

P r e f a c e

The 14th Congress of the International Council of the Aeronautical Sciences (ICAS), of which this volume is the Proceedings, is being held in the city of Toulouse, France, a well-known centre of international aerospace activities, from September 9-14, 1984. The host society for the 14th Congress is the Association Aéronautique et Astronautique de France, which already hosted an earlier ICAS Congress in Paris in 1964.

ICAS was founded in 1957 by the late Theodore von Kármán, its first President, to encourage free interchange of information on all those aeronautical problems in which the scientific aspect is of significant interest and to promote international cooperation in the study of such problems. These objectives have been fostered and cherished by ICAS Presidents following von Kármán: Maurice Roy, the late John J. Green, Raymond L. Bisplinghoff, and myself.

ICAS today is a federation of the aeronautical societies of 28 countries and is additionally supported by aerospace companies and technical and scientific institutions from all over the world.

The ICAS Congresses have become the primary international forum for aeronautical scientists and engineers. This is demonstrated by the growing number of papers submitted for presentation at recent ICAS Congresses and a total of 161 papers and lectures, chosen by the ICAS Program Committee from over 300, are scheduled for delivery in the five days of the Congress. In the ICAS tradition, the program highlights critical problem areas in aeronautical development and progress and assembles the world's outstanding experts for lectures and discussions.

The opening session, commencing at 9:30 a.m. on Monday, 19 September 1984, will feature welcome addresses by distinguished representatives of the host country as well as by the Chairman of the Organizing Committee, the AAAF President, and the ICAS President. At the conclusion of the opening ceremonies, the ICAS von Kármán Award for International Cooperation in Aeronautics will be presented to Mr. Roger Bêteille, Executive Vice President and General Manager, Airbus Industrie, Blagnac, France, and Dipl.-Ing. Johann Schäffler, Corporate Vice President MBB and Managing Director Transport Aircraft Division, MBB Hamburg, F.R.G., and then the second ICAS von Kármán Lecture on "Engineering Aspects of International Cooperation in Aeronautics" will be delivered by Mr. R. Bêteille.

On Wednesday, 12 September, the Daniel and Florence Guggenheim Memorial Lecture on "Improving the Efficiency of Smaller Commercial Transport Airplanes" will be delivered by Mr. R.T. Jones of NASA Ames Research Center, California, USA. Other important areas are reviewed in three additional General Lectures: "Flight Control System on Modern Civil Aircraft" by B. Ziegler and M. Durandeu from France, "Transport Design Opportunities for the 1990s" by M.A. Booth and P.C. Bandow from the USA, and "Advanced Materials in Perspective" by R.L. Circle and J.R. Carroll from the USA, which will open the Tuesday, Thursday and Friday sessions.

On Wednesday, 12 September, a variety of Technical Visits to the most prominent industrial and research facilities in the vicinity of Toulouse have been arranged by our hosts.

The final day of the Congress, Friday, 14 September, features a special plenary session "Reports on Recent Flight Test Results", to be followed by the closing session with the second Historical Lecture, "The Race for Speed and the Development of Configurations from the Origin of Aviation up Today" by P. Lissarrague and P. Lecomte from France.

The other 155 papers are presented in five parallel sessions, beginning on the afternoon of the first day. These specialist sessions can be broadly divided into six main areas. Aerodynamics and Aerodynamic Design and Testing are covered in eighteen sessions with special emphasis on computational aerodynamics, unsteady aerodynamics, inlet aerodynamics, configurational aerodynamics, and high angle of attack aerodynamics as well as wind tunnel and flight test techniques. Structures and Materials are covered in ten sessions with special emphasis on composite materials and composite structures and on design for fatigue as well as fracture mechanics. Flight Mechanics, Stability and Control are dealt with in five sessions with emphasis on new theoretical methods. Design, Design Integration and Systems are discussed in eight sessions with emphasis on computer aided methods. Propulsion and Noise are covered in five sessions with emphasis on new technologies for air breathing engines and noise reduction. Finally Airport Area Control and Environmental Effects are discussed in four sessions, showing the growing awareness to these problems.

ICAS has, this year, lost one of its founders and former presidents, Dr. John J. Green from Canada. His great contribution to ICAS will live on and not be forgotten.

On behalf of the Council of ICAS, I offer its sincere thanks to the authors of the papers and to the lecturers, without whose efforts no congress would be successful. To Mr. P. Contensou, President of AAAF and Chairman of the Organizing Committee, to Mr. M. Pelegrin, its Vice Chairman, to Mr. C. Dousset who served as the link between ICAS and the Organizing Committee, as well as to the other members of the Committee, ICAS tenders its sincere thanks not only for the warm invitation to hold the 14th Congress in Toulouse, but for the great effort invested in its organization. Very special thanks are offered to the many people who attend to the multitude of arrangements and services which allow the smooth running of a congress of this nature.

To Professor Dr.-Ing. Boris Laschka, Chairman of the ICAS Program Committee, and all the members of the Committee, the thanks of the Council are tendered for the excellence of the program devised and for the devotion with which they executed their task. Thanks also to Professor P. Santini for graciously hosting the ICAS Program Committee in Rome three times.

Finally, it is an extreme honour and pleasure to extend cordial thanks and appreciation to Professor Dr.-Ing. Rolf W. Staufenbiel, Executive Secretary of ICAS, and the Deutsche Gesellschaft für Luft- und Raumfahrt e.V., which provided the ICAS Secretariat for many years, for their strong leadership and support of all aspects of the work of ICAS. Mrs. Helga Will of DGLR has earned our warmest gratitude for the outstanding service she has rendered on behalf of ICAS.

June 3, 1984

Josef Singer
President, ICAS