

**NAVAL
SHORE ELECTRONICS
CRITERIA**

**HF RADIO PROPAGATION
AND
FACILITY SITE SELECTION**

**DEPARTMENT OF THE NAVY
NAVAL ELECTRONIC SYSTEMS COMMAND
WASHINGTON , D.C. 20360**

JUNE 1970

LIST OF EFFECTIVE PAGES

Total number of pages in this manual is 111 consisting of the following:

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RECORD OF CHANGES

CHANGE NO.	DATE	TITLE OR BRIEF DESCRIPTION	ENTERED BY

FOREWORD

PURPOSE

This handbook presents planning criteria and judgement factors for engineers and planners involved in the propagation path aspects of high-frequency circuit design.

SCOPE

The role of this handbook is to review some fundamentals concerning HF radio wave propagation, to describe methods of predicting propagation performance for an HF radio circuit, and to discuss factors that should be considered in connection with the selection of sites for HF communications terminals. Major attention is given to ionospheric (sky-wave) propagation since this is the principal application of HF radio. Ground-wave propagation is considered briefly in connection with the problem of using HF radio for short-distance communications.

Since the propagation path is only part of a circuit, it is apparent that this handbook is not intended as a guide for complete circuit planning, user-to-user. Criteria concerning signal processing and associated standards can be found in NAVELEX 0101, 102, and the reader should refer to NAVELEX 0101, 104 for a detailed discussion of HF radio antennas and the trade-offs to be considered in antenna selection.

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