
VOICE OF
Jon Cowart
Partner Manager for SpaceX, Commercial Crew Pgm.

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00:00:01,246 --> 00:00:06,176
[Kyle Herring] We'd like to welcome John
Cowart to the Mission Control Center.

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00:00:06,176 --> 00:00:06,846
John are you there?

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00:00:07,256 --> 00:00:07,816
[John Cowart] Yes sir!

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00:00:07,816 --> 00:00:08,306
Good morning.

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00:00:08,306 --> 00:00:08,946
Thanks for having me.

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00:00:08,946 --> 00:00:09,426
[Kyle] Hey John!

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00:00:09,426 --> 00:00:10,806
It's good to talk to you again.

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00:00:11,136 --> 00:00:11,626
[John] Yes sir!

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00:00:12,536 --> 00:00:17,356
[Kyle] You're the Partner Manager for
Space Exploration Technologies, SpaceX.

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00:00:17,636 --> 00:00:22,016
And I know they've got a lot on
their plate right now obviously

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00:00:22,016 --> 00:00:26,666
with the cargo launch that's
coming up in the next month or so.

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00:00:26,666 --> 00:00:33,686

But obviously your focus is more on their
efforts related to the Commercial Crew Program.

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00:00:33,686 --> 00:00:36,846
But start out by telling us
a little bit about yourself.

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00:00:36,846 --> 00:00:38,566
You've been with NASA for quite a while.

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00:00:38,566 --> 00:00:39,366
I don't want to date you.

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00:00:40,736 --> 00:00:42,256
But I know you've been around for quite a while.

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00:00:42,256 --> 00:00:44,256
You worked on a lot of different programs.

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00:00:44,326 --> 00:00:49,806
So set the stage for us with how you got
to be the Partner Manager for SpaceX.

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00:00:50,596 --> 00:00:51,566
[John] Well, let's see.

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00:00:51,566 --> 00:00:55,876
I was born down in Mobile,
Alabama, but grew up mostly

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00:00:55,876 --> 00:00:58,276
in a little town outside
of Atlanta called Tucker.

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00:00:58,276 --> 00:01:02,976
Ended up going to Georgia Tech where
I got an aerospace engineering degree

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00:01:02,976 --> 00:01:04,886

and a commission in the Air Force.

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00:01:04,926 --> 00:01:08,166
So then I spent four years out
at Vandenberg Air Force Base

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00:01:08,166 --> 00:01:13,466
in California building a shuttle launch pad out
there that we never, unfortunately we never got

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00:01:13,466 --> 00:01:17,216
to use it because of the effects and
the fallout from the Challenger disaster

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00:01:17,326 --> 00:01:19,216
that those things had on the Shuttle Program.

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00:01:20,006 --> 00:01:24,156
But while I was there, luckily NASA
liked what I had done in the Air Force

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00:01:24,156 --> 00:01:29,306
and they offered me a job and a great guy named
Larry Ellis took a chance on me and hired me

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00:01:29,306 --> 00:01:31,886
as a project engineer to work on Atlantis.

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00:01:32,136 --> 00:01:36,286
Now that's how I ended up at NASA,
but to go, kind of even further back

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00:01:36,286 --> 00:01:42,676
and just let folks know why I want to be here,
what inspired me to join NASA goes all the way

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00:01:42,676 --> 00:01:44,946
to back to Christmas Eve in 1968.

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00:01:45,566 --> 00:01:49,946
When I was a nine-year old kid who
was trying desperately to get to sleep

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00:01:49,946 --> 00:01:54,146
so that Santa would bring my new bike, cause,
you know, he won't come unless you're asleep.

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00:01:54,496 --> 00:01:54,886
[Kyle] Right.

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00:01:55,166 --> 00:01:55,396
[John] Yeah.

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00:01:55,396 --> 00:02:00,126
So at some point I'm laying there trying, trying
hard to get to sleep, my mom walks in the room

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00:02:00,126 --> 00:02:01,726
and says she wants me to see something.

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00:02:01,726 --> 00:02:05,036
So she took me out on the back
porch and she pointed out the Moon.

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00:02:05,036 --> 00:02:08,096
And I was certain she was
going to tell me that I was

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00:02:08,096 --> 00:02:10,516
about to see Santa fly in front of the Moon.

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00:02:11,306 --> 00:02:14,556
What she told me was that three men
from Earth, three men from NASA,

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00:02:14,556 --> 00:02:16,036
were orbiting the Moon right then.

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00:02:16,676 --> 00:02:19,156
And they were going to be
talking back to Earth shortly.

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00:02:19,156 --> 00:02:20,526
So I came back inside.

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00:02:20,526 --> 00:02:22,956
My Dad was adjusting the rabbit ears on the TV.

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00:02:22,956 --> 00:02:27,526
And I got to listen to Borman, Lovell
and Anders talk to us from the Moon.

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00:02:27,526 --> 00:02:30,676
And so that's what got me inspired
to want to come work for NASA.

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00:02:31,326 --> 00:02:33,856
[Kyle] Well, that's a great, great story.

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00:02:34,476 --> 00:02:41,016
So now that you've, you know, transitioned
over to Commercial Crew talk a little bit

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00:02:41,016 --> 00:02:48,776
about your role with SpaceX as a Partner
Manager, you know, representing NASA to SpaceX.

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00:02:49,526 --> 00:02:49,926
[John] Well.

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00:02:49,986 --> 00:02:53,266
I tell you working with SpaceX is fascinating.

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00:02:53,866 --> 00:02:59,706
They are a young vibrant group of folks
and I love the energy I get whenever I go

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00:02:59,706 --> 00:03:03,486
to their facilities out there
in Los Angeles, or in McGregor,

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00:03:03,486 --> 00:03:06,506
Texas where they test their
engines, or here at the Cape

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00:03:06,506 --> 00:03:08,096
where they do all their launch activities.

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00:03:08,506 --> 00:03:14,926
My role is to lead the best pit crew
in NASA as we work with SpaceX trying

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00:03:14,926 --> 00:03:20,366
to nurture their ability to safely
and reliably take our astronauts to

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00:03:20,366 --> 00:03:22,376
and from the ISS in the future, we sure hope.

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00:03:23,766 --> 00:03:29,226
[Kyle] Well, you know, this, I've asked,
talked to Sarah yesterday as her role,

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00:03:29,256 --> 00:03:32,986
specifically with EAI, but, you know,

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00:03:33,106 --> 00:03:37,456
were working under the Space Act
Agreements with these different companies.

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00:03:37,496 --> 00:03:40,916
But, you know, you talked, I
guess you've already touched,

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00:03:40,916 --> 00:03:42,376
kind of, on the integration part.

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00:03:42,436 --> 00:03:45,126
But, and you do a lot of
traveling associated with that.

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00:03:45,186 --> 00:03:48,076
But it's kind of a new way of doing business.

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00:03:48,146 --> 00:03:53,246
But, you know, obviously, there's a lot of
excitement there, but how have they received you

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00:03:53,246 --> 00:03:55,826
as being integrated with them and vice versa?

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00:03:56,906 --> 00:03:59,256
[John] It's been very well received so far.

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00:03:59,256 --> 00:04:05,616
The good news for folks who think we're
doing just this radically new thing here,

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00:04:05,616 --> 00:04:13,006
the good news is that all of us on my pit
crew have worked in human spaceflight before.

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00:04:13,006 --> 00:04:16,496
And we've worked, and therefore we have
worked with private companies already.

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00:04:16,496 --> 00:04:20,496
So we have some sense of what
goes on in a private company.

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00:04:20,496 --> 00:04:24,926
It's not like the first we have ever
gone to a contractor or partner's site.

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00:04:25,566 --> 00:04:30,846
The difference now, of course, being under Space

Act Agreement is that we do not dictate designs

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00:04:30,846 --> 00:04:35,636
or design solutions and right
now the partners don't come to us

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00:04:35,636 --> 00:04:37,766
with a kind of a "mother May I" approach.

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00:04:37,766 --> 00:04:42,426
It is much more collaborative when we talk,
when we have are our technical meetings

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00:04:42,426 --> 00:04:45,026
and we discuss back and forth the merits

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00:04:45,316 --> 00:04:51,086
of a particular design that
they might be thinking of.

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00:04:52,046 --> 00:04:56,496
[Kyle] Some of that integration obviously
involves, and part of the structure of the SAA,

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00:04:56,496 --> 00:04:59,856
or the Space Act Agreement,
I guess is the milestones.

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00:04:59,856 --> 00:05:05,006
Can you talk a little bit about, at least at
where Commercial Crew is concerned with SpaceX,

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00:05:05,006 --> 00:05:09,286
how, what those milestones are
that they've actually met so far

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00:05:09,286 --> 00:05:13,846
and what's kind of coming up for them?

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00:05:14,026 --> 00:05:14,946
[John] Well, sure.

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00:05:14,946 --> 00:05:18,046
They have primarily so far been working

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00:05:18,046 --> 00:05:20,626
to develop their own version
of a launch abort system.

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00:05:21,226 --> 00:05:26,576
Their system uses a derivative of a smaller
maneuvering jet they already have called

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00:05:26,576 --> 00:05:27,166
a Draco.

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00:05:27,536 --> 00:05:32,036
But this new one is a Draco on
steroids and they call it a Super Draco.

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00:05:32,546 --> 00:05:35,156
They've also been working to design the interior

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00:05:35,156 --> 00:05:38,666
of their Dragon capsule to
accommodate the astronauts.

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00:05:38,996 --> 00:05:43,296
So physically, they've done a couple of
iterations of their Super Draco design,

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00:05:43,296 --> 00:05:47,266
optimized its performance and
it's for five operating limits.

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00:05:47,806 --> 00:05:51,416
The sorts of trades one would
normally do early in early in a design.

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00:05:51,806 --> 00:05:55,276
And they've even gone so far as
to rig up temporary test stand,

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00:05:55,276 --> 00:05:57,366
actually ring out some of the design options.

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00:05:57,366 --> 00:05:59,906
And they fired their test development engine.

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00:06:00,556 --> 00:06:05,016
As far as design of Dragon
interior they've rigged up a mockup.

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00:06:05,016 --> 00:06:09,066
And have actually had, we've had some NASA
astronauts go out there and along with some

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00:06:09,066 --> 00:06:13,286
of their design folks evaluate the
design at this particular stage.

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00:06:13,906 --> 00:06:20,186
Now in the future it's about to get even
more interesting as they are actually going

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00:06:20,186 --> 00:06:24,236
to manufacture flight like components
for their Super Draco engines.

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00:06:24,846 --> 00:06:28,096
And they are in the final stages
right now building a test stand

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00:06:28,096 --> 00:06:32,106
for those particular components
and that engine altogether.

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00:06:33,426 --> 00:06:38,466

Once they had talked with us about
these components and shown them to us,

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00:06:38,466 --> 00:06:42,226
and we've had a few discussions, and we
both agreed that it's time to test them,

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00:06:42,226 --> 00:06:47,456
it's going to be really cool because
that's one of the things that many

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00:06:47,456 --> 00:06:49,806
of us became rocket scientists
for was because we get to play

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00:06:49,806 --> 00:06:51,956
with rocket engines and do
the smoke and fire thing.

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00:06:51,956 --> 00:06:57,116
So we're all looking forward to the upcoming
engine test that will happen out there in Texas.

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00:06:57,236 --> 00:07:02,116
And as far as the Dragon and it's, and the
human system testing they're doing there,

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00:07:02,576 --> 00:07:05,466
they have completed one crew
trial test as they call it.

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00:07:05,466 --> 00:07:07,396
Where they said, as I said they
brought the astronauts out.

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00:07:07,606 --> 00:07:11,276
The next one will actually
involve the use of suit simulators

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00:07:11,276 --> 00:07:12,976

and a little bit higher fidelity.

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00:07:12,976 --> 00:07:17,696
Each time we do one of these crew trials you get
a little bit better fidelity inside the Dragon

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00:07:17,696 --> 00:07:19,016
capsule, what it's going to be like.

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00:07:19,396 --> 00:07:21,776
But the next one we think is
going to be particularly cool

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00:07:21,776 --> 00:07:24,176
because they will be wearing
spacesuit simulators.

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00:07:24,176 --> 00:07:26,376
Now these are not the actual spacesuits.

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00:07:26,376 --> 00:07:27,026
They'll fly.

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00:07:27,476 --> 00:07:30,596
They're not even what I would
call a prototype phase.

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00:07:30,596 --> 00:07:36,536
What these suits will be for in the next
test is to demonstrate to the astronauts

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00:07:36,536 --> 00:07:39,516
and the test subjects on board
the limits of their reach.

129
00:07:39,516 --> 00:07:42,596
Because when you wear a spacesuit you
can't reach everywhere you want to.

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00:07:42,596 --> 00:07:43,446
You're restricted.

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00:07:43,726 --> 00:07:46,986
Your vision is a little bit limited
because of the helmet you're wearing.

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00:07:46,986 --> 00:07:52,556
So those are the things they want to make sure
they capture in this next crew trial test.

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00:07:52,556 --> 00:07:56,196
[Kyle] And obviously with
the crews that's invaluable

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00:07:56,196 --> 00:07:57,856
because they've actually been up there.

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00:07:58,076 --> 00:08:02,396
And, you know, you can sense that they
know, you know how to design a spacecraft

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00:08:02,396 --> 00:08:07,656
but bringing them out there actually to
take part is a big help in that area, right?

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00:08:07,656 --> 00:08:08,426
[John] Absolutely.

138
00:08:08,426 --> 00:08:11,416
Yeah, the crew loves going out
there and seeing what's going on.

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00:08:11,416 --> 00:08:15,756
Because they know at some point
in time they could well be riding

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00:08:15,756 --> 00:08:17,056
that rocket in that capsule.

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00:08:17,056 --> 00:08:19,376
So it's very important to
them and they love doing it

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00:08:19,466 --> 00:08:23,026
and SpaceX loves getting
their input on that as well.

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00:08:23,486 --> 00:08:28,386
[Kyle] Well you know you've worked on a lot of
different programs and now you're on this quote,

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00:08:28,386 --> 00:08:35,856
new program of Commercial Crew, but how do you
describe your job to family and friends now?

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00:08:37,036 --> 00:08:39,876
[John] Oh, I tell them I'm
having an awful lot of fun.

146
00:08:40,366 --> 00:08:46,516
That I'm helping the private sector
make spaceflight available to everyone,

147
00:08:46,946 --> 00:08:49,076
not just highly trained astronauts.

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00:08:49,236 --> 00:08:53,686
Because of what we are doing, some day,
and that's now sooner rather than later,

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00:08:53,686 --> 00:08:58,676
I truly believe ordinary folks will be
riding into space much like a we get

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00:08:58,676 --> 00:09:04,476
into an airplane now and ride around the around
the whole planet visiting far-flung places.

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00:09:04,476 --> 00:09:08,796
So I think that day is coming and Commercial Crew has helped ushering it in more quickly.

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00:09:10,266 --> 00:09:12,636
[Kyle] Well, that's great John and I know you're busy down there

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00:09:12,636 --> 00:09:17,386
and we really appreciate you taking time out to join us here in Mission Control.

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00:09:17,386 --> 00:09:24,466
Obviously, the goal of Commercial Crew is to get a spacecraft, a human rated spacecraft,

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00:09:25,206 --> 00:09:29,216
back in the game on the U.S. side to the International Space Station in low Earth orbit.

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00:09:29,296 --> 00:09:32,986
So, you know, we really appreciate you taking the time out to join us.

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00:09:33,326 --> 00:09:34,606
[John] It's been my pleasure Kyle.

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00:09:34,606 --> 00:09:38,196
As a former mission manager for a couple of pieces of space station,

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00:09:38,626 --> 00:09:42,286
I'm anxious to get our boys up there on of our rockets as well.

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00:09:42,696 --> 00:09:44,416
[Kyle] I bet and thanks again.

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00:09:44,416 --> 00:09:45,356
That's John Cowart.

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00:09:45,356 --> 00:09:51,126
He is the Partner Manager for SpaceX,
Space Technologies Incorporated,