1
00:00:12,300 --> 00:00:17,220
We’re here outside the iconic Vehicle Assembly Building at NASA’s Kennedy Space Center.

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00:00:17,220 --> 00:00:20,890
I’m Joshua Santora, and today I’m going to be your tour guide, taking you behind the

3
00:00:20,890 --> 00:00:24,120
scenes of the Exploration Ground Systems Program.

4
00:00:24,120 --> 00:00:28,300
They’re responsible for all the infrastructure to build, launch and recover the world’s

5
00:00:28,300 --> 00:00:33,260
most powerful rocket, the Space Launch System, or SLS, and the Orion crew capsule.

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00:00:33,260 --> 00:00:37,620
Those three major elements make up the Artemis program, which is our mission and our drive

7
00:00:37,620 --> 00:00:42,660
to return to the moon and go farther beyond to Mars and even world’s unknown.

8
00:00:42,660 --> 00:00:46,730
Our tour stops today include an underway recovery test, where you’ll get a firsthand look

9
00:00:46,730 --> 00:00:51,780
at what it’s like to be on a NAVY ship trying to pull a spaceship out of the Pacific Ocean.

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00:00:51,780 --> 00:00:57,879
Be sure to enjoy the view and look around as we go, and let’s get going.

11

00:00:57,879 --> 00:00:59,880
Goal one was to build.

12
00:00:59,880 --> 00:01:03,929
This high bay was previously used by the shuttle
program and had to be completely overhauled

13
00:01:03,929 --> 00:01:08,570
with brand new platforms custom-made for the
Space Launch System, or SLS.

14
00:01:08,570 --> 00:01:13,360
There are 10 levels of platforms, and they
have been designed in a modular fashion where

15
00:01:13,360 --> 00:01:18,470
the platform inserts can change to accommodate
different rockets or future configurations

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00:01:18,470 --> 00:01:20,610
of SLS.

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00:01:20,610 --> 00:01:25,501
The distance the platforms extend and retract
can change, just like kitchen drawers, and

18
00:01:25,501 --> 00:01:29,960
even the vertical location of each platform
in the High Bay can change.

19
00:01:29,960 --> 00:01:34,820
These platforms allow up-close access to do
stacking and checkout of the vehicle before

20
00:01:34,820 --> 00:01:38,030
rolling out to the launch pad.

21
00:01:38,030 --> 00:01:42,850
This high bay represents one of many facilities
that had to be built or modified to be ready

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00:01:42,850 --> 00:01:44,220
for future vehicles.

23
00:01:44,220 --> 00:01:49,640
We've also had to build incredible pieces
of software to perform necessary functions

24
00:01:49,640 --> 00:01:53,280
and provide launch controllers the data they
need.

25
00:01:53,280 --> 00:01:59,310
As you can see, this 510-foot-tall high bay
is just one example of how massive the challenge

26
00:01:59,310 --> 00:02:00,830
has been for us.

27
00:02:00,830 --> 00:02:05,060
The second major function of EGS is to launch.

28
00:02:05,060 --> 00:02:10,459
Launch is the culmination of years of intense
labor to actually get the hardware into space.

29
00:02:10,459 --> 00:02:15,970
It's also the culmination of a two-day,
around-the-clock procedure to prepare, power,

30
00:02:15,970 --> 00:02:18,870
and fuel the vehicle for flight.

31
00:02:18,870 --> 00:02:22,820
Right now, the teams around the room are working
together to walk through full simulations

32
00:02:22,820 --> 00:02:24,310
of the countdown procedure.

33
00:02:24,310 --> 00:02:29,010
It’s a procedure that takes up books that
fill entire shelves.

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00:02:29,010 --> 00:02:32,780
Everything is choreographed and meticulously
planned.

35
00:02:32,780 --> 00:02:37,490
The teams here are even simulating failures
and unexpected situations to ensure they’re

36
00:02:37,490 --> 00:02:41,370
ready to tackle any challenge that arises
on the journey to liftoff.

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00:02:41,370 --> 00:02:45,300
Charlie Blackwell-Thompson, the first female
launch director, is leading the entire team

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00:02:45,300 --> 00:02:47,660
and preparing them for Artemis launches.

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00:02:47,660 --> 00:02:49,750
Her task is no small one.

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00:02:49,750 --> 00:02:54,430
She has to know that her people are ready
not only to launch, but ready to stop a launch

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00:02:54,430 --> 00:02:57,050
if circumstances arise that demand caution.

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00:02:57,050 --> 00:03:03,120
It’s not an easy thing to be the one who
says, “We can’t launch today.”

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00:03:03,120 --> 00:03:06,900

The final phase of the responsibility of EGS
is to recover.

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00:03:06,900 --> 00:03:11,390
Once SLS leaves Earth, EGS hands the reins
over to the Johnson Space Center and Mission

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00:03:11,390 --> 00:03:13,120
Control in Houston.

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00:03:13,120 --> 00:03:17,550
But as soon as Orion returns to Earth, EGS
resumes control.

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00:03:17,550 --> 00:03:22,630
Once Orion touches down gently in the Pacific
Ocean, it will be the job of teams on a ship

48
00:03:22,630 --> 00:03:29,320
just like this to get to the capsule quickly,
secure it, and get the astronauts out safely.

49
00:03:29,320 --> 00:03:34,220
Then they have to pull Orion into the well
deck of a Navy landing platform dock ship,

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00:03:34,220 --> 00:03:36,790
just like what you see here now.

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00:03:36,790 --> 00:03:40,569
The partnership that NASA has formed with
the U.S. Navy is proving to be invaluable,

52
00:03:40,569 --> 00:03:45,040
as they have provided all the necessary support
to ensure mission success.

53
00:03:45,040 --> 00:03:49,020
They have provided the help of several vehicles,
each outfitted with an enormous well decks

54
00:03:49,020 --> 00:03:53,290
to be able to grapple Orion and pull her inside
to safety.

55
00:03:53,290 --> 00:03:57,370
That might sound like it’s pretty easy,
but this is the ocean, which can be a very

56
00:03:57,370 --> 00:03:59,130
unforgiving place.

57
00:03:59,130 --> 00:04:03,780
These teams have spent years using mockups,
like this one, to practice understanding how

58
00:04:03,780 --> 00:04:06,599
Orion will move in the ocean and what to expect.

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00:04:06,599 --> 00:04:11,380
There is also a wave-monitoring system onboard
to chart the best course for minimal energy

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00:04:11,380 --> 00:04:16,590
in the well deck—that is to say… we want
as few waves as possible.

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00:04:16,590 --> 00:04:21,370
They practice for when conditions are ideal,
and they practice for when things go wrong.

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00:04:21,370 --> 00:04:27,680
The mission isn’t over until everyone is
home safely.

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00:04:27,680 --> 00:04:31,289
We hope that you will continue to track our
progress as we work towards the first woman

64

00:04:31,289 --> 00:04:33,319
and next man to walk on the moon.

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00:04:33,319 --> 00:04:37,330
From NASA’s Kennedy Space Center for Exploration
Ground Systems, that’s all we have time

66
00:04:37,330 --> 00:04:38,620
for today.