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This is a listing of unclassified AGARD publications NASA received and announced in the NASA abstract journal, *Scientific and Technical Aerospace Reports (STAR)*, during the quarter cited above. Reports on the list may be requested by U.S. AGARD Panel Members by accession number (e.g., N95-29503) from the NASA Center for AeroSpace Information, 800 Elkridge Landing Road, Linthicum Heights, MD 21090-2934. Requests may also be made by telephone (301) 621-0390, fax (301) 621-0134, or the Internet 'help@sti.nasa.gov.' Where stock permits, requests will be filled with printed copies; if printed copies are not available, microfiche copies will be supplied.

N95-29503# Advisory Group for Aerospace Research and Development, Neuilly-Sur-Seine (France). Flight Mechanics Panel.
AGARD FLIGHT TEST TECHNIQUES SERIES. VOLUME 13: RELIABILITY AND MAINTAINABILITY [FIABILITE ET MAINTENABILITE]
JAN M. HOWELL (Test Wing, 0412th, Edwards AFB, CA.) Feb. 1995 63 p
(AGARD-AG-300-VOL-13; ISBN-92-836-1014-8) Copyright Avail: CASI HC A04/MF A01

This AGARDograph outlines the rudiments of reliability and maintainability (R&M) evaluations conducted during initial flight test programs. Many organizations, both military and civilian, prefer to defer R&M evaluations until the new equipment has been delivered to the eventual user. The U.S. Air Force Flight Test Center has long conducted R&M evaluations during initial flight test and has found value in that process. This document discusses, first, the objectives of the early evaluations. Then, the acquisition process and the test planning process, as they relate to R&M evaluations, are presented. The test planning section discusses the data needed for a successful R&M evaluation and the sources of such data. The conduct of the test, analysis of results, and subsequent reporting methods are delineated. Follow-up actions that are needed after the test are considered. In conclusion, the document lists some R&M considerations for the future. Author

N95-29604# Advisory Group for Aerospace Research and Development, Neuilly-Sur-Seine (France). Aerospace Medical Panel.
RECENT ISSUES AND ADVANCES IN AEROMEDICAL EVACUATION (MEDEVAC) [LES PROGRES RECENTS ET LES QUESTIONS POSEES DANS LE DOMAINE DE L'EVACUATION AEROMEDICALE (MEDEVAC)]
Feb. 1995 132 p Symposium held in Athens, Greece, 3-7 Oct. 1994
(AGARD-CP-554; ISBN-92-836-1012-1) Copyright Avail: CASI HC A07/MF A02

Recent experience has demonstrated NATO's difficulty in planning and coordinating International Aeromedical Evacuation of acutely sick, injured and wounded patients. There is much discussion which seeks to clarify and define NATO's role in medical air evacuation. Papers in this Symposium updated available data in medicine research and development and provided a focal point for discussion of specialized equipment and techniques required to

care for patients in the NATO Medevac System. The Symposium covered also the role, training, procedures as well as command and control in the management of casualties in the aeromedical evacuation system. There is a clear operational need to provide medical planners within NATO and Alliance Nations with a generic concept of integrated aeromedical evacuation to improve the effectiveness of NATO forces. For individual titles, see N95-29605 through N95-29629.

N95-31061# Advisory Group for Aerospace Research and Development, Neuilly-Sur-Seine (France). Flight Vehicle Integration Panel.
FLIGHT VEHICLE INTEGRATION PANEL WORKSHOP ON PILOT INDUCED OSCILLATIONS [ATELIER SUR LE POMPAGE PILOTE]
Feb. 1995 117 p Workshop on Pilot Induced Oscillations of the Symposium on Active Control Technology, Turin, Italy, May 1994
(AGARD-AR-335; ISBN-92-836-1013-X) Copyright Avail: CASI HC A06/MF A02

Instability of the pilot/airframe combination has been a problem of manned flight. Rapid advances made in aviation following World War 2 greatly increased the incidence of PIO problems and the amount of research and development work aimed at understanding and mitigating these difficulties. Criteria and requirements were developed to be used in design to obtain satisfactory PIO qualities, but, in spite of all this work and the great flexibility in available modern control design technologies, PIO problems still often occur with new aircraft. It is clear that a universal solution of the PIO problem still evades the engineering community. The cost of these problems financially and in program delay is significant. This AGARD Flight Mechanics Workshop summary report contains presentations and discussions that aim toward the elimination and avoidance of PIO's by increasing the knowledge of PIO's and the problems associated with them. For individual titles, see N95-31062 through N95-31072.

N95-31989# Advisory Group for Aerospace Research and Development, Neuilly-Sur-Seine (France). Flight Mechanics Panel.
ACTIVE CONTROL TECHNOLOGY: APPLICATIONS AND LESSONS LEARNED [LES TECHNOLOGIES DU SYSTEME DE CONTROLE ACTIF: APPLICATIONS ET ENSEIGNEMENTS]
Jan. 1995 400 p In ENGLISH and FRENCH Presented at the Flight Mechanics Panel Symposium, Turin, France, 9-13 May 1994

2 N95-32123

(AGARD-CP-560; ISBN-92-836-0007-X) Copyright Avail: CASI HC A17/MF A04

In the last decade, Active Control Technology (ACT) has emerged from the realm of theory and modest experimental applications to full-scale use on production aircraft, while more elaborate forms of ACT are under test for the future production of aircraft. New technologies have been applied in military fighters to maximize maneuverability and agility, and in civil transports to reduce trim drag, lower pilot workload and improve riding qualities. During this symposium the status of Active Control Technology was assessed in light of the experience gained over the last decade. The symposium was organized around four sessions comprising 28 technical papers in all. These sessions focused on: Specifications for flight control design, Design and analysis methods, System integration and Implementation of experience. For individual titles, see N95-31990 through N95-32017.

N95-32123# Advisory Group for Aerospace Research and Development, Neuilly-Sur-Seine (France). Mission Systems Panel. **GUIDANCE AND CONTROL FOR FUTURE AIR-DEFENCE SYSTEMS [TECHNIQUES DE GUIDAGE/PILOTAGE POUR LES SYSTEMES FUTURS DE DEFENCE ANTI-AERIENNE]**

Jan. 1995 202 p ENGLISH and FRENCH Presented at the Mission Systems Panel 1st Symposium, Copenhagen, Denmark, 17-20 May 1994 (AGARD-CP-555; ISBN-92-836-0008-8) Copyright Avail: CASI HC A10/MF A03

This volume contains the Technical Evaluation Report and the 18 unclassified papers, presented at the Mission Systems Panel Symposium held in Copenhagen, Denmark from 17th to 20th May 1994. The papers presented covered the following headings: (1) Ballistic Missile Defense Architecture and Air Defense Simulation; (2) Advanced Sensors Technology and Techniques; (3) Acquisition, Pointing, Fire Control and System Integration (4) Data Fusion, Tracking and Identification; (5) Threat Detection, Suppression and Situation Assessment; (6) Missile Guidance and Control; and (7) C3I Aspects. For individual titles, see N95-32124 through N95-32141.

N95-32165# Advisory Group for Aerospace Research and Development, Neuilly-Sur-Seine (France). Structures and Materials Panel. **ENVIRONMENTALLY SAFE AND EFFECTIVE PROCESSES FOR PAINT REMOVAL [PROCEDES EFFICACES ET ECOLOGIQUES POUR L'ENLEVEMENT DES PEINTURES]**

Apr. 1995 91 p Lecture series held in Lisbon, Portugal 27-28 Apr. 1995, in Eskisehir, Turkey 1-2 May 1995 and in Ottobrunn, Germany 4-5 May 1995 (AGARD-LS-201; ISBN-92-836-1017-2) Copyright Avail: CASI HC A05/MF A01

Paint stripping and repainting of aircraft surfaces are required periodically during the operating lifetime of an aircraft. Historically, paint removal has been achieved using chemical strippers, involving materials which contain toxic components and which create hazardous working conditions. The process generates large amounts of hazardous waste from the chemicals used. Alternative methods for aircraft paint removal are now being investigated within the NATO nations with regard to their environmental safety and effective application. These processes include: Plastic Media Blasting, Wheat Starch Dry Media Blasting, Carbon Dioxide Pellet Blasting, Sodium Bicarbonate Blasting and Thermal Decomposition Methods (Laser, Flash Lamps/Carbon Dioxide). The Lecture Series will review these current state-of-the-art alternative methods with environmental effects and related health hazards, costs, process controls, and more. For individual titles, see N95-32166 through N95-32181.

N95-32486# Advisory Group for Aerospace Research and Development, Neuilly-Sur-Seine (France). Mission Systems Panel.

LOW-LEVEL AND NAP-OF-THE-EARTH (NOE) NIGHT OPERATIONS [OPERATION DE NUIT A BASSE ALTITUDE ET EN RASE MOTTES]

Jan. 1995 204 p Presented at the Mission Systems Panel Symposium, Rome, Italy, 25-27 Oct. 1994 (AGARD-CP-563; ISBN-92-836-0009-6) Copyright Avail: CASI HC A10/MF A03

Tactical rotary wing and low-level, fixed wing aircraft operating in high threat areas require improvements in night and adverse weather conditions in order to increase survivability, improve operational performance, and reduce pilot workload. Recent developments and the results of on-going programs suggest that increased automation and optimized integration of sensors, guidance/navigation, control and display systems, and weapons provide approaches to greatly enhanced capability in night operation. The purpose of this symposium is to support the evolutions and envelopment of alternative core structures which will lead to the fielding of effective low-level and N.O.E. night operations systems for fixed and rotary wing aircraft. For individual titles, see N95-32487 through N95-32505.

N95-33126# Advisory Group for Aerospace Research and Development, Neuilly-Sur-Seine (France). Guidance and Control Panel. **DUAL USAGE IN MILITARY AND COMMERCIAL TECHNOLOGY IN GUIDANCE AND CONTROL [TECHNOLOGIES DUALES MILITAIRES ET CIVILES DE GUIDAGE/PILOTAGE]**

Mar. 1995 179 p 59th symposium was held in Rome, Italy, 20-21 Oct. 1994 (AGARD-CP-556; ISBN-92-836-1016-4) Copyright Avail: CASI HC A09/MF A02

This volume contains the Technical Evaluation Report and the 19 unclassified papers, presented at the Guidance and Control Panel Symposium held in Pratica di Mare (Rome), Italy, from 20th to 21st October 1994. The papers presented covered the following headings: (1) Dual-use Opportunities and Missions; (2) Navigation Sensors for Dual-use Applications; (3) Multi-sensor Navigation Applied to Dual-uses; (4) Dual-use Technology for Air-Ground Operations; and (5) Dual-use Applications of G&C Technology. For individual titles, see N95-33127 through N95-33145.

N95-33198# Advisory Group for Aerospace Research and Development, Neuilly-Sur-Seine (France).

AGARD INDEX OF PUBLICATIONS: 1992-1994 [AGARD INDEX DES PUBLICATIONS 1992-1994]

Jul. 1995 503 p (AGARD-INDEX-92-94; ISBN-92-836-1019-9) Copyright Avail: CASI HC A22/MF A04

This volume provides abstracts and indexes for AGARD unclassified publications published during the period 1992-1994. Full bibliographical citations and abstracts for all the documents in this publication are given in the abstract section, which is organized in the major subject divisions and specific categories used by NASA in abstract journals and bibliographies. The major subject divisions are listed, together with a note for each that defines its scope and provides any cross-references. Category breaks in the abstract section are identified by category number and title, and a scope note. Within each category, the abstracts are arranged by series and year. Six indexes - Subject (based on NASA Thesaurus nomenclature), Personal Author, Corporate Source, Panel, Report/ Accession Number, and Accession Number - are included. Sample entries are shown on the first page of each index. This publication was sponsored by the Technical Information Committee of AGARD (TIC), and compiled by NASA's Center for AeroSpace Information (CASI). Author

N95-34050# Advisory Group for Aerospace Research and Development, Neuilly-Sur-Seine (France). Aerospace Medical Panel. **CURRENT CONCEPTS ON G-PROTECTION RESEARCH AND DEVELOPMENT [CONCEPTS ACTUELS EN RECHERCHE ET DEVELOPPEMENT POUR LA PROTECTION ANTI-G]**

May 1995 128 p Lecture series held in Ohio, 15-16 May 1995, in Koenigsbrueck, Germany, 12-13 Jun. 1995, and in Farnborough, UK, 15-16 Jun. 1995

(AGARD-LS-202; ISBN-92-836-0016-9) Copyright Avail: CASI HC A07/MF A02

A new class of fighter aircraft is emerging that will be operational or in advanced Test and Evaluation (T&E) by 1995. These aircraft (e.g. MiG 31, YF-22, Eurofighter, Rafale) are capable of developing G far in excess of 9G (i.e. 12G will be a realistic capability). The operational envelope of these agile aircraft will depend upon the G protection provided to the aircrew. In response to this challenge, established and new laboratories using human-use centrifuges are developing new aircrew protection methods. These laboratories include Armstrong Laboratory (US), SAM (UK), DCIEM (CA), LAMAS (FR), SAM (RU), KONIGSBRUCK Laboratory (GE) and FOA Laboratory (SW). In 1995, much of this research will have produced prototype flight-worthy equipment/methods with advanced understanding of their physiological bases. This lecture series reviews (1) pathophysiology of high sustained G (9G and above) and (2) recent equipment development and reports on T&E. For individual titles, see N95-34051 through N95-34060.