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00:00:01,536 --> 00:00:04,766
[Brandi Dean] Hi, welcome to the Space
Vehicle Mockup Facility in building 9

2
00:00:04,766 --> 00:00:07,506
at the Johnson Space Center
where we are here with Bill Todd

3
00:00:07,506 --> 00:00:10,116
who is the mission manager
for our NEEMO mission.

4
00:00:10,646 --> 00:00:12,036
Bill why don't you tell us what NEEMO is.

5
00:00:12,216 --> 00:00:13,666
I know it's an acronym but it's long.

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00:00:13,796 --> 00:00:15,196
[Bill Todd] It is an embedded acronym actually.

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00:00:15,626 --> 00:00:20,796
So it's NASA Extreme Environment Mission
Operations named after the famous Captain Nemo.

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00:00:20,996 --> 00:00:22,796
[Brandi] And there's a reason
that it's NEEMO right?

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00:00:22,796 --> 00:00:24,856
[Bill] Oh yeah, "20,000 Leagues Under the Sea."

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00:00:24,856 --> 00:00:27,256
Big fan of Jules Verne and all that admittedly.

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00:00:27,486 --> 00:00:29,436
[Brandi] Okay and this mission is under the sea.

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00:00:29,576 --> 00:00:30,446
[Bill] Absolutely it is.

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00:00:30,496 --> 00:00:34,696
So this is our 16th NEEMO
mission that NASA's been doing.

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00:00:34,696 --> 00:00:38,266
So we just started training
this week for the mission.

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00:00:38,266 --> 00:00:41,756
And the mission is June of this
year in about six weeks from now.

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00:00:41,756 --> 00:00:41,946
[Brandi] Okay.

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00:00:41,946 --> 00:00:46,006
So y'all will go, obviously we're not underwater
now, but y'all will go down to Florida

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00:00:46,006 --> 00:00:48,456
and the astronauts that are involved with that,

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00:00:48,456 --> 00:00:52,406
a crew of four actually will go
down below the sea and do what?

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00:00:53,376 --> 00:00:55,186
[Bill] Well we have a crew
of four like you said.

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00:00:55,326 --> 00:01:00,336
Four from NASA, three are astronauts
and one other researcher with NASA.

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00:01:00,826 --> 00:01:03,256
And we have two people that are members

23
00:01:03,606 --> 00:01:05,896
of the National Undersea
Research Center, professionals.

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00:01:05,946 --> 00:01:08,266
So we have six people on the crew.

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00:01:08,266 --> 00:01:13,256
An in our mission in June we're going
to focus on an underwater mission

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00:01:13,746 --> 00:01:18,576
that simulates what it's like to travel
to, work and operate on an asteroid.

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00:01:18,956 --> 00:01:19,046
[Brandi] Okay.

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00:01:19,046 --> 00:01:21,976
I guess that's kind of a new and
interesting question for NASA.

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00:01:21,976 --> 00:01:22,776
What all are we looking at?

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00:01:22,856 --> 00:01:23,946
[Bill] It really is.

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00:01:24,556 --> 00:01:26,206
We've done one more of these missions.

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00:01:26,206 --> 00:01:27,766
Early in October we did one.

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00:01:28,116 --> 00:01:30,426
Had a little bit of weather
that we had to deal with.

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00:01:30,636 --> 00:01:31,326
So that was okay.

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00:01:31,356 --> 00:01:32,856
So we're coming back at it again.

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00:01:32,856 --> 00:01:34,096
We've iterated a few things.

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00:01:34,616 --> 00:01:39,846
And we're going to deal primarily
with the concepts, the tools,

38
00:01:40,396 --> 00:01:43,126
developing ways to live and
work on these asteroids.

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00:01:43,126 --> 00:01:44,466
And it's a little bit tricky.

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00:01:44,466 --> 00:01:50,116
NASA's never worked in a place where there's
total absence of gravity on a surface itself.

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00:01:50,816 --> 00:01:51,556
So it's challenging.

42
00:01:51,756 --> 00:01:53,906
[Brandi] Yeah, lots of new
things for us to work on.

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00:01:53,906 --> 00:01:55,186
[Bill] Oh yeah, lots of new tools.

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00:01:55,416 --> 00:01:56,486
[Brandi] So what are we doing here this week?

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00:01:57,246 --> 00:02:01,636
[Bill] So, well we started the

training this week for the crew.

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00:02:02,206 --> 00:02:06,346
And what we like to do is we like to
give classroom briefings about everything

47
00:02:06,346 --> 00:02:09,096
that they need to learn and how to
live in this undersea environment.

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00:02:09,446 --> 00:02:11,246
'Cause it's more than just a space mission.

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00:02:11,246 --> 00:02:15,106
It's also how to live and work in an
undersea environment which is new for them.

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00:02:15,716 --> 00:02:21,016
So it's, and there's lots, a lot of procedures
that you have to follow to be safe there.

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00:02:21,436 --> 00:02:28,576
So what we're doing here today in this facility,
in building 9, is we're learning about what it's

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00:02:28,726 --> 00:02:33,766
like and what it feels like to work on a device
that can keep you in a zero-gravity state.

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00:02:35,096 --> 00:02:42,446
So on this device you have nothing, what
we call ground reaction force, okay,

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00:02:42,756 --> 00:02:45,076
so you don't feel your feet on the surface.

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00:02:45,616 --> 00:02:48,126
'Cause it's a loss of gravity,
a total absence of gravity.

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00:02:48,406 --> 00:02:52,516
So what we're doing here that you can see, and
you can see the crew member there Steve Squyres,

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00:02:53,006 --> 00:02:59,146
is that he's learning what it feels like to
have absence of gravity and what the tools feel

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00:02:59,146 --> 00:03:01,126
like to work with on the surface of an asteroid.

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00:03:01,446 --> 00:03:03,966
[Brandi] And I guess that's one the reasons
that you're going to do this underwater

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00:03:03,966 --> 00:03:05,246
as well as the absence of gravity?

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00:03:05,516 --> 00:03:05,856
[Bill] Right.

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00:03:06,056 --> 00:03:09,596
That's the primary reason that
underwater is so because we can,

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00:03:10,256 --> 00:03:14,266
we can weigh the crew out
exactly to zero-gravity.

64
00:03:14,446 --> 00:03:18,526
So when they leave the habitat, their
living in a habitat, an undersea habitat,

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00:03:19,146 --> 00:03:21,706
so they're getting the feel
of the dynamic of what it's

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00:03:21,706 --> 00:03:23,316
like to live in this extreme environment.

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00:03:23,596 --> 00:03:28,336
They're living there, working there and then
when it's time to do an extravehicular activity,

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00:03:28,666 --> 00:03:32,936
an EVA or spacewalk, sometimes it gets
confusing 'cause it's really a sea walk.

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00:03:33,216 --> 00:03:33,386
[Brandi] Right.

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00:03:33,386 --> 00:03:37,576
[Bill] But when they got out the door and they
go into the ocean they're doing these EVAs

71
00:03:37,576 --> 00:03:41,756
in this zero-gravity environment
and duplicating the types of tasks

72
00:03:42,076 --> 00:03:43,346
that we'll have to do on an asteroid.

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00:03:43,696 --> 00:03:43,796
[Brandi] Okay.

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00:03:43,876 --> 00:03:47,616
And I guess you have to train for that just
like you do for a regular space station mission.

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00:03:47,616 --> 00:03:49,006
So that's, that's what this week is about.

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00:03:49,006 --> 00:03:49,556
[Bill] Absolutely.

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00:03:49,556 --> 00:03:53,056
That's what it's all about to try to
understand the techniques for them.

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00:03:53,056 --> 00:03:57,556
But it's also a chance for our engineers
and our scientists to try to figure

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00:03:57,556 --> 00:04:02,206
out what tools are appropriate and how
we would do the operational techniques.

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00:04:02,626 --> 00:04:05,626
We're not going to answer what
an anchor would look like here.

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00:04:05,736 --> 00:04:06,706
That's not the point.

82
00:04:07,296 --> 00:04:09,916
We're early in the game of
trying to figure this out.

83
00:04:10,326 --> 00:04:13,186
But we're trying to figure
out what concepts make sense.

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00:04:13,496 --> 00:04:16,726
[Brandi] So we're almost kind of
practicing for the practicing here so.

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00:04:16,836 --> 00:04:17,306
[Bill] Fair enough.

86
00:04:17,706 --> 00:04:17,886
[Brandi] Yeah.

87
00:04:17,886 --> 00:04:18,786
Okay. Alright.

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00:04:18,786 --> 00:04:21,596
Well I know that we are going to hopefully talk

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00:04:21,666 --> 00:04:24,256
with you a few more times
during the actual mission.

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00:04:24,256 --> 00:04:26,726
So we'll get updates on how
that actually turns out.

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00:04:26,726 --> 00:04:29,056
It's going to be June 11 through 22.

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00:04:29,106 --> 00:04:32,586
And we'll have lots more to come on that.