

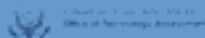
*Proceedings of the OTA Seminar on the
Discrete Address Beacon System (DABS)*

July 1980

NTIS order #PB80-208168

Proceedings of the
OTA Seminar on the
**Discrete Address
Beacon System (DABS)**

Background Paper Associated With OTA's
Assessment on the Airport and Air Traffic Control System



Library of Congress Catalog Card Number 80-600093

Preface

In response to a request from the House Committee on Appropriations' Subcommittee on Transportation, the Office of Technology Assessment convened a 1-day seminar on January 31, 1980, to examine some of the impacts on the aviation system of the Federal Aviation Administration's (FAA) proposed implementation of the Discrete Address Beacon System (DABS) and the Automatic Traffic Advisory and Resolution Service (ATARS). The objective of the seminar was to provide an information update on the impacts of DABS implementation and to make this information available prior to the appropriation hearings at which Congress considered the FAA request for initial implementation funding. Specifically, the Committee requested that the seminar review the following:

- the impact of DABS/ATARS on the Air Traffic Control Radar Beacon Service;
- the compatibility of DABS/ATARS equipment with upgraded military equipment; and
- the extent to which FAA is and should be coordinating the development of DABS/ATARS with the International Civil Aviation Organization.

This document includes a summary of the seminar findings and a detailed account of the day's proceedings. OTA is undertaking an assessment of air traffic control. The technologies discussed in the workshop are among the many technologies relevant to that assessment. However, OTA does not at this point take a position on any candidate technology.



JOHN H. GIBBONS
Director

Definitions

DABS (Discrete Address Beacon System).—An improved secondary surveillance radar system which can interrogate a specific aircraft within a given airspace. The discrete address function also provides a highly flexible datalink communications capability in support of a wide range of advanced air traffic control services such as weather advisories and the Automatic Traffic Advisory and Resolution Service. The DABS sensor is more accurate than the existing radar beacon system. Increased accuracy may facilitate higher levels of automation in ground systems.

ATARS (Automatic Traffic Advisory and Resolution Service).—A service that would be carried through the DABS datalink and would provide certain air traffic control information automatically, instead of by voice contact with the controller. A pilot in an ATARS-equipped aircraft would receive information on either the identity and relative location, or the identity, location, and altitude, of aircraft in close proximity to his own, depending on the equipment carried in the other aircraft. ATARS receives the surveillance data from DABS sensors and then computes traffic and resolution advisories. In the event of a potential collision, ATARS transmits avoidance instructions. Prerequisites to aircraft use of ATARS area DABS transponder with an altitude encoder and an ATARS display.

NOTE: Appendix A contains a list of the full names of other acronyms used in this Background Paper.

OTA Transportation Staff

John Andelin, *Acting Assistant Director, OTA
Science, Information, and Transportation Division*

Robert L. Maxwell, *Transportation Program Manager*

Yupo Chan Lemoine V. Dickinson, Jr.

Larry L. Jenney Jacquelynne Mulder David Seidman

Paula Walden Jerry D. Ward

Contractors

Jack H. Enders

Joanne Greiser, System Design Concepts, Inc.

Bonnie Back, System Design Concepts, Inc.

Arthur L. Webster

OTA Publishing Staff

John C. Holmes, *Publishing Officer*

Kathie S. Boss Debra M. Datcher Joanne Heming