On The Move: NASA Antarctic Balloon Buildings Equipped With Skis for Mobility

by Steven Profaizer, Antarctic Sun staff

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Construction crews working to complete NASA’s new long-duration balloon facility have a longer drive to work.

The six buildings, built downhill from McMurdo Station during the winter, have been moved to their new home almost five miles away at Williams Field.

Each of the buildings is on large skis designed to make them mobile. Starting in late September, the buildings were pulled one-by-one behind D-8 Caterpillar tractors in a slow parade to the airfield. The last one was put into place Oct. 14.

“This is a huge improvement to [the facilities] the program had,” said Linda Waterhouse, project manager. “The buildings were old, and these are nice, new and bigger. It’s exciting for [the scientists] because they means they can fly bigger payloads, and that’s what it’s all about for them - the science.”

The buildings were constructed near McMurdo and relocated to Williams Field because of the advantages associated with conducting the large-scale project close to station. They were originally designed to be mobile to save money and resources after the facility is in use.

“We had a lot of people question whether we could move buildings this large, but we had done all the engineering analyses and felt we could do it,” Waterhouse said.

A reoccurring problem Waterhouse found is that the skis will often freeze to the snow after sitting still and immobilize the building.

“People have used a lot of different methods to free the skis from the ice,” Waterhouse said. “Most of them are pretty harsh and have a possibility of damaging the building, such as banging the building or putting explosives under the skis to break the bond.”

Waterhouse said she wanted to come up with a less destructive and more effective way to free the buildings. Her answer was to create heated skis. When it’s time to move the buildings, the skis are warmed to melt the ice cementing the buildings in place.

Frozen skis were not the only obstacle the team had to overcome. The buildings were constructed during the winter months, when weather is always a force to contend with.

“The largest challenge was probably constructing the buildings in the extreme weather conditions encountered during the winter,” said Bill Marshall, construction coordinator for the project through the relocation of the buildings.

“Historically, these buildings had to be dug out every year,” Waterhouse said. “It took several weeks, a lot of people and a lot of money every year to dig them out.”

At the end of the summer season, workers will be able to free the buildings from where they are currently anchored and move them onto snow berms, where they will be re-anchored for storage. This will eliminate the need to excavate them at the end of every winter.

The two largest buildings, at 39 feet high by 50 feet long, are in an entirely different weight class than structures typically moved by this method.
We’re Looking for Snow in January  by Ted Wilz, Senior Meteorologist

So, what’s the weather usually like along the Eastern Shore in January?

High temperatures are usually in the mid to upper 40’s at the beginning of the month. By month’s end they are in the low to mid 40’s. Low temperatures start out in the low 30’s, and get even colder by the end of the month when they are usually in the mid to upper 20’s.

The record high temperature for January occurred on January 30, 2002, when we reached a balmy 74 degrees. In contrast, the all time record low for the month occurred on January 16th, 1965, when we reached a frigid minus 4 degrees.

We average 3.15 inches of rain during January with measurable precipitation usually occurring on 10 days. We also average just over three inches of snow fall. January typically is the month we see the most snow.

The staff at the WFF Weather Office wishes everyone a joyous, peaceful and safe holiday season.

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Personnel interested in attending need to complete and submit a training registration request or contact Marvin Bunting at marvin.n.bunting.1@gsfc.nasa.gov or call x2030.