

## CIVIL AIR DEFENSE WARNING SYSTEM EQUIPMENT DESIGN REQUIREMENTS COMMON SYSTEMS

### 1. GENERAL

#### SCOPE

1.01 This specification, together with the supplementary information listed herein, covers the design requirements for the framework, equipment, and circuits to be used in the manufacture and installation of a civil air defense warning system.

1.02 This specification is reissued to rate J99237A, L1 Mfr Disc., replaced by J99237A, L2.

#### DESCRIPTION

1.03 The civil air defense warning system provides an arrangement for the rapid dissemination of civil air defense warning signals from one or more control points to a number of stations in an area, usually a city or other highly populated localities. The warning signals may be transmitted to individual station indicators providing a bell and light signal or to station relays that in turn control public signals such as sirens.

1.04 This system provides for originating an alarm by means of a special dial at a selected control point and transmitting the dial pulses over a private wire network to one or more central offices. Each central office is arranged with special code ringing equipment that is actuated by the dial pulses to automatically distribute the alarms simultaneously to all of the stations designated to receive the air defense warning signals.

#### Control Point

1.05 A special dial, designated with the various degrees of air defense warning signals rather than the conventional digits and letters, is provided at each control point. A typical arrangement would provide one dial at the main control point and another dial at an alternate control point. Air defense warning signals can be originated at either point. To send

an air defense warning signal, the control point attendant dials the type of warning signal required. To discontinue the sending of any signal, the attendant can dial "stop", which will release the circuit. The dial is housed in a special locked box. For routine tests, the box may be unlocked with a key, but in an emergency, if the key is not readily available, the doors may be forced open to gain access to the dial. However, after the door has been forced open, it may not be closed without a key thus furnishing evidence of use. A special dial, designated with O.C.D.M. terminology for air defense warning signals, is provided at each control point (see 5.01).

#### Signaling Repeater Networks

1.06 When the attendant at the control point dials an air defense warning signal, the loop connecting this circuit to the central office is opened a number of times corresponding to the digit dialed. These pulses are distributed to the various central offices by means of a special dial pulse repeater network similar to a telegraph network but requiring only a 48-volt power supply. Four repeater units, a balancing network, a patching unit, and an alarm unit have been coded for use in building up the repeater networks. Typical circuit arrangements are shown on SD-95684-01.

#### Dial Pulse Receiving and Code Distributing

1.07 Dial pulses received at the central offices are counted by a dial pulse receiving unit (J99237E or J99237P) which registers the type of code ringing to be distributed. After the code is registered, superimposed ringing current of the proper code is applied (through J99237F or J99237G multicontact relay units when the J99237E receiving unit is used) to all of the warning stations equipped with the bell and light station indicators. (The J99237P unit provides for five indicators and requires two pairs of wires for each indicator line. Only one pair of wires per indicator is required with the 200-line unit J99237E.)

#### NOTICE

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### Station Signal Indicator

**1.08** The indicators at each station receiving the bell and light warning signals consists of a standard station ringer modified to include four cold-cathode tubes. These tubes are mounted behind a screen on which are indicated the various degrees of air defense signals, "1-Test," "2-Alert," "3-Take Cover," and "4-(optional)." No local power is required at the station. When the ringing power is applied to the lines, the bell at each station will ring and the appropriate indicator tube will light. Code ringing is employed, except in small offices using the J99237P, 5-line unit, so it will be possible for an observer to determine the type of air defense warning signal from the audible code alone. The tubes will serve as a visual supplement to the audible code ringing. If the visual indication of the alarm is not required, a standard ringer without cold-cathode tubes may be employed. Indicators connected to offices equipped with J99237P 5-line unit provide a visual coded signal but the audible signal is steady ringing. The central office equipment is arranged so that the "Test" and/or "Alert" signals may be withheld from selected indicator lines if it is desirable (see 5.01).

### Public Signal Control

**1.09** If public signals such as sirens are to be controlled, the J99237E or J99237P receiving unit is connected to a J99237R public signal control unit. This unit is designed to recognize the "Test," "Alert," "Take Cover," and No. 4 signals to the sirens. The "Take Cover" signal from the sirens is a warble or modulation produced by starting or stopping the sirens successively. Timing relays for the siren ON-OFF intervals function only when "Take Cover" signals are received. These timing relays, in turn, connect relays in the line connector unit which connect ringing current to the public signal lines. The control unit is so designated that the siren ON-OFF time intervals may be adjusted as required by straps on the unit terminal strip. The circuit is arranged so that the "Test" and "Alert" signals, which are considered to be confidential, are not sent out to the siren stations. Likewise, a No. 4 signal following a "Test" or "Alert," but not preceded by a "Take Cover," will be withheld. Only initial No. 4 signals or No. 4 signals that have been preceded by a "Take Cover" will be sent out to sirens. A No. 4 signal will continue to hold the siren station relay operated until the key point control attendant dials "stop." If desired, equipment per J99237W or J99237Y may be

provided in the central office to apply a continuous test of the condition of all or selected lines to the siren stations.

### Public Signal Station

**1.10** The equipment required at each public signal control station consists of a KS-16626 L13 or KS-16626 L6 (Mfr Disc.), weatherproof relay set which provides contacts to control a public signal controller relay or a siren motor. If continuous line testing is specified, a KS-8612 L6A resistor, 6200 ohms  $\pm 5$  percent with Fig. 7 type terminals, is also required. To permit a test of the system without sounding sirens, means for disconnecting power to the siren should be provided as a part of the siren installation.

**1.11** The KS-16626 L6 relay set is equipped with a high-voltage breakdown 526A capacitor and replaces the KS-7340 and KS-7341 sets previously used. Where trouble is experienced with the 449B capacitors of these sets, they may be replaced with 526A capacitors in the field.

### Central Office Equipment Arrangement

**1.12** The equipment required at each central office will vary widely depending on the repeater equipment requirements, the number of lines, and the amount of spare ringing capacity available. All of the various units are designed to mount on an 11-foot 6-inch bulb angle relay arranged for 2- by 23-inch mounting plates, with the associated fuse panel at the top of the bay. (In community dial offices, the 6-foot, 10-1/2 inch floor supported relay rack may be used.) Typical bay layouts are shown on ED-92686-01.

### Power

**1.13** When J99237E and J99237F dial pulse receiving and code distributing equipment is provided, 10 milliamperes of superimposed ringing current will be required for each two bell and light warning stations (one odd and one even). The ringing current may be obtained from the regular central office supply where excess power is available. However, it will be necessary to supply a separate superimposing battery supply at each central office when visual indicators are used for the warning stations. The regular central office superimposing battery, when present, may not be used. A 48-volt battery supply is required at each central office. A source of 60 ipm (Brush 3) is required for the code generator. Table

A outlines the arrangements for ringing supplies that will normally be required. In addition to these arrangements, it may be possible in some cases to supply some of the load from existing spare ringing capacity and part from auxiliary machines. Such combinations are not coded but may be engineered on a job basis.

**1.14** When the J99237P 5-line dial pulse receiving and control equipment is provided, 10 milliamperes of superimposed ringing current will be required for each warning station. Regular central office ringing, either continuous ac, ac/dc, or superimposed, may be used. If no ringing fuse is available, J99237S, L1 and 2 fuse alarm equipment is required. If ringing voltage limits are not within 70 volts to 90 volts ac and 36 volts to 52 volts dc, J99237S, L1 and 3 transformer equipment is required. (Only one J99237S, L1 is required per office.)

**1.15** If a 48-volt battery supply is not available in the office, a small 48-volt power plant, such as the 105D (J86446) or 105C (J85616), should be furnished.

**1.16** With J99237E dial pulse receiving and code distributing equipment or J99237R public signal control unit, if J99237A ringing equipment is not provided, and a source of 60 ipm (Brush 3) is not available in the office, separate interrupter equipment per J86212J or J86212S should be ordered.

**1.17** The J99237A auxiliary ringing supply consists of a panel mounted KS-5319-01 QD-15 ringing machine. One unit provides 1/4-ampere ringing current for 50 station lines. The panel occupies the space of six 2- by 23-inch mounting plates.

**1.18** The J99237C positive battery equipment consists of block-type dry batteries mounted in a cabinet arranged for relay rack mounting. This unit may be used with one or two auxiliary ringing supplies per J99237A. When this equipment is used in an office with spare ringing capacity, one or two 1/4-ampere transformers are provided and mounted in the battery cabinet.

**1.19** When public signal control equipment is provided, the regular central office continuous ringing current may be used, provided the minimum voltage is 70 or more. Approximately 12-1/2 milliamperes of continuous ringing current is required for each line. J99237B, L3 or J99237S, L1 and 2 fuse

alarm equipment will also be required. If no spare ringing power is available, one J99237A, L1 will also be required per 20 lines.

**1.20** The test and alarm cutoff unit per J99237AF is a one-plate unit that provides the following features.

- (a) A dial for sending a test digit "9" over the entire system.
- (b) Facilities for releasing a major central office alarm in an unattended office by dialing a particular connector terminal number from the master office.
- (c) A test circuit to permit testing an individual station line.
- (d) Battery supply jacks for testing.
- (e) Test jacks for dialing into one-way sending circuits or 2-way open and closed loop repeaters.

## 2. SUPPLEMENTARY INFORMATION

801-000-000—Numerical Index—Common Systems  
 800-600-000—Checking List—General Equipment Requirements  
 A804.526—Education Information—Civil Air Defense Warning System  
 951.081.01—General Information—Civil Air Defense Warning System for Disseminating Alerts From Keypoints and Subkeypoints to Warning Stations and Siren Control Stations  
 J68651—804-004-156—V3 Telephone Repeaters—VF and Carrier Applications  
 J86212—802-029-150—Small Ringing Equipment  
 J86446—802-606-150—105D Power Plants  
 J86516—802-656-151—105C Power Plants  
 KS-3106—Pen Register  
 KS-5319—Ringing Machine  
 KS-8128—Primary Battery—Dry, 22-1/2 Volts  
 KS-8612—Resistor  
 KS-16626—Relay Set  
 Power Data Book

## 3. DRAWINGS

For additional drawings forming a part of this specification, see listings under Subdivisions of Equipment and Detailed Index.

TABLE A

RINGING SUPPLIES FOR USE WITH DIAL PULSE RECEIVING AND  
CODE DISTRIBUTING EQUIPMENT PER J99237E AND J99237F

SPARE RINGING CAPACITY	INDICATORS	CAPACITY (AMP)	QUANTITIES PER LIST				
			J99237A LIST	J99237B LISTS		J99237C LISTS	
			1	1	2	1	2
AC-DC or Superimposed Ringing, 70 Volt to 90 Volt or Better (see Note)	No	1	—	1	—	—	—
	Yes	1/4	—	1	1	1	1
	Yes	1/2	—	1	1	1	2
Not Available	No	1/4	1	1	—	—	—
		1/2	2	1	—	—	—
	Yes	1/4	1	1	1	1	—
		1/2	2	1	1	1	—

**Note:** Existing ringing supplies rated for wider voltage limits may be used provided office load is light and the proper adjusting tap on transformer (T) in J99237C, L2 is selected at the time of installation. If no ringing fuse is available, J99237B, L3 fuse alarm equipment is also required.

**Circuits**

SD-56335-01—Signaling Testing Circuit for 2400- or  
2600-Cycle Single Frequency Signal-  
ing Circuits

SD-95684-01—Application Schematic  
SD-96452-01—Repeating Coil Circuit

**Equipment**

ED-25710-01—Mounting Assembly for Multicontact  
Relays

ED-69245-01—Dial and Dial Housing

ED-80911-01—Mounting Details for Block-Type Dry  
Batteries—23-Inch Relay Rack

ED-91183-( )—Relay Rack—10-Inch Guard Rail

ED-91837-( )—Relay Rack—1-Foot Guard Rail

ED-92134-( )—Fuse Panel

ED-92465-01—Relay Rack Assembly—Floor Support-  
ed

ED-92686-01—Typical Bay Layout

**Group 2**—Backboard required in addition to group 1  
when dial and dial housing are wall mount-  
ed.

**ED-91183-( )—Relay Rack Assembly**

**Group 2**—One bay 11 feet, 6 inches high for 2- by  
23-inch mounting plates; 10-foot, 6-inch  
frame base.

**ED-91837-( )—Relay Rack Assembly**

**Group 7**—One bay 11 feet, 6 inches high for 2- by  
23-inch mounting plates; 1-foot, 0-inch  
sheet metal base.

**ED-92134-( )—Fuse Panel Assemblies**

**Group 3**—One fuse panel assembly, 38-fuse capacity,  
23-inch relay rack.

**4. EQUIPMENT****ED-69245-01—Dial and Dial Housing**

**Group 1**—One dial and dial housing for civil air de-  
fense warning system control point.

**Note:** The fuse panel shall be equipped to meet  
job requirements. Circuit arrangements shown  
on SD-81202-01, Fig. 5, 6, 8, 9, 12, and 16 shall  
be furnished as required.

**ED-92465-01—Relay Rack Assembly**

**Group 1**—One floor supported relay rack 6 feet, 10-1/2 inches high.

**J99237A—AT&TCo Std—Ringing Machine Unit**

**List 2**—Assembly, wiring, and equipment for 1/4-ampere, 70- through 90-volt, 17- through 23-cycle ac supply and 60-ipm interrupted ground per SD-81202-01, Fig. 4 and A and ED-81654-01, Fig. 1. (See Notes A and B.)

**Notes**

A. In addition to the equipment included above, one KS-5319-04 L3 ringing machine is required for each J99237A, L2.

B. The above voltage limits will hold for battery voltage from 46 through 52 volts.

**J99237B—AT&TCo Std—Fuse Alarm and Positive Battery Control Unit**

**List 1**—Common equipment for one fuse alarm and positive battery control unit.

	WIRE	EQUIP	NOTES
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Aux Ring. Sup and Bat. Dist Ckt, SD-81202-01, Fig. 10 and 11	1	1	
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**List 2**—Apparatus and wiring to be added for positive battery control.

	WIRE	EQUIP	NOTES
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Aux Ring. Sup and Bat. Dist Ckt, SD-81202-01, Fig. 2	1	1	
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**List 3**—Apparatus and wiring per SD-81202-01, Fig. 14, with option Z or W wiring required in addition to list 1 when no fuse is available in the ringing power plant or for public signal control unit. (See Notes A and B.)

**Notes**

A. Furnish option Z in ac/dc offices, or option W in ac or superimposed offices.

B. Furnish option Z in ac/dc or superimposed offices, or option W in ac offices or with J99237A, L1.

**J99237C—AT&TCo Std—Positive Battery Equipment**

**List 1**—Positive 1/2-ampere 46- through 52-volt superimposing battery equipment.

	WIRE	EQUIP	NOTES
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Bat. Cab., ED-80911-01,GR2		1	
Aux Ring. Sup and Bat. Dist Ckt, SD-81202-01, Fig. 3	1	0	A

**List 2**—1/4-ampere transformer for offices with spare ringing capacity per SD-81202-01, Fig. 1, with option X or Y wiring. (See Notes B and C.)

**Notes**

A. Six KS-8128 dry batteries are required in addition to the equipment covered by this list.

B. Mounting space is provided in list 1.

C. Furnish option X in ac/dc offices, or option Y in superimposed offices.

**J99237D—AT&TCo Std—Station Signal Indicator for Civil Air Defense Warning System**

**List 1**—Assembly, wiring, and equipment for one station signal indicator per SD-69211-01, Fig. 1.

**Note**

A. Since it is intended that this item is to be assembled locally, a J drawing will not be made available.

**J99237E—AT&TCo Std—Code Generator and Dial Pulse Receiving Unit**

**List 1**—Assembly, wiring, and equipment for one code generator and dial pulse receiving unit.

	WIRE	EQUIP	NOTES
Code Gen Ckt, SD-95677-01, Fig. 1	1	1	
Dial Puls Rec Ckt, SD-95678-01, Fig. 1, With Option T and M App and Option E G, H, and J Wiring	1	1	A,B

**List 2**—Wiring and equipment for one transfer relay required in addition to list 1 per SD-95678-01, Fig. 2 for each two lists 3 furnished. (See Note C.)

**List 3**—Assembly, wiring, and equipment for one resistance lamp panel equipment with 13 resistance lamps per SD-95678-01, Fig. 3. (See Note C.)

**List 4**—Assembly, wiring, and equipment for one automatic termination unit per SD-95678-01, Fig. 1, option ZK apparatus and wiring to provide for automatic termination of alert after 3 minutes.

#### Notes

- A. The unit is universally wired so that circuit options S, T, M, or K may be obtained by adding straps on the unit terminal strip at the time of installation.
- B. The shop shall provide option G, H, and J straps across the P and N resistances. These straps shall be cut by the installer in accordance with the circuit notes when it is necessary to adjust for the loop resistance to the control station lines.
- C. One TR1 network is provided for each two TR1 relays per list 2. Resistance lamps per list 3 shall be provided as follows:
1. For continuous No. 4 signal, option B provide two lists 3 (25 resistance lamps) for the odd numbered lines of a group of 50 and two lists 3 (25 resistance lamps) for the even numbered lines of that group.
  2. For an ON-OFF, No. 4 signal, option D provide two lists 3 (25 resistance lamps) for each group of 50 lines.

D. The alarm lamps provided under list 1 may be duplicated in another location by specifying extension lamps per SD-95678-01, Fig. 7. These lamps should be mounted on a job basis to meet local requirement.

#### **J99237F—AT&TCo Std—Line Connector Relay Unit for First Group of 50 Lines for Civil Air Defense Warning System**

**List 1**—Framework, equipment, and wiring for one line connector relay unit per SD-95678-01, Fig. 4 for lines 1 through 50.

**List 2**—Assembly, wiring, and equipment required in addition to list 1 to provide one shunt jack per SD-95678-01, Fig. 6.

#### Note

A. Option Q and N wiring shall be connected on the unit terminal strip by the installer in accordance with job requirements.

#### **J99237G—AT&TCo Std—Line Connector Relay Unit for Second, Third, or Fourth Group of 50 Lines for Civil Air Defense System**

**List 1**—Framework, equipment, and wiring for one line connector relay unit (for 50 lines) per SD-95678-01, Fig. 5.

#### Note

A. Option W or V wiring shall be connected on the distributing frame by the installer in accordance with job requirements.

#### **J99237H—AT&TCo Std—Two-Way Signal Repeater Unit—Balanced Loop**

**List 1**—Assembly, wiring, and equipment for one signal repeater unit per SD-95681-01, Fig. 1, 2, and 3 with option Z.

#### Notes

A. This unit is universally wired and options shall be strapped by the installer on the unit terminal strips, as required.

B. The installer shall strap the D and E resistance in accordance with circuit requirements.

C. This unit may be converted for one-way operation by strapping at the unit terminal strip, or a key may be provided locally to permit selection of one- or 2-way operation.

**J99237J—AT&TCo Std—Two-Way Signal Repeater Unit—Open and Closed Loop**

**List 1**—Assembly, wiring, and equipment for one signal repeater unit per SD-95682-01, Fig. 1, 2, and 3, with option Z.

**Notes**

A. This unit is universally wired and all options shall be strapped by the installer on the unit terminal strips as required.

B. The installer shall strap the D and E resistance in accordance with circuit requirements.

C. This circuit may be converted for one-way operation by strapping at the unit terminal strip or a key may be provided locally to permit selection of one- or 2-way operation.

**J99237K—AT&TCo Std—One-Way Receiving Unit for Civil Air Defense Warning System**

**List 1**—Assembly, wiring, and equipment for a one-way receiving unit per SD-95683-01, Fig. 1.

**J99237L—AT&TCo Std—One-Way Sending Unit for Civil Air Defense Warning System**

**List 1**—Assembly, wiring, and equipment for one 2-circuit, one-way sending unit.

One-Way Rec, One-Way  
Sdg, Alm and Jk Ckt,  
SD-95683-01 Fig. 2,  
Option V

WIRE	EQUIP	NOTES
2	2	A

**List 2**—Assembly, wiring, and equipment for one 3-circuit, one-way sending unit.

WIRE	EQUIP	NOTES
3	3	A

One-Way Rec, One-Way  
Sdg, Alm and Jk Ckt,  
SD-95683-01, Fig. 2,  
Option V

**Note**

A. When a KS-3106 pen register is required for recording pulses from a key point dial, it shall be ordered separately and installed locally. The installer should be instructed to omit the option V wiring on the associated one-way sending unit and add option W wiring.

**J99237M—AT&TCo Std—Alarm Unit for Civil Air Defense Warning System**

**List 1**—Assembly, wiring, and equipment for one alarm unit per SD-95683-01, Fig. 3.

**J99237N—AT&TCo Std—Line and Loop Jack Unit for Civil Air Defense Warning System**

**List 1**—Assembly, wiring, and equipment for one 3-circuit line and loop jack unit.

One-Way Rec, One-Way  
Sdg, Alm and Jk Ckt,  
SD-95683-01, Fig. 4 and 5

WIRE	EQUIP	NOTES
3	3	

**List 2**—Assembly, wiring, and equipment for one 5-circuit line and loop jack unit.

One-Way Rec, One-Way  
Sdg, Alm and Jk Ckt,  
SD-95683-01, Fig. 4 and 5

WIRE	EQUIP	NOTES
5	5	

**J99237P—AT&TCo Std—Dial Pulse Receiving and Control Unit for Transmitting Coded Visual and Noncoded Audible Signals to Warning Stations (Maximum Five Lines)**

**List 2**—Wiring and equipment per SD-95685-01, Fig. 2 required in addition to list 1 or 3 to provide for sending signals to four additional warning stations. (See Note B.)

**List 3**—Assembly, wiring, and equipment for one dial pulse receiving and control unit per SD-95685-01, Fig. 1, universally wired for options X, Q, T, W, V, S, R, Y, and Z for transmitting signals to one warning station. (See Note A.)

**List 4**—Assembly, wiring, and equipment required in addition to list 1 or 3 to provide one shunt jack per SD-95685-01, Fig. 3.

**List 5**—Assembly, wiring, and equipment for one automatic termination unit per SD-95685-01, Fig. 1, option A apparatus and wiring to provide for automatic termination of alert after 3 minutes.

**Notes**

A. The unit is universally wired so that the installer can obtain options Z, Y, X, T, V, S, R, Q, or W by adding straps on the unit terminal strips, as required.

B. List 2 includes a 50A cover with cover guides and one 224A terminal strip and apparatus per SD-95685-01, Fig. 2. These items are shipped loose and assembled and wired locally.

C. Duplicates of the alarm lamps may be obtained in another location by providing, on a job basis, extension lamps per SD-95685-01, Fig. 4.

**J99237R—AT&TCo Std—Public Signal Control Unit**

**List 1**—Assembly, wiring, and equipment for one public signal control unit.

	WIRE	EQUIP	NOTES
Pub Sig Cont Ckt, SD-95688-01:			
Cont Rel, Fig. 1	1	1	
Red Alert Sig Gen, Fig. 5 and A	1	1	A
Aux Tmg Rel, Fig. 6 or 7	7	7	B
Sn CO Key, Fig. 9	1	1	

**Notes**

A. This unit is provided with universal wiring so that Fig. A or Fig. B may be obtained by strapping at the unit terminal strip.

B. This unit is provided with seven auxiliary timing relays universally wired per Fig. 6 or 7 with connections to the unit terminal strip so that various siren ON-OFF periods for "Take Cover" signals may be obtained by strapping at the unit terminal strip.

**J99237S—AT&TCo Std — Fuse Alarm and Transformer Unit for Dial Pulse Receiving and Control or Public Signal Control Units**

**List 1**—Mounting plate and terminal strip for fuse alarm and transformer unit.

**List 2**—Apparatus and wiring required in addition to list 1 for fuse alarm when no ringing fuse is available in the ringing power plant or for use with public signal control unit when spare ringing capacity is available.

	WIRE	EQUIP	NOTES
Aux Ring. Sup and Bat. Dist Ckt, SD-81202-01, Fig. 13 With Opt Z or W	1	1	A

**List 3**—Transformer required in addition to list 1 for ringing voltages outside the 70- through 90-volt ac, 36- through 52-volt dc ranges.

	WIRE	EQUIP	NOTES
Aux Ring. Sup and Bat. Dist Ckt, SD-81202-01, Fig. 15, With Opt Z or W	1	1	B

**Notes**

A. Furnish option Z in ac/dc or superimposed offices, or option W in ac offices.

B. Furnish option Z in ac/dc offices, or option W in ac or superimposed offices.

**J99237T—AT&TCo Std—Public Signal Line Connector Unit**

**List 1**—Assembly, wiring, and equipment for one 10-line capacity public signal line connector unit universally wired for two Fig. 2, 3, or 8 and two Fig. 4, SD-95688-01.

**List 2**—Assembly, wiring, and equipment for one 5-line capacity public signal line connector unit universally wired for one Fig. 2, 3, or 8 and one Fig. 4, SD-95688-01.

**J99237U—AT&TCo Std—Balancing Network for CX Line**

**List 1**—Assembly, wiring, and equipment per SD-95687-01, Fig. 1 for a 2-circuit balancing network for CX lines.

**List 2**—Assembly, wiring, and equipment per SD-95687-01, Fig. 1 for a one-circuit balancing network for CX lines.

**Note**

A. This unit is universally wired so that the installer may obtain option X, V, T, or W as required by connecting to appropriate terminals on the unit terminal strip. The A, B, C, D, and E resistances shall be strapped by the installer in accordance with circuit requirements.

**J99237W—AT&TCo Std—Alarm Unit for Continuous Line Test**

**List 1**—Assembly, wiring, and equipment for SD-95688-01, Fig. 10, with option Y for one alarm unit for continuous line test.

**Notes**

- A. Option Y or X may be obtained by strapping at the unit terminal strip.
- B. One J99237W alarm unit will be required for each group of 30 or less lines under continuous test.

**J99237Y—AT&TCo Std—Continuous Line Test Unit—Capacity Three Lines**

**List 1**—Assembly, wiring, and equipment per SD-95688-01, Fig. 11 for a continuous line test unit for three lines.

**Note**

A. One J99237W alarm unit is required for use with each group of ten J99237Y continuous line test units.

**J99237AA—AT&TCo Std—Signaling Test Unit**

**List 1**—Assembly, wiring, and equipment for one signaling test unit per SD-95696-01, Fig. 1. (See Note A.)

**Note**

A. Installer shall add straps on the unit terminal strip per Fig. A or Fig. B in accordance with local requirements.

**J99237AB—AT&TCo Std—Dial Pulse Checking Unit**

**List 1**—Assembly, wiring, and equipment for one dial pulse checking unit per SD-95685-01, Fig. A for use with units per J99237P.

**List 2**—Assembly, wiring, and equipment for one dial pulse checking unit per SD-95678-01, Fig. A for use with units per J99237E.

**J99237AC—AT&TCo Std—Dial Pulse Checking and Code Generator Unit**

**List 1**—Assembly, wiring, and equipment for one dial pulse checking and code generator unit per SD-95743-01, Fig. A and SD-95677-01, Fig. 1, wired for option W for use with J99237AD. (See Note B.)

**List 2**—Wiring and equipment per SD-95743-01, Fig. 2, wired for options Z and Y required in addition to list 1 for increasing capacity of J99237AD to eight lines. (See Note A.)

**Notes**

- A. Installer shall add option Z or Y straps on unit terminal strips, as required.
- B. Installer shall connect option W strap on unit terminal strips, when required.

**J99237AD—AT&TCo Std—Dial Pulse Checking and Control Unit for Transmitting Coded Visual and Coded Audible Signals to Warning Stations (Maximum Four Lines) (See Notes A and B)**

**List 1**—Assembly, wiring, and equipment for one dial pulse receiving and control unit per SD-95674-01, Fig. 1 universally wired for options

X, Q, T, W, V, S, R, Y, and Z for transmitting signals to four warning stations. (See Note C.)

**List 2**—Apparatus required to convert J99237P-1, L3 (where J99237P-1, L2 is not furnished) to agree with J99237AD, L1.

**List 3**—Assembly, wiring, and equipment required in addition to list 1 to provide one shunt jack per SD-95743-01, Fig. 3.

**List 4**—Assembly, wiring, and equipment for one automatic terminal unit per SD-95743-01, Fig. 1, option B apparatus and wiring to provide for automatic termination of alert after 3 minutes.

#### Notes

A. In existing installation, this unit may be obtained by modifying a J99237P unit.

B. This unit will serve a maximum of four warning stations. To increase this to eight warning stations, see J99237AC, L2.

C. The unit is universally wired so that the installer can obtain options Z, Y, X, T, V, S, Q, R, or W by adding straps on the unit terminal strips, as required.

D. Duplicates of the alarm lamps may be obtained in another location by providing, on a job basis, extension lamps per SD-95743-01, Fig. 4.

#### **J99237AE—AT&TCo Std—60-IPM Interrupter Unit**

**List 1**—Assembly, wiring, and equipment for one 60-ipm interrupter unit per SD-95677-01, Fig. 2.

#### **J99237AF—AT&TCo Std—Test and Alarm Cutoff Unit**

**List 1**—Mounting plate and terminal strip for one test and alarm cutoff unit.

**List 2**—Assembly, wiring, and equipment required in addition to list 1 for one test jack circuit per SD-95683-01, Fig. 6.

**List 3**—Assembly, wiring, and equipment required in addition to list 1 for one dial circuit per SD-95683-01, Fig. 7.

**List 4**—Assembly, wiring, and equipment required in addition to list 1 for one test jack circuit for dialing into one-way sending circuits or 2-way open-closed loop repeaters, SD-95683-01, Fig. 8.

**List 5**—Assembly, wiring, and equipment required in addition to list 1 for battery jacks per SD-95683-01 universally wired for Fig. 9 or Fig. 12. (See Notes B and C.)

**List 6**—Assembly, wiring, and equipment required in addition to list 1 for one station line test circuit per SD-95746-01, Fig. 1.

**List 7**—Assembly, wiring, and equipment required in addition to list 1 for one station line test circuit per SD-95746-01, Fig. 2.

**List 8**—Assembly, wiring, and equipment required in addition to list 1 for one alarm cutoff circuit per SD-95746-01, Fig. 5.

#### Notes

A. Order one No. 2W6A cord for use with list 6 or one No. 3W3A cord for use with list 7.

B. When battery jacks per list 5 wired per SD-95683-01, Fig. 12 are specified for use with a No. 2A signaling test set with option V, the following power is required: 130-volt plate, 24-volt filament, and 48-volt signaling battery.

C. When the battery jacks per list 5 wired per SD-95683-01, Fig. 12 are for use with a No. 2B signaling test set with option W or N, the following power is required: 130-volt signaling and 48-volt signaling battery together with a J68602CU battery supply (SD-56335-01, Fig. 2, less jacks).

#### **J99237AG—AT&TCo Std—Line Test Lamp Unit for Use With Continuous Line Test Circuit**

**List 1**—Assembly, wiring, and equipment per SD-95688-01, Fig. 15 and Fig. 14 for one alarm relay circuit and ten line test lamp circuits. (One mounting plate, ten circuits.)

**List 2**—Assembly, wiring, and equipment required in addition to list 1 for ten line test lamps per SD-95688-01, Fig. 14 for lines 11 through 20 or 21 through 30. (One mounting plate, ten circuits.)

**J99237AH—AT&TCo Std—Signal Converter Unit  
for Use Between the Civil Air Defense  
Warning System and Telegraph Loop  
Terminal Circuits**

**List 1**—Assembly, wiring, and equipment for one signal converter unit per SD-95800-01, Fig. 1, 2, and 3, with options X, Y, and Z for connecting the civil air defense warning system to telegraph loop terminal circuits. (See Note A.) (One mounting plate, one circuit.)

**Note**

A. This unit is universally wired with options X, Y, and Z and Fig. 2 and 3 connected to the terminal strip so that the installer may obtain the required option by strapping punchings on the terminal strip.

**5. GENERAL NOTES AND INDEXES**

**5.01** Use the following decals (obtainable from Duralith Corp, Philadelphia, Penn) to modify existing station dials and indicators having colors and letters for air defense signals to agree with the Office of Civil and Defense Mobilization regulations.

S652 Dial Face—one per station dial

S653 Indicator Lamp Numbers—one per station indicator  
S654 Indicator Functions—one per station indicator

These decals have an adhesive backing under a peel-off paper covering.

**List of A&M Only and Mfr Disc. Equipment**

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J99237A,L1	Mfr Disc.	4	J99237A,L2
J99237P,L1	Mfr Disc.	2	J99237P,L3

The above equipment has been replaced as indicated. Where A&M Only items appear, the issue numbers shown are those of the issue in which the rating was first applied.

## SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

WE J drawings should be ordered by referring to the prefix and base number and requesting the current dash (—) number.

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
ED-69245-01	Std	Dial and Dial Housing	ED-69245-( )	—
ED-91183-( )	Std	Relay Rack Assembly	ED-91183-( )	—
ED-91837-( )	Std	Relay Rack Assembly	ED-91837-( )	—
ED-92465-01	Std	Relay Rack Assembly	ED-92465-( )	—
ED-92134-( )	Std	Fuse Panel Assemblies	ED-92134-( )	SD-81202-01
J99237A	Std	Ringing Machine Unit	ED-81654-01	SD-81202-01
J99237B	Std	Fuse Alarm and Positive Battery Control Unit	ED-81654-01	SD-81202-01
J99237C	Std	Positive Battery Equipment	ED-81655-01	SD-81202-01
J99237D	Std	Station Signal Indicator for Civil Air Defense Warning System	ED-69231-01	SD-69211-01
J99237E	Std	Code Generator and Dial Pulse Receiving Unit	ED-92674-01	SD-95677-01 SD-95678-01
J99237F	Std	Line Connector Relay Unit for First Group of 50 Lines for Civil Air Defense Warning Signal	ED-92675-01	SD-95678-01
J99237G	Std	Line Connector Relay Unit for Second, Third, or Fourth Group of 50 Lines for Civil Air Defense System	ED-92675-01	SD-95678-01
J99237H	Std	Two-Way Signal Repeater Unit—Balanced Loop	ED-92681-01	SD-95681-01
J99237J	Std	Two-Way Signal Repeater Unit—Open and Closed Loop	ED-92680-01	SD-95682-01
J99237K	Std	One-Way Receiving Unit for Civil Air Defense Warning System	ED-92683-01	SD-95683-01
J99237L	Std	One-Way Sending Unit for Civil Air Defense Warning System	ED-92683-01	SD-95683-01

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
J99237M	Std	Alarm Unit for Civil Air Defense Warning System	ED-92683-01	SD-95683-01
J99237N	Std	Line and Loop Jack Unit for Civil Air Defense Warning System	ED-92683-01	SD-95683-01
J99237P	Std	Dial Pulse Receiving and Control Unit for Transmitting Coded Visual and Noncoded Audible Signals to Warning Stations (Maximum Five Lines)	ED-92692-01	SD-95685-01
J99237R	Std	Public Signal Control Unit	ED-92725-01	SD-95688-01
J99237S	Std	Fuse Alarm and Transformer Unit for Dial Pulse Receiving and Control or Public Signal Control Units	ED-81654-01	SD-81202-01
J99237T	Std	Public Signal Line Connector Unit	ED-92725-01	SD-95688-01
J99237U	Std	Balancing Network for CX Line	ED-92714-01	SD-95687-01
J99237W	Std	Alarm Unit for Continuous Line Test	ED-92725-01	SD-95688-01
J99237Y	Std	Continuous Line Test Unit— Capacity Three Lines	ED-92725-01	SD-95688-01
J99237AA	Std	Signaling Test Unit	ED-92741-01	SD-95696-01
J99237AB	Std	Dial Pulse Checking Unit	ED-92786-01	SD-95678-01 SD-95685-01
J99237AC	Std	Dial Pulse Checking and Code Generator Unit	ED-92795-01	SD-95677-01 SD-95743-01
J99237AD	Std	Dial Pulse Checking and Control Unit for Transmitting Coded Visual and Coded Audible Signals to Warning Stations	ED-92692-01	SD-95674-01 SD-95743-01
J99237AE	Std	60-IPM Interrupter Unit	ED-92797-01	SD-95677-01
J99237AF	Std	Test and Alarm Cutoff Unit	ED-92683-01	SD-95683-01 SD-95746-01

EQUIPMENT CODE	AT&T RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
J99237AG	Std	Line Test Lamp Unit for Use With Continuous Line Test Circuit	ED-92725-01	SD-95688-01
J99237AH	Std	Signal Converter Unit for Use Between the Civil Air Defense Warning System and Telegraph Loop Terminal Circuits	J99237AH-( )	SD-95800-01

## Circuit Schematic Index

CIRCUIT DRAWING	J99237 EQPT CODE
SD-69211-01	D
SD-81202-01	ED-92134-( ), A,B,C,S
SD-95674-01	AD
SD-95677-01	E,AC,AE
SD-95678-01	E,F,G,AB
SD-95681-01	H
SD-95682-01	J
SD-95683-01	K,L,M,N,AF
SD-95685-01	P,AB
SD-95687-01	U
SD-95688-01	R,T,W,Y,AG
SD-95696-01	AA
SD-95743-01	AC,AD
SD-95746-01	AF
SD-95800-01	AH

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