DEPARTMENT OF THE ARMY TECHNICAL MANUAL TM 11-5820-334-10

DEPARTMENT OF THE AIR FORCE TECHNICAL ORDER TO 31R1-2URR-421

OPERATOR'S MANUAL

RADIO RECEIVER R-392/URR

DEPARTMENTS OF THE ARMY AND THE AIR FORCE

7 November 1960

TECHNICAL MANUAL
No. 11-5820-334-10

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AND THE AIR FORCE

WASHINGTON 25, D. C., *7 November 1960*

RADIO RECEIVER R-392/URR

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***This manual supersedes TM 11-5820-334-10P, 27 October 1959, TM 11-858, 27 April 1954, C1, 30 December 1955, C2, 26 July 1956, C3, 7 December 1956, C4, 7 February 1957, C5, 6 June 1960 as pertains to operation of subject equipment.**

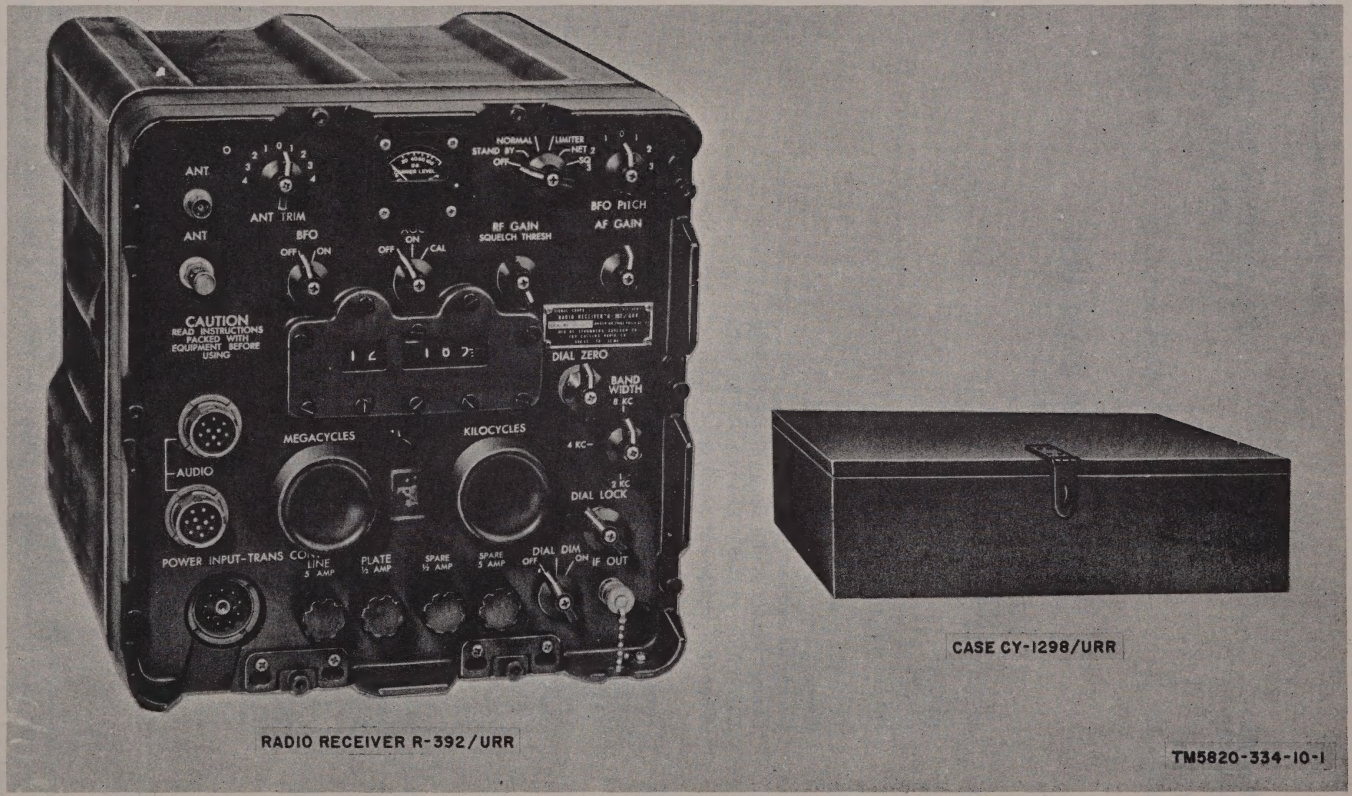


Figure 1. Radio Receiver R-392/URR.

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1. Scope

a. This manual describes Radio Receiver R–392/URR (fig. 1) and covers its operation and operator's maintenance. It includes instructions for cleaning and inspecting the equipment. Throughout this manual, Radio Receiver R–392/URR is referred to as the *receiver*.

b. For information on the operation of the receiver as a part of Radio Set AN/GRC–19, refer to TM 11–5820–295–10.

c. The maintenance allocation chart will appear in the second echelon portion of the technical manual.

2. Forms and Records

a. Unsatisfactory Equipment Report.

(1) Fill out and forward DA Form 468 (Unsatisfactory Equipment Report) to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS–ML, Fort Monmouth, N. J., as prescribed in AR 700–38.

(2) Fill out and forward AF TO Form 29 (Unsatisfactory Report) to the Commander, Air Materiel Command, Wright-Patterson Air Force Base, Ohio, as prescribed in AF TO 00–35D–54.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700–58 (Army), Navy Shipping Guide, Article 1850–4 (Navy), and AFR 71–4 (Air Force).

c. Preventive Maintenance Form. Prepare DA Form 11–238 (fig. 10), (Maintenance Checklist for Signal Equipment (Sound Equipment, Radio, Direction Finding, Radar, Carrier, Radiosonde, and Television)) in accordance with the instructions on the form.

d. Parts List Form. Forward DA Form 2028 (Recommend Changes to DA Technical Manual Parts Lists or Supply Manuals 7, 8, and 9) directly to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS–ML, Fort Monmouth, N. J., with comments on parts listings.

e. Comments on Manual. Forward all other comments on this publication directly to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS–PA2d, Fort Monmouth, N. J.

Section II. DESCRIPTION AND DATA

3. Purpose and Use

Radio Receiver R–392/URR is designed for vehicular use and is operated from a direct current (dc) power source such as a vehicle electrical system. The receiver provides reception of voice or radio-telegraph signals. It may be used alone as a receiver or as a part of a two-way radio set such as Radio Set AN/GRC–19.

4. Technical Characteristics

Frequency range	500 kc to 32 mc in 32 bands.
Types of signals received	Cw, mcw, voice (am.), and frequency-shift radio teletypewriter.
Type of tuning	Continuous; frequency read directly on counter-type frequency indicator.
Method of calibration	Built-in crystal calibrator.
Calibration points	Every 100 kc.
Nominal input voltage	28 volts dc; will operate on an input of 25 to 30 volts; will operate at reduced gain

with input voltages from 25 to 22 volts.

Input current ..... 3 amperes.

Antenna requirements 15-ft whip or random length long wire (para 7).

5. Components of Radio Receiver R-392/URR

a. Components. The components of the receiver are listed in the following chart:

Quantity	Item	Height (in.)	Depth (in.)	Width (in.)	Unit Weight (lb)
1	Radio Receiver R-392/URR (fig. 1).	11-1/2	14-3/16	11-1/2	52-1/4
1	Case, Electron Tube CY—1298/URR (fig 1).	4	3-1/16	10-1/8	2
2	TM 11-5820-334-10.				
1 set	Running spares (fig. 2) (*b.* below).				2

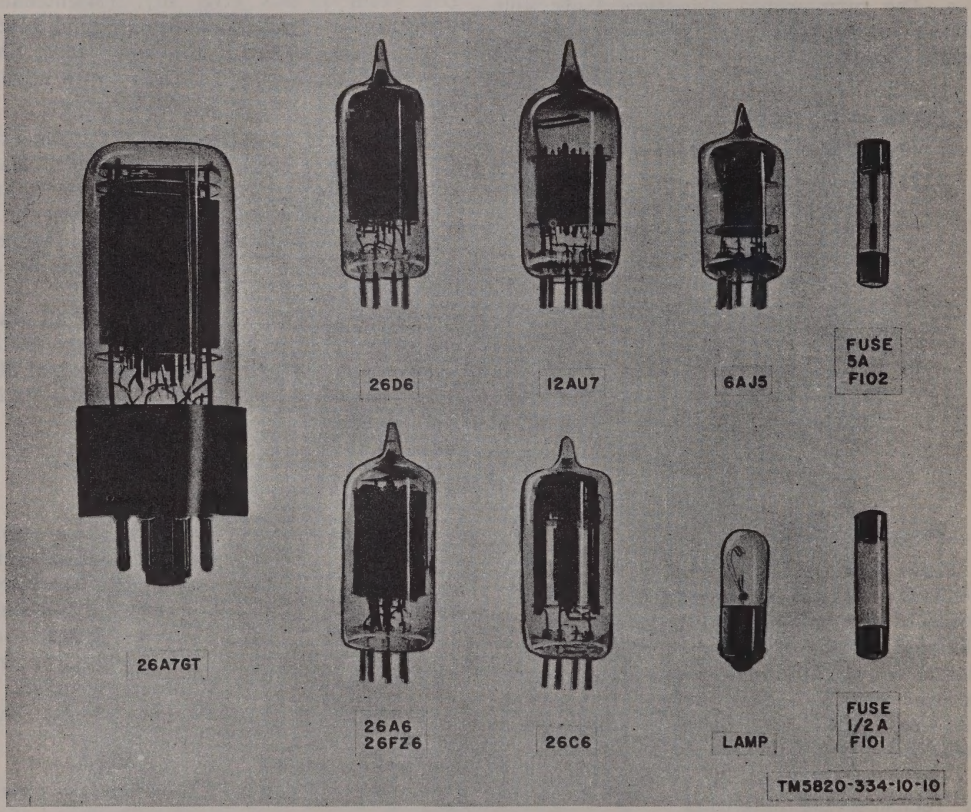


Figure 2. Running spares for Radio Receiver R-392/URR (three-fourths actual size).

b. Running Spares. (fig. 2) The following running spares are stored in Case, Electron Tube CY–1298/URR:

Quantity (ea.)	Item
1	Lamp, incandescent 28-volt, 0.175-ampere
2	Electron tube, 6AJ5
1	Electron tube, 26A7/GT
2	Electron tube, 12AU7
4	Electron tube, 26A6
1	Electron tube, 26FZ6
1	Electron tube, 26C6
1	Electron tube, 26D6
6	Fuse, 1/2-ampere, 250 volt
6	Fuse, 5-ampere, 32 volt

6. Description of Radio Receiver R–392/URR

(fig. 1)

Radio Receiver R–392/URR is housed in an immersionproof case and is sufficiently ruggedized to withstand conditions encountered in vehicular use. Recesses at the bottom rear of the case are used for fitting the receiver on the mounting base. The receiver is fastened within the case by 10 Allen-head screws. A watertight seal between the panel and case maintains the immersionproof feature of the receiver. All operating controls are located on the front panel. The frequency to which the receiver is tuned is shown directly on the frequency indicator. All electrical connections are made at the front panel.

7. Additional Equipment Required

The following equipment is not supplied as part of the receiver but is required for its operation:

a. Antenna. For mobile operation, a 15-foot whip antenna is used. In a fixed installation, a doublet antenna such as Antenna Group AN/GRA–12 or a random length wire may be used.

b. Mounting. When the receiver is to be used alone, Mounting MT–836/URR is required. When the receiver is used as part of Radio Set AN/GRC–19, it is installed on Mounting MT–851/GRC–19 along with Radio Transmitter T–195/GRC–19.

c. Headset. Navy type CW–49507 and Audio Headset Cord CX–1334/U or equivalent headset and cord are required.

d. Loudspeaker (Optional). When a loudspeaker is to be used, Dynamic Loudspeaker LS–166/U or equivalent 600-ohm loudspeaker is required.

e. Power Source. For mobile operation, a 24-volt dc vehicular electrical system is used. For other installations, a 24- to 28- volt dc supply at 3 amperes is required.

f. Cable Assembly. If the receiver is used alone, Electrical Special Purpose Cable Assembly CX–1597/U is required.

CHAPTER 2

OPERATING INSTRUCTIONS

Note. When the receiver is used as part of Radio Set AN/GRC–19, refer to TM 11–5820–295–10.

8. Operating Controls

(fig. 3)

The following chart lists the receiver operating controls and their functions:

Control or indicator	Function	
	SW Position	*Function*
Function switch _____	OFF	Turns off power to receiver.
	STAND BY	Applies power to tube filaments but signals cannot be received.
	NORMAL	Sets up receiver for normal operation.
	LIMITER	Reduces static. The limiter has little effect on static when receiving weak signals.
	NET	Permits simultaneous operation of the receiver and an associated transmitter.
	SQ (squelch)	Prevents noise from being heard when a signal is not being received. The minimum signal level which can be received in the SQ position is determined by the position of the RF GAIN SQUELCH THRESH control.
Frequency indicator ___	Shows the frequency in megacycles or kilocycles to which the receiver is tuned. Megacycles are indicated in the first two spaces of the frequency indicator. Kilocycles are indicated in the last three spaces of the frequency indicator. (The receiver shown in figure 3 is tuned to 29,111 kilocycles).	
MEGACYCLES control	Changes the tuning range of the receiver in steps of 1 megacycle.	
KILOCYCLES control _	Tunes the receiver.	
RF GAIN SQUELCH THRESH control.	Controls the ability of the receiver to receive weak signals. Establishes the minimum level of signals which can be heard when the function switch is in the SQ position. The receiver can receive the weakest signal when the control is completely clockwise.	
AF GAIN control ____	Controls the loudness of the signal.	
CARRIER LEVEL meter	When the AGC switch is set to ON or CAL, shows the relative strength of received signal.	
ANT TRIM control ___	Tunes the antenna circuit. Should be adjusted for maximum signal strength.	
ANT receptacle (upper connector) *and* ANT post (lower connector)	Connects antenna to receiver. The antenna can be connected to either receptacle into which the antenna lead-in fits.	

Control or indicator	Function
BFO control	In ON position, permits reception of cw signals. In OFF position, turns off BFO.
BFO PITCH control	Adjust the pitch of code signals when the BFO switch is ON.
AGC switch	In ON position, keeps the loudness of the signal nearly the same regardless of the strength of the signal being received. In OFF position, turns off the agc. In CAL position, provides calibration signals for checking or adjusting the frequency indicator.
DIAL ZERO control	Permits correction of small errors in the frequency indicator.
DIAL LOCK control	Locks the KILOCYCLES control.
BAND WIDTH switch	At 2 KC, reduces interference caused when unwanted signals are too close in frequency to the wanted signal. At 4 KC, reduces interference but not as much as in the 2 KC position. At 8 KC, used when interference is not objectionable. Voice signals will have better tone quality in this position.
DIAL DIM switch	In ON position, turns dial light on. In OFF position, turns dial light off. At midposition, causes dial light to be dim.
IF OUT connector	Used to connect receiver to a radio teletypewriter converter when such equipment is used.
AUDIO receptacles (2)	Used to connect a headset and/or speaker to the receiver. Used to connect a microphone or key when the receiver is used as part of Radio Set AN/GRC–19.
POWER INPUT-TRANS CONT receptacle.	Used to connect the receiver to the vehicular electrical system. Used to connect the receiver to an associated transmitter when used as part of Radio Set AN/GRC–19.

NOTE. All controls except the frequency selector (MEGACYCLES and KILOCYCLES controls) are marked by a white line. The white line points to the related control setting labeled on the panel. For example, on figure 3, the BFO switch is shown OFF, BFO PITCH at 0, function switch at NORMAL.

9. Tuning Precautions

CAUTION: Be careful when operating the MEGACYCLES control, because on some receivers the stop mechanism fails to provide a positive stop. The limits between which the control can be rotated without damage are 00 and 31 megacycles.

a. The KILOCYCLES control has a 25-kilocycle overlap at each end of its travel. It can be tuned through 000 kilocycles in the counterclockwise, or negative, direction for 25 kilocycles; in which case, the counter will indicate −975 kilocycles. It can be tuned past 999 kilocycles in the clockwise, or positive, direction for 25 kilocycles; in which case, the counter will indicate +25 kilocycles.

b. To prevent any possible damage to the tuning mechanism, do not tune past 000 kilocycles counterclockwise or 999 kilocycles clockwise (fig. 4).

10. Voice Operation

a. To receive voice (am.) signals, follow the procedure shown in figure 5.

b. To stop the receiver, follow the procedure shown in figure 6.

11. Cw and Modulated Continuous Wave Operation

a. To receive cw or modulated continuous wave (mcw) signals, follow the procedure shown in figure 7.

b. To stop the receiver, follow the procedure shown in figure 8.

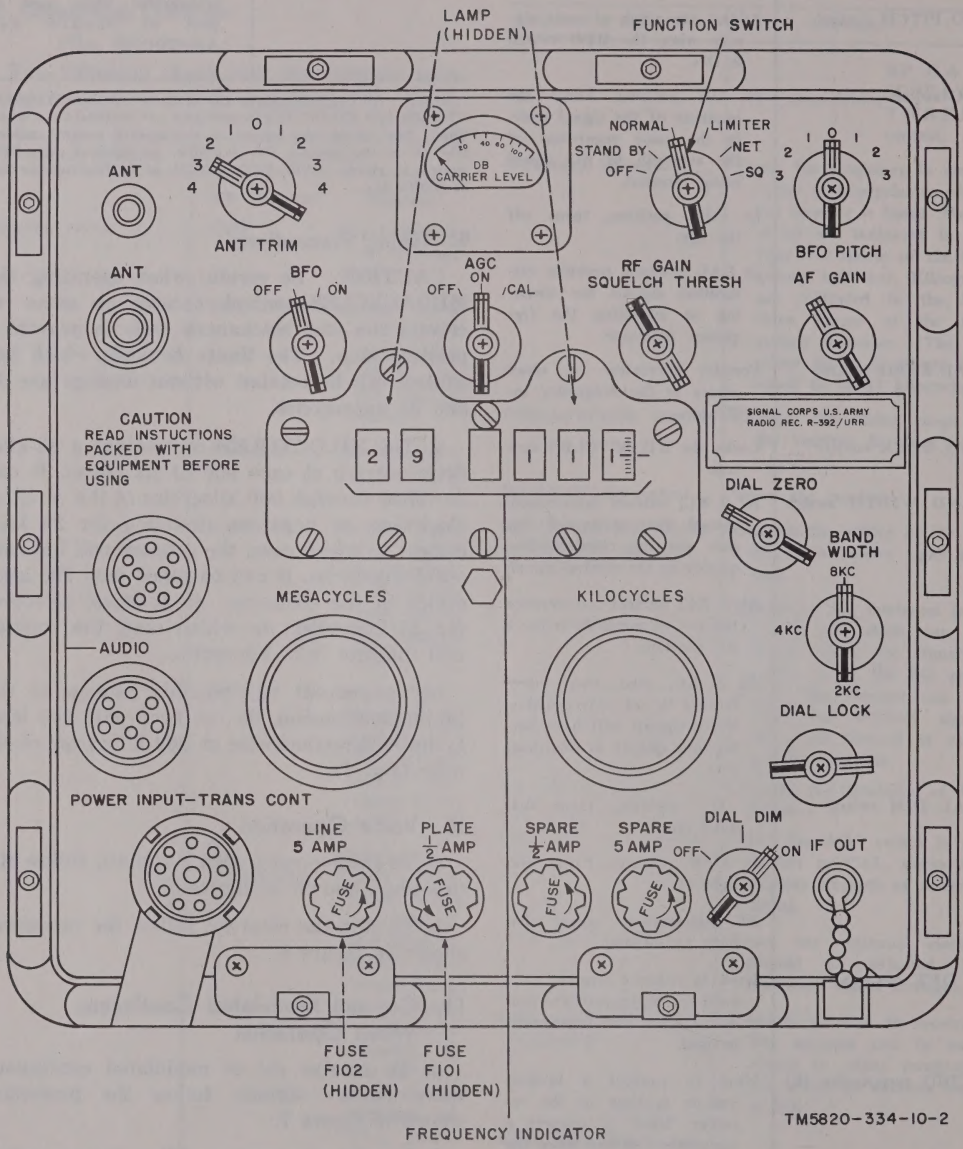


Figure 3. Radio Receiver R-392/URR, front panel.

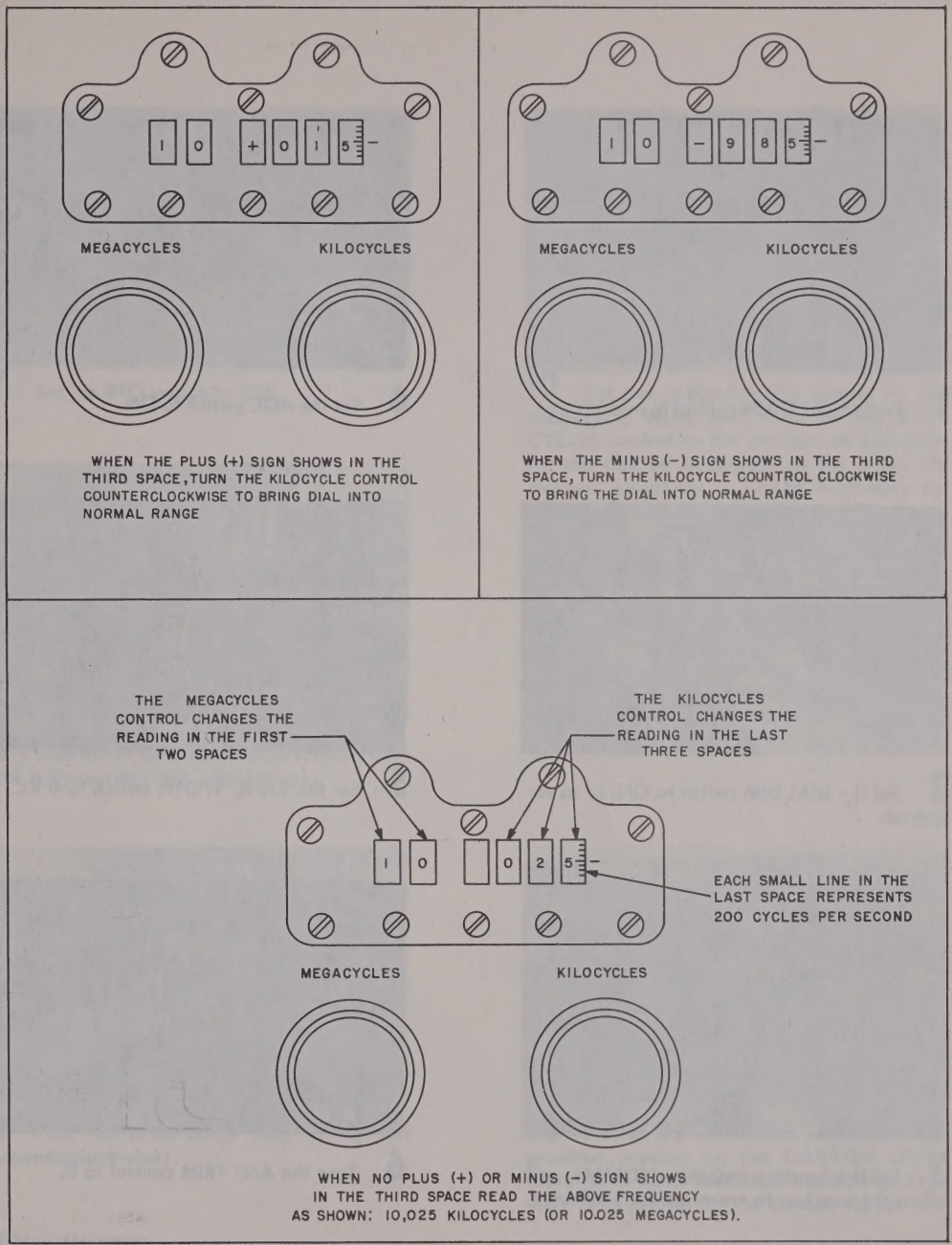
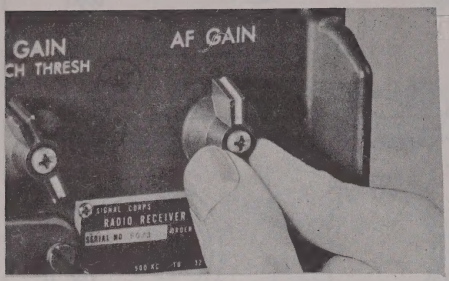
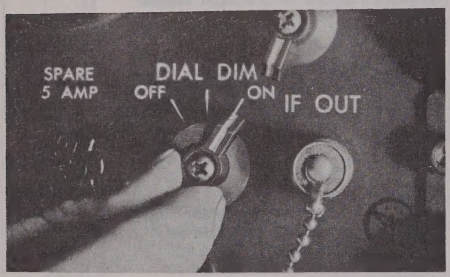


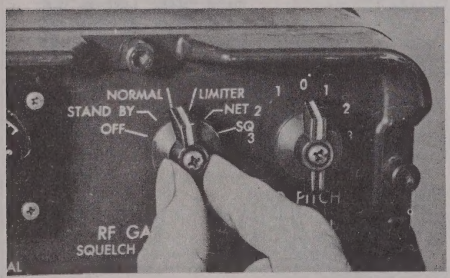
Figure 4. Frequency indicator readings.



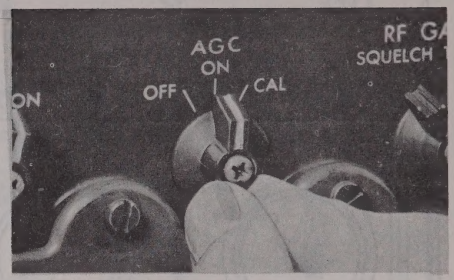
1 Turn the AF GAIN control to midposition.



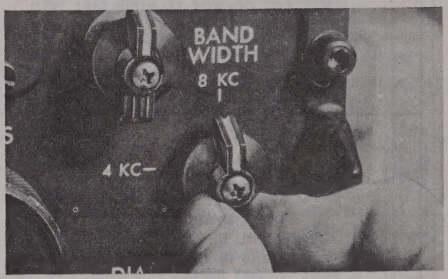
2 Set the DIAL DIM switch to ON, or as required.



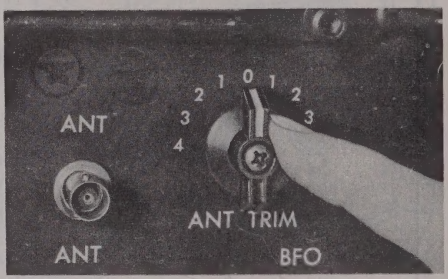
3 Set the function switch to NORMAL and allow the receiver to warm up for 5 minutes.



4 Set the AGC switch to ON.



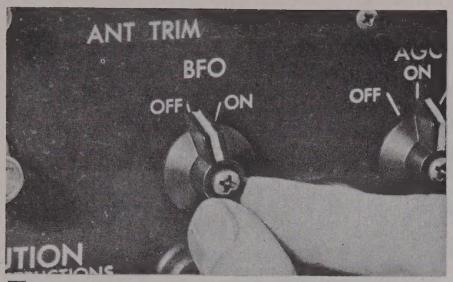
5 Set the BAND WIDTH switch to 8 KC.



6 Turn the ANT TRIM control to 0.

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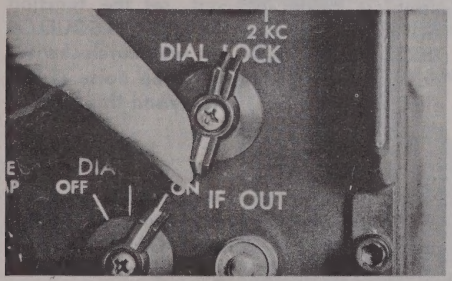
Figure 5①. Voice operation (part 1 of 3).



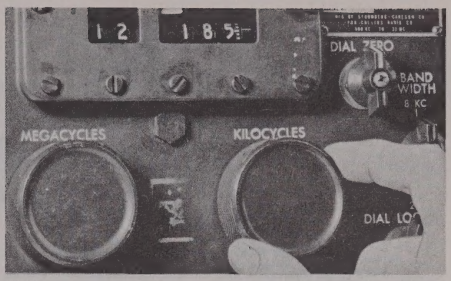
7 Set the BFO switch to OFF.



8 Turn the RF GAIN SQUELCH THRESH control fully to the right (clockwise).

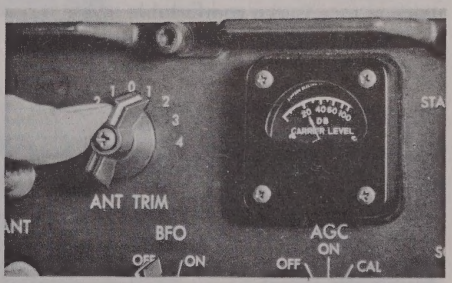


9 Turn the DIAL LOCK fully to the left (counterclockwise).



10 Set the MEGACYCLES control to the megacycle band and then set the KILOCYCLES control to the number of kilocycles for the desired frequency. In the figure the desired frequency is 12,185 kilocycles (or 12.185 megacycles).

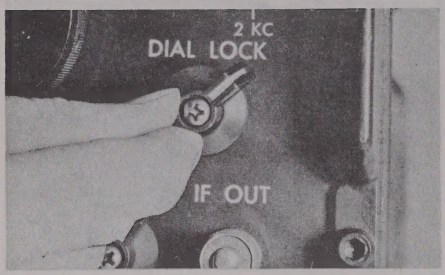
11 Adjust the KILOCYCLES control (step 10) for the greatest reading on the CARRIER LEVEL meter. If no meter reading is noted, adjust the KILOCYCLES control for the loudest signal.



12 Adjust the ANT TRIM control for the greatest reading on the CARRIER LEVEL meter If no meter reading is noted, adjust the ANT TRIM control for the loudest signal.

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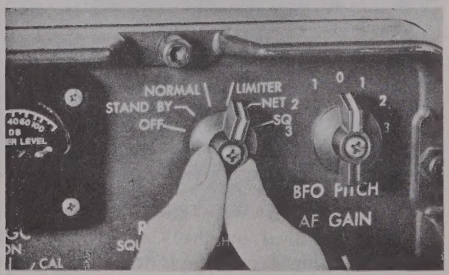
Figure 5(2). Voice operation (part 2 of 3).



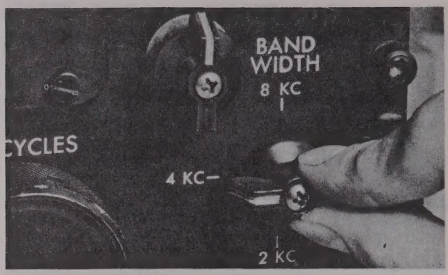
13 Lock the KILOCYCLES control by turning the DIAL LOCK control fully to the right (clockwise).



14 Adjust the AF GAIN control so that the voice or tone is at a comfortable level.



15 If objectionable noise or static is heard, set the function switch to LIMITER.



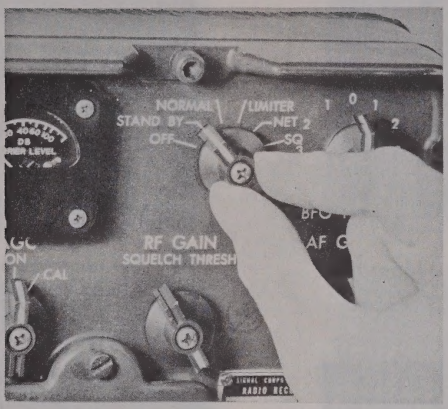
16 If interference from another station is heard, set the BAND WIDTH switch to 4 KC, or, if necessary, to 2 KC.



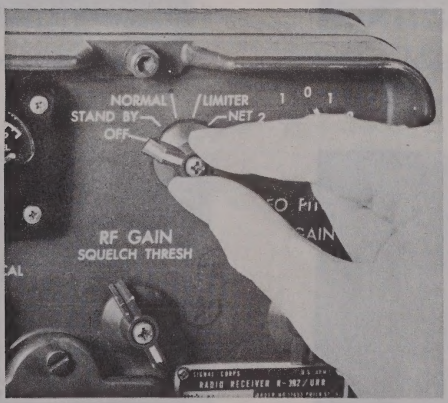
17 If the noise is very annoying when no signal is being received, set the function switch to SQ and turn the RF GAIN SQUELCH THRESH control to the left (counterclockwise) slowly to the point where the noise is first eliminated. **Do not turn beyond this point.**

Note. Do not set the function switch to SQ if the signal is weak or subject to fading. If it is necessary to move the RF GAIN SQUELCH THRESH control more than a small amount to the left to eliminate noise, do not set the function switch to SQ.

Figure 5③. Voice operation (part 3 of 3).



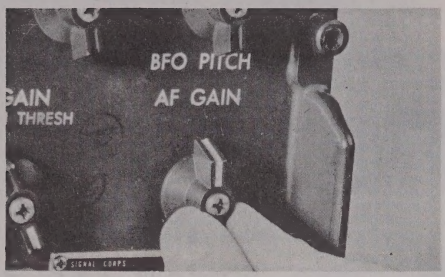
1 When the receiver is not to be used for a short interval but is to be kept ready, set the function switch to STAND BY.



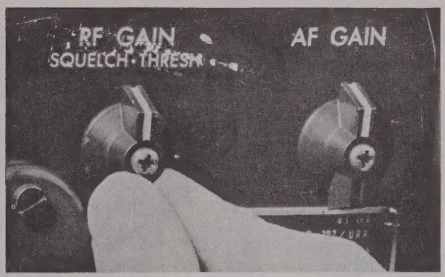
2 To turn the receiver off, set the function switch to OFF.

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Figure 6. Stopping procedure for voice operation.



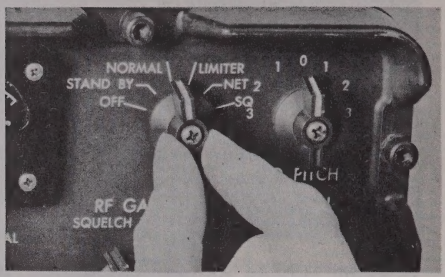
1 Turn the AF GAIN control to midposition.



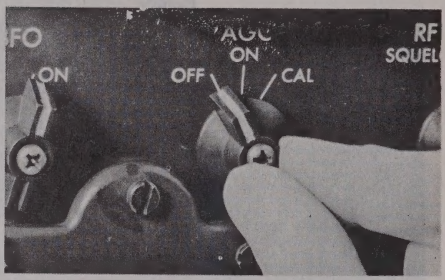
2 Turn the RF GAIN SQUELCH THRESH control to midposition.



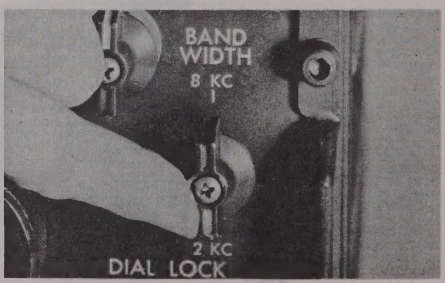
3 Set the DIAL DIM switch to ON or as required.



4 Set the function switch to NORMAL and allow the receiver to warm up for 5 minutes.



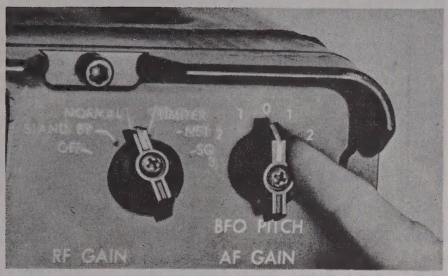
5 Set the AGC switch to OFF.



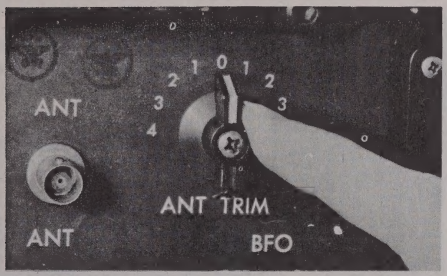
6 Set the BAND WIDTH switch to 2 KC.

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Figure 7①. Cw operation (part 1 of 3).



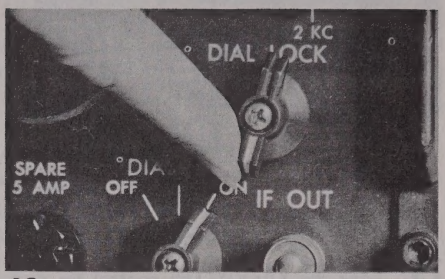
7 Turn the BFO PITCH control to 0.



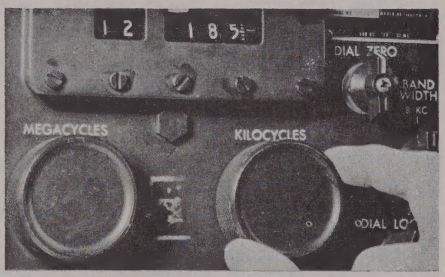
8 Turn the ANT TRIM control to 0.



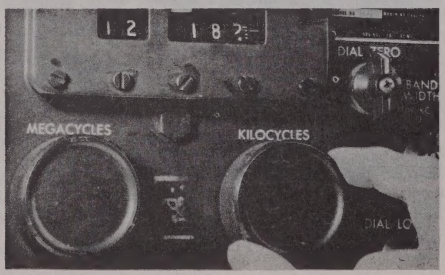
9 Set the BFO switch to ON.



10 Turn the DIAL LOCK control fully to the left (counterclockwise).



11 Set the MEGACYCLES control to the megacycle band and then set the KILOCYCLES control to the number of kilocycles for the desired frequency. In the figure the desired frequency is 12,185 kilocycles (or 12.185 megacycles).



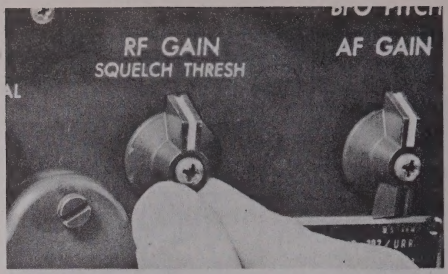
12 Adjust the KILOCYCLES control to obtain a zero beat in headset or loudspeaker.

TM5820-334-10-6 ②

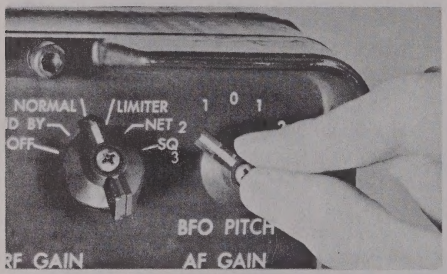
Figure 7②. Cw operation (part 2 of 3).



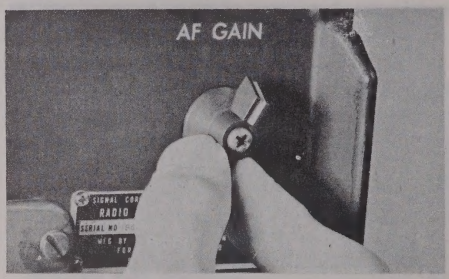
13 Lock the KILOCYCLES control by turning the DIAL LOCK control fully to the right (clockwise).



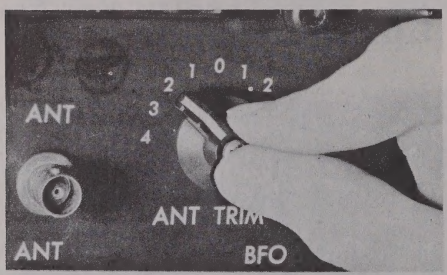
16 Adjust the RF GAIN SQUELCH THRESH control so that the tone is loud and clear.



14 Adjust the BFO PITCH control to give a note or signal of pleasing pitch.



17 Adjust the AF GAIN control so that the signal is at a comfortable level.



15 Adjust the ANT TRIM control for the loudest signal.

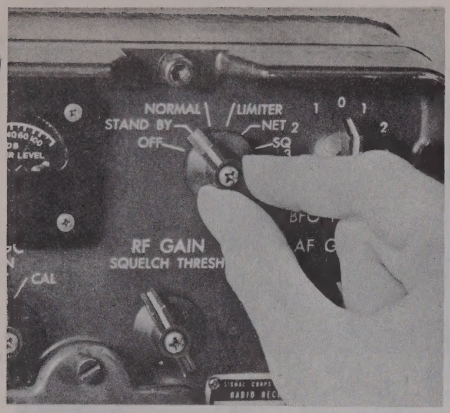


18 If objectionable noise or static is heard, set the function switch to LIMITER.

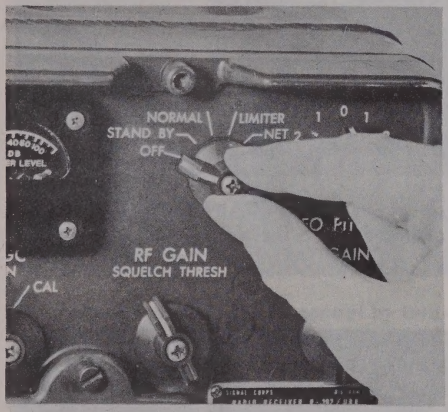
Note. Do not set the function switch to SQ for cw or mcw reception.

TM5820-334-10-6③

Figure 7③. Cw operation (part 3 of 3).



1 When the receiver is not to be used for a short interval but is to be kept ready, set the function switch to STAND BY.



2 To turn the receiver off, set the function switch to OFF.

TM5820-334-10-7

Figure 8. Stopping procedure for cw.

12. Frequency Indicator Calibration

a. Whenever an accurate indication is required, the frequency indicator should be calibrated. The 100-kc point nearest the operating frequency should be used for calibration. To calibrate the dial, follow the procedure shown in figure 9.

b. After the dial has been calibrated, the receiver should be operated as described in paragraph 10 for voice, or paragraph 11 for cw.

13. Recognition and Identification of Jamming

Under real or simulated tactical conditions, it is possible for the receiver to be jammed by the enemy. Jamming is easily done by transmitting a strong signal on the same frequency, making it difficult or impossible to hear the desired signal. Unusual noises or strong interference heard on the receiver may be enemy jamming, signals from a friendly station, noise from a local source, or due to a defective receiver. To determine whether the interference is originating in the receiver, disconnect the antenna, remove the antenna, or short the ANT post to the chassis. If the interference continues, the receiver is defective. Enemy jamming may be *continuous* wave or *modulated*. A jamming signal may be intended to block a single frequency; this is called *spot* jamming. The enemy may use one or several transmitters to jam a block or band of frequencies. This method is called *barrage* jamming.

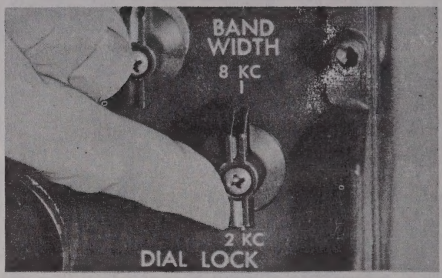
a. Continuous-Wave Jamming. Cw jamming is transmitted as a steady carrier. This signal beats with the signal being received and produces a steady tone in the headset. Cw jamming signals may also be keyed by using a random on and off signal, or using actual code characters keyed at the same rate or a little faster than the signal being received.

b. Modulated Jamming. Modulated jamming signals may consist of noise, laughter, singing, music, various tones, or almost any unusual sound. It may be a combination of these sounds. Various types of modulated jamming signals are explained in (1) through (6) below.

(1) *Spark.* This is the simplest, most effective, and most easily produced jamming signal. This type of signal sounds rough, raspy, and sometimes like interference produced by an elec-



1 Turn the AF GAIN control to midposition.



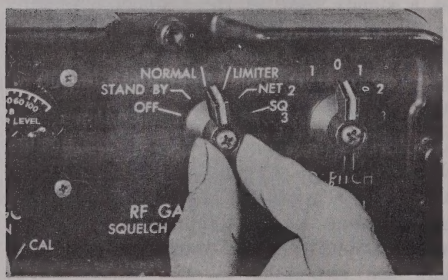
4 Set the BAND WIDTH switch to 2 KC.



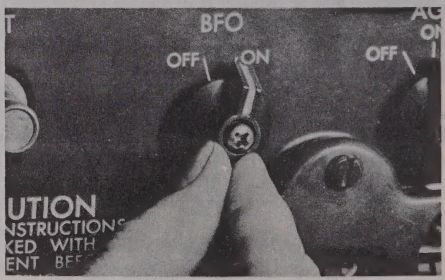
2 Set the DIAL DIM switch to ON as required.



5 Turn the RF GAIN SQUELCH THRESH control fully to the right (clockwise).



3 Set the function switch to NORMAL and allow the receiver to warm up for at least 5 minutes.



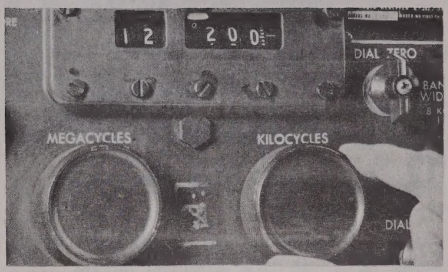
6 Set the BFO switch to ON.

TM5820-334-10-8 ①

Figure 9①. Frequency indicator calibration (part 1 of 3).



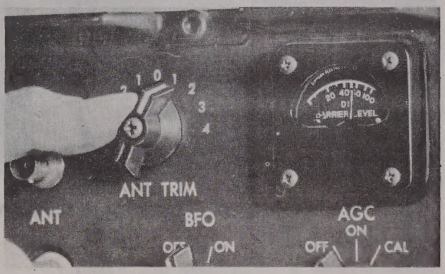
7 Set the AGC switch to CAL.



9 Set the MEGACYCLES and KILOCYCLES controls for a frequency indicator reading at the 100-kc point nearest the operating frequency.



8 Unlock the KILOCYCLES control by turning the DIAL LOCK control fully to the left (counterclockwise).

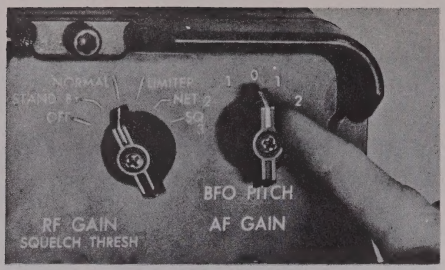


10 Adjust the ANT TRIM control for maximum CARRIER LEVEL meter reading.

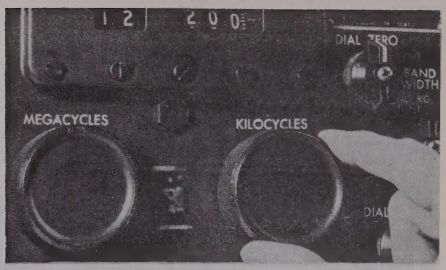
11 If no reading is noted, adjust the BFO PITCH control until a note is heard, and then adjust the ANT TRIM control for loudest tone.

TM5820-334-10-8 (2)

Figure 9(2). Frequency indicator calibration (part 2 of 3).



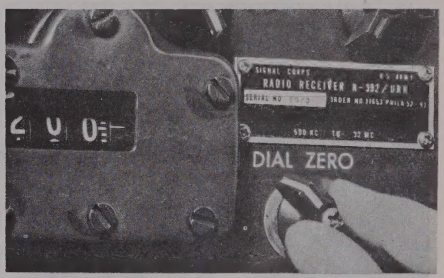
12 Turn the BFO PITCH control to 0.



14 Adjust the KILOCYCLES control to obtain a zero beat in the headset or loudspeaker. A zero beat should be obtained with only a slight adjustment of the KILOCYCLES control.



13 Turn the DIAL ZERO control to the right (clockwise) limit.



15 Release the DIAL ZERO control by turning completely to the left (counterclockwise) and check to determine if there is a change in the zero beat.

16 If there is no change in zero beat, the dial is calibrated properly. If there is a change in zero beat, repeat steps 9 through 15.

TM5820-334-10-8 ③

Figure 9③. Frequency indicator calibration (part 3 of 3).

tric motor having sparking brushes. This type of signal is very broad; therefore, it will interfere with a large number of communication channels.

(2) *Sweepthrough.* This signal is a result of sweeping or moving a carrier back and forth across the frequency at a slow or rapid rate. The numerous signals of varying amplitude and frequency produce a sound similar to that of a low-flying airplane. This type of jamming is effective over a broad range of frequencies. When varied rapidly, it is effective against all types of voice signals.

(3) *Stepped tones or bagpipes.* This signal usually consists of several separate tones. The tones are transmitted in the order of first increasing and then decreasing pitch, repeated over and over. The audible effect is like the sound of a Scottish bagpipe.

(4) *Noise.* Noise is random both in amplitude and frequency. It is considered one of the better types of jamming modulation. It produces a sound similar to that heard when a receiver is not tuned to a station and the volume control is turned to maximum.

(5) *Gulls.* This signal consists of a quick rise and fall of a variable audiofrequency. The sound is similar to the cry of the sea gull.

(6) *Tone.* This signal consists of a single audiofrequency of unvarying tone. It produces a steady howl in the headset. If the tone is varied slowly, it will produce a howling sound of varying pitch.

14. Antijamming Procedures

When it is first noticed that the received signal is being jammed, the immediate superior officer should be promptly notified. Under no condition should operation cease.

a. When receiving voice or cw signals that are being jammed, proceed as follows:

(1) Set the BAND WIDTH switch to the 2 KC position.

(2) Turn the KILOCYCLES control through several dial markings on either side of the desired signal frequency to the point where the signal is heard with the least amount of interference.

(3) If receiving voice, turn the AGC switch to OFF.

(4) Turn the RF GAIN SQUELCH THRESH control counterclockwise to the point where the signal is heard with the least amount of interference.

(5) If receiving cw, adjust the BFO PITCH control to the point where the signal is heard with the least amount of interference.

(6) Adjust the ANT TRIM control to the point where the signal is heard with the least amount of interference.

(7) Set the function switch to LIMITER.

(8) If the signal that is being jammed still cannot be understood, continue with the procedure given in (9) through (12) below.

(9) When a doublet antenna is used, change the direction and location of the antenna if possible. If the signal still cannot be understood, try a whip antenna if available.

(10) When mobile operation is used. move the vehicle to a new location if possible.

(11) If the signal that is being jammed still cannot be understood after performing the previous steps, request a change of signal frequency and callsign. Request the use of cw operation if it may be used.

(12) If the jamming interference is so strong that communication is impossible, report this fact to your immediate superior. Keep repeating the above procedure until an intelligible signal is received.

b. Radio Teletypewriter. When receiving radio teletypewriter signals that are being jammed, refer to the technical manual covering the radio teletypewriter system for antijamming information.

15. Scope of Operator's Maintenance

The maintenance duties normally performed by the operator of the radio set are limited to those listed in paragraph 16. These procedures do not require special tools or test equipment.

16. Preventive Maintenance

a. DA Form 11–238. DA Form 11–238 (fig. 10) is a preventive maintenance checklist to be used by the operator. Items not applicable to the radio set are lined out. References to the ITEM blocks in the figures are to paragraphs that contain additional maintenance information pertinent to the particular item. Following the instructions on the form.

b. Items. The information shown below is supplementary to DA Form 11–238. The item numbers correspond to the ITEM numbers on the form.

Item	Maintenance procedures
2	Use a clean cloth to remove dust, dirt, moisture, and grease from the antenna, mast base, headset, and front-panel controls. If necessary, wet the cloth with Cleaning Compound (Federal stock No. 7930–395–9542) and then wipe the parts with a clean dry cloth.
3	All control knobs should work smoothly, be tight on the shaft, and should not bind. Be sure the knobs do not rub against the panel.
12	Clean the terminals of the storage battery and apply a thin layer of petroleum jelly. Check the level of the electrolyte; add distilled water if necessary.

WARNING: Cleaning compound is flammable and its fumes are toxic. Do not use near a flame; provide adequate ventilation.

LEGEND for marking conditions:
Satisfactory, ✓.
Adjustment, Repair or Replacement required, X.
Defect corrected, (X).

DAILY CONDITION FOR MONTH OF JULY 1960

NO.	DAILY ITEM	1 FL 17	2 FL 18	3 FL 19	4 FL 20	5 FL 21	6 22	7 23	8 24	9 25	10 26	11 27	12 28	13 29	14 30	15 31	16	2D 3D ECHELON
1.	COMPLETENESS AND GENERAL CONDITION OF EQUIPMENT. *(Transmitter, receiver, carrying cases, wire, cables, microphones, tubes, spare parts, technical manuals).*	✓	✓	✓	✓	✓												
2.	CLEAN DIRT AND MOISTURE FROM ANTENNA, MICROPHONES, HEADSETS, KEYS, JACKS, PLUGS, ~~COMPONENT~~ PANELS. PARA 15b	(X)	✓	✓	✓	✓												
3.	INSPECT CONTROLS FOR NORMAL OPERATION. TAP CONTROLS LIGHTLY FOR EVIDENCE OF CUT-OUT FROM LOOSE CONTACTS. PARA 15b	✓	✓	✓	✓	✓												
4.	CHECK FOR NORMAL OPERATION OF EQUIPMENT. BE ALERT FOR UNUSUAL OPERATION OR CONDITION.	✓	✓	✓	✓	✓												

WEEKLY	CONDITION EACH WEEK 1ST	2D	3D	4TH	5TH	2D 3D ECH
5. CLEAN ~~AND TIGHTEN~~ EXTERIORS OF CASES, RACKS, MOUNTS, TRANSMISSION LINES.	✓					
6. INSPECT CASES, MOUNTS, ANTENNA ~~TOWERS~~ AND EXPOSED METAL SURFACES FOR RUST, CORROSION.	✓					
7. INSPECT CORDS, CABLE, WIRE, SHOCK MOUNTS FOR CUTS, KINKS, BREAKS, FRAYING, UNDUE STRAIN.	✓					
8. ~~CHECK ANTENNA GUY WIRES FOR PROPER TENSION OR DAMAGE.~~						
9. INSPECT CANVAS AND LEATHER ITEMS FOR MILDEW, TEARS, FRAYING.	✓					
10. INSPECT ACCESSIBLE ITEMS FOR LOOSENESS: SWITCHES, KNOBS, JACKS, CONNECTORS, ~~RELAYS, TRANSFORMERS, MOTORS~~, PILOT LIGHTS, ~~BLOWERS~~, ETC.	⊗					
11. CLEAN AND/OR INSPECT ~~AIR FILTERS~~, BRASS NAME PLATES, DIAL AND METER WINDOWS.	✓					
12. INSPECT STORAGE BATTERIES FOR DIRT, LOOSE TERMINALS, SPECIFIC GRAVITY, DAMAGED CASES. ~~INSPECT DRY BATTERIES FOR LEAKAGE.~~ PARA 15b	✓					

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
13. ~~INSPECT SHELTERS AND COVERS FOR ADEQUACY OF WEATHER PROOFING, TEARS, FRAYING.~~	
14. ~~CHECK TERMINAL BOX COVERS FOR CRACKS, DIRT, LEAKS, DAMAGED GASKETS, GREASE.~~	

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
15. ~~INSPECT SEATING OF READILY ACCESSIBLE PLUG-IN ITEMS: TUBES, LAMPS, FUSES, CRYSTALS, CONNECTORS, VIBRATORS, PLUG-IN COILS.~~	
16. ~~INSPECT RELAYS AND CIRCUIT BREAKERS FOR LOOSE MOUNTINGS, BAD CONTACTS, MIS-ALINEMENT OF CONTACTS AND SPRINGS, PROPER SPRING TENSION.~~	
17. ~~INSPECT VARIABLE CAPACITORS FOR DIRT, MIS-ALINEMENT OF PLATES, LOOSE MOUNTINGS, MOISTURE.~~	
18. ~~INSPECT RESISTORS, BUSHINGS AND INSULATORS FOR CRACKS, CHIPPING, BLISTERING, MOISTURE, DISCOLORATION.~~	
19. ~~CLEAN AND TIGHTEN SWITCHES, TERMINAL BLOCKS, BLOWERS, RELAY CASES AND INTERIORS OF CHASSIS AND CABINETS NOT READILY ACCESSIBLE.~~	
20. ~~INSPECT TERMINAL BLOCKS FOR LOOSE CONNECTIONS, CRACKS AND BREAKS.~~	
21. ~~INSPECT TERMINALS OF LARGE FIXED CAPACITORS AND RESISTORS FOR DIRT, CORROSION, LOOSE CONTACTS.~~	
22. ~~INSPECT TRANSFORMERS, CHOKES, POTENTIOMETERS AND RHEOSTATS FOR OVERHEATING AND OIL LEAKAGE.~~	
23. ~~INSPECT GENERATORS, AMPLIDYNES, DYNAMOTORS FOR BRUSH WEAR, SPRING TENSION, ARCING AND PITTING OF COMMUTATOR.~~	
24. ~~INSPECT CATHODE RAY TUBES FOR BURNT SCREEN SPOTS.~~	
25. ~~INSPECT WATERPROOF GASKETS FOR LEAKS, WORN OR LOOSE PARTS.~~	

CONTINUED ON PAGE 4

☆ GPO: 1957 O—427034

Figure 10. DA Form 11-238 pages 2 and 3.

CHAPTER 4

DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

17. Authority for Demolition

Demolition of the equipment will be accomplished only upon the order of the commander. The destruction procedure outlined in paragraph 17 will be used to prevent further use of the equipment.

18. Methods of Destruction

Any or all of the methods of destruction given below may be used. The time available will be the major determining factor for the methods used. The tactical situation also will determine in what manner the destruction order will be carried out.

a. Smash. Use sledges, axes, hammers, crowbars, and any other heavy tools available to smash the interior of the set. Smash tuning indicator, dials, meter, and controls with the heaviest tool on hand if time does not permit removing the set from the case.

b. Cut. Use axes, machetes, and similar tools to cut cabling, cording, and wiring. Cut all cords and cables in a number of places. If time permits, slash the interior wiring and cabling.

c. Burn. Burn as much of the equipment as is flammable; use gasoline, oil, flamethrower, or similar tools. Burn instruction literature first. Pour gasoline on the cut cables and internal wiring and ignite it. Use a flamethrower to burn the spare parts or pour gasoline on the spares and ignite it. Use incendiary grenades to complete the destruction of the equipment interiors.

WARNING: Be extremely careful with explosives and incendiary devices. Use these items only when the need is urgent.

d. Explode. Use explosives to complete demolition or to cause maximum destruction when time does not permit complete demolition by other means. Powder charges, fragmentation grenades, or incendiary grenades may be used. Incendiary grenades usually are most effective if destruction of small parts and wiring is desired.

e. Dispose. Bury or scatter the destroyed parts in slit trenches, foxholes, or throw them into streams.

APPENDIX I
REFERENCES

Following is a list of applicable references which are available to the operator of Radio Receiver R–392/URR:

TM 11–2651	Antenna Groups AN/GRA–4 and AN/GRA–12
TM 11–5820–295–10	Operator's Manual Radio Set AN/GRC–19
SR 320–5–1	Dictionary of United States Army Terms
SR 320–50–1	Authorized Abbreviations
FM 21–5	Military Training
FM 21–6	Techniques of Military Instruction
FM 21–30	Military Symbols
DA Pam 108–1	Index of Army Motion Pictures, Television Recordings, and Filmstrips
DA Pam 310–4	Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders

APPENDIX II

BASIC ISSUE ITEMS LIST, RECEIVER, RADIO R–392/URR

Section I. INTRODUCTION

1. Scope

a. This appendix lists items supplied for initial operation and for running spares. The list includes tools, accessories, parts, and material issued as *part of* the major end item. This portion includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents which are a basis for requisitioning.

b. The columns are as follows:

(1) *Source, maintenance, and recoverability code.* Not used.

(2) *Federal stock number.* This column lists the 11-digit Federal stock number.

(3) *Designation by model.* Not used.

(4) *Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description on the requisition.

(5) *Unit of issue.* The unit of issue is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

(6) *Expendability.* Expendable items are indicated by the letter X; nonexpendable items are indicated by NX.

(7) *Quantity authorized.* Under "Items Comprising an Operable Equipment", the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spares and Accessory Items", the quantities listed are those issued initially with the equipment as spare parts. The quantities are authorized to be kept on hand by the operator for maintenance of the equipment.

(8) *Illustration.* Not used.

2. Comments or Suggestions

Any comments concerning omissions and discrepancies in this manual will be prepared on DA Form 2028 and forwarded direct to Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS–ML, Fort Monmouth, N. J.

Section II. FUNCTIONAL PARTS LIST

(1) SOURCE MAINTENANCE AND RECOVERABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXPENDABILITY	(7) QUANTITY AUTHORIZED	(8) ILLUSTRATIONS FIGURE NO	(9) ILLUSTRATIONS ITEM NO.
			ITEMS COMPRISING AN OPERABLE EQUIPMENT					
			RECEIVER RADIO R-392/URR					
	5820-503-1250		RECEIVER, RADIO R-392/URR	ea	NX			
	Ord thru AGC		TECHNICAL MANUAL TM 11-858	ea	X	2		
	Ord thru AGC		TECHNICAL MANUAL TM 11-5820-334-10P	ea	X	2		
	5960-280-4018		CASE, ELECTRON TUBE CY-1298/URR	ea	NX	1		
			RUNNING SPARES AND ACCESSORY ITEMS					
			RECEIVER RADIO R-392/URR					
	5960-188-3553		ELECTRON TUBE: MIL type 6AJ5	ea	X	2		
	5960-166-7663		ELECTRON TUBE: MIL type 12AU7	ea	X	2		
	5960-188-0827		ELECTRON TUBE: MIL type 26A6	ea	X	4		
	5960-100-7111		ELECTRON TUBE: MIL type 26A7GT	ea	X	1		
	5960-188-0897		ELECTRON TUBE: MIL type 26C6	ea	X	1		
	5960-681-9934		ELECTRON TUBE: type 26D6 w/yellow dot	ea	X	1		
	5960-777-3235		ELECTRON TUBE: type 26FZ6; RCA No. A-4908F	ea	X	1		
	5920-356-2193		FUSE, CARTRIDGE: 0.500 amp; 250 v; MIL type F02GR500A	ea	X	6		
	5920-014-2630		FUSE, CARTRIDGE: 5 amp, 32 v; MIL type F01A5R00A	ea	X	6		
	6240-155-8714		LAMP, INCANESCENT: 28 v; 0.17 amp; Spec Fed No. W-L-111b, trade No. 313; AN std AN3121-313	ea	X	1		

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USAR: None.

For explanation of abbreviations used, see AR 320-50.

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