:26,205 --> 00:18:27,272
THE SYSTEM IS DESIGNED TO LAST A

480
00:18:27,272 --> 00:18:29,875
LONG TIME AND INDEED IT'S

481
00:18:29,875 --> 00:18:31,043
DESIGNED TO POWER THROUGH

482
00:18:31,043 --> 00:18:32,678
OBSTACLES AS THEY COME UP.

483
00:18:32,678 --> 00:18:38,984
SO WE'VE SEEN THE LATCH

484
00:18:38,984 --> 00:18:40,586
MECHANISMS DRAW MORE AND MORE

485
00:18:40,586 --> 00:18:42,221
AND AS WE ALSO JUST MENTIONED

486
00:18:42,221 --> 00:18:44,389
HERE JUST NOW WE WERE GOING TO

487
00:18:44,389 --> 00:18:47,493
DO A WALKOFF ON AUGUST 22ND AND

488
00:18:47,493 --> 00:18:50,128

WE HAD THE LATCHES STALL DURING

489

00:18:50,128 --> 00:18:51,063

THAT OPERATION AND TOOK A REALLY

490

00:18:51,063 --> 00:18:53,165

GOOD LOOK AT ALL THE DATA THAT

491

00:18:53,165 --> 00:18:57,336

WE'RE SEEING AND BASICALLY THAT

492

00:18:57,336 --> 00:19:00,372

LATCH MECHANISM IS TELLING US

493

00:19:00,372 --> 00:19:01,206

IT'S TIME.

494

00:19:01,206 --> 00:19:04,610

SO THE PLAN IS THIS THURSDAY

495

00:19:04,610 --> 00:19:05,477

WE'RE GOING TO

496

00:19:05,477 --> 00:19:10,749

SWAP ON TO THE MOBILE BASE.

497

00:19:10,749 --> 00:19:14,386

EFFECTIVELY IMMEDIATELY

498

00:19:14,386 --> 00:19:17,389

RESTORING CANON ARM 2 AND READY

499

00:19:17,389 --> 00:19:20,058

TO DO MORE ROBOTICS WORK.

500

00:19:20,058 --> 00:19:24,263

AFTER THIS MONTH SET'S OF E.V.A

501
00:19:24,263 --> 00:19:25,397
E.V.A's THERE ILL WITH BE AT

502
00:19:25,397 --> 00:19:27,332
LEAST ONE MORE AT THE END OF

503
00:19:27,332 --> 00:19:27,666
JANUARY.

504
00:19:27,666 --> 00:19:30,202
WE'LL HAVE MOVED SOME HARDWARE

505
00:19:30,202 --> 00:19:31,670
AROUND AND AT THAT TIME THEY'LL

506
00:19:31,670 --> 00:19:41,013
BE COME COMING INSIDE THE SPACE

507
00:19:41,013 --> 00:19:43,549
STATION AND THEY'LL SET ABOUT

508
00:19:43,549 --> 00:19:45,684
THE REFURBISHMENT OF THE COMPLEX

509
00:19:45,684 --> 00:19:49,054
UNIT AND PREPARING IT AS

510
00:19:49,054 --> 00:19:49,421
REFLIGHT.

511
00:19:49,421 --> 00:19:52,224
WHAT IS NOW LEAD D.

512
00:19:52,224 --> 00:19:54,159
ARM WILL END UP ON THE MOBILE

513
00:19:54,159 --> 00:19:57,062

BASE STOWING LARGE ITEMS AS

514

00:19:57,062 --> 00:20:00,032

THEY'RE NEEDED AND WILL BE

515

00:20:00,032 --> 00:20:02,367

UTILIZING ANOTHER ONE WHICH IS

516

00:20:02,367 --> 00:20:03,702

STORED ON THE SPACE STATION

517

00:20:03,702 --> 00:20:04,002

TRUCK.

518

00:20:04,002 --> 00:20:05,604

SO THAT'S ABOUT IT.

519

00:20:05,604 --> 00:20:08,540

IT'S WORTH NOTING WE HAVE

520

00:20:08,540 --> 00:20:10,008

CONTINUED TO SUPPORT STATION

521

00:20:10,008 --> 00:20:13,812

OPES AND ABLE TO SUCCESSFULLY

522

00:20:13,812 --> 00:20:16,214

RELEASE THE SPACE EX DRAGON

523

00:20:16,214 --> 00:20:19,751

VEHICLE ON TIME AND IT DID NOT

524

00:20:19,751 --> 00:20:21,887

USE THAT LATCH MECHANISM AND

525

00:20:21,887 --> 00:20:23,255

THAT WENT JUST FINE AND WE'RE

526
00:20:23,255 --> 00:20:24,590
EXCITED TO BE HERE TODAY WORKING

527
00:20:24,590 --> 00:20:27,159
WITH OUR PARTNER AND WORKING TO

528
00:20:27,159 --> 00:20:29,094
KEEP THE CANADIAN ROBOTS WORKING

529
00:20:29,094 --> 00:20:42,507
IN SUPPORT OF SPACE STATION.

530
00:20:42,507 --> 00:20:43,875
WE KICKED OFF DEVELOPMENT OF

531
00:20:43,875 --> 00:20:46,244
THIS E.V.A BACK IN JULY AND THEN

532
00:20:46,244 --> 00:20:48,847
WHEN THE FAILURES -- THE ISSUES

533
00:20:48,847 --> 00:20:51,183
APPEARED IN AUGUST, WE SWITCHED

534
00:20:51,183 --> 00:20:53,819
FROM THE LEAD BRAVO TO LEAD

535
00:20:53,819 --> 00:20:55,621
ALPHA CHANGEOUT.

536
00:20:55,621 --> 00:20:58,123
WITH THE HELP OF MY TEAM, MEGAN

537
00:20:58,123 --> 00:21:01,560
AND GOOSE AND THE INCREMENT

538
00:21:01,560 --> 00:21:03,095

TEAM, WE'RE WELL PREPARED FOR

539

00:21:03,095 --> 00:21:07,065

THIS THURSDAY'S E.V.A.

540

00:21:07,065 --> 00:21:09,668

THE OVERALL THROW IS PRETTY

541

00:21:09,668 --> 00:21:12,738

STRAIGHTFORWARD SO I'LL WALK YOU

542

00:21:12,738 --> 00:21:19,211

THROUGH IT.

543

00:21:19,211 --> 00:21:24,449

WE PLAN TO CARRY ONE BAG OF

544

00:21:24,449 --> 00:21:25,784

TOOLS.

545

00:21:25,784 --> 00:21:27,886

IT WILL GATHER A FOOT RESTRAINT

546

00:21:27,886 --> 00:21:30,689

PRIOR TO HEADING TO THE WORK

547

00:21:30,689 --> 00:21:30,989

SITE.

548

00:21:30,989 --> 00:21:33,392

OUR WORK SITE IS NEAR THE CENTER

549

00:21:33,392 --> 00:21:36,495

OF STATION FOR THE ENTIRE E.V.A

550

00:21:36,495 --> 00:21:37,796

WE BASE OUR TOOLS ON THE CART

551
00:21:37,796 --> 00:21:41,233
AND SET UP FOOT RESTRAINTS ON

552
00:21:41,233 --> 00:21:44,736
SPACE ONE TO ENABLE US TO REACH

553
00:21:44,736 --> 00:21:50,509
THE ARM.

554
00:21:50,509 --> 00:21:52,310
AND ARM FLIES IN BETWEEN THEM TO

555
00:21:52,310 --> 00:21:57,849
ALLOW FOR THE CHANGE OUT.

556
00:21:57,849 --> 00:22:00,118
THERE ARE TWO BLANKETS THAT NEED

557
00:22:00,118 --> 00:22:04,856
TO BE RELEASED TO UNCOVER THE

558
00:22:04,856 --> 00:22:05,290
INTERFACE.

559
00:22:05,290 --> 00:22:10,062
SINCE THE CREW CAN'T REACH ALL

560
00:22:10,062 --> 00:22:11,830
6EDS WE'LL RELEASE TWO AND

561
00:22:11,830 --> 00:22:15,200
ROTATE THE ARM AND THEN WE'LL

562
00:22:15,200 --> 00:22:17,269
POWER DOWN AND DRIVE THE

563
00:22:17,269 --> 00:22:19,604

CONNECTOR AND FINALLY RELEASE

564

00:22:19,604 --> 00:22:20,706

THE OTHER 4.

565

00:22:20,706 --> 00:22:22,274

THE DEGRADED JOINT WILL BE

566

00:22:22,274 --> 00:22:24,109

REMOVED AND THE CREW WILL

567

00:22:24,109 --> 00:22:27,479

TRANSLATE IT TO THE CART TO

568

00:22:27,479 --> 00:22:45,797

ATTEMPT THE LOCATION.

569

00:23:14,459 --> 00:23:17,062

WE'LL ROTATE IT AGAIN TO BE ABLE

570

00:23:17,062 --> 00:23:20,031

TO THE FINAL TORQUE ON THE FIRST

571

00:23:20,031 --> 00:23:22,834

4 BOLTS.

572

00:23:22,834 --> 00:23:24,436

TIME PERMITTING PICTURES WILL BE

573

00:23:24,436 --> 00:23:27,973

TAKEN PRIOR TO PUTTING THE

574

00:23:27,973 --> 00:23:40,252

BLANKET BACK ON.

575

00:23:40,252 --> 00:23:42,287

THEY'LL INSTALL ALL 6 BOLTS TO

576
00:23:42,287 --> 00:23:44,489
THE FINAL TORQUE AND THEN

577
00:23:44,489 --> 00:23:45,757
FINALLY THEY'LL START CLEAN-UP

578
00:23:45,757 --> 00:23:47,759
FROM THE E.V.A AND GATHER ALL

579
00:23:47,759 --> 00:23:50,929
THEIR TOOLS AND THEIR FOOT

580
00:23:50,929 --> 00:23:51,897
RESTRAINTS AND PLACE THE FOOT

581
00:23:51,897 --> 00:23:53,064
RESTRAINTS AND IDEAL LOCATIONS

582
00:23:53,064 --> 00:23:58,136
FOR THE NEXT E.V.A AFTER THAT

583
00:23:58,136 --> 00:24:01,673
THEY'LL RETURN TO THE AIR LOCK

584
00:24:01,673 --> 00:24:21,493
FOR IN TKPWRES.

585
00:25:43,508 --> 00:25:46,878
THAT AND HE'LL BE BACKED UP BY A

586
00:25:46,878 --> 00:25:49,080
VETERAN DEVIN.

587
00:25:49,080 --> 00:25:50,348
ON THE THIRD E.V.A's THOSE TWO

588
00:25:50,348 --> 00:25:52,317

GUYS WILL SWITCH POSITIONS AND

589

00:25:52,317 --> 00:25:53,285

DEVIN WILL LEAD IT AND CHRIS

590

00:25:53,285 --> 00:25:54,853

WILL BE THE BACK-UP.

591

00:25:54,853 --> 00:25:56,922

WE ALSO HAVE GOOSE IN OUR BACK

592

00:25:56,922 --> 00:25:58,690

ROOM AS WELL AS SANDY FLETCHER

593

00:25:58,690 --> 00:26:01,192

FOR THE SECOND E.V.A AND FOR THE

594

00:26:01,192 --> 00:26:03,261

THIRD E.V.A WE'LL HAVE REAGAN

595

00:26:03,261 --> 00:26:10,068

CHENEY SUPPORTING AT THE AIR

596

00:26:10,068 --> 00:26:14,873

LOCK CONSULE.

597

00:26:14,873 --> 00:26:17,042

I WANTED TO CALL OUT IN

598

00:26:17,042 --> 00:26:18,610

PARTICULAR DAVEY MOORE WHO HAS

599

00:26:18,610 --> 00:26:20,679

BEEN SUPPORTING US FOR THE

600

00:26:20,679 --> 00:26:21,947

ENTIRE LENGTH OF THE

601
00:26:21,947 --> 00:26:22,981
INTERNATIONAL SPACE STATION.

602
00:26:22,981 --> 00:26:25,684
HE STARTED AS THE VEHICLE

603
00:26:25,684 --> 00:26:27,152
INTEGRATION TEST TEAM OFFICER AT

604
00:26:27,152 --> 00:26:29,154
KENNEDY SPACE CENTER ON

605
00:26:29,154 --> 00:26:32,724
INTERNATIONAL SPACE STATION FOR

606
00:26:32,724 --> 00:26:34,092
THE VERY FIRST MISSION.

607
00:26:34,092 --> 00:26:44,035
WE ALL WISH HIM THE BEST I

608
00:26:44,035 --> 00:26:45,804
BELIEVE I'M ABLE TO ROLL THE

609
00:26:45,804 --> 00:26:49,007
ANIMATION FOR THE SECOND E.V.A.

610
00:26:49,007 --> 00:26:50,342
WHEEL START THE SECOND AT THE

611
00:26:50,342 --> 00:26:55,580
QUEST AIR LOCK AS WE ALWAYS DO

612
00:26:55,580 --> 00:26:58,049
AND RANDY CONRAD BRESNIK WILL

613
00:26:58,049 --> 00:26:59,684

RECONFIGURE A LATCH AND THEN

614

00:26:59,684 --> 00:27:03,021

HE'LL RETURN AND PICK UP AN APFR

615

00:27:03,021 --> 00:27:04,489

OR FOOT RESTRAINT AND MAKE HIS

616

00:27:04,489 --> 00:27:06,524

WAY OVER TO THE PORT SIDE OF THE

617

00:27:06,524 --> 00:27:07,926

U.S. LABORATORY WHERE HE WILL

618

00:27:07,926 --> 00:27:11,429

SET UP THAT FOOT RESTRAINT AND

619

00:27:11,429 --> 00:27:12,630

INGRESS IN PREPARATION FOR

620

00:27:12,630 --> 00:27:16,034

ROTATING THAT PUMP FLOW CONTROL

621

00:27:16,034 --> 00:27:21,406

SYSTEM TO ITS NEW ORIENTATION.

622

00:27:21,406 --> 00:27:26,011

MARK WILL HEAD UP TO THE TRUSS

623

00:27:26,011 --> 00:27:29,681

AND MOVE PORT OVER WHERE HE WILL

624

00:27:29,681 --> 00:27:31,616

STOW HIS TOOL BAG AND THEN GRAB

625

00:27:31,616 --> 00:27:35,320

A FOOT RESTRAINT FROM THE PORT

626
00:27:35,320 --> 00:27:52,971
CART AND INSTALL IT TO THE ROBOT

627
00:27:52,971 --> 00:27:53,805
ARM.

628
00:27:53,805 --> 00:27:54,973
AND HE'LL HELP OUT WITH THE

629
00:27:54,973 --> 00:27:58,410
SPARE INTO A LOCATION WHERE IT

630
00:27:58,410 --> 00:28:14,526
CAN BE VENTED.

631
00:28:14,526 --> 00:28:17,495
MARK WILL EXCEPT GREAT HIS TOOL

632
00:28:17,495 --> 00:28:22,467
BAGS AND TAKE THE MEDIUM ORU BAG

633
00:28:22,467 --> 00:28:27,172
WITH HIM AND INGRESS THE ARM AND

634
00:28:27,172 --> 00:28:28,907
THEY'LL MANEUVER THE ARM IN

635
00:28:28,907 --> 00:28:30,008
FRONT OF THE CAMERA PORT NUMBER

636
00:28:30,008 --> 00:28:33,211
9 LOCATION WHICH IS PORT,

637
00:28:33,211 --> 00:28:36,714
OUTBOARD AND LOWER ON THE TRUST.

638
00:28:36,714 --> 00:28:39,717

CONRAD WILL BRING THE LARGE ORU

639

00:28:39,717 --> 00:28:41,753

BAG WITH THE NEW CAMERA GROUP

640

00:28:41,753 --> 00:28:45,023

OUT TO MEET MARK AT THE

641

00:28:45,023 --> 00:28:45,390

WORKSIGHT.

642

00:28:45,390 --> 00:28:47,125

WORK WILL FIRST HAVE TO WORK

643

00:28:47,125 --> 00:28:50,261

TOGETHER TO REMOVE THE HIGH

644

00:28:50,261 --> 00:28:53,398

DEFINITION CAMERA FROM THE

645

00:28:53,398 --> 00:28:58,369

CAMERA GROUP.

646

00:28:58,369 --> 00:29:00,238

WE'LL BE REINSTALLING IT WHEN

647

00:29:00,238 --> 00:29:01,840

THE CHANGEOUT IS COMPLETE.

648

00:29:01,840 --> 00:29:03,908

THE TWO SPACE WALKERS WILL WORK

649

00:29:03,908 --> 00:29:06,144

TOGETHER TO REMOVE THE FAILED

650

00:29:06,144 --> 00:29:08,012

CAMERA GROUP FROM THE CAMERA

651
00:29:08,012 --> 00:29:10,648
PORT IN INAND CHANGE IT WITH THE

652
00:29:10,648 --> 00:29:11,583
REPLACEMENT CAMERA GROUP THAT

653
00:29:11,583 --> 00:29:15,253
THEY ASSEMBLED WHEN THEY WERE

654
00:29:15,253 --> 00:29:25,396
INSIDE THE SPACE STATION.

655
00:29:25,396 --> 00:29:29,300
MARK WORKS TO REINSTALL THE

656
00:29:29,300 --> 00:29:31,736
HI-DEF CAMERA AND PAULO CAN

657
00:29:31,736 --> 00:29:33,705
MANEUVER THE ARM BACK OVER TO

658
00:29:33,705 --> 00:29:35,106
THE FORWARD FACE OF THE TRUST

659
00:29:35,106 --> 00:29:36,774
WHERE MARK WILL EGRESS THE ARM

660
00:29:36,774 --> 00:29:40,011
AND CHANGE HIS BAG OUT FOR THE

661
00:29:40,011 --> 00:29:44,649
CREW HOLDING ALL HIS LUBRICATION

662
00:29:44,649 --> 00:29:45,517
TOOLS.

663
00:29:45,517 --> 00:29:47,085

HE'LL SET UP THAT FOOT RESTRAINT

664

00:29:47,085 --> 00:29:51,022

AND BE ABLE TO ACCESS THE NEW

665

00:29:57,896 --> 00:29:54,125

LATCHING

666

00:29:57,896 --> 00:29:58,363

SCREW.

667

00:29:58,363 --> 00:30:01,566

IN THE MEANTIME CONRAD WILL

668

00:30:01,566 --> 00:30:03,034

RETURN TO THE AIR LOCK AND WORK

669

00:30:03,034 --> 00:30:05,637

ON MYRIAD OF TASKS THAT WE HAVE

670

00:30:05,637 --> 00:30:08,139

FOR HIM TO ACCOMPLISH.

671

00:30:08,139 --> 00:30:10,708

HE'LL GO OVER TO THE PORT CART

672

00:30:10,708 --> 00:30:12,877

AND THEN ONTO THE MOBILE

673

00:30:12,877 --> 00:30:14,412

TRANSPORTER TO REPLACE THE

674

00:30:14,412 --> 00:30:17,649

CAMERA LENS OF THE MOBILE

675

00:30:17,649 --> 00:30:18,416

TRANSPORTER CAMERA AND THEN

676
00:30:18,416 --> 00:30:21,219
HE'LL REMOVE THE SOCKETS FROM

677
00:30:21,219 --> 00:30:23,288
THE DEGRADED LATCHER AND

678
00:30:23,288 --> 00:30:27,525
DEFECTOR FOR USE ON ANOTHER EDA.

679
00:30:27,525 --> 00:30:29,594
HE'LL GRAB THE MEDIUM OR U BAG

680
00:30:29,594 --> 00:30:33,198
THAT MARK WAS USING AND RETURN

681
00:30:33,198 --> 00:30:37,669
WITH IT DOWN TO THE FRONT OF THE

682
00:30:37,669 --> 00:30:39,070
EXTERNAL PLATFORM NUMBER 2 WHERE

683
00:30:39,070 --> 00:30:42,106
WE KEEP THE FOOT RESTRAINTS IN

684
00:30:42,106 --> 00:30:45,043
SUPPORT OF CRITICAL CONTINGENCY

685
00:30:45,043 --> 00:30:46,444
EDA's AND HE'LL RETURN IT TO THE

686
00:30:46,444 --> 00:30:50,281
AIR LOCK AND THEN HE'LL HEAD OUT

687
00:30:50,281 --> 00:30:51,950
ON THE INTERNATIONAL SPACE

688
00:30:51,950 --> 00:30:54,986

STATION AROUND THE BACKSIDE TO

689

00:30:54,986 --> 00:30:57,789

THE TRANQUILITY MODULE WHERE HE

690

00:30:57,789 --> 00:31:00,425

WILL WORK ON THE END CONE OF THE

691

00:31:00,425 --> 00:31:02,727

MODULE TO REMOVE TWO HANDRAILS

692

00:31:02,727 --> 00:31:09,601

IN PREPARATION FOR IN STALL

693

00:31:09,601 --> 00:31:11,236

LAYINGS OF THE WIRELESS SYSTEM

694

00:31:11,236 --> 00:31:12,570

ON ANOTHER EDA.

695

00:31:12,570 --> 00:31:14,305

MARK WILL FINISH HIS WORK AND

696

00:31:14,305 --> 00:31:17,942

THEN PACK UP HIS BAGS, RETURN

697

00:31:17,942 --> 00:31:22,947

THE FOOT RESTRAINT TO THE CART

698

00:31:22,947 --> 00:31:26,417

FROM WHEPBS IT CAME AND MEET UP

699

00:31:26,417 --> 00:31:30,588

WITH COMRADE FOR THE END OF THE

700

00:31:30,588 --> 00:31:32,323

SECOND OF THE 3 E.V.A's.

701
00:31:32,323 --> 00:31:33,891
I BROUGHT ALONG A LITTLE SHOW

702
00:31:33,891 --> 00:31:34,726
AND TELL.

703
00:31:34,726 --> 00:31:36,127
SOME OF YOU HAVE SEEN OUR GREASE

704
00:31:36,127 --> 00:31:38,196
GUN BEFORE.

705
00:31:38,196 --> 00:31:39,664
THIS IS THE TOOL THAT MARK WILL

706
00:31:39,664 --> 00:31:44,535
BE USING TO LUBRICATE THE ROBOT

707
00:31:44,535 --> 00:31:47,605
ARM ON THE SECOND OF THE 3

708
00:31:47,605 --> 00:31:47,972
E.V.A's.

709
00:31:47,972 --> 00:31:49,474
AND THEN JOE WILL BE TRADING

710
00:31:49,474 --> 00:31:51,309
PLACES WITH HIM ON THE THIRD

711
00:31:51,309 --> 00:31:52,710
E.V.A AND FINISHING UP SOME

712
00:31:52,710 --> 00:31:55,313
ADDITIONAL WORK ON THE

713
00:31:55,313 --> 00:31:56,247

LUBRICATION.

714

00:31:56,247 --> 00:32:06,124

NOTICE IT LOOKS LIKE A CAL BEEN

715

00:32:06,124 --> 00:32:06,391

GUN.

716

00:32:06,391 --> 00:32:07,558

YOU'RE USING A TOOL VERY MUCH

717

00:32:07,558 --> 00:32:12,697

LIKE THIS ONE OF THE IT'S GOT A

718

00:32:12,697 --> 00:32:15,700

RATCHETING PLUNGER THAT

719

00:32:15,700 --> 00:32:19,037

PRESSURIZES THE GREASE.

720

00:32:19,037 --> 00:32:26,344

IT'S GOT AN ON AND OFF VALVE.

721

00:32:26,344 --> 00:32:30,748

IF WE COULD ROLL THE VIDEO.

722

00:32:30,748 --> 00:32:38,823

I'VE GOT SOME VIDEO ON E.V.A 40.

723

00:32:38,823 --> 00:32:40,425

WHEN HE WAS LUBRICATING ANOTHER

724

00:32:40,425 --> 00:32:41,959

ONE OF THE LATCHING DEFECTORS.

725

00:32:41,959 --> 00:32:43,828

YOU COULD SEE THE GREASE GUN IN

726
00:32:43,828 --> 00:32:47,098
THE FOREGROUND AND WORKING WITH

727
00:32:47,098 --> 00:33:07,885
THE OTHER TOOLS AS WELL.

728
00:33:07,885 --> 00:33:15,626
LET'S ROLL THE VIDEO FOR THE

729
00:33:15,626 --> 00:33:18,463
THIRD E.V.A.

730
00:33:18,463 --> 00:33:21,332
THERE WE GO.

731
00:33:21,332 --> 00:33:23,634
TWO CREW MEMBERS, JOE AND

732
00:33:23,634 --> 00:33:27,205
COMRADE BRESNIK BEING EV1 WILL

733
00:33:27,205 --> 00:33:29,941
EGRESS THE AIR LOCK AND JOE WILL

734
00:33:29,941 --> 00:33:34,679
HEAD UP TO FACE ONE OF THE

735
00:33:34,679 --> 00:33:34,979
TRUSS.

736
00:33:34,979 --> 00:33:39,217
THIS TIME HE'LL BE WORKING ON

737
00:33:39,217 --> 00:33:45,356
THE STARBOARD SIDE OF THE TRUSS.

738
00:33:45,356 --> 00:33:46,891

RANDY BRESNIK WILL FOLLOW HIM

739

00:33:46,891 --> 00:33:49,527
OUT OF THE TRUSS.

740

00:33:49,527 --> 00:33:53,364
HE'LL TRANSLATE UNDER JOE ACABA

741

00:33:53,364 --> 00:33:56,334
AND THEN TO THE MOBILE

742

00:33:56,334 --> 00:33:58,436
TRANSPORTER TO THE STAR BOARD

743

00:33:58,436 --> 00:33:59,971
SIDE AND WHERE THE DETECTIVER

744

00:33:59,971 --> 00:34:04,409
ROBOT HAND IS POSITIONED AND

745

00:34:04,409 --> 00:34:12,650
CHANGING OUT.

746

00:34:12,650 --> 00:34:18,222
JOE WILL BE INGRESSING THE ROBOT

747

00:34:18,222 --> 00:34:19,490
ARM.

748

00:34:19,490 --> 00:34:22,860
PAULO WILL FLY HIM OVER TO THE

749

00:34:22,860 --> 00:34:26,264
CP3 TO INSTALL A HI-DEF CAMERA

750

00:34:26,264 --> 00:34:27,465
AND THEN COMRADE WILL HEAD BACK

751
00:34:27,465 --> 00:34:29,867
DOWN TO THE AIR LOCK AND OVER TO

752
00:34:29,867 --> 00:34:33,137
THE EXTERNAL STOEUAGE PLATFORM

753
00:34:33,137 --> 00:34:36,641
NUMBER 2 WHERE HE'LL BE REMOVING

754
00:34:36,641 --> 00:34:38,009
MULTILAYER INSULATION OFF THE

755
00:34:38,009 --> 00:34:53,925
SPRAY THAT'S IN THAT LOCATION.

756
00:34:53,925 --> 00:34:56,561
JOE WILL MANEUVER OVER TO THE

757
00:34:56,561 --> 00:34:58,830
CAMERA PORT 3 TO CAMERA PORT 13

758
00:34:58,830 --> 00:35:01,732
WHICH IS ON THE STAR BOARD SIDE

759
00:35:01,732 --> 00:35:03,034
OF THE U.S. LABORATORY AND 2 OF

760
00:35:03,034 --> 00:35:05,069
THEM WILL WORK TOGETHER TO

761
00:35:05,069 --> 00:35:08,706
REMOVE AND REPLACE THE FAILED

762
00:35:08,706 --> 00:35:26,090
CAMERA GROUP.

763
00:35:27,725 --> 00:35:29,160

AND THEN PAULO WILL MANEUVER HIM

764

00:35:29,160 --> 00:35:31,762

BACK OVER TO THE TRUSS WHERE HE

765

00:35:31,762 --> 00:35:35,700

WILL ONCE AGAIN SET UP HIS FOOT

766

00:35:35,700 --> 00:35:38,736

RESTRAINT FOR THE FINAL

767

00:35:38,736 --> 00:35:44,876

LUBRICATION OF THE IN THE

768

00:35:44,876 --> 00:35:45,676

MEANTIME COMRADE GOES BACK TO

769

00:35:45,676 --> 00:35:49,080

THE LOWER SIDE OF THE EXTERNAL

770

00:35:49,080 --> 00:35:54,886

PLATFORM NUMBER 2 AND GRABS HIS

771

00:35:54,886 --> 00:35:57,755

ORU BAG WHERE THE DCSU SPARE IS

772

00:35:57,755 --> 00:35:58,155

LOCATED.

773

00:35:58,155 --> 00:36:00,358

HE'LL PERFORM THE SAME

774

00:36:00,358 --> 00:36:02,159

MULTILAYER INSTALLATION REMOVAL

775

00:36:02,159 --> 00:36:07,098

ON THAT SPARE MAKING IT ALSO

776
00:36:07,098 --> 00:36:24,549
COMPATIBLE JOE CAN EASILY ACCESS

777
00:36:28,753 --> 00:36:32,857
THOSE 4 LUBRICATION OF THOSE

778
00:36:32,857 --> 00:36:34,692
BALL SCREWS.

779
00:36:34,692 --> 00:36:36,127
HE'LL COMPLETE AS MUCH OF THE

780
00:36:36,127 --> 00:36:38,496
WORK AS POSSIBLE AND THERE MAY

781
00:36:38,496 --> 00:36:40,398
BE BE ADDITIONAL LUBRICATION

782
00:36:40,398 --> 00:36:42,266
REQUIRED BUT WE'LL TRY TO GET AS

783
00:36:42,266 --> 00:36:43,434
MUCH DONE AS WE CAN BEFORE IT'S

784
00:36:43,434 --> 00:36:46,404
TIME FOR JOE TO RETURN HIS FOOT

785
00:36:46,404 --> 00:37:04,188
RESTRAINT TO THE PORT CART AND

786
00:37:04,188 --> 00:37:05,923
THAT'S ALL WE HAVE FOR THE

787
00:37:05,923 --> 00:37:06,223
VIDEO.

788
00:37:06,223 --> 00:37:07,992

I DID HAVE ONE ADDITION IN AL

789

00:37:07,992 --> 00:37:09,226

PIECE OF HARDWARE I BROUGHT

790

00:37:09,226 --> 00:37:11,429

ALONG FOR SHOW AND TELL AND IT'S

791

00:37:11,429 --> 00:37:14,632

INTERESTING IN THAT IT'S

792

00:37:14,632 --> 00:37:27,211

PROBABLY THE OLDEST AND IT HOLDS

793

00:37:27,211 --> 00:37:29,080

THE SUPPORT EQUIPMENT FOR THE

794

00:37:29,080 --> 00:37:32,583

SPARE ON TO THE EXTERNAL

795

00:37:32,583 --> 00:37:35,386

PLATFORM NUMBER 1 ON THE SIDE OF

796

00:37:35,386 --> 00:37:37,822

THE LABORATORY.

797

00:37:37,822 --> 00:37:41,192

SO, THIS PIECE OF HARDWARE FIRST

798

00:37:41,192 --> 00:37:43,027

FLEW THE VERY SAME HARDWARE

799

00:37:43,027 --> 00:37:43,961

THAT'S ON THE STATION NOW

800

00:37:43,961 --> 00:37:46,664

HOLDING THAT EQUIPMENT IN PLACE.

801
00:37:46,664 --> 00:37:50,935
IT FLEW FOR THE FIRST TIME ON

802
00:37:50,935 --> 00:37:51,669
STS80 AND 87.

803
00:37:51,669 --> 00:37:53,704
WHEN WE WERE TESTING OUR

804
00:37:53,704 --> 00:37:54,705
TECHNOLOGIES FOR HOW WE WERE

805
00:37:54,705 --> 00:37:55,740
GOING TO BUILD THE SPACE

806
00:37:55,740 --> 00:37:56,207
STATION.

807
00:37:56,207 --> 00:37:57,642
IT WAS A DREAM AND JUST DIDN'T

808
00:37:57,642 --> 00:37:58,909
WORK AT THAT TIME AND TRYING TO

809
00:37:58,909 --> 00:38:00,077
FIGURE OUT HOW WE WERE GOING TO

810
00:38:00,077 --> 00:38:00,611
DO IT.

811
00:38:00,611 --> 00:38:04,015
WE KNEW WE WERE GOING HAVE TO

812
00:38:04,015 --> 00:38:09,587
HOLD LARGE BOXES IN PLACE FOR

813
00:38:09,587 --> 00:38:12,089

BOTH SPARE STOWAGE AND TO MOVE

814

00:38:12,089 --> 00:38:14,992

THEM AROUND TO THE WORK SITE AND

815

00:38:14,992 --> 00:38:16,827

AT THAT TIME WE DID NOT HAVE THE

816

00:38:16,827 --> 00:38:19,063

ROBOT HAND AND WE WOULD HAVE TO

817

00:38:19,063 --> 00:38:23,401

USE THAT ALL USING MECHANICAL

818

00:38:23,401 --> 00:38:36,113

INTERFACES ONLY.

819

00:38:36,113 --> 00:38:39,417

THIS SIDE BOLTS ON TO THAT AND

820

00:38:39,417 --> 00:38:42,386

THEN THE OPPOSITE SIDE FITS INTO

821

00:38:42,386 --> 00:38:43,721

A FAIR GRID LIKE THE ONES ON THE

822

00:38:43,721 --> 00:38:46,457

CART THAT WE HAVE NOW AND HANGS

823

00:38:46,457 --> 00:38:48,592

ON EACH SIDE.

824

00:38:48,592 --> 00:38:50,995

WE CALL THESE LATCHES AND HOLD

825

00:38:50,995 --> 00:38:52,530

THE WHOLE STRUCTURE AND ITS KA

826
00:38:52,530 --> 00:38:55,599
ARE GO IN PLACE ON THE SQUARE

827
00:38:55,599 --> 00:38:55,900
GRID.

828
00:38:55,900 --> 00:38:58,235
IT'S ACT WAITED BY HAND.

829
00:38:58,235 --> 00:39:00,638
WE DIDN'T HAVE THE DEXTER ROBOT

830
00:39:00,638 --> 00:39:03,774
ARM AT THAT TIME AND THE

831
00:39:03,774 --> 00:39:05,576
ASTRONAUT PUSHES IN ON THE

832
00:39:10,014 --> 00:39:08,045
BUTTON AND

833
00:39:10,014 --> 00:39:11,182
THIS IS THE CAPTURE POSITION

834
00:39:11,182 --> 00:39:13,017
WHERE YOU CAN PUSH IN ON EACH SO

835
00:39:13,017 --> 00:39:14,919
IT CAN GO INTO THE SQUARE GRID

836
00:39:14,919 --> 00:39:16,921
BUT NOT COME BACK OUT OF IT.

837
00:39:16,921 --> 00:39:18,489
SO IN ORDER TO REMOVE IT YOU GOT

838
00:39:18,489 --> 00:39:20,424

TO TAKE IT TO THE UNLOCK

839

00:39:20,424 --> 00:39:21,792

POSITION OR RELEASE POSITION

840

00:39:21,792 --> 00:39:41,779

WHERE THEY'RE ALL THE WAY

841

00:39:55,359 --> 00:39:56,160

RETRACTED.

842

00:39:56,160 --> 00:39:58,262

THE FIRST OF THE SPARES TO GO TO

843

00:39:58,262 --> 00:39:59,797

THE INTERNATIONAL SPACE STATION

844

00:39:59,797 --> 00:40:00,798

WAS THE CONTROL SYSTEM AND IT

845

00:40:00,798 --> 00:40:02,700

WAS MOUNTED ON ONE OF THESE.

846

00:40:02,700 --> 00:40:05,603

IT WAS PRIOR TO THE TIME THAT WE

847

00:40:05,603 --> 00:40:07,538

FINISHED WHAT WE CALL FRAM

848

00:40:07,538 --> 00:40:07,905

INTERFACE.

849

00:40:07,905 --> 00:40:11,575

JUST A LITTLE BIT OF HISTORY FOR

850

00:40:11,575 --> 00:40:15,613

YOU THERE.

851
00:40:15,613 --> 00:40:17,348
IT'S ALL I HAVE.

852
00:40:17,348 --> 00:40:17,681
BRANDY.

853
00:40:17,681 --> 00:40:18,082
>> THANKS.

854
00:40:18,082 --> 00:40:20,851
I LOVE WHEN WE CAN HAVE SHOW AND

855
00:40:20,851 --> 00:40:23,654
TELL AND ALONG THE LINES OF

856
00:40:23,654 --> 00:40:24,455
HISTORICAL QUESTIONS I WAS

857
00:40:24,455 --> 00:40:25,589
WONDERING WHETHER WE COULD HAVE

858
00:40:25,589 --> 00:40:28,292
KEN TALK ABOUT ALL THAT THE ARM

859
00:40:28,292 --> 00:40:29,827
HAS DONE OVER THE YEARS AND IF

860
00:40:29,827 --> 00:40:31,595
THERE IS ANYTHING THAT SURPRISED

861
00:40:31,595 --> 00:40:43,741
HIM IN THE USES THAT WE FOUND

862
00:40:43,741 --> 00:40:45,109
FOR IT.

863
00:40:45,109 --> 00:40:46,911

MOST OF THE LARGE ELEMENTS ON

864

00:40:46,911 --> 00:40:49,914

THE U.S. SEGMENT WERE HANDED BY

865

00:40:49,914 --> 00:40:57,688

CANON ARM 2 DURING THAT ASEPL

866

00:40:57,688 --> 00:40:58,055

ASSEMBLY.

867

00:40:58,055 --> 00:40:59,523

ALL THROUGH THIS TIME AS WELL,

868

00:40:59,523 --> 00:41:02,893

WE STARTED THE AGE OF THE FREE

869

00:41:02,893 --> 00:41:12,236

FLYING CARGO VEHICLES, IT WAS A

870

00:41:12,236 --> 00:41:14,505

REMARKABLE EVENT AND SINCE THEN

871

00:41:14,505 --> 00:41:15,573

OF COURSE THE FREQUENCY HAS BEEN

872

00:41:15,573 --> 00:41:17,341

INCREASING AND INCREASING AND

873

00:41:17,341 --> 00:41:19,043

SEEMS LIKE WE DO ONE EVERY

874

00:41:19,043 --> 00:41:20,010

COUPLE OF MONTHS.

875

00:41:20,010 --> 00:41:23,981

OF THAT REALLY IS SORT OF THE

876
00:41:23,981 --> 00:41:25,716
QUICKENING PULSE OF OUR SPACE

877
00:41:25,716 --> 00:41:27,451
STATION OPERATIONS.

878
00:41:27,451 --> 00:41:29,653
VERY OFTEN THE DRAGON CARGO

879
00:41:29,653 --> 00:41:31,722
VEHICLES WHICH HAVE AN EXTERNAL

880
00:41:31,722 --> 00:41:33,924
TRUNK AS WE CALL IT, COMES FULL

881
00:41:33,924 --> 00:41:37,027
OF CARGO THAT NEEDS TO BE

882
00:41:37,027 --> 00:41:44,268
UNLOADED AND ONLY OUR TWO ROBOT

883
00:41:44,268 --> 00:41:50,274
CAN GET IN THERE.

884
00:41:50,274 --> 00:41:51,842
I'M NOT SURE WHAT IS REALLY

885
00:41:51,842 --> 00:41:52,676
SURPRISED US.

886
00:41:52,676 --> 00:41:57,214
I THINK WE WERE IMPRESSED AT HOW

887
00:41:57,214 --> 00:41:59,950
MUCH AND HOW MUCH THE WORK IS

888
00:41:59,950 --> 00:42:00,351

INCREASING.

889

00:42:00,351 --> 00:42:02,019

AND THE PACE OF THE ROBOTIC HAS

890

00:42:02,019 --> 00:42:04,088

JUST BEEN GOING UP AND UP AND UP

891

00:42:04,088 --> 00:42:06,590

AND UP IT'S EXCITING TO SEE THE

892

00:42:06,590 --> 00:42:07,691

SYSTEM BEING USED.

893

00:42:07,691 --> 00:42:08,759

>> THAT MAKES SENSE.

894

00:42:08,759 --> 00:42:09,693

WE'LL TAKE QUESTIONS NOW AND

895

00:42:09,693 --> 00:42:10,761

WE'LL START HERE IN THE ROOM.

896

00:42:10,761 --> 00:42:12,229

WE'VE GOT A FEW REPORTERS HERE

897

00:42:12,229 --> 00:42:13,731

IN PERSON WITH US AND WE'LL TAKE

898

00:42:13,731 --> 00:42:14,698

QUESTIONS ON THE PHONE.

899

00:42:14,698 --> 00:42:17,801

IF YOU HAVE A QUESTION ON THE

900

00:42:17,801 --> 00:42:20,938

PHONE YOU CAN USE THE SIGNAL

901
00:42:20,938 --> 00:42:22,606
STAR 1 AND LET US KNOW YOU HAVE

902
00:42:22,606 --> 00:42:23,440
A QUESTION.

903
00:42:23,440 --> 00:42:25,276
IF YOUR QUESTION GETS ANSWERED

904
00:42:25,276 --> 00:42:28,212
YOU CAN PRESS STAR 2 AND WE'LL

905
00:42:28,212 --> 00:42:32,416
BE TAKING QUESTIONS FROM SOCIAL

906
00:42:32,416 --> 00:42:32,750
MEDIA.

907
00:42:32,750 --> 00:42:36,787
USE THE #ASKNASA.

908
00:42:36,787 --> 00:42:37,988
LET'S START OVER HERE.

909
00:42:37,988 --> 00:42:43,460
>> I BELIEVE THIS IS FOR KENNY.

910
00:42:43,460 --> 00:42:46,697
THE CANADIAN ARM IN ITS CURRENT

911
00:42:46,697 --> 00:42:48,098
CONDITION, COULD YOU CAPTURE THE

912
00:42:48,098 --> 00:42:49,033
CARGO MODULE THAT YOU'RE

913
00:42:49,033 --> 00:42:52,703

PLANNING TO LAUNCH IN NOVEMBER

914

00:42:52,703 --> 00:42:54,238

FOR ORBITAL?

915

00:42:54,238 --> 00:42:55,406

>> WE WOULD HAVE -- THERE IS

916

00:42:55,406 --> 00:42:57,374

SOME POWER THAT'S REQUIRED FOR

917

00:42:57,374 --> 00:42:59,677

THAT MODULE IN ORDER TO APPLY

918

00:42:59,677 --> 00:43:03,213

POWER TO THE MODULE ONCE YOU

919

00:43:03,213 --> 00:43:20,631

CAPTURE IT.

920

00:43:31,408 --> 00:43:35,012

EXPLANATION WAS SO THOROUGH BUT

921

00:43:35,012 --> 00:43:36,380

THE LEAD YOU'RE CHANGING IS THE

922

00:43:36,380 --> 00:43:38,382

ONE THAT IS EXTENDED OR THE ONE

923

00:43:38,382 --> 00:43:40,250

THAT'S ATTACHED NORMALLY TO THE

924

00:43:40,250 --> 00:43:40,751

STATION IS THIS

925

00:43:40,751 --> 00:43:43,487

>> IT'S -- WHEN WE DO OPERATIONS

926
00:43:43,487 --> 00:43:46,657
BOTH ENDS ARE THE SAME AND SO,

927
00:43:46,657 --> 00:43:48,525
THAT'S ONE REASON WE CONTINUE TO

928
00:43:48,525 --> 00:43:50,227
TAKE A LOOK AT THEM AND TAKE A

929
00:43:50,227 --> 00:43:52,262
LOOK AT THE SNARES AND TAKE A

930
00:43:52,262 --> 00:43:53,630
LOOK HOW THEY'RE PERFORMING

931
00:43:53,630 --> 00:43:54,898
BECAUSE OF THE FACT THAT WE USE

932
00:43:54,898 --> 00:43:57,067
THEM INTERCHANGEABLY AND THERE

933
00:43:57,067 --> 00:43:59,636
IS NO -- WE DON'T REALLY TRY TO

934
00:43:59,636 --> 00:44:01,138
SWAY THIS WAY OR THAT WAY WHEN

935
00:44:01,138 --> 00:44:04,608
IT COMES TO BASE OR THE ONE

936
00:44:04,608 --> 00:44:06,710
THAT'S DOING THE ACTUAL CAPTURE.

937
00:44:06,710 --> 00:44:19,023
IT'S NOT -- WE DON'T

938
00:44:19,023 --> 00:44:19,790

DISCRIMINATE.

939

00:44:19,790 --> 00:44:20,824

THAT HE AT LATCH ON THE BASE

940

00:44:20,824 --> 00:44:22,359

SIDE BECAUSE THAT'S WHERE THE

941

00:44:22,359 --> 00:44:23,460

POWER IS GOING TO COME FROM.

942

00:44:23,460 --> 00:44:25,796

IF YOU NEED TO EXTEND THAT ALL

943

00:44:25,796 --> 00:44:29,266

THE WAY OUT TO THE ORBITAL ATK

944

00:44:29,266 --> 00:44:32,403

YOU'LL NEED TO EXTEND THE

945

00:44:32,403 --> 00:44:33,704

LATCHES THERE AS WELL TO ENSURE

946

00:44:33,704 --> 00:44:37,441

YOU CAN GET THE POWER THROUGH TO

947

00:44:37,441 --> 00:44:40,811

THE MODULE.

948

00:44:40,811 --> 00:44:42,746

>> HI.

949

00:44:42,746 --> 00:44:44,081

ROBERT PEARLMAN WITH COLLECT

950

00:44:44,081 --> 00:44:44,381

SPACE.

951
00:44:44,381 --> 00:44:46,950
TO FIRST CLARIFY, HOW MANY TOTAL

952
00:44:46,950 --> 00:44:48,385
SPARES ARE THERE?

953
00:44:48,385 --> 00:44:50,687
I THINK THERE WERE MENTIONED 2.

954
00:44:50,687 --> 00:45:10,841
ARE THERE MORE ON THE GROUND?

955
00:45:12,910 --> 00:45:15,846
SO YOU COULD SAY THERE ARE 3

956
00:45:15,846 --> 00:45:17,714
SPARE LEES IN PLAY BUT AFTER

957
00:45:17,714 --> 00:45:21,018
THIS THURSDAY THERE WILL BE ONLY

958
00:45:21,018 --> 00:45:21,552
2.

959
00:45:21,552 --> 00:45:25,255
I BELIEVE YOU MENTIONED THE

960
00:45:25,255 --> 00:45:27,891
CANON ARM IT WAS SOMEWHAT

961
00:45:27,891 --> 00:45:31,228
UNEXPECTED GIVEN THE LIFE SPAN

962
00:45:31,228 --> 00:45:42,473
OF THE ARM.

963
00:45:42,473 --> 00:45:44,808

THE ARM WAS DESIGNED TO LAST FOR

964

00:45:44,808 --> 00:45:47,444

THE WHOLE DURATION OF THE SPACE

965

00:45:47,444 --> 00:45:57,654

STAYS PROGRAM WITH MAINTENANCE.

966

00:45:57,654 --> 00:46:00,357

THE LIFE OF THE COMPONENTS I

967

00:46:00,357 --> 00:46:01,792

LOOKED BACK AT THE DESIGN

968

00:46:01,792 --> 00:46:02,259

DOCUMENTATION.

969

00:46:02,259 --> 00:46:03,494

WE USED THE 10 YEAR FIGURE

970

00:46:03,494 --> 00:46:04,661

DURING THE COURSE OF THAT.

971

00:46:04,661 --> 00:46:16,974

FOR SOME ASPECTS WE ALSO USED 15

972

00:46:16,974 --> 00:46:19,576

YEARS WE'RE ACTUALLY VERY

973

00:46:19,576 --> 00:46:23,080

PLEASED BOTH LEADS LASTED THIS

974

00:46:23,080 --> 00:46:24,781

LONG.

975

00:46:24,781 --> 00:46:26,049

THE FACT THAT THEY LASTED THIS

976

00:46:26,049 --> 00:46:28,785

LONG IS A GREAT THING.

977

00:46:28,785 --> 00:46:30,988

AS FAR AS OTHER MAINTENANCE WE

978

00:46:30,988 --> 00:46:32,322

ACTUALLY DID A JOINT REPLACEMENT

979

00:46:32,322 --> 00:46:35,759

IN JUNE OF 2002.

980

00:46:35,759 --> 00:46:37,828

THAT WAS EARLY ON WITHIN THE

981

00:46:37,828 --> 00:46:40,564

FIRST YEAR OF THE ARM BEING IN

982

00:46:40,564 --> 00:46:40,864

SPACE.

983

00:46:40,864 --> 00:46:42,733

AND WE'VE BASICALLY DETECTED A

984

00:46:42,733 --> 00:46:46,703

SHORT IN WHAT WAS THEN THE ROLL

985

00:46:46,703 --> 00:46:49,773

JOINT AND THAT WAS BEFORE THE

986

00:46:49,773 --> 00:46:51,175

MOBILE BASE SHOWED UP THE WRIST

987

00:46:51,175 --> 00:46:53,143

ROLL JOINT NEEDED TO BE REPLACED

988

00:46:53,143 --> 00:46:57,581

AND WE DID THAT IN JUNE 2002 AND

989

00:46:57,581 --> 00:46:58,549

THAT WENT WELL.

990

00:46:58,549 --> 00:47:00,150

THAT WAS A GREAT DEMONSTRATION

991

00:47:00,150 --> 00:47:02,252

THAT YOU CAN DO JUST THIS TASK

992

00:47:02,252 --> 00:47:04,188

BECAUSE IN ORDER TO DO THAT WE

993

00:47:04,188 --> 00:47:06,190

HAD TO TAKE THE END DEFECTOR OFF

994

00:47:06,190 --> 00:47:07,457

TO GET TO THE JOINT ASK THAT

995

00:47:07,457 --> 00:47:11,061

WENT REALLY, REALLY WELL.

996

00:47:11,061 --> 00:47:13,697

EVEN GOT A GREAT PRECEDENT THAT

997

00:47:13,697 --> 00:47:15,599

THAT THIS FRIDAY IS GOING TO GO

998

00:47:15,599 --> 00:47:15,999

JUST FINE.

999

00:47:15,999 --> 00:47:16,934

>> WE'LL TAKE QUESTIONS FROM THE

1000

00:47:16,934 --> 00:47:19,603

PHONE NOW AND I THINK WE HAVE

1001
00:47:19,603 --> 00:47:22,105
ONE WAITING FOR US FROM MARK.

1002
00:47:22,105 --> 00:47:24,374
ARE YOU ONLINE, MARK?

1003
00:47:24,374 --> 00:47:28,045
>> MARK, HISTORICAL AEROSPACE

1004
00:47:28,045 --> 00:47:29,446
NEWS MEDIA.

1005
00:47:29,446 --> 00:47:31,815
THANK YOU FOR SUCH AN

1006
00:47:31,815 --> 00:47:33,483
INFORMATIVE BRIEFING.

1007
00:47:33,483 --> 00:47:34,318
QUESTION.

1008
00:47:34,318 --> 00:47:37,621
FIRST OFF, WILL THE LATCHING

1009
00:47:37,621 --> 00:47:40,390
EFFECTERS BEING REPLACED WILL

1010
00:47:40,390 --> 00:47:44,595
THERE BE DIFFERENCES TO THEM AND

1011
00:47:44,595 --> 00:47:46,196
ANY OTHER MECHANISMS IN THE

1012
00:47:46,196 --> 00:47:48,065
FUTURE TO ACCOMMODATE FUTURE

1013
00:47:48,065 --> 00:47:52,469

MISSIONS THAT WILL BE BRINGING

1014

00:47:52,469 --> 00:47:55,305

ASTRONAUTS FROM CAPE CANAVERAL

1015

00:47:55,305 --> 00:47:57,708

FROM THE KENNEDY SPACE CENTER TO

1016

00:47:57,708 --> 00:48:01,144

ISS, WILL THERE BE ANY CHANGES

1017

00:48:01,144 --> 00:48:03,847

TO ACCOMMODATE SPACECRAFT FLIGHT

1018

00:48:03,847 --> 00:48:06,416

AND THE DRAGON CAPSULE COMING TO

1019

00:48:06,416 --> 00:48:10,287

THE ISS?

1020

00:48:14,157 --> 00:48:12,356

>>

1021

00:48:14,157 --> 00:48:15,292

FROM THE STANDPOINT OF THE ARM

1022

00:48:15,292 --> 00:48:16,827

THERE ARE NO DESIGN CHANGES

1023

00:48:16,827 --> 00:48:34,244

BEING MADE TO SUPPORT THE NEW

1024

00:48:34,244 --> 00:48:34,845

VEHICLES.

1025

00:48:34,845 --> 00:48:36,113

THERE ARE NO PLANS TO UPDATE THE

1026
00:48:36,113 --> 00:48:39,783
ARMS OR LATCHES OR ANY OTHER

1027
00:48:39,783 --> 00:48:44,688
PARTS OF THE SYSTEM.

1028
00:48:44,688 --> 00:48:47,324
IT'S GOOD TO GO.

1029
00:48:47,324 --> 00:48:48,425
>> WE HAVE QUESTIONS FROM COLBY

1030
00:48:48,425 --> 00:48:49,559
ON TWITTER WHO WANTS TO KNOW

1031
00:48:49,559 --> 00:48:52,129
WHAT KIND OF TECHNOLOGY WE CAN

1032
00:48:52,129 --> 00:48:55,399
LOOK FORWARD TO IN FUTURE SPACE

1033
00:48:55,399 --> 00:48:57,634
WALKS AND NOT JUST ON THE SPACE

1034
00:48:57,634 --> 00:49:00,904
STATION BUT ORION SPACE WALKS

1035
00:49:00,904 --> 00:49:01,238
MAYBE.

1036
00:49:01,238 --> 00:49:02,205
>> I THINK I'LL TAKE THAT AND

1037
00:49:02,205 --> 00:49:07,377
I'LL LET YOU GUYS HAVE IT.

1038
00:49:07,377 --> 00:49:08,245

SPACE WALKS ARE SOMETHING THAT

1039

00:49:08,245 --> 00:49:17,988

IF YOU LOOK THROUGH THE HISTORY

1040

00:49:17,988 --> 00:49:19,256

HISTORY

1041

00:49:19,256 --> 00:49:21,024

AND HOW TO TAKE CARE OF SPACE

1042

00:49:21,024 --> 00:49:21,958

SUITS ON ORBIT.

1043

00:49:21,958 --> 00:49:23,427

YOU PUT BEHIND THAT ALL WORK

1044

00:49:23,427 --> 00:49:25,796

THAT'S BEEN DONE HERE ON THE

1045

00:49:25,796 --> 00:49:27,197

GROUND TO UPGRADE SUITS FROM

1046

00:49:27,197 --> 00:49:30,801

BACK EVEN IN THE APOLLO DAYS AND

1047

00:49:30,801 --> 00:49:31,134

PRIOR.

1048

00:49:31,134 --> 00:49:35,205

SO IT'S A CONTINUALLY EVOLVING

1049

00:49:35,205 --> 00:49:37,040

SORT OF ART THIS WHOLE SPACE

1050

00:49:37,040 --> 00:49:39,142

WALKING THING.

1051
00:49:39,142 --> 00:49:42,646
ANYWAY, I ANTICIPATE AS WE GO

1052
00:49:42,646 --> 00:49:44,815
FORWARD AND WE GET INTO OTHER

1053
00:49:44,815 --> 00:49:46,316
MISSIONS, WE'LL HAVE TO LOOK AT

1054
00:49:46,316 --> 00:49:47,651
THE REQUIREMENTS AT THAT

1055
00:49:47,651 --> 00:49:49,186
PARTICULAR TIME AND WE'LL TAKE

1056
00:49:49,186 --> 00:49:50,954
THE BEST TECHNOLOGY THAT WE HAVE

1057
00:49:50,954 --> 00:49:52,723
THAT WE CAN PRAO HAVE OUT IN THE

1058
00:49:52,723 --> 00:49:53,757
ENVIRONMENT THAT WE NEED TO

1059
00:49:53,757 --> 00:49:56,960
PROVE IT IN AND WE'LL BE READY

1060
00:49:56,960 --> 00:49:57,961
TO GO.

1061
00:49:57,961 --> 00:49:59,262
AGAIN, I THINK WE'RE LEARNING A

1062
00:49:59,262 --> 00:50:01,798
LOT WITH SPACE STATION ABOUT HOW

1063
00:50:01,798 --> 00:50:03,767

TO CARE FOR SUITS IN ORBIT AND

1064

00:50:03,767 --> 00:50:05,335

THAT'S GOING TO BENEFIT US GOING

1065

00:50:05,335 --> 00:50:09,005

FORWARD IN TERMS OF WHEN WE GET

1066

00:50:09,005 --> 00:50:14,478

FURTHER FROM THE PLANET AND WE

1067

00:50:14,478 --> 00:50:16,446

NEED TO MAKE THEM AS FLEXIBLE AS

1068

00:50:16,446 --> 00:50:18,782

WE CAN IN TERMS OF HOW WE TAKE

1069

00:50:18,782 --> 00:50:20,117

CARE OF THEM SO THEY'RE THERE

1070

00:50:20,117 --> 00:50:23,420

FOR US WHEN WE NEED IT.

1071

00:50:23,420 --> 00:50:25,021

IT'S CONTINUALLY EVOLVING AND

1072

00:50:25,021 --> 00:50:26,156

LIMITED BY WHATEVER TECHNOLOGY

1073

00:50:26,156 --> 00:50:26,857

CAN GIVE US.

1074

00:50:26,857 --> 00:50:28,692

AND EVERY DAY THAT'S CHANGING.

1075

00:50:28,692 --> 00:50:31,294

SO WE'RE ALWAYS LOOKING TO LEARN

1076
00:50:31,294 --> 00:50:42,739
AND UPGRADE WHEN WE CAN.

1077
00:50:42,739 --> 00:50:44,141
CURRENT SUITS WERE DESIGNED FOR

1078
00:50:44,141 --> 00:50:45,475
GROUND LAUNCH AND USE FOR A

1079
00:50:45,475 --> 00:50:47,677
COUPLE OF WEEKS AND THEN

1080
00:50:47,677 --> 00:50:49,312
RETURNED TO ORBIT BEFORE

1081
00:50:49,312 --> 00:50:52,282
REFURBISHING THEM.

1082
00:50:52,282 --> 00:50:54,484
FUTURE SUITS WILL BE MORE OF AN

1083
00:50:54,484 --> 00:51:01,792
OR DID THE -- ORU TYPE SO YOU

1084
00:51:01,792 --> 00:51:02,859
CAN CHANGE OUT PIECES BEFORE

1085
00:51:02,859 --> 00:51:04,761
THEY FAIL SO YOU'RE NOT TRASHING

1086
00:51:04,761 --> 00:51:07,964
A WHOLE SUIT SO YOU CAN BRING UP

1087
00:51:07,964 --> 00:51:10,767
NEW PIECES WHILE IN ORBIT AND

1088
00:51:10,767 --> 00:51:13,804

HAVE REDUNDANT SYSTEMS.

1089

00:51:13,804 --> 00:51:15,205

>> I'M ALL EXCITED ABOUT HAVING

1090

00:51:15,205 --> 00:51:16,706

NEW SPACE SUITS AS WELL.

1091

00:51:16,706 --> 00:51:18,308

BUT SOME OF THE NEW TECHNOLOGY

1092

00:51:18,308 --> 00:51:20,110

THAT WE'RE DEPLOYING IN THESE

1093

00:51:20,110 --> 00:51:22,145

SPACE WALKS AND THE NEXT FEW AS

1094

00:51:22,145 --> 00:51:25,048

I MENTIONED WE'RE INSTALLING

1095

00:51:25,048 --> 00:51:26,817

THOSE NEW HIGH DEFINITION

1096

00:51:26,817 --> 00:51:28,118

CAMERAS AND WE'LL HAVE THOSE

1097

00:51:28,118 --> 00:51:29,386

POSITIONED THEN ALL ACROSS THE

1098

00:51:29,386 --> 00:51:29,853

SPACE STATION.

1099

00:51:29,853 --> 00:51:33,757

SO THAT'S GOING TO GIVE YOU GUYS

1100

00:51:33,757 --> 00:51:38,962

SOME GREAT VIEWS.

1101
00:51:38,962 --> 00:51:40,931
WE'RE EXCITED ABOUT BRINGING YOU

1102
00:51:40,931 --> 00:51:41,231
THAT.

1103
00:51:41,231 --> 00:51:44,568
THE EXTERNAL WIRELESS SYSTEM IS

1104
00:51:44,568 --> 00:51:46,036
NEWER TECHNOLOGY TO TRANSMIT

1105
00:51:46,036 --> 00:51:49,806
THOSE SIGNALS AROUND THE SPACE

1106
00:51:49,806 --> 00:51:50,740
STATION.

1107
00:51:50,740 --> 00:51:53,143
THERE WILL ALSO BE WORKING WITH

1108
00:51:53,143 --> 00:51:57,113
THE NEW HI-DEF CAMERAS.

1109
00:51:57,113 --> 00:51:58,949
TO GIVE US A MUCH BETTER

1110
00:51:58,949 --> 00:51:59,983
TECHNOLOGY THERE.

1111
00:51:59,983 --> 00:52:01,518
WE'VE ALREADY INSTALLED ONE OF

1112
00:52:01,518 --> 00:52:06,089
THE NEW DOCKING SYSTEMS FOR THE

1113
00:52:06,089 --> 00:52:07,190

NEW CREW VEHICLES THAT ARE

1114

00:52:07,190 --> 00:52:08,692

COMING AND NEXT YEAR WE'LL BE

1115

00:52:08,692 --> 00:52:12,062

INSTALLING THE NEXT OF THOSE TWO

1116

00:52:12,062 --> 00:52:12,929

DOCKING PORTS.

1117

00:52:12,929 --> 00:52:16,166

SO IT WAS JUST A FEW OF THE NEW

1118

00:52:16,166 --> 00:52:16,867

TECHNOLOGIESES THAT WE'RE

1119

00:52:16,867 --> 00:52:18,101

BRINGING ON BOARD NOW AND

1120

00:52:18,101 --> 00:52:21,671

CONTINUE TO UPGRADE THE SPACE

1121

00:52:21,671 --> 00:52:26,042

STATION AS WE GO.

1122

00:52:26,042 --> 00:52:28,979

>> WE HAVE A FEW SPACE WALK 1

1123

00:52:28,979 --> 00:52:30,313

on 1 QUESTIONS COMING IN ON

1124

00:52:30,313 --> 00:52:32,349

SOCIAL MEDIA AND I THINK THAT

1125

00:52:32,349 --> 00:52:33,717

WILL BE JUST ABOUT ALL WE HAVE

1126
00:52:33,717 --> 00:52:35,085
TIME FOR.

1127
00:52:35,085 --> 00:52:38,922
DUKE WANTS TO KNOW HOW A SPACE

1128
00:52:38,922 --> 00:52:40,257
WALK POSSIBLE WHEN THE SPACE

1129
00:52:40,257 --> 00:52:44,127
STATION IS TRAVELING 17,500

1130
00:52:44,127 --> 00:52:45,462
MILES PER HOUR?

1131
00:52:48,064 --> 00:52:46,997
>>

1132
00:52:48,064 --> 00:52:49,866
THAT IS AN EXCELLENT QUESTION,

1133
00:52:49,866 --> 00:52:50,166
DUKE.

1134
00:52:50,166 --> 00:52:52,002
LET ME DESCRIBE IT TO YOU THIS

1135
00:52:52,002 --> 00:52:52,302
WAY.

1136
00:52:52,302 --> 00:52:54,638
IF YOU WERE ON YOUR CAR ON THE

1137
00:52:54,638 --> 00:52:58,208
OUT -- SAY YOU WERE STANDING ON

1138
00:52:58,208 --> 00:52:59,876

TOP OF YOUR CAR AND YOUR CAR WAS

1139

00:52:59,876 --> 00:53:01,611

MOVING ALONG AT 20 MILES AN HOUR

1140

00:53:01,611 --> 00:53:04,080

AND YOU'RE MOVING ALONG AT 20

1141

00:53:04,080 --> 00:53:05,782

MILES AN HOUR TOO BUT YOU'RE NOT

1142

00:53:05,782 --> 00:53:07,183

FALLING OFF BECAUSE YOU'RE GOING

1143

00:53:07,183 --> 00:53:08,151

THE SAME SPEED.

1144

00:53:08,151 --> 00:53:09,686

IF YOU GOT MOVING FAST ENOUGH

1145

00:53:09,686 --> 00:53:12,556

YOU PROBABLY WOULD, BUT IN THIS

1146

00:53:12,556 --> 00:53:14,491

CASE, WE'RE JUST MOVING AT THE

1147

00:53:14,491 --> 00:53:16,693

SAME SPEED RELATIVE TO THE SPACE

1148

00:53:16,693 --> 00:53:18,762

STATION OR THINK OF YOURSELF

1149

00:53:18,762 --> 00:53:19,896

STANDING ON THE EARTH.

1150

00:53:19,896 --> 00:53:21,531

WE'RE STANDING HERE AND THE

1151
00:53:21,531 --> 00:53:23,633
EARTH IS SPINNING AROUND REALLY

1152
00:53:23,633 --> 00:53:26,303
FAST BUT WE'RE NOT FLYING OFF

1153
00:53:26,303 --> 00:53:28,605
BECAUSE WE'RE RIGHT HERE MOVING

1154
00:53:28,605 --> 00:53:30,507
AT THE SAME SPEED AS THE EARTH.

1155
00:53:30,507 --> 00:53:32,275
FOR THE ACCIDENTS THEY'RE NOT

1156
00:53:32,275 --> 00:53:33,677
MOVINGALITY ALL RELATIVE TO THE

1157
00:53:33,677 --> 00:53:35,845
SPACE STATION.

1158
00:53:35,845 --> 00:53:36,846
DOES THAT HELP?

1159
00:53:36,846 --> 00:53:37,914
>> MAKES SENSE TO ME.

1160
00:53:37,914 --> 00:53:42,886
>> ONE MORE KIND ALONG -- FOR

1161
00:53:42,886 --> 00:53:43,920
SOMEBODY WHO HASN'T BEEN

1162
00:53:43,920 --> 00:53:47,090
FOLLOWING ALONG WITH IN AN IS IS

1163
00:53:47,090 --> 00:53:51,361

A WANTS TO WHAT TO DO IF AN

1164

00:53:51,361 --> 00:53:52,395

ASTRONAUT WAS INJURED DURING THE

1165

00:53:52,395 --> 00:53:52,963

SPACE WALK IS THIS

1166

00:53:52,963 --> 00:53:55,065

>> WE HAVE PROCEDURES AND THE

1167

00:53:55,065 --> 00:53:57,033

CREW HAS THEM IN THE CHECKLIST,

1168

00:53:57,033 --> 00:53:59,202

A LIST OF PROCEDURES THEY CAN

1169

00:53:59,202 --> 00:54:00,537

REFERENCE TO ANY TIME DURING THE

1170

00:54:00,537 --> 00:54:02,505

E.V.A AND WE TRY TO THINK OF ANY

1171

00:54:02,505 --> 00:54:04,074

ISSUES THAT MAY HAPPEN WHETHER

1172

00:54:04,074 --> 00:54:07,444

IT'S MEDICAL OR SUIT RELATED

1173

00:54:07,444 --> 00:54:09,245

ISSUES AND GIVE THE CREWS WHAT

1174

00:54:09,245 --> 00:54:10,246

THEY SHOULD FOLLOW THROUGH TO

1175

00:54:10,246 --> 00:54:14,184

RETURN TO THE AIR LOCK AND GET

1176
00:54:14,184 --> 00:54:15,285
THEMSELVES SAFE INSIDE THE AIR

1177
00:54:15,285 --> 00:54:17,354
LOCK BEFORE WE CAN BRING THEM

1178
00:54:17,354 --> 00:54:20,724
BACK UP TO ANY MEDICAL SERVICES

1179
00:54:20,724 --> 00:54:22,258
WHEN THEY'RE BACK INSIDE.

1180
00:54:22,258 --> 00:54:25,428
WE PRACTICE THOSE WITH THE CREW

1181
00:54:25,428 --> 00:54:29,566
AND PLAN FOR ANY SCENARIO THAT

1182
00:54:29,566 --> 00:54:31,501
WE CAN THINK OF.

1183
00:54:31,501 --> 00:54:33,036
>> WE ARE GETTING READY FOR THE

1184
00:54:33,036 --> 00:54:35,739
SPACE WALKS THAT ARE COMING UP

1185
00:54:35,739 --> 00:54:37,073
AND WE'LL SIGN OFF NOW BUT

1186
00:54:37,073 --> 00:54:39,209
REMIND YOU TO SOON BACK IN

1187
00:54:39,209 --> 00:54:41,811
STARTING ON OCTOBER 5TH AND THEN

1188
00:54:41,811 --> 00:54:43,613

FOLLOWING THAT ON OCTOBER 10TH

1189

00:54:43,613 --> 00:54:44,581

AND 18TH.

1190

00:54:44,581 --> 00:54:46,750

OUR NASA TV COVERAGE WILL START

1191

00:54:46,750 --> 00:54:48,785

EACH DAY AT 5:30 A.M. CENTRAL

1192

00:54:48,785 --> 00:54:50,286

TIME AND EXPECT TO SEE THE CREW

1193

00:54:50,286 --> 00:54:52,222

GO OUT THE DOOR PROBABLY A

1194

00:54:52,222 --> 00:54:54,624

LITTLE AFTER 7:00 A.M. CENTRAL.

1195

00:54:54,624 --> 00:54:57,994

YOU CAN KEEP UP WITH ALL OF

1196

00:54:57,994 --> 00:55:04,601

SPACE STATION NEWS AT

1197

00:55:04,601 --> 00:55:05,568

WWW.NASA.GOV/STATION AND WE'LL