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OTH-B RADAR SYSTEM: SYSTEM SUMMARY

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1.0 INTRODUCTION

This report summarizing the OTH-B Radar System was prepared, as part of a larger effort by the scientific community to publish a comprehensive "handbook" for use by the U.S. Air Force Over-the-Horizon radar operators at all levels, from technicians on up, that have had only a minimal exposure to the fundamentals of HF radiowave propagation in an ionized medium, the mechanics of the radar and the structure of the ionosphere and its relationship to other geophysical phenomena. The focus of this report is on the application of the fundamentals in these disciplines to the successful operation of the radar, bringing together the several areas of expertise necessary to make a very complex field more understandable.

The need for this material was often illustrated by the "folklore" circulated amongst the operators to explain certain phenomena that did not seem to fit their preconceived understanding of how the radar, the HF radiowave and the ionosphere interacted with each other. At times this resulted in operation of the radar that was less than optimum and it was felt that their overall performance would improve when these operators have access to this type of material.

This work depended on the contribution of several people who took the time and effort to discuss and review this report.