

Huffington – Green

http://www.huffingtonpost.com/dr-dave-randle/earth-we-have-a-problem-f_b_845491.html

Earth, We Have a Problem -- Failure Is Not an Option

Posted: 04/ 6/11 10:28 AM ET

By Dr Dave Randle and Dr Reese Halter

Dave's 88-year-old father has been involved in the space program most of his career. We have always been interested and supportive of the space program and the benefits that it has brought to all humankind. When Dave served as John Denver's environmental and political advisor, support for the space program was one of his top six priorities.

Recently, at the Kennedy Space Center, Dave picked up an Apollo 13 hat for his dad. It had the wording, "Failure is not an Option". The hat seemed fitting as his dad had been told a couple years ago that he had only three days to live. He didn't accept the prognosis and sought other treatment. For him failure was not an option so the hat seemed quite fitting for him to wear in the event he has to go to the hospital again.

Recently we heard a podcast where the NASA Space program was used as a metaphor for how we might better respond to critical environmental issues of our time.

This naturally caught our attention.

The story begins with the Apollo 11 mission to the moon. This was the mission where Neil Armstrong became the first human to walk on the moon. The landing for this mission was tense and uncertain but they made it. The famous words were spoken by Neil Armstrong: "That's one small step for man, one giant leap for mankind."

The Apollo 12 mission then followed with a second successful mission to the moon.

The astronauts were able to land much easier this time, spend more time on the moon, and gained more knowledge, skills, and furthered the NASA Apollo project.

Apollo 13 began its journey to the moon with the goal of further gains. Once again the launch was successful. Before the crew could land on the moon an explosion crippled the service module. The famous words were then relayed, "Houston, we have a problem".

At first there was disbelief in Houston; the thinking was that some technical glitch was probably just giving false information. 15 full minutes past before Mission Control in Houston realized this was now a critical life and death crisis.

At that point the Apollo 13 mission was abandoned and the new mission was survival. The astronauts had to shift their priorities to the all out task of making the space craft life sustaining until they could return to Earth. This meant they needed to conserve water, get the carbon dioxide out of the air they were breathing, conserve the energy from the batteries, conserve the air needed for the last hours of the journey, learn how to adapt to uncomfortable temperature changes, conserve the limited potable water, and find ways to use the resources of the lunar module not for exploration but as a lifeboat for their survival.

Despite the great challenge and uncertainty of the return voyage, failure to both Mission Control and the astronauts was not an option.

With Mission Control putting all their focus on a new mission, and the courage and support for each other among the astronauts, all were brought home safely to what NASA called a "successful failure".

Our state of planet Earth continues to become more perilous as we are fast approaching and in some cases have already surpassed the planetary boundaries for sustainability.

Today, we are threatened with many challenges that science has labeled our planetary boundaries. In an [article](#) in Nature, Johan Rocstrom and his co-authors argue that to avoid catastrophic environmental change, humanity must stay within defined planetary boundaries. If one boundary is transgressed, then safe levels for other processes could also be under serious risk. The planetary boundaries include: climate change, ocean acidification, atmospheric aerosol loading, chemical pollution, land system changes, ozone depletion,

overload of phosphorus and nitrates, and decreasing fresh water resources.

Just as the Apollo 13 mission aborted its original goals and its passengers focused on their own survival boundaries, crew aboard Spaceship Earth are being called to change their mission in order to live within our planetary boundaries. There is a need to abort the mission of business as usual to a new mission of creating a sustainable planet that functions within the limits of the planetary boundaries.

Like the astronauts aboard Apollo 13 this will mean using our resources more creatively, making sure our air is clean without too much ozone or carbon emissions, that there is potable drinking water for all, that chemicals don't contaminate the space ships water and food supply, and all passengers are able to have the basic survival needs to complete the journey.

Like the 15 minute pause in Houston where there was disbelief that the Apollo space craft was in trouble despite the warning signs, there has been the same kind of disbelief among many that Spaceship Earth is in trouble.

The question now is: Will enough people on Spaceship Earth realize that we have already exceeded some of the planetary boundaries and are dangerously close to exceeding others? Like the Apollo astronauts we need to change our mission.

There are some important lessons that we can learn from the Apollo 13 experience including:

The importance of creating a shared vision among the crew members of Spaceship Earth. In the Apollo 13 story, Mission Control set a new mission that failure was not an option and Apollo Commander James Lovell let the other crew members know "I intend to go home". This new shared vision created a context for better solving the problems. Creating a shared vision for a sustainable planet where people live within the planetary boundaries may be half the battle.

Creating a sense of community around the vision is also important for success. We learn from the Apollo 13 story that conflict over the best approaches to take was greatly reduced once everyone agreed to work toward the same vision. The team focused on innovation and creativity to jointly solve the problems

as opposed to focusing on different approaches. Commander Lovell observed that: "Thousands of people worked to bring us back home." The more individuals and groups we can get to work on a shared vision the stronger sense of a global community will form to achieve the goals.

Developing a positive culture for change helps achieve success. Gene Kranz, Flight Director of Apollo 13, said to his co-workers: "work the problem", meaning do the research to find the solutions. In solving the Apollo 13 challenges, the team put priority on the need for technical proficiency and getting the facts. When the explosion happened, one of the first questions was, "what do we have on the space craft that is good?" The team also made sure that everyone was getting the information they needed. Kranz created a positive culture for solving the problems.

Scientists from around the world have sounded the alarm. Many in government, higher education, NGO's, and business sectors have started to respond. Some encouraging examples include:

In government, the United Nations Environment Programme is in the process of completing it's [5th Global Outlook Report \(GEO-5\)](#), a process that engages scientists from around the world to detail the needs of the planet and set an agenda for what needs to be done. The warnings of the last report, GEO-4, have been largely ignored.

The [U.N. Academic Impact](#), a global initiative that aligns institutions of higher education with the United Nations in support of sustainability, human rights, literacy, and conflict resolution now has over 500 participating institutions. Each of the participating institutions makes a commitment to at least one project each year based on the program's principles.

NGO's such as the [International Union of Conservation and Nature](#), have brought together over 1000 NGO's and 11,000 scientists to work on issues such as biodiversity, climate change, sustainable energy, human well-being, and a green economy.

Corporations are becoming more sustainable in their practices. In the recent [Newsweek Green Rankings](#) of the 500 Largest U.S. Corporations, 51 had environmental performance rankings above 90 on a scale of 0 to 100. Of the Global 100 Corporations, ten percent also scored 90 or higher as well. One of the companies that was both a national and global leader in the rankings is the Walt Disney Co. The Walt Disney Co. was ranked #11 in environmental performance, #2 nationally in environmental performance in its category of Media, Travel, and Leisure, and #1 in this category globally. One of the unique things about the Walt Disney Co. is that it has proactively set ambitious goals related to each of the 9 planetary boundaries. It is fast becoming model for others to follow. For example it has set goals of reducing its carbon emissions by 50% by 2012 from 2006 levels and then becoming a net-zero carbon company thereafter. It has also set a goal to reduce its solid waste 50% by 2013 and becoming a net zero waste company thereafter.

To bring back the Apollo 13 crew safely, it took the cooperation of mission control, the astronauts, and many supporting scientists and other experts to use the ship's resources wisely.

Imagine if there was a coordinated effort of uncompromising integrity between governments, institutions of higher education, NGO's, and corporations. Imagine if they all worked together with a shared vision to have Spaceship Earth return to operation within safe planetary boundaries.

The simple truth is that like the Apollo 13 team, it will take bold leadership willing to acknowledge that we have serious problems on planet Earth, are willing to work to create a shared vision, sense of community, a positive culture that is committed to success, and that they really get it, that failure is not an option.

<http://www.huffingtonpost.com/dr-dave-randle/earth-we-have-a-problem-f b 845491.html>

Dr. David Randle is President & CEO of the Whale Center. Dr. Reese Halter is an Earth Doctor; Science Communicator: Voice for Ecology, conservation biologist at Cal Lu University and public speaker.