1
00:00:04,370 --> 00:00:02,419
well good morning everybody and welcome

2
00:00:06,559 --> 00:00:04,380
to NASA's Johnson Space Center in our

3
00:00:09,530 --> 00:00:06,569
series of briefings today throughout the

4
00:00:10,879 --> 00:00:09,540
day on discoveries final voyage this one

5
00:00:13,120 --> 00:00:10,889
duck tours to the International Space

6
00:00:16,060 --> 00:00:13,130
Station the 39th mission of discovery

7
00:00:18,290 --> 00:00:16,070
our first briefing is a program overview

8
00:00:20,720 --> 00:00:18,300
joining us for this first briefing is

9
00:00:23,300 --> 00:00:20,730
John Shannon he is the space shuttle

10
00:00:25,939 --> 00:00:23,310
program manager and also joining us is

11
00:00:29,300 --> 00:00:25,949
Dan Hartman he is the manager for ISS

12
00:00:31,939 --> 00:00:29,310
operations integration he also chairs

13
00:00:34,700 --> 00:00:31,949

the station's mission management team

14
00:00:36,139 --> 00:00:34,710
twice a week so he stays fully abreast

15
00:00:38,540 --> 00:00:36,149
of everything that's going on with all

16
00:00:40,910 --> 00:00:38,550
the international partners around the

17
00:00:42,350 --> 00:00:40,920
around the world so we'll hear from both

18
00:00:44,360 --> 00:00:42,360
gentlemen and then we'll throw it open

19
00:00:46,790 --> 00:00:44,370
for questions and with that I'll start

20
00:00:48,500 --> 00:00:46,800
with John okay thanks Kyle well it's

21
00:00:50,270 --> 00:00:48,510
it's good to see everybody again it's

22
00:00:52,430 --> 00:00:50,280
been a while since I've been here too to

23
00:00:54,080 --> 00:00:52,440
give you an update on the program status

24
00:00:58,549 --> 00:00:54,090
we've been very busy since our last

25
00:01:00,880 --> 00:00:58,559
launch concerning the sts-133 we had a

26
00:01:03,920 --> 00:01:00,890
good program review about two weeks ago

27
00:01:10,370 --> 00:01:03,930
we have had a very smooth flow on this

28
00:01:12,859 --> 00:01:10,380
vehicle in the stack since sts-131 the

29
00:01:14,450 --> 00:01:12,869
program we really had no issues that we

30
00:01:17,840 --> 00:01:14,460
were going to carry forward to the

31
00:01:21,140 --> 00:01:17,850
agency Flight Readiness review on Monday

32
00:01:23,660 --> 00:01:21,150
and more of status of just how things

33
00:01:26,030 --> 00:01:23,670
have been going in the program in the

34
00:01:29,270 --> 00:01:26,040
processing of this vehicle we did have

35
00:01:31,850 --> 00:01:29,280
one problem that started last week with

36
00:01:34,490 --> 00:01:31,860
it's been pretty heavily reported with

37
00:01:36,190 --> 00:01:34,500
the one of the fuel lines with mono

38
00:01:40,670 --> 00:01:36,200

methyl hydrazine in it that we use for

39
00:01:42,740 --> 00:01:40,680
the thrusters and the the orbital

40
00:01:46,069 --> 00:01:42,750
maneuvering system engines and that we

41
00:01:49,310 --> 00:01:46,079
had a small leak and in the plumbing at

42
00:01:50,539 --> 00:01:49,320
a flange fitting and the team has been

43
00:01:54,469 --> 00:01:50,549
working that very hard over the last

44
00:01:56,149 --> 00:01:54,479
week you probably have heard that we did

45
00:01:59,660 --> 00:01:56,159
some some troubleshooting on it it

46
00:02:02,569 --> 00:01:59,670
looked like the the leak stopped but the

47
00:02:04,670 --> 00:02:02,579
team you know the the tenant that we

48
00:02:08,270 --> 00:02:04,680
have is that we fly with accepted risk

49
00:02:09,919 --> 00:02:08,280
we don't fly with unknown risk and I

50
00:02:11,449 --> 00:02:09,929
characterize this as an unknown risk

51
00:02:13,550 --> 00:02:11,459
case because we didn't understand why we

52
00:02:13,950 --> 00:02:13,560
had that small leak and so the team is

53
00:02:16,950 --> 00:02:13,960
working

54
00:02:20,370 --> 00:02:16,960
very hard right now to to set up all of

55
00:02:22,710 --> 00:02:20,380
the equipment to drain the tanks they'll

56
00:02:26,040 --> 00:02:22,720
do a in what they call you ducting

57
00:02:29,190 --> 00:02:26,050
basically take it to drive the system

58
00:02:31,380 --> 00:02:29,200
take it down and do a vacuum on it I get

59
00:02:34,440 --> 00:02:31,390
it all safe and then we'll break that

60
00:02:37,250 --> 00:02:34,450
flange open and and look at the the

61
00:02:39,480 --> 00:02:37,260
metal ceiling services look at the two

62
00:02:41,460 --> 00:02:39,490
sealing rings they're like oh rings

63
00:02:43,500 --> 00:02:41,470

they're metal covered with Teflon that

64
00:02:45,810 --> 00:02:43,510
are inside there and it will understand

65
00:02:47,940 --> 00:02:45,820
a situation and I fully believe the team

66
00:02:49,920 --> 00:02:47,950
will will get that back together this

67
00:02:51,930 --> 00:02:49,930
weekend and we'll be in good shape to go

68
00:02:56,040 --> 00:02:51,940
fly so that's really the only the only

69
00:02:59,220 --> 00:02:56,050
systems issue that we had for discovery

70
00:03:00,870 --> 00:02:59,230
and preparing for this flight used a few

71
00:03:03,540 --> 00:03:00,880
things about it since this is a program

72
00:03:05,840 --> 00:03:03,550
status it's pretty exciting that

73
00:03:08,430 --> 00:03:05,850
discovery is going to take up the last

74
00:03:09,900 --> 00:03:08,440
major United States module to the

75
00:03:12,510 --> 00:03:09,910
station dan will talk about that some

76
00:03:15,540 --> 00:03:12,520
more plus getting the ELC for up i think

77
00:03:17,760 --> 00:03:15,550
we're we're making good on our promise

78
00:03:19,620 --> 00:03:17,770
that we would get the space station in

79
00:03:23,040 --> 00:03:19,630
the absolute best possible config we

80
00:03:26,370 --> 00:03:23,050
could with spares and equipment before

81
00:03:29,730 --> 00:03:26,380
we retire the space shuttle when we came

82
00:03:32,120 --> 00:03:29,740
out of the the Flight Readiness review

83
00:03:35,550 --> 00:03:32,130
we set the launch date is November first

84
00:03:38,370 --> 00:03:35,560
at 440 p.m. eastern daylight time the

85
00:03:40,590 --> 00:03:38,380
window for for this flight stretches

86
00:03:44,220 --> 00:03:40,600
from November first through november

87
00:03:45,780 --> 00:03:44,230
seventh the mission is eleven days and

88
00:03:48,240 --> 00:03:45,790

we have one extra day that we can add

89
00:03:52,080 --> 00:03:48,250
will have the consumables we predict dad

90
00:03:54,360 --> 00:03:52,090
a twelfth day if we launch at the end of

91
00:03:56,880 --> 00:03:54,370
the window on november seventh we would

92
00:03:59,370 --> 00:03:56,890
not have that additional day option we

93
00:04:01,590 --> 00:03:59,380
would we would run into some issues so

94
00:04:03,690 --> 00:04:01,600
if we've launched between november first

95
00:04:06,060 --> 00:04:03,700
november six we would have the potential

96
00:04:07,440 --> 00:04:06,070
venting in twelfth day if we launched on

97
00:04:09,090 --> 00:04:07,450
the seventh we would only have eleven

98
00:04:12,510 --> 00:04:09,100
days but the full mission could be

99
00:04:14,790 --> 00:04:12,520
completed in that in that time frame the

100
00:04:16,500 --> 00:04:14,800
the range is pretty clear for that that

101
00:04:18,720 --> 00:04:16,510
time there was a delta launch in there

102
00:04:20,940 --> 00:04:18,730
it's moved out to a november 15th which

103
00:04:23,760 --> 00:04:20,950
is after landing for us so that helps us

104
00:04:27,020 --> 00:04:23,770
out quite a bit there's a spacex falcon

105
00:04:29,030 --> 00:04:27,030
9 launch currently on the 8th it

106
00:04:32,540 --> 00:04:29,040
is not an issue for us from the range

107
00:04:35,300 --> 00:04:32,550
because we use one of the solid rocket

108
00:04:38,870 --> 00:04:35,310
booster recovery ships to go get the

109
00:04:41,000 --> 00:04:38,880
Falcon 9 first stage and what we

110
00:04:44,180 --> 00:04:41,010
understand SpaceX would do is slip day

111
00:04:47,330 --> 00:04:44,190
for day with us too to allow us to have

112
00:04:49,280 --> 00:04:47,340
that SRB ship on station to recover

113
00:04:53,090 --> 00:04:49,290

their stage so we go in the second they

114
00:04:54,710 --> 00:04:53,100
go in the ninth and so on if for some

115
00:04:56,900 --> 00:04:54,720
reason we have some kind of an issue and

116
00:04:59,390 --> 00:04:56,910
we don't go between november first and

117
00:05:02,330 --> 00:04:59,400
seventh the next window opens right now

118
00:05:05,090 --> 00:05:02,340
it's December first through the fifth it

119
00:05:07,250 --> 00:05:05,100
may end up being extended a couple more

120
00:05:10,550 --> 00:05:07,260
days the first to the seventh depending

121
00:05:14,060 --> 00:05:10,560
on what happens with 25 Soyuz and Dan

122
00:05:15,770 --> 00:05:14,070
can can talk about that some more it's

123
00:05:17,270 --> 00:05:15,780
an interesting flight besides the

124
00:05:18,469 --> 00:05:17,280
activities we're going to be doing that

125
00:05:20,480 --> 00:05:18,479
the international space station will

126
00:05:22,370 --> 00:05:20,490
again be doing our boundary layer

127
00:05:24,110 --> 00:05:22,380
transition dto this is the types of

128
00:05:25,640 --> 00:05:24,120
things that that we think we should have

129
00:05:27,409 --> 00:05:25,650
been doing on the on the space shuttle

130
00:05:29,960 --> 00:05:27,419
throughout the program treating it as a

131
00:05:33,560 --> 00:05:29,970
flight test vehicle that's the small

132
00:05:36,350 --> 00:05:33,570
bump on the the underside of the the

133
00:05:38,450 --> 00:05:36,360
left wing that will trip the boundary

134
00:05:42,110 --> 00:05:38,460
layer and get some additional heating in

135
00:05:44,420 --> 00:05:42,120
one of our height I'll thickness areas

136
00:05:46,250 --> 00:05:44,430
we've got thermocouples under there to

137
00:05:48,950 --> 00:05:46,260
understand that will image it from the

138
00:05:53,330 --> 00:05:48,960

ground and from from infrared cameras

139
00:05:55,790 --> 00:05:53,340
that are flying I was privileged to go

140
00:06:00,890 --> 00:05:55,800
to an AI double a concert conference

141
00:06:04,040 --> 00:06:00,900
about have very few concerts about five

142
00:06:05,540 --> 00:06:04,050
months ago and there were 11 papers on

143
00:06:08,060 --> 00:06:05,550
just the science that they've gotten

144
00:06:10,130 --> 00:06:08,070
back from the boundary layer tripping so

145
00:06:11,630 --> 00:06:10,140
it's a it's an environment that it's

146
00:06:13,909 --> 00:06:11,640
very difficult to collect data and I

147
00:06:16,550 --> 00:06:13,919
think that data will be very useful to

148
00:06:19,070 --> 00:06:16,560
to a variety of vehicles that are that

149
00:06:22,820 --> 00:06:19,080
will be designed in the future you know

150
00:06:24,260 --> 00:06:22,830
we have a we have had a mantra

151
00:06:25,700 --> 00:06:24,270
throughout the program that you know

152
00:06:27,080 --> 00:06:25,710
we're not even though the program is

153
00:06:29,240 --> 00:06:27,090
ending we're not going to stop trying to

154
00:06:30,650 --> 00:06:29,250
improve the vehicles and we're going to

155
00:06:31,940 --> 00:06:30,660
try and make the very last flight the

156
00:06:33,560 --> 00:06:31,950
very best flight and we're going to as

157
00:06:35,839 --> 00:06:33,570
we learn things each flight we're going

158
00:06:37,700 --> 00:06:35,849
to include that into the processing and

159
00:06:40,010 --> 00:06:37,710
make it better and better for this

160
00:06:40,760 --> 00:06:40,020
flight we have a full ceramic plug

161
00:06:42,800 --> 00:06:40,770
redesign

162
00:06:45,499 --> 00:06:42,810
on a number of different areas where you

163
00:06:48,110 --> 00:06:45,509

take tiles off to get it it equipment

164
00:06:49,850 --> 00:06:48,120
underneath you have tiles that you put a

165
00:06:51,140 --> 00:06:49,860
bolt through to attach it to the

166
00:06:53,360 --> 00:06:51,150
structure and we have these ceramic

167
00:06:56,140 --> 00:06:53,370
plugs we put in in those bolt holes we

168
00:06:58,100 --> 00:06:56,150
lost a couple of them a few flights ago

169
00:07:01,460 --> 00:06:58,110
discovery is flying with a with a

170
00:07:03,409 --> 00:07:01,470
redesigned plug that it actually flew on

171
00:07:05,029 --> 00:07:03,419
the last flight as well and it showed

172
00:07:07,939 --> 00:07:05,039
excellent performance and we didn't

173
00:07:11,089 --> 00:07:07,949
would did not lose any ceramic plugs we

174
00:07:15,409 --> 00:07:11,099
have some thicker tougher tiles they're

175
00:07:17,689 --> 00:07:15,419
called Bri tiles and we added 24 I'm

176
00:07:20,499 --> 00:07:17,699
sorry we had 33 new Bri tiles to the

177
00:07:23,180 --> 00:07:20,509
underside of discovery on this flow and

178
00:07:25,149 --> 00:07:23,190
there were 24 / on the forward edge of

179
00:07:27,830 --> 00:07:25,159
the ET door so we put the tougher tiles

180
00:07:29,960 --> 00:07:27,840
along the brakes and the fuselage where

181
00:07:31,730 --> 00:07:29,970
if you had some kind of tile damage you

182
00:07:33,200 --> 00:07:31,740
could potentially have have a

183
00:07:36,020 --> 00:07:33,210
significant damage to the structure of

184
00:07:38,510 --> 00:07:36,030
the vehicle so we put those pre tiles in

185
00:07:42,890 --> 00:07:38,520
there it's a total of 213 on discovery

186
00:07:44,390 --> 00:07:42,900
and we're in very good shape too in case

187
00:07:46,339 --> 00:07:44,400
we get any kind of foam or ice or

188
00:07:49,370 --> 00:07:46,349

anything else that Bree tile is a

189
00:07:50,959 --> 00:07:49,380
significant layer of protection to us we

190
00:07:54,379 --> 00:07:50,969
also worked on the rudder speed brake

191
00:07:58,640 --> 00:07:54,389
tiles we lost half of a tile during a

192
00:08:01,100 --> 00:07:58,650
sent two flights ago and we did a lot of

193
00:08:02,629 --> 00:08:01,110
rework on shaming those tiles and making

194
00:08:04,850 --> 00:08:02,639
sure that they were in good shape we

195
00:08:06,200 --> 00:08:04,860
repaired some cracks so you know we have

196
00:08:07,790 --> 00:08:06,210
not just been kind of sitting back

197
00:08:10,430 --> 00:08:07,800
saying our discoveries going to fly one

198
00:08:12,189 --> 00:08:10,440
more time we don't need to do any

199
00:08:14,240 --> 00:08:12,199
upgrades we don't need to do any any

200
00:08:15,550 --> 00:08:14,250
enhancements on it that is not the

201
00:08:18,290 --> 00:08:15,560
attitude the team has taken they're

202
00:08:19,610 --> 00:08:18,300
working just like they always have to to

203
00:08:21,860 --> 00:08:19,620
try to make it the best vehicle they

204
00:08:24,800 --> 00:08:21,870
possibly can before we go commit to

205
00:08:27,860 --> 00:08:24,810
flight I am sure I will be asked about

206
00:08:31,670 --> 00:08:27,870
workforce we went through a significant

207
00:08:34,579 --> 00:08:31,680
downsizing and right before october

208
00:08:36,380 --> 00:08:34,589
first of this year we're basically half

209
00:08:41,319 --> 00:08:36,390
the size the program overall is half the

210
00:08:45,199 --> 00:08:41,329
size it was two and a half years ago and

211
00:08:48,050 --> 00:08:45,209
from a prime contractor standpoint the

212
00:08:52,519 --> 00:08:48,060
shuttle program currently has 6439 prime

213
00:08:57,590 --> 00:08:52,529

contractors we were at just over 14,000

214
00:09:02,030 --> 00:08:57,600
in no.7 from a civil servant standpoint

215
00:09:04,850 --> 00:09:02,040
we have 1139 civil servants that support

216
00:09:07,280 --> 00:09:04,860
the program and we were at about 1,800

217
00:09:09,259 --> 00:09:07,290
so it's a little more than 600 civil

218
00:09:11,559 --> 00:09:09,269
servants that that have gone off the

219
00:09:15,549 --> 00:09:11,569
program in the last two and a half years

220
00:09:18,650 --> 00:09:15,559
we expect that we'll have one more

221
00:09:21,470 --> 00:09:18,660
reduction in the in the team members on

222
00:09:25,369 --> 00:09:21,480
the primary contractors in January it

223
00:09:27,319 --> 00:09:25,379
will be about 320 people and then we'll

224
00:09:28,639 --> 00:09:27,329
hold where we are from a workforce

225
00:09:30,559 --> 00:09:28,649
standpoint because we'll be down to

226
00:09:32,869 --> 00:09:30,569
really just operations team and critical

227
00:09:35,420 --> 00:09:32,879
sustaining engineering skills at that

228
00:09:38,239 --> 00:09:35,430
point if we end in after the februari

229
00:09:41,360 --> 00:09:38,249
flight then the the final layoffs would

230
00:09:43,670 --> 00:09:41,370
be in March would take us down to about

231
00:09:46,460 --> 00:09:43,680
300 people total to do transition and

232
00:09:48,889 --> 00:09:46,470
retirement activities if we fly in the

233
00:09:51,079 --> 00:09:48,899
summer then roughly a month after that

234
00:09:53,090 --> 00:09:51,089
last flight we would do the same thing

235
00:09:57,470 --> 00:09:53,100
and we would we would reduce at that

236
00:09:59,660 --> 00:09:57,480
time I would just you know it would end

237
00:10:02,749 --> 00:09:59,670
by saying that I'm really proud of the

238
00:10:05,179 --> 00:10:02,759

teams that are working on these vehicles

239
00:10:09,259 --> 00:10:05,189
with the obvious distractions that we

240
00:10:12,470 --> 00:10:09,269
have with a with budget discussions and

241
00:10:15,400 --> 00:10:12,480
transition activities it's a very proud

242
00:10:19,759 --> 00:10:15,410
group and that really shows in the focus

243
00:10:21,259 --> 00:10:19,769
that they put into reconfiguring these

244
00:10:23,660 --> 00:10:21,269
vehicles and getting ready for flight

245
00:10:26,509 --> 00:10:23,670
and just a tremendous amount of pride

246
00:10:28,160 --> 00:10:26,519
that they have in the in the successful

247
00:10:31,850 --> 00:10:28,170
successful missions that we've been

248
00:10:33,949 --> 00:10:31,860
flying over the last several years and

249
00:10:37,240 --> 00:10:33,959
we're prepared to descend discovery out

250
00:10:40,639 --> 00:10:37,250
on a on a very high note that's all damn

251
00:10:42,499 --> 00:10:40,649
alright thank you John well we certainly

252
00:10:45,079 --> 00:10:42,509
look forward to the to the eula 5

253
00:10:46,759 --> 00:10:45,089
mission as John mentioned it will be our

254
00:10:48,619 --> 00:10:46,769
final module that we bring up to the

255
00:10:52,449 --> 00:10:48,629
International Space Station or permanent

256
00:10:54,829 --> 00:10:52,459
multi-purpose module it's Leonardo fm1

257
00:10:58,129 --> 00:10:54,839
commonly called the MPL em we've

258
00:11:01,100 --> 00:10:58,139
upgraded it and have it ready for it's a

259
00:11:03,619 --> 00:11:01,110
long-duration stay on on station and

260
00:11:03,990 --> 00:11:03,629
also lc4 and I'll talk a little bit more

261
00:11:06,450 --> 00:11:04,000
on

262
00:11:09,360 --> 00:11:06,460
what we plan to do with that that'll be

263
00:11:10,650 --> 00:11:09,370

the third of our four eva TLC's that

264
00:11:15,720 --> 00:11:10,660
will be delivering we have one more

265
00:11:18,530 --> 00:11:15,730
coming up with AMS on you LF six the pmm

266
00:11:21,240 --> 00:11:18,540
will be delivering 6,500 pounds of cargo

267
00:11:24,180 --> 00:11:21,250
we have another 1500 pounds in the

268
00:11:28,020 --> 00:11:24,190
mid-deck ranging from 0 are used to

269
00:11:31,650 --> 00:11:28,030
consumables to actually 3,300 pounds of

270
00:11:34,260 --> 00:11:31,660
research on this mission which is a very

271
00:11:36,480 --> 00:11:34,270
big gain for us the research guys we

272
00:11:39,510 --> 00:11:36,490
find there their last express rack

273
00:11:41,670 --> 00:11:39,520
Express rack number eight and that that

274
00:11:46,080 --> 00:11:41,680
that racket and of itself can handle and

275
00:11:49,500 --> 00:11:46,090
accommodate ten payloads will be moving

276
00:11:50,880 --> 00:11:49,510
the pmm to the nadir node one nadir port

277
00:11:52,890 --> 00:11:50,890
and ports been checked out and it's

278
00:11:54,360 --> 00:11:52,900
ready to go so we feel like we're in

279
00:11:56,520 --> 00:11:54,370
good shape there a little bit more work

280
00:11:59,220 --> 00:11:56,530
to do but every all indications is we're

281
00:12:02,070 --> 00:11:59,230
just fine some of the major spares will

282
00:12:04,710 --> 00:12:02,080
be fined up on this mission that'll be

283
00:12:06,840 --> 00:12:04,720
in the pmm is a spare distillation

284
00:12:08,820 --> 00:12:06,850
assembly that is for our urine processor

285
00:12:12,720 --> 00:12:08,830
we currently don't have a spare on board

286
00:12:15,000 --> 00:12:12,730
and so we will supply that we have three

287
00:12:18,660 --> 00:12:15,010
more in the pipeline to come up as we

288
00:12:20,040 --> 00:12:18,670

need them but that's a that's one of our

289
00:12:22,200 --> 00:12:20,050
critical or usually be getting up

290
00:12:24,180 --> 00:12:22,210
there's a spare cat reactor which is

291
00:12:28,320 --> 00:12:24,190
kind of the heart of our water processor

292
00:12:30,660 --> 00:12:28,330
assembly it'll be coming up a sidra bed

293
00:12:33,150 --> 00:12:30,670
we're continuing to we have a couple

294
00:12:34,890 --> 00:12:33,160
more beds to change out on our sidra we

295
00:12:37,440 --> 00:12:34,900
have two integrated racks of Sidra

296
00:12:39,150 --> 00:12:37,450
presently one in London that operates in

297
00:12:41,190 --> 00:12:39,160
the u.s. lab one that operates in node 3

298
00:12:44,040 --> 00:12:41,200
will be actually doing some work on the

299
00:12:45,990 --> 00:12:44,050
Sidra during this mission of and with

300
00:12:47,820 --> 00:12:46,000
the intent of it bringing home one of

301
00:12:49,710 --> 00:12:47,830
the bed so we can retrofit that and get

302
00:12:51,510 --> 00:12:49,720
an upgrade on that and we also have a

303
00:12:52,650 --> 00:12:51,520
spare treadmill coming up on this

304
00:12:56,280 --> 00:12:52,660
mission so that's some of the major

305
00:12:58,560 --> 00:12:56,290
cargos once we get the pmm on board it

306
00:13:01,470 --> 00:12:58,570
will be used primarily help us with our

307
00:13:03,570 --> 00:13:01,480
overall stowage and logistics concerns

308
00:13:05,460 --> 00:13:03,580
that we've had as you know we've been

309
00:13:08,970 --> 00:13:05,470
just stuff in these flights completely

310
00:13:11,190 --> 00:13:08,980
full we tend to overflow ourselves on on

311
00:13:13,500 --> 00:13:11,200
the allowable stowage locations so we've

312
00:13:15,090 --> 00:13:13,510
been making do we're actually going to

313
00:13:16,190 --> 00:13:15,100

spend some dedicated time later this

314
00:13:18,710 --> 00:13:16,200
year too

315
00:13:20,780 --> 00:13:18,720
really try to go get our pantry set up

316
00:13:23,780 --> 00:13:20,790
our stowage integration efforts in line

317
00:13:28,010 --> 00:13:23,790
to make it more efficient for the crews

318
00:13:30,500 --> 00:13:28,020
to get to certain pieces of hardware as

319
00:13:34,480 --> 00:13:30,510
far as the LC for it will be going to

320
00:13:37,220 --> 00:13:34,490
the s3 trust lower lower end board

321
00:13:39,380 --> 00:13:37,230
basically is only find up with 1 oru it

322
00:13:40,970 --> 00:13:39,390
is the one of our our radiators one of

323
00:13:42,440 --> 00:13:40,980
our prime radiators of our six that we

324
00:13:45,290 --> 00:13:42,450
have it will be our only spare up on

325
00:13:48,440 --> 00:13:45,300
board and on the bottom side of the of

326
00:13:51,260 --> 00:13:48,450
the ELC we have five what we call Fram

327
00:13:54,020 --> 00:13:51,270
adapters no oh or user flying up on

328
00:13:58,220 --> 00:13:54,030
those specific locations two of the or

329
00:14:00,680 --> 00:13:58,230
use that are coming up on HTV to the fhr

330
00:14:04,010 --> 00:14:00,690
see which is a part of our thermal

331
00:14:06,200 --> 00:14:04,020
control system as well and a box that we

332
00:14:09,710 --> 00:14:06,210
call the cargo transfer container and

333
00:14:11,060 --> 00:14:09,720
inside that it contains 12 of our remote

334
00:14:12,970 --> 00:14:11,070
power control modules our power

335
00:14:16,610 --> 00:14:12,980
distribution boxes that go outside and

336
00:14:18,620 --> 00:14:16,620
so will be and when we get to the two

337
00:14:20,030 --> 00:14:18,630
http2 will actually have dexter be

338
00:14:22,010 --> 00:14:20,040

taking those off of the pallet that

339
00:14:26,030 --> 00:14:22,020
comes up with HTV to and transfer nerves

340
00:14:28,520 --> 00:14:26,040
over to the to the ELC b to e bas on

341
00:14:31,520 --> 00:14:28,530
this flight with the primary duties of

342
00:14:33,980 --> 00:14:31,530
preparing in and getting the external

343
00:14:38,210 --> 00:14:33,990
pump off of the MSS that's the pump that

344
00:14:40,970 --> 00:14:38,220
we had failed on the segment about 3-4

345
00:14:42,740 --> 00:14:40,980
months ago 3e va's to fix it we ran out

346
00:14:45,350 --> 00:14:42,750
of time to relocate that thing back to

347
00:14:47,570 --> 00:14:45,360
ESP too so we'll be doing that on EBA

348
00:14:49,640 --> 00:14:47,580
one and then ani ba two will actually

349
00:14:54,520 --> 00:14:49,650
event the remaining ammonia out of that

350
00:14:57,140 --> 00:14:54,530
pump module all kinds of water transfer

351
00:14:58,850 --> 00:14:57,150
nitrogen transfer oxygen transfer the

352
00:15:01,760 --> 00:14:58,860
the shell will be able to top off our

353
00:15:04,130 --> 00:15:01,770
airlock tanks again we we kind of ran

354
00:15:06,410 --> 00:15:04,140
those down about 75 pounds for the for

355
00:15:07,910 --> 00:15:06,420
the EPA's that we conducted for the pump

356
00:15:10,700 --> 00:15:07,920
module so we'll be able to top those off

357
00:15:13,550 --> 00:15:10,710
so we're looking forward to that as far

358
00:15:15,290 --> 00:15:13,560
as the the onboard systems on station

359
00:15:17,690 --> 00:15:15,300
we're ready to go we're ready to support

360
00:15:20,060 --> 00:15:17,700
our consumables urns are in very good

361
00:15:22,940 --> 00:15:20,070
condition to support to support this

362
00:15:25,850 --> 00:15:22,950
mission as far as kind of recent

363
00:15:28,100 --> 00:15:25,860

activities onboard the station over the

364
00:15:32,130 --> 00:15:28,110
last week or so we have been installed

365
00:15:34,530 --> 00:15:32,140
thus abadi a system into the og a track

366
00:15:36,780 --> 00:15:34,540
or oxygen generation rack and actually

367
00:15:41,490 --> 00:15:36,790
went the first time we tried to activate

368
00:15:43,920 --> 00:15:41,500
it was last night we actually did

369
00:15:45,560 --> 00:15:43,930
generate water from from our sub ita

370
00:15:47,850 --> 00:15:45,570
system so that is a major accomplishment

371
00:15:51,000 --> 00:15:47,860
went to processing mode probably around

372
00:15:53,370 --> 00:15:51,010
eight o'clock last night we subsequently

373
00:15:56,370 --> 00:15:53,380
had a shutdown that I think the teams

374
00:15:58,050 --> 00:15:56,380
will have a well understood and they're

375
00:16:00,660 --> 00:15:58,060
probably in the control center now bring

376
00:16:03,030 --> 00:16:00,670
in that system back up to up to speed so

377
00:16:05,120 --> 00:16:03,040
the sub ita is kind of the the last leg

378
00:16:07,800 --> 00:16:05,130
of our region system it's taken the

379
00:16:10,380 --> 00:16:07,810
carbon dioxide from the from the Sidra

380
00:16:13,470 --> 00:16:10,390
scrubbers it's taken some hydrogen from

381
00:16:16,020 --> 00:16:13,480
the from the Oga system combines those

382
00:16:17,580 --> 00:16:16,030
and we produce water and the invent of

383
00:16:20,070 --> 00:16:17,590
the gases overboard what we don't use

384
00:16:21,900 --> 00:16:20,080
went up and fully operational it'll

385
00:16:26,130 --> 00:16:21,910
it'll generate about two liters per day

386
00:16:28,050 --> 00:16:26,140
for us I mentioned Dexter we did do a

387
00:16:31,020 --> 00:16:28,060
check out of dexter with with an hour

388
00:16:33,690 --> 00:16:31,030

PCM several months back we got into a

389
00:16:36,690 --> 00:16:33,700
kind of a high friction force in pulling

390
00:16:39,180 --> 00:16:36,700
one of our RP CMS out and so we stood

391
00:16:41,580 --> 00:16:39,190
down on dexter activity during that time

392
00:16:44,010 --> 00:16:41,590
period although i would say during that

393
00:16:45,780 --> 00:16:44,020
time period dexter performed just fine

394
00:16:47,970 --> 00:16:45,790
we just didn't have it configured right

395
00:16:49,440 --> 00:16:47,980
with the arms of how to pull that oru

396
00:16:51,840 --> 00:16:49,450
out with the loads that we were seeing

397
00:16:53,400 --> 00:16:51,850
but as far as overall arm performance

398
00:16:55,830 --> 00:16:53,410
controllability everything associated

399
00:16:58,650 --> 00:16:55,840
with dexter work just fine so now we're

400
00:17:01,980 --> 00:16:58,660
getting ready to go do the HTV checkout

401
00:17:04,170 --> 00:17:01,990
task with dexter it will be i think

402
00:17:06,450 --> 00:17:04,180
around december i think we're 12 6 and

403
00:17:09,660 --> 00:17:06,460
12 7 will get dexter back up and

404
00:17:11,130 --> 00:17:09,670
operation and we'll be done to to the to

405
00:17:13,770 --> 00:17:11,140
the frames that we're going to bring up

406
00:17:16,170 --> 00:17:13,780
on this mission to manipulate them

407
00:17:18,330 --> 00:17:16,180
around to get more comfortable get more

408
00:17:20,160 --> 00:17:18,340
run time on dexter for the mission that

409
00:17:24,810 --> 00:17:20,170
comes up when we do this for real and

410
00:17:27,380 --> 00:17:24,820
HTV to science continues on board the

411
00:17:31,320 --> 00:17:27,390
International Space Station we're still

412
00:17:33,630 --> 00:17:31,330
somewhere around 2530 hours a week we've

413
00:17:36,870 --> 00:17:33,640

actually had some major rack moves this

414
00:17:39,420 --> 00:17:36,880
week within the within the complex we've

415
00:17:41,030 --> 00:17:39,430
we've relocated or today we will

416
00:17:42,350 --> 00:17:41,040
relocate the microgravity

417
00:17:44,420 --> 00:17:42,360
science glovebox out of the Columbus

418
00:17:46,010 --> 00:17:44,430
module and put it in a lab room was

419
00:17:48,890 --> 00:17:46,020
freed up in the lab once we moved all of

420
00:17:51,140 --> 00:17:48,900
our region racks over to note 3 and we

421
00:17:54,080 --> 00:17:51,150
also moved a milfy rakha earlier in the

422
00:17:58,430 --> 00:17:54,090
week as well as far as our upcoming

423
00:18:02,180 --> 00:17:58,440
vehicle traffic we have a 37p undock on

424
00:18:04,070 --> 00:18:02,190
Monday in fact we had to go no-go is

425
00:18:07,460 --> 00:18:04,080
probably going on right now in our IMT

426
00:18:11,210 --> 00:18:07,470
we have a 40 p launch on 1027 with a

427
00:18:14,240 --> 00:18:11,220
docking on 1030 the Russians have moved

428
00:18:16,460 --> 00:18:14,250
their EV 826 their stage eevee a 26 a

429
00:18:19,670 --> 00:18:16,470
couple days that will now be on 1115

430
00:18:22,900 --> 00:18:19,680
they were talking about back-to-back or

431
00:18:25,400 --> 00:18:22,910
closed within a week vvas 26 and 27

432
00:18:28,700 --> 00:18:25,410
occurring within a week they have since

433
00:18:30,890 --> 00:18:28,710
slipped out EBA 27 they need to get some

434
00:18:33,020 --> 00:18:30,900
additional cargo up on 40 p to support

435
00:18:34,430 --> 00:18:33,030
that EV aid so we'll we'll go figure out

436
00:18:36,830 --> 00:18:34,440
where we're going to go put EV at

437
00:18:38,540 --> 00:18:36,840
russian deviate 27 in the timeline but

438
00:18:44,600 --> 00:18:38,550

they're targeting sometime in the

439
00:18:46,820 --> 00:18:44,610
january time period with that and the

440
00:18:48,260 --> 00:18:46,830
primary task of epa 26 is to bring

441
00:18:50,840 --> 00:18:48,270
inside a couple payloads that they have

442
00:18:54,950 --> 00:18:50,850
out there 23s landing is still scheduled

443
00:18:57,410 --> 00:18:54,960
for 11 29 and that gets us to the next

444
00:18:59,990 --> 00:18:57,420
Soyuz launch and I think most know about

445
00:19:03,070 --> 00:19:00,000
the the transportation issue that they

446
00:19:07,340 --> 00:19:03,080
had on transporting it down to Baikonur

447
00:19:10,760 --> 00:19:07,350
they have since changed out the descent

448
00:19:13,760 --> 00:19:10,770
module of the of the Soyuz they flew one

449
00:19:16,040 --> 00:19:13,770
in from from Moscow it arrived they have

450
00:19:18,200 --> 00:19:16,050
already taken the old decent module out

451
00:19:23,840 --> 00:19:18,210
they've integrated the new decent module

452
00:19:25,790 --> 00:19:23,850
in so integrated testing and hookups

453
00:19:28,700 --> 00:19:25,800
everything they do for for pre-launch

454
00:19:30,290 --> 00:19:28,710
checkouts are going 24seven they have

455
00:19:32,540 --> 00:19:30,300
indicated to us though that it will

456
00:19:33,860 --> 00:19:32,550
cause a two day to day slip in their

457
00:19:41,480 --> 00:19:33,870
launch and so we're probably going from

458
00:19:43,190 --> 00:19:41,490
11 13 to 1115 and with that you know we

459
00:19:45,230 --> 00:19:43,200
can't we are staying very very busy on

460
00:19:48,500 --> 00:19:45,240
board the station and just like to say

461
00:19:50,780 --> 00:19:48,510
on November second we hit our 10-year

462
00:19:52,340 --> 00:19:50,790
human presence on board the

463
00:19:55,010 --> 00:19:52,350

International Space Station so quite a

464
00:19:57,350 --> 00:19:55,020
milestone force and with that

465
00:19:59,180 --> 00:19:57,360
so I gotta go okay thanks we'll take

466
00:20:01,750 --> 00:19:59,190
questions here and then check the other

467
00:20:04,040 --> 00:20:01,760
NASA centers KSC and headquarters and

468
00:20:05,540 --> 00:20:04,050
Jeremiah center on that side will work

469
00:20:06,950 --> 00:20:05,550
that side and then come over here and

470
00:20:10,880 --> 00:20:06,960
we'll start starting to back there with

471
00:20:13,790 --> 00:20:10,890
Martin thanks mark Cairo for aviation

472
00:20:17,030 --> 00:20:13,800
week and had two questions one for John

473
00:20:20,530 --> 00:20:17,040
Shannon you mentioned sort of a floor on

474
00:20:23,780 --> 00:20:20,540
personnel around 300 at the end of the

475
00:20:25,760 --> 00:20:23,790
program and I wonder I think you're

476
00:20:27,680 --> 00:20:25,770
talking contractors on the numbers you

477
00:20:30,310 --> 00:20:27,690
gave us other than when you designate it

478
00:20:34,700 --> 00:20:30,320
civil service but when you get to 300

479
00:20:39,200 --> 00:20:34,710
will they be in charge of preparing the

480
00:20:42,500 --> 00:20:39,210
orbiters for for museum duty so to speak

481
00:20:44,630 --> 00:20:42,510
or is there another activity it's uh

482
00:20:47,060 --> 00:20:44,640
it's hard to put one number on it mark

483
00:20:48,680 --> 00:20:47,070
because it's a sliding kind of kind of

484
00:20:51,350 --> 00:20:48,690
scale there will be a significant

485
00:20:53,540 --> 00:20:51,360
layoffs after our last mission and the

486
00:20:56,000 --> 00:20:53,550
vehicle is is what we call down mission

487
00:20:58,430 --> 00:20:56,010
process basically saved then we'll have

488
00:21:00,080 --> 00:20:58,440

a significant layoffs will have we have

489
00:21:01,580 --> 00:21:00,090
identified the personnel that will need

490
00:21:03,080 --> 00:21:01,590
to stay around to do things like safe

491
00:21:06,460 --> 00:21:03,090
and hazardous systems getting

492
00:21:09,380 --> 00:21:06,470
pyrotechnics out and actually all across

493
00:21:12,740 --> 00:21:09,390
there's a shuttle equipment everywhere

494
00:21:17,090 --> 00:21:12,750
and it Marshall Space Flight Center it's

495
00:21:18,830 --> 00:21:17,100
Stannis at in California here at JSC it

496
00:21:20,390 --> 00:21:18,840
will it will take a small group of

497
00:21:23,960 --> 00:21:20,400
people to go through and prepare them to

498
00:21:27,860 --> 00:21:23,970
be dis positioned in whatever way they

499
00:21:29,330 --> 00:21:27,870
may be so in that 300 people is kind of

500
00:21:31,250 --> 00:21:29,340
the beginning number and I would expect

501
00:21:33,380 --> 00:21:31,260
in a year would probably be about half

502
00:21:36,230 --> 00:21:33,390
that and and then a year after that

503
00:21:39,100 --> 00:21:36,240
probably half that again so it's a big

504
00:21:42,320 --> 00:21:39,110
job to get through all of the all of the

505
00:21:44,630 --> 00:21:42,330
hardware and facility structures that we

506
00:21:45,740 --> 00:21:44,640
have but we've had some time to get the

507
00:21:50,510 --> 00:21:45,750
plan together and I think it's pretty

508
00:21:53,150 --> 00:21:50,520
solid plan oh thank you had a question

509
00:21:56,930 --> 00:21:53,160
for a Dan Hartman to you mentioned the

510
00:21:58,400 --> 00:21:56,940
descent module change out and I hope I

511
00:22:00,650 --> 00:21:58,410
didn't read too much into this but you

512
00:22:02,300 --> 00:22:00,660
mentioned that it was flown in and I

513
00:22:04,310 --> 00:22:02,310

just wonder if that's going to be like a

514
00:22:06,020 --> 00:22:04,320
permanent change in procedure since

515
00:22:08,029 --> 00:22:06,030
there were some questions about whether

516
00:22:10,430 --> 00:22:08,039
it was damaged by rail shipment

517
00:22:12,979 --> 00:22:10,440
then they they have not told us if

518
00:22:14,330 --> 00:22:12,989
there's a generic change I I would

519
00:22:15,889 --> 00:22:14,340
almost be convinced they're they're

520
00:22:17,180 --> 00:22:15,899
doing this because of the urgency of the

521
00:22:18,739 --> 00:22:17,190
schedule that they were trying to meet

522
00:22:20,539 --> 00:22:18,749
and they had it there they can get it

523
00:22:22,580 --> 00:22:20,549
there into the into the airport in to

524
00:22:24,830 --> 00:22:22,590
Baikonur and then they just trucked it

525
00:22:27,469 --> 00:22:24,840
over to there to the / to their facility

526
00:22:30,619 --> 00:22:27,479
I I have no indication that this will be

527
00:22:31,820 --> 00:22:30,629
a generic change form I know they're

528
00:22:33,590 --> 00:22:31,830
very good they working obviously there

529
00:22:36,109 --> 00:22:33,600
they have the Commission out looking

530
00:22:38,599 --> 00:22:36,119
into the overall transportation efforts

531
00:22:43,339 --> 00:22:38,609
on how it goes from Moscow down to the

532
00:22:45,680 --> 00:22:43,349
down to Baikonur hi Robert Perlman with

533
00:22:48,200 --> 00:22:45,690
collectspace.com with two questions

534
00:22:49,909 --> 00:22:48,210
first for Jon you talked about the

535
00:22:52,029 --> 00:22:49,919
improvements made to discovery and the

536
00:22:54,019 --> 00:22:52,039
continual improvements made to the fleet

537
00:22:57,549 --> 00:22:54,029
but given this is the last flight of

538
00:23:00,560 --> 00:22:57,559

discovery how if you can if you can

539
00:23:04,129 --> 00:23:00,570
approximate how much of the discovery is

540
00:23:06,409 --> 00:23:04,139
as it was the day it launched 26 years

541
00:23:08,060 --> 00:23:06,419
ago versus I mean is it is it mostly and

542
00:23:10,129 --> 00:23:08,070
would you call it mostly a new vehicle

543
00:23:12,409 --> 00:23:10,139
versus mostly an original vehicle how

544
00:23:17,690 --> 00:23:12,419
would you describe the condition of

545
00:23:20,509 --> 00:23:17,700
discovery thinking this structure

546
00:23:22,519 --> 00:23:20,519
obviously is is is unchanged from when

547
00:23:26,989 --> 00:23:22,529
it rolled out of California out of

548
00:23:31,489 --> 00:23:26,999
Palmdale the TPS obviously you know is

549
00:23:32,539 --> 00:23:31,499
is mostly the same other than any damage

550
00:23:36,799 --> 00:23:32,549
that might have happened and has been

551
00:23:38,899 --> 00:23:36,809
repaired paler baby is basically the

552
00:23:41,570 --> 00:23:38,909
same in the cockpit though of course we

553
00:23:43,099 --> 00:23:41,580
did the the cockpit upgrade with the

554
00:23:45,109 --> 00:23:43,109
Ahmed's system which is our glass

555
00:23:47,960 --> 00:23:45,119
cockpit which was a significant upgrade

556
00:23:50,119 --> 00:23:47,970
to the to the vehicle but for the most

557
00:23:53,919 --> 00:23:50,129
part it's it's as it rolled out of

558
00:23:57,529 --> 00:23:53,929
Palmdale and and we've just done some

559
00:24:00,649 --> 00:23:57,539
some safety and usability improvements

560
00:24:05,980 --> 00:24:00,659
but not that different probably the same

561
00:24:11,710 --> 00:24:09,640
and for Dan you mentioned that the

562
00:24:13,630 --> 00:24:11,720
upcoming 10th anniversary of human

563
00:24:17,350 --> 00:24:13,640

presence on the space station can you

564
00:24:21,100 --> 00:24:17,360
give it a report card how the space

565
00:24:24,700 --> 00:24:21,110
station has performed expectations fully

566
00:24:26,560 --> 00:24:24,710
crewed for 10 years well I'll be biased

567
00:24:29,500 --> 00:24:26,570
I'll give it an A rights we've yeah

568
00:24:32,290 --> 00:24:29,510
we've struggled at times you know we

569
00:24:33,730 --> 00:24:32,300
early systems you know we had some early

570
00:24:37,540 --> 00:24:33,740
MDM problems because there are some

571
00:24:39,130 --> 00:24:37,550
early CMG problems the Russian side you

572
00:24:42,130 --> 00:24:39,140
know with the with the electron in Baz

573
00:24:44,169 --> 00:24:42,140
Duke once we got up kind of the

574
00:24:46,090 --> 00:24:44,179
redundancy built into the system it just

575
00:24:48,210 --> 00:24:46,100
made it that much more robust and we

576
00:24:50,590 --> 00:24:48,220
feel like we can rely on each other to

577
00:24:52,500 --> 00:24:50,600
get us through any kind of down times

578
00:24:55,150 --> 00:24:52,510
and we have those kind of discussions

579
00:24:56,799 --> 00:24:55,160
all the time with the IMT I mean it's

580
00:24:59,140 --> 00:24:56,809
almost on a daily basis where we talk

581
00:25:00,370 --> 00:24:59,150
about I need to do some maintenance on

582
00:25:02,320 --> 00:25:00,380
my system make sure you have enough

583
00:25:04,240 --> 00:25:02,330
spares on your side to go you know pick

584
00:25:07,270 --> 00:25:04,250
up pick up the slack and that's that's

585
00:25:09,850 --> 00:25:07,280
just kind of routine business so you

586
00:25:11,770 --> 00:25:09,860
know overall performance you learn after

587
00:25:13,630 --> 00:25:11,780
the Columbia accident we went down to a

588
00:25:17,440 --> 00:25:13,640

crew of two that was a very challenging

589
00:25:19,750 --> 00:25:17,450
period on the vehicle to maintain and

590
00:25:22,600 --> 00:25:19,760
sustain it but once we picked up

591
00:25:25,180 --> 00:25:22,610
assembly you know we had a computer

592
00:25:27,280 --> 00:25:25,190
glitch we had a torn solar array but

593
00:25:29,980 --> 00:25:27,290
then you're into kind of the more do

594
00:25:31,450 --> 00:25:29,990
since stuck bolts and latches won't come

595
00:25:35,380 --> 00:25:31,460
free and just got to go out there and

596
00:25:37,330 --> 00:25:35,390
deal with it real time I'm extremely

597
00:25:40,600 --> 00:25:37,340
proud of the team it's just a major

598
00:25:43,600 --> 00:25:40,610
amazing accomplishment to take it from

599
00:25:45,910 --> 00:25:43,610
from you know from a from a node and an

600
00:25:48,430 --> 00:25:45,920
f gb to the to the structure that we see

601
00:25:52,270 --> 00:25:48,440
today and and then have the the presence

602
00:25:53,470 --> 00:25:52,280
on there for ten years and now finally I

603
00:25:55,450 --> 00:25:53,480
shouldn't say finally we've been doing

604
00:25:57,700 --> 00:25:55,460
it for for the last year or so but

605
00:26:00,130 --> 00:25:57,710
really pick it up on the research and so

606
00:26:01,690 --> 00:26:00,140
we're committed to the to the to the up

607
00:26:03,880 --> 00:26:01,700
mess that the research community needs

608
00:26:05,680 --> 00:26:03,890
they're basically have a free reign of

609
00:26:08,710 --> 00:26:05,690
all the all the up mess that they can

610
00:26:10,690 --> 00:26:08,720
they can muster up right now we're

611
00:26:13,299 --> 00:26:10,700
always working on efficiencies and ways

612
00:26:15,100 --> 00:26:13,309
to improve the crew time form and to

613
00:26:17,200 --> 00:26:15,110

date they've they've come through

614
00:26:19,600 --> 00:26:17,210
they've they've had to wait for us a

615
00:26:21,520 --> 00:26:19,610
little bit but they're over 600

616
00:26:25,510 --> 00:26:21,530
strong in the number of experiments

617
00:26:27,340 --> 00:26:25,520
accomplished on Space Station no Harlan

618
00:26:31,330 --> 00:26:27,350
I feel how via CBS a couple questions

619
00:26:33,850 --> 00:26:31,340
first for Jon if the sealing the seal

620
00:26:36,730 --> 00:26:33,860
rnr does not solve your problem for

621
00:26:38,530 --> 00:26:36,740
whatever reason is there any scenario or

622
00:26:40,330 --> 00:26:38,540
you can change out that flange and still

623
00:26:41,980 --> 00:26:40,340
make the December window or with

624
00:26:44,440 --> 00:26:41,990
something beyond replacing the co push

625
00:26:46,299 --> 00:26:44,450
you in the next year I don't know bill

626
00:26:49,330 --> 00:26:46,309
we haven't to run it out that far I

627
00:26:50,650 --> 00:26:49,340
fully expect that they'll they'll d mate

628
00:26:52,419 --> 00:26:50,660
the flange take a look at the metal

629
00:26:55,780 --> 00:26:52,429
surface polish if needed put the seals

630
00:26:58,240 --> 00:26:55,790
in and it'll work just fine if there's

631
00:27:05,049 --> 00:26:58,250
some other problem or significant flange

632
00:27:07,299 --> 00:27:05,059
damage or if we don't if we damage it

633
00:27:08,590 --> 00:27:07,309
somehow and trying to repair it then we

634
00:27:11,560 --> 00:27:08,600
would lay that schedule out but we have

635
00:27:12,760 --> 00:27:11,570
not done that work yet and for Dan we

636
00:27:14,650 --> 00:27:12,770
were talking before this started about

637
00:27:16,270 --> 00:27:14,660
Soyuz entry issues with the

638
00:27:18,250 --> 00:27:16,280

pressurization system could you go over

639
00:27:20,919 --> 00:27:18,260
that again and given the descent module

640
00:27:22,990 --> 00:27:20,929
issue for the flight coming up and a few

641
00:27:24,070 --> 00:27:23,000
other little issues they've had I mean I

642
00:27:25,419 --> 00:27:24,080
don't know that any of these are major

643
00:27:28,570 --> 00:27:25,429
in and of themselves but are there any

644
00:27:30,280 --> 00:27:28,580
concerns of workmanship or anything else

645
00:27:33,010 --> 00:27:30,290
as the Russians accelerate their flight

646
00:27:34,960 --> 00:27:33,020
rate to support ISS as it is today I

647
00:27:38,310 --> 00:27:34,970
mean that certainly comes to mind

648
00:27:40,180 --> 00:27:38,320
although i think in for the last

649
00:27:43,090 --> 00:27:40,190
typically for the events that are over

650
00:27:44,919 --> 00:27:43,100
there now you were involved in we're on

651
00:27:46,630 --> 00:27:44,929
the ground there so we're listening in

652
00:27:50,590 --> 00:27:46,640
here and we're discussing some of the

653
00:27:53,200 --> 00:27:50,600
some of the issues that they've had as

654
00:27:55,360 --> 00:27:53,210
far as the the o2 system and the leak

655
00:27:56,980 --> 00:27:55,370
that they had on the last mission coming

656
00:28:01,210 --> 00:27:56,990
home it actually occurred just a few

657
00:28:05,020 --> 00:28:01,220
minutes before the undocking and the

658
00:28:06,250 --> 00:28:05,030
pressure did go up the po2 did go up it

659
00:28:08,980 --> 00:28:06,260
did not violate any of their

660
00:28:12,789 --> 00:28:08,990
requirements as they went through

661
00:28:15,280 --> 00:28:12,799
descent before they dropped off the the

662
00:28:17,740 --> 00:28:15,290
hab module they did offload a little bit

663
00:28:19,570 --> 00:28:17,750

of pressure to the hab module which i

664
00:28:21,070 --> 00:28:19,580
think is the kind of almost a standard

665
00:28:23,100 --> 00:28:21,080
practice for them if they get into this

666
00:28:26,590 --> 00:28:23,110
scenario the crew was trained to do it

667
00:28:28,720 --> 00:28:26,600
and then they had a nominal reentry I

668
00:28:31,860 --> 00:28:28,730
will also tell you that on the last so

669
00:28:33,460 --> 00:28:31,870
use that went up they also had an o2

670
00:28:35,890 --> 00:28:33,470
regulator issue

671
00:28:38,260 --> 00:28:35,900
that they are trying to piece these two

672
00:28:43,450 --> 00:28:38,270
together and see if there's just some

673
00:28:46,450 --> 00:28:43,460
sort of manufacturing this lot is of any

674
00:28:48,370 --> 00:28:46,460
kind of particular concern and so

675
00:28:49,840 --> 00:28:48,380
they're working through that now they

676
00:28:53,919 --> 00:28:49,850
have that Commission up and running as

677
00:28:55,720 --> 00:28:53,929
well they airlie indications to me or

678
00:28:58,240 --> 00:28:55,730
they're looking at some some seals

679
00:29:00,130 --> 00:28:58,250
associated with a valve but they will

680
00:29:03,340 --> 00:29:00,140
report out to us they reward out to

681
00:29:04,930 --> 00:29:03,350
Isetta at our red interest reviews they

682
00:29:07,570 --> 00:29:04,940
have their own general design review

683
00:29:09,640 --> 00:29:07,580
much like we have our FRS over there

684
00:29:11,830 --> 00:29:09,650
that go through all their anomalies that

685
00:29:13,810 --> 00:29:11,840
go through all their open paper a very

686
00:29:17,490 --> 00:29:13,820
very similar process to what we do and

687
00:29:20,110 --> 00:29:17,500
typically we're in attendance in those

688
00:29:22,270 --> 00:29:20,120

but for the o2 the other their

689
00:29:23,950 --> 00:29:22,280
troubleshooting it we actually took

690
00:29:26,590 --> 00:29:23,960
there's a common regulator with the

691
00:29:29,590 --> 00:29:26,600
progresses as well just a couple days

692
00:29:32,680 --> 00:29:29,600
ago since we have 37 PS getting ready to

693
00:29:34,690 --> 00:29:32,690
leave we we've brought all the excess 02

694
00:29:37,230 --> 00:29:34,700
into you know basically into the stack

695
00:29:39,970 --> 00:29:37,240
to route to help us out metabolically

696
00:29:41,830 --> 00:29:39,980
and then they have since taken out that

697
00:29:43,600 --> 00:29:41,840
regulator as well and so they're just

698
00:29:46,149 --> 00:29:43,610
trying to get more assets and what's

699
00:29:47,529 --> 00:29:46,159
going on and they will they have told us

700
00:29:50,680 --> 00:29:47,539
they'll do it or they're doing a

701
00:29:54,600 --> 00:29:50,690
thorough inspection of the regulator in

702
00:30:01,700 --> 00:29:54,610
this area for the for the 25's launch

703
00:30:06,690 --> 00:30:04,519
Eric burger with the Houston Chronicle

704
00:30:08,639 --> 00:30:06,700
thanks for answering the workforce

705
00:30:13,200 --> 00:30:08,649
question Jon I can have something else

706
00:30:16,500 --> 00:30:13,210
now the there's still some uncertainty

707
00:30:18,779 --> 00:30:16,510
about the summer flight obviously you

708
00:30:20,820 --> 00:30:18,789
guys have to be working on that if

709
00:30:26,039 --> 00:30:20,830
you're going to go flying in June or

710
00:30:27,539 --> 00:30:26,049
July sort of in terms of your own work

711
00:30:28,799 --> 00:30:27,549
group sort of what is your confidence

712
00:30:30,750 --> 00:30:28,809
that mission is actually going to happen

713
00:30:32,250 --> 00:30:30,760

now and talk a little bit about the

714
00:30:34,139 --> 00:30:32,260
challenges of preparing for that mission

715
00:30:36,600 --> 00:30:34,149
but still not sort of having the

716
00:30:39,029 --> 00:30:36,610
authorization to go and do it that's a

717
00:30:41,399 --> 00:30:39,039
good that's a good question i would

718
00:30:43,200 --> 00:30:41,409
first say you know what you're talking

719
00:30:47,580 --> 00:30:43,210
about is the summer flight which is

720
00:30:51,659 --> 00:30:47,590
right now our rescue vehicle flight 335

721
00:30:54,210 --> 00:30:51,669
and the discussion is still ongoing but

722
00:30:55,769 --> 00:30:54,220
we have to point out how important that

723
00:31:01,769 --> 00:30:55,779
flight is to the International Space

724
00:31:03,899 --> 00:31:01,779
Station and you know there I think Dan

725
00:31:07,399 --> 00:31:03,909
can tell you you know in great detail

726
00:31:09,539 --> 00:31:07,409
from a logistics standpoint I think that

727
00:31:12,840 --> 00:31:09,549
2012 is going to be a real challenge for

728
00:31:14,460 --> 00:31:12,850
them and if there are delays in any of

729
00:31:17,009 --> 00:31:14,470
the new vehicles that are expected to

730
00:31:19,100 --> 00:31:17,019
deliver cargo to the station that

731
00:31:22,230 --> 00:31:19,110
problem is just going to be exacerbated

732
00:31:26,730 --> 00:31:22,240
and I asked my guys it's hard to figure

733
00:31:30,509 --> 00:31:26,740
out to compare vehicles and capabilities

734
00:31:32,310 --> 00:31:30,519
but my operations guys said one shuttle

735
00:31:34,830 --> 00:31:32,320
flight is roughly equivalent to about

736
00:31:37,110 --> 00:31:34,840
seven progress flights is in sanibel

737
00:31:39,090 --> 00:31:37,120
right so if you think about that i mean

738
00:31:42,840 --> 00:31:39,100

that's that's animate you can get pretty

739
00:31:46,919 --> 00:31:42,850
well on one shuttle and so so getting to

740
00:31:49,049 --> 00:31:46,929
fly 135 late is going to give the space

741
00:31:51,419 --> 00:31:49,059
station margin from a logistic

742
00:31:53,190 --> 00:31:51,429
standpoint to keep six crew up to keep

743
00:31:58,320 --> 00:31:53,200
doing the research to keep doing the

744
00:32:00,419 --> 00:31:58,330
utilization even if some of those new

745
00:32:04,169 --> 00:32:00,429
vehicles are delayed by some period of

746
00:32:06,149 --> 00:32:04,179
time you know when when the

747
00:32:09,330 --> 00:32:06,159
authorization bill was passed some

748
00:32:12,570 --> 00:32:09,340
people questioned our plan to continue

749
00:32:13,080 --> 00:32:12,580
with the workforce downsizing as much as

750
00:32:15,540 --> 00:32:13,090
we

751
00:32:18,570 --> 00:32:15,550
have and that was a very difficult

752
00:32:21,900 --> 00:32:18,580
decision but what we have the plan we

753
00:32:24,750 --> 00:32:21,910
have put in place allows us to carry

754
00:32:28,170 --> 00:32:24,760
through enough money to be able to keep

755
00:32:30,270 --> 00:32:28,180
the program going and make the decision

756
00:32:32,880 --> 00:32:30,280
on whether we fly 135 as late as

757
00:32:34,230 --> 00:32:32,890
possible we really can't make that

758
00:32:38,820 --> 00:32:34,240
decision under a continuing resolution

759
00:32:40,530 --> 00:32:38,830
we need an appropriations and I'm not

760
00:32:42,630 --> 00:32:40,540
sure when that is going to show up but

761
00:32:44,640 --> 00:32:42,640
if it shows up even as late as februari

762
00:32:48,270 --> 00:32:44,650
or march we can keep the program intact

763
00:32:52,290 --> 00:32:48,280

to preserve the option to fly 135 in the

764
00:32:54,090 --> 00:32:52,300
summertime the downside to all that or

765
00:32:58,500 --> 00:32:54,100
the thing to really think about is is

766
00:33:01,230 --> 00:32:58,510
the people I had said before that if we

767
00:33:03,240 --> 00:33:01,240
launch our last flight in February that

768
00:33:08,340 --> 00:33:03,250
we're going to have a big layoffs in the

769
00:33:11,310 --> 00:33:08,350
middle of March and by law you have to

770
00:33:13,170 --> 00:33:11,320
provide a 60-day notice to those folks

771
00:33:18,240 --> 00:33:13,180
that that they're going to get laid off

772
00:33:19,680 --> 00:33:18,250
and that would end up being sometime

773
00:33:22,860 --> 00:33:19,690
around the middle of January that those

774
00:33:25,440 --> 00:33:22,870
notices would go out what I would like

775
00:33:27,390 --> 00:33:25,450
to avoid to stop the stir in the

776
00:33:29,490 --> 00:33:27,400
workforce is sending out the layoff

777
00:33:31,350 --> 00:33:29,500
notices for March and then turning

778
00:33:33,870 --> 00:33:31,360
around two months later and saying you

779
00:33:35,190 --> 00:33:33,880
know hey just just kidding we're going

780
00:33:39,030 --> 00:33:35,200
to actually go until you know the

781
00:33:41,310 --> 00:33:39,040
summertime and that's not in my opinion

782
00:33:43,140 --> 00:33:41,320
very fair for this team what I think we

783
00:33:46,110 --> 00:33:43,150
have done is we have let the team know

784
00:33:48,870 --> 00:33:46,120
that that is a possibility and I've

785
00:33:50,910 --> 00:33:48,880
gotten nothing but but understanding

786
00:33:53,580 --> 00:33:50,920
from the folks they understand exactly

787
00:33:56,940 --> 00:33:53,590
where we are in the in the authorization

788
00:34:00,410 --> 00:33:56,950

appropriation cycle the team has to

789
00:34:03,720 --> 00:34:00,420
prepare atlantis for flight we have a

790
00:34:05,820 --> 00:34:03,730
good plan to take up logistics even if

791
00:34:07,110 --> 00:34:05,830
we flew it as a rescue mission so

792
00:34:09,510 --> 00:34:07,120
there's very little difference between

793
00:34:12,420 --> 00:34:09,520
what a 335 rescue flight would look like

794
00:34:13,830 --> 00:34:12,430
and a 135 mission would look like so

795
00:34:16,650 --> 00:34:13,840
there's really no difference in our

796
00:34:19,890 --> 00:34:16,660
preparation there's there's sufficient

797
00:34:23,340 --> 00:34:19,900
funding to carry out the decision until

798
00:34:26,730 --> 00:34:23,350
very close to februari March when we

799
00:34:28,590 --> 00:34:26,740
would fly 134 we're just trying to

800
00:34:31,440 --> 00:34:28,600
to optimize it to not perturb the team

801
00:34:32,700 --> 00:34:31,450
with with layoff notices so I think the

802
00:34:35,580 --> 00:34:32,710
whole team understands the shuttle

803
00:34:37,020 --> 00:34:35,590
program is coming to an end they need to

804
00:34:39,149 --> 00:34:37,030
go on with planning their lives what

805
00:34:41,310 --> 00:34:39,159
they're going to do post shuttle weather

806
00:34:44,070 --> 00:34:41,320
stay in the space community go to go to

807
00:34:47,129 --> 00:34:44,080
other industries and and we need to

808
00:34:50,010 --> 00:34:47,139
allow them the time to do that and that

809
00:34:52,050 --> 00:34:50,020
uncertainty makes it difficult so the

810
00:34:53,490 --> 00:34:52,060
sooner we know the better but but the

811
00:34:56,580 --> 00:34:53,500
process we're in is pretty well

812
00:35:00,060 --> 00:34:56,590
understood I would point out that you

813
00:35:04,950 --> 00:35:00,070

know it's it's probably a good good

814
00:35:06,930 --> 00:35:04,960
discussion point to make we we are doing

815
00:35:10,410 --> 00:35:06,940
a lot of work for surveys a lot of

816
00:35:12,900 --> 00:35:10,420
things to kind of gauge the focus and

817
00:35:14,840 --> 00:35:12,910
attention of the the team make sure that

818
00:35:18,090 --> 00:35:14,850
we're going to fly these very safely

819
00:35:20,520 --> 00:35:18,100
we're also working very hard to have job

820
00:35:25,620 --> 00:35:20,530
fairs and workforce transition for the

821
00:35:26,940 --> 00:35:25,630
contractor teams to allow them to define

822
00:35:30,930 --> 00:35:26,950
new jobs and I've spent a lot of time

823
00:35:37,880 --> 00:35:30,940
with the with the companies that come to

824
00:35:41,190 --> 00:35:37,890
the job fairs and the common comment

825
00:35:43,730 --> 00:35:41,200
from just about everybody I talked to

826
00:35:48,270 --> 00:35:43,740
that is a recruiter is that this is not

827
00:35:50,849 --> 00:35:48,280
your typical workforce the engineers

828
00:35:53,160 --> 00:35:50,859
that have come in into the contractors

829
00:35:55,080 --> 00:35:53,170
or you know to work for NASA directly

830
00:35:56,910 --> 00:35:55,090
then were the best of the best coming

831
00:35:58,650 --> 00:35:56,920
out of school and they have this

832
00:36:01,560 --> 00:35:58,660
experience of working in an operational

833
00:36:04,380 --> 00:36:01,570
space program the technicians that have

834
00:36:06,150 --> 00:36:04,390
come in work in a safety culture that is

835
00:36:09,810 --> 00:36:06,160
unlike any other out there and they

836
00:36:12,960 --> 00:36:09,820
worked incredibly fine tolerances and do

837
00:36:14,910 --> 00:36:12,970
amazing work so I think there has been

838
00:36:18,720 --> 00:36:14,920

some more comfort in the workforce that

839
00:36:21,210 --> 00:36:18,730
there is a lot of new work out there in

840
00:36:23,730 --> 00:36:21,220
Florida it's not in Florida it seems to

841
00:36:27,000 --> 00:36:23,740
be outside of the state in Texas it

842
00:36:27,960 --> 00:36:27,010
seems to be within this area so the

843
00:36:29,730 --> 00:36:27,970
folks that are staying with the program

844
00:36:33,170 --> 00:36:29,740
are just kind of savoring the adventure

845
00:36:35,430 --> 00:36:33,180
and looking forward after we finish this

846
00:36:37,710 --> 00:36:35,440
this outfitting of the station and

847
00:36:38,910 --> 00:36:37,720
retire the shuttle safely that that

848
00:36:40,260 --> 00:36:38,920
they'll get on with the next thing

849
00:36:40,529 --> 00:36:40,270
whether they stay in the space community

850
00:36:52,559 --> 00:36:40,539
or

851
00:36:55,620 --> 00:36:52,569
and I was it was related to me you know

852
00:36:56,900 --> 00:36:55,630
the story of the avro arrow which folks

853
00:37:00,209 --> 00:36:56,910
ought to know if you know your space

854
00:37:04,529 --> 00:37:00,219
history that when that program was

855
00:37:06,209 --> 00:37:04,539
canceled in canada in 1959 the probably

856
00:37:08,579 --> 00:37:06,219
biggest beneficiary of that cancellation

857
00:37:13,049 --> 00:37:08,589
was the space task group at Langley

858
00:37:14,189 --> 00:37:13,059
which eventually came to to the manned

859
00:37:16,199 --> 00:37:14,199
spacecraft Center which is now the

860
00:37:19,529 --> 00:37:16,209
johnson space craft center to execute

861
00:37:22,109 --> 00:37:19,539
the Apollo program and some of the very

862
00:37:25,079 --> 00:37:22,119
highest leaders of that program came

863
00:37:27,900 --> 00:37:25,089

from the cancellation of that Avro Arrow

864
00:37:30,659 --> 00:37:27,910
program up in Canada and I see the same

865
00:37:32,669 --> 00:37:30,669
thing happening here as we release this

866
00:37:35,489 --> 00:37:32,679
incredibly talented shuttle workforce

867
00:37:37,469 --> 00:37:35,499
that has this background in operational

868
00:37:39,269 --> 00:37:37,479
spacecraft it's going to benefit

869
00:37:40,679 --> 00:37:39,279
commercial spacecraft companies it's

870
00:37:42,959 --> 00:37:40,689
going to benefit aviation companies

871
00:37:44,939 --> 00:37:42,969
going to benefit electronics companies I

872
00:37:47,219 --> 00:37:44,949
think across the entire spectrum of

873
00:37:50,789 --> 00:37:47,229
industry that folks are going to go out

874
00:37:53,549 --> 00:37:50,799
and and benefit from it and this

875
00:37:56,549 --> 00:37:53,559
workforce is is greatly desired they are

876
00:37:59,159 --> 00:37:56,559
they're finding finding jobs and even in

877
00:38:00,179 --> 00:37:59,169
this incredibly difficult economy so how

878
00:38:02,269 --> 00:38:00,189
to say this is not your typical

879
00:38:06,469 --> 00:38:02,279
workforce that we're trying to place

880
00:38:08,669 --> 00:38:06,479
anything else there I just you know

881
00:38:10,709 --> 00:38:08,679
maybe to follow up a little bit what

882
00:38:12,989 --> 00:38:10,719
kind of confidence are you working with

883
00:38:15,929 --> 00:38:12,999
at least in your own mind or within your

884
00:38:18,109 --> 00:38:15,939
within your top program people that

885
00:38:19,859 --> 00:38:18,119
display is actually going to happen as a

886
00:38:22,019 --> 00:38:19,869
logistics mission of the space station

887
00:38:24,749 --> 00:38:22,029
eighty ninety percent yeah are going to

888
00:38:27,719 --> 00:38:24,759

have I don't know okay I don't know but

889
00:38:29,489 --> 00:38:27,729
I have nothing that's that's swinging me

890
00:38:31,939 --> 00:38:29,499
one way or the other I told my team it

891
00:38:34,649 --> 00:38:31,949
was 5050 would there be prepared to fly

892
00:38:41,390 --> 00:38:34,659
335 and and that will prepares to fly

893
00:38:43,769 --> 00:38:41,400
135 if it becomes an an option mark

894
00:38:46,069 --> 00:38:43,779
hi Mark Kirkman interspace news a couple

895
00:38:48,390 --> 00:38:46,079
questions um first one would be for John

896
00:38:50,999 --> 00:38:48,400
can you relate how you're going to

897
00:38:51,959 --> 00:38:51,009
approach discovery post landing do you

898
00:38:54,209 --> 00:38:51,969
need to keep it in a certain

899
00:38:56,039 --> 00:38:54,219
configuration to give you flexibility

900
00:38:58,650 --> 00:38:56,049
with dealing with the next two flights

901
00:39:00,689 --> 00:38:58,660
or is there a certain point where it

902
00:39:02,459 --> 00:39:00,699
officially becomes on flight-worthy as a

903
00:39:05,609 --> 00:39:02,469
vehicle again and then I have a followed

904
00:39:07,890 --> 00:39:05,619
yeah that's good mark that's been a

905
00:39:09,630 --> 00:39:07,900
debate within the program is to you keep

906
00:39:14,880 --> 00:39:09,640
discovering some kind of a flight ready

907
00:39:17,279 --> 00:39:14,890
state to provide spares or provide

908
00:39:19,499 --> 00:39:17,289
options i am i'm not in favor of that

909
00:39:23,219 --> 00:39:19,509
that option although we haven't

910
00:39:24,959 --> 00:39:23,229
completely decided it as the program my

911
00:39:27,989 --> 00:39:24,969
opinion is that that we need to get on

912
00:39:30,900 --> 00:39:27,999
with business that we need to once

913
00:39:32,370 --> 00:39:30,910

discovery is is it will stop that we can

914
00:39:37,170 --> 00:39:32,380
immediately start to reconfigure the

915
00:39:41,160 --> 00:39:37,180
vehicle as a display we have we're in

916
00:39:43,859 --> 00:39:41,170
the middle of a very significant effort

917
00:39:45,900 --> 00:39:43,869
to identify hardware off of discovery

918
00:39:49,079 --> 00:39:45,910
and also in the spares that could be

919
00:39:52,319 --> 00:39:49,089
used for some future as yet a nun

920
00:39:54,359 --> 00:39:52,329
program or that we would want to

921
00:39:57,209 --> 00:39:54,369
maintain as spares for endeavour and

922
00:40:00,029 --> 00:39:57,219
Atlantis we're also going to pull some

923
00:40:02,430 --> 00:40:00,039
off as engineering teaching units so

924
00:40:03,689 --> 00:40:02,440
that future generations will be able to

925
00:40:06,209 --> 00:40:03,699
take the hardware that was fun on the

926
00:40:08,489 --> 00:40:06,219
shuttle and and dissected and understand

927
00:40:11,069 --> 00:40:08,499
the thing engineering and and how it was

928
00:40:13,380 --> 00:40:11,079
how it was put together we're also going

929
00:40:15,689 --> 00:40:13,390
to go in and look at some hardware on

930
00:40:18,420 --> 00:40:15,699
discovery that has flown for 30 years

931
00:40:20,969 --> 00:40:18,430
that we've never looked at before things

932
00:40:23,219 --> 00:40:20,979
like actuators and in some structural

933
00:40:25,709 --> 00:40:23,229
areas that are impossible to get to and

934
00:40:27,209 --> 00:40:25,719
those will be fairly invasive it'll take

935
00:40:28,920 --> 00:40:27,219
time and they'll take money but I think

936
00:40:31,769 --> 00:40:28,930
that's one of the legacies the shuttle

937
00:40:35,849 --> 00:40:31,779
can provide is for a real reusable

938
00:40:38,160 --> 00:40:35,859

spacecraft over a number of flight

939
00:40:42,420 --> 00:40:38,170
cycles what is the real condition of the

940
00:40:44,880 --> 00:40:42,430
hardware so really for areas that that

941
00:40:46,559 --> 00:40:44,890
will be looking at with discovery is his

942
00:40:48,299 --> 00:40:46,569
hardware that can be used for future

943
00:40:50,579 --> 00:40:48,309
programs hardware that we would want to

944
00:40:53,699 --> 00:40:50,589
have as spares for endeavour in Atlantis

945
00:40:55,350 --> 00:40:53,709
till the end of the program engineering

946
00:41:00,510 --> 00:40:55,360
test or education kind of

947
00:41:01,860 --> 00:41:00,520
units and and the last one is hardware

948
00:41:03,360 --> 00:41:01,870
we would want to take off and neither do

949
00:41:05,190 --> 00:41:03,370
destructive testing or some kind of

950
00:41:08,610 --> 00:41:05,200
significant in de to understand its

951
00:41:11,100 --> 00:41:08,620
state so even after discovery lands it

952
00:41:12,870 --> 00:41:11,110
will not be will not be finished

953
00:41:16,200 --> 00:41:12,880
learning about the space environment we

954
00:41:19,650 --> 00:41:16,210
will even learn from from the from the

955
00:41:22,860 --> 00:41:19,660
vehicle post post all of its missions so

956
00:41:26,610 --> 00:41:22,870
I that's my goal is to to start

957
00:41:28,610 --> 00:41:26,620
immediately on that it also because

958
00:41:31,140 --> 00:41:28,620
we're in constrained fiscal environment

959
00:41:32,490 --> 00:41:31,150
it allows me to get that work done and

960
00:41:36,000 --> 00:41:32,500
then get that work force off the books

961
00:41:37,380 --> 00:41:36,010
and and that's another you know we're

962
00:41:39,570 --> 00:41:37,390
having to make tough decisions right now

963
00:41:43,050 --> 00:41:39,580

very difficult decisions as we move

964
00:41:44,670 --> 00:41:43,060
forward in anywhere we can can save

965
00:41:48,480 --> 00:41:44,680
money and get on with business that's

966
00:41:50,910 --> 00:41:48,490
that's where where we're headed right

967
00:41:53,270 --> 00:41:50,920
now just to follow up on that you said

968
00:41:55,500 --> 00:41:53,280
the debate still ongoing do you have a

969
00:41:57,540 --> 00:41:55,510
date when you have to kind of commit to

970
00:41:58,860 --> 00:41:57,550
one path of the other since we're only

971
00:42:02,160 --> 00:41:58,870
about a month away I guess from

972
00:42:03,270 --> 00:42:02,170
wheelstop yeah it's a sure good I'm

973
00:42:05,640 --> 00:42:03,280
sorry is going to break breaking the

974
00:42:07,410 --> 00:42:05,650
next question go ahead the the study is

975
00:42:10,230 --> 00:42:07,420
not finished yet as to what hardware we

976
00:42:14,520 --> 00:42:10,240
want to pull off and the the total cost

977
00:42:16,470 --> 00:42:14,530
is not totally assessed yet where I am

978
00:42:18,750 --> 00:42:16,480
leaning is to get on with business and

979
00:42:20,040 --> 00:42:18,760
we know immediately post-mission the

980
00:42:22,230 --> 00:42:20,050
damn mission processing will give us

981
00:42:23,940 --> 00:42:22,240
some extra time to make that decision so

982
00:42:25,680 --> 00:42:23,950
it's probably about a month after

983
00:42:26,940 --> 00:42:25,690
landing we have to have the plan in

984
00:42:30,680 --> 00:42:26,950
place so we still have a little bit of

985
00:42:33,690 --> 00:42:30,690
time and then the last question for John

986
00:42:35,730 --> 00:42:33,700
you mentioned the boundary layer dto is

987
00:42:37,770 --> 00:42:35,740
it was such a big deal when you have gap

988
00:42:38,820 --> 00:42:37,780

fillers protrusions and so forth I was

989
00:42:41,460 --> 00:42:38,830
just wondering because I have seen no

990
00:42:43,800 --> 00:42:41,470
data from the so far have you learned

991
00:42:45,060 --> 00:42:43,810
whether you're you you're maybe too

992
00:42:46,350 --> 00:42:45,070
conservative maybe that thermal

993
00:42:47,940 --> 00:42:46,360
environment was more benign than you

994
00:42:49,470 --> 00:42:47,950
thought or is it worse what what have

995
00:42:50,820 --> 00:42:49,480
you learned from that so far well and

996
00:42:52,050 --> 00:42:50,830
the reason we went and got the gap

997
00:42:54,750 --> 00:42:52,060
filler right was there were such big

998
00:42:57,840 --> 00:42:54,760
uncertainties in our in our analysis

999
00:42:59,580 --> 00:42:57,850
capability rhaggy net stem from two

1000
00:43:02,360 --> 00:42:59,590
things one is you didn't know how this

1001
00:43:04,730 --> 00:43:02,370
flexible gap filler would bend over or

1002
00:43:06,710 --> 00:43:04,740
or fold so actually what the height

1003
00:43:09,590 --> 00:43:06,720
would be and then he didn't we had a

1004
00:43:12,530 --> 00:43:09,600
very large error band around when we

1005
00:43:14,060 --> 00:43:12,540
would trip the laminar flow into a

1006
00:43:19,460 --> 00:43:14,070
turbulent flow and get the increased

1007
00:43:20,870 --> 00:43:19,470
mixing and heating so what we did is now

1008
00:43:22,940 --> 00:43:20,880
we can control the protuberance height

1009
00:43:24,770 --> 00:43:22,950
exactly and we have thermocouples in the

1010
00:43:26,210 --> 00:43:24,780
back that show exactly when you trip and

1011
00:43:28,280 --> 00:43:26,220
exactly what the temperatures are and

1012
00:43:31,220 --> 00:43:28,290
what it is shown is that we trip later

1013
00:43:33,440 --> 00:43:31,230

than our worst case and the temperatures

1014
00:43:36,710 --> 00:43:33,450
are significantly lower than our worst

1015
00:43:38,180 --> 00:43:36,720
case so our models have been updated and

1016
00:43:41,660 --> 00:43:38,190
I actually haven't asked that if we went

1017
00:43:43,700 --> 00:43:41,670
back and looked at the gap filler on was

1018
00:43:45,680 --> 00:43:43,710
a 114 Wednesday Robinson pulled it down

1019
00:43:48,230 --> 00:43:45,690
right if we would have made that same

1020
00:43:50,090 --> 00:43:48,240
decision given our updated models I am

1021
00:43:52,280 --> 00:43:50,100
pretty sure that we would not have done

1022
00:43:54,620 --> 00:43:52,290
that but you know at the time you don't

1023
00:43:57,560 --> 00:43:54,630
know that and you take the best analysis

1024
00:44:01,070 --> 00:43:57,570
that you can I think it's great that you

1025
00:44:02,690 --> 00:44:01,080
know the team picked a to keep their or

1026
00:44:05,540 --> 00:44:02,700
dynamic surface on the other side of the

1027
00:44:09,550 --> 00:44:05,550
vehicle tiles are different thicknesses

1028
00:44:13,130 --> 00:44:09,560
and so they picked a very robust high

1029
00:44:15,940 --> 00:44:13,140
factor safety tile area and I put these

1030
00:44:18,770 --> 00:44:15,950
thermocouples in and put the put the

1031
00:44:20,030 --> 00:44:18,780
protuberance in which you know a lot of

1032
00:44:21,230 --> 00:44:20,040
people are a little nervous about right

1033
00:44:22,700 --> 00:44:21,240
because we're trying to protect the

1034
00:44:24,890 --> 00:44:22,710
underside of the vehicle as much as we

1035
00:44:26,990 --> 00:44:24,900
possibly can but people say hey you know

1036
00:44:29,570 --> 00:44:27,000
we need to we need to understand this

1037
00:44:33,520 --> 00:44:29,580
for future vehicles we're also putting a

1038
00:44:35,840 --> 00:44:33,530

catalytic coating on some tiles that are

1039
00:44:38,000 --> 00:44:35,850
downstream from that / to burns and that

1040
00:44:40,340 --> 00:44:38,010
catalytic coating is what is proposed

1041
00:44:43,910 --> 00:44:40,350
for the back shell of the Orion so as

1042
00:44:45,920 --> 00:44:43,920
you have that that very turbulent weight

1043
00:44:48,950 --> 00:44:45,930
coming off of your heat shield and

1044
00:44:50,030 --> 00:44:48,960
hitting the the back shell of Orion you

1045
00:44:52,220 --> 00:44:50,040
know is the coating that you're going to

1046
00:44:54,560 --> 00:44:52,230
put on there going to be sufficient well

1047
00:44:57,100 --> 00:44:54,570
hey we have a great art jet in the in

1048
00:44:59,600 --> 00:44:57,110
the returning shuttle will put the the

1049
00:45:01,790 --> 00:44:59,610
coating on those tiles downstream from

1050
00:45:03,080 --> 00:45:01,800
it you'll get that mixing at Mach 18

1051
00:45:04,910 --> 00:45:03,090
you'll get that higher temperature you

1052
00:45:07,040 --> 00:45:04,920
see how that coating does you can also

1053
00:45:08,600 --> 00:45:07,050
see how the difference in that

1054
00:45:10,730 --> 00:45:08,610
thermocouple under that coding changes

1055
00:45:12,069 --> 00:45:10,740
from the thermocouple in an uncoated

1056
00:45:14,589 --> 00:45:12,079
tile next to it

1057
00:45:15,969 --> 00:45:14,599
and it's it's it's a great experiment

1058
00:45:18,579 --> 00:45:15,979
and the team has done a great job

1059
00:45:20,079 --> 00:45:18,589
pulling it off and and I boy shame on us

1060
00:45:22,299 --> 00:45:20,089
if we haven't gotten the results out

1061
00:45:23,890 --> 00:45:22,309
there so that everybody can see them

1062
00:45:27,849 --> 00:45:23,900
because it's some pretty impressive work

1063
00:45:29,890 --> 00:45:27,859

that that has been done go ahead the

1064
00:45:31,630 --> 00:45:29,900
Philips loss with NASA Space Flight calm

1065
00:45:34,620 --> 00:45:31,640
i'm not sure if this is for John or down

1066
00:45:37,769 --> 00:45:34,630
or baby but I understand there's a

1067
00:45:41,349 --> 00:45:37,779
fourth EBA is being added to the Ulf six

1068
00:45:43,989 --> 00:45:41,359
sts-134 mission can you talk about

1069
00:45:48,549 --> 00:45:43,999
what's going to what's going to be added

1070
00:45:51,789 --> 00:45:48,559
in that fourth ABA not I'm a bad person

1071
00:45:53,920 --> 00:45:51,799
per game yeah John I'm gonna have to get

1072
00:45:55,299 --> 00:45:53,930
back to you again it's true we have

1073
00:45:57,789 --> 00:45:55,309
recently added to the fourth and I'm

1074
00:45:59,170 --> 00:45:57,799
just drawing a blank on that's pretty

1075
00:46:01,299 --> 00:45:59,180
far out of the future there for me when

1076
00:46:04,539 --> 00:46:01,309
I'm almost a real-time guy so well I'll

1077
00:46:07,839 --> 00:46:04,549
get that for you sorry about that what's

1078
00:46:09,609 --> 00:46:07,849
going Piercy be today so I wasn't good

1079
00:46:13,180 --> 00:46:09,619
sources so you have it approved again I

1080
00:46:17,109 --> 00:46:13,190
have not pretty ok sorry hey Leroy over

1081
00:46:19,420 --> 00:46:17,119
here anything else ok any other

1082
00:46:20,559 --> 00:46:19,430
questions over here let's come back mark

1083
00:46:22,150 --> 00:46:20,569
out I want to go around to the other

1084
00:46:24,549 --> 00:46:22,160
NASA centers first and then we'll catch

1085
00:46:26,170 --> 00:46:24,559
whatever we can back here let's head to

1086
00:46:31,299 --> 00:46:26,180
the Kennedy Space Center the launch site

1087
00:46:33,400 --> 00:46:31,309
for some questions this is Marcia Dunn

1088
00:46:37,209 --> 00:46:33,410

of the associated press with a question

1089
00:46:38,739 --> 00:46:37,219
for mr. Hartman the contractors some of

1090
00:46:42,579 --> 00:46:38,749
the contractors here are talking about

1091
00:46:44,650 --> 00:46:42,589
if that 135 flight is approved the word

1092
00:46:46,449 --> 00:46:44,660
on the street is that perhaps the space

1093
00:46:50,109 --> 00:46:46,459
station program would like it as late as

1094
00:46:52,839 --> 00:46:50,119
possible perhaps fall of 11 maybe even

1095
00:46:56,859 --> 00:46:52,849
November is any serious thought being

1096
00:47:01,239 --> 00:46:56,869
given to if it's approved pushing that

1097
00:47:04,359 --> 00:47:01,249
flight out a lot beyond june/july Marcia

1098
00:47:06,400 --> 00:47:04,369
not not that I'm aware of in the private

1099
00:47:08,709 --> 00:47:06,410
some of the discussion goes are there

1100
00:47:11,049 --> 00:47:08,719
any critical o our use that we would

1101
00:47:14,769 --> 00:47:11,059
like to get up on that 135 that we have

1102
00:47:16,089 --> 00:47:14,779
in the production flow right now we

1103
00:47:18,160 --> 00:47:16,099
haven't really gone through and looked

1104
00:47:21,009 --> 00:47:18,170
at all the details of where those might

1105
00:47:22,660 --> 00:47:21,019
end up and how much risk we would think

1106
00:47:24,290 --> 00:47:22,670
if we accelerated a lot of those

1107
00:47:25,940 --> 00:47:24,300
developments would we

1108
00:47:27,800 --> 00:47:25,950
either on time and give us a little bit

1109
00:47:30,470 --> 00:47:27,810
of margin so that would be the only

1110
00:47:32,720 --> 00:47:30,480
discussion that I know of that would be

1111
00:47:34,820 --> 00:47:32,730
pushing around June July certainly

1112
00:47:38,540 --> 00:47:34,830
that's what we have been thinking and

1113
00:47:40,610 --> 00:47:38,550

talking about within the program but we

1114
00:47:44,870 --> 00:47:40,620
are looking at at our critical or use

1115
00:47:47,120 --> 00:47:44,880
list in if that list happens to pile up

1116
00:47:48,830 --> 00:47:47,130
if we get this extra flight I'm sure

1117
00:47:52,310 --> 00:47:48,840
that might be a discussion point that we

1118
00:47:57,380 --> 00:47:52,320
have with that sell out with with John

1119
00:47:59,390 --> 00:47:57,390
and Gersten and the folks thank you in

1120
00:48:01,550 --> 00:47:59,400
and you have a 7th crew member on board

1121
00:48:04,340 --> 00:48:01,560
that you haven't mentioned yet mr.

1122
00:48:06,620 --> 00:48:04,350
Hartman are too could you just sort of

1123
00:48:08,390 --> 00:48:06,630
talk about the big picture I know there

1124
00:48:12,200 --> 00:48:08,400
are briefings later today on that but

1125
00:48:15,380 --> 00:48:12,210
what do you see this robot bringing to

1126
00:48:16,910 --> 00:48:15,390
the space station program and beyond the

1127
00:48:20,180 --> 00:48:16,920
seventh member here pretty soon not

1128
00:48:22,790 --> 00:48:20,190
quite yet proof of proof of concept

1129
00:48:24,260 --> 00:48:22,800
demonstration is what it's going to you

1130
00:48:26,840 --> 00:48:24,270
know it is what it's going to be about

1131
00:48:29,270 --> 00:48:26,850
you know the the concept is we're going

1132
00:48:32,060 --> 00:48:29,280
to be operating from the ground what

1133
00:48:35,960 --> 00:48:32,070
we'll start slow build up some tests to

1134
00:48:38,390 --> 00:48:35,970
see how useful and how much you know

1135
00:48:41,360 --> 00:48:38,400
I've been a crew time we can get some

1136
00:48:43,880 --> 00:48:41,370
efficiencies out of but I imagine it'll

1137
00:48:45,950 --> 00:48:43,890
be a technology demonstration for the

1138
00:48:48,470 --> 00:48:45,960

first year so just to prove the concept

1139
00:48:50,570 --> 00:48:48,480
out and like you said there's there's

1140
00:48:52,910 --> 00:48:50,580
many more people behind me that can can

1141
00:48:54,380 --> 00:48:52,920
talk or a lot about that but it's going

1142
00:49:00,830 --> 00:48:54,390
to be exciting to have to have Robonaut

1143
00:49:02,390 --> 00:49:00,840
up there it's James Dean from Florida

1144
00:49:05,330 --> 00:49:02,400
today with a few questions for John and

1145
00:49:07,610 --> 00:49:05,340
one for Dan if there's time John first

1146
00:49:10,190 --> 00:49:07,620
uh if the fly out continues on schedule

1147
00:49:13,460 --> 00:49:10,200
can you say at this point exactly how

1148
00:49:18,760 --> 00:49:13,470
much a 135 flight would cost and how

1149
00:49:22,190 --> 00:49:18,770
would it be funded what we asked the

1150
00:49:24,140 --> 00:49:22,200
congress for and the appropriations was

1151
00:49:27,230 --> 00:49:24,150
six hundred million dollars extra to

1152
00:49:31,040 --> 00:49:27,240
extend the program out through the

1153
00:49:34,940 --> 00:49:31,050
really the July timeframe and that is

1154
00:49:39,470 --> 00:49:34,950
still still the figure that the

1155
00:49:41,819 --> 00:49:39,480
we have put out there you know we'll see

1156
00:49:46,170 --> 00:49:41,829
it's a little bit to Marsha's question

1157
00:49:49,049 --> 00:49:46,180
as well if we had the additional six

1158
00:49:50,339 --> 00:49:49,059
hundred million dollars and with the

1159
00:49:52,319 --> 00:49:50,349
amount of money that we've been able to

1160
00:49:56,069 --> 00:49:52,329
save through making some of these tough

1161
00:49:57,359 --> 00:49:56,079
decisions over the last year I have

1162
00:49:59,099 --> 00:49:57,369
asked the question is probably coming

1163
00:50:03,480 --> 00:49:59,109

from me I have asked a question how late

1164
00:50:05,700 --> 00:50:03,490
could we fly the 135 mission and thus

1165
00:50:10,140 --> 00:50:05,710
mr. suffered a knee and I talked about

1166
00:50:12,270 --> 00:50:10,150
it a lot and and the it's a very simple

1167
00:50:16,770 --> 00:50:12,280
premise right is that if you're doing

1168
00:50:20,339 --> 00:50:16,780
this to to add additional logistics to

1169
00:50:24,480 --> 00:50:20,349
to give you some margin for when your

1170
00:50:25,710 --> 00:50:24,490
next vehicles are going to come up it

1171
00:50:28,109 --> 00:50:25,720
would make sense that the later is the

1172
00:50:30,870 --> 00:50:28,119
better and and so we've had you know

1173
00:50:33,030 --> 00:50:30,880
just initial discussions on from a

1174
00:50:36,120 --> 00:50:33,040
budgetary standpoint without really

1175
00:50:39,359 --> 00:50:36,130
looking at it the real logistic schedule

1176
00:50:40,559 --> 00:50:39,369
or winnow our user available or range or

1177
00:50:42,530 --> 00:50:40,569
any of the other constraints that we

1178
00:50:45,210 --> 00:50:42,540
have for actually launching the vehicle

1179
00:50:53,130 --> 00:50:45,220
how late could we go just from a budget

1180
00:50:56,910 --> 00:50:53,140
standpoint and I I can't understate I

1181
00:51:00,809 --> 00:50:56,920
can't overstate how much it will benefit

1182
00:51:04,349 --> 00:51:00,819
the space station to have an additional

1183
00:51:11,730 --> 00:51:04,359
flight in that timeframe and you know to

1184
00:51:13,470 --> 00:51:11,740
me if we don't fly 135 and the the new

1185
00:51:16,710 --> 00:51:13,480
vehicles that are going to deliver cargo

1186
00:51:19,500 --> 00:51:16,720
or delayed and we end up having a

1187
00:51:21,690 --> 00:51:19,510
logistic shortfall in 2012 and we have

1188
00:51:26,010 --> 00:51:21,700

to go down to three crew and we're not

1189
00:51:30,870 --> 00:51:26,020
doing research we have made a major

1190
00:51:38,080 --> 00:51:36,160
thank you just given the recent layoffs

1191
00:51:41,040 --> 00:51:38,090
that you've discussed I wondered if if

1192
00:51:42,910 --> 00:51:41,050
you could say if this upcoming launch

1193
00:51:46,840 --> 00:51:42,920
represents one of the most challenging

1194
00:51:48,280 --> 00:51:46,850
that that you'll have overseen or is

1195
00:51:51,490 --> 00:51:48,290
that how much of a factor is that

1196
00:51:55,420 --> 00:51:51,500
heading into you know your November one

1197
00:51:56,380 --> 00:51:55,430
launch obviously momentum over all

1198
00:51:58,120 --> 00:51:56,390
building toward the end of the program

1199
00:52:00,100 --> 00:51:58,130
as well and just just wondering it you

1200
00:52:01,600 --> 00:52:00,110
know is that making this a different

1201
00:52:03,040 --> 00:52:01,610
experience for you or is it just like

1202
00:52:06,190 --> 00:52:03,050
any other launch that you're getting

1203
00:52:08,950 --> 00:52:06,200
ready for I am I'm ready to launch we've

1204
00:52:12,580 --> 00:52:08,960
had this gap while we waited for things

1205
00:52:16,030 --> 00:52:12,590
to show up to to go fly and the team

1206
00:52:19,090 --> 00:52:16,040
gets a huge lift from from having a

1207
00:52:24,130 --> 00:52:19,100
launch and you know we'll see small

1208
00:52:25,660 --> 00:52:24,140
issues surface in the program and and we

1209
00:52:27,280 --> 00:52:25,670
always kind of say a launch fixes

1210
00:52:28,750 --> 00:52:27,290
everything because it's such a morale

1211
00:52:32,710 --> 00:52:28,760
builder and the team works together so

1212
00:52:36,670 --> 00:52:32,720
well in executing a mission we've been

1213
00:52:38,800 --> 00:52:36,680

very very careful in the workforce

1214
00:52:40,510 --> 00:52:38,810
reductions that we have made to maintain

1215
00:52:43,050 --> 00:52:40,520
critical skills most of the workforce

1216
00:52:47,200 --> 00:52:43,060
reductions are in the production side

1217
00:52:49,420 --> 00:52:47,210
the operations team is fairly intact our

1218
00:52:52,750 --> 00:52:49,430
sustaining engineering team for all of

1219
00:52:56,350 --> 00:52:52,760
the elements is intact we have good what

1220
00:52:58,120 --> 00:52:56,360
we call bench strength i will tell you

1221
00:53:02,320 --> 00:52:58,130
also that i have been getting a lot of

1222
00:53:04,270 --> 00:53:02,330
scrutiny from people above me and other

1223
00:53:06,390 --> 00:53:04,280
organizations that provide oversight to

1224
00:53:08,860 --> 00:53:06,400
nasa about how are you maintaining

1225
00:53:11,980 --> 00:53:08,870
safety how do you know that you have

1226
00:53:14,200 --> 00:53:11,990
safety in the program and we're spending

1227
00:53:17,170 --> 00:53:14,210
a lot of time working on that we had an

1228
00:53:19,180 --> 00:53:17,180
independent study done by brian o'connor

1229
00:53:22,270 --> 00:53:19,190
in his office of safety and mission

1230
00:53:25,250 --> 00:53:22,280
assurance and you know this is nothing

1231
00:53:28,370 --> 00:53:25,260
that you want to just sit back and and

1232
00:53:32,090 --> 00:53:28,380
and except you want to keep pushing on

1233
00:53:33,680 --> 00:53:32,100
it but I'll read you the results is that

1234
00:53:35,360 --> 00:53:33,690
the government mandatory inspection

1235
00:53:37,640 --> 00:53:35,370
points the gmaps that we do to inspect

1236
00:53:40,370 --> 00:53:37,650
to make sure that the hardware is

1237
00:53:43,100 --> 00:53:40,380
received in the proper configuration

1238
00:53:46,730 --> 00:53:43,110

that our rejection rates are at historic

1239
00:53:48,560 --> 00:53:46,740
lows and very stable that our material

1240
00:53:51,380 --> 00:53:48,570
review boards which disposition hardware

1241
00:53:53,030 --> 00:53:51,390
that is maybe not per print our

1242
00:53:54,740 --> 00:53:53,040
rejection rates are still showing a

1243
00:53:59,510 --> 00:53:54,750
downward trend so we're not having this

1244
00:54:01,400 --> 00:53:59,520
as much mrb activity process

1245
00:54:02,800 --> 00:54:01,410
non-conformance 'as have been in a

1246
00:54:06,260 --> 00:54:02,810
downward trend for the last three years

1247
00:54:09,530 --> 00:54:06,270
they're continuing that process escapes

1248
00:54:11,900 --> 00:54:09,540
that we we document and we bring in

1249
00:54:15,830 --> 00:54:11,910
quarterly all process escapes in the

1250
00:54:18,320 --> 00:54:15,840
program even if it was just 21 project

1251
00:54:20,080 --> 00:54:18,330
and make sure that we transfer those

1252
00:54:23,900 --> 00:54:20,090
lessons learned across all the projects

1253
00:54:25,640 --> 00:54:23,910
they're at a historic low our work

1254
00:54:26,930 --> 00:54:25,650
authorization documents technical error

1255
00:54:28,400 --> 00:54:26,940
rate basically the instructions of the

1256
00:54:31,610 --> 00:54:28,410
technicians used to put the vehicles

1257
00:54:35,000 --> 00:54:31,620
together we have a four-year error rate

1258
00:54:38,660 --> 00:54:35,010
that is continuing to decline and the

1259
00:54:40,640 --> 00:54:38,670
overall rate is is stable below one

1260
00:54:43,880 --> 00:54:40,650
error per thousand pages which was our

1261
00:54:49,190 --> 00:54:43,890
which was our goal and in-flight

1262
00:54:50,630 --> 00:54:49,200
anomalies which we since returned to

1263
00:54:52,700 --> 00:54:50,640

flight we classify I think everything is

1264
00:54:54,260 --> 00:54:52,710
an anomaly we don't have any of these

1265
00:54:55,550 --> 00:54:54,270
well it didn't work quite right but

1266
00:54:58,040 --> 00:54:55,560
we're not going to call it na mele games

1267
00:54:59,540 --> 00:54:58,050
we don't we don't do that the last three

1268
00:55:07,940 --> 00:54:59,550
missions have been below our 12 mission

1269
00:55:11,720 --> 00:55:07,950
average now it's it's it's so I look at

1270
00:55:13,640 --> 00:55:11,730
this report and I think okay how do we

1271
00:55:15,380 --> 00:55:13,650
keep doing this and the other question I

1272
00:55:17,420 --> 00:55:15,390
ask is okay do we have less people

1273
00:55:20,540 --> 00:55:17,430
reporting things and that's why our

1274
00:55:24,110 --> 00:55:20,550
numbers are going down and so we've done

1275
00:55:28,160 --> 00:55:24,120
Studies on the on the human side and to

1276
00:55:30,080 --> 00:55:28,170
make sure that the reporting process is

1277
00:55:31,460 --> 00:55:30,090
is the same as it has been and they were

1278
00:55:34,820 --> 00:55:31,470
getting equivalent data from previous

1279
00:55:36,339 --> 00:55:34,830
flights one of the reasons it's lower is

1280
00:55:39,249 --> 00:55:36,349
we're not in product

1281
00:55:40,900 --> 00:55:39,259
anymore but most of these things are

1282
00:55:42,279 --> 00:55:40,910
after things are produced and they

1283
00:55:44,890 --> 00:55:42,289
arrived at the Kennedy Space Center for

1284
00:55:48,219 --> 00:55:44,900
integration so overall the program is

1285
00:55:51,450 --> 00:55:48,229
very healthy but I have a very high

1286
00:55:54,339 --> 00:55:51,460
sense of paranoia that this is a very

1287
00:55:57,999 --> 00:55:54,349
difficult time for the team and we need

1288
00:56:01,059 --> 00:55:58,009

to be incredibly vigilant and any little

1289
00:56:04,960 --> 00:56:01,069
noises that you hear you have to go pay

1290
00:56:08,079 --> 00:56:04,970
attention to and really make sure that

1291
00:56:10,329 --> 00:56:08,089
you fully understand what is going on

1292
00:56:12,579 --> 00:56:10,339
and because a very complex process and

1293
00:56:14,079 --> 00:56:12,589
very unforgiving and so far the team has

1294
00:56:16,630 --> 00:56:14,089
been doing an outstanding job and we're

1295
00:56:18,849 --> 00:56:16,640
going to continue to to stay focused in

1296
00:56:21,519 --> 00:56:18,859
the team really wants to preserve the

1297
00:56:27,009 --> 00:56:21,529
legacy of the shuttle program and end on

1298
00:56:29,170 --> 00:56:27,019
a really high note thank you very much

1299
00:56:31,029 --> 00:56:29,180
and my wrapping up for me John I

1300
00:56:33,460 --> 00:56:31,039
wondered if you could just reflect a bit

1301
00:56:35,259 --> 00:56:33,470
on discovery's career and you know what

1302
00:56:38,170 --> 00:56:35,269
it what you think it's going to be like

1303
00:56:40,900 --> 00:56:38,180
to retire this this fleet leader and and

1304
00:56:42,430 --> 00:56:40,910
also for Dan I just wondered if you

1305
00:56:44,349 --> 00:56:42,440
could elaborate a little bit on the

1306
00:56:47,459 --> 00:56:44,359
point John's been making about the the

1307
00:56:50,709 --> 00:56:47,469
logistics logistics challenges ahead

1308
00:56:52,329 --> 00:56:50,719
when when did things start to get dicey

1309
00:56:58,479 --> 00:56:52,339
for you if you don't have a commercial

1310
00:57:00,640 --> 00:56:58,489
resupply mission yeah I you know so my

1311
00:57:03,700 --> 00:57:00,650
rearview mirror is is it's kind of

1312
00:57:06,700 --> 00:57:03,710
turned down until we finished the

1313
00:57:09,099 --> 00:57:06,710

program discovery obviously is a special

1314
00:57:12,190 --> 00:57:09,109
vehicle as all of them have been being

1315
00:57:15,579 --> 00:57:12,200
the vehicle that put Hubble up that was

1316
00:57:16,630 --> 00:57:15,589
the return to flight vehicle twice you

1317
00:57:18,039 --> 00:57:16,640
might even say it was a return to flight

1318
00:57:20,859 --> 00:57:18,049
vehicle three times because we've lid on

1319
00:57:24,400 --> 00:57:20,869
this just 121 after we we went down

1320
00:57:26,229 --> 00:57:24,410
after 114 it's a it's an outstanding

1321
00:57:28,239 --> 00:57:26,239
vehicle you know we've learned a lot

1322
00:57:31,420 --> 00:57:28,249
from operating discovery we've learned a

1323
00:57:34,120 --> 00:57:31,430
lot from operating space shuttles I am I

1324
00:57:37,029 --> 00:57:34,130
am greatly looking forward to using that

1325
00:57:40,989 --> 00:57:37,039
experience in in taking the next step

1326
00:57:43,329 --> 00:57:40,999
and I think that across the shuttle team

1327
00:57:45,279 --> 00:57:43,339
now that acceptance is kind of taking

1328
00:57:47,259 --> 00:57:45,289
hold that hey the program is going to

1329
00:57:48,940 --> 00:57:47,269
end we're going to end it right we're

1330
00:57:49,690 --> 00:57:48,950
going to get station configured exactly

1331
00:57:51,670 --> 00:57:49,700
the way we want

1332
00:57:53,500 --> 00:57:51,680
to be then we're going to take this

1333
00:57:56,140 --> 00:57:53,510
expertise and we're going to move on to

1334
00:57:57,460 --> 00:57:56,150
the next to the next step and and

1335
00:58:00,790 --> 00:57:57,470
everybody is really looking forward to

1336
00:58:03,520 --> 00:58:00,800
that adventure let's see you know I'm

1337
00:58:05,260 --> 00:58:03,530
not when the the vehicles are coming in

1338
00:58:08,770 --> 00:58:05,270

and where we might have a pinch point

1339
00:58:11,440 --> 00:58:08,780
it's it's at the tail end of 11 in 12 as

1340
00:58:14,110 --> 00:58:11,450
John kind of alluded to earlier and so

1341
00:58:17,890 --> 00:58:14,120
when you get into this discussion on 135

1342
00:58:21,010 --> 00:58:17,900
335 we've had discussions internal to

1343
00:58:24,280 --> 00:58:21,020
our program that we want to load enough

1344
00:58:26,500 --> 00:58:24,290
consumables on that flight to pretend to

1345
00:58:28,750 --> 00:58:26,510
potentially go for a year let's say food

1346
00:58:31,060 --> 00:58:28,760
and those type of consumables so

1347
00:58:33,880 --> 00:58:31,070
obviously we would have a lot of that

1348
00:58:36,010 --> 00:58:33,890
already on board and so we've you know

1349
00:58:37,960 --> 00:58:36,020
mike is kind of challenge the team is ok

1350
00:58:41,140 --> 00:58:37,970
what is it really going to take if we

1351
00:58:43,710 --> 00:58:41,150
can load that that MPL em up with with

1352
00:58:45,820 --> 00:58:43,720
the years worth of supplies for the crew

1353
00:58:48,160 --> 00:58:45,830
and we would probably do that at

1354
00:58:50,590 --> 00:58:48,170
potentially at some expense of some some

1355
00:58:52,860 --> 00:58:50,600
less critical who are you so so that's

1356
00:58:55,330 --> 00:58:52,870
you know that kind of shows us that

1357
00:58:57,880 --> 00:58:55,340
we're concerned about it obviously a lot

1358
00:58:59,500 --> 00:58:57,890
of these CRS vehicles are are you know

1359
00:59:01,150 --> 00:58:59,510
there's demonstration flights that still

1360
00:59:03,580 --> 00:59:01,160
need to happen and then CRS needs to

1361
00:59:07,360 --> 00:59:03,590
pick up and go you know they're on the

1362
00:59:09,460 --> 00:59:07,370
books we need them and we know we're

1363
00:59:11,650 --> 00:59:09,470

very hopeful that they'll be be

1364
00:59:13,750 --> 00:59:11,660
successful in getting there on time but

1365
00:59:17,050 --> 00:59:13,760
is there is risk there is development

1366
00:59:20,320 --> 00:59:17,060
out there that still is it has to be put

1367
00:59:23,110 --> 00:59:20,330
behind them and it's just prudent for us

1368
00:59:25,510 --> 00:59:23,120
to take take a look at the what-ifs and

1369
00:59:27,670 --> 00:59:25,520
the contingencies and so so that's what

1370
00:59:30,130 --> 00:59:27,680
we're looking at as well and then the

1371
00:59:31,720 --> 00:59:30,140
other part of the 135 flat is you know

1372
00:59:33,310 --> 00:59:31,730
we can get some critical over use home

1373
00:59:35,860 --> 00:59:33,320
and then it's this chair down and

1374
00:59:37,390 --> 00:59:35,870
understanding some of our failures you

1375
00:59:39,670 --> 00:59:37,400
know we have the pump module that we're

1376
00:59:42,160 --> 00:59:39,680
preparing like I said I'm on this these

1377
00:59:45,970 --> 00:59:42,170
evh to bring that home potentially on on

1378
00:59:48,070 --> 00:59:45,980
that flight so that just be a great

1379
00:59:50,110 --> 00:59:48,080
source of information to try to further

1380
00:59:54,490 --> 00:59:50,120
understand the root cause of why that

1381
00:59:59,349 --> 00:59:56,809
it's a bobby block from the Orlando

1382
01:00:02,180 --> 00:59:59,359
Sentinel with a few questions for John

1383
01:00:08,510 --> 01:00:02,190
first is um could you tell us a little

1384
01:00:10,579 --> 01:00:08,520
bit about how the flow is going for 134

1385
01:00:12,170 --> 01:00:10,589
there's a few rumors around that there's

1386
01:00:14,630 --> 01:00:12,180
some payload issues again and there

1387
01:00:16,880 --> 01:00:14,640
might be a delay and then link to that I

1388
01:00:18,799 --> 01:00:16,890

was wondering about when you were

1389
01:00:20,960 --> 01:00:18,809
talking about earlier about looking at

1390
01:00:22,760 --> 01:00:20,970
the idea of possibly when you're talking

1391
01:00:24,470 --> 01:00:22,770
to Mike suffer dini about pushing things

1392
01:00:27,130 --> 01:00:24,480
back I mean what would be the latest

1393
01:00:33,020 --> 01:00:27,140
time that you would contemplate a

1394
01:00:35,500 --> 01:00:33,030
pushing 135 out Bobby hey on 134 I've I

1395
01:00:39,940 --> 01:00:35,510
have no idea you know we've talked about

1396
01:00:43,220 --> 01:00:39,950
delaying its one day to februari 27th

1397
01:00:45,980 --> 01:00:43,230
but that was not not an issue with

1398
01:00:47,839 --> 01:00:45,990
payloads at all so TV Becca knocking

1399
01:00:49,549 --> 01:00:47,849
capability or some like that I haven't

1400
01:00:53,890 --> 01:00:49,559
heard of any payload issues either from

1401
01:00:57,349 --> 01:00:53,900
AMS DLCs so if you have a more specific

1402
01:01:00,200 --> 01:00:57,359
I'd be happy to answer that as far as

1403
01:01:05,030 --> 01:01:00,210
how far could we push back June flight

1404
01:01:08,890 --> 01:01:05,040
it all depends on money and we'll see I

1405
01:01:11,120 --> 01:01:08,900
don't have my my actual costs from

1406
01:01:14,059 --> 01:01:11,130
October since we're first this is the

1407
01:01:15,680 --> 01:01:14,069
first horse knocked over and I'll have

1408
01:01:18,980 --> 01:01:15,690
those in December timeframe and I'll

1409
01:01:22,250 --> 01:01:18,990
understand better the impacts of the the

1410
01:01:25,010 --> 01:01:22,260
layups that we did and as we go through

1411
01:01:28,579 --> 01:01:25,020
if we see what the appropriations

1412
01:01:30,980 --> 01:01:28,589
numbers are and we work with with

1413
01:01:33,500 --> 01:01:30,990

headquarters on on the money then that

1414
01:01:37,490 --> 01:01:33,510
will define how far out we can construct

1415
01:01:39,170 --> 01:01:37,500
this program we are at abouts our target

1416
01:01:42,319 --> 01:01:39,180
was about a hundred and twenty five

1417
01:01:45,680 --> 01:01:42,329
million dollars a month and were under

1418
01:01:47,630 --> 01:01:45,690
that to about a hundred and 112 million

1419
01:01:50,030 --> 01:01:47,640
dollars a month is what it looks like so

1420
01:01:52,010 --> 01:01:50,040
you know every month that goes by we're

1421
01:01:53,720 --> 01:01:52,020
buying back a little bit now you know

1422
01:01:55,609 --> 01:01:53,730
it's we can also use that money for

1423
01:01:58,069 --> 01:01:55,619
other things and that will be the

1424
01:02:00,500 --> 01:01:58,079
discussion on the on the priorities does

1425
01:02:02,329 --> 01:02:00,510
it make sense to to delay a little bit

1426
01:02:04,700 --> 01:02:02,339
to put ISS in better shape or do we want

1427
01:02:06,890 --> 01:02:04,710
to take that money lay out the workforce

1428
01:02:08,299 --> 01:02:06,900
and go go step out into the next the

1429
01:02:11,359 --> 01:02:08,309
next activities that we're going to do

1430
01:02:14,960 --> 01:02:11,369
so it's a it's going to be a lot of

1431
01:02:17,510 --> 01:02:14,970
discussions between now and and the

1432
01:02:22,280 --> 01:02:17,520
summer if we're going to fly 135 exactly

1433
01:02:24,589 --> 01:02:22,290
where we go fly it and one final

1434
01:02:26,180 --> 01:02:24,599
follow-up which is looking very much the

1435
01:02:29,180 --> 01:02:26,190
future I know a lot of your team were

1436
01:02:31,250 --> 01:02:29,190
was involved in looking at possible

1437
01:02:33,200 --> 01:02:31,260
designs from where do we go after the

1438
01:02:34,640 --> 01:02:33,210

shuttle program and I was just wanting

1439
01:02:38,270 --> 01:02:34,650
since there's so much talk about a

1440
01:02:40,880 --> 01:02:38,280
shuttle drive vehicle following on do

1441
01:02:43,480 --> 01:02:40,890
you think that it's possible that we are

1442
01:02:46,940 --> 01:02:43,490
you're going to make a NASA can make a

1443
01:02:48,349 --> 01:02:46,950
2016 deadline to for the next vehicle or

1444
01:02:51,500 --> 01:02:48,359
do you think that that's it's far too

1445
01:02:53,539 --> 01:02:51,510
early to say well again it's going to

1446
01:02:55,579 --> 01:02:53,549
depend that's art I think that's going

1447
01:02:57,230 --> 01:02:55,589
to be our direction if the the

1448
01:03:01,190 --> 01:02:57,240
Appropriations follows the authorization

1449
01:03:04,700 --> 01:03:01,200
and I know NASA will will pull out all

1450
01:03:07,880 --> 01:03:04,710
the stops to get there and I as far as

1451
01:03:09,890 --> 01:03:07,890
designs on hll V the the Marshall Space

1452
01:03:12,559 --> 01:03:09,900
Flight Center has been doing a great job

1453
01:03:16,039 --> 01:03:12,569
here of coming up with different designs

1454
01:03:20,870 --> 01:03:16,049
and a schedule and cost or I think their

1455
01:03:23,900 --> 01:03:20,880
their their their biggest concerns and

1456
01:03:26,089 --> 01:03:23,910
and they'll they'll keep working through

1457
01:03:28,130 --> 01:03:26,099
that so you know if it's our direction

1458
01:03:29,930 --> 01:03:28,140
we're going to work towards that in and

1459
01:03:32,120 --> 01:03:29,940
I think the team is certainly capable of

1460
01:03:35,690 --> 01:03:32,130
doing that but wallah we'll see what the

1461
01:03:37,640 --> 01:03:35,700
final language says okay up to NASA

1462
01:03:42,680 --> 01:03:37,650
headquarters in Washington DC for a

1463
01:03:45,650 --> 01:03:42,690

couple of questions please hi this is

1464
01:03:46,970 --> 01:03:45,660
Denise Chow its face calm just a really

1465
01:03:50,150 --> 01:03:46,980
quick question for John and then a

1466
01:03:52,069 --> 01:03:50,160
question for Dan as well about the seals

1467
01:03:53,599 --> 01:03:52,079
on discoveries fuel lines I just wanted

1468
01:03:56,329 --> 01:03:53,609
to confirm that the repairs can be done

1469
01:03:58,069 --> 01:03:56,339
safely and effectively with discovery on

1470
01:04:02,030 --> 01:03:58,079
the launch pad and what the potential

1471
01:04:04,549 --> 01:04:02,040
risks are involved with that we will

1472
01:04:08,150 --> 01:04:04,559
make sure that we do them safely the

1473
01:04:11,510 --> 01:04:08,160
plan on the launch pad is I think is a

1474
01:04:13,280 --> 01:04:11,520
good one we're going to drain all of the

1475
01:04:14,360 --> 01:04:13,290
hydrazine out of the tanks we're going

1476
01:04:18,790 --> 01:04:14,370
to

1477
01:04:21,110 --> 01:04:18,800
pull a vacuum on them and dry them out

1478
01:04:24,290 --> 01:04:21,120
before they break it but they will still

1479
01:04:28,610 --> 01:04:24,300
be in inscape suits the full enclosed

1480
01:04:30,050 --> 01:04:28,620
suits in the actually in there's some

1481
01:04:32,690 --> 01:04:30,060
puts and takes we talked a lot about do

1482
01:04:34,250 --> 01:04:32,700
we want to do this fix horizontal in the

1483
01:04:38,050 --> 01:04:34,260
OPF or do we want to do a vertical on

1484
01:04:40,700 --> 01:04:38,060
the pad and it was kind of 5050 the

1485
01:04:42,440 --> 01:04:40,710
access to some things is better in the

1486
01:04:45,410 --> 01:04:42,450
vertical access to the other things is

1487
01:04:47,570 --> 01:04:45,420
better than the horizontal and the team

1488
01:04:50,930 --> 01:04:47,580

feels very confident that they can they

1489
01:04:53,630 --> 01:04:50,940
can safely accomplish it the the access

1490
01:04:55,310 --> 01:04:53,640
you know it's it I relate everything to

1491
01:04:57,470 --> 01:04:55,320
working on a car right but it's kind of

1492
01:04:59,270 --> 01:04:57,480
like working on your car it's it's three

1493
01:05:03,770 --> 01:04:59,280
inches you know in the back side to get

1494
01:05:05,300 --> 01:05:03,780
to get to the bolts and separate the

1495
01:05:07,610 --> 01:05:05,310
system and then they'll look at the the

1496
01:05:09,820 --> 01:05:07,620
sealing surface and polish but I think

1497
01:05:12,590 --> 01:05:09,830
they have a really good plan I you know

1498
01:05:15,680 --> 01:05:12,600
the Cape in the text that work on the

1499
01:05:20,150 --> 01:05:15,690
vehicles their their miracle workers and

1500
01:05:22,370 --> 01:05:20,160
you know too many I always I think they

1501
01:05:24,260 --> 01:05:22,380
can do everything and I always side on

1502
01:05:27,470 --> 01:05:24,270
the fact that hey we're going to go put

1503
01:05:29,360 --> 01:05:27,480
the vehicle the best possible config you

1504
01:05:30,890 --> 01:05:29,370
know prior to launch and I need to not

1505
01:05:33,290 --> 01:05:30,900
quit here because you know some of my

1506
01:05:35,750 --> 01:05:33,300
some of my peers say well what if we

1507
01:05:37,280 --> 01:05:35,760
mess up the flange more trying to repair

1508
01:05:38,630 --> 01:05:37,290
it I don't I don't even consider that

1509
01:05:41,120 --> 01:05:38,640
you know the guys just do an

1510
01:05:42,680 --> 01:05:41,130
unbelievable professional job and if we

1511
01:05:44,960 --> 01:05:42,690
did have something happen on it then

1512
01:05:46,340 --> 01:05:44,970
they'll fix that too so I you know we'll

1513
01:05:47,930 --> 01:05:46,350

get it in the right configuration before

1514
01:05:50,360 --> 01:05:47,940
we go to launch in understanding exactly

1515
01:05:51,770 --> 01:05:50,370
what we have and and we'll do it safely

1516
01:05:53,690 --> 01:05:51,780
if it takes more time it takes more time

1517
01:05:54,920 --> 01:05:53,700
and that's that's the way we've been

1518
01:05:59,160 --> 01:05:54,930
approaching things here the last couple

1519
01:06:03,940 --> 01:06:02,349
thank you and just a question for Dan

1520
01:06:06,400 --> 01:06:03,950
now and you mentioned the 10th

1521
01:06:08,470 --> 01:06:06,410
anniversary of expedition one arriving

1522
01:06:10,720 --> 01:06:08,480
at the ISS and start of the continuous

1523
01:06:12,849 --> 01:06:10,730
crew habitation what's the significance

1524
01:06:14,700 --> 01:06:12,859
of that ten-year milestone not only for

1525
01:06:17,589 --> 01:06:14,710
our country space program but

1526
01:06:20,769 --> 01:06:17,599
international cooperation and what does

1527
01:06:22,839 --> 01:06:20,779
it mean for the future of the ISS yeah

1528
01:06:24,999 --> 01:06:22,849
and you I think you hit it the

1529
01:06:26,700 --> 01:06:25,009
international cooperation aspect is kind

1530
01:06:29,829 --> 01:06:26,710
of what I hold my hat on it's it's just

1531
01:06:33,220 --> 01:06:29,839
you know we had to do it with with other

1532
01:06:35,410 --> 01:06:33,230
countries it's just been an amazing feat

1533
01:06:38,140 --> 01:06:35,420
to be able to get there you know

1534
01:06:41,589 --> 01:06:38,150
exposure to long duration understanding

1535
01:06:43,859 --> 01:06:41,599
the you know the regenerative ecosystem

1536
01:06:45,880 --> 01:06:43,869
is just going to be completely you know

1537
01:06:48,640 --> 01:06:45,890
transportable into any other kind of

1538
01:06:50,499 --> 01:06:48,650

vehicle we develop her for long-term

1539
01:06:52,809 --> 01:06:50,509
exploration it's going to be critical to

1540
01:06:54,370 --> 01:06:52,819
that all the medical research all the

1541
01:06:56,499 --> 01:06:54,380
human research that we're doing to

1542
01:07:00,299 --> 01:06:56,509
understand the effects on the human body

1543
01:07:03,190 --> 01:07:00,309
in my mind just directly applicable so

1544
01:07:07,660 --> 01:07:03,200
as we go forward you know we're making

1545
01:07:10,150 --> 01:07:07,670
plans to 2020 with with understanding

1546
01:07:12,249 --> 01:07:10,160
our capability after the 20 28 time

1547
01:07:16,630 --> 01:07:12,259
period so we're hoping we keep this

1548
01:07:18,430 --> 01:07:16,640
thing going okay we're back here for a

1549
01:07:22,390 --> 01:07:18,440
couple of wrap ups will get mark and

1550
01:07:25,180 --> 01:07:22,400
then bill thanks again mark a row from

1551
01:07:27,849 --> 01:07:25,190
the aviation week and it's for Dan

1552
01:07:30,819 --> 01:07:27,859
Hartman I think you mentioned on the on

1553
01:07:33,910 --> 01:07:30,829
the descent and the last launch the

1554
01:07:37,329 --> 01:07:33,920
descent module had a 02 pressurized

1555
01:07:40,990 --> 01:07:37,339
wonder if in each instance that was in

1556
01:07:43,690 --> 01:07:41,000
spec and why that is a concern that you

1557
01:07:46,329 --> 01:07:43,700
really need to chase down again I'll

1558
01:07:47,799 --> 01:07:46,339
have to get with an organ to get the

1559
01:07:50,349 --> 01:07:47,809
board details their commission is still

1560
01:07:52,329 --> 01:07:50,359
ongoing so just kind of anything I say

1561
01:07:54,420 --> 01:07:52,339
is kind of what I have heard and I'll

1562
01:07:57,730 --> 01:07:54,430
wait for that that kind of official

1563
01:07:59,499 --> 01:07:57,740

obviously if you have an o2 leak it was

1564
01:08:01,390 --> 01:07:59,509
passed a regulator and I believe they

1565
01:08:05,549 --> 01:08:01,400
were manipulating a valve and so

1566
01:08:09,999 --> 01:08:05,559
potentially a seal on a valve may have

1567
01:08:11,739 --> 01:08:10,009
came loose or got got to misguided and

1568
01:08:15,759 --> 01:08:11,749
then realign itself after them if

1569
01:08:17,019 --> 01:08:15,769
a couple other times total pressure I

1570
01:08:18,430 --> 01:08:17,029
think they were starting to get

1571
01:08:20,519 --> 01:08:18,440
concerned and that's why they vented it

1572
01:08:22,839 --> 01:08:20,529
off into the hab module the what the

1573
01:08:24,759 --> 01:08:22,849
where you can get into trouble is in a

1574
01:08:26,680 --> 01:08:24,769
PPO to a partial pressure of oxygen

1575
01:08:29,049 --> 01:08:26,690
total oxygen concentration into the

1576
01:08:30,669 --> 01:08:29,059
cabin that's where the you have some

1577
01:08:33,789 --> 01:08:30,679
pretty strict flight rules and ground

1578
01:08:39,039 --> 01:08:33,799
rules and to my knowledge on neither

1579
01:08:41,229 --> 01:08:39,049
case where those violated you have one

1580
01:08:42,970 --> 01:08:41,239
last one right over here I have a

1581
01:08:45,129 --> 01:08:42,980
question for John the doubt there's an

1582
01:08:46,689 --> 01:08:45,139
answer to but knowing John he certainly

1583
01:08:48,970 --> 01:08:46,699
thought about it and I'm curious about

1584
01:08:51,640 --> 01:08:48,980
it if and I don't even like to mention

1585
01:08:57,129 --> 01:08:51,650
aborts but if you if you uh if you had

1586
01:08:58,720 --> 01:08:57,139
an RTLS on 133 for 134 it would you have

1587
01:09:00,220 --> 01:08:58,730
a chance to fly that flight again with

1588
01:09:03,220 --> 01:09:00,230

the current budget environment or would

1589
01:09:05,289 --> 01:09:03,230
an RTLS end that mission i'm assuming a

1590
01:09:06,640 --> 01:09:05,299
towel would ended for sure just because

1591
01:09:08,890 --> 01:09:06,650
at the time it take to get an orbiter

1592
01:09:10,390 --> 01:09:08,900
bag but i was just curious where how

1593
01:09:11,740 --> 01:09:10,400
aborts could be handled from a budget

1594
01:09:14,499 --> 01:09:11,750
standpoint with these final three

1595
01:09:18,009 --> 01:09:14,509
missions I and I don't have an answer I

1596
01:09:22,509 --> 01:09:18,019
don't know I again we would weigh what

1597
01:09:30,579 --> 01:09:22,519
caused the abort versus how important it

1598
01:09:33,189 --> 01:09:30,589
is to to supply ISS and you know it the

1599
01:09:34,809 --> 01:09:33,199
problem with an abort right is I have

1600
01:09:37,269 --> 01:09:34,819
very limited set of flight hardware

1601
01:09:39,249 --> 01:09:37,279
right and I would expend one and so that

1602
01:09:40,450 --> 01:09:39,259
would take the 135 off the table and

1603
01:09:42,490 --> 01:09:40,460
then that would change the career size

1604
01:09:46,839 --> 01:09:42,500
for 134 because if it's always risky

1605
01:09:51,579 --> 01:09:46,849
went on and on so it depends it totally

1606
01:09:53,109 --> 01:09:51,589
depends on what caused the abort and

1607
01:09:54,819 --> 01:09:53,119
then you would decide whether it was

1608
01:09:58,689 --> 01:09:54,829
safe inappropriate to fly the next

1609
01:10:00,430 --> 01:09:58,699
mission okay well that's all the time we

1610
01:10:02,379 --> 01:10:00,440
have for this briefing but stay tuned

1611
01:10:03,939 --> 01:10:02,389
coming up at the bottom of the hour is

1612
01:10:05,919 --> 01:10:03,949
the mission overview you'll hear all the

1613
01:10:08,770 --> 01:10:05,929

details from the two lead flight

1614
01:10:11,830 --> 01:10:08,780
directors brian money for the space

1615
01:10:13,390 --> 01:10:11,840
shuttle portion of sts-133 and Royce

1616
01:10:17,080 --> 01:10:13,400
Renfrew who is the lead flight director

1617
01:10:19,209 --> 01:10:17,090
for the station side of the Ulf the

1618
01:10:21,490 --> 01:10:19,219
utilization and logistics flight five

1619
01:10:23,020 --> 01:10:21,500
part of this mission so stay tuned for