

METRIC

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 SUPERSEDING
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 1 November 1961

COMMERCIAL ITEM DESCRIPTION

AMPLIFIER-OSCILLATOR GROUP AN/SIA-114

The General Services Administration has authorized the use of this commercial item description as a replacement for MIL-A-21577/1A which is canceled.

1. **Scope.** This specification covers the detailed requirements for an audio amplifier Oscillator Group AN/SIA-114 for general announcing systems circuit 1MC, and intership announcing systems, circuit 6MC.

2. **Salient Characteristics.**

2.1 **General.** Amplifier oscillator group AN/SIA-114 shall be in accordance with the applicable paragraphs of A-A-59003 and as specified herein. Whenever a requirement of A-A-59003 conflicts with a requirement of this specification, the requirement of this specification shall govern.

2.1.1 **Speech processor.** A speech processor shall be incorporated into the audio circuit path. The speech processor circuit shall be a separate card from any other audio card. Insertion of or removal of the processor shall not disable normal 1MC or 6MC operation. The speech processor output shall be for engineering space loudspeaker groups only; all other loudspeaker output groups shall have unprocessed audio. The processor shall operate as specified in the acquisition specification.

2.2 **Equipment.** Equipment complement shall consist of the following:

(a) One common enclosure, bulkhead mounted, amplifier control rack, type AN/SIA-114 containing:

- 2 Input preamplifier modules type AM-2127/SIA.
 - 2 Alarm output preamplifier modules type AM-2056/SIA.
 - 2 Power supply modules type PP-2563/SIA.
 - 2 Oscillator modules type 0-718/SIA.
 - 2 Oscillator modules type 0-719/SIA.
 - 2 Oscillator modules type 0-721/SIA.
 - 2 Oscillator modules type 0-722/SIA.
 - 2 Oscillator modules type 0-724/SIA.
- All necessary switches, meters, relays, wiring, terminals, and other components required.

(b) One common enclosure, deck mounted, power amplifier assembly type AM-2316/SIA containing two 500-watt audio frequency amplifier assemblies type AM-2128/SIA.

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2.3 **Construction.** Modular construction techniques with quick disconnect features shall be employed in the design of these assemblies to permit easy removal of the modules for servicing.

2.4 **Module mounting.** Modules shall be mounted in a vertical position to facilitate the unrestricted flow of air between modules for ventilation purposes.

2.5 **Forced air cooling.** In addition to the requirements of A-A-59003, facilities for forced air cooling will be required for the power amplifiers. Blower motors shall be individually fused.

2.6 **Time constant.** Under the conditions specified in the overload limiter characteristic requirements of A-A-59003, the preamplifier output voltage shall return to the value specified in the overload limiter characteristic requirements within 0.025 second after the sudden increase in input signal voltage above reference level.

2.7 **Relays.** Microphone input relays, amplifier input relays, alarm input relays, and alarm output relays shall be miniature, hermetically sealed, direct current (dc) relays with bifurcated contacts. Control relays shall be miniature, hermetically sealed, dc relays.

2.8 **Test facilities.** A test meter and switching facilities shall be included in each power amplifier and shall provide ready means for indicating the operating conditions of each stage, and the output signal level. A common voltmeter with switching facilities shall be provided on the control rack to determine proper power supply voltage for amplifier-oscillators and preamplifiers. The meter calibration and circuit component values shall be such that the operating condition of the amplifiers or amplifier-oscillators can be determined directly from the meter without reference to tables or charts.

2.9 **Output power.** The rated power for each of the two power amplifier assemblies shall be 500 watts, minimum rating.

2.10 **Interstage input facilities.** Interstage input circuit, input impedance, and input level will not be required.

2.11 **Alarm Signals.** Each of the amplifier-oscillator assemblies shall generate the following alarm signals:

<u>Signal number</u>	<u>Signal function</u>
1	Collision alarm
4	Chemical alarm
5	General alarm
-	Unassigned
2	Flight crash alarm

2.12 **Generated signals.** Alarm signal numbers 3, 6, and 8 will not be required. Electronic timing shall be provided on circuits where timing is required.

2.13 **Output level.** The amplifier-oscillator shall maintain an output level of not less than 10 volts into a 600-ohm resistive load for amplifier input. This voltage shall also be used as a test signal source in accordance with A-A-59003.

2.14 **Adjustment of output level.** A lockable adjustment, adjustable by screwdriver, coin, or hand, shall be provided in the amplifier-oscillator or in

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combination with the associated control circuits to permit independent adjustment of the amplifier-oscillator output level for the alarm signal into the amplifier input.

2.15 **Input facilities.** Amplifier AN/SIA-114 shall have the following input facilities:

<u>Microphone station number</u>	<u>Microphone station type</u>	<u>Circuits controlled</u>
1	IC/MSB-2	1MC - 6MC
2	IC/MSB-2	1MC
3	IC/MSB-2	1MC
4	IC/MSB-2	1MC
5	IC/MSB-2	1MC
6	IC/MSB-2	1MC

2.16 **Circuit attenuation.** Operation of the 1MC system from any microphone station shall energize a circuit that is capable of attenuating circuit SE (Ship's Entertainment system). This circuit shall be capable of making and breaking a resistive load of 7 amperes at 115 volts, 60 cycles, single phase.

2.17 **Local loudspeaker cutout circuit.** A cutout circuit shall be included for each microphone station to automatically disconnect local loudspeakers when the microphone is in use. The cutout circuit shall consist of a normally closed relay which shall operate to open the audio circuit supplying the local loudspeakers when the microphone press-to-talk switch is operated. These relays shall be installed in the amplifier control rack. Six local cutout circuits are required.

2.18 **Output facilities.** Amplifier, AN/SIA-114 shall have the following output facilities:

<u>Loudspeaker group number</u>	<u>Loudspeaker group designation</u>	<u>Circuit</u>
1	Officers	1MC
2	Topside	1MC
3	Crew	1MC
4	Engineering spaces	1MC
5	Bull horn	6MC
6	Spare	1MC

2.19 **Spare switches.** One spare amplifier output switch shall be provided.

2.20 **Combined metering.** A common value indicator meter shall be provided for input and output metering. This meter shall indicate zero decibels (db) at rated input and output power.

2.21 **Test input level control.** Test input level control shall not be required.

2.22 **Microphone press-to-talk switches.** Reduction in output of circuit SE following operation of a press-to-talk switch shall not apply to the 6MC system.

2.23 **Alarm signal exception.** Alarm signals shall not be provided for circuit 6MC.

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2.24 **Visual alarm.** Operation of alarm signal numbers 1, 4, 5, and 8 shall initiate operation of the visual alarm signal.

2.25 **Circuit SE muting.** Operation of any alarm contact shall energize a circuit that is capable of muting circuit SE. This circuit shall be capable of making and breaking a resistive load of 7 amperes at 115 volts, 60 cycles, single phase.

2.26 **Alarm signal priorities.** The order of priority for alarm signals shall be as follows:

- (a) Collision alarm.
- (b) Chemical attack alarm.
- (c) General alarm.
- (d) Unassigned.
- (e) Flight crash alarm.

The oscillator modules shall be provided with a device to prevent unauthorized or accidental changes in alarm signal priorities.

3. **Quality assurance.** Sampling, examination, and tests shall be in accordance with A-A-59003.

4. **Packaging.** Packaging shall be in accordance with A-A-59003.

5. **Notes.**

5.1 **Intended use.** Amplifier-oscillator group, AN/S1A-114 is intended for use in shipboard general and intership announcing systems.

5.2 **Notes.** The notes specified in A-A-59003 are applicable to this specification.

Preparing activity:
Navy - SH
(Project 6320-N047)