
VOICE OF
Cheryl Malloy
Partner Mgr.,United Launch Alliance, Commercial Crew Pgm.

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00:00:01,256 --> 00:00:04,616
[Kyle Herring] While the crew continues
its work we'll take the opportunity now

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00:00:04,676 --> 00:00:10,606
to welcome Cheryl Malloy to the International
Space Station Flight Control Room.

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00:00:10,606 --> 00:00:16,016
Cheryl's on a phone but she's located down
at the Kennedy Space Center in Florida.

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00:00:16,486 --> 00:00:17,636
Cheryl welcome.

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00:00:18,386 --> 00:00:19,726
[Cheryl Malloy] Thank you Kyle.

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00:00:19,726 --> 00:00:20,846
It's a pleasure to be here.

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00:00:20,846 --> 00:00:24,736
I wish I'd been able to squeeze in a trip down
to Houston and be in the control room with you.

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00:00:25,016 --> 00:00:27,916
[Kyle] Well next time we'll
hopefully get you here.

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00:00:28,176 --> 00:00:34,726
Cheryl is a partner manager for the, for United
Launch Alliance, one of the seven partners

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00:00:34,726 --> 00:00:39,296
in the Commercial Crew Program and I
wanted to take an opportunity to talk

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00:00:39,296 --> 00:00:43,036
to all seven, Cheryl will close out our week.

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00:00:43,606 --> 00:00:47,276
And Cheryl I always start with a
little biographical information.

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00:00:47,276 --> 00:00:52,636
So tell us all about yourself, where
you grew up and how you got to NASA.

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00:00:52,636 --> 00:00:53,816
[Cheryl] Oh, okay.

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00:00:54,266 --> 00:00:57,146
I was born and raised on
the Florida space coast.

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00:00:57,146 --> 00:01:01,046
So I've been watching rockets
launch from my backyard all my life.

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00:01:01,496 --> 00:01:04,666
My parents both worked for
NASA during the Apollo era.

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00:01:04,666 --> 00:01:08,846
So that sort of makes me a
second-generation space baby.

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00:01:08,846 --> 00:01:11,006
I like to tell folks I've been at NASA forever

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00:01:11,006 --> 00:01:13,176
and I think you got a picture
with my proof there.

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00:01:14,226 --> 00:01:19,996
Most folks assumed that I would just
follow naturally in my parents' footsteps.

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00:01:19,996 --> 00:01:21,866
That's not quite the case.

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00:01:22,006 --> 00:01:25,066
I went to the local community
college, Brevard Community College,

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00:01:25,066 --> 00:01:29,926
and graduated as a medical lab technician
and worked in the local hospital for a while.

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00:01:30,526 --> 00:01:34,806
And then I decided I wanted to be an electrical
engineer and I didn't know it at the time

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00:01:34,806 --> 00:01:37,526
but that's pretty much a
natural step for med techs.

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00:01:37,606 --> 00:01:42,316
I went to Florida Tech which is, used
to be Florida Institute of Technology

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00:01:42,316 --> 00:01:48,556
and while I was there I cooped with NASA's
Biomedical Engineering Group and that sort

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00:01:48,556 --> 00:01:51,236
of blended both experiences really well.

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00:01:52,026 --> 00:01:56,896
And after I graduated, NASA offered me a
job working life science SpaceLab missions.

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00:01:56,896 --> 00:01:57,936
You remember SpaceLabs?

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00:01:58,466 --> 00:01:58,866
[Kyle] Yep.

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00:01:59,116 --> 00:02:00,096
Absolutely.

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00:02:00,726 --> 00:02:01,806
[Cheryl] Yeah.

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00:02:01,806 --> 00:02:06,836
My favorite was SpaceLab Japan working
with their Japanese life science teams.

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00:02:06,836 --> 00:02:08,056
That was a great opportunity.

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00:02:08,996 --> 00:02:15,116
NASA's also provided me an opportunity to
go to school at night and earn my Masters

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00:02:15,116 --> 00:02:17,916
in Engineering Management from
the University of Central Florida.

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00:02:18,426 --> 00:02:23,496
And just recently I got a certificate
in Space Systems Engineering

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00:02:23,496 --> 00:02:25,556
from the Stevens Institute of Technology.

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00:02:26,146 --> 00:02:30,776
And I think just, you know, excuse me,
learning is just a part of NASA's culture.

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00:02:31,456 --> 00:02:32,356
[Kyle] Yeah, no kidding.

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00:02:32,986 --> 00:02:35,466
How, so, you know, that's how you got here.

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00:02:35,466 --> 00:02:39,236
But what did you do before you
joined the Commercial Crew Program?

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00:02:39,456 --> 00:02:45,016
[Cheryl] After SpaceLabs I actually
moved over to Launch Services Program.

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00:02:45,016 --> 00:02:48,376
They moved that program down
here to Kennedy Space Center

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00:02:48,376 --> 00:02:50,746
and I helped start that program here.

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00:02:51,516 --> 00:02:55,926
And I had the opportunity to lead
teams launching NASA missions

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00:02:56,206 --> 00:02:58,976
on expendable launch vehicles
including those termed ULA.

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00:02:58,976 --> 00:03:03,416
So that's where the relationship
started being built with ULA.

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00:03:04,106 --> 00:03:08,776
And LSP offered me a whole range of
opportunities from being responsible

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00:03:08,776 --> 00:03:14,486
for sending teams downrange to Africa and
Australia to capture downrange telemetry

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00:03:14,486 --> 00:03:20,556
and also doing the first orbital missions
from the Kodiak Launch Complex in Alaska.

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00:03:21,276 --> 00:03:21,666

[Kyle] Wow.

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00:03:21,666 --> 00:03:23,026
That's a pretty impressive.

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00:03:23,936 --> 00:03:25,466
[Cheryl] It's a wide range for sure.

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00:03:25,466 --> 00:03:26,196
[Kyle] No kidding.

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00:03:26,546 --> 00:03:30,986
Well, talk to us a little bit about
your role now as a partner manager.

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00:03:31,656 --> 00:03:35,656
What do you do as a partner manager
for ULA and what is your role?

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00:03:36,276 --> 00:03:39,276
[Cheryl] Partner manager sounds
like a jam job, doesn't it?

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00:03:39,276 --> 00:03:41,036
I'm going to go out and manage partners.

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00:03:41,036 --> 00:03:43,926
And that is so not the case.

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00:03:44,226 --> 00:03:46,896
First and foremost we're partners with ULA.

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00:03:46,896 --> 00:03:51,556
I serve as an interface between our pit
crew, I think you talked about that,

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00:03:51,556 --> 00:03:54,466
our teams are partner integration teams and ULA.

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00:03:54,466 --> 00:04:00,536
And we foster a good relationship,
we foster collaboration in areas

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00:04:00,536 --> 00:04:03,546
where we have experience that
they might be looking for.

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00:04:03,906 --> 00:04:08,446
We're trying to break down barriers
and facilitate an understanding that,

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00:04:08,446 --> 00:04:12,016
our understanding of what commercial
means to them and their understanding

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00:04:12,016 --> 00:04:14,286
of what human space flight means to us.

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00:04:14,706 --> 00:04:18,256
And something I'm not sure you've
heard too much about for the,

72
00:04:18,256 --> 00:04:24,276
for the partner managers is we also
advocate for our partners within the program.

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00:04:24,486 --> 00:04:27,956
That sort of sounds like I've changed
badges but that is not the case.

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00:04:28,756 --> 00:04:33,426
What the program needs to hear from the
seven partner managers is how decisions

75
00:04:33,426 --> 00:04:38,836
that they're making are affecting the
partners and their program gets cross-view

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00:04:38,836 --> 00:04:43,196
of how those decisions may be
impacting several partners.

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00:04:43,196 --> 00:04:48,776
And so each of the partners does that
advocacy back into the program and allows them

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00:04:48,776 --> 00:04:52,476
to see how decisions could be
affecting all of the partners.

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00:04:54,846 --> 00:04:58,166
[Kyle] You talk about the
pit crew and, you know,

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00:04:58,166 --> 00:05:00,476
Ed Mango mentioned that earlier in the week.

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00:05:00,476 --> 00:05:04,806
It's a pretty impressive group of people
that you guys put together, you know,

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00:05:05,086 --> 00:05:08,716
to support you I guess in the
role as a Partner Manager right?

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00:05:09,156 --> 00:05:09,826
[Cheryl] That's true.

84
00:05:10,876 --> 00:05:14,066
My pit crew, if I can brag
on them for a minute, there,

85
00:05:14,126 --> 00:05:16,556
actually they are mentors
and Ed did mention that.

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00:05:16,556 --> 00:05:17,966
They're from Marshall and JSC.

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00:05:17,966 --> 00:05:23,176
We've got some time Langley and KSC, all
together with the Launch Services Program

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00:05:23,176 --> 00:05:26,116
as well and they bring a
wealth of experience both

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00:05:26,116 --> 00:05:30,296
in human space flight and Atlas-V experience.

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00:05:30,296 --> 00:05:33,776
Again, that's why the Launch
Services Program is currently flying.

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00:05:34,186 --> 00:05:39,466
And, you know, we've got folks that
have worked shuttle and Ares and 1-X.

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00:05:39,466 --> 00:05:45,886
And so all of that experience together allows
them to gain an understanding back and forth,

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00:05:45,886 --> 00:05:49,896
as well as share that data
with United Launch Alliance.

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00:05:50,886 --> 00:05:55,016
[Kyle] Talk about the Space
Act Agreement part of this.

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00:05:55,256 --> 00:05:56,596
It's a new way of doing business.

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00:05:56,656 --> 00:05:58,716
But how are you integrated with ULA?

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00:05:59,296 --> 00:06:04,316

[Cheryl] Ed did mention earlier in
the week that there were 4 fundeds

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00:06:04,316 --> 00:06:08,006
and 3 unfundeds and ULA is an unfunded.

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00:06:08,006 --> 00:06:14,416
We are further along in the, in the technology
and we're talking about that fundeds went to,

100
00:06:14,416 --> 00:06:17,206
you know, development risk areas

101
00:06:17,206 --> 00:06:21,616
and United Launch Alliance has 29
successful Atlas-V launches already.

102
00:06:22,296 --> 00:06:26,716
They've been flying that heritage vehicle for
a very long time and although it's, you know,

103
00:06:26,716 --> 00:06:32,466
it's not suitable for human space
flight right now all of that data

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00:06:32,466 --> 00:06:37,466
and technology has allowed ULA to
gain confidence in their vehicle,

105
00:06:37,466 --> 00:06:40,106
so they really know how it operates.

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00:06:40,366 --> 00:06:44,676
And that will allow them to, to
make the unique accommodations

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00:06:44,676 --> 00:06:46,506
that are required in human space flight.

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00:06:47,236 --> 00:06:50,456
It'll allow them to do that
better with the understanding

109
00:06:50,456 --> 00:06:52,116
of how their vehicle already flies.

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00:06:53,506 --> 00:06:56,746
[Kyle] I know, I'm going to
jump around a little bit,

111
00:06:56,746 --> 00:07:00,056
cause we've only got about
five more minutes or so.

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00:07:00,056 --> 00:07:04,706
But, I know you had a video that
you asked us to prepare for you.

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00:07:04,786 --> 00:07:09,136
If this is a good time I'd like
for you to either show that

114
00:07:09,136 --> 00:07:10,946
or talk to it for us if you don't mind.

115
00:07:11,136 --> 00:07:11,676
[Cheryl] Sure.

116
00:07:11,676 --> 00:07:15,086
If you want, if you went go
ahead play it I'll talk to it.

117
00:07:15,236 --> 00:07:22,196
And what I'm showing you, and actually it
starts with an Atlas-V launch and processing.

118
00:07:22,726 --> 00:07:25,326
And those always get your blood going.

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00:07:25,826 --> 00:07:32,816
One of the design modifications that ULA
will require is an emergency detection system

120
00:07:33,216 --> 00:07:35,296
and they've already done some work on this.

121
00:07:35,526 --> 00:07:40,136
ULA developed the prototype of emergency
detection system and the processor

122
00:07:40,216 --> 00:07:47,726
and the software that are going to require,
be required to monitor the launch vehicle.

123
00:07:47,726 --> 00:07:53,436
So in using this vehicle for human
spaceflight you've got to also have the ability

124
00:07:53,436 --> 00:07:57,696
to abort the crew in case something's going
wrong with the vehicle or the spacecraft.

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00:07:57,696 --> 00:08:04,946
So what you're watching is just some interaction
between my team and the ULA team on looking

126
00:08:04,946 --> 00:08:07,966
at the software and algorithms in
doing the bottom of the purview

127
00:08:07,966 --> 00:08:12,936
on how those failures might be detected,
which sensors you would be looking at,

128
00:08:12,936 --> 00:08:17,026
and what is the backup corroboration
sensor that would say, "Yeah,

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00:08:17,026 --> 00:08:18,966
the tank pressure might be falling.

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00:08:19,296 --> 00:08:20,866
Are we losing acceleration?"

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00:08:20,866 --> 00:08:25,416
Those types of measurement and after they've
done an extensive review of the software

132
00:08:25,886 --> 00:08:29,416
and we actually took it to the SIL
lab, or the Software Integration Lab,

133
00:08:29,416 --> 00:08:33,956
which is a high fidelity laboratory,
and demonstrated with hardware

134
00:08:34,246 --> 00:08:38,086
that the emergency detection software
was doing what it was supposed to.

135
00:08:38,546 --> 00:08:42,616
What's really important about this is
you want to be able to do two things

136
00:08:42,616 --> 00:08:44,206
with an emergency detection system.

137
00:08:44,206 --> 00:08:48,226
You want to be able to get off
a rocket that's got an issue,

138
00:08:48,226 --> 00:08:49,886
or a spacecraft that's got an issue.

139
00:08:50,186 --> 00:08:53,106
You want to be really, really sure
you don't get off a bad rocket.

140
00:08:53,486 --> 00:08:56,676
You want to be able to do
that in both directions.

141
00:08:56,676 --> 00:08:59,586
You want that detection system
to work just right.

142
00:09:00,856 --> 00:09:03,306
[Kyle] Well you probably
touched on it in your video.

143
00:09:03,306 --> 00:09:10,256
But with a couple of minutes we have left
can you talk about some of the milestones

144
00:09:10,526 --> 00:09:16,956
that ULA has accomplished thus
far and what's ahead of them?

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00:09:16,956 --> 00:09:17,226
[Cheryl] Okay.

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00:09:17,226 --> 00:09:23,316
So last September they did a Design
Equivalency Review and that's where ULA decided

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00:09:23,316 --> 00:09:26,586
that they would do their own
evaluation of the design they are flying

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00:09:26,586 --> 00:09:29,856
against Commercial Crew Program's 1100 series.

149
00:09:29,856 --> 00:09:35,956
So that allowed them to see if there
were gaps in where they would need

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00:09:35,956 --> 00:09:38,486

to do something different with the Atlas-V.

151
00:09:38,486 --> 00:09:44,566
I, and that started, you know, started the
conversations between our team and their team

152
00:09:44,566 --> 00:09:50,096
on what would meet the intent and what
would be acceptable for human space flight.

153
00:09:50,936 --> 00:09:57,306
They finished that, that review with a tailored
systems requirements review in December of 2011.

154
00:09:57,766 --> 00:10:04,576
And it came down to four major areas that
would require modifications to fly humans.

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00:10:04,576 --> 00:10:08,716
One was the emergency detection system
that you've already heard about.

156
00:10:08,976 --> 00:10:12,986
They're going to do what's called the managed
flight profile for structural reasons.

157
00:10:13,646 --> 00:10:18,726
One thing we don't think too much about is that
this vehicle will launch from launch complex 41.

158
00:10:18,786 --> 00:10:23,596
And that has no way to get the crew in or
out at this point, or an egress system.

159
00:10:23,646 --> 00:10:26,166
So that's one of the ones
that's kind of obvious.

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00:10:26,296 --> 00:10:28,466
Then they're going a look

at a dual engine Centaur

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00:10:29,256 --> 00:10:31,706
which will improve the capability
of the vehicle.

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00:10:31,706 --> 00:10:35,046
So those are four main things
that we're working on right now.

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00:10:35,486 --> 00:10:38,336
And they're evaluating and
doing the testing on that.

164
00:10:38,646 --> 00:10:43,966
So their upcoming systems requirements
review in mid-June will report

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00:10:43,966 --> 00:10:46,456
out on how they're doing and
developing those designs.

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00:10:47,656 --> 00:10:50,496
[Kyle] And it's just a tremendous
amount of work.

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00:10:50,496 --> 00:10:55,336
And I think you've layed that out
beautifully in the, in the time we have here.

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00:10:56,276 --> 00:10:58,426
I really appreciate you taking the time,

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00:10:58,426 --> 00:11:02,616
in fact all of the Commercial Crew
Program experts that joined us all week.

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00:11:02,656 --> 00:11:06,486
But that was a great way of
wrapping up the week Cheryl.

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00:11:06,486 --> 00:11:09,336
We appreciate you joining
us here in Mission Control.

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00:11:09,546 --> 00:11:11,336
[Cheryl] Oh, well thanks
very much for having me.

173
00:11:11,416 --> 00:11:12,016
[Kyle] Thanks again.

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00:11:12,296 --> 00:11:16,006
That was Cheryl Malloy, the Commercial
Crew Program's Partner Manager