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Air-Ground Communications Operational Considerations for 1980 and Beyond

RTCA DO-162
October 17, 1975

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F O R E W O R D

This Document presents an analysis of air-ground communications requirements anticipated for the post-1980 time frame. It was prepared by the Operational Working Group of RTCA Special Committee 120, and accepted by SC-120 at a meeting held June 25-26, 1974, in Washington, D. C. It was approved by RTCA on October 17, 1975. It was intended to be a prime source of reference material for the Special Committee during the preparation of a proposed U. S. National Aviation Standard for the air-ground communication system to be used post-1980. SC-120 had originally been set up to prosecute this task. By the time the Document was completed, however, progress on several ongoing FAA Engineering and Development programs likely to impact 1980's air-ground communications philosophy was such that other prerequisites to the commencement of this task were not to hand. When it became apparent that several years might elapse before these voids would be filled, the RTCA Executive Committee decided to postpone the preparation of the proposed National Aviation Standard and to disband SC-120.

This Document, therefore, is a record of the work performed by the SC-120 Operational Working Group (OWG) through June 1974. It presents the best estimates of future air-ground communications requirements that could be made at that time. It will not be kept current, however, and the reader should recognize that the information in it may have lost its validity during the time that has passed since then.

RTCA is an association of aeronautical organizations of the United States from both government and industry. Dedicated to the advancement of aeronautics, RTCA seeks sound technical solutions to problems involving the application of electronics and telecommunications to aeronautical operations. Its objective is the resolution of such problems by mutual agreement of its member organizations.

The findings of RTCA are in the nature of recommendations to all organizations concerned. As RTCA is not an official agency of the Government of the United States, its recommendations may not be regarded as statements of official government policy unless so enunciated by the government organization or agency having statutory jurisdiction over any matters to which the recommendations relate.

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CHAPTER 1 TASK CONDITIONS

1.1 Introduction

RTCA Special Committee 120 was set up to prepare a proposal for the U. S. National Aviation Standard for VHF/UHF air-ground communications (voice and data) for the post-1980 time-frame. An additional task imposed on it shortly after it was established was to prepare a similar proposal for the VHF voice-only system in use today.

At its first meeting, the Special Committee organized itself into two working groups, one to address the operational aspects of the assignment and the other to examine alternative technical proposals for providing air-ground data communications. Shortly thereafter, however, the technical group became totally involved in developing the proposal for the VHF voice-only standard, leaving the operational group to work alone in the forward-looking field.

1.2 Terms of Reference for the Operational Working Group

Special Committee 120 directed the Operational Working Group to prepare a statement of operational requirements for air-ground communications (voice and data) related to air traffic operations foreseen for 1980 and beyond. In addressing this task, the group was instructed to:

a. Review FAA/DOT plans for ATC system development in the time-scale envisaged and determine the ATC air-ground communications needs associated with them.

b. Review Airline/ARINC forecasts for company communications needs and planning in progress to satisfy them in the referenced time frame.

c. Review military air traffic services communications needs with particular emphasis on factors giving rise to requirements not covered in a.

d. Determine the air-ground communications needs of general aviation and other airspace users not covered by a., b., or c. above. Integrate such needs with requirements already established when they are seen to fall within the purview of SC-120.

e. Maintain liaison with the Technical Working Group of SC-120 to ensure that operational requirements are presented in a