

N804NA



1
00:00:01,700 --> 00:00:03,400

On my mark. Ready.

2
00:00:03,680 --> 00:00:07,720

We have been load testing on this exact airplane in a similar way

3
00:00:08,020 --> 00:00:09,820

except for the airbag support.

4
00:00:10,300 --> 00:00:14,480

That's different. And I don't know that that's ever been done before.

5
00:00:15,740 --> 00:00:20,120

We're going to support the CG of the airplane using airbags,

6
00:00:20,640 --> 00:00:27,980

so three airbags, one under the left wing, one under the right wing and one under the aft fuselage.

7
00:00:28,620 --> 00:00:31,700

[Hammer Pounding]

8
00:00:33,480 --> 00:00:36,260

It looks pretty good.

9
00:00:37,820 --> 00:00:44,540

That will keep the main gear tires off the floor so the load going through the main gear doesn't vary.

10
00:00:44,820 --> 00:00:49,180

And the problem that we found was that as the main gear load varies,

11
00:00:49,440 --> 00:00:50,940

as we load the wings up,

12

00:00:50,940 --> 00:00:56,540

the load on the gear goes down and that has an influence of it's own on the strain gauges,

13

00:00:56,580 --> 00:01:00,999

because it's torqueing
the whole wing box from the main gear,

14

00:01:00,999 --> 00:01:05,670

so we're going to isolate the main gear. So that's
our test.

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00:01:05,670 --> 00:01:10,850

Ron go ahead and start begin inflation of
airbags to contact.

16

00:01:11,099 --> 00:01:13,679

[Air Hissing]

17

00:01:17,100 --> 00:01:19,680

We're going to continue inflation.

18

00:01:22,740 --> 00:01:24,920

Right side's good. Left side's good.

19

00:01:24,940 --> 00:01:29,040

What we've got here is hydraulics jacks
under the wing. We're going to apply known

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00:01:29,040 --> 00:01:34,250

loads to those hydraulic jacks. And so with
those known loads and the strain gauge responses,

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00:01:34,250 --> 00:01:40,130

we'll be able to correlate those so that we
can derive our own load equations in flight

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00:01:40,130 --> 00:01:43,110

and be able to monitor the loads real time.

23

00:01:43,920 --> 00:01:50,920

Establish control there at the load cell.
I have control. All right stop and place it.

24

00:01:50,920 --> 00:01:51,500

I see it.

25

00:01:52,840 --> 00:01:54,100

That looks good.

26

00:01:55,360 --> 00:01:58,740

We've supported the aircraft on airbags,
we've collected initial data and things

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00:01:59,080 --> 00:02:00,440

are looking good.

28

00:02:01,030 --> 00:02:07,270

We want to understand the structural performance
of the aircraft while it's flying, and so

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00:02:07,270 --> 00:02:12,730

doing a test of this nature enables us to
understand, on the ground, by applying certain

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00:02:12,730 --> 00:02:16,320

loads into the airplane what the loads will
be experienced in flight.

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00:02:16,320 --> 00:02:19,720

I see loading on left eight and right eight

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00:02:19,720 --> 00:02:26,340

This test will be to either to validate those
equations or to help fix them if we find that they're off.

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00:02:26,540 --> 00:02:30,260

Verify the power parameter feedback for the
chiller and the pump are on.

34
00:02:30,360 --> 00:02:31,800
Watch for actuator movement.

35
00:02:32,160 --> 00:02:33,960
Okay, coming up on L7.

36
00:02:36,200 --> 00:02:40,620
And it's always good to test your technical
know how and your strengths

37
00:02:40,720 --> 00:02:41,760
-- full pressure

38
00:02:41,820 --> 00:02:42,780
-- with challenging tests.

39
00:02:42,780 --> 00:02:48,740
Having successfully completed this effort
then we will be prepared to flight test the airplane,

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00:02:48,880 --> 00:02:52,720
and track the wing load against
the wing strength envelope while its flying.

41
00:02:52,730 --> 00:02:57,040
OK, Darren, go ahead and zero DACS channels
except for LRTs and pressure gauges.

42
00:02:57,040 --> 00:02:59,200
Okay roger that. In work. Stand by.

43
00:02:59,200 --> 00:03:00,120
Zeroes are completed.

44
00:03:00,120 --> 00:03:05,350
If we don't do our job well now they won't
be able to do their job well then.

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00:03:05,350 --> 00:03:08,580

Okay go ahead and remove aircraft jacks from underneath both wings.

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00:03:08,580 --> 00:03:12,820

So it's important that we have a small error band and that we know what it is.

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00:03:12,860 --> 00:03:15,740

So the way it takes off will be the same way it lands.

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00:03:15,920 --> 00:03:18,160

It won't be bent when it comes back.

49

00:03:18,320 --> 00:03:22,040

We won't cause harm to the airplane by the flight test of the new flap.

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00:03:22,300 --> 00:03:25,260

How does the data look, are you guys happy with data capture?

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00:03:25,580 --> 00:03:29,660

Yea, I think we're happy with the data capture.