

The Space Shuttle Challenger Teleconference

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Parts of NASA

Managerial programs are divided into 3 main areas:

1. The Johnson Space Center, Houston, TX
 - Management of the orbiter
2. The Marshall Space Flight Center, Huntsville, AL
 - Solid Rocket Boosters, orbiter's main engines
3. Kennedy Space Center, Merritt Island, FL
 - Assembling shuttle components
 - Testing
 - Conducting launches

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Contractors

1. Morton Thiokol Corporation, Utah
 - Solid rocket boosters
2. Rockwell International Corporation, space transportation systems division
 - Design and development of the shuttle orbiter
3. Rockwell, division of Rockwell
 - Main engines for the orbiter
4. Morton Thiokol Denver Aerospace
 - Development and fabrication of the shuttle's external tank

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Actors for the Launch

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Mr. Joe R. Peterson - VP Thiokol
Peter and William Marshall
Mr. Arnold K. Murphy - Manager, Marshall Space Center

Actors Against the Launch

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- Robert Ebeling - Engineer, Thiokol, Utah
- Dr. Judson A. Lovingsood - Deputy manager, Marshall Center
- Mr. Roger Boisjoly - Thiokol, Utah
- Robert K. Lund - Vice President, engineering, Thiokol
- Mr. Arnold R. Thompson - Supervisor, Thiokol
- Mr. Allen McDonald - Director, Thiokol
- Dr. Rocco Petrone - President, California facility, Rockwell

Cause of the Explosion



How it should have happened



The Countdown to the Space Shuttle



Problems at the time

On the morning of January 28, 1986, the Space Shuttle Challenger was launched. The launch was delayed for several days due to problems with the Solid Rocket Boosters (SRBs). The SRBs were found to have a crack in the joint between the segments. This crack was found to be the cause of the explosion during the launch.

Timeline 1

Pre-launch Meeting
January 27, 1986

- No mention of SRB problems or the earlier or the chosen found on previous shuttles
- Cold weather not discussed as an issue

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Actors Against the Launch

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- Robert Ebeling- Engineer, Thiokol, Utah
- Dr. Judson A. Lovingood-Deputy manager, Marshall Center
- Mr. Roger Boisjoly- Thiokol, Utah
- Robert K. Lund- Vice President, engineering, Thiokol
- Mr. Arnold R. Thompson- Supervisor, Thiokol
- Mr. Allen McDonald- Director, Thiokol
- Dr. Rocco Petrone- President, California facility, Rockwell

Actors for the Launch

- Mr. Joe Kilminster- VP Thiokol
- Hardy and Mulloy- Marshall center
- Mr. Arnold Aldrich- Manager, Johnson Space center

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Inhibiting Actors

- Stanley Reinartz-Manager, Shuttle Projects, Marshall Center
- Mr. McDonald- Thiokol, Kennedy Center
- Mr. Glaysher- Rockwell, Kennedy Center
- Mr. Cioffoletti- Rockwell, Kennedy Center

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Contractors

1. Martin-Thiokol Corporation,
Utah

- Solid rocket boosters

2. Rockwell International
Corporations, space transportation
systems division

- Design and development of the
shuttle orbiter

3. Rocketdyne, division of Rockwell

- Main engines for the orbiter

4. Martin Marietta Denver

Aerospace

- Development and fabrication
of the shuttle's external tank

The Thiokol logo, featuring the word "THIOKOL" in a bold, italicized, sans-serif font, is displayed within a white rectangular box.

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Timeline 1

Prelaunch Meeting

January 27, 1986

- No mention of SRB problems or the earlier o-ring erosion found on previous shuttles
- Cold weather not discussed as an issue

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Timeline 2

Meeting 2

January 27

14:00

- Discuss cold weather in regard to showers, water drains, fire suppression systems.
- Fail to discuss SRB o-rings

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Timeline 3

Meeting 3
January 27
14:30

- Engineers from Thiokol-Wasatch facility
- First time the concerns for the low temperature forecast were voiced
- Ebeling calls McDonald to express concerns about o-rings in SRBs at cold temperatures.
- McDonald contacts Kennedy Space Center to collect temperature data for Ebeling to review

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