

C/2227  
SIGNAL CORPS  
REPAIR STANDARD

NO. REP-218  
ISSUE NO. 1

REPAIRED EQUIPMENT STANDARD  
FOR  
AMPLIFIER BC-730-B and C

PROJECT 4422D

1 December 1952

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SIGNAL CORPS ENGINEERING LABORATORIES  
PROCUREMENT-MAINTENANCE ENGINEERING DIVISION  
MAINTENANCE ENGINEERING BRANCH

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REPAIRED EQUIPMENT STANDARD

FOR

AMPLIFIER BC-730-B and C

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This Signal Corps Repair Standard No. REP-218 is a general standard and is subsidiary to any individual standards prepared. No individual standard is to be considered complete in itself, but is to be used in conjunction with Signal Corps Repair Standard No. REP-1004, General Standard for Repaired Signal Equipment.

Reports of any discrepancies or any other comments on this repair standard are invited. A report of Comments and/or Notes pages will be found at the back of this standard which are designed to facilitate reporting any information noted. All such reports, comments or requests for additional copies should be addressed to:

Signal Corps Engineering Laboratories, GPO: 718-2  
Fort Monmouth, New Jersey

PREFACE

Signal Corps Repair Standards (formerly Signal Corps Repaired Equipment Requirements) are prepared by the Maintenance Engineering Branch, Procurement-Maintenance Engineering Division, Signal Corps Engineering Laboratories and cover various items of signal equipments which are subject to repair, test and inspection. These repair standards are documents which set forth the specific repair requirements and test standards to be applied to the individual equipments being repaired and tested.

Signal Corps Repair Standards are prepared for the specific use of the fifth echelon Signal Repair Shops in repairing and determining the quality and acceptability of repaired signal equipments covered by these standards. The use of Signal Corps Repair Standards is recommended as a guide and reference for any agency having occasion to repair, test or inspect an item of signal equipment for which a repair standard has been prepared.

Signal Corps Repair Standard No. REP-1001 is a general standard and is subsidiary to any individual standards prepared. No individual standard is to be considered complete in itself, but is to be used in conjunction with Signal Corps Repair Standard No. REP-1001, "General Standards for Repaired Signal Equipment."

Reports of any discrepancies or any other constructive comments bearing upon this repair standard are invited. A series of Comments and/or Notes pages will be found in the back of this standard which are designed to facilitate reporting any inaccuracies noted. All such reports, comments or requests for additional copies should be addressed to:

COMMANDING GENERAL  
Signal Corps Engineering Laboratories, SIGEL-PMM-3  
Fort Monmouth, New Jersey

REPAIRED EQUIPMENT STANDARD  
FOR  
AMPLIFIER BC-730-B and C

I. STATEMENT COVERING APPLICABILITY

A. This repair standard covers inspection requirements to be used in determining the quality and acceptability of repaired Amplifier BC-730-B and C. Its use is mandatory in the Maintenance Divisions of Signal Depots and the Signal Sections of General Depots. The use, insofar as limitations of test and calibration equipment permit, is recommended for all Signal Repair organizations.

B. Safety Precautions

1. Exercise Safety Precautions at all times.
2. Select and apply the proper tools.
3. Avoid makeshift methods.
4. Don't damage yourself or the equipment.
5. BE CAREFUL

II. APPLICABLE REFERENCES

Applicable paragraphs of the following form a part of this standard:

A. Repair Standards

	Title	Number
1.	General Standards for Repaired Signal Equipment	REP-1001
2.	Class "C" Receiver and Low Power Transmitter Vacuum Tubes	REP-242

COMMENTS AND / OR NOTES

AMPLIFIER BC-130-B and C

I. STATEMENT COVERING APPLICABILITY

A. This repair standard covers inspection requirements to be used in determining the quality and acceptability of repaired amplifier BC-130-B and C. Its use is mandatory in the Maintenance Division of Signal Corps and the Signal Section of General Depot. The use, insofar as limitations of test and calibration equipment permit, is recommended for all Signal Repair organizations.

B. Safety Precautions

1. Excludes Safety Precautions at all times.
2. Select and apply the proper tools.
3. Avoid unnecessary methods.
4. Don't damage yourself or the equipment.

C. IN GENERAL

II. APPLICABLE REFERENCES

Applicable paragraphs of the following form a part of this standard:

A. Repair Standards

Number	Title
REP-1001	1. General Standards for repaired Signal Equipment
REP-212	2. Class "C" Receiver and Low Power Transmitter Vacuum Tubes

B. Technical Publications: The following technical publications form a part of this standard to the extent referenced herein:

	Title	Manufacturer
1.	Preliminary Instructions for BC-730-B	Amplifier Corp. of America
2.	Instruction Book for BC-730-C	Transformer Corp. of America

III. TEST EQUIPMENT

A. The following test equipments, or suitable equivalents of known accuracy, will be employed in determining compliance with the requirements of this Signal Corps Repair Standard and will be capable of conforming to their respective Repair Standards.

	Equipment	Stock Number	Number Used	REP
1.	Audio Oscillator SG-15/PCM	3F4325-427	1	-
2.	Distortion Meter TS-723/U	3F1722-5.4	1	-
3.	Electronic Multimeter ME-6/U	3F4073-20.6	1	-

B. Associated Equipment

	Equipment	Stock Number	Number Used	REP
1.	Headset HS-30	2B830	1	30

C. Accessories

	Item	Stock Number	Number Used
1.	Resistor, fixed, comp 600 ohms ±5% lw		2

COMMENTS AND / OR NOTES

Equipment	Stock Number	Number Used	REP
I. Radio Oscillator SR-1270M	SR332-487	1	-
II. Motor Motor TR-1234	SR120-2-4	1	-
III. Electronic Unit Resistor SR-500	SR4073-20-0	1	-
<b>B. Associated Equipment</b>			
Equipment	Stock Number	Number Used	REP
I. Resistor SR-50	SR30	1	00
<b>C. Resistor</b>			
I. Resistor, five comp 500 ohms 43K 1w		2	

Manufacturer  
Amplifier Corp.  
of America  
Transformer Corp.  
of America

A. The following test equipment, or suitable equivalents of known accuracy, will be employed in determining compliance with the requirements of this Signal Corps Repair Standard and will be capable of conforming to their respective Repair Standards.

III. TEST EQUIPMENT

- I. Preliminary Inspections for SR-120-B
- II. Instruction Book for SR-120-C



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#### IV. TEST REQUIREMENTS

A. General Test Conditions. General test conditions will be as follows:

1. Power supply will be 115  $\pm$ 5 or 230  $\pm$ 10 volts, 50-60 cycle, single phase, AC.
2. A 600 ohm 1 watt resistor will be used as a load.
3. An audio oscillator capable of furnishing an output signal from .01 to 2.5 volts with less than 2% distortion and a 600 ohm output impedance will be connected to the amplifier input and set at 400 cps.
4. A vacuum tube voltmeter will be set up to measure input and output voltage.
5. A distortion test set capable of measuring 5-10% total distortion from a 1.9 volt fundamental signal will be connected across the load resistor.

B. Detailed Tests. Detailed tests will be made as follows and the equipment shall meet the requirements indicated below and on the CHECK LIST on page 5.

1. Power Output. Standard power output is 6 milliwatts into 600 ohms (1.9 volts). The output shall remain constant within  $\pm$ 1 db (2.13 volts to 1.69 volts) as the input is varied between 0.034 and 0.106 volts (-35 to -25 db).
2. Frequency Response. The output shall remain constant within  $\pm$ 1 db (2.13 volts to 1.69 volts) as the frequency of the audio oscillator is varied from 100 to 4000 cycles per second.
3. Distortion. Total distortion, as measured at 400 cycles per second, at rated output (1.9 volts) shall not exceed 10% of the fundamental output signal.

COMMENTS AND / OR NOTES

A. General Test Conditions  
Will be as follows:  
1. Power supply will be 115 ± 5 or 230 ± 10 volts, 50-60 cycle, single phase.  
2. A 500 ohm 1 watt resistor will be used as a load.  
3. An audio oscillator capable of furnishing an output signal from 0.1 to 2000 cycles per second with less than 2% distortion and a 500 ohm output impedance will be connected to the amplifier input and output voltages measured.  
4. A vacuum tube voltmeter will be set up to measure input and output voltages.  
5. Distortion is not capable of measuring 5-10% total distortion from 1.0 volt fundamental signal will be connected across the load resistor.  
B. Test Procedure  
1. The test will be made as follows and the equipment shall meet the requirements indicated below and on the CHECK LIST on page 2.  
2. Power Output  
a. The output shall be measured with a 500 ohm load resistor as the input is varied between 0.05V and 0.100V (0.50 to 1.00 V). The output shall remain constant within ± 5% (1.00 V) as the frequency of the audio oscillator is varied from 100 to 400 cycles per second.  
3. Distortion  
To measure distortion as measured at 400 cycles per second, at 1.00 V output (1.0 V) shall not exceed 1% of the fundamental output signal.

4. Noise Level. Remove the audio oscillator and connect a 600 ohm resistor across the input terminals of the amplifier. The output shall not exceed 0.019 volts (40 db below rated output).

5. Operational check. The output shall be monitored on a headset or loudspeaker (600 ohms impedance) as the equipment is operated at rated output for 30 seconds on a vibration table. There shall be no evidence of intermittents, microphonics, or other extraneous noises during this test.

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COMMENTS AND / OR NOTES

Operational check. The output shall be monitored on a headset or loudspeaker (500 ohm impedance) as the equipment is operated at rated output for 30 seconds on a vibration table. There shall be no evidence of intermittent, microphonic, or other extraneous noises during this test.

APPENDIX A

Serial No. \_\_\_\_\_

Date \_\_\_\_\_

C H E C K   L I S T

FOR

AUDIO AMPLIFIER BC-730-B,C

Test	Required Value	Measured Value
1. Output (.034-.106 volts input)	2.13 volts max 1.69 volts min	
2. Frequency Response (100-4000 cps)	2.13 volts max 1.69 volts min	
3. Distortion	10% max (at rated output)	
4. Noise Level	.019 volts max (40 db down)	
5. Operational Check	(on Vibration table)	
Intermittents	Absent	
Microphonics	Absent	
Noise	Absent	

Tested by \_\_\_\_\_

Inspector \_\_\_\_\_



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Signal Corps Repair Standard

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1 December 1952

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