
MOST STRUCTURAL TESTING INCLUDES BASELINE TESTING.

1
00:00:00,000 --> 00:00:05,320
Nasa is committed to the safety and future of human spaceflight.

2
00:00:05,320 --> 00:00:10,160
With one final test, NASA’s Space Launch System rocket structural design is officially ready for flight.

3
00:00:10,220 --> 00:00:15,200
Engineers pushed the liquid oxygen tank structural test article to its limits in June 2020.

4
00:00:15,260 --> 00:00:19,200
The final test concludes a three year structural test campaign for the deep space rocket.

5
00:00:19,260 --> 00:00:22,220
Teams conducted 199 test cases and collected more than 420 gigabytes of data.

6
00:00:23,160 --> 00:00:31,300
The SLS rocket will power NASA’s Artemis missions to send astronauts to the Moon.

7
00:00:31,360 --> 00:00:36,220
NASA teams use exact replicas of the flight hardware, called structural test articles.

8
00:00:36,280 --> 00:00:38,400
The structural test articles are installed in test stands

9
00:00:38,460 --> 00:00:40,340
at NASA’s Marshall Space Flight Center in Huntsville, Alabama.

10
00:00:40,540 --> 00:00:43,200
Hydraulic systems push and pull on the hardware

11
00:00:43,280 --> 00:00:45,240
to simulate what the rocket will experience during launch and flight.

12
00:00:45,320 --> 00:00:49,140
Most structural testing includes baseline testing.

13
00:00:49,260 --> 00:00:55,260

But, NASA engineers also want to verify exactly how strong the SLS rocket hardware is.

14
00:00:55,340 --> 00:01:00,140
That kind of testing pushes the hardware until it fails.

15
00:01:00,960 --> 00:01:04,780
Because engineers apply forces much stronger

16
00:01:04,860 --> 00:01:09,240
than what they expect the hardware to endure…

17
00:01:09,540 --> 00:01:18,380
Sometimes the hardware pops and twists like a soda can.