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Before *Challenger's* last flight—known as Mission 51L—Dick Scobee (the mission commander) talks with Christa McAuliffe (America's first teacher in space) about the instrumentation on board the shuttle's flight deck. This event took place during pre-launch training. Image online, courtesy NASA.

Having breakfast together on the morning of the launch, the shuttle crew did not know about delayed liftoff discussions. When they walked to *Challenger*, carrying their attaché cases containing emergency breathing apparatus, they could not have anticipated what was about to happen.

Astronauts, and civilians who are permitted to fly in space, understand the risks. But they believe those risks are what remains after responsible officials do everything they can to insure a safe mission. Such was not the case for this crew, according to the government's investigative findings.

Christa McAuliffe—selected as the world's first teacher in space—had been through simulator training many times. She knew where she would sit. She knew what would happen before, during, and after liftoff. She knew her job as a payload specialist would come later, when she used her lesson plans to teach children throughout the country. Lesson plans that were found floating on the ocean by the Coast Guard.

Teacher in Space Project



Families of the crew were watching the launch. So were millions of others, since most television networks were live broadcasting. Children were glued to the screen, just like school children 25 years before who watched the launches of Alan Shepard and John Glenn.

No one realized *Challenger* was doomed before it left the launch pad. Most people had no idea there was a problem until they saw an unexpected pattern of smoke in the clear blue sky. (Follow the link to view NASA's movies of the crew, the liftoff and *Challenger* explosion.)

But the aft field joint of the right Solid Rocket Booster was already in failure mode within seconds of ignition. A gray smoke puff is clearly visible in the area of the joint at T+0.445 seconds.

Before STS 51-L left the launch pad (according to the government's investigative report), the grease, joint insulation and rubber O-rings in the joint seal were being burned and eroded by hot propellant gases. Gases that would be free to go elsewhere, and cause more damage, if the O-rings did not reseal sometime during the launch sequence.

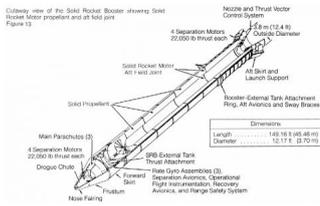
See Alignments to State and Common Core standards for this story online at:

<http://www.awesomestories.com/asset/AcademicAlignment/THE-FINAL-MINUTES-Challenger-Disaster>

See Learning Tasks for this story online at:

<http://www.awesomestories.com/asset/AcademicActivities/THE-FINAL-MINUTES-Challenger-Disaster>

Media Stream



Space Shuttle - Cutaway View of the Solid Rocket Booster

Image depicted above is Figure 13 in the "Report of the Presidential Commission on the Space Shuttle Challenger Accident," at page 56. Online, courtesy NASA via Google Books.

View this asset at:

<http://www.awesomestories.com/asset/view/Space-Shuttle-Cutaway-View-of-the-Solid-Rocket-Booster>

Shuttle Bus Identification

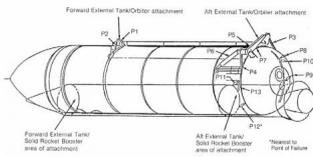


Figure 10
Quantity of transport External Tank with right Solid Rocket Booster on the side, shows location of struts measured in scale of shuttles (Figure 8)

Space Shuttle - External Tank Drawing

Image depicted above is Figure 10 in the "Report of the Presidential Commission on the Space Shuttle Challenger Accident," at page 54. Online, courtesy NASA and Google Books.

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Challenger Explosion - Visible Gray Smoke at T+2.147 Seconds

Image, described above, online courtesy NASA.

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