



# MAINTENANCE BULLETIN

AN/TPQ-37 (V)4 ANTENNA TRANSCEIVER GROUP	FILE NO: 142	REVISION:
	DATE: 11/13/91	CATEGORY: D-SAFETY
SUBJECT: BACKSHELL / SHIELD INSTALLATION ON BSU AND RECEIVER/EXCITER POWER SUPPLY CONNECTORS	SYSTEMS AFFECTED: SN 89-99 (FMS ONLY)	

- References:
- Maintenance Bulletin 141, Missing Sleeving Insulation on BSU and Receiver Exciter Power Supply Connector Contacts.
  - TM11-5840-373-10-1, Operator's Manual for Radar Set AN/TPQ-37 (V)4.
  - TM11-5840-373-20-2, Organizational Maintenance Manual, Antenna Removal and Installation Procedures.
  - TM11-5840-373-20-3, Organizational Maintenance Manual, Transceiver Removal and Installation Procedures.

The following modification is required on AN/TPQ-37 radars SN 89-99 to resolve a safety related problem with exposed contacts on the BSU and Receiver Exciter power supplies. The problem and necessary safety precautions are further defined in the reference a) maintenance bulletin. All the materials necessary to perform the modification are provided herein and are listed in Table 1. The necessary tools can be found in the standard ORG and DS tool kits.

### Antenna Power Supply Backshell Installation.

#### Initial Setup

- Set Transmitter Power Switch located on the Transmitter Power Distribution panel to OFF.
- Perform the system Shut Down procedure per TM11-5840-373-10-1, Chapter 2, Section VI.

**CAUTION:** Be certain that all equipment and personnel are clear of the antenna and the boresight box cover is closed before moving or stowing.

#### Connector Removal

- Open lower antenna BSU Power Supply access doors by unfastening latches.
- Disconnect power supply connectors by unscrewing two retaining screws and pulling the connector body away from the power supply. Do not pull on the wires or wire bundle to disconnect the connector.

Note: In the event the connector is difficult to access, it may be necessary to remove the power supply in order to disconnect the connector. Refer to TM11-5840-373-20-2 for detailed instructions.

APPROVED BY CHIEF LMD:

PMFF

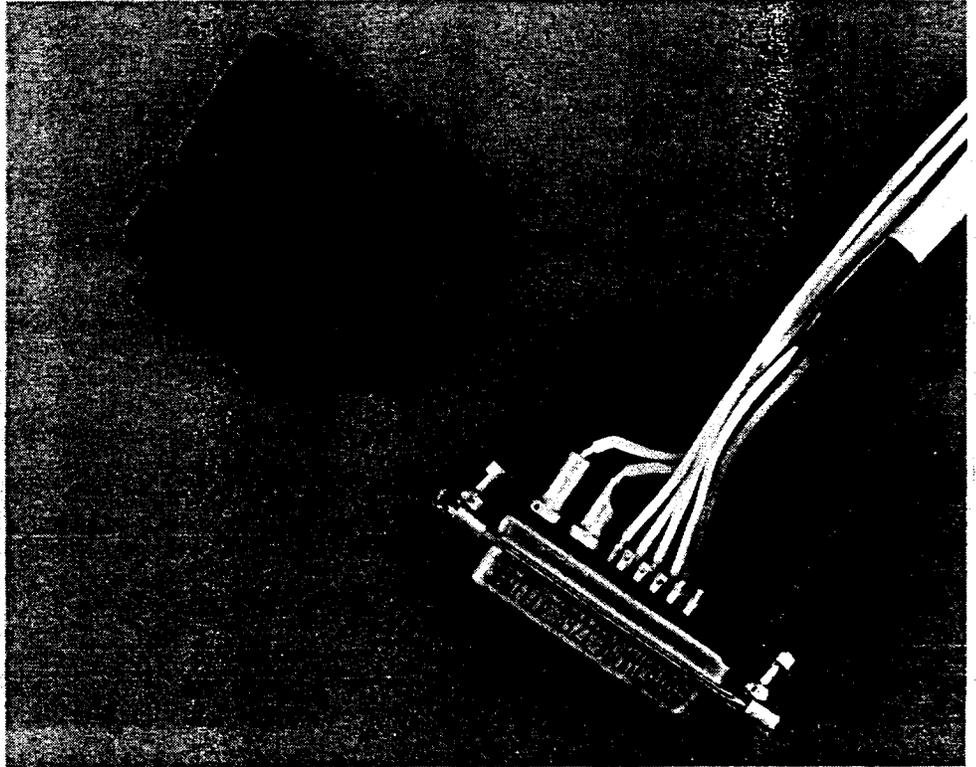
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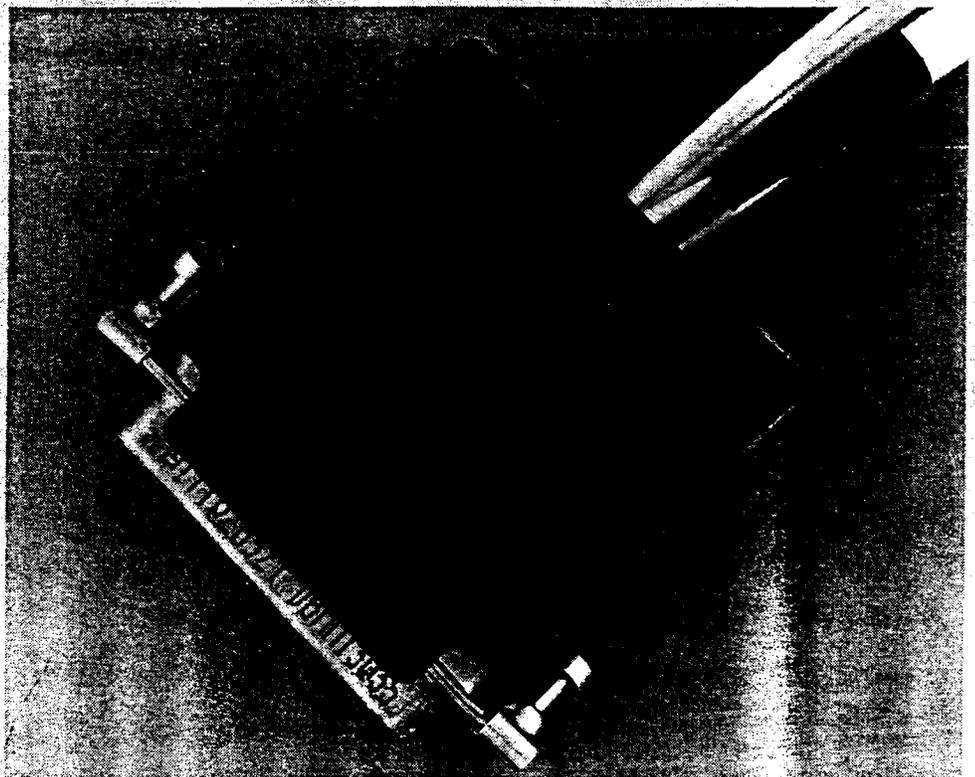
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Backshell Installation.

1. Using one half of the two piece backshell, redress wires as necessary to neatly fit within the perimeter of the backshell. Caution is necessary to prevent damage to the wire conductor or insulation.
2. Mate the two backshell halves with the connector and wire positioned as shown. Be certain that none of the wires are pinched between the two backshell halves.



3. Secure the backshell halves by pressing the two halves together until the locking tabs snap in place.



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4. Using tie wraps, redress the wire bundle as needed.

Connector Installation

1. Reinstall any power supplies which were previously removed in accordance with TM11-5840-373-20-2. Re-connect connector-backshell assembly and secure with two retaining screws. **DO NOT OVERTIGHTEN THE RETAINING SCREWS.**
2. Visually inspect the power supply compartment for any loose hardware or debris.
3. Close the BSU Power Supply access doors and fasten latches to secure.
4. Perform System Start-up and Antenna Erection procedures per TM11-5840-373-10-1, Chapter 2, Section II.

Receiver Exciter Power Supply Backshell Installation.

Initial Setup

1. Open safety cover and set ANTENNA DRIVE circuit breaker to OFF.
2. In the Operations Control Group, press the System Power OFF switch located on the Lower WLU display panel.
3. Set the prime power circuit breaker at the power source to OFF and then disconnect the prime power input cable from the Antenna Transceiver Group (ATG).
4. Remove ATG aisle safety cover.

Connector Removal

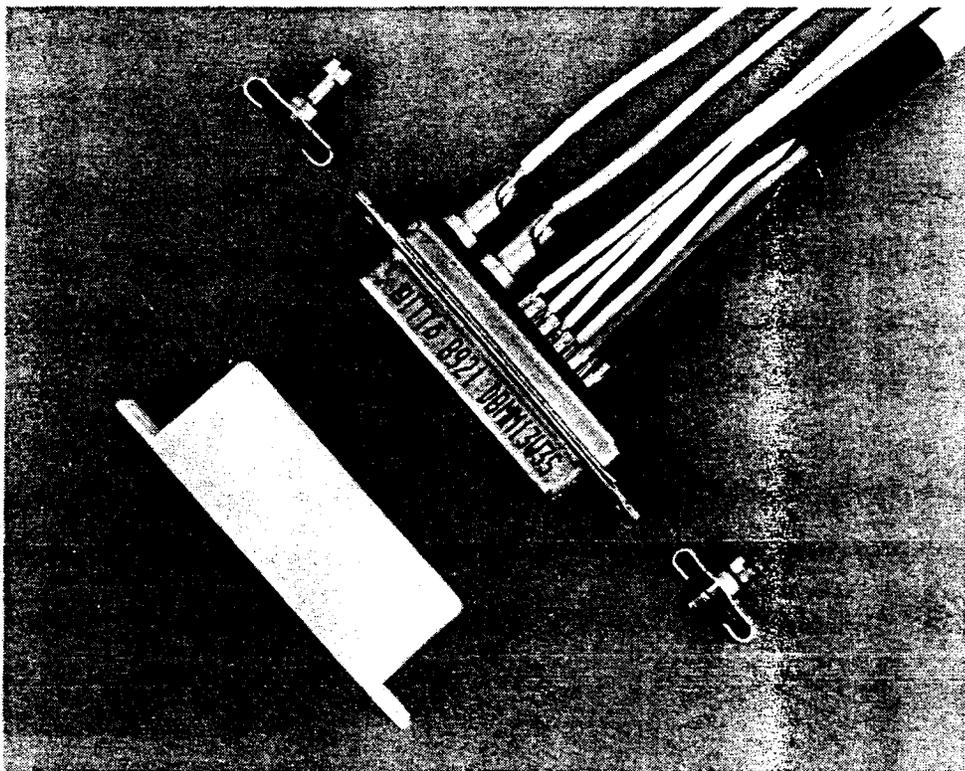
1. Open left access door by unfastening 14 latches.
2. Disconnect power supply connectors by unscrewing two retaining screws and pulling the connector body away from the power supply. Do not pull on the wires or wire bundle to disconnect the connector.

Note: In the event the connector is difficult to access, it may be necessary to remove the power supply in order to disconnect the connector. Refer to TM11-5840-373-20-3 for detailed instructions.

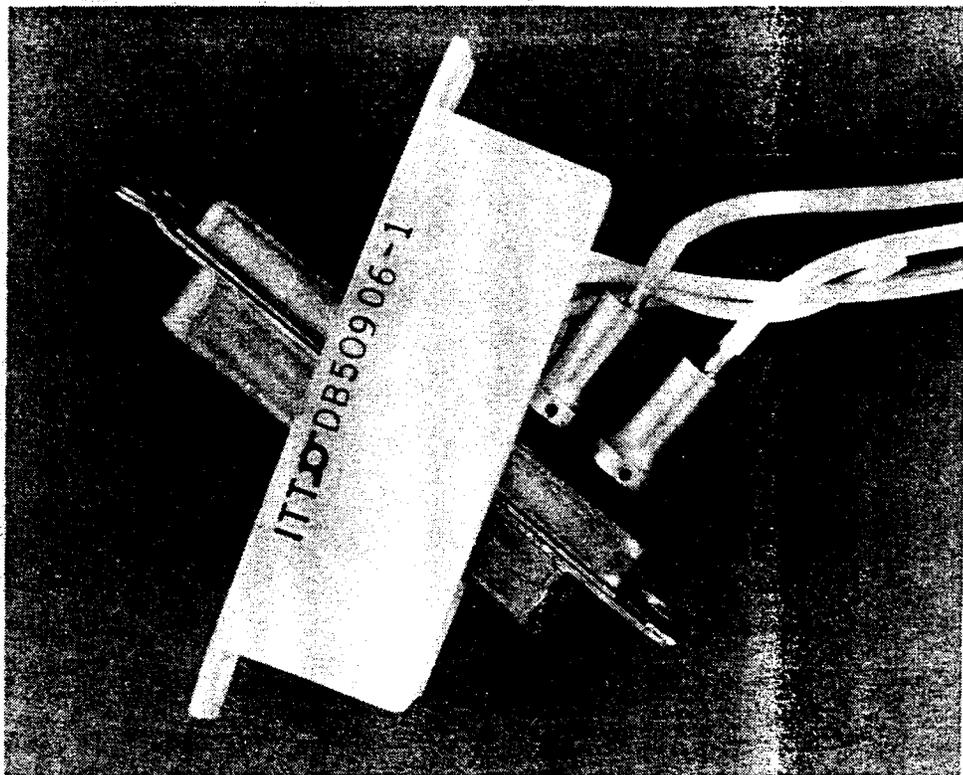
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Shield Installation.

1. Remove the connector retaining assemblies by backing out the retaining screws until the clip portion may be slid off the ends of the connector. Do not discard the retaining assemblies.

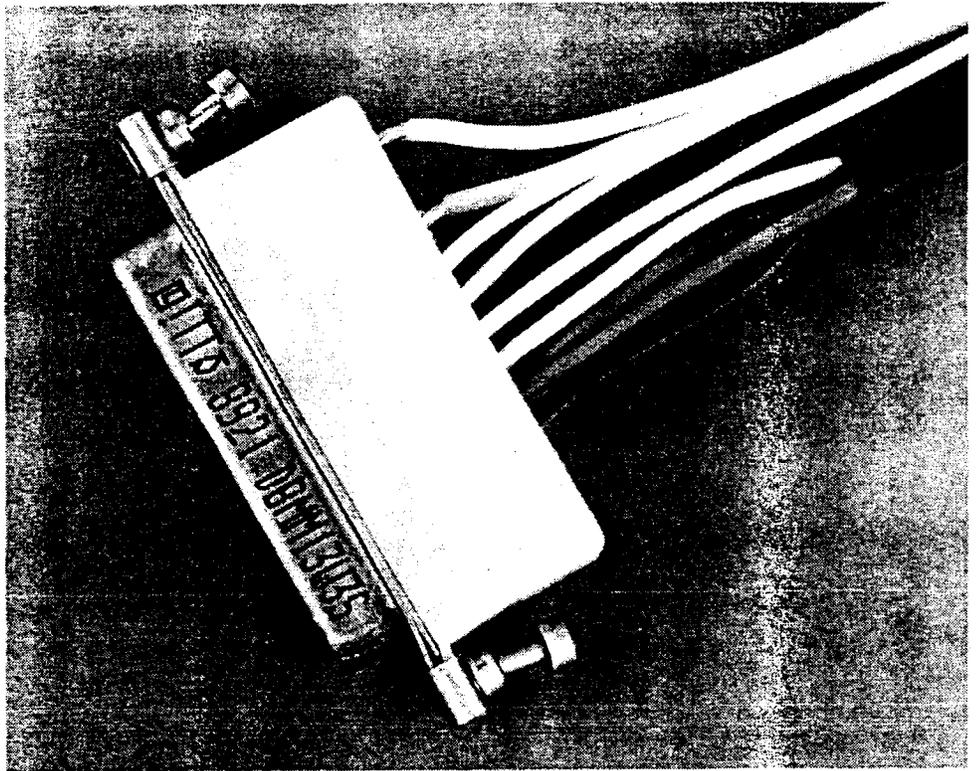


2. Starting at one end of the connector, work the shield over the connector and onto the wire bundle. Caution is necessary to prevent damage to the wire conductor or insulation. Tie wraps may be removed from the wire bundle to improve flexibility.



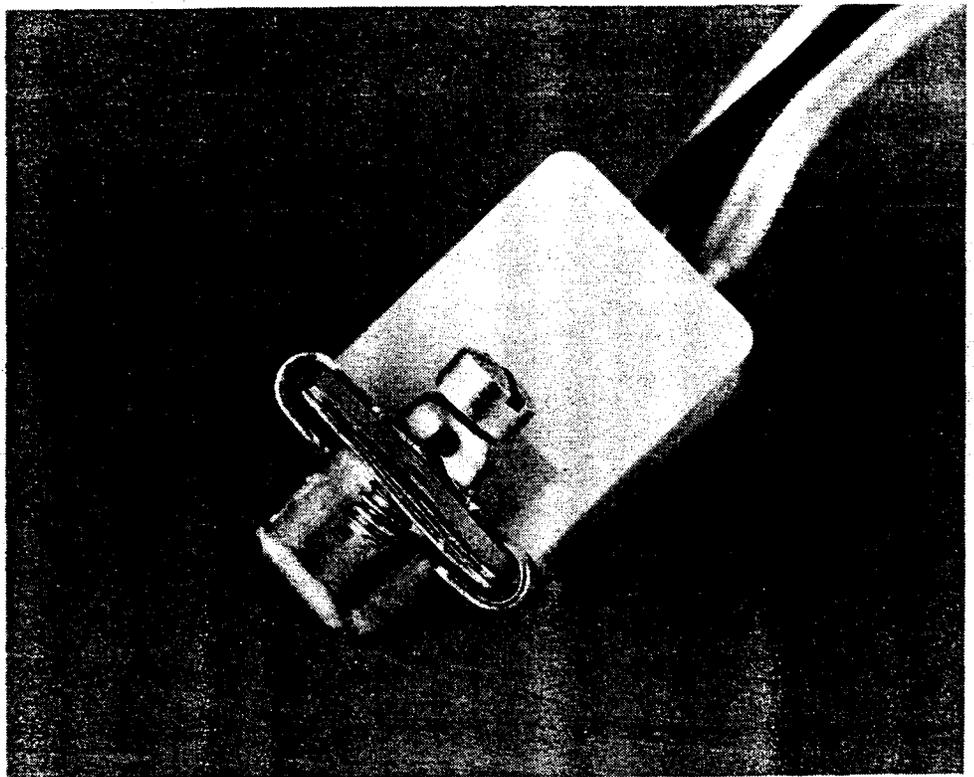
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3. Position the shield over the back of the connector and press into place. Be certain to orient the "D" pattern in the shield to match the connector.



4. Re-install the connector retaining assemblies by sliding the clip portion over the ends of the connector and connector shield. Align the clip, connector, and connector shield so that the screw may pass through the holes provided. The clip portion must capture both the connector and connector shield.

**NOTE:** The clip ends may have to be reformed slightly to accommodate the additional thickness of the connector shield.



5. Using tie wraps, redress the wire bundle as needed.



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Connector Installation

1. Reinstall any power supplies which were previously removed in accordance with TM11-5840-373-20-3. Re-connect connectors and secure with two retaining screws. **DO NOT OVERTIGHTEN THE RETAINING SCREWS.**
2. Visually inspect the Receiver Exciter compartment for any loose hardware or debris.
3. Close access door and fasten 14 latches to secure.
4. Install trailer aisle safety cover.
5. Return system to operation per the applicable procedure in TM11-5840-373-10-1, Chapter 2, Section III.

Post Modification Performance Test.

1. Verify system operation per the performance test procedure in TM11-5840-373-10-1, Chapter 3, Section III.

**NOTE: The information regarding the new hardware addressed in this Maintenance Bulletin will be incorporated into RPSTL TM11-5840-373-34P for radars SN 89-99 during the next scheduled RPSTL update.**

TABLE 1: Backshell Usage Chart

<u>Power Supply</u>	<u>Connector Ref.Desig.</u>	<u>Backshell PN</u>
Receiver Exciter PS1	P9	DC 50907-1
Receiver Exciter PS2	P10	DB 50906-1
Receiver Exciter PS3	P11	DB 50906-1
Receiver Exciter PS4	P12	DB 50906-1
Receiver Exciter PS5	P13	DB 50906-1
BSU PS401	P420	DA 115339-21
BSU PS402	P421	DB 115339-22
BSU PS403	P422	DA 115339-21
BSU PS404	P423	DB 115339-22
BSU PS405	P424	DB 115339-22
BSU PS406	P425	DA 115339-21
BSU PS407	P426	DA 115339-21
BSU PS408	P427	DA 115339-21

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GROUND SYSTEMS GROUP

14 November 1991

SUBJECT: Contract DAAB07-87-C-T037  
Resolution of Connector Insulation Issue for  
AN/TPQ-37 Radars SN 89-99

TO: PM RADAR  
ATTN: AMCPEO-IEW-RDR-EL  
Mr. John Vonella  
Bldg. 9001 (Evans)  
Ft. Monmouth, NJ 07703-5000

Enclosed is Maintenance Bulletin 142 which defines the corrective action which resolves the issue of missing insulation on BSU and Receiver/Exciter power supply connectors on AN/TPQ-37 radars SN 89-99, as identified in Maintenance Bulletin 141.

The objective of the modification is to prevent accidental contact between radar personnel and exposed 115VAC conductors during maintenance or troubleshooting activities. The modification procedure involves the mechanical installation of backshells and shields over the affected power supply connectors. This method is preferred since it does not involve processes such as soldering and connector pin extraction which are undesirable for field modifications. With the backshells and shields in place, the exposed AC contacts and conductors on the back of the connectors are covered. Shields were selected for the receiver/exciter connectors because backshells which can accommodate the large contacts used on either end of these connectors are not available. The modification procedure and results have been verified on radar SN 96.

Hughes proposes to implement this maintenance bulletin as follows:

<u>Radar SN</u>	<u>Location</u>	<u>Implementation Plan</u>
89	Egypt	HAC provide kits to HAC Field Engineer for installation (M. Palmer)
90,98	Singapore	HAC provide kits to HAC Field Engineer for installation (R. Liedel)
91	Saudi Arabia	HAC provide kits to HAC Field Engineer for installation(S. Wiederhoft)
92, 95	Hughes-Fullerton	HAC to install prior to shipment.
93, 94	Israel	HAC provide kits to Israeli Ministry of Defense
96	Hughes-Fullerton	HAC to install prior to shipment.
97	Singapore (Damaged)	HAC to retain kit for installation during radar repair.
99	SAAD	HAC to provide kit to SAAD representative.

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Upon receipt of the approved Maintenance Bulletin, Hughes will ship copies and the necessary hardware to the contact personnel listed above for modification incorporation.

Questions regarding the maintenance bulletin or implementation plan should be directed to Steve Bruce at (714)732-6958 or Dennis Sharp at (714) 732-3210.

Sincerely,



S. R. Bruce, Project Engineer  
AN/TPQ-37 Project

Enclosure

c.c. Mr. T. Sieminski AMSEL-LC-SA-AFD