

What We'll Discuss TOPIC OUTLINE



The Incident Design of Shuttle The Investigation Role of Communication

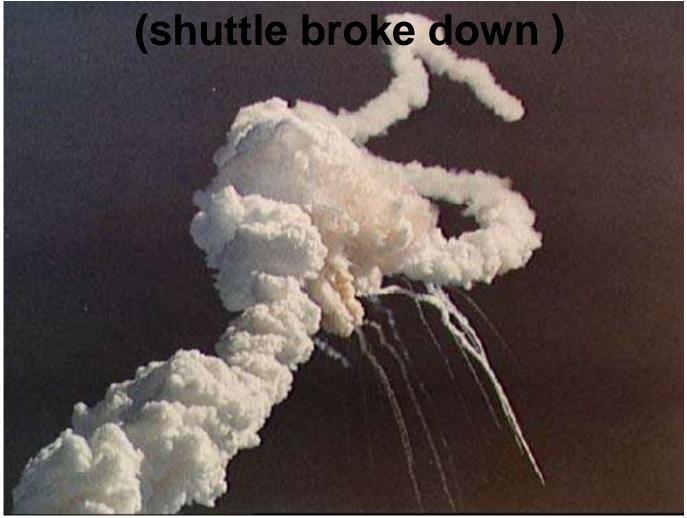
The Incident

January 28, 1986

Launch



About 80 seconds after Launch









WHEN

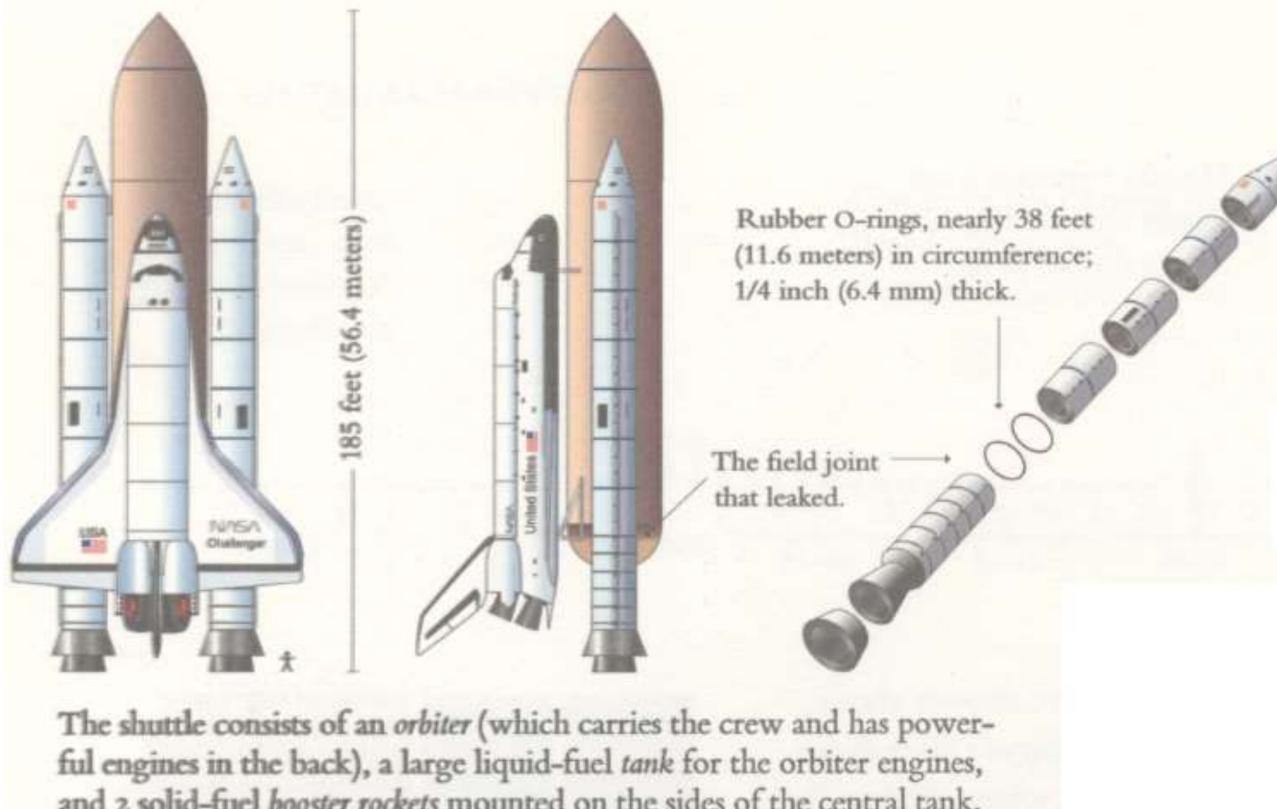
- Tuesday, January 27th 1976 •
- The shuttle broke down 73 seconds into it's flight •







Design of Shuttle

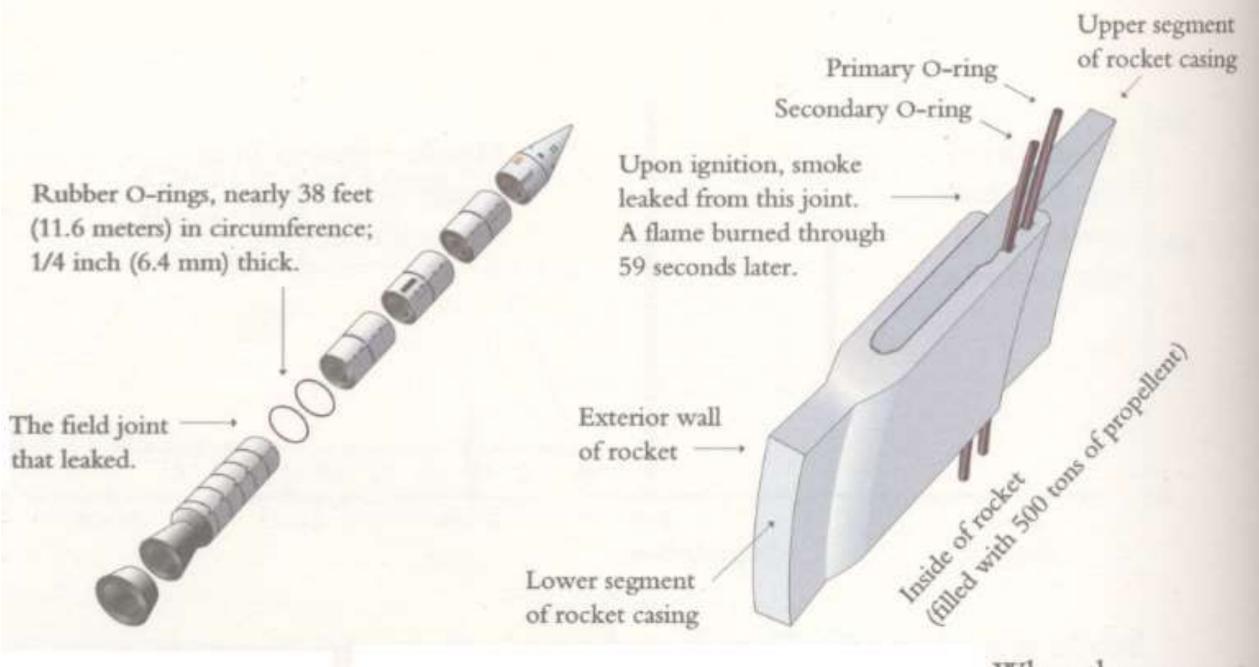


and 2 solid-fuel booster rockets mounted on the sides of the central tank.





Design of Shuttle



Where these segments mate, each joint is sealed by two rubber O-rings as shown above. In the case of the Challenger accident, one of these joints leaked, and a torchlike flame burned through the side of the booster rocket.





Why

NASA did not address the issue even though they were aware of it.







The Investigation

- 1970's: less safe than more expensive alternative 1985: scorching becomes noticeable
 - Thiokol analysis shows worse on colder days
 - Launch constraint by NASA (waived every launch)
 - Thiokol Engineer Roger Boisjoly warns superiors "we could lose a flight"
- August '85: NASA Meeting, no changes

Later, Feynman calls this strategy "Russian Roulette"





The Investigation

Boisjoly and others: "too cold, delay launch!"

• Until 53°F

Management:

scorching?

(crucial fact ignored--every single launch in cold

temperatures showed damage)

Thiokol management gets the engineers to accept a launch recommendation.

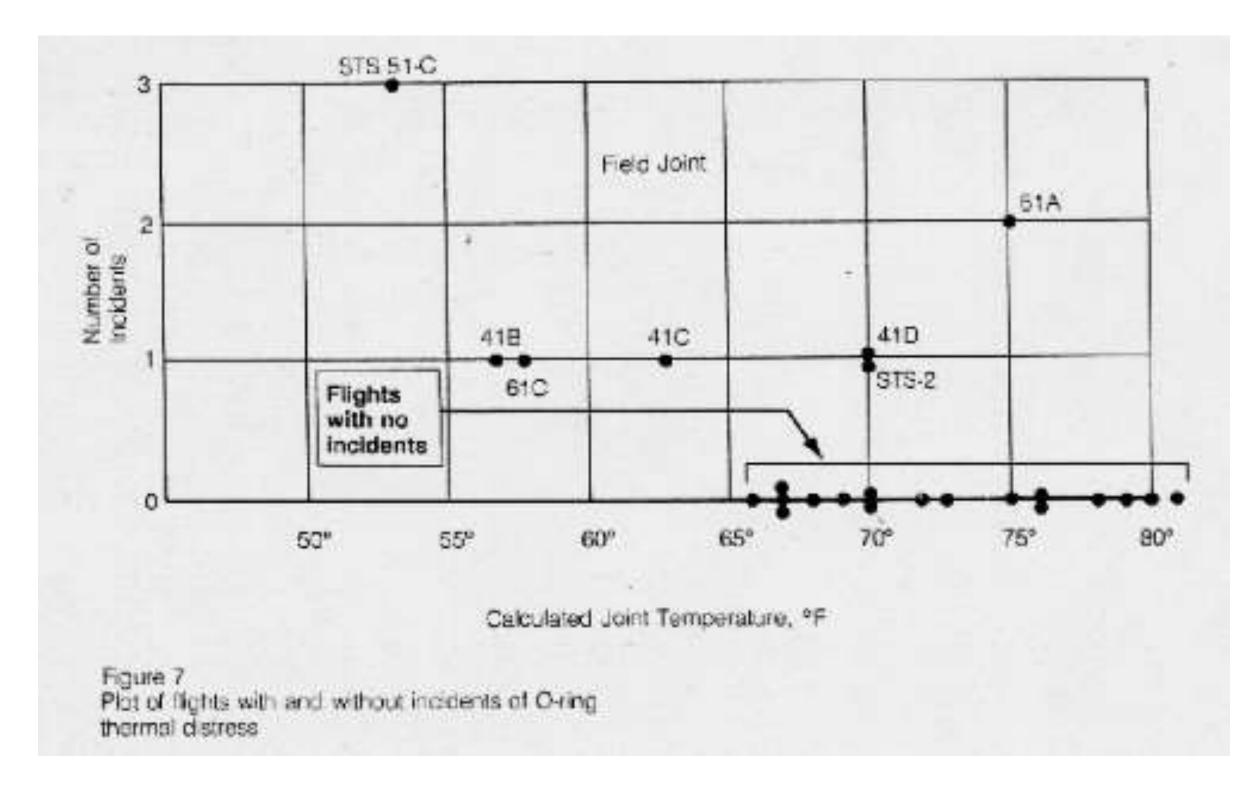


how come some warmer launches show



Role of Communication

Chart used by Thiokol Engineers on Jan 27 before launch



9/21/2023 28.08.2020

16 G E 3 01/PROFESSIONAL ETHIECS / Mr. GASOKAN / Automobile Engg / SNSCT





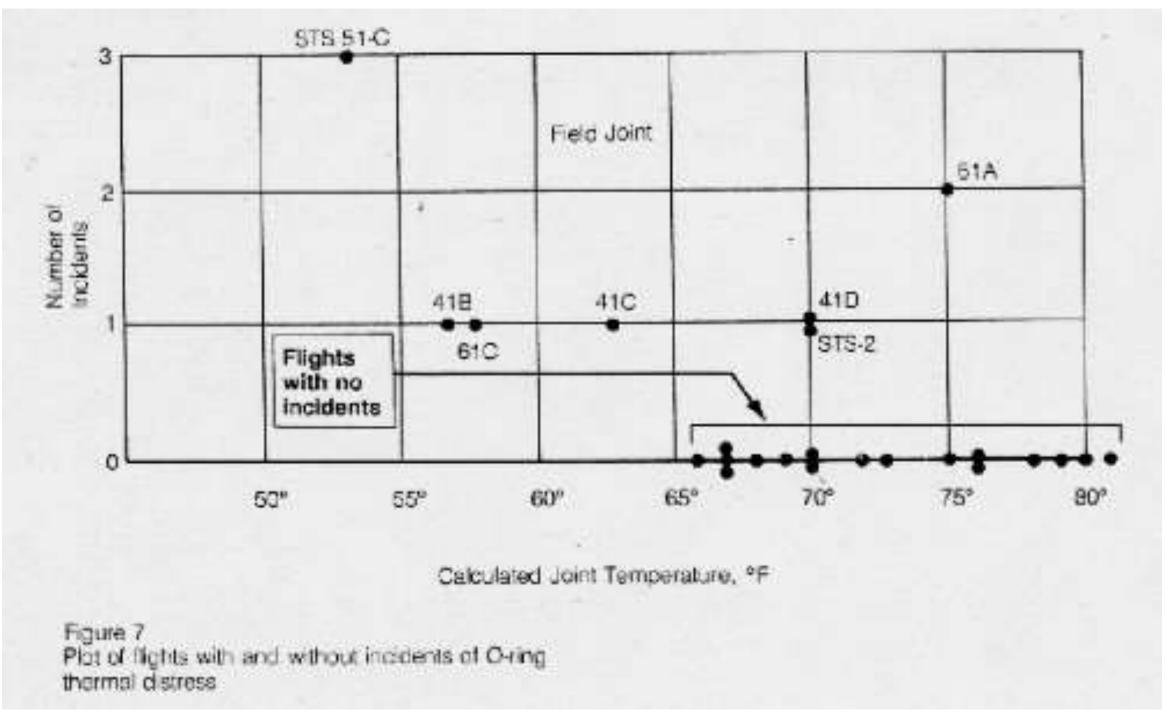






Role of Communication

A Revised Chart by Rogers Commission Showing all launches







Obfuscation during investigation

Famous physicist Richard Feynman performs experiment on television

- Dips o-ring in ice-water
- Shows greater stiffness ullet
- also complains about slides, bullets lacksquare

Edward Tufte, designer

- analysis of charts Provides further damning \bullet
- **Condemns** PowerPoint \bullet











THANK YOU