

# IEEE SPECTRUM magazine: Apollo 13, We Have a Solution

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  - *Date:* Wed, 13 Apr 2005 18:41:00 GMT
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IEEE SPECTRUM magazine: Apollo 13, We Have a Solution

Rather than hurried improvisation, saving the crew of Apollo 13 took years of preparation

By Stephen Cass [IEEE website has many illustrations and sidebar essays]

<http://www.spectrum.ieee.org/WEBONLY/wonews/apr05/0405napola.html>

13 April 2005—"Houston, we've had a problem."

Thirty-five years ago today, these words marked the start of a crisis that nearly killed three astronauts in outer space. In the four days that followed, the world was transfixed as the crew of Apollo 13—Jim Lovell, Fred Haise, and Jack Swigert—fought cold, fatigue, and uncertainty to bring their crippled spacecraft home.

But the crew had an angel on their shoulders—in fact thousands of them—in the form of the flight controllers of NASA's mission control and supporting engineers scattered across the United States.

To the outsider, it looked like a stream of engineering miracles was being pulled out of some magician's hat as mission control identified, diagnosed, and worked around life-threatening problem after life-threatening problem on the long road back to Earth.

From the navigation of a badly damaged spacecraft to impending carbon dioxide poisoning, NASA's ground team worked around the clock to give the Apollo 13 astronauts a fighting chance. But what was going on behind the doors of the Manned Spacecraft Center in Houston—now Lyndon B. Johnson Space Center—wasn't a trick, or even a case of engineers on an incredible lucky streak. It was the manifestation of years of training, teamwork, discipline, and foresight that to this day serves as a perfect example of how to do high-risk endeavors right.

Many people are familiar with Apollo 13, thanks to the 1995 Ron Howard

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movie of the same name. But as Howard himself was quick to point out when the movie was released, it is a dramatization, not a documentary, and many of the elements that mark the difference between Hollywood and real life are omitted or altered. For this 35th anniversary of Apollo 13, IEEE Spectrum spoke to some of the key figures in mission control to get the real story of how they saved the day.

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- ◇ *From:* Sy Liebergot

- ◆ ***Re: IEEE SPECTRUM magazine: Apollo 13, We Have a Solution***

- ◇ *From:* Derek Lyons

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