

LIFE on MARS



Have you ever wondered what it would be like to live on Mars? Barbara Braun doesn't need to wonder. For two weeks, she spent every moment of every day behaving as if she were living on Mars. Here's what she told me about the experience.

by Francine Galko



Barbara works for The Aerospace Corporation, a research center that focuses on space missions. In addition to studying aerospace engineering, she's had training in many different fields. She has an EMT (emergency medical technician) license, has worked in wilderness search and rescue, and is a volunteer firefighter. All these experiences helped her prepare for this mission.



Hi, Barbara! Your space mission was called an analog mission. What's an analog mission?



It's a mission where we don't actually go into space. Instead, we live and work on Earth as if we were in space—or on Mars, in this case. We do our day-to-day work in a way that is similar, or “analogous,” to how we would work on Mars.



Oh, I get it! An analog mission is analogous. But why do an analog mission?



Analog missions let us test experiments and procedures without the cost and danger of spaceflight. In some ways, it's like a dress rehearsal for going to space. We want to make sure we test everything on the ground, so we don't run into problems in space.

¡Muy inteligente!
For success in space, work out the bugs on Earth first.





So if you didn't really go to Mars, where did you go?



A research laboratory called the Mars Desert Research Station (MDRS). It's in an out-of-the-way part of Utah that looks a lot like the surface of Mars.



Most buildings at the research station are connected by aboveground tunnels, like the one seen through this window. The tunnels allow the crew to move to different parts of the station without having to put on a spacesuit.



What did you do to get ready for your two weeks there?



We prepared for almost two years. In the beginning, we designed the experiments we would run and learned about the MDRS. As we got closer to the actual mission, we spent more time planning our days.



What did you eat?



Our food was like the food an astronaut living on Mars would eat. A lot of it was freeze-dried or made to have a long shelf life. We got very creative with recipes to make the food taste better!



Where did you live?

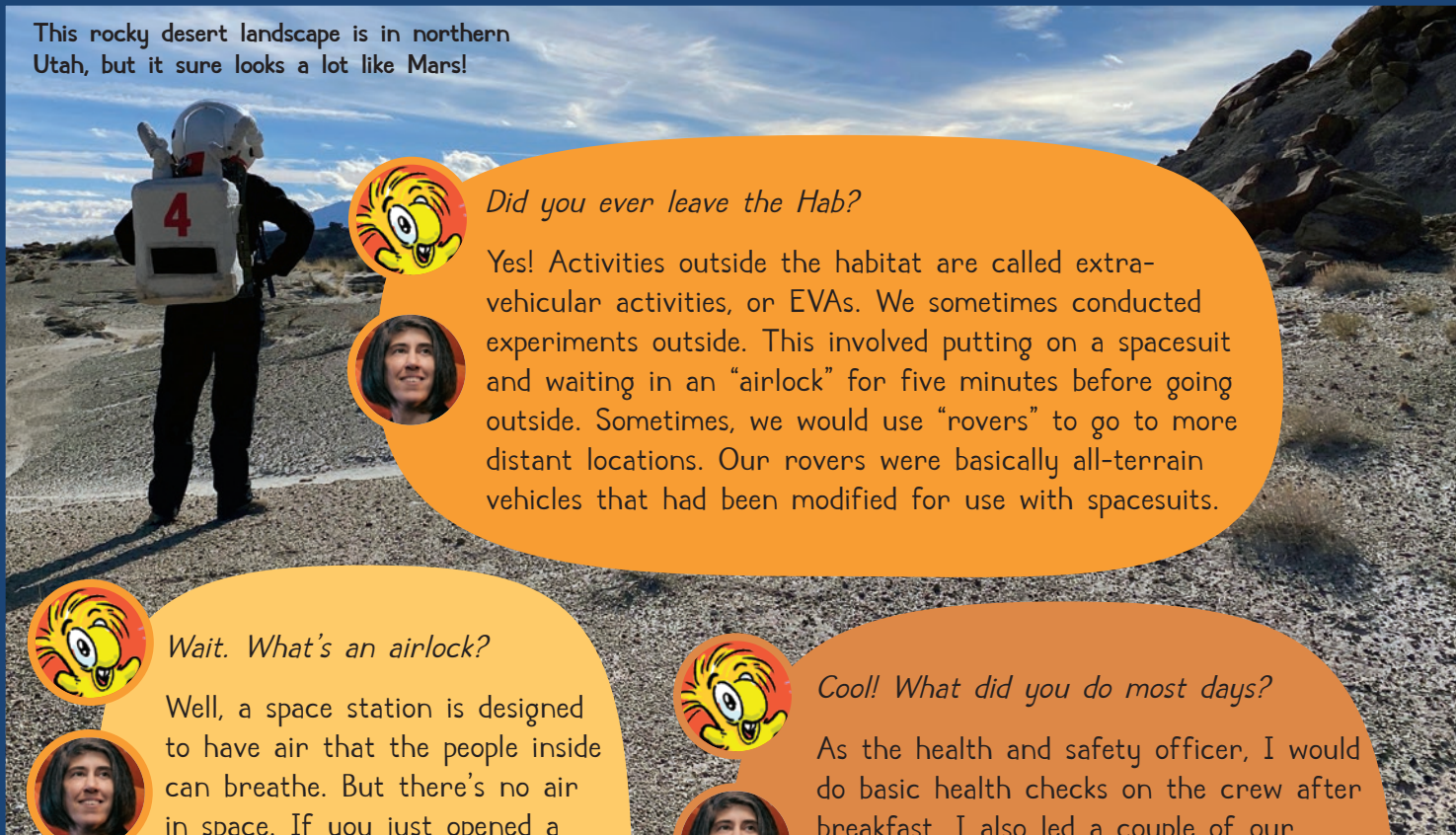


In the Hab, short for habitat, a two-story cylinder-shaped building designed to be like a landed spacecraft. It has a kitchen, a common area where we worked and ate our meals, and seven bunkrooms, each about the size of a closet.



The Hab, where Barbara and her team lived, is the tall building on the right. They did experiments in the Science Dome, the big building on the left.

This rocky desert landscape is in northern Utah, but it sure looks a lot like Mars!



Did you ever leave the Hab?



Yes! Activities outside the habitat are called extra-vehicular activities, or EVAs. We sometimes conducted experiments outside. This involved putting on a spacesuit and waiting in an “airlock” for five minutes before going outside. Sometimes, we would use “rovers” to go to more distant locations. Our rovers were basically all-terrain vehicles that had been modified for use with spacesuits.



Wait. What’s an airlock?



Well, a space station is designed to have air that the people inside can breathe. But there’s no air in space. If you just opened a door to go out, all the air inside the station would escape—fast! An airlock is a small sealed room with a door to the station and a door to outside. It lets us go in and out safely.



Cool! What did you do most days?



As the health and safety officer, I would do basic health checks on the crew after breakfast. I also led a couple of our research projects. And like all the other crew members, I helped with the day-to-day work needed to keep the station running and to make our mission a success. Our main job was to show how analog missions can be used to test new space technologies. We did that by conducting several specific experiments and demonstrations.



Crew members exercised inside the habitat just like they would if they were living on Mars.



Like what?



We used drones and rovers to demonstrate 3D-mapping equipment. We studied how crew members exercise in space and how time delays affected our communication with family and friends. We tested protective mirror coatings and conducted radiation measurements. We also tested how to use different tools to take samples. We learned a LOT about living, working, and experimenting in a Mars-like environment.



Were there any unexpected discoveries?

I learned that astronauts need to be handy! For example, we had to work in the greenhouse to grow plants for food. When our spacesuits didn't work right, we had to repair them ourselves using soldering irons. One day, our toilet broke down, and I had to fix it. It's not like you can call a plumber or electrician if you are on Mars!

Potty problem-solving stopped a stinky situation!



Sounds like you were busy! Did you get any time off?

Sometimes we took a break to play board games, make artwork, or watch a movie.



What developments do you see coming up in the future of living in space?

I'm very excited that NASA is planning to go back to the moon, and I am looking forward to seeing everyday people, not just astronauts, live and work in space one day!



What advice do you have for kids interested in outer space?

Follow your passion! You'll always do your best work if you are excited about what you are working on. Read a lot! Read not just nonfiction, but science fiction too and other books that envision how we might live and work in space.

Thanks, Barbara!

I know NASA sent caterpillars on a mission to space. I'm off to study so maybe I can go one day too! Bye. 🐛



During the mission, Barbara did experiments outside the Hab wearing a spacesuit.

Created with support from
The Aerospace Corporation