

The Challenges of Getting to Mars: Transporting a Mars Rover

...zero and liftoff!

Music

Man, that's it. That was a long day!

Thirty six hours, about three hours of sleep in there somewhere, half of it on a bus, half of it on a plane but there it is, so... Now the journey really begins

As we led up to that whole operation we had a huge set of work ahead of us. Stowing the rover and getting it ready for shipment meant a lot of shifts in a row, a lot of complex operations with the vehicle.

And you have to remind yourself every time you pick that rover up it's almost a billion dollars' worth of hardware that you are watching out for every time you do something with it, so that part got to be really white knuckles for us.

It makes us a little nervous sometimes I mean, you worry about the environment it's on a forklift, it gets put on the back of a flatbed truck and then run down the highway to March Air Force Base from JPL. And that whole transport is just like you are driving any other truck down the highway, so it's full of bumps, and it takes lumps, and so it's one of those that you worry about for sure.

It's a very impressive operation to get the shipping container up into the aircraft. These boxes are incredibly large and even as big an aircraft as the C17 is, it is barely big enough to fit these boxes.

There's an entire team of Air Force Reservists who help us load this led by the load master who was in charge of the winching operation. Basically they use the aircraft cable system and hydraulic winch to hook up to the container and tow it on board.

As that happens you have a team of about eight other Air Force crew members plus all of the payload crew members, all of the MSL crew members that we had with us watching all of the corners making sure that everything was clearing and that the measurements were right and that we weren't going to run into a problem if the shipping container got off line for any reason.

Even despite the best planning we can find ourselves in a spot where we still have to solve some of the problems. We need thick plywood to reduce the contact pressure on the wheels on the shipping container. You have this thing which ways ten thousand pounds or more and you have to make sure you don't punch a hole in the aircraft floor, so we had to get thicker plywood.

We had to make emergency calls out here to Kennedy Space Center to make sure that enough plywood was on hand so that we would have that same accommodation on the way off of the aircraft.

"May I have your attention please, May I have your attention please, please remain seated with your seatbelt fastened until we reach cruise altitude. I will notify you when it is safe to move around. Thank you."

Music

All of those operations had to be undone once we got down to the ground here at KSC and so that operations on the tarmac including the offloading of the shipping containers had to be done just in the same way, the same crew, then after the five hour flight, stepped up and had to check all of these clearances again. Make sure all of the rigging was out of the way and that the winch system was ready to help lower the lower the shipping containers down the ramp.

You don't want the shipping container to get away from you and roll out onto the tarmac and get out of control but they did a really nice careful job and again we had all of the same crew that were there at March Air Force Base here at KSC, plus our arrival crew. We had a fresh crew of folks who were well rested to be able to take care a lot of the ground operations once we arrived here so that those of us who had been going for almost 48 hours straight didn't have to also finish out that part of the job.

We're about to send our baby on a very long journey to go spend its life exploring the surface of Mars.

That's a big leap of faith to be able to hand off the vehicle. They have a great team on the launch vehicle side and they're ready to take care of her, but we are definitely nervous parents.

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