

## FOREWORD

THESE volumes contain the papers given in the First International Congress for the Aeronautical Sciences held in Madrid on 8-13 September, 1958. Many meetings and conferences have been held in the last decade dealing with aeronautical problems. I believe the congress in Madrid gave the first opportunity to representatives of the aeronautical scientists of all nations to meet and to discuss problems of mutual interest.

The congress was organized by the International Council in the Aeronautical Sciences. The congress followed the principle of inviting all national organizations in the world which are devoted to the aeronautical sciences.

The idea of organizing such an international congress in the broadest sense came up about three years ago when an informal group representing the aeronautical sciences in ten countries sat around a dinner table in the Hotel Astor in New York and discussed the possible formation of an international organization in the aeronautical and allied sciences. However, the question of how to go about the creation of such an organization, where and when the first meeting might be held, was not clear to the participants.

The proposal to form a world-wide forum for the discussion of common problems in aeronautics and in space technology had come originally from Harry F. Guggenheim. To back up his suggestion, he wholeheartedly approved the use of the income from the Daniel and Florence Guggenheim Memorial Fund for the Promotion of International Collaboration in the Aeronautical Sciences (which had come to the IAS from the sale of the family estate at Sands Point, Long Island, to the U.S. Navy), to provide the necessary financial assistance.

The papers given at the First Congress and reproduced in these volumes were given by invitation of the Program Committee designated by the International Council. Voluntary contributions were accepted on recommendation of the Council members. The balance between survey papers and original contributions is a delicate and important question which occurs in the process of the organization of any or every scientific congress. I hope that we used a just measure and the reader will find many interesting survey papers on problems of great actual interest like "Principles of Inertial Guidance"; "Boundary Layer Control"; "VTOL/STOL Aircraft"; "Heat Resisting Material"; "Heat Transfer and Heat Barrier"; "Jet Noises" and "Human Factors in Aeronautics"; also "Hypersonic Speeds"; "Propulsion Methods in

Space" and the latest branch of aerodynamics "Magneto-Fluid Dynamics" were not neglected. In addition the reader will find many papers which were written more for the specialist and deal with advanced mathematical methods or with refined experimental techniques.

The Institute of the Aeronautical Sciences in New York served as permanent secretariat during the period of organization and during the actual congress. It will continue to serve ICAS in this capacity in the future. The Spanish official representatives, especially the Instituto Nacional de Técnica Aeronáutica, its Director, Colonel Rafael Calvo and Secretary General, Colonel Antonio Perez-Marin, gave their full support to the congress.

The International Council is indebted to the Pergamon Press for the excellent work that was done in the production of these volumes. I want to express my personal thanks to the members of the Editorial Committee.

THEODORE VON KÁRMÁN

*Honorary President*