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Main overview:

VSO-10 "Gradient" familiarly named "Vosa (Wasp)" is a single-seated shoulder-wing sailplane with mixed structure designed initially for sport gliding. Now his performance is far from performances of modern sailplanes, but this type is still very popular by many advanced gliders and still is flying on many standard class competitions. It is equipped by self-supporting fully wooden wings with the Wortmann FX profile. The fuselage is made from a special aluminium alloy and steel with fibreglass cockpit. Cockpit has a cover from organic glass and its back part opens to the right. The wooden skeleton of wing is covered by plywood sandwich and is filled by balsa. The metal skeleton of the tail surfaces is covered with Dural. Movable parts, such as ailerons or elevator and rudder are covered with canvas. The landing gear consists of retractable main wheel and shielded tail wheel. The towing device for aero tow take-off is located in the nose of the sailplane and for take-off by winch on both sides of sailplane.

### **History:**

The initial theoretical work began in the development office Orličan Choceň in 1972. This sailplane was designed as a replacement for sailplanes VT-116 Orlík II. Regarding the costs and availability of materials a mixed design was chosen. Modern Wortmann FX wing profiles was used in the wing design, the fibreglass and sandwich design was used for surfaces. The first flight of the prototype was performed in October 1976. (The first prototype test flights ended 16. 9.1977). Serial production began in December 1978 and already in 1979 aero clubs received the first sailplanes. VSO-10 didn't replace VT-116 Orlík by their quantity but allowed performance improvement to the gliders. There was formed the first 12 pcs series of VSO 10C Gradient Club with fixed main wheel in 1979. In the same year occupied Eng. M. Brunecký and

J. Vávra on VSO 10C first and second place at the first European club class championship in the Swedish Orebro. Production of VSO 10 (total 225 were produced until 1990) in Orličan Sopotnice was replaced by licence production of fibreglass sailplanes Schempp-Hirth Discus CS.

**Main technical data:**

Wingspan	15 m
Length	7m
Height	1 m
Wing area	12 m <sup>2</sup>
Max. take-off weight	380 kg
Empty weight	234 kg
Never exceed speed	250 km/h
Minimum speed	68 km/h
Glide ratio	1:36
Descending speed	0,63 m/s