There was a nearly complete absence of accidents. The only damage which interferred with flying was suffered by Weinholtz's Phoebus when he ground-looped in a rough field and cracked the fuselage behind the wings. This was repaired by Boelkow with the loss of only one contest day.

All competitors were very well qualified, and there is no reason to suppose that poorer showings by any sailplane are due to pilot incompetence. Of course, differences in pilot skill affect the performance which sailplanes can yield, just as sailplane qualities affect the ability of the pilot to utilize his skill. Neither sailplane nor pilot can consistently achieve results beyond the capabilities of the other. Where several different pilots fly machines of the same type, effects of pilot differences can reasonably be expected to be reduced. It is generally true that the better pilots tend to fly the machines with greater performance possibilities; pilot factors thus may magnify differences among sailplanes, but probably rarely reverse the direction of the differences. With these reservations in mind, and with malice to none, we offer the following conclusions concerning sailplane performance:

1. There is now an appreciable difference in the performance of Standard and Open Class sailplanes. It is unlikely that even the most highly practiced team could duplicate the feat of the Poles in 1965 of flying a Standard Class machine to an Open Class victory if faced by any substantial number of Open Class machines with the performance capabilities of the BS-1, D-36, AS-12, SHK or Libelle. The effect should be to strengthen both classes and make separation of the two in competitions practically mandatory.

Photo courtesy German Aero Club

The AS-12, Schleicher's production version of the D-36, showed a very high degree of workmanship and finish.

2. The example provided by the remarkable performance of the Hidalgo, designed by members of the Akaflieg Stuttgart, should constitute a powerful stimulus to the development of extremely light fiberglass Standard Class machines in which higher performance is gained by aspect ratios well over 20. The Hidalgo has an aspect ratio of 24 with a span of only 43 feet; nevertheless, a normal wing loading is retained by very careful design. Empty weight is only 226 pounds. This little jewel appeared to outperform every Standard Class sailplane in the contest!

3. The super-sailplane configuration is not simply a passing design fad like swept tails, nor are the BS-1, D-36 and AS-12 hot-house plants. These machines, stressed for higher speeds, incorporating special wing profiles and variable-camber flaps, high-aspect ratio wings free of airbrake discontinuities, ultra-smooth and precise fiberglass surfaces, and low-drag tail configurations, are murderous to less sophisticated competition. First rank Open Class competition sailplanes will necessarily incorporate most of these refinements in the future.

4. In this contest the BS-1 was the fastest of the three supersailplanes and the AS-12 the slowest. The data indicate that the AS-12, and especially the BS-1, tend to be comparatively somewhat better still under stronger weather conditions. The D-36 may be superior to both the others in weak conditions.

The AS-12 is a beautiful and at least superficially flawless sailplane. If the difference in performance seen in this competition is not due to pilot skill, then it probably arises from differences in profile characteristics. The AS-12 profile was derived from that used in the D-36 by multiplying the y-coordinates of the D-36 profile by 1.1, yielding a 14.4% thick wing with somewhat more camber. This section has not yet been wind-tunnel tested. The supersailplanes will be expensive: rumored German price for the BS-1 is $7000 and for the AS-12 $7500.

* * *

5. Although slower than the super-sailplanes, the SHK is a very good machine and appears definitely superior to the Libelle. Relative performance of the SHK is considerably better under weak conditions, and then it may actually be better than the AS-12.

6. Although superior to all the Standard Class machines and to the Geier and HKS-1, the Libelle did not perform to expectations in this contest. Relative performance was about the same on both strong and weak days.

7. The poor performance by the all-fiberglass Kria and SB-7 illustrates that fiberglass designs with low aspect ratios or with weak wing profiles are just as bad as if they were made of less exotic material. The Kria actually appears far worse than the L-Spatz-55 with a non-laminar wing.

8. Performance differences are smaller among Standard Class than among Open Class sailplanes. Consequently, point-earning capabilities are more affected by weather and the reliability with which the sailplane can be flown. Although any machine might be moved up or down a notch or two, the following rankings are probably roughly correct for three important parameters:

Strong Conditions	Weak Conditions	Reliability
1. Phoebus	1. K-6E	1. L-Spatz-55
2. K-10	2. Phoebus	2. K-6E
3. K-6E	3. K-10	3. K-6CR
4. SF-27	4. Edelweiss	4. SF-27
5. SB-7	5. SF-27	5. K-10
6. Foka	6. Zugvogel IV	6. Zugvogel IV
7. Edelweiss	7. K-6BR/CR	7. Edelweiss
8. K-6BR/CR	8. Foka	8. Foka
9. Zugvogel IV	9. SB-7	9. Phoebus
10. L-Spatz-55	10. L-Spatz-55	10. SB-7

9. Under conditions like those at Roth, these factors combine to make the K-10 the best point-earner,