SPECIAL NOTICE

The abstract sections of the monthly supplements of *Aeronautical Engineering* can be bound separately. Individual abstracts can be located readily by means of the page numbers given at each entry, e.g., p 0559 A82-44940. To assist the user in binding Supplements SP-7037(145) through SP-7037(156), a title page is included in the back of this Cumulative Index.
A CUMULATIVE INDEX
TO
A CONTINUING BIBLIOGRAPHY ON

AERONAUTICAL ENGINEERING

This Cumulative Index supersedes the indexes contained in supplements [SP-7037(145) through SP-7037(156)] published by NASA during 1982.
This index is available as NTISUB/141/093 from the National Technical Information Service (NTIS), Springfield, Virginia 22161 at the price code of $10.00 domestic; $20.00 foreign.
INTRODUCTION

WHAT THIS CUMULATIVE INDEX IS

This publication is a cumulative index to the abstracts contained in NASA SP-7037(145) through NASA SP-7037(156) of Aeronautical Engineering: A Continuing Bibliography, NASA SP-7037, and its supplements have been compiled through the cooperative efforts of the American Institute of Aeronautics and Astronautics (AIAA), and the National Aeronautics and Space Administration (NASA). Entries prepared by the two contributing organizations are identified as follows:

1. NASA entries by their STAR accession numbers (N82-10000 series).
2. AIAA entries by their IAA accession numbers (A82-10000 series)

HOW THIS CUMULATIVE INDEX IS ORGANIZED

This Cumulative Index includes a subject, personal author, and corporate source index.

HOW TO USE THE SUBJECT INDEX

Two types of cross-references appear in the subject index:

1. Use (U) references indicate that the subject term is not “postable,” i.e., not a valid term, and that the following term or terms are used instead. For example:
   AIRCRAFT PROTUBERANCES
   U PROTUBERANCES
   FLIGHT PERFORMANCE
   U FLIGHT CHARACTERISTICS

2. Narrower Term (NT) references refer the user to more specific headings in the same subject area, under which additional material on the subject may be found. For example:
   FLOW RESISTANCE
   NT AERODYNAMIC DRAG
   NT FRICTION DRAG
   NT SUPERSONIC DRAG

In addition, a searcher may use the title or title and title extension in the index to narrow further his quest for particular items, this is because subject terms can readily include more than one class of document. For example:

AIRLINE OPERATIONS
   All-weather operations, including pilot role, instrument landing systems and guidance aids.
   Airport congestion as constraint on air travel, considering runway capacity and adjusted demand

illustrates a case where two references on different topics are listed under the same subject term.

HOW TO USE THE PERSONAL AUTHOR INDEX

All personal authors used in the abstract-section citations in the individual Supplements appear in the index. Differences in translation schemes may require multiple searching of the index for variants of an author's name. For example:

EMELIANOV, M. D.
   and
YEMELYANOV, M. D.
HOW TO USE THE CORPORATE SOURCE INDEX

The corporate source index entries are abridged versions of the corporate sources used in the abstract-section citations in the individual Supplements. The corporate source supplementary (organizational component) does not appear in the index. For example:

BOEING CO., SEATTLE, WASH. MILITARY AIRCRAFT SYSTEMS DIV. (Source citation entry)
BOEING CO., SEATTLE, WASH. (Source index entry)

HOW TO USE THE CONTRACT NUMBER INDEX

All contract numbers that are identified in the abstract-section citations in the individual Supplements appear in this index. Changes by agencies in the style in which contract numbers are presented may require multiple searching for variants. For example:

AF 33(615)-71-C-1758
F33615-71-C-1758

HOW TO USE THE REPORT/ACCESSION NUMBER INDEX

All report numbers that have been assigned by the corporate source, monitoring agency or cataloging activity appear in this index. Variations in initial cataloging may result in different report number series. For example:

TP-924
ONERA-TP-924

IDENTIFICATION OF DESIRED SUPPLEMENT

The abstract and descriptive cataloging for any accession number selected from the indexes may be found in the appropriate Supplement. The page-number range of each Supplement appears on the inside front cover of this index. Once the range of page numbers containing the selected accession number is located in the second column, the desired Supplement number will be found in the first column. For example:

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ASTESSA BAMAIIOS PATTEBIS

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HI SPXBAL AHIEHHAS

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Recent results in main beam nulling --- aircraft

General aviation aircraft antennas for the global
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| Antenna array design handbook
| [AD-A11091]
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Spiral slotted phased antenna array

Advanced microstrip antenna designs. Volume 2:
Microstrip GPS antennas for general aviation
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Improved 243 MHz homing antenna system for use on
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| (ULSP-01022-0) |
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**ANTENNA PATTERN**

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**ANTENNA RADIATION PATTERNS**

Antenna theory and design --- Book

Octave bandwidth dual polarized antenna

[AD-1118121]
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Broader bandwidth for thin conformal antennas

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[AD-A1009159]
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Conformal antenna array design handbook

[AD-A110916]
0322 A82-21463

Spiral slotted phased antenna array

[AD-A1109162]
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Advanced microstrip antenna designs. Volume 2:
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**ANTENNA PATTERN**

A ANTENNA RADIATION PATTERNS

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**ANTENNA RADIATION PATTERNS**

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**ANTENNAS**

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| LOOP ANTENNAS |
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| PARABOLIC ANTENNAS |
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FIBER OPTICS

Fiber optics is a critical technology in a wide range of applications, from telecommunications to aerospace engineering. This section highlights various research projects and advancements in fiber optics, spanning from the development of new materials to the optimization of existing systems.

- **Optimization of auto-pilot equations for rapid estimation of helicopter control settings** (AD-A110739)
- **Use of entire eigenstructure assignment with high-gain error-actuated flight control systems** (AD-A111098)
- **Marine Air Traffic Control and Landing System (MASCAL) investigation** (AD-A107384)
- **Active flutter suppression using optical output feedback digital controllers** (NASA-CR-165939)
- **Integrated energy management study. Energy efficient transport program** (NASA-CR-158960)
- **Portable air driven variable speed fiber optic fabricator** (AD-A106129)
- **Fabrication of boron/aluminum fan blades for SCB (AD-A108007)**
- **Air data measurement using distributed processing** (AIAA 82-0712)
- **Test and evaluation of 0V fiber optics for Bole of optical computers in aeronautical control** (AD-A11106)
- **Study of fiber optics to enhance an environmental technical and economic comparison of carbon fiber** (AD-A115060)
- **Processing and uses of carbon fibre reinforced plastics (AD-A105093)**
- **Failure analysis of silica phenolic nozzle liners** (NASA-CR-165212)
- **A preliminary investigation of Individual Blade-control Independent of a Swashplate** (NASA-CR-165121)
- **Design considerations and experiences in the use of composite material for an aeroelastic research wing** (NASA-CR-83291)
- **Fiber optics remoting of terrestrial radar and beacon signals** (AD-A116403)
- **Fiber optics observations of selected non-voros fiber composites for helicopter rotor blades** (AD-A107024)

FIBER OPTICAL SYSTEMS

The integration of fiber optics into various systems has revolutionized many industries. This section details research and advancements in optical systems for enhanced performance and efficiency.

- **Fiber optic system for aero engine exhaust analysis** (NASA-CR-165209)
- **Fiber-optic immunity to EMI/EMP for military aircraft** (NASA-CR-165213)
- **Portable air driven variable speed fiber optic cable termination polisher** (NASA-CR-165211)
- **Study of fiber optics to enhance an environmental lighting laboratory** (NASA-CR-165217)
- **Role of optical computers in aeronautical control applications** (NASA-CR-165218)
- **Test and evaluation of UV fiber optics for application for aircraft fire detector systems** (NASA-CR-165219)
- **Air data measurement using distributed processing and fiber optics data transmission** (NASA-CR-165220)

FIBER COMPOSITES

The use of fiber composites in aerospace applications has grown significantly in recent years. This section covers various research in composite materials, their properties, and applications.

- **Advanced concepts for composite structure joints and attachment fittings. Volume 1: Design and evaluation** (AD-A110212)
- **Study of noise reduction characteristics of composite fiber-reinforced panels, interior panel configurations, and the application of the tuned damper concept** (NASA-CR-165245)
- **Advanced concepts for composite structure joints and attachment fittings. Volume 2: Design and evaluation** (AD-A111106)
- **Fuselage structure using advanced technology fiber reinforced composites** (NASA-CASE-11680-1)
- **Carbon fiber reinforced composite structures protected with metal surfaces against lightning** (NASA-CASE-11680-1)

SILICON MODIFIED ENHANCED FIBER OPTICAL SYSTEMS

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A real time Pegasus propulsion system model for VSTOL piloted simulation evaluation

UNITED TECHNOLOGIES CORP., WINDSOR LOCKS, CONN.

Gas path analysis of commercial aircraft engines

UNITED TECHNOLOGIES RESEARCH CENTER, WEST HARTFORD, CONN.

Helicopter rotor trailing edge noise

Evaluation of fuel injection configuration to control carbon and soot formation in small GT combustors

Deposit formation in hydrocarbon fuels

Experimtntal study of external fuel vaporization

Determination of rotor wake induced espenaged airloads

External fuel vaporization study

Research and development program for non-linear structural modeling with advanced time-temperature dependent constitutive relationships

Research on turbine rotor-stator aerodynamic interaction and rotor negative incidence stall

Investigation of soot and carbon formation in small gas turbine combustors

A doublet lattice method for the determination of rotor induced espenaged vibration airloads. Analytic description and program documentation

A prescribed wake rotor inflow and flow field prediction analysis, user's manual and technical approach

Aeroelastic analysis for helicopter rotors with blade appended pendulum vibration absorbers. Mathematical derivations and program user's manual

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