

SOME HIGHLIGHTS OF THE
1958 WORLD GLIDING CHAMPIONSHIPS
AT LESZNO, POLAND

(Extracts from Lessons of Leszno, by Chas. Yeates in a special issue of Soaring Association of Canada's "Free Flight")

(Charles Yeates, Gordon Oates and Wolf Mix attended the meet from Canada. A Breguet 901-S and a Geier II were supplied in France and Germany respectively. Teams from 22 countries competed and field facilities included army tents, a dining room for 300, fully equipped repair and instrument shops and a loudspeaker system. Polish teams assembled, provisioned, de-rigged and retrieved sailplanes. Flying took place over flat countryside with innumerable landing places, no fences and few overhead wires. Towing was done by twenty 5-cyl. 160 hp Junak II tugs. Finish and starting lines, besides circling of triangular course turn-points had to be done below 1,000 metres. Weather prediction was good.)

Monday, June 17th, first day

The task was to fly an out-and-return race southwest to the airfield at Jelneia Gora over a total distance of 230 km.

The weather was clear and relatively weak lift forecast. By 11.30 a.m. all sailplanes had been launched and many were heading straight across the starting line. Reasonably good progress during the first 1 1/2 hours towards the hills in which the target area lay, made me over-confident and instead of stopping to circle patiently in zero sink, I flew on to the hill area and shortly thereafter landed in a small field beside a village over which no lift had been found, only 90 km from the start. The next three sailplanes seen passing overhead met the same fate, and finally an hour later the first Polish Jaskolka crept over, passed between hill summits, slowly began to circle and drifted out of sight downwind without having climbed more than 100 feet or so. Thereafter gliders passed over in a steady stream in both directions as conditions improved. Twenty-one of 62 sailplanes made the round trip.

2

Gordon (Oates) flew cautiously and landed after completing 151 km of the course, next to a factory at the end of the city of Legnica. He was surprised to be greeted by an armed guard who was one of the large number of troops stationed at this Russian army headquarters in Poland.

Pilots completing the course reported being as low as 300 feet above ground and achieving 30 km in three hours during the flight. Obviously it was necessary for competing pilots to choose the aggressive or the patient mode of attack.

Tuesday, June 17th, second day

The task was a 100-km triangular race with turning points at Rawicz and Gostyn.

Originally happy with our 55-km per hour speeds, Gordon and I were quickly deflated as results were posted showing that the day's leaders had flown at speeds of 75 to 83 km per hour. Analysis of the flight showed that we had consistently flown at less than the best speed for the thermal strengths encountered. In addition, we had climbed several hundred feet too high before starting the last glide. As a result, a minimum of 10 minutes had been unnecessarily added to our course time, and this amount was enough to drop us from 17th to 24th and 25th place.

The method of calculating best speeds for any sailplane was described in detail in a recent issue of SOARING magazine, and is not dwelt on here. A device which I used to good advantage through the rest of the contest is shown in Figure 1. Basically it is a device that can be laid on a map during flight to determine how far the sailplane can go with a given amount of altitude at various flying speeds. Stated another way, it can indicate how much altitude will be consumed flying between two points at a chosen flying speed. It is simply a graphic expression of a sailplane's sink vs. airspeed curve on celluloid, and it has proved extremely useful, even though wind effect must still be estimated.

Wednesday, June 18th, third day

The task was a goal race to Warsaw over a distance of 315 km.

Launching time at 11.00 a.m. found a trough of low pressure with its stratus clouds and threat of rain almost upon us. It became clear that not only was it difficult to get away, it was no easy job to stay up. Most aircraft were forced to land and take a second launch. Practically no turbulence was encountered during the second tow. Some gliders had already crossed the starting line to land shortly after or drift along on course in marginal conditions; the overcast was thickening and the only sunshine lay downwind towards Warsaw. Therefore from the 700-m release height I turned immediately, crossed the starting line, pointed the sailplane towards Warsaw and passed directly over Leszno with almost no hope of finding lift. Zero sink was encountered at 300 m height and held, as the wind drifted the Breguet along the course. The sight of woods sliding by below was disconcerting, but forced one to concentrate. Ultimately, the lift increased to 1 1/2 m per second, and eventually a height of 600 m was attained.

The flight continued eastward in this fashion for almost 2 hours before the sunshine and stronger thermals were encountered. Almost a third of the sailplanes had been forced to land in the first 50 km.

Gordon and I met in a thermal approximately 100 km from the starting point and climbed to cloud base. Reaching this height about two minutes before Gordon, I left and pointed along below, where wisps of cumulus puffed and quickly disappeared. Gordon shortly afterwards straightened up to leave the thermal and chose to cross a band of clear air towards heavy cumulus only 5 or 6 miles to the south. Looking back, I was surprised to see the Geier descending rapidly. This 15 to 20 degree difference in course direction put Gordon through a large sink area which ultimately left him to struggle to a landing 150 km from the start. This seemingly minor difference in course put Gordon in 21st position as compared with my 14th spot for the day.

Not much later, I climbed to another cloud base with Mestan of Czechoslovakia in his blue Demant sailplane. He disappeared into the cloud about 15 seconds before I reached cloud-base, and at this point I decided to push along the course rather than follow him into the cloud so closely. Mestan came out of cloud approximately 1,500 feet higher and passed directly overhead on course towards the next cloud, which appeared to be dissipating. I found it necessary to struggle in this weakening lift, while Mestan, with his extra altitude, pressed towards a cumulus

cloud that was beginning to develop.

My landing took place 209 km from the start, while Mestan reached 256 km, thereby attaining third position for the day.

This was the second example in one day of how fine a difference there is between high and low standings during the world gliding competition. Looking back, it seems possible that I should have remained at cloud base below Mestan for a minute or a minute and a half and then followed him, assuming that he could climb consistently and leave the cloud immediately lift weakened.

Sunday, June 22nd, fourth day

The task was a 95-km goal race to the east.

Conditions along the route were extremely changeable. Towering cumulus alternated with completely overcast skies and brilliant sunshine, as the wind blew strongly across the course from the southwest. Much depended upon when the task was undertaken. Halfway along the course Gordon and I ran into complete overcast and separated while struggling close to the ground. Gordon landed 65 km out, contacted his crew by telephone, was retrieved, but reached Leszno too late for a second start.

In the meantime, Resch of Austria and I worked together unsuccessfully and landed in the same field about 50 km from the start. Resch radioed his crew and the main station at Leszno to report both his and my position. This kindness on his part meant that we were both able to reach Leszno in time for a second start under favourable thermal conditions. We each reached the goal handily, and unquestionably it was due to his radio equipment and the hard work of my ground crew that enabled me to come 12th that day.

Tuesday, June 24th, fifth day

The task was the long-awaited free distance.

Ten pilots flew more than 500 km and fifteen others exceeded 450 km, with many of these landing on the border between Russia and the Polish Peoples Republic. While there was no con-

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6

Later, while circling between 300 and 400 m over large evaporating vats and adjacent factory smokestacks, it seemed that the plant manager was giving me a special conducted tour of the premises. Still later, while circling over the Inowroclaw airdrome I was surprised to see an ancient biplane take off, climb and pass by a few hundred yards away at my altitude, whereupon a parachutist crawled out on the lower wing and dropped off in a business-like manner. This unusual view of parachuting was fascinating, and the performance was repeated three times before the weak thermal died and I had to press on.

Ultimately a landing was made just short of what turned out to be the receiving end of an army artillery range, 179 km from Leszno.

ENHARGE
FIG. 1 to
occupy most of
the space,
and insert

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test regulation forbidding flights into Russia, the rules did specify that effective distance for marking purposes would go no farther than the border.

a/—
During this flight I began to mark my position on the map during each thermal climb, and it was surprising to note the extra distance covered while zigzagging on short runs between cloud-topped thermals.

B
Fields in eastern Poland are smaller and more swampy than those encountered during earlier flying. Weiss of France turned his Breguet away from the field he had chosen on final approach because it looked more like a lake than a grain field. Unfortunately he turned directly into, and slammed through, a power line which pivoted the aircraft, stalled and dropped it almost on the doorstep of a farmer's cottage. He was unhurt, but the machine was wrecked. Gordon also had landing difficulties. He chose to land diagonally across a grain field and did not discover until after a violent eruption that he had actually been landing across two fields separated by an invisible mound of earth a foot high and just as wide. Hitting this forced the glider to ground loop with the result that the fuselage broken in half between the trailing edge of the wing and the tailplane. Because of language difficulties and a not very efficient telephone system, the report of his plight did not reach us until the following day. Although Polish specialists performed the impossible by rebuilding the Geier within 24 hours of his return, he was forced to miss the last contest day.

Thursday, June 25th, sixth day

This day's task was a distance flight along a line through Inowroclaw, northeast from Leszno, under very light conditions.

Five-and-a-half-hour flights were made with maximum height never being more than 950 m. Distances up to 209 km were flown.

Nick Goodhardt and Tony Dean-Drummond, who flew farthest, left earliest. There were many distractions along the course to take one's mind off weak lift and constant circling. Once, while circling at about 800 m with Barbera of France, three twin-engined jet light bombers flashed by half a mile away, below us.