

XIX. OSTIV-Congress 1985, Rieti

Introduction

The XIX. OSTIV-Congress 1985 was opened on Friday, 2 August 1985 in the Palazzo della Provincia of Rieti, Italy.

The Opening Ceremony took place on a hot early evening under presence of honoured guests, scientists, pilots, crew members and friends of gliding, starting with the welcome addresses, followed in good tradition by the presentation of OSTIV-Awards by the president and a Keynote Address by Dipl. Ing. Gerhard Waibel and closed by a reception offered by the President of the Province of Rieti.

Welcome by the President of OSTIV, Dr. Manfred E. Reinhardt

"It is the first time OSTIV, the International Technical and Scientific Organization for Gliding, meets for a Congress in Italy. As always, it is combined with the World Gliding Championships.

I have the great honour to welcome you all here at Rieti. We are pleased to continue an uninterrupted series of 19 congresses held in conjunction with the World Gliding Championships, wherever these have been in the world. Now we are here at Rieti. Gliding- to our knowledge- is the only sport which combines sport, science and technique in such an effective way in one event. This tradition guarantees the nearest contact between science and technology and the practical experiences of the best pilots of the world.

Looking back, I recognize some main roots for our work in your country, in Italy. In 1958 and 1959 two expeditions were made to Rieti following scientific programs led by Prof. Georgii and Plinio Rovesti, where I had the luck to participate as a research pilot, for studying atmospheric phenomena around the Terminillo. Other technical and scientific courses were been held at the Centro Alpino Volo a Vela at Varese. This work had many results which found their way into international regulations for design, construction and safety. But we cannot relax, we need new ideas for design, construction, material, instruments and also more knowledge about many atmospheric phenomena which we still have not understood yet.

OSTIV was and will be a meeting point according to our Constitution "to encourage and coordinate internationally the science and technology of gliding and the development and use of sailplanes in pure and applied research".

I thank you that you are sharing our interest and that you participate in this Opening!

Address by the President of the Province Administration of Rieti, Prof. Mario Marchionni

L'Amministrazione Provinciale di Rieti è particolarmente lieta di ospitare nella presente cerimonia di apertura del XIX Congresso Scientifico e Tecnico dell'OSTIV, che si svolgerà nell'aeroporto di Rieti in concomitanza con i Campionati Mondiali di Volo a Vela, gli scienziati ed i tecnici convenuti nella nostra città da ogni parte del mondo.

Insieme al benvenuto ed al cordiale saluto miei personali e del Consiglio Provinciale, porgo a tutti gli studiosi dell'OSTIV l'augurio di risultati scientifici e tecnici degni dell'importanza del Congresso e della felice tradizione della nostra valle reatina, tanto cara non solo ai volovelisti italiani, ma anche ai numerosi piloti stranieri che hanno poi trovato il luogo ideale per misurare i loro alianti verso i traguardi più impegnativi che il volo veleggiato propone.

La Sabina, terra di storia millenaria, è orgogliosa della vostra presenza e vi allinea al "via" del Congresso dell'OSTIV, con i piloti partecipanti alla competizione mondiale, con un unico applauso.

Voglio pertanto rivolgere al Presidente dell'Organizzazione Scientifica e Tecnica del Volo a Vela Internazionale ed a tutti gli studiosi che daranno vita a questo Congresso, l'augurio di un buon lavoro.

E facendomi portavoce del Consiglio Provinciale di Rieti, rivolgo a tutti gli uomini di scienza qui convenuti anche l'augurio di una piacevole permanenza nella valle reatina e di successi uguali al grande livello di preparazione scientifica e tecnica di tutti i soci dell'OSTIV presenti nella nostra città.

Address by the Director of the World Gliding Championship Rieti 1985, Prof. Dr. Piero Morelli

Ladies and Gentlemen,
After more than thirty years of technical and scientific cooperation with and within OSTIV and, at the

same time, of active participation in glider design and gliding competitions I can assess on the basis of personal experience the value of the opportunity OSTIV offers to support and to enhance the development of the sport of gliding through a continuous implementation of scientific and technical knowledge.

It is understood, therefore, that the OSTIV Congress is always contemporary to the World Gliding Championships and as close as possible to its site.

Designers, meteorologists, manufacturers are often pilots themselves and sometimes competition pilots. This is one of the important reasons for the extraordinary progress of the sailplane technology and soaring performance. OSTIV plays an invaluable role in this process.

May I therefore wish to the OSTIV Congress and the OSTIV activities here a success which is in line with its tradition and high reputation.

Address by the OSTIV-Representative of Italy, Col. Plinio Rovesti

Come rappresentante italiano dell'OSTIV, sono onorato di rivolgere un caloroso saluto a tutti coloro che, con la loro opera hanno reso possibile lo svolgimento del Congresso che sta per avere inizio.

In questo momento sento di dover ringraziare, a nome di tutti i partecipanti, la Presidenza dell'Amministrazione Provinciale di Rieti, che ci ospita nella presente cerimonia di apertura; L'Aeronautica Militare, e in particolare il Comando dell'Aeroporto di Rieti, che ha allestito per noi la sala delle riunioni, oltre all'ufficio di segreteria; e ancora tutti gli Enti che, con il loro sollecito intervento, hanno contribuito alla realizzazione di quelle strutture sulle quali poggerà la macchina operativa di questo Congresso.

Tale organizzazione permetterà alle decine di scienziati e di tecnici, convenuti a Rieti da ogni parte del mondo, di svolgere la loro attività nelle migliori condizioni possibili. Tutto ciò, insieme al valore e all'alto livello di specializzazione dei congressisti, costituisce un sicuro auspicio per il successo di questa manifestazione.

Voglio pertanto rivolgere al Presidente dell'OSTIV e a tutte le eminenti Personalità che daranno vita a questo diciannovesimo congresso scientifico, l'augurio di un buon lavoro, nella certezza che ciascuno

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-