



Stratosphere Balloon Poised for the Take-Off.

Prepared by National Geographic Society, Washington, D. C.—WNU Service.
ANOTHER flight by a huge balloon into the stratosphere will be made in the summer of 1935, jointly by the National Geographic Society and the United States Army Air Corps. Capt. Albert W. Stevens will be in command of the balloon which will be piloted by Capt. Orvil A. Anderson. Like the expedition of last summer, the flight of 1935 will take off from a natural basin in the Black Hills, eleven miles southwest of Rapid City, S. D.

Preparation for such a flight is a stupendous task. From the inception of the last flight, in the fall of 1933, with the guidance of the scientific committee appointed by President Grosvenor of the National Geographic Society, no pains were spared to produce the best possible instruments and equipment for collecting scientific data in the stratosphere. The instruments were to be of full laboratory size to insure the greatest attainable accuracy. This meant that some would be both bulky and heavy.

To house these many large instruments, it became necessary to design a gondola larger than any that had previously been sent aloft.

Finally, it became apparent that to lift the gondola and its cargo of apparatus high into the stratosphere, a very large balloon would be required. Experts were consulted, skilled in such construction, and a contract was given to design and build a larger balloon than any previously constructed—a bag which, when fully inflated, would contain 3,000,000 cubic feet of gas.

It required five months to fashion this gigantic bag, and into it went two and a third acres of rubber-impregnated cloth made from long staple cotton. While it was being built, work was begun on the gondola, a globe of duralumin, lighter than aluminum, and in a score of laboratories and workshops from New York to California specially designed instruments were being constructed.

Meanwhile a site for the base camp of the stratosphere flight had been chosen in western South Dakota. Three considerations determined this choice: the point was far enough west to permit the balloon to drift even 700 or 800 miles to the eastward and still come to earth in relatively level, un-forested country; the record of the region was promising for good summer flying weather; and the site was sheltered from surface winds.

Making the "Stratocamp."

Early in June a camp was established in the deep, cliff-encircled natural "bowl" near Rapid City. It quickly became known as the "Stratocamp." Capt. Orvil A. Anderson was on the scene from the start. Under his capable direction the camp developed from an almost deserted basin into a bustling little village of more than a hundred inhabitants.

Within a few weeks it had its drainage system, and sawdust-paved streets, a waterworks, two electric lighting systems, a sewage disposal plant, parking spaces, traffic officers, a hospital and ambulance. There was even a fire department with a full-size hose wagon, two professional fire fighters, a dozen fire extinguishers, and a volunteer corps to operate them, providing a safeguard against accident in handling quantities of explosive gas. No smoking was permitted in the neighborhood of the hydrogen cylinders.

Three telephone lines and two radio stations kept the Stratocamp in communication with the outside world; and there were two telegraph wires leading to teletype machines which constantly rapped out weather information from points as far away as Alaska, Cuba and Iceland. The special weather station set up at the camp, through the co-operation of the United States weather bureau, the signal corps, and the air corps, ranked in fullness of information furnished, with the half dozen most important weather stations in the United States.

Two weeks after the camp was started Captain Stevens went out by plane from Washington, taking some special instruments. A few days later Maj. William E. Kepner flew into Rapid City, and the flight personnel was complete.

Freight car loads and truck loads of the equipment necessary for a strato-

sphere flight had been converging on the Stratocamp for weeks. Three railroad cars filled with heavy steel cylinders containing compressed hydrogen arrived in Rapid City. Thanks to the generous co-operation of the National Guardsmen of South Dakota and their fleet of trucks, these tons of steel were soon neatly piled along one edge of the camp.

Collecting the Equipment.

The gondola rolled in by truck, after a journey of more than a thousand miles, from Midland, Mich., and was installed in the commodious gondola house, the entire front of which could be opened up.

A few days later another truck brought in a huge box containing the balloon bag, which weighed two and a half tons, carefully packed in a waterproof container. The box was placed on blocks in the exact center of the level floor of the "bowl," protected from sun and rain by a canvas tent fly, there to remain until the day of the inflation.

The largest truck of all to traverse the winding road down into the basin arrived the following week—the liquid-oxygen generator truck of the army air corps. It supplied the essential liquid oxygen used to make breathable air inside the gondola during the flyers' stay in the stratosphere.

Several airplane loads of instruments were flown to Rapid City; and daily freight and express packages arrived, their contents varying from machinist-shop tools to delicate vacuum tubes.

The last of the preparatory work was completed on July 9. From that time on the flight could have taken place any day, so far as the equipment was concerned. But it was essential that the flight be made during very special—and, unfortunately, rare—weather conditions, covering the area for seven or eight hundred miles east.

At last, on July 27, the long-awaited high-pressure area had drifted in from the west and promised for the next day the conditions wanted both at the Stratocamp and to the east. When, at noon, Major Kepner announced officially that the weather was satisfactory for the flight and that the inflation would begin that evening, the camp was galvanized into activity.

Off for the Stratosphere.

Guests were barred from the floor of the "bowl"; only men with definite jobs to perform were permitted in the camp. The balloon box was opened and the huge, billowy mass of fabric was spread out on the circular sawdust-covered canvas-protected bed that had been prepared for it.

Bus load after bus load of soldiers arrived from Fort Meade. They were the men of the ground crew who were to hold the balloon in leash while the hydrogen poured into it.

At the gondola house, those concerned with the instruments were extremely busy. A definite schedule was worked out, minutes were allotted and, one after the other, specialists climbed into the black and white ball to install batteries and to give their instruments a final tuning up.

On all sides the preparations moved ahead like clockwork. At dusk the floodlights in the great ring that extended around the floor of the basin were turned on and a little later the hydrogen gas was started through the canvas tubes into the vast maw of the balloon.

By shortly after five o'clock there remained only a few last-minute tasks to be performed—the careful placing of rope ends for valve and rip-cords; the lashing on of a small mail sack; the loading of warm flying clothes and parachutes.

Captain Anderson and Captain Stevens climbed into the gondola; Major Kepner to its rope enclosed top, the better to direct the take-off.

The outer ropes were dropped; only the gondola and ten small hand ropes attached to it held the gigantic bag of gas to the earth. Major Kepner directed the final ground activity of the flight before the ascent—the weighing off. Ropes were slackened to test the balloon's lift. Ballast was adjusted until the upward pull seemed just right.

Then came the order, "Cast off!"—the balloon was away for the stratosphere.

Better Handling of Horses Urged

Old Dobbin Is Now Staging Comeback; Cost of Keep Important Item.

By E. L. Sauer, Farm Management Specialist, University of Illinois.—WNU Service.

Horses are staging a comeback, but some of their value as a source of economical farm power will be lost unless they are handled efficiently. Next to man labor, the cost of keeping work horses is one of the largest items of expense on many farms. This is often not realized because horses are usually fed on farm-grown grains and roughages and no cash outlay is necessary for their feed.

How widely the worth and expenses of horses may vary depending upon their management is shown in a study of cost account records kept by 33 farmers in co-operation with the farm management division of the University of Illinois College of Agriculture. The net cost of keeping a horse for the year varied from \$24.23 to \$76.98, or an average of \$43.58.

The number of hours of work performed by the horses ranged from 300 to 1,244 each, the average being 705 hours. The cost for each hour of horse labor averaged 6.6 cents. This varied from 3.6 cents on the lowest-cost farm to 18.4 cents an hour on the farm with the highest horse power cost. The cost for each hour's work was closely correlated with the number of hours worked by each horse, although the total cost of keeping a horse varied widely on farms where the horses worked an equal number of hours.

Feed accounted for 59 per cent of the average total cost of maintaining the horses, man labor required to care for and harness the horses accounted for another 14 per cent, shelter 9 per cent, interest on investment 7 per cent, depreciation 5 per cent, harness 4 per cent and veterinary, shoeing and incidental costs 2 per cent.

From these figures it is evident that the cost for each unit of horse power on farms can be reduced by cutting down the maintenance expenses and by increasing the hours of productive work done by each horse. The feed given the animals and the labor spent in caring for them must be governed by the work done, if horse power is to be economical. Depreciation costs may be reduced and an appreciation in the horse account effected by raising colts for replacement purposes.

Plague of Warts Cause of Heavy Potato Losses

Wart disease, which in the last few years has reduced to poverty vast potato-growing areas in Scotland and Ireland, is caused by a parasitic fungus, scientifically christened *synchytrium endobioticum*. It is capable of lying dormant in the soil for at least ten years, patiently awaiting its prey. The only effective way of countering it, notes a writer in *Tit-Bits Magazine*, is to produce varieties immune from attack. But it is one thing, laboratory workers at Rothamsted experimental station are discovering, to immunize varieties, and another to insure them giving good domestic yields.

Wart disease was originally detected in Britain in 1898; it is variously called "Black Scab," "Canker," "Fungus," and "Stag Head." It attacks the tubers and low-lying stalks of potatoes, never their roots, covering infected parts with knobby warts, which damp soil quickly converts into ugly black festers. Occupiers of land, discovering the disease in their soil, are required by law to notify the ministry of agriculture at once.

Clover Hay Good Feed

Clover is good feed. On the stock farm clover can be used for hay or pasture. Clover hay contains nearly twice as much nitrogen, 50 per cent more phosphorus, and four to six times as much calcium as Timothy hay. These are the important bone and muscle making elements. These differences are characteristic of legumes and non-legumes. The Oklahoma station compared more than 300 samples each of legumes and non-legumes. They found that the legumes averaged nearly four times as much phosphorus, and more than two and a half times as much nitrogen as the non-legumes. Legumes are an important source of minerals for both man and animals.—*Rural New-Yorker*.

Silage for Horses

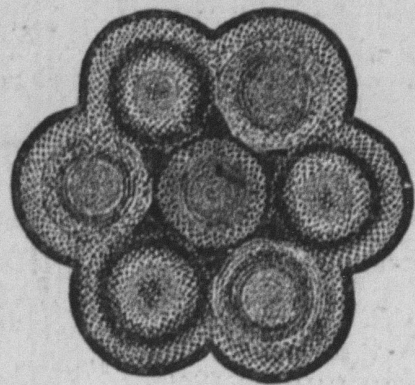
Horses can be wintered entirely upon silage but great care should be exercised not to feed them any moldy silage, writes a correspondent in *Hoard's Dairymen*. In the beginning, start by feeding a very small quantity, a double handful, and gradually increase it until he has an allowance that will maintain him in good condition. Those who winter their horses on silage tell us that they come through in fine condition.

Conditioner for Horses

To make horses appear to be less tight in the hide is to put a little more flesh on them. Horses which are thin in condition do not usually show any great looseness of hide. As they fatten they take on a sleek appearance and the hide appears to be very much looser. A mixture of 125 pounds crushed oats, 100 pounds wheat bran and 25 pounds linseed oil meal is recommended for a six-months-old foal. As he grows older, reduce bran, replacing with crushed oats.

RUG WELL NAMED "BED OF ROSES"

By GRANDMOTHER CLARK



The original rug shown measures 44 inches and requires four pounds of rags to complete. It is braided with three strands, but can be crocheted. A crocheted rug has better wearing properties. Many colors are used in the following combinations: Center circle in white, yellow, red, and black. Three of the outer circles in various rust shades. The other three circles in two shades of blue, and yellow. Outer edge is rose, yellow, black.

This rug shows that beautiful rugs can be made of rags. The regulation or common rag rug is either round or oval, with various color combinations, and when finished has no particular beauty. In making the above "Bed of Roses" rug, make seven small round rugs about twelve inches in diameter, and set together as shown here, then work rows all around to size wanted. It's a different rug and only another idea of what can be made of rags.

The best material for making rag rugs is "Linkraft." When using this new material no cutting or matching of sizes is necessary. Linkraft is a round knitted material like Jersey. It comes in links about five inches long, but stretches to about nine inches when linking together. These links are to be linked together

In solid colors or mixed as desired. Linkraft is very durable, does not fray like rag strips and Linkraft rugs weigh about 20% less than rag rugs.

If you are interested in making rag rugs, send for Grandmother Clark's Book No. 25 on Crocheted and Braided Rugs. Twenty-six rugs are illustrated, with instructions. A wonderful selection to pick from when having a good-looking rug in mind.

Send 15c to Rug Department for Book No. 25.

Address, Home Craft Company, Dept. "C," Nineteenth & St. Louis Ave., St. Louis, Mo.

Enclose stamped addressed envelope when writing for any information.

City, Long Buried Under Mud, Uncovered in China

A terrific windstorm which recently swept over northern Honan uncovered the west gate and part of a street of the ancient city of Chuihsien, according to reports from Kalfeng, the provincial capital, says the *New York Times*.

Chuihsien, which was a flourishing city situated between Weihsien and Hsinhsiang on the former bed of the Yellow river, was inundated by a disastrous flood in the early part of the reign of Emperor Chien Lunz. Shortly after the Yellow river shifted its course, and when the waters subsided no vestige of the city could be found. It had been completely covered by the mud and sand deposited as a result of the flood.

In the intervening two centuries the action of the wind has removed successive layers of mud and sand, until the last windstorm actually brought a part of the buried city once more to view. The provincial authorities have planned to continue the work of nature and completely excavate the ancient city.

DIRE EFFECT OF POISON

Believed to have been killed by anti-locust "dust" dropped from government airplanes, two white rhinoceroses, five waterbuck and several smaller animals were found poisoned in the Illuhluwe game reserve in Zululand, Africa. It had killed scrub grass over a wide area.—*Montreal Herald*.

CONSTIPATION Can be Helped!

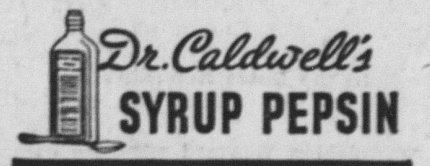
(Use what Doctors do)

Why do the bowels usually move regularly and thoroughly, long after a physician has given you treatment for constipation?

Because the doctor gives a liquid laxative that can always be taken in the right amount. You can gradually reduce the dose. Reduced dosage is the secret of real and safe relief from constipation.

Ask your doctor about this. Ask your druggist how popular liquid laxatives have become. The right liquid laxative gives the right kind of help, and the right amount of help. When the dose is repeated, instead of more each time, you take less. Until the bowels are moving regularly and thoroughly without any help at all.

The liquid laxative generally used is Dr. Caldwell's Syrup Pepsin. It contains senna and cascara, and these are natural laxatives that form no habit—even in children. Your druggist has it; ask for—



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HEY, BOB—BRING MY MAIL OUT FROM TOWN, WILL YOU?
 DON'T EVEN ANSWER HIM! WHAT DOES HE TAKE YOU FOR... THE PONY EXPRESS?
 WELL, BOB... HOW ARE YOU THESE DAYS?
 TELL HIM YOUR WORST PAIN IS CAUSED BY FOLKS WHO CAN'T MIND THEIR OWN BUSINESS!
 NOT SO GOOD! I'M HAVING HEADACHES AND INDIGESTION, AND I CAN'T SLEEP NIGHTS!
 THE DOCTOR TOLD ME TO CUT OUT COFFEE AND SWITCH TO POSTUM. THE CHANGE WORKED WONDERS IN ME!
 CURSES! I'LL HAVE TO SCRAM! I CAN'T GET RESULTS AFTER POSTUM COMES ALONG!
 IT DID? THEN MAYBE BOB BETTER TRY IT! I'LL GET SOME POSTUM RIGHT NOW!
LATER
 WE'RE ON OUR WAY TOWN—ANYTHING I CAN DO FOR YOU?
 BOB, YOU'RE LOOKING GREAT SINCE YOU SWITCHED TO POSTUM. I NEVER SAW SUCH A CHANGE IN A MAN!

"I KNEW children should never drink coffee, but was surprised to learn coffee could have such an effect on me!"
 "Nothing surprising about that! The caffeine in coffee affects lots of people. It can give 'em indigestion, upset their nerves and keep 'em awake nights."

If you suspect that coffee disagrees with you... try Postum for 30 days. Postum contains no caffeine. It is simply whole wheat and bran, roasted and slightly sweetened. It's easy to make, and costs less than 1/4 a cup. Postum is a delicious drink... and may prove a real help. A product of General Foods.

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