1
00:00:00,000 --> 00:00:07,610
Music

2
00:00:07,645 --> 00:00:10,794
At the beginning of SLS program we

3
00:00:10,829 --> 00:00:12,953
identified a concern using heritage

4
00:00:12,988 --> 00:00:15,353
hardware. One of the key areas of that

5
00:00:15,388 --> 00:00:17,913
concern was the forward skirt. So the

6
00:00:17,948 --> 00:00:19,889
part we're testing is the forward skirt

7
00:00:19,924 --> 00:00:22,521
of the solid rocket boosters that we used

8
00:00:22,556 --> 00:00:24,153
on shuttle successfully for over thirty

9
00:00:24,188 --> 00:00:28,170
years. That skirt was tested to 1.4 times

10
00:00:28,205 --> 00:00:31,609
its flight predicted loads. That flight

11
00:00:31,644 --> 00:00:34,849
load with its margin was essentially

12
00:00:34,884 --> 00:00:36,865
the same load we’ve got for SLS.

13
00:00:36,900 --> 00:00:39,857

Due to trying to use this skirt with

14
00:00:39,892 --> 00:00:42,953
the fairly high loads on this we’re

15
00:00:42,988 --> 00:00:46,017
venturing into an area of very

16
00:00:46,052 --> 00:00:49,576
nonlinear behavior. So it’s very

17
00:00:49,611 --> 00:00:52,097
difficult to come up with a redesign

18
00:00:52,132 --> 00:00:55,457
and it's very difficult to predict

19
00:00:55,492 --> 00:00:57,353
analytically without a test like this.

20
00:00:57,388 --> 00:01:01,738
The thrust post must carry the lift off

21
00:01:01,773 --> 00:01:03,482
load as it would be in flight. We’re also

22
00:01:03,517 --> 00:01:05,977
required to have margins beyond that

23
00:01:06,012 --> 00:01:08,625
to ensure this forward skirt can carry

24
00:01:08,660 --> 00:01:10,937
the loads. So we’re doing the test

25
00:01:10,972 --> 00:01:13,273
at ATK in Promontory Utah. We're

26
00:01:13,308 --> 00:01:15,353
using one of the old static motor test

27
00:01:15,388 --> 00:01:18,090
stands. We've got a force ring that

28
00:01:18,125 --> 00:01:20,632
weighs about twenty eight thousand

29
00:01:20,667 --> 00:01:23,040
pounds; we're hanging it on the skirt.

30
00:01:23,075 --> 00:01:25,136
We attach four one million pound

31
00:01:25,171 --> 00:01:28,481
load rams. Each load ram then applies

32
00:01:28,516 --> 00:01:30,184
up to one million pounds of force

33
00:01:30,219 --> 00:01:31,985
measured through load cells that

34
00:01:32,020 --> 00:01:33,402
we will use to determine the capability

35
00:01:33,437 --> 00:01:36,482
of the skirt. We're gonna start the

36
00:01:36,517 --> 00:01:39,273
first phase where we will kind of check

37
00:01:39,308 --> 00:01:41,097
out loads up, make sure all the systems

38
00:01:41,132 --> 00:01:43,201

are working up to a million pounds of

39
00:01:43,236 --> 00:01:46,273
axial load and make sure that’s working.

40
00:01:46,308 --> 00:01:49,073
And that will be followed by a basic

41
00:01:49,108 --> 00:01:55,497
limit load lift off test. Then we will

42
00:01:55,532 --> 00:01:58,049
take the test up to 110% of load.

43
00:01:58,084 --> 00:02:01,560
Then we will disassemble certain

44
00:02:01,595 --> 00:02:04,713
areas and inspect the hardware then

45
00:02:04,748 --> 00:02:09,569
reassemble, run it up to failure of

46
00:02:09,604 --> 00:02:12,425
the article or the limit of the test

47
00:02:12,460 --> 00:02:15,457
stand. So for me, one of the exciting

48
00:02:15,492 --> 00:02:17,977
portions about the test is that we

49
00:02:18,012 --> 00:02:21,001
used to fly these on shuttle, we go

50
00:02:21,036 --> 00:02:22,889
pull them out of the water, refurb

51
00:02:22,924 --> 00:02:25,273
the skirts and then get them ready

52
00:02:25,308 --> 00:02:27,025
for flight again. So this is one of

53
00:02:27,060 --> 00:02:28,401
the skirts that we pulled out of the

54
00:02:28,436 --> 00:02:30,185
water and now we are going to

55
00:02:30,220 --> 00:02:31,577
do a test to determine just what

56
00:02:31,612 --> 00:02:33,009
capability that skirt has in order