

saprà dare un importante contributo allo sviluppo del Volo a Vela, e nella speranza che, tornando in patria, ciascuno porti con sè un grato ricordo di questo soggiorno a Rieti.

AWARDS-Giving

The OSTIV-President then called for the winners of the OSTIV-AWARDS, reading the citations and handing out the following awards:

- **OSTIV-Plaque 1985 with Klemperer Award to Dr. Werner Pfenninger, USA**



Since 1948, Dr. Werner Pfenninger, who was born at Switzerland, has been working in the United States. He received the OSTIV-Plaque 1985 with Klemperer Award with the following citation:

"The OSTIV-PLAQUE 1985 with Klemperer Award is given to: Dr. Werner Pfenninger for his outstanding scientific and technical contributions in the permanent quest for higher performance of sailplanes and aircraft. Dr. Pfenninger received his technical education at the Swiss Federal Institute of Technology under Professor Ackeret - one of the great names in aerodynamics. It was there in 1942 that Dr. Pfenninger invented and tested blowing turbulators to avoid drag producing laminar separation bubbles. Just recently this work was rediscovered and many high performance gliders now use blowing holes. In 1947, together with R. Markwalder, Dr. Pfenninger designed the Super Elfe, the first sailplane which, except for its wood construction, had all the features of today's high performance gliders: a low profile fuselage, high aspect ratio wing, thin laminar flow airfoil sections

with a small chord trailing edge flap. These were the first laminar flow airfoils designed with a concave corner at the flap hinge line for increased low drag flap deflection range.

Also at Zurich, Dr. Pfenninger conducted the first, pioneering laminar flow control (LFC) experiments, where the low drag laminar boundary layer is stabilized and maintained over the whole wing by suction of air through a number of span-wise slots. In 1948, Dr. Pfenninger moved to the United States for extensive LFC research with the Northrop and Boeing aircraft companies, and now with NASA. Much of this work is directed towards a large, long range transonic aircraft. But Dr. Pfenninger never lost interest in soaring and he is now investigating LFC for sailplanes. The predicted quantum jump in performance with a lift/drag ratio of about 90 will certainly justify the added complexity. Through Dr. Pfenninger's research, the technology is now at hand to build such a super high performance glider; what is needed are sponsors. Some day such an ultimate soaring machine will fly opening new frontiers to human endeavor, and Dr. Pfenninger's lifetime work will have found its due reward."

- **The OSTIV-Prize 1985 to Heiko Friess, Klaus Holighaus, Wolf Lemke and Gerhard Waibel**

On nomination of the OSTIV-Sailplane Development Panel the OSTIV-Prize was given to Heiko Friess, Klaus Holighaus, Wolf Lemke and Gerhard Waibel with the following citation:

"The OSTIV-Prize 1985 is awarded to Heiko Friess, Klaus Holighaus, Wolf Lemke, Gerhard Waibel for their outstanding improvement in Sailplane Technology.

The famous D 36 of the wellknown Akaflieg Darmstadt had been designed in 1963/64 by the students Heiko Friess, Klaus Holighaus, Wolf Lemke and Gerhard Waibel (now diploma engineers). The D 36 won the German Championships at Roth 1964 with Waibel as pilot and was second in the World Championships at South Cerney 1965 with Rolf Spänig as pilot.

With the BS 1 of Björn Stender and the D 36 the development of families of very efficient open class glass fibre sailplanes began. After their studies Friess entered on the Luftfahrt-Bundesamt (West German aviation authority); Holighaus

designed for Schempp-Hirth the CIRRUS, NIMBUS, JANUS, VENTUS, DISCUS; Lemke for Rolladen-Schneider the LS1 to LS6 and Waibel for Alexander Schleicher the ASW 12, 15, 17, 19, 20, 22, of which the ASW 12 was the production version of the D 36.

The four ingenious designers contributed so much to the perfection of sailplanes and so to improvements of soaring performance that all of us are obliged to them who began as young boys with model flying, worked hard as students in the Akaflieg and were often successful in competitions. They know well theory and practice, design and constructions, flying and testing, calculating and certificating. They thought out new ideas, even in details, and persevered to bring them to fruition.

The OSTIV is glad to present the Prize for their most outstanding contribution to the development of sailplanes after the war to Heiko Friess, Klaus Holighaus, Wolf Lemke, Gerhard Waibel."



Heiko Friess made his studies in mechanical and aircraft engineering at the Technical University Darmstadt. He was as a member of the Akademische Fliegergruppe Darmstadt glider pilot since 1961 and a few years later he was licensed as aircraft pilot in 1966. During this Akaflieg period the D-36 was designed and constructed by the above mentioned group of four young engineers, namely Friess, Holighaus, Lemke and Waibel; it was brought to a full success.

After finishing his diploma Friess started his professional career at the German Aviation Authority (Luftfahrtbundesamt) being responsible for licensing of new con-