

## MILITARY SPECIFICATION

### SYNCHRO RECEIVER, TYPE 5SN, Mod 1b

This specification has been approved by the Bureau of Naval Weapons, Department of the Navy

#### 1 SCOPE

1.1 This specification covers the detail requirements for synchro receiver, type 5SN, Mod 1b, 115 volt, 60 cycle. This detail specification shall be for replacement purposes only and shall be inactive for new design.

#### 2 APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids, form a part of this specification to the extent specified herein.

#### SPECIFICATIONS

##### Military

MIL-I-16557	Ink, Marking, Quick Drying (for Non-Porous Surfaces)
MIL-S-20708	Synchros, 60 and 400 Cycles, General Specification for

#### STANDARDS

##### Military

MIL-STD-8	Dimensioning and Tolerancing
MS17183	Clamp Assembly
MS17187	Nut

STANDARDS

Military (Continued)

MS17188	Washer
MS25036	Terminal, Lug

DRAWINGS

Bureau of Naval Weapons

184723 16	Slotted Steel Washer
LD 25-268	Stock Material for Precision Instrument Components

(Copies of specifications, standards, drawings and publications required by contractors in connection with specific procurement functions should be obtained from the procuring agency or as directed by the contracting officer.)

3. REQUIREMENTS

3.1 Qualification - Except as specified in paragraph 3.1.1, synchros covered by this specification shall be a product which has been tested and qualified in accordance with Specification MIL-S-20708.

3.1.1 Preproduction sample - Pending issuance of a Qualified Products List (QPL), a sample (see 4.1.1.1) of the synchros to be furnished under this specification shall be subjected to the preproduction tests as specified in Specification MIL-S-20708.

3.2 Requirements - All requirements shall be in accordance with Specification MIL-S-20708 except as otherwise specified herein.

3.2.1 Salt spray requirements - Not applicable.

3.2.2 Design and construction - The synchro shall be of the design, construction and physical dimensions specified in Figure 1, and shall be complete, including all hardware shown and identified thereon.



3.2.3 Performance requirements - The values applicable to the synchro shall be as specified in Table I

TABLE I

## SYNCHRO RECEIVER, TYPE 5SN, Mod 1b

Requirement	Units	Value
Frequency	Cycles	60
Primary Voltage (nominal)	Volts	115
Primary Current (maximum)	Amps	1.4
Primary Power (maximum)	Watts	16.5
Transformation Ratio ( $\pm 2\%$ )	---	0.783
Electrical Error (maximum)	Minutes	---
Torque Gradient (minimum)	Oz-in/deg	1.10
Receiver Error (maximum)	Minutes	36
Synchronizing Time $30^\circ \pm 2^\circ$	Seconds	N/A
Synchronizing Time $177^\circ \pm 2^\circ$	Seconds	N/A
Primary impedance (ZRO)	Ohms	<u>1/</u>
Primary impedance (ZRS)	Ohms	<u>1/</u>
Secondary impedance (ZSO-90)	Ohms	<u>1/</u>

1/ As measured

## 4 QUALITY ASSURANCE PROVISIONS

4.1 Sampling, inspection, and tests -

4.1.1 Sampling - Except as specified in 4.1.1.1, sampling shall be in accordance with the requirements of Specification MIL-S-20708.

4.1.1.1 Preproduction samples - Unless otherwise specified (see 4.1.1.1.1) and pending the issuance of a QPL (see 3.1.1), four (4) synchros shall be furnished by the contractor to the procuring activity for preproduction testing in accordance with Specification MIL-S-20708. Further production of the item by the contractor prior to the approval of the procuring activity shall be at the contractor's risk. Accepted preproduction samples will become the property of the procuring activity and will be included in the quantity of synchros called for in the contract or order.

4.1.1.1.1 Preproduction sample for a subsequent contract - If a contractor has delivered synchros previously in accordance with the requirements of this specification and his product has been found to be satisfactory, the preproduction sample for any subsequent contract or order may be waived at the discretion of the procuring activity (see 6.1).

4.1.2 Inspection and tests - Inspection and tests shall be conducted in accordance with the requirements of Specification MIL-S-20708, except as otherwise specified herein.

4.1.2.1 Salt spray test - Not applicable.

4.1.2.2 Preproduction rejection criteria - Failure of any preproduction sample synchro in any test or requirement shall be cause for withholding approval (see 4.1.1.1).

## 5 PREPARATION FOR DELIVERY

5.1 Preparation for delivery shall be in accordance with the requirements of Specification MIL-S-20708 except as otherwise specified herein

## 6 NOTES

6.1 All notes specified in Specification MIL-S-20708 are applicable to this specification and in addition, under ordering data, should specify the following

- (a) If preproduction samples are not required (see 4.1.1.1)

6 2            Stock material - Miscellaneous stock materials not shown on Figure 1 which may be required for use with synchros, should be selected from LD 255268.

6 3            Supersession data - This specification supersedes synchro receiver, Type 5SN, Mod 1b of Military Specification MIL-S-2335 dated 8 August 1950

**NOTICE** When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever, and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto

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**SPECIFICATION ANALYSIS SHEET**  
**NAVVEPS FORM 4121/3 (8-62)**

FORM APPROVED  
 BUDGET BUREAU NO. 45 R309

**INSTRUCTIONS**

This sheet is to be filled out by Government or contractor personnel involved in the use of this specification in procurement of products for ultimate use by the activity shown on the reverse of this sheet.

If this specification suitable products can be procured with a minimum amount of delay and at the least cost.

Comments and the return of this sheet will be appreciated.

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fold on dotted lines on reverse side, staple in corner and send to the activity shown.

SPECIFICATION (No. and abbrev. title)

ORGANIZATION		CITY	STATE
CONTRACT NUMBER	QUANTITY OF ITEM PROCURED		DOLLAR AMOUNT \$
MATERIAL PROCURED UNDER A DIRECT GOVERNMENT CONTRACT		OR A SUBCONTRACT	

IF ANY PART OF THIS SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE:  
 (1) to give name, date, and details of problem and interpretation to activity shown on reverse of this sheet.

2. COMMENT ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID

3. IS THE SPECIFICATION RESTRICTIVE?

YES

NO

IF YES, IN WHAT WAY?

4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If additional papers are attached, send this form and papers in an envelope. This form is addressed for use in window envelope when appropriate.)

SUBMIT TO (Print name and title)

DATE