

APPROVED

10 AM



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00:00:00,010 --> 00:00:04,100

[music] Narrator: Say you're somebody who wants to build a satellite to go around Mars. You've

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00:00:04,120 --> 00:00:08,200

done lots of hard work, your designs are approved, and so you think to yourself, "Great! I'll just

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00:00:08,220 --> 00:00:12,300

whip it together like that office chair I bought last week. Unlike your chair, however, a satellite

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00:00:12,320 --> 00:00:16,400

has to survive in space, where it's extremely hot, extremely cold, and just plain dangerous

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00:00:16,420 --> 00:00:20,530

to nearly everything. So, as you might imagine, it's a little more difficult to put a satellite

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00:00:20,550 --> 00:00:24,600

together. To give you an idea, let's take a look at a bolt on the MAVEN spacecraft.

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00:00:24,620 --> 00:00:28,660

Now, if this was a screw on your office chair, you'd find a screwdriver, sit down for about 15 seconds,

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00:00:28,680 --> 00:00:32,730

and be done with it. If you want to put the same bolt onto MAVEN, however, it's slightly

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00:00:32,750 --> 00:00:36,810

more complicated. You have to test the bolt, get the bolt approved, clean the bolt,

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00:00:36,830 --> 00:00:40,880

make sure it's the right bolt again, build scaffolding so you can install it, get the scaffolding approved,

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00:00:40,900 --> 00:00:44,900

check the size, check the fit, and finally, put it in carefully with a torque wrench.

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00:00:44,920 --> 00:00:48,930

And once you've put in all the screws, you have to test the entire satellite to make sure all of them stay put.

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00:00:48,950 --> 00:00:52,970

Now, this all may seem a little silly, but if you've got screws falling out of something that's millions

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00:00:52,990 --> 00:00:56,970

of miles away, you've got trouble on your hands, and nobody wants that. And what's more,

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00:00:56,990 --> 00:01:01,050

the bolts are the easy part. Satellites are complex things filled with tons of electronics,

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00:01:01,070 --> 00:01:05,150

so you can only imagine how much work it takes to put those together. So, while it may take a little more

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00:01:05,170 --> 00:01:09,260

time and a few more people than an office chair, it's definitely worth the effort. And once

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00:01:09,280 --> 00:01:13,370

it's built, the spacecraft can get onto its real job without having problems along the way.

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00:01:21,520 --> 00:01:17,450

[music, beeping]