



Target Audience

Senior leaders, safety professionals, those responsible for complex processes and legacy systems.

Synopsis

The NASA Shuttle Programme was 135 shuttle launches in the 30 years between 1981 and 2011. What is remarkable about the shuttle programme is how successful it actually was, given the enormous complexity of designing, building, maintaining and operating the orbiter, and its unique power system. A sign of how engineers were pushing the boundaries of technology was their creation of a fully fly by wire spacecraft with computers processing 96kb of memory in the form of ferrite cores.

By the 25th flight, in 1986, the images of take-off from Kennedy Space Centre had become comfortably familiar. Yet this flight lasted only 73 seconds before a solid rocket booster shot a lethal plume of flame which ignited the external tank containing liquid hydrogen and oxygen. The seven astronauts, including school teacher Christa McAuliffe, all perished.

From the very beginning, compromises and conflicting demands on the shuttle orbiter sowed the seeds that led to the loss of both Challenger and, in 2003, Columbia. This programme, commissioned by NATS, follows the space shuttle programme from 1968 when design and procurement decisions were being made, through to 2003, as the investigation into Columbia discovered that the astronauts might, in fact, have been saved.

The Houston Center Director enters, followed by a Senior Engineer. The Houston Center Director is holding a letter. He is furious.

Centre Dir: What the hell do we have to do to keep this guy happy?

Snr Eng: John Houbolt?*

Centre Dir: How did you guess?

Snr Eng: I thought we had shown that the tiles were safe?

Centre Dir: We did! We ran the wind tunnel tests again at Langley and we showed that the Thermal Protection System performs exactly as predicted.

Snr Eng: So what's he writing for now?

Centre Dir: Because he won't take no for an answer. And he knows that people listen to him because he was right about using a lunar module for the moon landing when everyone else thought he was crazy.

Snr Eng: But he's wrong about the tiles! We've proved it time and time again!

Centre Dir: He refuses to believe us.

**The man who came up with the idea of a Lunar Orbit Rendezvous where the lunar module left the surface of the moon and docked with the command module. Previously the plan was for the command module to land – but this would have been a lot heavier and more expensive*