1
00:00:00,220 --> 00:00:05,320
[Music]

2
00:00:06,460 --> 00:00:11,820
[Background Noise]

3
00:00:24,170 --> 00:00:27,440
>> Today we're doing the X-56 Ground Vibration Tests.

4
00:00:27,440 --> 00:00:34,450
We have the aircraft suspended on a bungee system to simulate a free-free flight environment

5
00:00:34,450 --> 00:00:38,000
for when we actually excite the vehicle.

6
00:00:38,000 --> 00:00:42,460
How we excite the aircraft is through some electromagnetic shakers; we have one on each

7
00:00:42,460 --> 00:00:48,460
wingtip on a vertical and also a 45 degree skewed angle.

8
00:00:48,460 --> 00:00:53,650
With that excitation we have various sensors all over the aircraft where we're measuring

9
00:00:53,650 --> 00:00:56,590
the response on these accelerometers.

10
00:00:56,590 --> 00:01:01,780
We don't need to put in too much force whatsoever, it's a really small shake that we put in-

11
00:01:01,780 --> 00:01:07,210
that's good enough to get all the structural frequencies and mode shapes out of the article that we

12
00:01:07,210 --> 00:01:08,460
need.

13
00:01:08,460 --> 00:01:15,590
We're also gathering data with a photogrammetry
system and a fiber optic- our FOSS system.

14
00:01:15,590 --> 00:01:21,260
These other external systems, we have to excite
the aircraft a little bit more and use a higher

15
00:01:21,260 --> 00:01:22,260
force level.

16
00:01:22,260 --> 00:01:31,380
Ok, flight accels, record, 5, 4, 3, 2, 1.

17
00:01:33,220 --> 00:01:40,480
[Music/Background Noise]

18
00:01:54,720 --> 00:01:56,080
Shakers stopped...

19
00:01:56,310 --> 00:02:00,640
Using this data, we can get the mode shapes
and the flexibility out of the aircraft that

20
00:02:00,640 --> 00:02:05,729
it has for its structural frequencies and
use that data and update and validate our

21
00:02:05,729 --> 00:02:10,310
finite element models, and once we have our
finite element models updated, we use those