

AERONAUTICS-VOLCANOLOGY

Eruption Seen from Air

Helicopter over Paricutin enables geologists to make inspections in a few minutes that otherwise would have required many hours of climbing.

By CHRISTINA BUECHNER

► AS THE first woman to fly in a helicopter over the Mexican volcano Paricutin near Uruapan, this correspondent had a feeling of viewing very closely a natural drama from a grandstand seat in a show window.

There was no feeling of danger in sitting in the transparent bulge of the cockpit while Flight Officer Roy P. Beer buzzed the crater in the Army's hovering helicopter R6A, one of the many flights made during two weeks of exploration that simultaneously tested this unusual craft's performance at high altitude and explored the erupting volcano. There was so much of interest to see that there was no time for feeling afraid.

Our take-off was from the helicopter camp just beyond where the lava ceased to flow some months ago after engulfing the little town of San Juan Parangaricutiro, leaving only the steeple of the church in sight. The helicopter needs only a little clear space to land and take off. From this 7,200 feet above sea level, the helicopter rose to 1,500 feet above the crater which rises a thousand feet above what was merely a cornfield from which the volcano burst forth 2½ years ago.

This was considered by the officers of the Air Technical Service Command of Wright Field, Ohio, in charge of the aeronautical aspects of the expedition, as very satisfactory flying for a helicopter that was built to operate at lower altitudes.

Idling over the volcano and its lava beds, the helicopter has carried the American and Mexican volcanologists on flights that in several cases allowed prompt observation and study of new volcanic activity that would have ceased before the areas could have been reached tortuously on foot. Several landings were made near such newly active areas and the geologists were able to make inspections in a few minutes that otherwise would have required many hours of climbing.

Around the jagged and sometimes still warm lava beds the convection currents are strong, the air is bumpy and flight

is turbulent.

Because of the rainy season less than half of the daylight hours have been suitable for observations during approximately two weeks that the expedition has been at the volcano. There have been more than 30 hours of flying with about 60 flights. Forty of these gave the geologists close views of the crater, and many times the pilot dropped down to within 300 feet of the crater's rim.

The scientists who did most of the observing were: Dr. Ezequiel Ordóñez, leading Mexican geologist, Dr. L. C. Graton of Harvard, and Dr. W. F. Fosshag of the U. S. Geological Survey and U. S. National Museum.

"Flying in the helicopter was one of the greatest experiences of my life," white-haired Dr. Ordóñez told me. "I never really saw the volcano until I saw it from this slowly moving aircraft."

It was Dr. Ordóñez who arrived at the volcano within 48 hours after it was born and who has spent many months observing it since.

Still and motion pictures, mostly in color, have been used to map the interesting structure that can best be seen from the air. Unusual lava flow formations, unsuspected from the ground even when crossed laboriously on foot, have been studied. The helicopter was able to come down within a few tens of feet over the rugged lava and sharply circle the point under observation. Conventional airplanes would have traveled too fast to allow such observations.

Helicopter data acquired on this expedition will permit more efficient operation of helicopters in the China-Burma-India theater, according to Capt. George Colchagoff, commanding officer of the Air Technical Service Command expedition. Helicopter experts of the Army were aided by Igor Sikorsky, inventor of the helicopter, and Ralph Alex, helicopter designer, who were both members of the expedition.

The helicopter will be flown to Mexico City and then dismantled and packed for the return trip aboard the same cargo C47 plane in which it was transported to Mexico from Wright Field.

Living in rough dwellings and Army

tents, the expedition feasted on an unusual mixture of native Mexican food and Army C rations. A Trascan woman from the region cooked for the party and the menu consisted of local dishes built around the Army issue.

The American scientist who has been hunting for lightning in the eruption of Paricutin, Mexico's volcano, had his waiting rewarded when at least a hundred lightning flashes occurred within two hours in the Paricutin cone of eruption.

Dr. O. H. Gish of the Carnegie Institution of Washington found some of these were mere sparks and others were two-thirds of the visible height of the cone or about 800 to 900 feet in length. Quite a few of the lightning flashes were in the crater or on the cone. Some of the short ones were in the clouds, and some of the flashes were horizontal and others were at an angle.

These lightning observations will be studied because of their relationship to lightning conditions met with by airplanes in storm clouds. Both from the standpoint of air transport and the weather these new observations will be interesting, and Dr. Gish will report his findings to the U. S. Weather Bureau upon his return to the United States.

Within five miles of the volcano's cone, the ash from the volcano is too thick to allow any plants to grow from seed, Dr. W. A. Eggler of Central Michigan College, and his associates, have found as a result of a survey to determine what plants survived and what plants are returning to the volcano-devastated region.

In the area of thick ash only those continue to grow that have well-developed roots or underground stems. Such plants can grow up through the ash.

The trees that survived best under the blanket of fine dusty material blown out of the volcano are oak and madrona, with pine somewhat less hardy. Such trees are found within a mile of the volcano. When the ash is as much as ten feet thick, trees will nevertheless survive, although they look sickly.

Prickly poppy is growing up from its roots through the earth in the old corn fields and so is grass.

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Cotton production in southern Brazil has developed faster than in any other major cotton-growing section in the world; from an average of 40,000 bales in the five year period ended in 1930, production has now increased to over 2,000,000 bales.