AWESOME

THE SHUTTLE'S DESIGN FLAW

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CHANGES MADE TO SRB JOINTS AFTER CHALLENGER DISASTER. Cacture Feature added to keep loint from opening during ignificon. (This could knock the O-rings out of place.) O-ring heater added Primary O-ring Secondary O-ring Third O-ring added Clevis Pin Cork Insulation Tang Insulation Insulation

18. THE SHUTTLE'S DESIGN FLAW

After the *Challenger* explosion, causing all seven crew members to die, NASA redesigned how the solid rocket booster joints were configured. This NASA image depicts the changes.

America's <u>Supersonic Transport Shuttle</u> program was set for its twenty-fifth mission. On board would be a payload specialist whose real job was teaching. Christa McAuliffe would be America's first "teacher in space." Launch was set for January 28, 1986.

Unknown by most people, all of the shuttles had a potentially fatal flaw. Roger Boisjoly knew about that flaw. He did his best to warn both his employer, Morton Thiokol, and NASA. But the people to whom he reported wouldn't listen. And the people who made the ultimate decisions at NASA weren't told.

As a result, *Challenger* and its <u>seven-member crew</u> - including America's first teacher in space - were <u>blown out</u> of the sky seventy-three seconds after launch.

A potential disaster was looming long before that fateful January day. Although NASA completed twenty-four successful shuttle missions before STS 51-L (the official name for the <u>Challenger mission</u>), other flights had experienced lesser versions of the same problem that caused the *Challenger* explosion.

Trouble is, neither the astronauts nor their families knew about it. But the manufacturer of the shuttle's solid rocket booster (SRB) and solid rocket motor (SRM) knew. So did some of the management officials at NASA.

As a result of misjudgments and lack of effective team work, the mission was lost.

Today, the history of flight continues with new planes and ongoing technological advances. Some designers even anticipate planes with circular seating!

See Alignments to State and Common Core standards for this story online at:

http://www.awesomestories.com/asset/AcademicAlignment/THE-SHUTTLE-S-DESIGN-FLAW-History-of-Flight

See Learning Tasks for this story online at:

http://www.awesomestories.com/asset/AcademicActivities/THE-SHUTTLE-S-DESIGN-FLAW-History-of-Flight

Media Stream





Supersonic Transport Shuttle - Payload Bay Doors

NASA image, online courtesy National Air and Space Museum at the Smithsonian.

View this asset at:

http://www.awesomestories.com/asset/view/Supersonic-Transport-Shuttle-Payload-Bay-Doors



Challenger Crew

NASA Image, online courtesy GRIN (Great Images in NASA).

View this asset at: http://www.awesomestories.com/asset/view/Challenger-Crew



Challenger - Blown Out of the Sky

Image online, courtesy NASA.

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Challenger Mission - STS 51-L

NASA image, online via National Air and Space Museum at the Smithsonian.

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