DGLR/AIAA/JSASS

20th International Electric Propulsion Conference

Proceedings

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Conference Committee [Chairmen].

General
W. Berry
ESA/ESTEC
Noordwijk

Technical
D. G. Fearn
Royal Aircraft Establishment
Farnborough

International
R. Schreib
INTELSAT
Washington

Coordination
C. Bartoli
ESA/ESTEC
Noordwijk

Organization
R. Aul
DGLR
Bonn

Edited by
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Foreword

The 20th International Electric Propulsion Conference was co-sponsored by the American Institute of Aeronautics and Astronautics (AIAA), the Deutsche Gesellschaft fuer Luft- und Raumfahrt (DGLR) and the Japanese Society of Aeronautical and Space Sciences (JSASS). The IEPC 88 was supported by the Federal Ministry for Research and Technology. It was the second time that this Conference was held outside the United States and it was for the first time in Europe.

The Call for Papers was published in the AIAA Bulletin. 125 papers were accepted. These papers came from all over the world: USA (54), Japan (22), West-Germany (17), Great Britain (13), The Netherlands (5), Italy (5), France (3), China (3), USSR (2) and Austria (1). The 173 participants came from the countries mentioned.

In 24 Sessions, 122 papers were presented. Every participant was handed out a booklet of abstracts and will receive the Conference Proceedings soon.

The Conference Dinner was celebrated at the "Hochalm". (292 litres of beer, 247 glasses of Obstler/Enzian and many other drinks were consumed at 1705 metres over sea level!)

The Conference was organized by the Organizing Committee. Members of this Committee were:

Dr. Cesare Bartoli, ESA/ESTEC, Noordwijk,  
Dr. David G. Fearn, RAE, Farnborough,  
Ing. Helmut Bassner, MBB-Ottobrunn,  
Dr. Klaus Groh, University of Gießen,  
Dr. Reinhard Aul, DGLR, Bonn.

The Social Programme was initiated and organized by Mrs. D. v. Pelchrzim, MBB-Ottobrunn. The Conference Office was run by Mrs. Helga Will (DGLR) and Miss Schellhaas. We received excellent support in all matters of organization by Mr. Maninger and Mrs. Laumer from the Tourist Office in Garmisch-Partenkirchen.

As chairman of the Organizing Committee, I would like to thank everyone who contributed to make the Conference a success. We hope that most of the participants will keep Garmisch-Partenkirchen in good memory.

Dr. R. Aul
Technical Introduction

In introducing these Proceedings of the 20th International Electric Propulsion Conference, it is a pleasure to report that the Meeting was extremely successful from all points of view, with significant benefits for every participant. The 125 papers in the programme covered all aspects of the subject and also touched on many allied topics, such as relevant areas of plasma physics. As can be seen by reading through these Proceedings, these papers provide an excellent guide to the status of electric propulsion research, development and applications in 1988, and suggest the current trends in the various laboratories and countries active in the field. The renewed emphasis on missions aimed at demonstrating the viability of ion propulsion systems is most encouraging, as is the good progress being made with a variety of plasma propulsion devices.

Of course, the key to the future use of many of the technologies under study is the provision of high power levels in space at modest cost. It was therefore pleasing to have the benefit of several papers addressing topics associated with advanced solar arrays and NASA's SP-100 space-based nuclear reactor system. The survey paper by Dr. J. Ambrus in the Plenary Session was particularly valuable in setting the scene in this very important area.

The Conference provided an unsurpassed opportunity for the interchange of scientific and technical ideas and views, in superb surroundings, and I am sure that most participants gained a great deal from this. As well as occupying all available time after the individual papers and sessions, these discussions continued into the meal breaks and even intruded into the social events. In addition, the Round Table meetings provided further opportunities to broaden this exchange of information; it was a pleasure to participate in these enthusiastic discussions, which were terminated only by lack of time.

This introduction would not be complete without recording formally my thanks to the members of the Technical Committee for their efforts in assisting with the organization of the Conference. I should also record here my appreciation of the organizational skills and hard work of the members of the other Committees, particularly the Chairmen of the Organization and Co-ordination Committees, Dr. R. Aul of DGLR and Dr. C. Bartoli of ESTEC respectively. I would also like to acknowledge the generous assistance of MBB, ably represented by Mr. M. Bassner. On behalf of all participants, I would finally like to thank all Chairmen of the Technical Sessions and of the Round Table meetings for their most valuable contributions to the success of the Conference.
I think that we can claim that electric propulsion is now moving ahead at an accelerating pace after some years of relative stagnation. This view will be supported by a glance through the following pages, and I hope that it will be endorsed further at the next Conference, the 21st in the series. Let us hope that additional progress will be reported there of flight demonstrations, of advances in understanding the physics of the various devices under study, and of new advanced concepts for future investigations. I look forward to an exciting Meeting in Florida in 1990.

D.G. Fearn,
Chairman, Technical Committee