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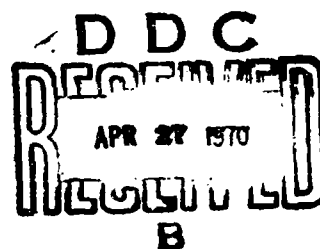
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FEBRUARY 1970
SPECIAL REPORTS, NO. 94



AIR FORCE CAMBRIDGE RESEARCH LABORATORIES
L. G. HANSCOM FIELD, BEDFORD, MASSACHUSETTS

Bibliography of AFCRL Reports on Meteorological Equipment

GEORGE McLEAN
MARILYN CARCHIA



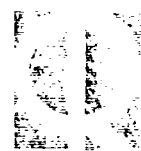
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AEROSPACE INSTRUMENTATION LABORATORY PROJECT 6670

AIR FORCE CAMBRIDGE RESEARCH LABORATORIES

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Abstract

This bibliography presents a listing of papers and publications by personnel of the Aerospace Instrumentation Laboratory (AFCRL) involved in the design, development, and test of meteorological equipment. Also included are related Scientific and Final Reports published under contract. The bibliography is divided into groups by type of report (that is, AFCRL Reports, Journal Articles, and Contract Reports). Subject and Author indexes at the rear of the report may be used to locate reports that are of interest to the user. All reports listed in this paper, if not available from the Defense Documentation Center (DDC), can be obtained from the author. AD numbers are listed where available.

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Bibliography of AFCRL Reports on Meteorological Equipment

I. INTRODUCTION

This bibliography presents a comprehensive listing of In-house Reports, Journal Articles, and Contractor Scientific and Final Reports, related to work performed under sponsorship of the Air Force Cambridge Research Laboratories (AFCRL) in the meteorological equipment area from 1960 to September 1969.

The survey has been prepared in response to requests by visitors to the meteorological equipment branches of the Aerospace Instrumentation Laboratory, who have had difficulty in locating papers describing this work.

This bibliography presents as complete a listing as possible on reports covering the design, development, and test of meteorological equipments. These equipments have been developed in order to provide the Air Weather Service, (MAC), and their support groups, such as Weather Detachments at the Eastern and Western Test Ranges, with operational and special capabilities. Close liaison has been effected with the Army, Navy, Coast Guard, U.S. Weather Bureau, FAA, NASA, and other Government Agencies.

Equipments covered by these listed reports have been developed under Project 6670, Atmospheric Sensing Techniques; Project 6020, Aircraft Meteorological Sensors and Techniques; and Project 6682, Test Range Meteorological Support.

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Exploratory development efforts carried out under Project 6670 frequently lead to new or vastly improved conventional measuring equipments and, in some cases, provide combat personnel with specialized tactical equipments. Ground-based balloon-launched and rocket-launched equipments and ground sensors are developed under this project.

Under Project 6020, the objective has been to develop sensors and techniques, including expendable sensors, that can be used on aircraft or dropped from the aircraft to (a) detect areas of hazardous meteorological conditions ahead of the aircraft, or (b) collect meteorological data for operational and climatological applications. (Project 6020 has recently been absorbed by Project 6670.)

Under Project 6682, the equipment developments are part of a continuing program for the development of necessary meteorological instrumentation to meet the specialized needs of the test ranges.

Earlier work sponsored by the Aerospace Instrumentation Laboratory was in support of Weather System 433L. Some of the reported work is directly, or in part, a continuation of the work begun under 433L.

Some of the reports listed describe the design of equipment, and some describe the scientific principles involved. Others delve into the results of studies based on data gathered by the equipment, and some, more research-oriented than developmental, describe the feasibility studies conducted as the first step in an orderly development cycle.

We hope that this listing will provide users with an easier means for obtaining research and developmental results applicable to their specialized interests. Supplements will be issued at intervals to update this listing.

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P.I. Hershberg, Apr 1960. AFCRC-TR-60-235; AD 250 585
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Hershberg, J.R. Griffin, and R.H. Guenther, Dec 1960.
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AD 298 980

- No. 28 Error Analysis of the Modified Humidity - Temperature Measuring Set AN/TMQ-11, R.W. Lenhard, Jr., Major, USAF, and B.D. Weiss, Aug 1963. AFCRL-63-845; AD 416 341
- No. 29 Evaluation of a Varactor Diode Parametric Amplifier for Rawin Set AN/GMD-2, Konstantins Pocs, Sep 1963. AFCRL-63-761; AD 423 824
- No. 35 Accuracy of Meteorological Data Obtained by Tracking the ROBIN with MPS-19 Radar, Robert W. Lenhard, Jr., Major, USAF, and Margaret P. Doody, Dec 1963. AFCRL-63-938; AD 434 379
- No. 43 A Preliminary Evaluation of the Cricketsonde Rocket System, Konstantins Pocs, Jun 1964. AFCRL-64-469; AD 603 592
- No. 69 Evaluation of the T-755/GMQ-20 Wind Speed and Direction Transmitter, Russell M. Peirce, Jun 1965. AFCRL-65-444; AD 619 171
- No. 79 A System for the Determination of the Vertical Wind Profile From an Aircraft, James F. Morrissey, Sep 1965. AFCRL-65-704; AD 625 188
- No. 128 Determining the Degree of Ambiguity in Frost Point Temperatures as Measured by an Optical Dew Point Sensor, Russell M. Peirce, and Ruben H. Guenther, Mar 1967. AFCRL-67-0147; AD 651 651
- No. 130 The SPARSA Atmospheric Electricity Detection System as Modified by the Addition of the Image Storage Tube Electro-Optical Triangulation Computer, Part I, Bernard D. Weiss, Mar 1967. AFCRL-67-0183; AD 651 818
- No. 133 Stratospheric Humidity Sensing with the Alpha Radiation Hygrometer, Frederick J. Brousaides, and James F. Morrissey, Nov 1967. AFCRL-67-0604
- No. 137 Use of the AN/FPS-77 for Quantitative Weather Radar Measurements, Wilbur H. Paulsen, Jan 1968. AFCRL-68-0013
- No. 140 Error Analysis of the Humidity-Temperature Measuring Set AN/TMQ-11, Bernard D. Weiss, Mar 1968. AFCRL-68-0154
- No. 143 An Analysis of the Performance of the Three-Station SPARSA Network for Detecting and Tracking Thunderstorm Activity, Bernard D. Weiss, May 1968. AFCRL-68-0272
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- No. 63 Flight Information and Experimental Results of Inflatable Falling Sphere System for Measuring Upper-Air Density, G.A. Faucher, R.W. Procnier and C.N. Stark, Aug 1961. AD 265 172
- No. 73 Accuracy of Density from the ROBIN Falling Sphere, R. Leviton and J.B. Wright, Dec 1961. AD 274 213

2.3 Research Notes

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- No. 113 A Catalogue of ARCAS - ROBIN Soundings, Robert W. Lenhard and Arthur J. Kantor, Jun 1965. AFCRL-65-449; AD 622 667
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- (7) AFCRL-62-234 AF 19(604)-8340 Final Report, April 30, 1962. Suggestions for the adaptation of the Porcupine II radar for the detection of small atmospheric dielectric irregularities. Richard Bates, National Co., Inc. AD 275 612
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