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AWAMM-45
Antique Wireless Museum, Bloomfield, NY

FREQUENCY SHIFT RECEIVER

CONVERTER EQUIPMENT

MODEL FRG

RESTRICTED

FREQUENCY SHIFT RECEIVER CONVERTER EQUIPMENT
MODEL FRG

The equipment consists of the accessories and the following:

1 CXKB - 1 ADAPTER

PRELIMINARY
INSTRUCTIONS

This instruction book is furnished for the information of commissioned, warrant, enlisted and civilian personnel of the Navy whose duties involve design, instruction, operation and installation of radio and sound equipment, the word "RESTRICTED" as applied to this instruction book signifies that this instruction book is to be read only by the above personnel, and the contents of it should not be made known to persons not connected with the Navy.

Manufactured for
NAVY DEPARTMENT - BUREAU OF SHIPS

By

PRESS WIRELESS, INC.
Little Neck, N. Y., U.S.A.

Contract NXSR 95144
Contract date: 22 March 1945

INSTRUCTION BOOK FOR MODEL FRG
FREQUENCY SHIFT RECEIVER CONVERTER EQUIPMENT

A. DESCRIPTION OF EQUIPMENT

A-1. GENERAL - Model FRG Frequency Shift Receiver Converter Equipment consists of two chassis mounted in a table cabinet. The upper chassis contains the Converter Equipment proper, and the lower chassis contains the Power Supply.

A-2. CONVERTER UNIT - The Model FRG Frequency Shift Receiver Converter Equipment is designed for the single channel reception of frequency-shift radio-telegraph signals when used with Navy Model RBA/RBB/RBC Series Radio Receiving Equipment. This equipment is also capable of reception of facsimile signals when such signals have characteristics falling within the range of the equipment.

Frequency Shift - The equipment is designed for operation at signaling speeds up to forty dots per second on radio telegraph signals using frequency-shift keying with a total shift from the "Mark" to the "Space" frequency of from 100 to 850 cycles per second. With frequency shifts of 500 cycles per second and higher, the equipment is capable of operation with phase modulation of 200 cycles at 1 radian superimposed on the frequency-shift signals.

Operation - The Converter Equipment is designed to operate from the audio output of radio receivers having an impedance of 600 ohms. Power levels in this circuit of from 60 micro-

watts to 60 milliwatts are used to operate the Converter Equipment. For frequency-shift values from 120 cycles to 200 cycles between "Mark" and "Space" frequencies, an audio center frequency from the receiver of 1000 cycles per second is used. For larger values, an audio center frequency of approximately 2500 cycles per second is used. A switch is located on the front panel of the Converter Equipment for changing from one frequency to another.

Output - The equipment provides outputs as follows:

1. Audio frequency tone having the following characteristics:
 - a. frequency - 1000 cycles per second $\pm 10\%$
 - b. power level - continuously variable from 60 microwatts to 24 milliwatts into 600 ohm resistive load.
 - c. output impedance - 600 ohms $\pm 10\%$
2. Direct current - the output circuit provides, in addition to the tone specified above, a choice of neutral (open-closed) signals at 60 milliamperes, and polar signals at ± 25 milliamperes into a circuit having a maximum resistance of 1800 ohms and a minimum resistance of 150 ohms including the receiving relay of a teletypewriter or a Boehme or similar type recorder.
3. Visual Tuning Indicator - In order to properly tune the radio receiving equipment under conditions of frequency drift, a meter having an operating zero center is provided on the Converter Equipment. The meter scale is provided

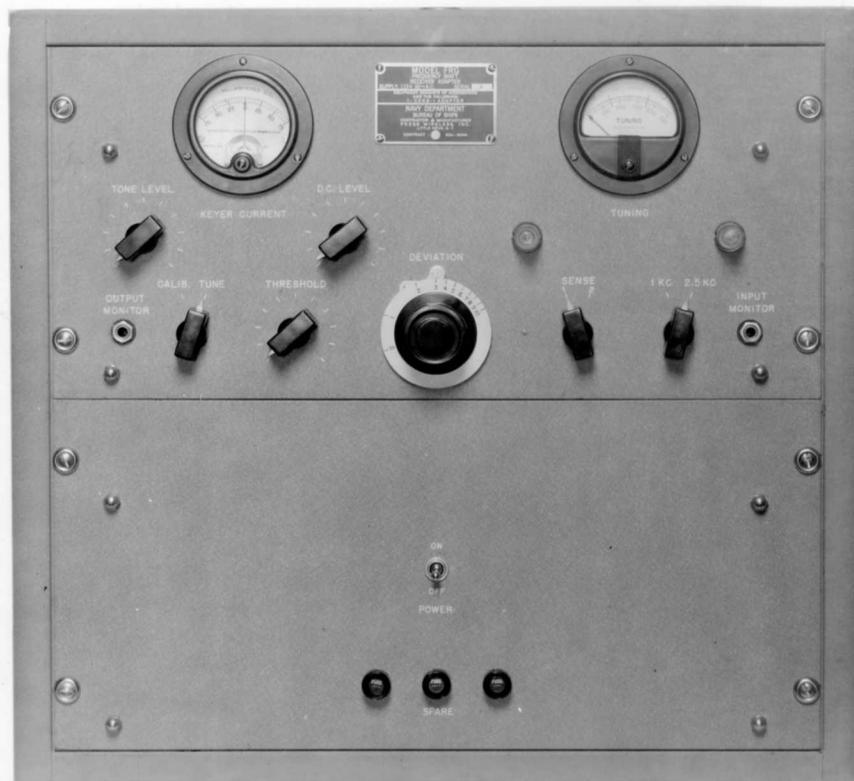
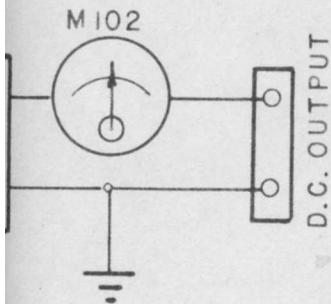
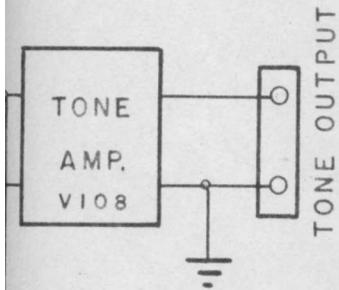


FIG. 5



PRESS WIRELESS, INC.

RESEARCH LABORATORY

LITTLE NECK, NEW YORK

DWG. NO. **6A-AA-41** SHEET _____ OF _____ SHEETS

DRAWN BY W.T.W. DATE 7-12-45 INSPECTED BY R.S.C. DATE 7-12-45

TRACED BY _____ DATE _____ APPROVED BY _____ DATE _____

SCALE _____ REPRODUCTION OF FINAL PLANS MADE _____

PLAN EXAMINED AND FOUND SATISFACTORY

BU. SHIPS APPROVAL LTR.

INM. APPROVAL LTR.

DATE

INSPECTOR OF NAVAL MATERIAL

ELECTRONIC DIVISION
NAVY DEPARTMENT

BUREAU OF SHIPS
WASHINGTON, D.C.

BLOCK DIAGRAM
FREQUENCY SHIFT
RECEIVER CONVERTER
MODEL FRG

BUREAU OF SHIPS PLAN NUMBER