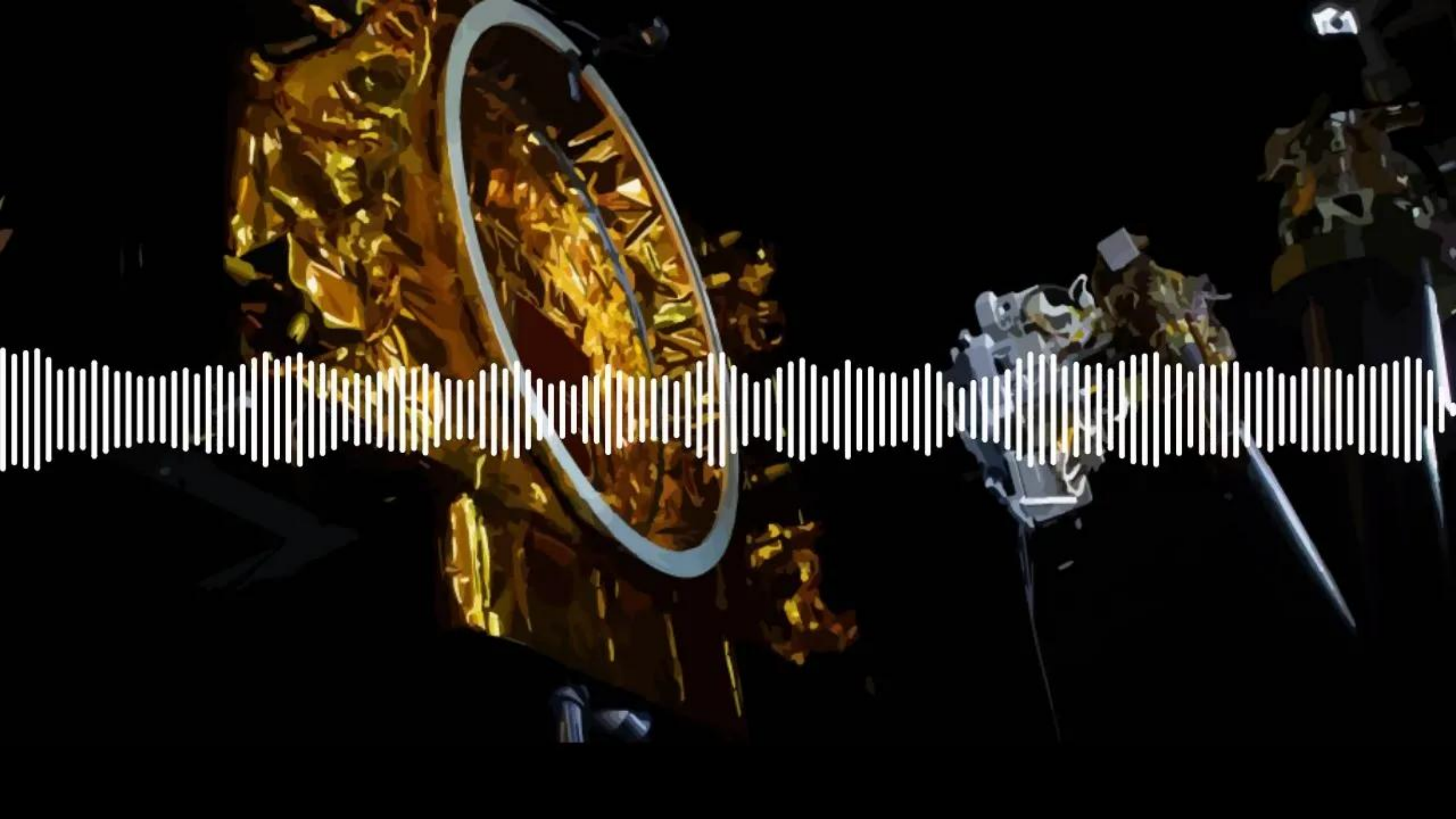

1
00:00:04,300 --> 00:00:05,300
My name is Brian Roberts.

2
00:00:06,000 --> 00:00:09,080
I'm the head robotic technologist here at the Goddard Space Flight Center.

3
00:00:09,080 --> 00:00:10,911
Today, we're going to take a tour of the ROC

4
00:00:10,911 --> 00:00:12,200
or the Robotic Operations Center.

5
00:00:12,760 --> 00:00:16,274
As you enter the ROC, you see a room that's a little bit smaller than a

6
00:00:16,274 --> 00:00:17,373
gymnasium at a school.

7
00:00:17,373 --> 00:00:19,086
You'll notice that the walls are

8
00:00:19,086 --> 00:00:22,170
all black and that's to simulate the darkness of space so we

9
00:00:22,170 --> 00:00:25,880
can shut the lights out in the room and the robots will be

10
00:00:25,880 --> 00:00:27,880
in an environment that will be as dark as it is in space.

11
00:00:28,820 --> 00:00:33,431
So just like sports teams practice before they play a game, we practice with

12
00:00:33,431 --> 00:00:34,420
robots as well.

13
00:00:34,960 --> 00:00:38,615

The first robot you'll hear is our engineering unit of the eventual robot that

14
00:00:38,615 --> 00:00:39,660
will fly in space.

15
00:00:40,300 --> 00:00:43,919
The reason we build that is so we can work out all the details of how to put the

16
00:00:43,919 --> 00:00:44,419
robot together,

17
00:00:45,120 --> 00:00:47,120
make sure it works before we build the more expensive

18
00:00:47,900 --> 00:00:48,700
flight unit.

19
00:00:49,160 --> 00:00:52,360
So the sound you hear sounds like hail hitting a tin roof.

20
00:00:57,480 --> 00:01:00,380
What you'll hear is the brakes on the robot coming on and off.

21
00:01:01,440 --> 00:01:06,094
moving back and forth and you kind of hear a tinging sound as the seven pieces

22
00:01:06,094 --> 00:01:07,840
of metal are hitting each other.

23
00:01:12,400 --> 00:01:14,600
This robot is a hexapod which is a motion platform

24
00:01:15,880 --> 00:01:17,680
on which we mount a satellite mock-up

25
00:01:17,820 --> 00:01:19,620
and the robot then moves that mock-up,

26
00:01:19,960 --> 00:01:22,260
simulating its motion as it would be moving through space.

27
00:01:25,660 --> 00:01:26,760
What you'll hear are

28
00:01:27,260 --> 00:01:31,420
the motors moving back and forth and it kind of sounds like a car engine revving

29
00:01:31,420 --> 00:01:32,460
up and revving down

30
00:01:34,240 --> 00:01:35,340
as you push the gas pedal

31
00:01:36,140 --> 00:01:38,840
and get more acceleration, less acceleration.

32
00:01:38,840 --> 00:01:40,280
You'll hear those motors

33
00:01:40,280 --> 00:01:44,246
moving the six legs of the robot up and down back and forth in front of the

34
00:01:44,246 --> 00:01:44,746
robot.

35
00:01:50,100 --> 00:01:55,793
The last robot you'll hear is an industrial robot that's used by car companies

36
00:01:55,793 --> 00:01:56,293
and

37
00:01:56,740 --> 00:02:01,140
other factories to assemble furniture, assemble cars or paint cars.

38
00:02:03,740 --> 00:02:07,840

So this robot is about the size of a human, maybe six feet or so,

39
00:02:07,840 --> 00:02:11,320
and it's got seven degrees of freedom, so seven individual

40
00:02:11,320 --> 00:02:12,420
actuators that move.

41
00:02:14,820 --> 00:02:19,435
What you'll hear is it moving through our facility and much like the previous

42
00:02:19,435 --> 00:02:20,095
robot,

43
00:02:20,095 --> 00:02:21,491
you'll hear the motors kind of revving up and

44
00:02:21,491 --> 00:02:22,220
revving down.

45
00:02:25,940 --> 00:02:28,697
Thank you for spending some time today touring our Robotic Operations Facility