

# BYRD EXPEDITION FOUND EACH TASK CARRIED DANGERS

## Balloon Man's Long Vigil Amid Icy Blasts Heads Peril List — Cameramen Beset by Many Difficulties

By Leicester Wagner United Press Hollywood Correspondent

HOLLYWOOD—(UP)—Down at the bottom of the world, where the winds howl all winter long at a temperature of 70 degrees below zero, members of the second Byrd Antarctic Expedition spent 18 long months.

And of all the difficult and dangerous jobs assigned to members of the crew, the balloon man's long vigil amid icy blasts, headed the list.

Even the two Paramount cameramen who risked their lives to photograph exciting incidents agree that their job did not compare with that of the meteorologist.

The story of George Griminger, sent with the expedition by the Weather Bureau in Washington, was told by John L. Herrmann and Carl O. Peterson, who brought 130,000 feet of film back from Little America.

Traced Wind Currents Day after day, Griminger mounted the snow-covered roof of the science building and kept a telescope trained on balloons soaring into the atmosphere. More than 400 balloons were released by the meteorologist to determine wind velocity and direction at various altitudes.

The neat little pile of record books cost Griminger many a frost-bitten cheek and finger. For hours at a time, exposed to the extreme cold, he kept his eye to the telescope. Because the lens must be adjusted constantly, he could wear only silk gloves. These kept his fingers from freezing to the rigid metal, but they weren't much protection from the cold.

Griminger relayed his readings through a telescope to fellow scientists in the warm building below. Readings were made once a minute until the balloon was lost from sight. In daylight, their course could be followed up to 30,000 feet. During the long winter of endless night, little paper bags containing lighted candles were attached.

Griminger wore a nose guard and other special equipment but still he suffered continually from frostbite, the cameramen related. As a matter of fact, all of the 55 men under Admiral Richard Byrd and the admiral himself, were frostbitten at one time or another.

Lost 18 Pounds Frequently the cameramen and others on trail trips would be caught in a blizzard, and parts of their bodies frozen before they could erect a shelter. Al Wade, of North Hollywood, suffered the most severe case. He was 18 pounds lighter when released from the hospital.

Motion picture photography was difficult at any temperature below zero and almost impossible from 40 degrees down, the cameramen reported. Down to 40 degrees the film becomes brittle, and beyond that it continually breaks.

The camera itself freezes at low temperatures and the hand crank cannot be turned. This happened to Peterson when he accompanied Admiral Byrd to the latter's advance base, where the commander remained alone for seven months. At 64 below zero, Peterson's camera froze, and he had to place it in an oven until it thawed.

The photographers developed a technique of their own to defeat the weather. Placing their cameras in ovens, they would prepare a scene for

# SET FOR STRATOSPHERE HOP



When the largest balloon ever built soars away from Rapid City, S. D., on a flight to the stratosphere, Capt. Orvil A. Anderson (left) and Capt. Albert W. Stevens (right) will be in it, the former as pilot and the latter as commander. (Associated Press Photos)

photographing, race for the cameras and grind them until they froze. Lighting was another problem, especially in winter. When working in the dark, magnesium flares were lighted. These lasted from two to four minutes.

Once Herrmann clambered up a 75-foot steel radio tower for a bird's eye view of the camp. The scene over he tried to descend, but discovered his legs were frozen to a pair of steel supports. Another man climbed up and shook him loose.

Another time, on a tractor trip, he fell backward into a 12-foot crevasse, but escaped with bruises. The cameramen and four others were bound for the admiral's advance base to bring back supplies and equipment left by Byrd when he returned to Little America by plane. Shortly after Herrmann's mishap, the tractor fell into a 35-foot crevasse. By tremendous effort, it was extricated, but two miles farther on the transmission fell out, and the trip was abandoned.

Side Trips In the 18 months in Little America, the expedition made two main tractor and dogged trips and five major exploration flights.

A party of geologists went southward, toward the Pole, to the Queen Maude range to study rock formations and make maps and surveys. Three men made this trip, using dog sleds, and were gone three months. They came within 200 miles of the pole and crossed many sections never before reached by man.

The eastern party of four men traveled 300 miles from Little America to the Edsel Ford mountains. They also used dogs, although both parties had advance support from the tractors. The big enclosed caterpillars went ahead with food and supplies, depositing that at depots a day's dogged journey apart.

Peterson accompanied the first tractor party and was one of the men who discovered a plateau at an altitude of 4,000 feet. Previously the geologists had thought the Ross Sea barrier extended through this section. The cameraman was the first to set foot on Mount Grace McKinley in the Edsel Ford range, proving that movie work often has its complications and compensations.

Little Life There Paul Siple, the Eagle Scout who was Admiral Byrd's protégé on the first Antarctic venture, and later became a talented biologist, led the eastern expedition. He brought back samples of microscopic life forms discovered in water holes at the bottom of crevasses, as well as a quantity of lichen, a low form of vegetation. Seals, certain fish and penguins are practically the only life existing in the Antarctic.

In addition to the exploration flight, the planes made a number of reconnaissance, and photographic trips. In summer, the planes were

# SCIENTIFIC ARMY TO WATCH HEIGHT OF STRATO FLIGHT

## Volunteers Will Measure Course of Balloon in Neighboring States — Barographs Inaccurate

WASHINGTON, D. C. — (Sp.) —

When the huge balloon of the National Geographic Society and the U. S. Army Air Corps soars into the stratosphere probably this month, the height that it reaches above earth will be measured with record-breaking accuracy almost to the last inch by a small "army" of scientists stationed on the ground below.

The exact height reached by the balloon, not only at its hoped-for "ceiling" of more than 14 miles, but at 15-minute intervals at all stages of the daylight hours of its flight, will be measured more accurately than ever has been possible before for a stratosphere balloon.

Present plans call for enlisting as many volunteers as possible among surveyors and engineers of Nebraska, Kansas, Iowa, and Missouri, to watch the course of the balloon through surveying instruments, and measure angles between it and the earth. From this data the height of the balloon can be calculated mathematically with high accuracy.

Engineers Asked to Volunteer A call for volunteer observers to take part in the project, which will be one of the most comprehensive experiments of the sort ever undertaken, has been issued by Captain Raymond S. Patton, Director of the U. S. Coast and Geodetic Survey and a member of the scientific advisory committee for the stratosphere flight.

It is desired to enlist the cooperation of as many volunteers as possible in order to have observers distributed throughout the area, over which the balloon may drift. Each observer will be asked to obtain use of an automobile equipped with radio to receive time signals so that all observations will be made simultaneously.

This method of measuring the balloon's height, almost as accurate as though a huge tape measure were

stretched from balloon to earth, is expected to be of great future value to aviation in general as well as in determining the altitude of Explorer II.

It will furnish a new check on the accuracy of barographs, the instruments that measure the height of aircraft by reacting to the changing atmospheric pressure at various levels. Barographs are known to be inaccurate as height measurers at the higher levels now reached by balloons and airplanes. If enough accurate measurements of the height of the National Geographic-Army Air Corps balloon can be obtained at intervals as it rises, these, considered with barometer readings from the gondola at the same times, will be useful in developing more accurate height-measuring instruments.

When weather conditions indicate that the stratosphere balloon can take off at the following dawn, the volunteer corps of scientists will be notified by radio the previous evening. Each man will have been previously assigned to one of the bench marks or bronze markers which are spaced at 30-mile intervals over the plains country above which the balloon will fly.

The exact position of each bench mark, part of a nation-wide government survey, is already known as accurately as the best instruments can determine, and from each bench mark an azimuth or direction line to a nearby point has been laid out. Each observer will have an automobile equipped with radio, and a surveyor's transit. The small telescope that is part of each transit will be trained upon the balloon as soon as it comes into sight.

Radio Signal to Observations Then, every 15 minutes, the watch-

ers will hear a special code signal coming over their automobile radio sets. When the signal sounds, all the observers who have the balloon in sight at that moment will measure two angles with their instruments—the horizontal angle from the azimuth line to the balloon, and the vertical angle from the balloon to the earth. This procedure will continue all day until the balloon lands. The observers will be asked to stay on watch from 9 a. m. until 3 p. m.

The observers will be stationed at the bench marks because the distances between them has been measured with greatest possible accuracy, thus providing base lines of known length, which are necessary in calculating the balloon's height by trigonometry. Altitude also will be calculated with the aid of photographs of the earth taken straight downward at intervals through the bottom of

the gondola, as was done last year on the flight of the first National Geographic-Army Air Corps stratosphere balloon. For this method to be accurate, however, it is necessary to know the exact distance between objects on the ground showing in the photographs, and in many cases this is not possible because the entire area over which the balloon will drift has not been accurately surveyed.

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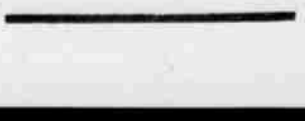
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