
PAO

1
00:00:04,309 --> 00:00:02,869
and welcome back inside mission control

2
00:00:05,990 --> 00:00:04,319
houston that again a look at the

3
00:00:07,670 --> 00:00:06,000
upcoming demonstration flight of the

4
00:00:10,150 --> 00:00:07,680
cygnus vehicle to the international

5
00:00:11,910 --> 00:00:10,160
space station uh as part of our lead up

6
00:00:13,830 --> 00:00:11,920
to that all this week i've been talking

7
00:00:15,350 --> 00:00:13,840
to a few of the flight control team that

8
00:00:17,670 --> 00:00:15,360
are going to be here in mission control

9
00:00:19,349 --> 00:00:17,680
houston monitoring the flight in charge

10
00:00:21,029 --> 00:00:19,359
of supporting the vehicle on its final

11
00:00:23,109 --> 00:00:21,039
approaches to the international space

12
00:00:25,029 --> 00:00:23,119
station joining me now one of those

13
00:00:27,109 --> 00:00:25,039

console positions billy jones he's one

14
00:00:28,830 --> 00:00:27,119
of our robo flight controllers

15
00:00:30,870 --> 00:00:28,840
now robo you're probably the only

16
00:00:32,950 --> 00:00:30,880
self-explanatory flight control position

17
00:00:35,590 --> 00:00:32,960
in this entire room let me say that your

18
00:00:36,630 --> 00:00:35,600
robotics yep uh we do robotics and we

19
00:00:37,830 --> 00:00:36,640
actually like robo because it's not an

20
00:00:39,670 --> 00:00:37,840
acronym doesn't stand for anything

21
00:00:42,069 --> 00:00:39,680
except robotics you guys are special

22
00:00:43,510 --> 00:00:42,079
with that yeah yeah we're the uh so

23
00:00:44,950 --> 00:00:43,520
you're in charge of robotics what what

24
00:00:48,310 --> 00:00:44,960
systems are you controlling on board the

25
00:00:51,110 --> 00:00:48,320
station so um we control uh the external

26
00:00:54,150 --> 00:00:51,120
robotics um for the the canadian uh

27
00:00:55,510 --> 00:00:54,160
robotic systems um so we've got the srms

28
00:00:57,590 --> 00:00:55,520
canadarm2

29
00:00:59,430 --> 00:00:57,600
we also have the mobile base system the

30
00:01:00,709 --> 00:00:59,440
mbs that goes with that and then the mt

31
00:01:01,670 --> 00:01:00,719
that allows us to move up and down the

32
00:01:04,630 --> 00:01:01,680
truss

33
00:01:06,390 --> 00:01:04,640
um addition we have dexter the spdm that

34
00:01:07,670 --> 00:01:06,400
we've been using a lot these days from

35
00:01:08,950 --> 00:01:07,680
the ground

36
00:01:10,469 --> 00:01:08,960
and then inside we've got the

37
00:01:12,230 --> 00:01:10,479
workstations where the the crew is

38
00:01:13,910 --> 00:01:12,240

actually flying the arm from uh when we

39
00:01:15,749 --> 00:01:13,920
have them doing operations

40
00:01:17,830 --> 00:01:15,759
uh a couple robotics we don't control of

41
00:01:19,910 --> 00:01:17,840
course the gem rms that's uh belongs to

42
00:01:21,830 --> 00:01:19,920
japan and then inside like the spheres

43
00:01:24,070 --> 00:01:21,840
and robonaut those are our other groups

44
00:01:25,510 --> 00:01:24,080
so we've got the the big industrial ones

45
00:01:28,230 --> 00:01:25,520
outdoors so you guys got the biggest

46
00:01:29,990 --> 00:01:28,240
toys yeah absolutely okay well this

47
00:01:32,230 --> 00:01:30,000
upcoming orbital flight robotics are

48
00:01:34,149 --> 00:01:32,240
going to play a huge role okay what are

49
00:01:35,510 --> 00:01:34,159
robotics going to be what are what are

50
00:01:36,789 --> 00:01:35,520
they in charge of

51
00:01:39,350 --> 00:01:36,799
sure um

52
00:01:40,789 --> 00:01:39,360
so with with uh orbital you can't dock

53
00:01:42,789 --> 00:01:40,799
direct to the station uh you've got to

54
00:01:45,030 --> 00:01:42,799
be captured uh by the arm

55
00:01:46,310 --> 00:01:45,040
so basically between orbital and the vvo

56
00:01:48,469 --> 00:01:46,320
teams you know they're they're going to

57
00:01:50,950 --> 00:01:48,479
get us to a point um a few meters below

58
00:01:52,389 --> 00:01:50,960
station um and then essentially turn off

59
00:01:54,230 --> 00:01:52,399
the thrusters and we're going to reach

60
00:01:55,429 --> 00:01:54,240
out and grab them

61
00:01:57,190 --> 00:01:55,439
so that's that's kind of the critical

62
00:02:00,230 --> 00:01:57,200
operation for us is is getting the crew

63
00:02:02,469 --> 00:02:00,240

to fly out and successfully grab cygnus

64
00:02:04,149 --> 00:02:02,479
uh and then from there um

65
00:02:06,149 --> 00:02:04,159
reconfigure the vehicle and and we move

66
00:02:07,350 --> 00:02:06,159
it up to uh underneath node two for the

67
00:02:09,830 --> 00:02:07,360
install

68
00:02:11,670 --> 00:02:09,840
that's kind of our big task once that's

69
00:02:13,270 --> 00:02:11,680
done we get to hang out for 30 days

70
00:02:14,869 --> 00:02:13,280
while people are messing around inside

71
00:02:16,229 --> 00:02:14,879
and then we do the opposite we're going

72
00:02:17,589 --> 00:02:16,239
to uninstall it we're going to take it

73
00:02:19,030 --> 00:02:17,599
to release point again several meters

74
00:02:20,790 --> 00:02:19,040
below station and

75
00:02:22,309 --> 00:02:20,800
put her back in the stream okay so walk

76
00:02:23,830 --> 00:02:22,319
me through the rolls real quick once it

77
00:02:25,350 --> 00:02:23,840
gets there and it kind of turns off it's

78
00:02:26,790 --> 00:02:25,360
thrusters it's just floating there the

79
00:02:29,110 --> 00:02:26,800
crew is actually going to be the ones

80
00:02:30,790 --> 00:02:29,120
controlling the arm to reach out yeah um

81
00:02:32,229 --> 00:02:30,800
it's it's such a dynamic situation

82
00:02:34,309 --> 00:02:32,239
because even though the thrusters are

83
00:02:36,390 --> 00:02:34,319
off it's essentially floating in space

84
00:02:37,990 --> 00:02:36,400
so it can move it can drift

85
00:02:39,509 --> 00:02:38,000
so we've got two crew they're going to

86
00:02:41,589 --> 00:02:39,519
be on the hand controllers and the rws

87
00:02:42,790 --> 00:02:41,599
inside the cupola actually have a great

88
00:02:44,630 --> 00:02:42,800

view outside

89
00:02:46,229 --> 00:02:44,640
um and and they're going to be flying in

90
00:02:47,430 --> 00:02:46,239
for the grapple

91
00:02:48,790 --> 00:02:47,440
what what me and my team are going to be

92
00:02:50,309 --> 00:02:48,800
doing is we're responsible for getting

93
00:02:52,390 --> 00:02:50,319
the system set up beforehand so getting

94
00:02:54,229 --> 00:02:52,400
everything powered on we've been doing a

95
00:02:56,309 --> 00:02:54,239
series of checks um and even training

96
00:02:57,910 --> 00:02:56,319
with the crew leading up to this point

97
00:02:59,430 --> 00:02:57,920
um so we've been in charge of that whole

98
00:03:00,630 --> 00:02:59,440
operation and we do most of the ground

99
00:03:02,630 --> 00:03:00,640
commanding to get everything set up and

100
00:03:03,910 --> 00:03:02,640
kind of in position for him

101
00:03:05,910 --> 00:03:03,920
so then on capture day we're gonna turn

102
00:03:07,589 --> 00:03:05,920
it over to them uh they're gonna fly in

103
00:03:09,030 --> 00:03:07,599
do the grapple uh they're gonna fly all

104
00:03:10,630 --> 00:03:09,040
the way through install and basically

105
00:03:11,750 --> 00:03:10,640
we're gonna be you know monitoring the

106
00:03:12,949 --> 00:03:11,760
the health of the system making sure

107
00:03:14,869 --> 00:03:12,959
everything's going good up through

108
00:03:16,550 --> 00:03:14,879
install um and then once they're done

109
00:03:18,309 --> 00:03:16,560
with that um you know we will take over

110
00:03:19,910 --> 00:03:18,319
from the arm from the ground and we can

111
00:03:21,750 --> 00:03:19,920
go do you know any other operations

112
00:03:23,589 --> 00:03:21,760
we've got in that time frame okay is

113
00:03:25,430 --> 00:03:23,599

there anything special happening because

114
00:03:26,789 --> 00:03:25,440
i mean is the crew always the one that

115
00:03:27,589 --> 00:03:26,799
reaches out and grabs the vehicle

116
00:03:30,070 --> 00:03:27,599
because

117
00:03:32,070 --> 00:03:30,080
and and then also docks it or is that

118
00:03:34,390 --> 00:03:32,080
does that different differ between the

119
00:03:36,789 --> 00:03:34,400
various cargo vehicles so uh the crew is

120
00:03:39,030 --> 00:03:36,799
always going to fly the capture um for

121
00:03:40,149 --> 00:03:39,040
uh for dragon for cygnus and for the

122
00:03:41,750 --> 00:03:40,159
htvs

123
00:03:43,350 --> 00:03:41,760
just because it's a dynamic situation

124
00:03:44,470 --> 00:03:43,360
and you want to have that quick feedback

125
00:03:46,789 --> 00:03:44,480
you know we got a little bit of lag

126
00:03:48,070 --> 00:03:46,799
being on the ground

127
00:03:49,670 --> 00:03:48,080
for for the other vehicles we've

128
00:03:51,589 --> 00:03:49,680
developed a ground control install so

129
00:03:53,830 --> 00:03:51,599
basically for for htv and dragon at this

130
00:03:55,110 --> 00:03:53,840
point you just you grapple it the crew

131
00:03:57,429 --> 00:03:55,120
says all right we're done and then the

132
00:03:59,350 --> 00:03:57,439
ground takes over for the install

133
00:04:01,110 --> 00:03:59,360
for orbital because it's a demo flight

134
00:04:02,630 --> 00:04:01,120
um we are going to have the crew fly all

135
00:04:03,910 --> 00:04:02,640
the way through the install um the plan

136
00:04:05,509 --> 00:04:03,920
is that for downstream flights we'll

137
00:04:07,750 --> 00:04:05,519
take over from the ground as well for

138
00:04:10,070 --> 00:04:07,760

the uh for the maneuver and the install

139
00:04:11,990 --> 00:04:10,080
okay well a lot of everyone else i've

140
00:04:13,350 --> 00:04:12,000
been talking to for this

141
00:04:14,949 --> 00:04:13,360
they've been training for this for years

142
00:04:16,710 --> 00:04:14,959
they're really excited is there any

143
00:04:18,469 --> 00:04:16,720
particular moment you're really going to

144
00:04:20,069 --> 00:04:18,479
you know sigh relief you're going to be

145
00:04:22,150 --> 00:04:20,079
really excited

146
00:04:24,390 --> 00:04:22,160
um i definitely think the the big sire

147
00:04:25,909 --> 00:04:24,400
leaf is going to be captured um now of

148
00:04:27,189 --> 00:04:25,919
course you know we've got a couple hours

149
00:04:28,710 --> 00:04:27,199
of operation to do the install after

150
00:04:30,070 --> 00:04:28,720
that but of course you know building

151
00:04:32,150 --> 00:04:30,080
station with the shuttle program we're

152
00:04:33,510 --> 00:04:32,160
pretty well versed on on the install

153
00:04:35,270 --> 00:04:33,520
but this you know it's the first time

154
00:04:36,710 --> 00:04:35,280
with a new vehicle so that the capture

155
00:04:38,710 --> 00:04:36,720
is gonna be gonna be a good moment to

156
00:04:39,990 --> 00:04:38,720
get to um of course the crew's been

157
00:04:41,030 --> 00:04:40,000
training for a long time you know i

158
00:04:42,710 --> 00:04:41,040
personally been working on this flight

159
00:04:44,310 --> 00:04:42,720
close to two years and there were teams

160
00:04:46,150 --> 00:04:44,320
before me who are handling the robotics

161
00:04:47,270 --> 00:04:46,160
so it's uh it's been quite a road to get

162
00:04:48,390 --> 00:04:47,280
here um

163
00:04:49,830 --> 00:04:48,400

but you know just just with the

164
00:04:52,550 --> 00:04:49,840
coordination between the safety teams

165
00:04:53,430 --> 00:04:52,560
with the engineers with actual orbital

166
00:04:54,710 --> 00:04:53,440
you know

167
00:04:57,030 --> 00:04:54,720
making sure that we've got this

168
00:04:58,629 --> 00:04:57,040
operation as safe as it can be

169
00:05:00,070 --> 00:04:58,639
crossing all the t's out in all the eyes

170
00:05:01,830 --> 00:05:00,080
all right well we're certainly looking

171
00:05:03,990 --> 00:05:01,840
forward to it again billy jones one of

172
00:05:06,150 --> 00:05:04,000
our robo flight controllers the only

173
00:05:07,990 --> 00:05:06,160
position here in the room not made up of

174
00:05:09,590 --> 00:05:08,000
an acronym of multiple words so it makes

175
00:05:11,350 --> 00:05:09,600
my job easier

176
00:05:13,110 --> 00:05:11,360
but again billy thanks so much for

177
00:05:14,790 --> 00:05:13,120
coming on giving us a little insight

178
00:05:17,110 --> 00:05:14,800
into the operations for all the robotics

179
00:05:19,830 --> 00:05:17,120
for this again orbital launching on

180
00:05:22,150 --> 00:05:19,840
september 17th and docking on september

181
00:05:23,590 --> 00:05:22,160
22nd you can see all the major times

182
00:05:25,830 --> 00:05:23,600
here on your screen now we're going to

183
00:05:27,350 --> 00:05:25,840
be bringing you live coverage on nasa tv

184
00:05:28,870 --> 00:05:27,360
like we do with all of our dynamic

185
00:05:31,270 --> 00:05:28,880
operations

186
00:05:33,110 --> 00:05:31,280
again orbital will be the second u.s

187
00:05:34,629 --> 00:05:33,120
commercial provider to come online for

188
00:05:36,469 --> 00:05:34,639

resupplying the international space

189
00:05:38,390 --> 00:05:36,479
station really looking forward to that

190
00:05:40,230 --> 00:05:38,400
next week make sure to tune in