BRUCE MANNERS

NASA COMMERCIAL ORBITAL
TRANSPORTATION SERVICES
PROJECT EXECUTIVE

1
00:00:01,467 --> 00:00:05,237
>> Kyle Herring: The focus
of attention for Cygnus,

2
00:00:05,237 --> 00:00:09,942
after its launch from the
Mid-Atlantic Regional Spaceport

3
00:00:09,942 --> 00:00:12,812
there at Wallops Flight
Facility on the Eastern Shore

4
00:00:12,812 --> 00:00:16,549
of Virginia, after it was
safely delivered to orbit,

5
00:00:16,549 --> 00:00:19,885
switched to the Cygnus
Control Center,

6
00:00:19,885 --> 00:00:24,390
which is at Orbital Sciences
Headquarters there outside

7
00:00:24,390 --> 00:00:28,227
Washington, DC in the
Dallas-Virginia area.

8
00:00:28,227 --> 00:00:32,131
And we're fortunate to
have Bruce Manners with us,

9
00:00:32,131 --> 00:00:36,569
joining us from Dallas
from the orbital location.

10
00:00:36,569 --> 00:00:38,571
He's the Project Executive

11

00:00:38,571 --> 00:00:43,175
for NASA's Commercial Orbital
Transportation Services Program.

12
00:00:43,175 --> 00:00:45,144
And Bruce, are you there?

13
00:00:45,144 --> 00:00:47,580
It's great to have
you with us today.

14
00:00:47,580 --> 00:00:48,380
>> Bruce Manning: Yes, I am.

15
00:00:48,380 --> 00:00:50,149
I'm really glad to be here.

16
00:00:50,149 --> 00:00:51,350
>> Kyle Herring: I bet you are.

17
00:00:51,350 --> 00:00:53,552
I'll tell you, the -- you
know, I was on console

18
00:00:53,552 --> 00:00:55,855
for the launch and, you know,

19
00:00:55,855 --> 00:01:01,026
the Antares obviously did its
job putting Cygnus into orbit.

20
00:01:01,026 --> 00:01:05,030
And I guess that just
started the workday

21
00:01:05,030 --> 00:01:08,367
for all the orbital
folks and the NASA folks

22

00:01:08,367 --> 00:01:12,805
that are supporting
there at Dallas.

23
00:01:12,805 --> 00:01:13,839
>> Bruce Manning: Yes, it did.

24
00:01:13,839 --> 00:01:15,207
It was a beautiful launch.

25
00:01:15,207 --> 00:01:17,977
I was actually privileged to
be at the Range Control Center

26
00:01:17,977 --> 00:01:20,846
at Wallops for the launch,
and I was able to see that

27
00:01:20,846 --> 00:01:24,183
and the data, launch the
data, and all that firsthand.

28
00:01:24,183 --> 00:01:28,120
And it was just an exciting
moment but, as you said,

29
00:01:28,120 --> 00:01:29,421
it was really just
the beginning.

30
00:01:29,421 --> 00:01:34,026
As things -- as it -- once
the Antares rocket left the

31
00:01:34,026 --> 00:01:37,329
spacecraft on orbit the focus
really shifted over here

32
00:01:37,329 --> 00:01:39,965
to Dallas and Virginia where

their flight control team

33
00:01:39,965 --> 00:01:42,601
for the Cygnus spacecraft
took over.

34
00:01:42,601 --> 00:01:46,172
>> Kyle Herring: I've been
reporting each day a little bit

35
00:01:46,172 --> 00:01:49,074
about the progress and the
health of this spacecraft,

36
00:01:49,074 --> 00:01:52,478
but maybe you can go into
some more detail I guess

37
00:01:52,478 --> 00:01:54,813
about after we went
off the air Wednesday,

38
00:01:54,813 --> 00:01:56,749
obviously the solar
rays were out.

39
00:01:56,749 --> 00:01:58,384
The vehicle was healthy.

40
00:01:58,384 --> 00:02:01,520
But talk about what's
kind of the --

41
00:02:01,520 --> 00:02:04,890
been the progress
since Wednesday

42
00:02:04,890 --> 00:02:09,061
and set the stage for Sunday?

43
00:02:09,061 --> 00:02:10,062
>> Bruce Manning: Sure.

44
00:02:10,062 --> 00:02:11,764
Well, the vehicle
is in great shape.

45
00:02:11,764 --> 00:02:13,132
I really couldn't be happier

46
00:02:13,132 --> 00:02:15,401
with how things are
operating there.

47
00:02:15,401 --> 00:02:17,036
They have, at this point,
completed the first --

48
00:02:17,036 --> 00:02:20,472
their couple of their
demonstration objectives

49
00:02:20,472 --> 00:02:23,776
that they need to accomplish
before they get approved

50
00:02:23,776 --> 00:02:26,312
to come into the station.

51
00:02:26,312 --> 00:02:28,847
That data right now is really
still in review with all

52
00:02:28,847 --> 00:02:30,416
of the flight control
teams back with --

53
00:02:30,416 --> 00:02:33,085
in Houston and in Dallas,

54
00:02:33,085 --> 00:02:35,087
but the preliminary
looks at all the data.

55
00:02:35,087 --> 00:02:36,956
It says that everything
is going great.

56
00:02:36,956 --> 00:02:39,892
They were able to maintain
position and attitude control

57
00:02:39,892 --> 00:02:42,861
and free drift when told
to and when commanded to.

58
00:02:42,861 --> 00:02:44,964
So that's all great news.

59
00:02:44,964 --> 00:02:46,832
What's really been happening
since then, you know, they --

60
00:02:46,832 --> 00:02:48,634
as you said, they have
the solar rays out

61
00:02:48,634 --> 00:02:51,870
and the spacecraft is fully
powered, and they've checked

62
00:02:51,870 --> 00:02:53,539
out all the systems,
and everything seems

63
00:02:53,539 --> 00:02:55,274
to be running really great.

64

00:02:55,274 --> 00:02:58,444
So really the big movements
right now is just chasing

65
00:02:58,444 --> 00:03:00,913
after the space station doing
Delta-V burns and trying

66
00:03:00,913 --> 00:03:03,315
to get themselves into
the proper position to --

67
00:03:03,315 --> 00:03:06,285
once they get the
authorization from Houston

68
00:03:06,285 --> 00:03:07,820
to come into the station.

69
00:03:07,820 --> 00:03:09,822
So that's really been the
focus of the activities;

70
00:03:09,822 --> 00:03:11,957
checking out that vehicle,
getting those first couple

71
00:03:11,957 --> 00:03:13,058
of demonstrations done

72
00:03:13,058 --> 00:03:15,561
and chasing [inaudible],
chasing the station.

73
00:03:15,561 --> 00:03:19,898
>> Kyle Herring: So that leads
us to Sunday morning obviously

74
00:03:19,898 --> 00:03:23,002
for the [inaudible],

everything starts happening

75
00:03:23,002 --> 00:03:26,705
about one-thirty in the morning,
I guess, your time there,

76
00:03:26,705 --> 00:03:30,042
on Eastern time,
twelve-thirty here.

77
00:03:30,042 --> 00:03:33,445
But one of the first
callouts I guess

78
00:03:33,445 --> 00:03:38,150
that morning is the go-no-go
decision for joint operations

79
00:03:38,150 --> 00:03:41,687
and then from there on
kind of the rest of the --

80
00:03:41,687 --> 00:03:44,290
it's a pretty feverish
pace I guess

81
00:03:44,290 --> 00:03:47,559
in orbital mechanic's lingo.

82
00:03:47,559 --> 00:03:49,328
But describe to us kind

83
00:03:49,328 --> 00:03:52,064
of what's going to
happen on Sunday?

84
00:03:52,064 --> 00:03:53,732
>> Bruce Manning: I'll
do the best I can.

85
00:03:53,732 --> 00:03:55,567
I'm not really the best one

86
00:03:55,567 --> 00:03:57,670
for all the orbital
mechanics pieces of it.

87
00:03:57,670 --> 00:04:00,105
The mission flight teams
are, I'm sure, much able --

88
00:04:00,105 --> 00:04:01,807
much more equipped to handle
those kinds of questions.

89
00:04:01,807 --> 00:04:03,942
But as they come into the
station, you know, they're --

90
00:04:03,942 --> 00:04:05,344
they will have to
-- they have --

91
00:04:05,344 --> 00:04:09,148
still have some demonstration
pieces that they need to sort

92
00:04:09,148 --> 00:04:10,616
out until they can
get close enough

93
00:04:10,616 --> 00:04:14,119
and ultimately captured
by the robotic arm.

94
00:04:14,119 --> 00:04:16,455
They'll be operated, of
course, by the onboard crew

95

00:04:16,455 --> 00:04:18,223
and the International
Space Station.

96
00:04:18,223 --> 00:04:20,092
That capture point,
once they are --

97
00:04:20,092 --> 00:04:22,461
be able to grab a hold of them,
that's referred to as capture,

98
00:04:22,461 --> 00:04:24,196
and then they will berth
them to all the way

99
00:04:24,196 --> 00:04:25,764
into the space station
where then the --

100
00:04:25,764 --> 00:04:28,367
we've got pieces then
that the crew will have

101
00:04:28,367 --> 00:04:29,501
to [inaudible] bolt the vehicle

102
00:04:29,501 --> 00:04:32,738
into the space station
before they'll be able

103
00:04:32,738 --> 00:04:37,009
to ultimately open the hatch,
which will hopefully happen

104
00:04:37,009 --> 00:04:38,977
in a day or so after that.

105
00:04:38,977 --> 00:04:41,213
>> Kyle Herring: In

this flight, you know,

106
00:04:41,213 --> 00:04:43,315
it's called a demo
flight, but obviously

107
00:04:43,315 --> 00:04:44,950
with everything going
very smoothly, I mean,

108
00:04:44,950 --> 00:04:47,653
all the orbital folks, NASA,
obviously you guys have

109
00:04:47,653 --> 00:04:50,789
to be really thrilled
with the performance

110
00:04:50,789 --> 00:04:52,925
of this vehicle so far.

111
00:04:52,925 --> 00:04:56,161
But now you've looked
to the next flight,

112
00:04:56,161 --> 00:04:58,831
which I guess is
known essentially

113
00:04:58,831 --> 00:05:01,900
as the real first
cargo delivery flight.

114
00:05:01,900 --> 00:05:04,636
But -- and I understand
preparations are probably

115
00:05:04,636 --> 00:05:08,073
already underway to reach
a goal of trying to launch

116
00:05:08,073 --> 00:05:11,443
that flight maybe as
early as December.

117
00:05:11,443 --> 00:05:12,711
>> Bruce Manning: Yes, sir.

118
00:05:12,711 --> 00:05:14,213
They do have cargo
on this flight.

119
00:05:14,213 --> 00:05:17,683
You know, there is a
little over 700 kilograms

120
00:05:17,683 --> 00:05:19,118
of cargo on this flight.

121
00:05:19,118 --> 00:05:21,320
But the intent here
was to keep that sort

122
00:05:21,320 --> 00:05:24,123
of low value pieces just in
case there was any issues.

123
00:05:24,123 --> 00:05:26,458
But right now, of course, it
looks like we're absolutely

124
00:05:26,458 --> 00:05:29,228
on track to deliver that
cargo to the station.

125
00:05:29,228 --> 00:05:33,632
And it has some student
payloads and some, you know,

126

00:05:33,632 --> 00:05:36,034
pieces for the crew
themselves and things.

127
00:05:36,034 --> 00:05:39,204
All that. But yeah, there
is work well under way

128
00:05:39,204 --> 00:05:42,841
for the first operational
flight under the CRS contract.

129
00:05:42,841 --> 00:05:44,910
We do hope that, that
can possibly be happening

130
00:05:44,910 --> 00:05:46,812
in December, maybe
not until January.

131
00:05:46,812 --> 00:05:49,948
That schedule needs to get
sorted out at this point.

132
00:05:49,948 --> 00:05:53,452
But if you were to go to the
Horizontal Integration Facility

133
00:05:53,452 --> 00:05:57,923
at Wallops, you will see all the
pieces really coming together

134
00:05:57,923 --> 00:05:59,324
for the next Antares.

135
00:05:59,324 --> 00:06:04,229
And H-100 at Wallops, they
also have the next PCM,

136
00:06:04,229 --> 00:06:06,498

the Pressurized Cargo
Module, the service modules.

137
00:06:06,498 --> 00:06:09,067
They're all -- it's all really
starting to come together

138
00:06:09,067 --> 00:06:12,538
and you can see the pieces, and
the crank is beginning to turn

139
00:06:12,538 --> 00:06:14,673
to really see it in a
production line mode;

140
00:06:14,673 --> 00:06:16,308
so they can keep
turning these things

141
00:06:16,308 --> 00:06:17,843
out every six months or so.

142
00:06:17,843 --> 00:06:21,747
But we are really excited
about this mission right now.

143
00:06:21,747 --> 00:06:25,317
And if you even look in
the history where we are,

144
00:06:25,317 --> 00:06:27,186
this is really the --
almost you can think of it

145
00:06:27,186 --> 00:06:28,454
as the third flight of Antares

146
00:06:28,454 --> 00:06:29,655
in the last seven
or eight months.

147
00:06:29,655 --> 00:06:31,390
They had a hot-fire test.

148
00:06:31,390 --> 00:06:34,159
It was done back in the
-- back early this year.

149
00:06:34,159 --> 00:06:36,462
Then, of course, the
Antares flight in April

150
00:06:36,462 --> 00:06:40,165
and then this flight with
Antares and Cygnus again now.

151
00:06:40,165 --> 00:06:41,533
They've really done
an awful lot.

152
00:06:41,533 --> 00:06:44,937
But you can see that the
production line mentality is

153
00:06:44,937 --> 00:06:47,139
setting in, in there, so they
can turn those things out

154
00:06:47,139 --> 00:06:50,342
and get them out as quickly
and as often as we need them.

155
00:06:50,342 --> 00:06:50,976
>> Kyle Herring: Yeah.

156
00:06:50,976 --> 00:06:52,344
That sounds great.

157
00:06:52,344 --> 00:06:57,249

It's nice to have a vehicle
that is probably well ahead

158
00:06:57,249 --> 00:07:00,285
of its processing, and
all it has to do is wait

159
00:07:00,285 --> 00:07:02,855
for a little bit of highway
traffic around the station.

160
00:07:02,855 --> 00:07:08,360
And it's always nice to have
a busy highway around the ISS.

161
00:07:08,360 --> 00:07:10,762
>> Bruce Manning: Absolutely.

162
00:07:10,762 --> 00:07:13,098
When we get this
mission, we will take --

163
00:07:13,098 --> 00:07:14,500
deliver the cargo up there.

164
00:07:14,500 --> 00:07:18,170
We'll take some trash away, and
when they leave in thirty days.

165
00:07:18,170 --> 00:07:20,639
And then as you said, we are --

166
00:07:20,639 --> 00:07:23,008
they're rapidly trying to
get everything wrapped up

167
00:07:23,008 --> 00:07:24,776
and buttoned up for the
next mission, which we --

168
00:07:24,776 --> 00:07:26,578
hopefully we can do
as early as December,

169
00:07:26,578 --> 00:07:28,046
if not, maybe into January.

170
00:07:28,046 --> 00:07:33,018
But the hardware is
definitely coming together.

171
00:07:33,018 --> 00:07:36,355
>> Kyle Herring: Well,
obviously give all of our best

172
00:07:36,355 --> 00:07:37,723
to the orbital team

173
00:07:37,723 --> 00:07:41,293
and obviously the NASA folks
supporting all the activities

174
00:07:41,293 --> 00:07:42,361
up there.

175
00:07:42,361 --> 00:07:44,463
Dallas will obviously
be here supporting

176
00:07:44,463 --> 00:07:45,797
as well and watching along.

177
00:07:45,797 --> 00:07:50,302
And we really appreciate
you, Bruce, stopping by

178
00:07:50,302 --> 00:07:52,971
and talking with us today.

179
00:07:52,971 --> 00:07:53,805
>> Bruce Manning:
Thank you very much.

180
00:07:53,805 --> 00:07:54,873
And you folks have a great day.

181
00:07:54,873 --> 00:07:56,341
And let's go Cygnus.

182
00:07:56,341 --> 00:07:58,777
I'm looking forward to
the birthday on Sunday.

183
00:07:58,777 --> 00:07:59,344
>> Kyle Herring: Take care.

184
00:07:59,344 --> 00:08:00,245
Thanks, Bruce.