1
00:00:02,766 --> 00:00:05,796
Hi, my name is Chris Johnson,
and I'm the Project Manager

2
00:00:05,796 --> 00:00:08,576
for the Orion Capsule Parachute
Assembly Project.

3
00:00:08,976 --> 00:00:13,616
What you are about to see in this video is the
third engineering development unit air drop test

4
00:00:13,616 --> 00:00:14,666
performed on Feb.

5
00:00:14,666 --> 00:00:18,646
29, 2012 at the U.S. Army Yuma Proving Grounds.

6
00:00:18,646 --> 00:00:22,816
This is the third in a series of the
most flight-like parachute tests to date

7
00:00:22,996 --> 00:00:27,366
with a representative parachute compartment
for the Orion spacecraft and is the first

8
00:00:27,366 --> 00:00:32,656
to use a capsule shape representing the Orion
spacecraft called a Parachute Test Vehicle.

9
00:00:33,206 --> 00:00:35,966
This particular test examined how the wake

10
00:00:35,966 --> 00:00:39,796
from the Orion spacecraft would affect
the performance of the parachute system.

11
00:00:40,256 --> 00:00:43,306
The wake is the disturbance of

the air flow behind the vehicle.

12
00:00:43,716 --> 00:00:47,636
Parachutes optimally perform in smooth
air that allows the proper lift.

13
00:00:48,066 --> 00:00:51,646
A wake of choppy air can reduce the
parachute inflation performance.

14
00:00:52,006 --> 00:00:56,606
This test will be the first conducted with
a representative Orion crew module wake

15
00:00:56,606 --> 00:01:00,776
in consideration using the full-sized
vehicle and complete system.

16
00:01:02,446 --> 00:01:07,546
The test hardware was extracted from a C-17
aircraft supported by the U.S. Air Force

17
00:01:07,766 --> 00:01:12,136
at an altitude of 20,000 feet above
the U.S. Army Yuma proving grounds.

18
00:01:12,806 --> 00:01:17,026
The sequence was followed by a separation of
the Parachute Test Vehicle from the palate.

19
00:01:17,696 --> 00:01:21,036
Programmer parachutes are deployed,
which set up the right conditions

20
00:01:21,036 --> 00:01:23,426
to begin the spacecraft parachute deployment.

21
00:01:23,826 --> 00:01:29,326
The Orion spacecraft drogue parachutes are
then deployed between 15,000 and 20,000 feet.

22
00:01:29,886 --> 00:01:34,626
This is followed by the pilot parachutes
which then deploy the main landing parachutes.

23
00:01:34,896 --> 00:01:37,656
There were 17 parachutes
deployed during this test.

24
00:01:38,046 --> 00:01:42,446
Nine were test-technique-related and
eight were Orion system parachutes.

25
00:01:53,286 --> 00:01:57,946
In this particular test sequence, you can
see the programmer parachutes releasing

26
00:01:57,946 --> 00:02:02,806
from the Orion spacecraft, and then the
actual sequence of the Orion system begins

27
00:02:02,806 --> 00:02:05,116
with the deployment of the drogue parachutes.

28
00:02:06,136 --> 00:02:11,616
After the drogue parachutes decelerate the
vehicle, they are released and then the sequence

29
00:02:11,616 --> 00:02:15,646
of the pilot parachutes pulling
out the main parachutes is started.

30
00:02:35,116 --> 00:02:39,386
Here again shows a snapshot of the
drogue parachutes being released followed

31
00:02:39,386 --> 00:02:41,626
by the pilot parachutes being deployed.

32

00:02:42,176 --> 00:02:45,996
When they inflate, they then pull out
the main parachutes from the spacecraft,

33
00:02:46,116 --> 00:02:48,996
which begins the main parachute
inflation sequence.

34
00:03:02,956 --> 00:03:07,826
The main parachutes, once they are
deployed, then inflate through two stages

35
00:03:08,096 --> 00:03:14,056
to full inflation, and they decelerate the
vehicle to approximately 25 feet per second,

36
00:03:14,116 --> 00:03:17,926
well below the maximum designed
touchdown speed of the spacecraft.

37
00:03:18,716 --> 00:03:23,736
We also recover the palate hardware, which
then we reuse for subsequent testing.

38
00:03:24,106 --> 00:03:29,066
The testing is accomplished by a team of
disciplined experts in parachute hardware,

39
00:03:29,256 --> 00:03:34,096
systems integration, simulation and modeling,
testing operations, and safety and quality.

40
00:03:34,926 --> 00:03:38,146
Their contribution to the development
testing is instrumental in paving the way