

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

OPERATION OF WIRELINE ADAPTER INTERCONNECT
 CABLE CX-13310/VRC WITH
 SINGGARS GROUND RADIO SETS

Headquarters, Department of the Army, Washington, DC

1 APRIL 1993

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

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1. **Purpose.** This technical bulletin provides the information and procedures for operating the Wireline Adapter Interconnect Cable CX-13310/VRC with a Ground SINGGARS Family Radio Set using Communications Security Equipment TSEC/KY-57 and Wire Line Adapter HYX-57/TSEC. This technical bulletin is a supplement for the purpose of interoperability.
2. **Application - Radio Sets.** The radio sets covered by this technical bulletin are AN/VRC-87, AN/VRC-87A, AN/VRC-88, AN/VRC-88A, AN/VRC-89, AN/VRC-89A, AN/VRC-90, AN/VRC-90A, AN/VRC-91, AN/VRC-91A, AN/VRC-92, and AN/VRC-92A.
3. **References.** Refer to the following technical publications for normal operation and maintenance of the equipment:

<u>PUBLICATION NUMBER</u>	<u>DATE</u>	<u>TITLE</u>
TM 11-5810-256-OP-6	May 1983	Operating Procedures For Communications Security Equipment TSEC/KY-57 (With HYX-57/TSEC) FM Secure Remote Communications
TM 11-5820-890-10-1	1 September 1992	SINGGARS ICOM Ground Combat Net Radio
TM 11-5820-890-10-3	1 September 1992	SINGGARS NON-ICOM Ground Combat Net Radio

4. **Equipment Setup/Operation.** Assemble and install the radio set, KY-57, and HYX-57 individually per applicable technical manuals. Perform Preventive Maintenance Checks and Services (PMCS) and/or Built-In-Test (BIT) functions. Load all frequencies, hopsets, and variables into the radio set. Load required COMSEC data into the KY-57 and connect equipment as described in the following paragraph.
5. **Cabling Instructions.** The following figure illustrates the typical configuration for the connection between the radio set and the KY-57 with Wire Line Adapter, HYX-57.

Refer to figure 1 and perform the following cabling procedure:

- Connect Cable Assembly CX-13072 to RADIO connector on KY-57 and the RADIO/KY connector on the HYX-57.
- With field wire, WD-1, connect the two HYX-57 Wire Line Adapters using the two set's binding posts marked "T R".
- Connect a Wire Line Adapter Interconnect Cable (CX-13310) from the RXMT connector on the RT to the RADIO/KY connector on the Wireline Adapter.

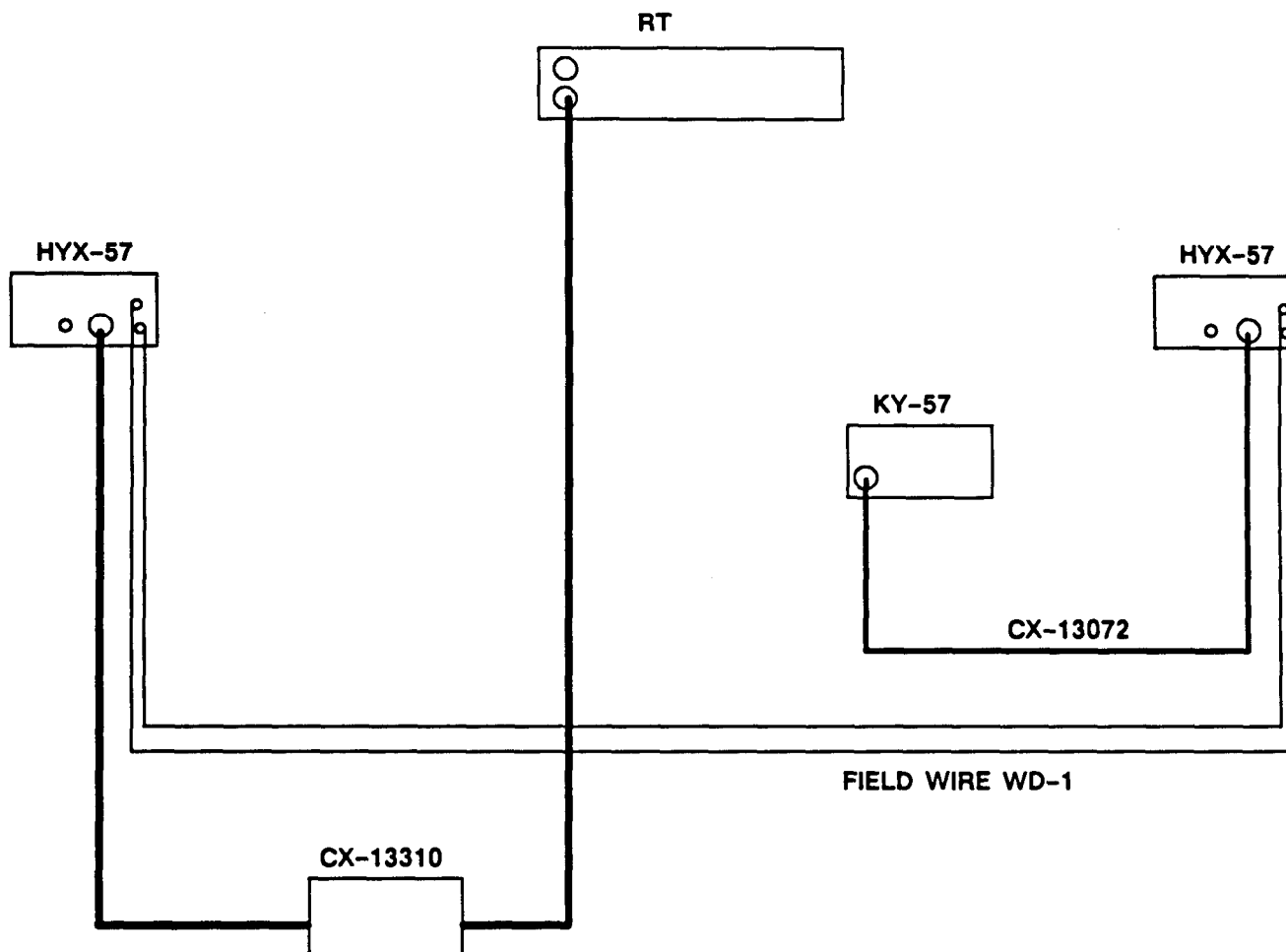


Figure 1. Cabling for Wire Line Adapter to SINGARS Radio Set and HYX-57/TSEC

6. **Switch Settings and Initialization.** The following table provides the necessary switch settings and communication parameters for interoperability.

Table 6-1. SINGGARS Radio Set

<u>MODE</u>	<u>SWITCH SETTINGS</u>				
	<u>RT-1523</u>	<u>RT-1439</u>	<u>HYX-57</u>	<u>KY-57</u>	<u>CX-13310</u>
	ICOM	NON-ICOM			
SC-PT	SC, RXMT, PT	SC, RXMT	PWR-LO 2-WIRE, 16K	P	PT-SC
FH-PT	FH, RXMT PT	FH, RXMT	PWR-LO 2-WIRE, 16K	P	PT-FH
SC-CT	SC, RXMT, PT	SC, RXMT	PWR-LO 2-WIRE, 16K	C, TD	CT
FH-CT	FH, RXMT, PT	FH, RXMT	PWR-LO 2-WIRE, 16K	C, TD	CT
OW	N/A	N/A	PWR-LO/HI 2-WIRE, 16K	P	OW

NOTES:

When using the SINGGARS Ground Combat Net Radio, ICOM, RT-1523 for the remote operation, the COMSEC switch on the radio must be turned to the PT position.

HYX-57 Interconnect Cable CX-13310 has a control box with a control switch for selecting the positions listed under CX-13310.

When using order wire ("OW"), the H-250 handset should be connected to the RADIO/KY connector on the HYX-57 at the remote site.

The maximum allowable wireline distance between the HYX-57s used to remote the radio system is 4 miles.

CAUTION

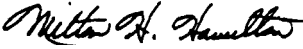
DO NOT USE THE HI POWER POSITION OF THE HYX-57s WHEN REMOTING A RADIO SET.

7. System Troubleshooting Procedures. These steps will assist you in isolating faulty system components when you have a problem using the Wire Line Adapter Cable CX-13310. These procedures assume you have loaded all required SC, FH, and COMSEC data.
- CHECK COMSEC KEY. If you can communicate in plain text (P) but have no communication in the secure mode (C), you may have an incorrect key loaded into the KY-57 COMSEC device.
 - CHECK WITH OTHER NET MEMBERS. Do You have communication with some stations but not others? The other station may be out of range, temporarily off the air, or has not checked into the net. If communication can be established with another station, your system is probabiy O.K. and the problem may be at the distant net station.
 - CHECK SYSTEM CONFIGURATION. Verify proper cabling and switch settings for the particular MODE you wish to use.
 - NOTIFY MAINTENANCE. If the problem cannot be isolated, notify unit maintenance personnel of your communication problem.

By Order of the Secretary of the Army:

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