
PAO
NASA

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00:00:00,676 --> 00:00:02,086
>> Josh Byerly: I'm
joined now by Bruce Manners

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00:00:02,086 --> 00:00:03,896
who is the Project
Executive as part

3
00:00:03,896 --> 00:00:06,886
of NASA's Commercial Orbital
Transportation Services Program

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00:00:07,276 --> 00:00:08,656
who works with orbital sciences.

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00:00:08,656 --> 00:00:11,246
Now we talked a lot about
SpaceX and their success

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00:00:11,246 --> 00:00:13,516
that they had the last few
weeks flying up to the station.

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00:00:13,946 --> 00:00:16,136
Orbital is the other
COTS partner

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00:00:16,136 --> 00:00:18,256
that NASA has been working
with for a number of years

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00:00:18,256 --> 00:00:19,906
but Orbital is a little
bit different in terms

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00:00:19,906 --> 00:00:21,076
of their hardware, their rocket

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00:00:21,076 --> 00:00:25,106

and also they started the COTS
Program, what, in 2008, correct?

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00:00:25,106 --> 00:00:26,646
>> Bruce Manners: They
did start a little late,

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00:00:26,646 --> 00:00:28,886
from when SpaceX got started
and that was principally

14
00:00:28,886 --> 00:00:31,076
because we initially
actually initiated the program

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00:00:31,076 --> 00:00:33,896
with a different company
entirely that was unsuccessful

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00:00:33,896 --> 00:00:37,396
so we started over and
Orbital started two years late

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00:00:37,486 --> 00:00:40,016
but it's coming in about
six months or so behind

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00:00:40,016 --> 00:00:41,026
so that ended pretty well.

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00:00:41,576 --> 00:00:43,226
>> Josh Byerly: So let
talk about the differences

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00:00:43,226 --> 00:00:45,906
between Cygnus, which is
their spacecraft, and Dragon.

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00:00:46,226 --> 00:00:47,846
Cygnus has not come

back and splash down.

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00:00:47,846 --> 00:00:49,846
It's more like a progress
and things like that

23
00:00:49,846 --> 00:00:51,916
that are you know packed full
of items and they come back

24
00:00:51,916 --> 00:00:52,776
and they burn up, right?

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00:00:52,776 --> 00:00:52,986
>> Bruce Manners: Right,

26
00:00:52,986 --> 00:00:54,286
they function much
more like progress.

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00:00:54,536 --> 00:00:56,906
Really it's going to take up
cargo to the Space Station

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00:00:56,906 --> 00:00:57,806
and then take away trash.

29
00:00:58,196 --> 00:01:00,166
>> Josh Byerly: Yeah so what
is, you know as you've worked

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00:01:00,166 --> 00:01:00,886
with him one on one,

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00:01:00,886 --> 00:01:03,896
Mike Horkachuck is the
project executive for SpaceX.

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00:01:03,896 --> 00:01:05,626

You guys worked very close
with these companies.

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00:01:06,026 --> 00:01:06,676
How has that been?

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00:01:06,676 --> 00:01:07,776
Has it been a little
bit differently

35
00:01:07,776 --> 00:01:09,206
than stuff you've
found at NASA before?

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00:01:09,206 --> 00:01:10,746
You know what have been
the challenges and sort

37
00:01:10,746 --> 00:01:12,916
of the cool part about it too?

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00:01:12,916 --> 00:01:15,196
>> Bruce Manners: It's been a
lot of fun and very challenging.

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00:01:15,256 --> 00:01:20,746
Orbital Sciences is a
very interesting company.

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00:01:20,746 --> 00:01:24,716
They've got unique skill set in
that they handle both spacecraft

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00:01:24,716 --> 00:01:27,776
and launch vehicles as part of
their core business products.

42
00:01:28,406 --> 00:01:29,856
Learning really how
the commercial side

43
00:01:29,916 --> 00:01:32,796
of the industry works and
learning how, specifically

44
00:01:32,796 --> 00:01:36,416
in the commercial side,
for satellite manufacturing

45
00:01:36,416 --> 00:01:39,056
and design and construction
has been very interesting.

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00:01:39,956 --> 00:01:40,806
>> Josh Byerly: So you know,

47
00:01:40,806 --> 00:01:42,106
a lot of people may
not realize this

48
00:01:42,106 --> 00:01:44,486
but Orbital is actually
going to launch from Wallops,

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00:01:44,486 --> 00:01:45,756
which is one of the
NASA facilities

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00:01:45,756 --> 00:01:47,306
up on the Northeast Coast.

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00:01:47,306 --> 00:01:49,556
It's different from
KSC so talk about that.

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00:01:49,556 --> 00:01:53,096
How different is that
from other launch sites?

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00:01:53,306 --> 00:01:55,826
>> Bruce Manners: You know
Wallops has a traditional launch

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00:01:55,826 --> 00:01:59,036
site who has done a
lot of solid boosters

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00:01:59,036 --> 00:02:01,486
and really smaller
things in general

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00:02:01,486 --> 00:02:03,296
like sounding rockets,
principally.

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00:02:03,466 --> 00:02:03,596
>> Josh Byerly: Sure.

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00:02:04,036 --> 00:02:05,536
>> Bruce Manners: They've been
in business for a long time

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00:02:05,536 --> 00:02:07,026
but this is a big step
up for them to get

60
00:02:07,026 --> 00:02:09,726
into a medium class launch
vehicle liquid system,

61
00:02:10,236 --> 00:02:13,196
having to build an entirely
new pad, this commercial pad,

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00:02:13,196 --> 00:02:15,116
really is going to be
owned and operated by Mars,

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00:02:15,116 --> 00:02:16,576

the Mid Atlantic
Regional Space Port.

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00:02:17,336 --> 00:02:18,366
It's a big step for them.

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00:02:18,496 --> 00:02:21,006
I think they've stepped
up to the challenge.

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00:02:21,386 --> 00:02:23,806
It's been a very interesting
process to try to integrate them

67
00:02:23,806 --> 00:02:27,536
with really how the
rest of the agency works

68
00:02:27,536 --> 00:02:30,066
for human space flight
and with KSC and all

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00:02:30,516 --> 00:02:31,776
that so very exciting.

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00:02:31,776 --> 00:02:33,476
>> Josh Byerly: We talked a
lot about this with SpaceX

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00:02:33,476 --> 00:02:34,636
but I think it's good
to remind people,

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00:02:34,636 --> 00:02:36,346
the way COTS works is a
little bit differently.

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00:02:36,346 --> 00:02:38,836
It's not just a straight up
contract with these companies.

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00:02:38,836 --> 00:02:41,436
It's a space act agreement
which is a NASA way of working

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00:02:41,436 --> 00:02:43,836
with private companies but
there's a lot of milestones

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00:02:43,956 --> 00:02:47,316
that are set that both
Orbital and SpaceX had to meet

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00:02:47,316 --> 00:02:49,976
and SpaceX is getting
close to wrapping up theirs

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00:02:49,976 --> 00:02:51,936
but Orbital is pretty far along
in terms of how many miles

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00:02:51,936 --> 00:02:54,166
since they've met and what
they've got left, right?

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00:02:54,166 --> 00:02:56,636
>> Bruce Manner: Yes, yeah,
we're really down to the,

81
00:02:56,636 --> 00:02:58,526
I hope the last three or
four milestones for them

82
00:02:58,836 --> 00:03:01,256
which are all hardware related
and all mission related.

83
00:03:01,616 --> 00:03:03,136
We've got to just finish up.

84
00:03:03,266 --> 00:03:07,276
In June we're hoping to wrap
up the first stage assembly

85
00:03:07,276 --> 00:03:10,586
for their test launch
vehicle and then

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00:03:10,586 --> 00:03:12,856
after that we have
another first stage

87
00:03:12,856 --> 00:03:16,026
for their ultimate demo vehicle
to go to the Space Station.

88
00:03:16,716 --> 00:03:18,906
They're really into the
hardware phase of this program.

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00:03:19,026 --> 00:03:22,396
The Cygnus spacecraft,
it's still in two pieces

90
00:03:22,396 --> 00:03:25,756
but their pressurized element is
already delivered and at Wallops

91
00:03:26,366 --> 00:03:27,596
and their service module side

92
00:03:27,596 --> 00:03:30,716
of that spacecraft is
really just wrapping

93
00:03:30,716 --> 00:03:34,196
up its final integration stages
at Dulles and then it will ship

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00:03:34,196 --> 00:03:37,146
to Wallops where it gets mated
with the pressurized element

95
00:03:37,676 --> 00:03:39,406
so the spacecraft is
pretty much finished.

96
00:03:39,406 --> 00:03:41,046
The launch vehicle, if you went

97
00:03:41,046 --> 00:03:43,006
down to Wallops right now you
could see two launch vehicles

98
00:03:43,006 --> 00:03:43,736
in process.

99
00:03:43,736 --> 00:03:45,276
It's very exciting seeing all

100
00:03:45,276 --> 00:03:46,846
of that hardware come
together after all this time.

101
00:03:46,846 --> 00:03:48,356
>> Josh Byerly: Let's talk about
the two flights that are coming

102
00:03:48,356 --> 00:03:49,206
up toward the end of this year.

103
00:03:49,206 --> 00:03:51,026
There's a test flight
of the Antares,

104
00:03:51,026 --> 00:03:53,926
which is the rocket itself and
then there's a second flight

105
00:03:53,926 --> 00:03:55,826
which is the actual
demonstration mission

106
00:03:55,826 --> 00:03:58,136
up to the station, much like
what SpaceX just did so talk

107
00:03:58,136 --> 00:03:59,936
about those two things
and what the goals are.

108
00:04:00,046 --> 00:04:01,806
>> Bruce Manner: The
goals are pretty simple.

109
00:04:01,976 --> 00:04:04,236
You know when we actually
started this program they

110
00:04:04,236 --> 00:04:05,966
actually had one
mission and it was going

111
00:04:05,966 --> 00:04:07,356
to go all the way to
the Space Station.

112
00:04:07,356 --> 00:04:08,836
Fortunately we had
some opportunity

113
00:04:08,836 --> 00:04:13,446
to add some additional money
to the program where we added

114
00:04:13,446 --> 00:04:14,806
in some risk reduction
activities.

115
00:04:14,806 --> 00:04:17,036
One of the first ones we wanted
to add in was a test flight

116
00:04:17,036 --> 00:04:19,476
of the Antares Launch
Vehicle, the new rocket.

117
00:04:20,066 --> 00:04:23,196
And like any other new
system it has challenges

118
00:04:23,286 --> 00:04:26,446
and risk associated with
the new development.

119
00:04:26,966 --> 00:04:30,146
So we, the first launch, the
test launch, which we hope to be

120
00:04:30,306 --> 00:04:34,706
in late December, will
be a test of Antares

121
00:04:34,706 --> 00:04:37,886
to launch and reach orbit.

122
00:04:38,266 --> 00:04:40,186
It will have a dummy
spacecraft on it.

123
00:04:40,186 --> 00:04:42,226
It's going to do
a mission profile

124
00:04:42,226 --> 00:04:44,086
that exactly matches
what they will do

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00:04:44,086 --> 00:04:46,466
for the ultimate demo
to the Space Station.

126
00:04:46,966 --> 00:04:48,526
But it's really a
test and ringing

127
00:04:48,526 --> 00:04:49,806
out of the launch
vehicle itself.

128
00:04:50,186 --> 00:04:51,736
>> Josh Byerly: So that first
mission that they're going

129
00:04:51,736 --> 00:04:53,966
to fly, how many orbits
is that going to be?

130
00:04:53,966 --> 00:04:55,676
Is it going to be a few
orbits and they come back

131
00:04:55,676 --> 00:04:56,796
in or what will they do?

132
00:04:56,896 --> 00:04:59,206
>> Bruce Manner:
Principally it's really a test

133
00:04:59,206 --> 00:04:59,906
of the launch vehicle.

134
00:04:59,906 --> 00:05:02,516
They're going to put up
this Cygnus simulator,

135
00:05:02,516 --> 00:05:03,986
>> Josh Byerly: It's

a mock up of it, yeah.

136
00:05:04,016 --> 00:05:04,886
>> Bruce Manner: It's a mock up

137
00:05:04,886 --> 00:05:07,046
and it will actually lose
communication with that as soon

138
00:05:07,046 --> 00:05:08,316
as it leaves the launch vehicle.

139
00:05:08,516 --> 00:05:08,846
>> Josh Byerly: Okay.

140
00:05:08,846 --> 00:05:10,176
>> Bruce Manner: Really it's
going to go up and it will end

141
00:05:10,176 --> 00:05:13,806
up orbiting some but the
test is really to make sure

142
00:05:13,806 --> 00:05:15,976
that the rocket can deliver
that payload to orbit.

143
00:05:15,976 --> 00:05:17,186
>> Josh Byerly: And then
the second one is going

144
00:05:17,186 --> 00:05:17,796
to be the big one?

145
00:05:17,856 --> 00:05:18,896
>> Bruce Manner: The
second one is the big one.

146
00:05:18,896 --> 00:05:20,946

It will just come
near or very similar

147
00:05:20,946 --> 00:05:22,426
to what we just did with SpaceX.

148
00:05:22,986 --> 00:05:24,286
They'll launch.

149
00:05:24,286 --> 00:05:24,896
You'll have cargo.

150
00:05:24,896 --> 00:05:27,506
They'll take it up to the
Space Station and deliver it,

151
00:05:27,506 --> 00:05:29,626
just like we plan
for the CRS missions.

152
00:05:29,626 --> 00:05:30,006
>> Josh Byerly: And
they're going

153
00:05:30,006 --> 00:05:31,386
to be grappled just
like SpaceX was.

154
00:05:31,386 --> 00:05:32,776
>> Bruce Manner: They will
be grappled just like SpaceX.

155
00:05:32,776 --> 00:05:35,026
It will be a hauntingly similar
mission with the exception

156
00:05:35,026 --> 00:05:37,086
that they won't, the
cargo that leaves,

157
00:05:37,166 --> 00:05:38,876
the trash, won't be recoverable.

158
00:05:39,296 --> 00:05:40,756
>> Josh Byerly: So is it cool
to kind of get finally close

159
00:05:40,756 --> 00:05:42,106
to actually seeing
this thing fly?

160
00:05:42,206 --> 00:05:43,006
>> Bruce Manner:
It's very exciting.

161
00:05:43,246 --> 00:05:44,076
We're really excited.

162
00:05:44,076 --> 00:05:45,586
We're proud of what
happened with SpaceX

163
00:05:45,706 --> 00:05:48,016
but this program is
really only half done

164
00:05:48,016 --> 00:05:49,176
and we're getting
ready to finish it up.

165
00:05:49,176 --> 00:05:49,816
>> Josh Byerly: It's
been a lot of work.

166
00:05:50,076 --> 00:05:51,566
>> Bruce Manner: It has
been an awful lot of work

167
00:05:51,596 --> 00:05:54,196

by an awful lot of people,
both in mission control here,

168
00:05:54,656 --> 00:05:56,326
the Space Station program,

169
00:05:56,676 --> 00:06:00,516
Orbital Sciences has put a huge
amount of resources into this.

170
00:06:00,606 --> 00:06:03,516
Wallops, NASA Wallops has
put a lot people into it.

171
00:06:03,606 --> 00:06:05,166
The Mid Atlantic Regional
Space Port has had a lot

172
00:06:05,166 --> 00:06:05,886
of people in it.

173
00:06:06,186 --> 00:06:07,796
This has been a big challenge

174
00:06:07,796 --> 00:06:10,286
and a very exciting program
worked by a lot of people.

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00:06:10,746 --> 00:06:12,196
>> Josh Byerly: So if you'd
like to learn more about Orbital

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00:06:12,196 --> 00:06:14,346
or take a look at SpaceX
as well, you can also log

177
00:06:14,346 --> 00:06:20,286
onto the COTS website which
is www.NASA.gov/COTS, C-O-T-S.

178
00:06:20,366 --> 00:06:24,056
Once again, www.NASA.gov/COTS.

179
00:06:24,056 --> 00:06:26,396
Of course we'll have more
information as we get closer

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00:06:26,396 --> 00:06:28,086
to launch so Bruce, thanks
so much for joining us.