

RTO Technical Publications:

a quarterly listing

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This is a listing of unclassified RTO technical publications NASA received and announced in the NASA STI Database during the quarter cited above. Requests for reports on the list may be made by document identification number (20000031944) from the NASA Center for AeroSpace Information, 7121 Standard Drive, Hanover, MD 21076-1320. Requests may also be made by e-mail help@sti.nasa.gov, fax (301) 621-0134, or telephone (301) 621-0390. Where stock permits, requests will be filled with printed copies; if printed copies are not available, microfiche copies will be supplied. This listing can also be viewed and downloaded via the NASA STI Program home page at <http://www.sti.nasa.gov>.

20000031944 Research and Technology Organization, Information Systems Technology Panel, Neuilly-sur-Seine, France
Databases for Assessment of Military Speech Technology Equipment *les Bases de donnees pour l'evaluation des equipements de technologie vocale militaire*

South, Allan, Defence Evaluation Research Agency, UK; March 2000; 30p; In English; CD ROM: CD ROM contains the entire technical report

Report No.(s): RTO-TR-25; AC/323(IST)TP/6; ISBN 92-837-1028-2; Copyright Waived; Avail: CASI; A03, Hardcopy; A01, Microfiche; C01, CD-ROM

A NATO research group carried out collaborative studies on military applications of speech processing. A major requirement in this area of work is for large quantities of speech recordings made in military environments, which are often expensive and difficult to obtain. Research and development in this area will benefit from sharing such data as widely as possible among the NATO research community. The cost of collecting speech recordings under realistic military conditions is high. Considerable cost savings may be made if such data are shared as widely as possible amongst the NATO community. The NATO research group on speech processing will continue to maintain and update the database of speech recordings relevant to military applications of speech technology. Further ways of disseminating this information will be sought, including electronic means such as the Internet.

Author

Military Technology; Data Bases; Speech; Voice Data Processing; Data Acquisition; Voice Communication

20000031945 Research and Technology Organization, Information Systems Technology Panel, Neuilly-sur-Seine, France
The Impact of Speech Under "Stress" on Military Speech Technology *l'Impact de la parole en condition de "stress" sur les technologies vocales militaires*

Vloeberghs, Claude, Research and Technology Organization, France; Verlinde, Patrick, Research and Technology Organization, France; Swail, Carl, Research and Technology Organization, France; Steeneken, Herman, Research and Technology Organization, France; vanLeeuwen, David, Research and Technology Organization, France; Trancoso, Isabel, Research and Technology Organization, France; South, Allan, Research and Technology Organization, France; Moore, Roger, Research and Technology Organization, France; Cupples, E. James, Research and Technology Organization, France; Anderson, Timothy, Research and Technology Organization, France; Jansen, John, Research and Technology Organization, France; March 2000; 115p; In English; CD ROM: CD Rom contains the entire technical document

Report No.(s): RTO-TR-10; AC/323(IST)TP/5; ISBN 92-837-1027-4; Copyright Waived; Avail: CASI; A06, Hardcopy; A02, Microfiche; C01, CD-ROM

Military operations are often conducted under conditions of stress induced by high workload, sleep deprivation, fear and emotion, confusion due to conflicting information, psychological tension, pain, and other typical conditions encountered in the

modern battlefield context. These conditions are known to affect the physical and cognitive abilities of human speech characteristics, and this study was intended to determine the actual effects of stress on voice production quality. It is suggested that the effect of operator based stress factors on voice is likely to be detrimental to the effectiveness of communication in general, in particular to the performance of communication equipment and weapon systems equipped with vocal interfaces (e.g., advanced cockpits, command, control, and communication systems, information warfare). Progress in the field of military based speech technology, including advances in speech based system design has been restricted due to the lack of availability of databases of speech under stress. In particular, the type of stress which an operator may experience in the modern battlefield context is not easily simulated, and therefore it is difficult to systematically collect speech data for use in research and speech system training. It is foreseen that in the future it will be necessary to improve the coordination of multi-national military forces. The need therefore exists for planned simulations with military personnel using a wide range of speech technology and addressing factors such as high workload, sleep deprivation, fear and emotion, confusion, psychological tension, pain, etc.

Author

Military Operations; Military Technology; Speech Recognition; Voice Communication; Stress (Physiology); Human Factors Engineering; Stress (Psychology)

20000032361 Research and Technology Organization, Studies, Analysis and Simulation Panel, Neuilly-sur-Seine, France
Modelling and Analysis of Command and Control *Modelisation et Analyse de Processus de Commandement et de Controle*
June 1999; 364p; In English; In French, 12-14 Jan. 1999, Moulinaux, France; See also 20000032362 through 20000032387
Report No.(s): RTO-MP-38; AC/323(SAS)TP/12; ISBN 92-837-0010-4; Copyright Waived; Avail: CASI; A16, Hardcopy; A03, Microfiche

The main objective for this Symposium was to exchange the latest research information in selected focus areas that must be addressed when conducting systematic and disciplined evaluation of C3I systems. A second objective was to provide an opportunity for NATO countries and PfP nations representatives to discuss examples of current best practices in C3I research, modeling, and analysis with recognized experts in the field. The Symposium consisted of six sequential sessions and was based on the format used by the SAS-002 team to assemble its "Code of Best Practice for the Assessment of Command and Control" [RTO publication TR-9, AC/323(SAS)TP/4]. The opening session comprises a keynote address by French General Marescaux, an overview of the work of the SAS-002 team, and a presentation on significant aspects and contributions of the team's work. The other sessions are on Measures of Merit (Session 1), Modeling and Simulations (Session 2), Human Factors and Organizations (Session 3), Applications (Session 4), and Special Topics (Session 5).

Derived from text

Command and Control; Communication; Decision Support Systems; Intelligence; Conferences; Computer Techniques; Defense Program

20000032388 Research and Technology Organization, Human Factors and Medicine Panel, Neuilly-sur-Seine, France
Models for Aircrew Safety Assessment: Uses, Limitations and Requirements *La Modelisation des Conditions de Securite des Equipages: Applications, Limitations et Cahiers des Charges*
August 1999; 360p; In English, 26-28 Oct. 1998, Wright AFB, OH, USA; See also 20000032389 through 20000032420; Original contains color illustrations
Report No.(s): RTO-MP-20; AC/323(HFM)TP/7; ISBN 92-837-1017-7; Copyright Waived; Avail: CASI; A16, Hardcopy; A03, Microfiche

These proceedings include the Technical Evaluation Report, a tribute to Dr. Henning E. von Gierke, Director Emeritus, Wright-Patterson Air Force Base (WPAFB), OH, three Keynote Addresses and 32 invited papers of a Specialists' Meeting sponsored by the NATO/RTO Human Factors and Medicine Panel. It was held at WPAFB from 26-28 October 1998. Significant advances have been made in modelling human physical and physiological responses to extreme environments. Technological advances in computer speed and power have made modelling a feasible research and design tool. Computer simulations are being used extensively for predicting human physical and physiological responses, for reducing testing requirements, for rapidly designing improved protective systems, and for performing human safety-systems analyses. A variety of models were reviewed at this Specialists' Meeting including lumped-parameter, rigid-body, finite-element, statistical, physiologic, and empirical models. Topics covered included modelling human-body responses to environmental stressors, and the systems with which the body interacts to impact, emergency escape, sustained acceleration, vibration, mechanical shock, motion sickness, high altitude, blast, extreme thermal conditions, directed energy, and live firing. These proceedings will be of interest to military and civilian

scientists and engineers interested in exploiting data bases, tolerance criteria, and new models and methods in the research of physiological systems and in simulating the design, test set up and evaluation of safety systems.

Author

Computerized Simulation; Conferences; Human Factors Engineering; Mathematical Models; Flight Crews; Safety Factors; Human Body; Physiological Responses

20000032651 Research and Technology Organization, Systems Concepts and Integration Panel, Neuilly-sur-Seine, France

Search and Target Acquisition *Recherche et Acquisition d'Objectifs*

March 2000; 241p; In English, 21-23 Jun. 1999, Utrecht, Netherlands; See also 20000032652 through 20000032676

Report No.(s): RTO-MP-45; AC/323(SCI)TP/19; ISBN 92-837-1035-5; Copyright Waived; Avail: CASI; A11, Hardcopy; A03, Microfiche; C01, CD-ROM

This volume contains the Technical Evaluation Report, the Keynote Address, and the 26 unclassified papers, presented at the Workshop on Search and Target Acquisition, that was organised by the Systems Concepts and Integration (SCI) Panel 12 (the former RSG-2), on "Camouflage, Concealment and Deception Evaluation Techniques", and that was held in Utrecht, the Netherlands, from 21-23 June 1999. The paper presented covered the following headings: search performance predictions, target acquisition mechanisms, and simulation issues.

Derived from text

Conferences; Camouflage; Target Acquisition; Simulation; Detection; Performance Prediction; Tracking (Position)

20000032683 Research and Technology Organization, Human Factors and Medicine, Neuilly-sur-Seine, France

Human Consequences of Agile Aircraft *Cycle de conférences sur les facteurs humains liés au pilotage des avions de combat très manœuvrants*

March 2000; 92p; In English, 20-21 Mar. 2000, Neubiberg, Preston, Ohio, Germany, UK, USA; See also 20000032684 through 20000032689

Report No.(s): RTO-EN-12; AC/323(HFM)TP/32; ISBN 92-837-1036-3; Copyright Waived; Avail: CASI; A05, Hardcopy; A01, Microfiche; C01, CD-ROM

This Lecture Series evaluates the human factors implications for pilots of "superagile flight", specifically with regard to agile airframes, agile weapons, and rapidly configurable systems. During interviews, experienced pilots have confirmed the operational need for military aircraft agility. Although pilots have noted that their experiences to date have not caused them any major concerns regarding the potential for physiological problems, significant gaps remain in our understanding of the effects of multi-axis accelerations. Human consequences are also anticipated in the area of situational awareness. Presentation of aircraft attitude and energy state in a helmet mounted display will be a design challenge. The minimal constraints on aircraft incidence angles and the expanded weapon launch envelopes anticipated with the forthcoming and next generations of air systems requires the provision of novel displays to enable pilots to effectively operate such air systems. Decision aids, intelligent interfaces and automated subsystems are required to enable pilots to maintain situational awareness whilst coping with dramatic increases in the tempo of the tactical situation and the 'data deluge'. Moreover, many of the current pilot protection systems will be inadequate for everyday use in such an unconstrained flight envelope and during ejection. Additional challenges in selection, simulation, and training are also anticipated.

Derived from text

Human Factors Engineering; Decision Support Systems; Aircraft Pilots; Pilot Training; Lectures; Human-Computer Interface

20000032859 Research and Technology Organization, Applied Vehicle Technology, Neuilly-sur-Seine, France

Application of Damage Tolerance Principles for Improved Airworthiness of Rotorcraft *L'Application des principes de la tolérance à l'endommagement pour une meilleure aptitude au vol des aéronefs à voilure tournante*

February 2000; 202p; In English, 21-22 Apr. 1999, Corfu, Greece; See also 20000032860 through 20000032874

Report No.(s): RTO-MP-24; AC/323(AVT)TP/12; ISBN 92-837-1024-X; Copyright Waived; Avail: CASI; A10, Hardcopy; A03, Microfiche; C01, CD-ROM

The Specialists' Meeting dealt with Aging Systems and more specifically Application of Damage Tolerance Principles for Improved Airworthiness of Rotorcraft. These proceedings include a Keynote Address and fifteen papers having the objective of discussing and presenting the applicability of the new design approach to major rotorcraft components such as the dynamic system, primary load carrying structures, and flight control systems. Both metal and composite structures including special

material related topics such as crack growth models and delamination modelling were examined. There were three sessions covering the following topics: Material Data and Crack Growth Models for DT-Approaches for Helicopter Structures; Design Application of DT-Principle; and Operator Experience and Certification Issues. A Technical Evaluation Report of this meeting is also included.

Author

Conferences; Rotary Wing Aircraft; Aircraft Reliability; Damage; Tolerances (Mechanics); Fatigue (Materials); Aircraft Structures; Systems Health Monitoring; Structural Reliability; Structural Failure

20000033303 Research and Technology Organization, Human Factors and Medicine, Neuilly-sur-Seine, France

Individual Differences in the Adaptability to Irregular Rest-Work Rhythms/Status of the Use of Drugs in Sleep-Wakefulness Management *Les différences entre individus concernant les facultés d'adaptation aux rythmes irréguliers activité-repos/Le point sur l'utilisation des médicaments pour la gestion des périodes veille-sommeil*

Individual Differences in the Adaptability to Irregular Rest-Work Rhythms/Status of the Use of Drugs in Sleep-Wakefulness Management; March 2000; 171p; In English, 3-4 Jun. 1999, Venice, Italy; See also 20000033304 through 20000033323 Report No.(s): RTO-MP-31; AC/323(HFM)TP/11; ISBN 92-837-1031-2; Copyright Waived; Avail: CASI; A08, Hardcopy; A02, Microfiche; C01, CD-ROM

This Lecture Series evaluates the human factors implications for pilots of "superagile flight", specifically with regard to agile airframes, agile weapons, and rapidly configurable systems. During interviews, experienced pilots have confirmed the operational need for military aircraft agility. Although pilots have noted that their experiences to date have not caused them any major concerns regarding the potential for physiological problems, significant gaps remain in our understanding of the effects of multi-axis accelerations. Human consequences are also anticipated in the area of situational awareness. Presentation of aircraft attitude and energy state in a helmet mounted display will be a design challenge. The minimal constraints on aircraft incidence angles and the expanded weapon launch envelopes anticipated with the forthcoming and next generations of air systems requires the provision of novel displays to enable pilots to effectively operate such air systems. Decision aids, intelligent interfaces and automated subsystems are required to enable pilots to maintain situational awareness whilst coping with dramatic increases in the tempo of the tactical situation and the 'data deluge'. Moreover, many of the current pilot protection systems will be inadequate for everyday use in such an unconstrained flight envelope and during ejection. Additional challenges in selection, simulation, and training are also anticipated

Author

Human Factors Engineering; Decision Support Systems; Drugs; Sleep; Rhythm (Biology)

20000033631 Research and Technology Organization, Systems Concepts and Integration Panel, Neuilly-sur-Seine, France

Electronic Warfare Test and Evaluation, Volume 17, Flight Test Techniques Series *les Essais et l'Evaluation du Materiel de Guerre Electronique*

Banks, H., Editor, Research and Technology Organization, France; McQuillan, R., Editor, Research and Technology Organization, France; March 2000; 91p; In English

Report No.(s): RTO-AG-300-Vol-17; AC/323(SCI)TP/24; ISBN 92-837-1034-7; Copyright Waived; Avail: CASI; A05, Hardcopy; A01, Microfiche; C01, CD-ROM

The past decade has seen an enormous increase in the use and importance of the "electronic battlefield." As a result of the continuing growth in this area, this volume has been prepared to serve as an introductory reference to the process of testing and evaluating Electronic Warfare Systems. Electronic Warfare (EW) is the mission area responsible for establishing and maintaining a favorable position in the electromagnetic domain. Test and evaluation (T&E) of those devices used on modern military aircraft to prosecute this critical mission area requires the use of a wide range of test techniques and analytical methods to assure users of the readiness of EW systems to meet the challenges of the combat environment. Actual in-flight testing comprises a relatively small portion of the EW T&E process. Today's tester makes judicious use of a plethora of models, simulations, and hardware-in-the-loop test facilities prior to and during the more realistic open-air range and installed system test facility events. Analysis of data derived from each of these test opportunities leads to the overall evaluation of the EW system. This volume will introduce the concept of the EW Test Process and subsequently show how it is applied in each class of test facility and to each major division of EW systems. The reader will find that the concentration in this document is far broader than "flight test" - ranging from laboratory efforts to establish the system performance baseline through complex ground-based simulations and finally the limited, but vitally important, verification accomplished in the open air range environment.

Author

Hardware-In-The-Loop Simulation; Computerized Simulation; Electronic Warfare; Flight Tests; Performance Tests

20000037804 Research and Technology Organization, Systems Concepts and Integration Panel, Neuilly-sur-Seine, France
Advances in Vehicle Systems Concepts and Integration *Les Avancees en Concepts Systemes pour Vehicules et en Integration*
April 2000; 400p; In English; In French, 26-28 Apr. 1999, Ankara, Turkey; See also 20000037805 through 20000037844;
CD-ROM contains full text document in PDF format

Report No.(s): RTO-MP-44; AC/323(SCI)TP/17; ISBN 92-837-0011-2; Copyright Waived; Avail: CASI; A17, Hardcopy; A04, Microfiche; C01, CD-ROM

The meeting proceedings from this joint symposium on "Advances in Vehicle Systems Concepts and Integration" contain the Technical Evaluation Reports and papers presented at Symposium (A) on "Aircraft Update Programmes, The Economical Alternative?" and at Symposium (B) on "Warfare Automation: Procedures and Techniques for Unmanned Vehicles". It was organized by the Systems Concepts and Integration (SCI) Panel of the RTA in Ankara, Turkey from 26 to 28 April 1999. Symposium (A) was structured in five sessions covering Cockpit, Sensors, Engine, Overview and Lessons Learned (Part I and Part II) and was concluded by a panel discussion. Symposium (B) was structured in four sessions covering Operational requirements for unmanned vehicles, Integration aspects and mission management, Platform management and critical technologies and System concepts and mission experience.

Derived from text

Conferences; Warfare; Upgrading; Economics; Aircraft Engines; Avionics; Systems Engineering; Human-Computer Interface; Pilotless Aircraft; Human Factors Engineering

20000037887 Research and Technology Organization, Neuilly-sur-Seine, France

Development and Operation of UAVs for Military and Civil Applications *Developpement et utilisation des avions sans pilote (UAV) pour des applications civiles et militaires*

April 2000; 311p; In English, 13-17 Sep. 1999, Rhode-Saint-Genese, Belgium; See also 20000037888 through 20000037899;
CD-ROM contains full text document in PDF format

Report No.(s): RTO-EN-9; AC/323(AVT)TP/24; ISBN 92-837-1033-9; Copyright Waived; Avail: CASI; A14, Hardcopy; A03, Microfiche; C01, CD-ROM

Lecture Notes for the RTO Applied Vehicle Panel (AVT) Special Course on "Development and Operation of UAVs for Military and Civil Applications" have been assembled in this report. The following topics were covered: Overview of current UAV systems and potential for the future, Design and airworthiness requirements, Propulsion systems, Airbreathing propulsion for UVAVs, Microflyers, Experimental research at low Reynolds numbers, Payloads and sensors, Datalinks, Airspace policy, Air traffic management and Tools for software and system architecture validation. The material assembled in this report was prepared under the combined sponsorship of the RTO Applied Vehicle Technology Panel, the Consultant and Exchange Programme of RTO, the von Karman Institute for Fluid Dynamics (VKI), and the NATO Partnership for Peace Programme.

Author

Airspace; Air Traffic Control; Command and Control; Architecture (Computers); Air Breathing Engines; Propulsion System Configurations; Fluid Dynamics; Pilotless Aircraft

20000038013 Research and Technology Organization, Applied Vehicle Technology Panel, Neuilly-sur-Seine, France

Recommended Practices for Monitoring Gas Turbine Engine Life Consumption *Pratiques Recommandees pour le Controle du Vieillessement des turbomoteurs*

April 2000; 181p; In English; CD-ROM contains full text document in PDF format

Report No.(s): RTO-TR-28; AC/323(AVT)TP/22; ISBN 92-837-1032-0; Copyright Waived; Avail: CASI; A09, Hardcopy; A02, Microfiche; C01, CD-ROM

The Task Group analysed the use of life monitoring systems in modern engines (from 1990) and in ageing fleets. The design and operational factors to be considered beforehand are described. Particular attention is paid to turbine disks. Regulatory requirements for safety standards are considered. Civil military practices, maintenance policies and procedures, modes and mechanics of service usage are covered as well as their influence on life consumption. Lifting procedures, monitoring system verification and validation, operational management considerations an usage monitoring approaches are dealt with.

Author

Gas Turbine Engines; Engine Monitoring Instruments; Systems Health Monitoring

20000039703 Research and Technology Organization, Applied Vehicle Technology Panel, Neuilly-sur-Seine, France

Measurement Techniques for High Enthalpy and Plasma Flows *Techniques de Mesure Pour les Ecoulements de Plasma et les Ecoulements a Haute Enthalpie*

Measurement Techniques for High Enthalpy and Plasma Flows; April 2000; 401p; In English, 25-29 Oct. 1999,

Rhode-Saint-Genese, Belgium; See also 20000039704 through 20000039719; CD-ROM contains full text document in PDF format

Report No.(s): RTO-EN-8; AC/323(AVT)TP/23; ISBN 92-837-1030-4; Copyright Waived; Avail: CASI; A18, Hardcopy; A04, Microfiche; C01, CD-ROM

The RTO AVT/VKI Special Course on "Measurement Techniques for High Enthalpy and Plasma Flows" gathered specialists in this area from Europe, USA and Russia who combined their efforts to produce this comprehensive set of notes. The following topics were covered: (1) review of various high enthalpy and plasma flow facilities, (2) intrusive and non intrusive measurement techniques for the characterization of the flows generated in these facilities, and (3) utilization of the plasma facilities for the evaluation of material catalytic properties. The material assembled in this report was prepared under the combined sponsorship of the RTO AVT panel, the Consultant and Exchange Program of RTO and the von Karman Institute (VKI) for Fluid Dynamics.

Author

Procedures; Enthalpy; Plasmas (Physics); Magneto hydrodynamic Flow

20000047263 Research and Technology Organization, Studies, Analysis and Simulation Panel, Neuilly-sur-Seine, France
Approaches to the Implementation of Environment Pollution Prevention Technologies at Military Bases *Approches de l'application des techniques de prevention de la pollution sur les bases militaires*

Approaches to the Implementation of Environment Pollution Prevention Technologies at Military Bases; April 2000; 343p; In English; Symposium of the RTO Studies, Analysis and Simulation Panel: Approaches to the Implementation of Environment Pollution Prevention Technologies at Military Bases, 5-7 May 1999, Budapest, Hungary; See also 20000047264 through 20000047289; CD ROM: CD ROM contains the entire document presented in PDF format

Report No.(s): RTO-MP-39; AC/323(SAS)TP/14; ISBN 92-837-1025-8; Copyright Waived; Avail: CASI; C01, CD-ROM; A15, Hardcopy; A03, Microfiche

Military operations within the framework of Environment Security are largely dependent on conformance with national and international laws or agreements to protect the air, water and ground resources. Pollution must be controlled, modified, or eliminated at the source. Society is paying a very high price today to restore and reclaim resources that have been subject to wanton pollution for many years by both military and civilian users. Many NATO and Partnership for Peace operations and training exercises are now being constrained by national and international environmental laws. Military forces, air, land and sea, must be enabled to operate and train under a wide variety of conditions. Serious consideration must be given to compliance with the body of environmental law either in existence or now being written. Pollution Prevention activities will ensure the ability to continue operation without undue penalty or restriction.

Author

Environment Pollution; Environment Protection; Military Operations; Pollution Control

20000047290 Research and Technology Organization, Applied Vehicle Technology Panel, Neuilly-sur-Seine, France
New Metallic Materials for the Structure of Aging Aircraft *les Nouveaux Matériaux Métalliques Pour les Structures des aéronefs d'ancienne Génération*

New Metallic Materials for the Structure of Aging Aircraft; April 2000; 111p; In English, 19-20 Apr. 1999, Corfu, Greece; See also 20000047291 through 20000047296; Original contains color illustrations

Report No.(s): RTO-MP-25; AC/323(AVT)TP/13; ISBN 92-837-1029-0; Copyright Waived; Avail: CASI; A06, Hardcopy; A02, Microfiche; C01, CD-ROM

This workshop dealt with the replacement of Structural component of aging aircraft with components manufactured from materials with specifications of a high qualification, with enhancing various parameters including overall life cycle cost technology (LCC). The following topics were treated: An Overview Aluminium Alloys and Composites Processing, Fatigue and Durability.

Author

Replacing; Aging (Materials); Aluminum Alloys; Fatigue (Materials); Durability

20000047449 Research and Technology Organization, Systems Concepts and Integration Panel, Neuilly-sur-Seine, France
Flight Testing of Radio Navigation Systems *les Essais en vol des systèmes de radionavigation*

April 2000; 83p; In English; CD ROM contains the entire document presented in PDF format

Report No.(s): RTO-AG-300-Vol-18; AC/323(SCI)TP/26-Vol-18; ISBN 92-837-1039-8; Copyright Waived; Avail: CASI; A05, Hardcopy; A01, Microfiche; C01, CD-ROM

Civil as well as military aviation relies on a number of radio navigation systems including satellite systems in space. As new systems are developed extensive flight testing is needed to ensure that the design parameters are met. The approval of every new

installation is dependent on flight tests. Moreover, all installations require flight inspection in well-defined time periods. The development and application of cost effective flight test techniques and instrumentation systems including the test aircraft are presented. Room is given also to the adverse effects of radio wave propagation like multipath.

Author

Flight Tests; Radio Navigation; Navigation Aids; Inspection

20000051537 Research and Technology Organization, Applied Vehicle Technology Panel, Neuilly-sur-Seine, France
Small Rocket Motors and Gas Generators for Land, Sea and Air Launched Weapon Systems *Les Petits Moteurs-Fusees et Generateurs de Gaz pour Missiles Tires du Sol, de Plates-Formes Aeriennes ou de Navires*

April 2000; 423p; In English; In French, 19-23 Apr. 1999, Corfu, Greece; See also 20000051538 through 20000051564; CD-ROM contains full text document in PDF format

Report No.(s): RTO-MP-23; AC/323(AVT)TP/11; Copyright Waived; Avail: CASI; A18, Hardcopy; A04, Microfiche; C01, CD-ROM

The symposium dealt with Small Rocket Motors and Gas Generators for Land, Sea, and Air Launched Weapon Systems. The following sub-topics were covered: Ground Launched Systems; Motor Layout and Testing ; Insensitive Munitions; Control Systems; Air Launched Systems; Propellants; Thrust and Impulse Managements; and Motor Service Life. Boosters, ejection motors, lateral thrust devices, and gas generators were covered, and research and operation recommendations were developed. A total of 34 papers from NATO countries are included.

Author

Conferences; Solid Propellant Rocket Engines; Gas Generators; Rocket Launching; Air Launching; Sea Launching; Weapon Systems

20000053157 Research and Technology Organization, Applied Vehicle Technology Panel, Neuilly-sur-Seine, France

Structural Aspects of Flexible Aircraft Control *Les Aspects Structuraux du Controle Actif et Flexible des Aeronefs*

Structural Aspects of Flexible Aircraft Control; May 2000; 295p; In English; Specialists' Meeting of the RTO Applied Vehicle Technology Panel (AVT): Structural Aspects of Flexible Aircraft Control, 18-20 Oct. 1999, Ottawa, Ontario, Canada; See also 20000053158 through 20000053182; CD-ROM contains full text document in PDF format

Report No.(s): RTO-MP-36; AC/323(AVT)TP/17; ISBN 92-837-0014-7; Copyright Waived; Avail: CASI; A13, Hardcopy; A03, Microfiche; C01, CD-ROM

The specialists' meeting dealt with design issues and more specifically Structural Aspects of Flexible Aircraft Control. Twenty six papers and a keynote address were presented with the following objectives: How the design methods used in the development of military fighter aircraft can be improved, and applied to transport aircraft design applications. There were three sessions covering the following topics: (1) Aeroservoelasticity; (2) Active Control for Flexible Structures I; and (3) Active Control for Flexible Structures II.

Author

Flight Control; Fighter Aircraft; Aircraft Design; Aeroservoelasticity; Transport Aircraft; Flexible Bodies; Control Systems Design