

Quo vadis – Standard Class?

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For the third time the Standard Class has successfully taken part in a World Championship. At Junin in Argentina, 23 sailplanes took part in the Open Class, among which were two Standard Class, and 38 sailplanes took part in the Standard Class contest, that is, a total of 40 Standard Class sailplanes (63% of the total), and 22 of them were Kaiser Ka-6, the first winner of the OSTIV Trophy in Poland in 1958.

In St. Yan in 1956 a suggestion was made by OSTIV for a specification for Standard Class sailplanes on the basis of which C.V.S.M. (Sailplane Committee) of the F.A.I. founded the Standard Class, and as far as contests were concerned, introduced it in place of the two-seater class. Most designers had a proper understanding about what was necessary for the general development of soaring, typified by the Ka-6, Standard Austria and Vasama. This refers to sailplanes which are not just usable for World Championship flying, mounted by specially developed flying jockeys, but also suitable for average weather conditions and average pilots in flying clubs. That is the Standard Class Sailplane.

But before one can give an answer to the problems confronting us, various and differing opinions and ideas (Ref. [1]), must be mentioned. A great deal has been written on the basic design of sailplanes, and Eppler's analysis (Ref. [2]) clarifies certain problems including a study of the best wing span. The question of a 12-meter span glider has been dealt with by Dr. C. D. Cone (Ref. [3]) in the U.S.A. at a technical symposium of the S.S.A. Particularly in the U.S.A. it has been suggested (C. Oldershaw, J. Graves and others) that the Standard Class is too big and that the span should be reduced to 12 meters because in effect the present Standard Class is merely the "Open Class with restrictions". The last appearance of small-span sailplanes in World Championships was at Örebro in Sweden in 1950 when the Jensen (Denmark) and Hütter-28 (Germany) 12-meter sailplanes put up a good show.

Designers have shown, particularly those who have worked closely with aerodynamicists, that one can get the same and even better performance out of a 15-meter span sailplane than out of an average unlimited span job. It is clear (Ref. [2]) that on the basis of a hypothetical 12-meter specification if defined by OSTIV-CVSM, one could produce an outstanding short-span sailplane. It should be mentioned that the present Standard Class definition leaves an open door for shorter span machines. After all, it only says that the span must not be more than 15 meters. So, should we not see a shorter span sailplane flying before we take administrative steps toward a modified specification? We could then decide whether it was worth-while.

On the other hand, the problem of the Standard Class is not only the span, but the suitability of such machines for club activities, good thermal and wave flights and so on. If such a short-span (12 meters) sailplane could fulfill all the requirements of club activities and at the same time be even cheaper and simpler and yet have the same performance as the Ka-6, such a machine could make its way right to the top at World Championships. Is it possible that the present OSTIV/CVSM requirements could be responsible for the existence of such an aircraft? Definitely no! In the meantime, designers have shown what you can do with a requirement if

it is not detailed word for word, and the results have been Foka, Edelweiss 3-Siren, SB-7. And yet none of them has designed a 12-meter super-machine. The present requirements for Standard Class machines should be modified, not in the direction of the Edelweiss which with Lacheny as pilot won the FAI Silver Medal in Argentina for the second place in the Standard Class, but in the direction of the "Standard Spirit" which can be precisely defined in an engineering manner. Dr.-Ing. E. Ciani, the Italian designer, in a letter to the author (March 6, 1963) wrote: "Only rules modification can give a new direction to designers. Speaking of 'standard spirit' and so on is a purely philosophical exercise. Some rules modification is necessary". There are other views expressed by Ciani which will be published separately. There remain several problems in mainly two categories, sporting and technical, which require solution:

1. The FAI attitude toward Standard Class and World Championships.
2. The technical specification for the Standard Class sailplane.

These two problems are closely inter-dependent and thus delineate the present problems faced by soaring in general. The St. Yan rules were broad in outline, not only because one could not tell whether, without fuselage dimensional limits, various flying pencils would be born, but because it was desired to have minimum limitations, less than in 1938 (Ref. [1]) so that progress should be encouraged. The appearance of the Foka, Edelweiss-Siren (Cayla's second single-seater apart from Fauvette), SB-7, etc. are of course the result of the St. Yan rules, and these machines are certainly an advance and not a disaster for the Standard Class. The Foka and Fauvette are in production and used as club machines. Lacheny's great success with Edelweiss will have particular influence on the question of a racing machine, considering specially the reclining pilot position. The pencil can be sharpened in other ways, such as persuading the pilot to lie face downwards (or forwards). He then gets a perfect view, smaller fuselage cross-section, less wetted area, smaller empennage, etc. But do racing machines, in spite of having a 15-meter span, belong in the Standard Class? If such machines are also economic, simple in construction and entirely suitable for club use, why not? But in this aspect the flying instructor should also have his say. We assume that the racing machines, apart from span, which are not built to the exact Standard Class specification do not belong to that class. Then we come to the simultaneous solution of the two questions:

As far as the FAI is concerned, the Standard Class in World Championships should be flown by such aircraft as can have a broad utilization as club machines and are not racing machines.

Today, now that we have such a success in the production of Standard Class machines, where over 50% of all the Standard Class in Argentina were Ka-6 (and aerodynamic and structural improvements are still possible), no wonder the Chairman of the FAI-CVSM, A. Gehriger stated clearly at the Junin meeting of the OSTIV Sailplane Development Panel (Feb. 20, 1963): "Mr. Gehriger expressed appreciation

of the fact that no essential changes to the FAI specifications have been suggested by the panel. In view of the excellent results already obtained with present Standard Class sailplanes, he was in favour of leaving the specification as it is for the time being. He noted the wish of the panel to incorporate a restriction of some sort on the fuselage dimensions, but indicated that he would need at least a month's time to submit the pertinent proposal to the FAI, and for studying it. The next FAI meeting being planned for September of this year (1963), he urgently requested that he have the proposal in written form before the beginning of August 1963".

There is hardly enough time for this to be done, and the OSTIV Sailplane Development Panel, which must consider any proposals, will not be meeting until September in Varese which will be the first opportunity for all the experts and interested parties to discuss the matter.

In order to clarify the problem of the Standard Class machine for club use, OSTIV is calling a meeting at its recently-founded International Gliding Research Institute in Varese (which the President of OSTIV, Mr. L. A. de Lange discussed as early as 1960 in Cologne) from September 2-19, 1963. The location is at the Centro Studi del Volo a Vela Alpino (Aeroporto Calcinate del Pesce) in Varese. At this time, a research and training course for flying instructors from various countries will also be organized.

The flying instructors will be systematically trained in the flying qualities of various two-seaters and also fly various Standard Class aircraft, such as Ka-6, Ka-8, M-100S, Austria, Foka, Vasama, etc.

The job of OSTIV is the solution of scientific problems of meteorology and technology, and also more practical technical matters and to assist in solving flying problems so that the future development of soaring may be properly and effectively influenced. The production of highly developed sailplanes is hardly possible without scientific work and research, particularly in aerodynamics and structures. Hence one cannot deal with the practical problems even with the Standard Class without technical considerations from the flying or even from the idealistic view of the "spirit" of the problem. If we study the trend of the Standard Class, and suggest more clearly-defined Requirements so that success in the World Championships can be improved upon, it can only be done by study and the co-operation of science, engineering and flying if the future development is to be guided properly.

So the Standard Class goes forward with the watching eyes of OSTIV, CVSM, and of the whole gliding movement fastened upon it.

References:

- [1] B. S. Shenstone, B. J. Cijan: «Development and Progress of Standard Class Sailplanes», Aero Revue Nr. 3, 1963.
- [2] R. Eppler: «Die Auslegung von Segelflugzeugen», OSTIV Publication IV, 1956.
- [3] C. D. Cone, Jr.: «The Design and Performance Optimization of the Thermal Sailplane» (Technical Symposium of the Soaring Society of America 1961).

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