

NRC Publications Archive Archives des publications du CNRC

Progress reports on CB and MZPI radar equipments, July - September, 1950

National Research Council of Canada. Radio and Electrical Engineering Division.

For the publisher's version, please access the DOI link below./ Pour consulter la version de l'éditeur, utilisez le lien DOI ci-dessous.

https://doi.org/10.4224/21272339

NRC Publications Record / Notice d'Archives des publications de CNRC: https://nrc-publications.canada.ca/eng/view/object/?id=c3481959-2a25-4149-a5ab-b1d0a0e2897; https://publications-cnrc.canada.ca/fra/voir/objet/?id=c3481959-2a25-4149-a5ab-b1d0a0e28973

Access and use of this website and the material on it are subject to the Terms and Conditions set forth at https://nrc-publications.canada.ca/eng/copyright

READ THESE TERMS AND CONDITIONS CAREFULLY BEFORE USING THIS WEBSITE.

L'accès à ce site Web et l'utilisation de son contenu sont assujettis aux conditions présentées dans le site https://publications-cnrc.canada.ca/fra/droits

LISEZ CES CONDITIONS ATTENTIVEMENT AVANT D'UTILISER CE SITE WEB.

Questions? Contact the NRC Publications Archive team at

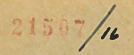
PublicationsArchive-ArchivesPublications@nrc-cnrc.gc.ca. If you wish to email the authors directly, please see the first page of the publication for their contact information.

Vous avez des questions? Nous pouvons vous aider. Pour communiquer directement avec un auteur, consultez la première page de la revue dans laquelle son article a été publié afin de trouver ses coordonnées. Si vous n'arrivez pas à les repérer, communiquez avec nous à PublicationsArchive-ArchivesPublications@nrc-cnrc.gc.ca.





MAIN Ser QC1 N21 ERA 190 c.2



ERA - 190

SECRET



NATIONAL RESEARCH COUNCIL OF CANADA RADIO AND ELECTRICAL ENGINEERING DIVISION

PROGRESS REPORT

ON

CB AND MZPI RADAR EQUIPMENTS

JULY - SEPTEMBER, 1950

Declassified to:
OPEN Original Signed by
Authority:

Date: JUL 11 1985

OTTAWA
OCTOBER 1950

The National Research Council of Canada Radio and Electrical Engineering Division

PROGRESS REPORT

on

CB and MZPI RADAR EQUIPMENTS

July-September, 1950

COUNTER-BOMBARDMENT RADAR EQUIPMENT

All units were completed during July and August for the trials of the initial system. The equipment was mounted on the carrier and in the Field Trials Trailer behind the Sussex Street laboratories during August. Initial tests were commenced, and, although these tests were incomplete at the time, the equipment was moved to the Connaught Ranges on September 15 at the request of the user. From that date to the end of the period under review efforts were concentrated on making the equipment ready for the field trials.

MICROWAVE ZONE POSITION INDICATOR Mk.II (Modified A.A. No.4, Mk.VI)

Flight trials have been carried out using the new antenna and rotating coupler. The expected advantages have been obtained — namely, greater bandwidth and more reliable A.F.C. operation.

It has not yet been possible to investigate the improvement in power-handling capacity. No improvement in range can be obtained from the antenna, except at the expense of coverage. This work has been described in Report ERA-193, "Trials of a New Antenna and Rotating Coupler for A.A. No.4, Mk.VI (MZPI)".

Further trials were made using the new antenna and rotating coupler and also a new experimental preamplifier of improved noise figure. The results are presented in Report ERA-194, "Flight Trials of Cascode Preamplifier for MZPI". The report demonstrates the actual improvement in range to be expected if the i-f noise figure is reduced to 1.7 db. Detailed charts are presented of the actual echo received from Vampire and Dakota aircraft, receding and approaching, at altitudes of from 5,000 to 40,000 feet. An appendix summarizes some of the more reliable data on aircraft echoing area.

Construction of an experimental polarization duplexer has begun. This G.E. development will probably provide the best means for duplexing at the higher power output. Several simpler systems which would involve much less modification to the existing r-f components are under active experimental investigation. These are based on the use of the British tube, Type-CV294, a very inexpensive tube, which, when correctly mounted, can serve as either a pre-TR or ATR switch. During the course of this work a shunt wave-guide tee has been developed with a greater bandwidth than is obtained by using conventional techniques.

DISTRIBUTION

Dr. C.J. McKenzie, NRC
Mr. B.G. Ballard, NRC
Dr. G.A. Miller, NRC
Mr. W.C. Brown, NRC
Mr. H.E. Parsons, NRC

Director of Armament Development, D.N.D., Canada (6 copies)

Defence Research Board,
Research Coordination Staff
(Electrical)