

# CLOUD CRASHING

At noon, on July 1, 1937, a KAI-4\* two-place sailplane took off from the Kazan Aerodrome by airplane tow, piloted by the Soviet master soaring pilot, I. Korotov, and, carrying as passenger, Adjamoff, also a soaring pilot and student of the Aviation Technical Institute. Korotov planned to try for altitude, as the conditions for such a flight were very favorable. Big cumulus clouds were everywhere, with the cloud bases at 6500 feet and practically no wind.

Having taken off and made one circle of the field, Korotov's sailplane hit a strong updraft. He immediately released from the tow plane, although he had no more than 400-500 feet of altitude. The pilot of the tow ship did not notice that the sailplane had released and kept on climbing for some time before discovering it and landing. Korotov's flight was officially observed by the Sports Commisar of the Central Aeroclub of the USSR.

Flying over the aerodrome, Korotov soon gained an altitude of 6500 feet and later climbed to 11,800. At that altitude, he crossed over to a very big formation of cumulus clouds, which were just over the city of Kazan where he soared for over an hour and a half. Soon the observers saw him turn back and fly towards the airport, where the sailplane seemed to fly to great height. A few minutes later the ship was seen entering an enormous cloud, which had the appearance of a thunderhead. For fifteen minutes the KAI-4 was out of sight. Then the observers saw parts of the ship emerging from the cloud—a wing—parts of the fuselage—and at last, two parachutes, bringing down the pilot and passenger to safety.

According to the story of Korotov and Adjamoff, as well as the findings of the investigation committee, we have this account of what happened in the cloud. On entering the cloud, the sailplane immediately encountered a very strong upcurrent of 23 feet per second. Rain and hail threatened to tear the fabric off the wing and a blizzard inside the cloud buffeted them unmercifully. At times the wings of the ship were covered with ice. The air inside the cloud was extremely turbulent. As the KAI-4 ascended, the upcurrent seemed to become more narrow. The last few feet that the sailplane spiralled upward, at times one wing was in the upcurrent and the other in the downdraft.

When the altimeter read 15,100 feet, Korotov decided to try and get out of the cloud, as things were getting too tough. Suddenly the sailplane was hurled violently upward, then started to lose altitude very rapidly in a position which its crew could not determine, as they had lost all orientation. The variometer registered a rate of descent of 33 ft. per second (2000 ft. per minute). The airspeed indicator needle went up to 150 miles per hour and stuck at the peg. The ball-bank indicator, however, showed a normal attitude of the ship. When all attempts to bring the ship out of the situation proved futile, Korotov neutralized all controls and decided to wait. Due to the rapid descent of the ship, load factors on it were getting higher and higher. The passenger, Adjamoff, who held the barograph in his hands, could not move, because of the pressure exerted on his body by the rapid fall of the ship.

\*An amphibian sailplane of Kazan Aviation Institute. For take-offs from land, the wing tip pontoons are detachable and the keel is reinforced.

## The Flight of Korotov in the KAI-4

Translated from "Samolet" by Alexis Dawydoff

The next second, Korotov and his passenger heard a sound like an explosion behind them. The tail surfaces, not being able to withstand the terrific load, had broken off. Almost immediately the fuselage broke in half. Adjamoff was thrown out as his belt had broken at the same time. Korotov was left hanging on his belt, with part of the fuselage behind him. Unfastening the buckle, he jumped clear and opened his chute after a drop of 1300 feet. Adjamoff had pulled his ripcord immediately after being tossed out.

Both pilot and passenger landed safely, the only injury being a small scratch on Korotov's face, caused by the enclosure. All instruments except the barograph were soon found, and it was recovered the next day. Only part of the barograph was damaged in the fall, and enough of it was left to enable the officials to determine that Korotov had reached a record altitude of 16,156 feet.

It was thought that the breaking up of the KAI-4 was due to the fact that, after the ship was thrown violently upwards, it went into a dive because of the resultant stall and, as the sailplane was not equipped for instrument flying, its pilot could not determine the ship's position. He probably held it in the dive so that the airspeed of the ship reached 150 to 170 m.p.h. The air was extremely rough, with updrafts and downdrafts of 20 to 35 feet per second, and a sudden change of the angle of attack of the ship imposed a terrific load on the structure and caused it to collapse. This only goes to show that attempts to break altitude records should be made in ships equipped with full blind flying instruments, in the use of which the pilots must be expert. The sailplanes themselves must be built with higher safety factors, although this will mean sacrificing some performance. It may all result in two definite types of high performance sailplanes, one for thermal and distance soaring, and the other for altitude and cloud flying.

## Soaring and Meteorology

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direction, temperature, relative humidity, and pressures on the ground, as well as the record made during flight. Each pilot participating will be presented with the mimeographed log sheet, which he will be asked to fill out after his flight, whether it be of half an hour duration with return to starting point, or eight hours with a landing several hundred miles distant.

We are fortunate to have Dr. Karl O. Lange, our Contest Chairman, as the supervising official at Wichita Falls. In addition to his ground observations, he will send up his radio meteorographs every morning. With these upper air soundings and those made in flight by the various pilots, we should be able to compile data which will be of undoubted value to the science of meteorology and, therefore, to weather forecasting and, consequently, to all Americans. Again we repeat that there remains a great deal to be learned about the behavior of this ocean of air in which we live before aerial travel and commerce will be as dependable as we would like them to be, and much of it will be discovered through soaring flight.