

P R E F A C E

It is an honor and a privilege to present, on behalf of ICAS, the Proceedings of the 20th Congress in Sorrento, Italy. ICAS was founded in 1957 to bring together the international community of aeronautical engineers and scientists to promote cooperation, further aeronautical progress, and strengthen education. It has been an outstanding success. The General Assembly now consists of 32 Member Associations representing aeronautical societies from all around the globe. The biennial congresses normally attract about 400 international participants and typically consists of over 250 technical papers covering all fields of aeronautics.

The outstanding progress of the aeronautical sciences over the last 40 years is reflected in these Proceedings. In 1957, commercial aircraft were propeller-driven, and only a few military aircraft were capable of brief periods of supersonic flight. Today we have thousands of commercial jet aircraft, a supersonic transport, military aircraft which cruise at supersonic speeds (and are almost invisible to radar), and aerospace vehicles that carry humans to orbit and back. The digital computer, which was barely born in 1957 has revolutionized our field. At least half of the papers in these Proceedings report the use of computers for analysis in the aeronautical disciplines and for aircraft design and optimization. Other papers report the use of on-board computers to enable and enhance aircraft performance. As we approach the 21st Century, we are discussing new, much improved supersonic transports, even more capable military aircraft, and a new generation of aerospace vehicles to provide practical access to Earth orbit.

These Proceedings contain approximately 270 papers which will be presented at the 20th Congress. They were selected by an international Program Committee from over 500 abstracts submitted. They cover the latest state of art in aerodynamics, structures, propulsion, flight control, aircraft systems, and potential aircraft designs. Three invited General Lectures will be given by distinguished experts.

These are "AEREA - a European Research Initiative" by W. Kröll (Germany), "Advanced On-Board Computing and Data Processing: A Primary Condition for the Functionality of Modern High Performance Aircraft" by H. Scheidt and H. Rapp (Germany), and "Innovative Aspects of the Boeing 777 Development Program" by R.S. Breuhaus, K.R. Fowler and J.J. Zanatta (U.S.A.).

The opening and closing lectures of the Congress are associated with ICAS Awards of great distinction. The Opening Ceremonies will feature the Daniel and Florence Guggenheim Lecture and Award to recognize a particular individual and area of important scientific advances. The lecturer and awardee will be Professor Paolo Santini of the University of Rome "La Sapienza". Professor Santini supported ICAS for many years, and served as ICAS President from 1990 to 1994. He is here honored for his contributions to the field of aircraft structures, and his topic is "Smart Structures in Aerospace Technology". The Congress will close with the Von Kármán Lecture and Award which recognizes a collaboration of international organizations in a successful development or research program. The Award will be presented to the V2500 Turbofan Project, an outstanding achievement by Pratt & Whitney (U.S.A.), Rolls Royce (United Kingdom), Motoren und Turbinen-Union (Germany), Fiat Avio (Italy), and Japanese Aeroengine (Japan). The Lecture "Working Together - International Aero Engines' V2500 Program" will be presented by B. Eccleston and B. Wolfe of the U.S.A. and J. Cheffins of the United Kingdom.

Special thanks are in order to all the Authors who worked hard to produce these papers and to the international Program Committee and its Chairman, John Green, who evaluated, selected, and organized them to create an outstanding Congress. The Executive Secretary of ICAS, Fred Sterk, worked long and hard to ensure success, and the Italian Organizing Committee, chaired by Paolo Santini and Carmine Golia, selected the wonderful venue of Sorrento and provided an outstanding social and educational program for the participants and spouses.

After 40 years ICAS lives and prospers!

Pete Petersen
ICAS President