

Big blimp to tread lightly as it probes clouds' inner secrets

September 24 2013, by Kevin Spear

The world's largest blimp leaves Florida on Tuesday on a monthlong journey across the U.S., slipping into clouds and hanging out so its crew can try to determine whether they teem with microscopic life.

The brilliant-white airship, owned by an Orlando company, is on a "sea to shining sea" science expedition for a British Broadcasting Corp. television project.

"The point of this is to combine some great science with some great entertainment," said Jonathan Renouf, a BBC executive producer. "I think a project like this, using a huge airship to travel across America, captures the imagination."

Emblazoned with the words "Cloud Lab" - a working name for the television project - the 200-foot-long airship recently spent a week on shakedown flights over Orlando and Titusville, Fla.. It's a flying laboratory, packed with instruments that will study clouds' behavior and chemistry, listen to the sounds made by bats and birds, probe [atmospheric gases](#) and measure Earth's surface features.

When the blimp, called the "Spirit of George," took off last week for some final calibration of its instruments, the liftoff was more a sharply angled launch than a stately rising into the sky. That's because the ship is powered by a pair of turbo-boosted Porsche engines that can push the blimp to a top of speed of 57 mph.

But for scientific purposes, the advantage of a blimp is being able to slow to zero mph.

"It can hover and hang around inside a cloud," said David Smith, a NASA [microbiologist](#) at Kennedy Space Center and one of nearly a dozen scientists involved in the Cloud Lab project.

Smith said his blimp-mounted experiments will try to collect microbes, including bacteria and fungi that may be "making a living" in the moist, shaded interior of clouds.

The discovery of such microbes would build on scientists' knowledge of the places that can sustain life, including locations beyond Earth, and lead to further exploration of the role microbes may play in triggering cloud formation and rainfall, Smith said.

Hugging the belly of the 68-foot-tall blimp is a gondola the size of an RV - 38 feet long and 8 { feet wide. Normally, there's space for two pilots and 13 passengers inside, but packed with computers and experiment hardware, Cloud Lab has room for only eight TV or science crew members.

Fewer seats makes a ride on the blimp a hot ticket unavailable even to Julian Benscher, president of Orlando-based Skyship Services Inc., the craft's owner.

But Benscher has seven other airships to manage, and he expects the Cloud Lab project will draw renewed attention to his blimps' ability to provide rides that are quiet, vibration-free and, at 11 miles to the gallon, fuel-efficient.

"We use as much fuel in a typical, 12-hour mission as a (Boeing) 737 takes while taxiing out to a runway," Benscher said.

The Cloud Lab [airship](#) spent Monday night in Ocala, Fla., and was to fly Tuesday to Gulf Shores, Ala. For the next several weeks, it will follow the Gulf Coast to New Orleans and Houston, lingering there to examine the atmosphere for pollution. The remainder of the cross-country route will take in both wetlands and deserts, with the blimp passing over selected landmarks such as Austin, Texas; the Grand Canyon; and, after about four weeks, San Francisco.

One of the participating scientists is Jennifer Krauel, a doctoral student at the University of Tennessee who specializes in the behavioral ecology of animal migrations. For her part in Cloud Lab, crew members will lower microphones at the end of long cables to listen for bird and bat calls below. Also under her supervision, a cone-shaped net has been attached to the gondola to collect insects thousands of feet above the ground.

"I study bats and insect migration, and how cool is it that the BBC would do a show exactly about my research?" Krauel said.

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