DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

OPERATION OF BATTERY COMPUTER SYSTEM AN/GYK-29 WITH SINCGARS GROUND RADIO SETS

Headquarters, Department of the Army, Washington, DC

1 APRIL 1993

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1. Purpose. This technical bulletin provides the information and procedures for operating the Battery Computer System AN/GYK-29 (BCS) with the SINCGARS family of ground radios. It is necessary that the operator be properly trained in the operation of the BCS and SINCGARS. 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:

PUBLICATION NUMBER	DATE	TITLE
TM 11-7440-283-12-1	24 Sept 1982	Computer Croup, Gun Direction 0L-200/GYK-29(V) (Part of Computer System, Gun Direction AN/GYK-29(V))
TM 11-7440-283-12-2	27 Sept 1982	Data Display Group, Gun Direction 0D-144(V)1/2/3/GYK-29(V) (Part of Computer System, Gun Direction AN/GYK-29(V))
TM 11-5820-890-10-1	1 September 1992	SINCGARS ICOM Ground Combat Net Radio
TM 11-5820-890-10-3	1 September 1992	SINCGARS NON-ICOM Ground Combat Net Radio

4.   Equipment Setup/Operation.   Assemble and install the radio set and BCS 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 and establish voice communications before connecting the BCS to the radio set. Once voice communication has been established, connect the BCS 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 BCS.

   •   Connect W4 cable from RT AUD/DATA connector to mounting adapter DATA A J5 connector.

   •   Connect BCS data cable from BCS J1 connector to mounting adapter AUD/DATA A J3 connector.

   •   Connect handset H-250/U to RT AUD/FILL connector.

   •   Figure shows BCS connected to lower radio (RT-A).

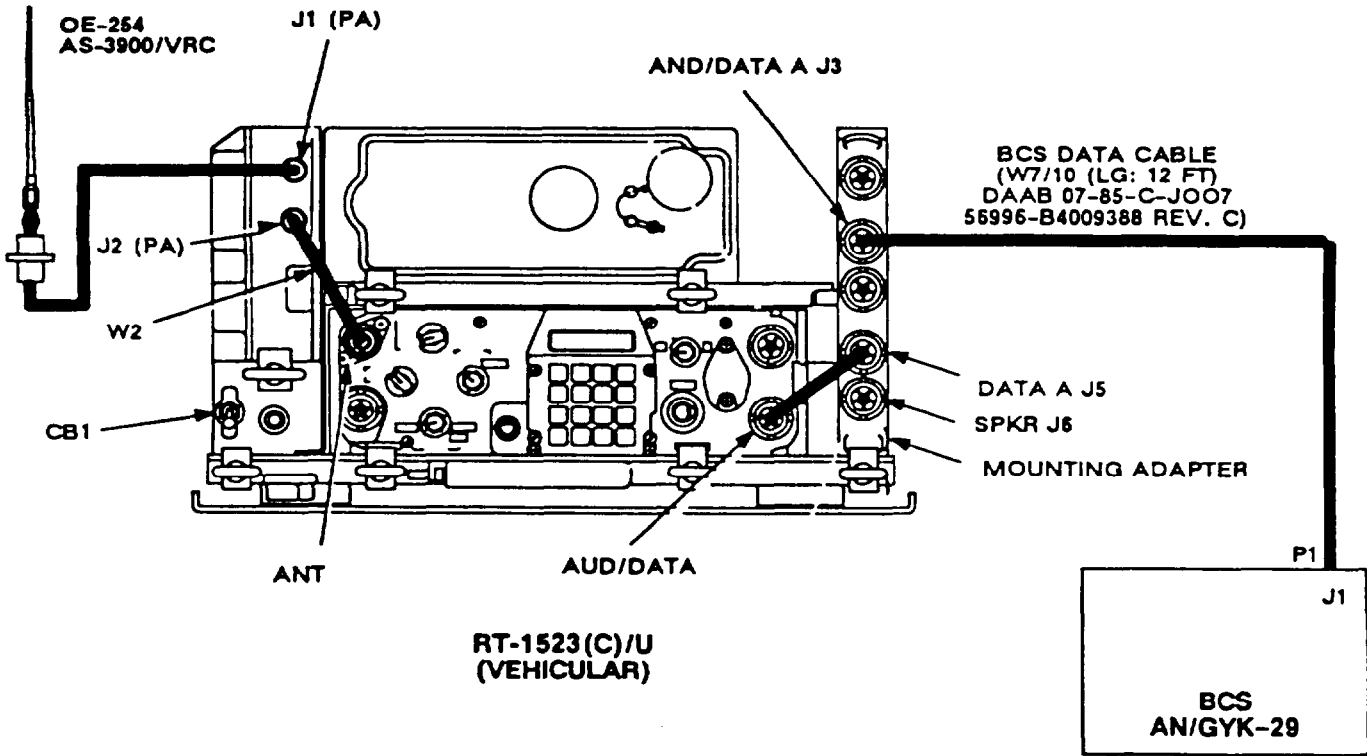   •   BCS may be connected to upper radio (RT-B) if desired.

Figure 1. Cabling for BCS to SINCGARS Radio Set

6. Switch Settings and Initiallzation.   The following tables provide the necessary switch settings and communication parameters for interoperability. Initialize the BCS for communication as shown in Table 6-2. Verify the switch settings for both the radio and the BCS; then establish communication on the net.

SWITCH	ICOM RADIO	NON-ICOM RADIO
FUNCTION	SQ ON	SQ ON
MODE	SC or FH	SC or FH
DATA	T F	AD2
COMSEC	C T	(TSEC/KY-57) ON C T
*	OFF	N/A

Table 6-1. SINCGARS Radio Set

XMIT BLOCK:	SINGLE
XMIT RATE:	1200
PREAMBLE:	. 7
SET TRANSMIT:	PT

Table 6-2. BCS AN/GYK-29

7. System Troubleshooting Procedures. These steps will assist you in isolating faulty system components when you have a problem communicating in a net using data transmission. These procedures assume that the net and secure FH voice communication has been established. If you are unable to communicate using data transmission, do the following troubleshooting steps in the order provided.

-   CHECK LOCAL RADIO. Use the data on the FH voice net to determine that the radio net is operating.

-   CHECK WITH OTHER NET MEMBERS. Do you have data 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 data communication can be established with another station, your system is probably OK and the problem may be at the distant net station.

-   CHECK SYSTEM CONFIGURATION. Verify proper cabling, initialization and subscriber parameters, radio set and BCS switch settings, etc.

-   NOTIFY MAINTENANCE. If the problem cannot be isolated, notify unit maintenance personnel and inform your NCS of your communication problem.

8. Remote Control Operations. The Remote Control Unit (RCU) C-11561 may be used in place of the RT in a SINCGARS radio system to allow the radio set and antenna to be placed at distances up to 4 km from the local system. interoperability between the BCS and the RCU is the same when the BCS is connected to an RT. Table 8-1 provides the switch settings for the radio set and the RCU for remote control operation.
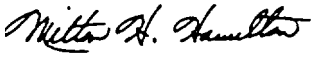
SWITCH	RCU	RADIO SET
FUNCTION	SQ ON	REM
MODE	SC or FH	N/A
DATA	T F	N/A
COMSEC	C T	P T
*	OFF	N/A

Table 8-1. RCU Settings for Remote Operation

By Order of the Secretary of the Army:

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