

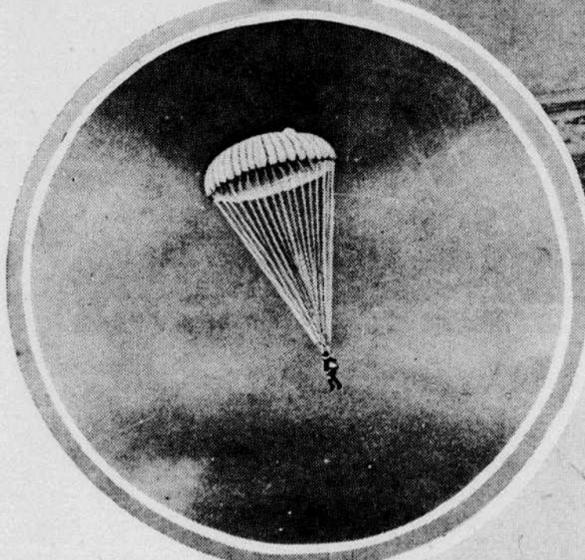
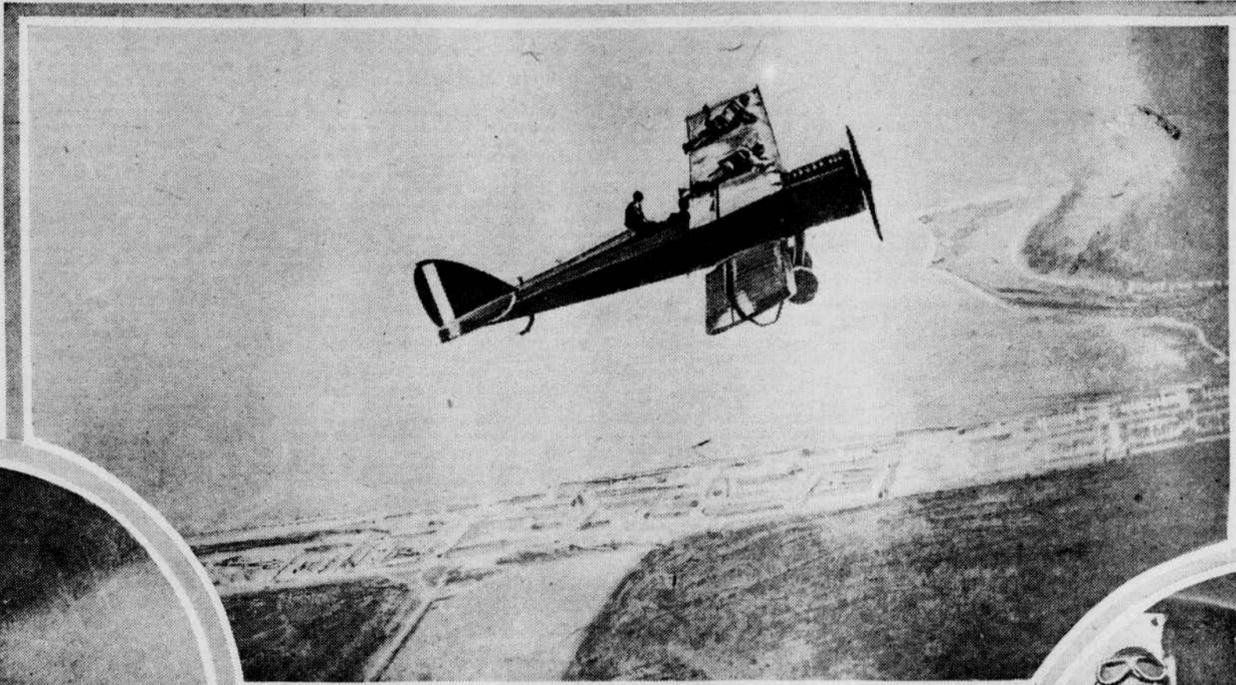
DROPPING FOUR MILES, RELYING ON FRAIL SILK BAG

Thrills Incomparable Come to Army Aviator Who Makes World Record in Parachute Leap—Simple Apparatus Devised to Protect Fliers a Medium of Sensational Stunts

By RICHARD H. WATKINS.

HERE was a time not so very long ago when an aviator was considered a daredevil. Now piloting an airplane is a prosaic occupation, and the daredevil is the parachute jumper. And the jumper himself says that within a few years the parachute will lose its reputation as an instrument for risking one's life and attaining much fame as a preserver of life.

Pictures below portray how army aviators make parachute jumps safely. Note the two flying men on the top plane with parachute packs, awaiting the signal to let go. In circle is shown the first parachute open; about 1,000 feet up the second one is used, lessening the speed of the descent. The long figure in centre is Major W. S. Schaffer, Jr., equipped with two parachutes. Arrows point to the releasing rings which must be pulled to open the parachute. At left are Staff Sergeant Ensel Chambers (with packs), who dropped 22,200 feet, and Pilot Lieut. Paul T. Wagner, who took him up.



The parachute jumper may be right, but just at the present time the ultimate in thrills on the earth, in the waters beneath the earth or in the air above it seems to be jumping or being blown from an airplane, with nothing to prevent the working of the inexorable law of gravity but a few square yards of silk. And the higher the jumper goes the more excitement he is bound to have, for there is something more than mere altitude working against the jumper when he leaps from a height of several miles.

Sergt. Chambers's Four Mile Jump Established a World's Record

One of the most spectacular jumps ever made was recently scored by Sergeant Ensel Chambers of the 135th Aero Squadron, United States Air Service, out at Post Field, Fort Sill, Okla. The sergeant established a world's record by a leap from 22,200 feet—more than four miles—above sea level.

Love may make the world go around, but it is rivalry between squadron and squadron, flying field and flying field, that makes the men of the United States Air Service go up. Chambers was gunning for a record held by another Air Service man, and his gunning was successful.

With a parachute strapped on his chest and another on his back, with most of the sweaters and gloves owned by his squadron and all of the socks at the field on him, Sergeant Chambers was hoisted into the rear seat of a powerful De Havilland plane. Then somebody put on his helmet and clinched it under his chin, strapped on his goggles and patted him on the back of the rear 'chute. Up in the front cockpit Lieut. Paul T. Wagner, also voluminously attired, opened the throttle, the motor roared and the big plane lumbered across the field, grew lighter and leaped into the air.

Then while Sergeant Chambers thought of many things Lieut. Wagner thought of nothing but making altitude. He kept the big ship circling around the field at the maximum climbing angle. Higher and higher the big ship roared, and as it rose the temperature dropped. At 15,000 feet pilot and jumper began breathing deeply, for it is about this level that the thinning of the air is first noticed. Making no unnecessary movements, the two men watched the altimeters. Slowly the little indicators in both cockpits moved around the dials. The first 15,000 feet was easy, for the motor then had all the air it needed, but above that height the motor, like the men, lost power.

When his instrument had steadily pointed at 21,000 feet for some time Lieut. Wagner saw he could force the plane no higher. He turned and pointed downward with a thickly swaddled finger. Then it was Sergeant Chambers's move. The multitudinous garments had been to keep heat in his body. Sergeant Chambers decided that his fingers were not numb enough to interfere with pulling the little trip cord on which his life depended.

By a great exertion he heaved himself up off the gunner's stool on which he had been sitting and tumbled over the side of the machine. By good fortune he dropped under the ship before the tail could strike him. From here on his own words best describe the drop.

"I can't recall jerking the trip cord as I shot downward, but I must have done it somehow, for after I had dropped fully 2,000 feet I heard a flutter and sudden loud report as the parachute which had been packed on my chest opened up. I was pre-

pared for quite a drop, for I knew the thin air would take some time to open the parachute, but I had not anticipated that I would be moving quite as fast as that. There's no use trying to tell how it feels; I can't do it. However, the silk held, and so did the harness, and I found myself perfectly secure, but still a long way from earth.

"The wind drifted me rapidly toward the southeast. As I dropped lower the air got warmer and thicker, and I recovered from the lassitude I felt higher up. Lieut. Wagner was following me down in the plane. I heard later that as soon as I jumped he put the plane in a nose dive to get down rapidly to where there was real air again, for he was afraid of losing consciousness.

"At a height of about 1,000 feet I pulled the cord of the emergency parachute on my back. Although I was not moving very rapidly it opened up and helped break the landing. I was numb all over and couldn't un-snap the harness as I hit the earth, so the wind, catching the two bags, dragged me along the ground for about half a mile. Then, somewhat scratched and bumped, I came to rest in a clump of trees."

He Is Planning Another Jump From an Altitude of 30,000 Feet

Although no other young men in the flying game have yet attempted to break Chambers's record, he knows that within a month or two some one will try it, so he is planning to try for a 30,000 foot drop. To reach 30,000 feet in a plane the motor must be equipped with an air compressor, or super-charger, and the two men must wear oxygen masks and breathe from tanks. Whether a parachute will open at 30,000 feet is not known; no parachute ever has opened at that height, but, as Sergeant Chambers optimistically points out, no parachute has failed to open at that height.

Although the altimeters on the plane indicated only 21,000 feet when the sergeant jumped, the height of the field, registered as zero on the instruments, is 1,200 feet above sea level, so the correct height of Chambers's jump is 22,200 feet. His regular parachute was made of eighty square yards of Shantung silk, which was attached by means of forty shroud lines also of silk, each of 250 pounds strength, to the harness about his body. When the trip cord is pulled a pilot parachute, a miniature parachute, is jerked out of the pack.

This parachute, about two feet in diameter, pulls the big chute from the pack. The whole thing weighs about thirty pounds.

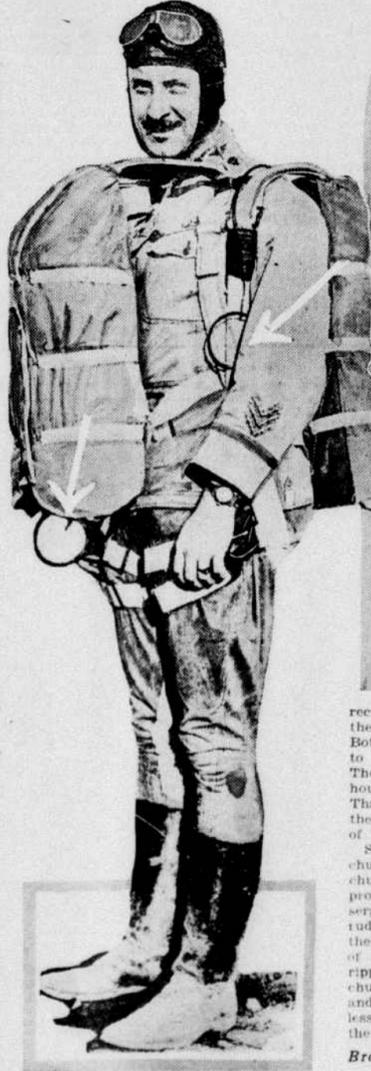
While parachutes are still virtually in their infancy as yet, as a writer in the *Air Service News Letter*, organ of the Air Service, recently pointed out, the airplane parachute has now been developed to a point where in case of accident to the plane any pilot or mechanic who knows something about them would unhesitatingly dive over the side, trusting his life to one of them. During the war observers in observation balloons used parachutes, and many a man reached the ground in safety after an enemy scout plane had fired his balloon. Plane pilots, however, crashed to death when their ships were disabled, for it was not thought possible to make use of an aerial life preserver in a machine making from sixty to a hundred and sixty miles an hour.

In order to push along the parachute and make the air safe for aeronauts the United States Air Service has established a regular school and experimental laboratory at McCook Field, Dayton, Ohio. The students learn to make parachutes, and, more important still, to fold them.

"Too much stress cannot be placed on the necessity for care and inspection in folding a parachute," the *News Letter* writer, who happens to be a parachute jumping aviator, remarks feelingly. "Our motto is: 'Put your trust in God, but be sure your chute is folded right.' If at any time a United States Army type A chute fails to open properly some one has missed a bet on the folding table."

This type of parachute is tested by releasing it attached to a 200 pound weight from a plane travelling at 150 miles an hour. The new parachute has a forty-eight inch vent in the apex, which opens fully as the plane spreads out. This vent is designed to prevent the sudden jerk which may rip the silk to ribbons or even injure or kill the jumper whose heart is not as strong as his nerve. The vent is closed automatically by means of shock absorber rubbers, and the descent is made at a speed of from fourteen to eighteen feet per second, depending on air conditions. The jumper lands with the same force as if he had made a free jump of about ten feet.

Within certain limits it is possible to steer a parachute. A jumper can side slip the



record of their own. So Madan climbed into the pilot's cockpit of a Le Pere biplane and Bottrell, with two parachute packs strapped to his body, got into the observer's seat. The Le Pere was headed upward for an hour, when the altimeter showed 29,500 feet. That seemed to be about the "ceiling" for the plane, so Bottrell started to climb out of the cockpit.

Somehow the release ring of his parachute caught and the next instant the parachute was blown open by the blast of the propeller. The big parachute dragged the rudder backward. His left arm struck the rudder. His arm was gashed and some of the ligaments were torn. One of the straps of his harness caught in the rudder and ripped the big control off the tail. The parachute itself was ripped from edge to vent, and three shroud lines were cut. Nevertheless it opened and Bottrell, bleeding from the wound, drifted earthward.

Broken Rudder Put Madan in Most Perilous Position

The man out of luck, however, was Sergeant Madan, who found himself four miles above solid earth in an airplane without a rudder. After some rapid experimenting he found that by throttling down and tipping the plane slightly to one side with the ailerons he could maintain a straight flight. He glided cautiously downward to about 8,000 feet where, juggling with his throttle and ailerons, he succeeded in making a wide and wavering turn. He then straightened out, and heading straight into the wind, glided downward into Wilbur Wright Field, which is much larger than McCook Field, and therefore presented a better chance for a man to land a rudderless plane. He made a perfect landing.

Meanwhile Bottrell drifted down. Although he lost much blood, he retained consciousness. At 1,000 feet he released his emergency parachute and came to earth safely in a ploughed field. He was given medical attention in time to prevent serious consequences from his wounds.

Although Sergeant Bottrell's method of leaving the plane was unconventional, it may become the ordinary thing for a pilot in a disabled or burning ship to loose his safety belt holding him in the cockpit, jerk his trip and be lifted bodily out of the machine. Several inventions, including the installation of a cockpit with a back designed to shoot the pilot out above the tail of the machine, have been tested out successfully in the army.

Down on the Mexican border the parachute has also found its place. Lieut. Alexander H. Pearson of the Twelfth Aero Squadron at Douglas received a verbal message from the commanding officer at that station to deliver to a detachment of cav-

Sergeant Chambers, Eager to Keep in Lead, Plans to Outdo His Own Remarkable Performance by Making Another Plunge, This Time From an Altitude of 30,000 Feet

and infantry thirty miles away. Pearson ascended with a pilot in a fast De Havilland, located the troops, signalled to them from the plane and then stepped off the machine at 3,000 feet. He landed within a half mile of the outfit and delivered his message.

Down in Texas Lieut. John H. Wilson of the Ninety-sixth Aero Squadron established a record of 19,861 feet in a jump which antedated that of Sergeant Chambers. It took Wilson seventeen minutes to come down, and on the way he met a stratum of rough north wind which so tumbled him around that he announced he thought he had also made a new loop record. He steered to safety in a soft looking turnip field.

An effort at a record jump that turned out to be what even an Air Service man will admit was a thriller was staged by Lieut. A. G. Hamilton at Carlstrom Field. Lieut. P. H. Downes carried him upward through a heavy broken layer of clouds at 4,000 feet, a lighter cloud formation at 10,400 feet and a mist at about 15,000 feet. At an altitude of 29,900 feet the motor began to miss and Downes signalled he could force the ship no higher.

Hamilton thrust his feet over the edge of the cockpit, paused a moment and then pushed himself off. He shot downward, jerking hard at the releasing cord of his only parachute. He fell through the thin air for 2,000 feet before the parachute opened. When it did snap into shape it did so with a report like a pistol shot. Looking up, Hamilton found that the rubbers designed to close the vent in the silk had broken. He shot toward earth at a speed which meant that at the luckiest he could not escape broken bones.

He dropped downward through the successive layers of clouds. The Le Pere followed him, its wires whistling in the wind at the speed of the downward descent. Downes was powerless to help him. When Hamilton caught a glimpse of the ground through the fog he saw he was drifting past a creek with trees overhanging its bed. Deciding that he still had a chance, Hamilton climbed up the shroud lines on one side of the parachute. The big silk umbrella slipped sharply down toward the creek. He continued to fight against the wind, which was drifting him from the little stream. Finally he crashed through the trees. The branches he passed through caught the big parachute and he dropped lightly to the bed of the creek.

The parachute jumpers of the future, so the men who use them today say, will be so safeguarded from harm and even from discomfort that a jump from a plane will be much less dangerous than a jump from a sinking ship with a life preserver. Some see the computer on the 5:15 peering over the side as the giant passenger plane approaches his town and then walking to a trap door with a cigar in one hand and the trip cord of a parachute in another. Others, less fanciful, point out that in almost any kind of air disaster save sudden crashes near the earth the man with a parachute on his back is comparatively safe.

The R-34, the big British dirigible which first crossed from England to America, carried a parachute for each man, and the first of the aerial visitors to reach the ground here was Major John Edward M. Pritchard, who dropped 1,500 feet from the navigating compartment of the aircraft to Roosevelt Field, Minnola, to make sure that everything was ready for the landing of the dirigible.