XXV OSTIV CONGRESS 1997

Preprint

Saint Auban sur Durance, France

- 3 to 11 July 1997 -
Preprint

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Foreword

This booklet „Preprints“ are containing the collection of „Extended Abstracts“ for the XXV OSTIV Congress to be held in July 1997 at Saint Auban sur Durance, France. It offers again interesting news in a wide range of objectives around our gliding sport.

May it be a good guide through the different sessions of the Congress and may it also be an interesting source of information for those who were not able to participate personally in it.

I thank authors and coauthors very much for submitting their abstracts and want to express also my sincere thanks to all who assisted in any kind in planning and preparing this XXV OSTIV Congress.

Wessling 9 Juni 1997

Dr. Manfred E. Reinhardt

(OSTIV President)
Program of the XXV OSTIV CONGRESS 1997 at Saint Auban sur Durance, France, 3 - 11 July 1997

Saturday/Sunday 28/29 June 1997
- Preliminary meetings of OSTIV subcommittees

Monday 30 June 1997
- OSTIV Sailplane Development Panel Meeting,

Tuesday 1 July 1997
- OSTIV Sailplane Development Panel Meeting

Wednesday 2 July 1997
- OSTIV Sailplane Development Panel Meeting;
- OSTIV Board Meeting

Thursday 3 July 1997
Official Opening XXV OSTIV Congress 1997

- Welcome
  - by OSTIV President Dr Manfred E Reinhardt

- Addresses by
  - Director of World Gliding Championships
  - Mayor of the City of Saint Auban sur Durance
  - President of the International Gliding Committee
  - President of OSTIV with Opening of Congress and Presentation of Awards

- Keynote Address
  - by Loek M.M. Boermans: "Glide Ratio 1 : 80, a solar challenge?"

- Reception
Lectures:

Friday 4 July 1997
- Technical Sessions

Saturday 5 July 1997
- Technical- / Training- and Safety Sessions

Sunday 6 July 1997
- Technical- / Training- and Safety- / Joint Sessions

Monday 7 July 1997
- Excursion to the GORGES of VERDON

Tuesday 8 July 1997
- Scientific / Meteorological Sessions

Wednesday 9 July 1997
- Scientific / Meteorological / Medical Sessions

Thursday 10 July 1997
- a.m.: Scientific / Meteorological Sessions (only Morning!).
- p.m.: OSTIV-General Conference 1997 (14.00 Local Time).

- Closing Dinner (Evening) -

Friday 11 July 1997
- Final meetings of subcommittees and working groups.

On special days there will be organized Joint Sessions with lectures of general interest for technical people, meteorologists, soaring pilots and other interested guests.
Papers:

Note: The precise dates and times of presentation of each of the following papers will be announced daily at Saint Auban congress area. They may not given in the order listed here.

1. Technology

1.1 Aerodynamics

1.1.1 Pressure measurements on variable incidence winglets
*Crosby, Charles, Pretoria, South Africa*

1.1.2 An empirical criterion for laminar-to-turbulent boundary layer transition
*Eppler, Richard, Stuttgart, Germany*

1.1.3 Experimental research of the configuration of wing-tip drag reduction for light aircraft
*Deng, Yaomin, Hu, Jizhong, Beijing, China*

1.1.4 Sailplane winglet design
*Maughmer, Mark D., Kunz, Peter J., University Park, USA*

1.1.5 Navier-Stokes computations on a laminar airfoil
*Soinne, Erkki, Linkoeping, Sweden*

1.1.6 Numerical predictions of ground effect on NACA 0012 aerofoil
*Darida, Mauro and Smrcek, Ladislav, Glasgow, Great Britain*

1.1.7 Airfoil design for sailplanes and ultralight aircraft
*Reneaux, J., Thibert, J.J., Rodde, A.M., Chatillon, France*

1.1.8 Comments on progress of wing profile aerodynamics related to Standard Class glider performance
*Koivisto, Pekka, Helsinki, Finland*

1.2. Flight Mechanics, Performance

1.2.1 Aerodynamics, dynamics and performance prediction of sailplanes and light aircrafts
*Cairo, D.P. and Nicolosi, F., Naples, Italy*

1.2.2 The effect of inertia on the winch launch
*Riddell, J.C., Harrogate, Great Britain*

1.2.3 A theoretical contribution to the problem of tow-plane upsets
*de Matteis, Guido, Torino, Italy*
1.2.4 Use of satellite navigation for sailplane performance measurements  
Lipp, Andreas, Braunschweig, Germany

1.2.5 Trajectory of the parachute bag during the deployment phase  
Melber, Stefan., Roeger, Wolf., Aachen, Germany

1.2.6 Analysis of low speed performance  
Hermanspan, Fred, Seattle, USA

1.3 Design and Development

1.3.1 Sailplane fuselage and wing-fuselage junction design  
Boermans, Lock M.M., Delft, The Netherlands, Nicolosi, Fabrizio, Naples, Italy

1.3.2 Design and analysis of the standard class tailless sailplane DUTAG  

1.3.3 A comparative evaluation of emergency parachute rescue system design aspects  
Woollard, Mike G., Letchworth, Great Britain

1.4 Loads, Materials and Structures

1.4.1 Design proposal and wing box manufacturing of a self launching solar-powered sailplane  
Romeo, Giulio, Torino, Italy

1.4.2 Heavily loaded glued joints  
Eppler, Richard, Stuttgart, Germany

1.4.3 The effect of energy absorbing foam in firm landings - dynamic and orthopaedic considerations  
Johnston, Ian, Edinburgh, Great Britain

1.4.4 Method of lifetime prediction of sailplane fiber structures  
Kensche, Christoph, Stuttgart, Germany

1.4.5 Further fatigue testing of a GFRP glider wing  
Patching, Alan and Wood, I.A., Melbourne, Australia

1.4.6 Glider ground impact tests  
Ludwig, Niels, Conradi, Manfred and Roeger, Wolf, Aachen, Germany

1.4.7 Crashworthiness of gliders  
Sperber, Martin, Koeln, Germany

1.4.8 Risk evaluation through the glider stall  
Suchodolski, Stanislaw, Wismiewski, Jacek, Zak, Pawel, Warsaw, Poland
1.5 **Motorgliders, Propulsion**

1.5.1 Study of single-blade propulsion system for retractable engine sailplanes
*Ballocchi, P., Beretta, M., Fumagalli, G., Vigano, Italy*

1.5.2 Design, test and certification of low drag engine installation for a high performance motorglider
*de Faria Bica jun., Sergio, Porto Alegre, Brazil*

1.5.3 A method to design solar powered aircrafts
*Rehmet, M., Voit-Nitschmann, R., Kröplin, B., Stuttgart, Germany*

1.5.4 Possibilities and requirements for long endurance high flying solar powered platforms
*Schoeberl, Ernst, Schweinfurt, Germany*

1.6 **Flight Testing, Instrumentation**

1.6.1 An instrument to aid "in the bucket" operation of laminar airfoils
*Crosby, Charles, Pretoria, South Africa*

1.6.2 A new instrument for fuel consumption measurement in light aircraft and motorgliders
*Morelli, Piero, Nuccio, Patricio, Torino, Italy*

1.6.3 The BAT-Probe – the ultimate tool to measure turbulence from any kind of aircraft (or sailplane)
*Hacker, Joerg M., Crawford, T., Adelaide, Australia*

1.6.4 A little flight test laboratory
*Folchini, Alberto, Milano, Italy*

1.6.5 Flight test comparisons of modern flapped profiles in a standard configuration
*Schofield, Paul D., Auckland, New Zealand*

1.7 **Training and Safety**

1.7.1 The personality of glider pilots: Evaluation with the QPS inventory, comparison with other sports
*Gillot, G., Torregiani, M., Nizzoli, S., Dijon, France*
1.7 Training and Safety (continued)

1.7.2 Prolonged soaring flights: recent experiments and data
Gillot, G., Mahiddine, S., Kane-Toure, N., Dijon, France

1.7.3 What is to be learned within „cut-away“ accidents for training and safety in gliding?
Gillot, G., Mahiddine, S., Dijon, France

1.7.4 Tree methods for risk evaluation of the glider flight
Pancewicz, Tomasz, Szopa, Tadeusz, Warsaw, Poland

1.7.5 The use of expert opinion in aggregating data for „man-glider-environment“ for safety analysis
Rakotomanana, Alain, Warsaw, Poland

1.7.6 Glider accidents in France from 1989-1993: The role of the pilot
Caron, Frank, Paris, France

1.7.7 Avoidable accidents
Blows, Les G., Pulborough, Great Britain

1.7.8 Which capacities are required in elite gliding: a comparison between „elite-“ and „hope-“ French pilots
Gillot, G., Roe, A., Kane-Toure, N., Dijon, France

1.7.9 What high level gliding pilots and coaches expect from a sport-psychologist
Gillot, G., Kane-Toure, N., Jovignot, Fr., Dijon, France

1.7.10 Demonstration of longitudinal stability and spinning qualities during sailplane pilot training
Waihel, Gerhard, Poppenhausen, Germany

1.8 Miscellaneous

1.8.1 Electrically- and sun-powered gliders: Do they require the definition of new F.A.I. classes?
Duranti, Pierlugi, Caselle, Italy

1.8.2 Ultra-Light Gliders
Morelli, Piero, Torino, Italy

1.8.3 Present activities of German Akafliegs
Neumann, Janes, Karlsruhe, Germany
2. Meteorology

2.1 Convection

2.1.1 Instability indices for atmospheric convection
        Aslan, Zafer, Artvin, Turkey, Tokgözlu, A., Isparta, Turkey

2.1.2 Mesoscale convergence and cumulus convection
        Hamann, Krzysztof E., Warsaw, Poland

2.1.3 The ascent of a vortex ring under compressibility and bouyancy
        Stuff, Roland, Göttingen, Germany

2.1.4 Anomalous variometer readings in strongly tilted thermals
        West, Julian, München, Germany

2.1.5 Symmetric instability in some cases of cloud bands in Argentina
        Schwarzkopf, M.L., Rosso, L.C., Mueller, G.V., Buenos Aires, Argentina

2.2 Waves and rotors

2.2.1 Lee waves over Europe
        Eckhart, Matthias, Berlin, Germany

2.3 Climatology

2.3.1 Soaring in South Africa: The magic of the trough line
        Fischer, Helmut H., Johannisburg, South Africa

2.3.2 A new approach to the climatology of convective activity
        Liechti, Olivier, Benken, Switzerland, Lorenzen, Erland, Offenbach, Germany

2.3.3 A probe of soaring a straight distance of 2000 km
        Kaihe, Li, Anyang, China

2.3.4 Thermal infrared temperatures and vertical heat flux measured by a powered sailplane
        Lindemann, Carsten, Berlin, Germany

2.3.5 Requirements, developments and trends for General Aviation forecasts in Germany
        Leykauf, Herbert, Offenbach, Germany
2.4 **Forecasting**

2.4.1 **Future aspects of meteorological support for competition flights**  
*Heise, René, Berlin, Germany*

2.4.2 **PC_met - New Application for soaring forecasting.**  
*Lorenzen, Erland, Offenbach, Germany*

2.4.3 **Synergy as a powerful integrated tool for gliding meteorology**  
*Bénichon, Patrick and Santourette, Patrick, Toulouse, France*

2.5 **Miscellaneous**

2.5.1 **From the atmospheric boundary layer into the stratosphere - the story of the**  
Airborne Atmospheric Research Group at Flinders University  
*Hacker, Joerg, Adelaide, Australia*

2.5.2 **Soaring weather at the top of the world**  
*Hindman, Edward (Ward), New York, USA*

2.5.3 **Scientific soaring adventures**  
*Kuettner, Joachim P, Boulder, USA*

2.5.4 **Nowcasting of hazards**  
*Wehry, Werner, Berlin, Germany*

Additional Papers (also for use of changes):

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Authors, please remind:

In case you are not able to participate in the OSTIV Congress personally, please realize, that your paper will be presented in any case either by the chairman or a competent scientist of the respective section and published later in the OSTIV Publication Section of our official magazine TECHNICAL SOARING.