

INTERNATIONAL COUNCIL OF THE AERONAUTICAL SCIENCES

Third Congress

Stockholm, Sweden 27-31 August, 1962

The technical sessions will be held in the New Congress Hall (Folkets Hus) Stockholm, Sweden. Dr. Theodore von Kármán, Honorary President of ICAS, will preside. The program and arrangements for the Congress have been organized by committees chairmanned by Dr. Maurice Roy, Academy of Sciences, Paris, and Bengt Reistad, Chief, Engineering Department, The Aeronautical Research Institute, Sweden. The Registration Desk will be open on Sunday, 26 August, 1600-1800 Hours, and Monday 27 August, 0830 Hours.

TECHNICAL PROGRAM

MONDAY, 27 AUGUST

1030 Hours

Opening Session

1. Daniel and Florence Guggenheim Memorial Lecture Speed and Safety in Civil Aviation - Bo K.O. Lundberg, Director, Aeronautical Research Institute of Sweden.

1400 Hours

General Lecture

2. Enoch Thulin Memorial Lecture Creep Rupture - Folke K.G. Odqvist, Professor, Royal Institute of Technology, Sweden.
A Paper to be presented by The Academy of Sciences, USSR.

TUESDAY, 28 AUGUST

0830 Hours

General Lecture

3. Fortschritte in der Physik der hohen Atmosphäre - Walter Dieminger, Director, Max-Planck-Institut für Aeronomie, Germany

1000 Hours

Physics of the Upper Atmosphere

4. Photolysis of Wet Ozone and its Significance to Atmospheric Heating of the Ozone Layer - John Hampson, Defence Research Board Scientist, Canadian Armament Research & Development Establishment, Canada.
5. Particle Populations in Space - Carl E. Fichtel, Head, Nuclear Emulsions Section and Frank B. McDonald, Head, Fields and Particles Branch; Space Sciences Division, Goddard Space Flight Center, NASA, USA.
6. Cross Stresses in Laminar Flow of Rarefied Air - A. Fouix, Research Associate and M. Reiner, Research Professor, Technion, Israel Institute of Technology, Israel.

1000 Hours

VTOL/STOL

7. The Influence of Lateral Jets, Simple or Combined with Longitudinal Jets, Upon the Wing Lifting Characteristics - Elie Carafoli, Professor, Polytechnic Institute of Bucharest and Director, Institute of Applied Mechanics; and N.N. Patraulea, Head, Aeromechanics Division, Institute of Applied Mechanics, CORMA (Rumanian Committee for Applied Mechanics) Rumania.
8. Aerodynamic Problems of High Lift - H. Schlichting, Director, Institute of Fluid Mechanics, Technical University of Braunschweig, Germany.
9. VTOL/STOL Aircraft Handling Qualities as Determined by Flight Test and Simulator Techniques - Fred J. Drinkwater III, Aeronautical Research Scientist and Pilot; L. S. Rolls, H. L. Turner and H. C. Quigley, Aeronautical Research Scientists, Ames Research Center, NASA, U.S.A.

1400 Hours

Materials and Fatigue

10. Mecanisme de Rupture des Metaux Refractaires - Herve Bibring, Chef de Division de Recherches, Direction Scientifique des Materiaux, and Francois Girard, Ingénieur de Recherches; Office National d'Etudes et de Recherches Aéronautiques (ONERA), France.

11. The Potential of Beryllium in Supersonic Commercial Aircraft - George A. Hoffman, Engineer, The RAND Corporation, U.S.A.
12. Interactions Between Fatigue and Deformation in Structural Materials - A. J. Kennedy, Professor of Materials, The College of Aeronautics, U.K.
13. The Development of Full Scale Fatigue Testing - B. E. Stephenson, Director of Engineering, and D. James, Chief Structural Engineer, Vickers-Armstrongs (Aircraft) Ltd., U.K.

1400 Hours Boundary Layer

14. An Experimental Investigation of Boundary Layer Transition - Ennio Mattioli, Assistant Applied Mechanics, Laboratoria di Aerodinamica, Politecnico-Torino, Italy.
15. Boundary-Layer Instability at Subsonic Speeds - Itiro Tani, Professor, Aeronautical Research Institute, University of Tokyo; Jiro Sakagami, Professor, Department of Physics, Ochanomizu University, and Yasujiro Kobashi, Senior Research Engineer, Aerodynamics Division, National Aeronautical Laboratory, Japan.
16. Facteurs agissant sur la transition de la couche limite aux Vitesses hypersoniques - R. Michel, Chef de Subdivision de Recherches, ONERA, France.
17. Leading Edge Effect on Supersonic Boundary Layer Flow - Jean J. Ginoux, Professor, Brussels University and Training Center for Experimental Aerodynamics, Belgium.

WEDNESDAY, 29 AUGUST

0830 Hours

General Lecture

18. Spacecraft Control Systems - H. H. Haglund, Head, Guidance Division, Jet Propulsion Laboratory, California Institute of Technology, U.S.A.

1000 Hours

19. Nonlinear Dynamic Stability of Space Vehicles Entering or Leaving an Atmosphere - E. V. Laitone, Professor of Aeronautical Sciences and T. J. Coakley, Graduate Research Engineer, University of California, Berkeley, U.S.A.

Electronics

20. Wissenschaftliche Ergebnisse und Aussichten der Automatisierung des Flugsicherungsdienstes mittels elektronischer Rechenanlagen - Wolfgang Haack, Professor, Technische Universität Berlin und Hahn-Meitner-Institut für Kernforschung, Sektor Mateematik; in collaboration with Prof. Dr. Gundlach, H. Springer, E. Jesson, W. Stortz, W. -D. Wirth, Technische Universität Berlin.

21. Digital Systems in Space Communications - Daniel Hochman, Manager, Telecommunications Development, Lockheed Missiles and Space Company, U.S.A.

over

1000 Hours

Supersonic and Hypersonic Aerodynamics

22. Untersuchungen an Spoilern bei Überschallgeschwindigkeiten – A. Heyser, F. Maurer, Institut f. angew. Gasdynamik der DVL, Aachen Technische Hochschule, and H.G. Knoche, Bölkow-Entwicklungen K.G., Germany.

23. Differential-geometric Considerations on the Hodograph Transformation for Irrotational Conical Flow – John W. Reyn, Mathematical Institute, Technological University, Delft, Holland

24. Some Aspects of the Low-Speed and Supersonic Aerodynamics of Lifting Slender Wings – A. Spence and J.H.B. Smith, Aerodynamics Department, Royal Aircraft Establishment, U.K.

Wednesday, 29 August

Afternoon

No technical sessions scheduled

THURSDAY, 30 August

0830 Hours

General Lecture

25. Aeroplane Noise in the 1970s – Elfyn John Richards, Professor of Aeronautical Engineering, Department of Aeronautics and Astronautics, University of Southampton, U.K.

1000 Hours

Structures and Aeroelasticity

26. A Paper to be presented by the Academy of Sciences, USSR.

27. Instabilité de flottement à Mach rapidement variable – Rolland Dat, Chef de Section de Recherches, ONERA, France.

28. Vibrations and Elastic Stability of a Divergent Nozzle with Internal Supersonic Flow – W. Fiszdon, Professor of Aeronautics, Technical University Warsaw, Poland.

1000 Hours

Supersonic and Hypersonic Aerodynamics

29. A Paper to be presented by the Academy of Sciences, USSR.

30. Configurations Tridimensionnelles Optimales en Régime Supersonique – Maurice Fenain, Ingénieur de Recherches, ONERA, France.

31. Non Equilibrium Effects in Hypersonic Aerodynamics – Amable Linan, Aeronautical Engineer, and Ignacio Da-Riva, Aeronautical Engineer, Aerodynamics Division, INTA, Spain.

1400 Hours

Boundary Layer

32. A Paper to be presented by the Academy of Sciences, USSR.

33. Some Recent Developments in the Study of Edge Vortices – E.C. Maskell, Senior Principal Scientific Officer, Aerodynamics Department, Royal Aircraft Establishment, U.K.

34. Abhängigkeit der Laminaren Ablösung von Mach-Zahl und Wärmeübergang bei stationärer sinusformig modulierter Außenströmung – Alfred Walz, Privat-Dozent, Technische Hochschule Karlsruhe und DVL-Institut Freiburg i.Br., Germany.

35. Akustische Beeinflussung von Freistrahlgrenzschichten – Ottmar Wehrmann, und Alfons Michalke, Deutsche Versuchsanstalt für Luftfahrt e.V., Institut für Turbulenzforschung, Berlin, Germany.

1400 Hours

Supersonic and Hypersonic Aerodynamics

36. Effects des hautes températures dans les écoulements hypersoniques – G. Giarre, Professor de Dynamique des Gaz, Politecnico di Torino, Italy.

- On "First Collision" Approximation of Pitot Pressure in a Hypersonic Flow of a Rarefied Gas – Jan Lubomski, Research Associate, Division of Fluid Mechanics, Institute of Basic Technical Problems, Polish Academy of Sciences, Poland.

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37. Fatigue crack propagation in mustang wings by G. Parry-Jones

38. An Investigation of Wing-Body Interference Effects at Supersonic and Hypersonic Speeds – P.G. Wilby, Research Scientist, The Aeronautical Research Institute of Sweden, Sweden.

39. Aerodynamic Derivatives of Axi-Symmetric Body Moving at Hypersonic Speeds – Ryuma Kawamura, Professor; and Fu-Hsing Tsien, Research Fellow; Aeronautical Research Institute, University of Tokyo, Japan.

FRIDAY, 31 AUGUST

0830 Hours

General Lecture

40. Problèmes de Magnéto-Dynamique des Fluides – Henri Cabannes, Professeur, Faculté des Sciences de Paris, France.

1000 Hours

Structures and Aeroelasticity

41. Temperature Distributions, Thermal Stresses and Thermal Buckling of Thin Skins Supported by Frames – H. Schuh, Senior Scientist, Thermodynamics, SAAB Aircraft Company, Sweden.

42. A Unified Theory of Creep Buckling of Columns, Plates and Shells – George Gerard, Associate Director of Research, College of Engineering, New York University, U.S.A.

43. Aeroelasticity in Practice – B.O. Heath, Project Manager, English Electric Aviation Ltd., U.K.

1000 Hours

44. A Paper to be presented by the Academy of Sciences, USSR.

Supersonic and Hypersonic Aerodynamics

45. Experimental Investigation of Hypersonic Ramjets – J. Swindenbank, Research Fellow, Department of Fuel Technology and Chemical Engineering, University of Sheffield, U.K.

46. Some Aerodynamic Studies of Re-Entry Configurations in Ballistic Ranges – H.F. Waldron, Head, Aeromechanics Section, and B. Cheers, Canadian Armament Research and Development Establishment, Canada.

1400 Hours

Supersonic Transport Aircraft

47. Comportement asymptotique à l'infini dans l'atmosphère, des ondes sonores non linéaires émises par un avion supersonique – Jean Pierre Guiraud, Ingénieur de Recherches, ONERA, France.

48. Emploi des sources et doublets au calcul de la voilure d'un avion supersonique – Robert Legendre, Directeur Technique, ONERA, France.

49. Some Design Limitations of Supersonic Transports as Identified in Piloted Simulator Studies – Maurice D. White, Assistant Chief, Flight and Systems Simulation Branch, Richard S. Bray, Research Scientist; and George E. Cooper, Chief, Operations Branch, Ames Research Center, NASA, U.S.A.

50. Supersonic Transports – Some Considerations of Non-cruising Problems – L.F. Nicholson, Director General of Scientific Research (Air), Ministry of Aviation, U.K.

1400 Hours

Hypersonic Flight

51. Theoretical and Experimental Investigations of Supersonic Combustion – Antonio Ferri, Professor of Aerodynamics, Director of Aerodynamics Laboratory, Head of Dept. of Aerospace Engineering and Applied Mechanics; Paul A. Libby, Professor of Aeronautical Engineering, Assistant Director of Aerodynamics Laboratory; and Victor Zakkay, Research Assistant, Professor of Aerospace Engineering; Polytechnic Institute of Brooklyn, U.S.A.

52. Experience with the X-15 Airplane in Relation to Problems of Reentry Vehicles – Eldon E. Kordes, Aerospace Technologist, Vehicle and Systems Dynamic Branch, Flight Research Center, NASA, U.S.A.

- A Paper to be presented by the Academy of Sciences, USSR. Eventual Influence of the Earth Magnetic Field on the Hypersonic Plane at High Altitude – M. Lunc, Member of Polish Academy of Sciences, Professor, Warsaw University, Poland.