

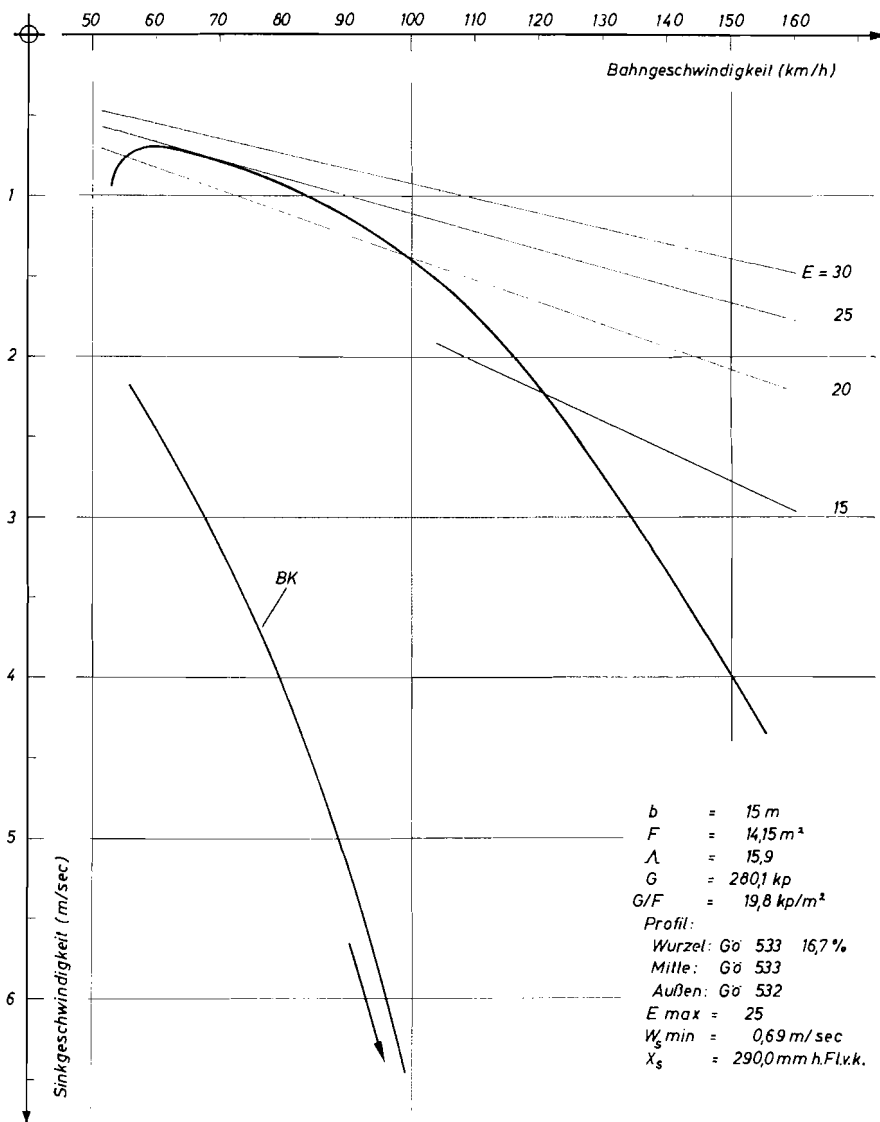
Schleicher K-8

get points for the entire speed range in each flight. In order to eliminate as far as possible any systematic errors, the flights were carried out over a wide area.

Because of the accuracy of the recorders, not much scatter was expected when the measurements were reduced to ground level conditions. The sinking speed was within 2% and forward speeds within 1 to 1.5 km/h which was particularly important for low speed flight. The scatter is average compared to other results, but considerably greater than expected from the measuring equipment. Because of the varying turbulence, atmospheric influences on the aircraft (e.g. change of surface texture and slits due to temperature, humidity, insects) and small angles of yaw and control surface movements at low speeds, the points do not lie within a narrow band. Mainly because of scatter due to weather, a great number of measurements were necessary so that the resulting polar would indicate a high degree of probability.

As the scatter between individual measurements indicates, the weather conditions were not constant. In addition, it was not always possible to make the same number of measurements on each flight, so that the polar curves shown have differing probabilities. One can express these conditions if one plots the frequency of all the sinking speed deviations from the polar.

An attempt was initially made to determine mathematically the polars from the principle of least squares by EDP (electric calculator) but it was found that a free-hand curve was actually better in practice because it was easier to take account of irregularities in the



K-8, Speed Polar