

ELECTRONICS FIELD CHANGE BULLETIN
NAVAL SHIP ENGINEERING CENTER, NAVY DEPARTMENT
WASHINGTON, D. C.

6-R390A/URR

INTERNAL HEAT REDUCTION
FSN N5820-937-0141

TYPE (I), CLASS (A)
ESTIMATED MAN HOURS (2)

OPERATIONAL CHANGE ()
NON-OPERATIONAL CHANGE (X)

Prepared by

NAVAL SHIP ENGINEERING CENTER, NORFOLK DIVISION
(ELECTRONICS MAINTENANCE ENGINEERING CENTER)
U. S. NAVAL STATION
NORFOLK, VIRGINIA 23511

AUTHORIZATION NOTICE: Forces afloat shall accomplish this field change at the earliest opportunity on ship-installed equipment without reference to the Bureau of Ships.

EQUIPMENT AFFECTED: This field change applies to all shipboard installed R390A/URR equipments.

PURPOSE: The purpose of this field change is to reduce internal heating.

PREVIOUS FIELD CHANGES: No previous field changes need be accomplished.

EFFECT ON NOMENCLATURE: None

IDENTIFICATION OF ACCOMPLISHMENT: The accomplishment of this field change may be identified by: (1) The two rectifier tubes 26Z5W have been removed from their sockets; (2) New type heat dissipating tube shields have been installed on all tubes.

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MATERIAL REQUIRED:

Supplied with Field Change Kit

Item	Ref. Desig.	Quantity	Description
1	CR801 & CR802	2 ea.	Silicon Diode - 1N561, 9N5960-829-0728
2		13 ea.	Tube Shield, 7 pin medium 9N5960-686-8085
3		7 ea.	Tube Shield, 9 pin medium 9N5960-686-8087
4		2 ea.	Tube Shield, 7 pin short 9N5960-686-8119
5		1 ea.	Tube Shield, 9 pin long 9N5960-752-5857
6		1 ea.	Tube Shield, 7 pin long 9N5960-729-8150
7		2 ea.	Field Change Bulletin NAVSHIPS
8		2 ea.	Temporary Corrections to NAVSHIPS 93053, Technical Manual for Receiver R390A/URR

Required by Installing Activity

1		1 ea.	NAVSHIPS 93053 Technical Manual for Radio Receiver R390A/URR
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TOOLS REQUIRED:

Screwdriver, 6 inch common
 Screwdriver, Phillips head, 6 inch
 Diagonal Pliers, 6 inch
 Longnose Pliers, 6 inch
 Soldering Iron or Gun, 60-100 watts
 Solder
 AN/USM-116 or equivalent

PROCEDURE: (Refer to NAVSHIPS 93053)

NOTE: OBSERVE SAFETY PRECAUTIONS AT ALL TIMES, ALWAYS INSURE THAT THE EQUIPMENT IS PROPERLY GROUNDED, WHENEVER IT IS ENERGIZED.

1. De-energize the receiver at its power source.
 2. Disconnect all wires and cables from the receiver.
 3. Remove the receiver from its cabinet or rack and place upon a suitable workbench.
- A. Installation of the Silicon Diodes 1N561 in the Receiver Power Supply:
1. Place the receiver on the workbench bottom up.
 2. Remove the top and bottom dust covers if installed.
 3. Remove the connector P111 from the power supply assembly.
 4. With the Phillips head screwdriver, loosen the six greenheaded captive screws that secure the subchassis to the main frame of the receiver.
 5. Carefully withdraw the subassembly from the receiver. Be careful not to drop it - it is heavy!
 6. Remove the two rectifier tubes (26Z5W) from their sockets.
 7. Place the power supply assembly bottom up, so that the socket connections are accessible. (See fig. 54, page 78, NAVSHIPS 93053).
- CAUTION: USE CARE WHEN SOLDERING TO PREVENT THE HEAT FROM DAMAGING THE DIODES. UTILIZE HEAT SHUNTS WHEN SOLDERING.**
8. Shape, cut leads, install, and solder the two 1N561 silicon diodes, item 1, as follows:
 - a. One diode between pins 1 and 4 of socket XV801, connecting the cathode lead of the diode to pin 4.
 - b. The remaining diode between pins 1 and 4 of socket XV802, connecting the cathode lead of the diode to pin 4.
 9. Re-install the power supply in the following manner:
 - a. Carefully lower the power supply sub-chassis into the receiver, be careful not to drop it on the bench or into the receiver.
 - b. Engage the six green-headed captive screws that secure the power supply sub-chassis into the receiver. Tighten each of the six captive screws.
 - c. Reconnect the plug P111.
 10. Temporarily apply power to the receiver.

11. With the AN/USM-116 adjusted to read +150 volts dc. Connect the common test lead to the receiver chassis and connect the other lead to the test jack E607. A reading of +148 to +152 v dc will be obtained which indicates proper operation of the power supply. If this voltage reading is not obtained, it indicates improper installation or a defective diode. Correct as required. If the test of the power supply is satisfactory, remove the test leads and remove the temporary power from the receiver.

12. Remove all the presently installed tube shields if they are not of the new heat dissipating type, MS-24333. Install the shields supplied in this kit on the sockets as follows:

<u>Item</u>	<u>Qty.</u>	<u>TYPE</u>	<u>SIZE</u>	<u>SOCKET NUMBERS</u>
2	13 ea.	MS-24233-2	7 Pin Med.	XV201, XV202, XV203, XV204, XV501, XV502, XV503, XV504, XV505, XV508, XV603, XV604, XV701
3	7 ea.	MS-24233-5	9 Pin Med.	XV205, XV206, XV506, XV507, XV509, XV601, XV602
4	2 ea.	MS-24233-1	7 Pin Short	XV207, XV401
5	1 ea.	MS-24233-6	9 Pin Long	XV510
6	1 ea.	MS-24233-3	7 Pin Long	XV605

13. Re-install the receiver in its cabinet or rack and reconnect all cables or wires.

14. Check operation of the receiver in accordance with applicable Maintenance Standards Book.

15. Retain removed rectifier tubes (26Z5W) and dust covers for possible future use. Discard all removed tube shields.

The ordering number for this correction is 0967-063-2010.

Make the following pen and ink corrections to Technical Manual NAVSHIPS 93053.

<u>LOCATION</u>	<u>ACTION</u>
Page 6, para. 4-L Line 4	Change line to read "AC Power is rectified by CR801 and CR802"
Page 44, para. 28(a) Power Supply and Main Filter Circuits. Lines 8 and 9	Delete the following: "The plates of each rectifier (V801 and V802) are connected in parallel and ..."
Line 10	Delete "tubes" Insert "diodes"
Line 13	Delete "V801 and V802" Insert "CR801 and CR802"
Line 15	Delete "V801 and V802" Insert "CR801 and CR802"
Page 45, Fig. 28 Power Supply Schematic at tube sockets.	Delete "V801-26Z5W and V802-26Z5W" from schematic Insert "CR801, 1N561 and CR802, 1N561" Insert "Symbols for diodes with cathodes connected to pin 4 and plates to pin 1"
Page 58, para. 41(a) Lines 5 and 6	Delete "V801 and V802" Insert "CR801 and CR802"
Page 60, under B+ Short Circuit Tests First line, Isolating Procedure	Delete "Remove V801"
Second Line,	Correct to read: "XV801 and chassis"
Sixth Line	Delete "Remove V802"
Page 61, para. 42a(1) Open Circuits Lines 9 and 10	Delete reference to "V801 and V802"
Page 62, para. 42a(2)	Delete "IF Rectifiers V801 and V802 DO NOT LIGHT, THE TROUBLE IS WITH THE TUBES".
Page 62, para 42b(1) Short Circuits Lines 9 and 10	Delete "Tubes V801 and V802 in the power supply subchassis light and"

Page 64, para. 46
Troubleshooting Chart
Fig. 53, Power Supply Sub-
chassis under Procedure Step E.

Under Procedure Step F.

Under Procedure Step F,
last line

Page 78, Fig. 53
Power Supply, subchassis
Top View

Page 86, Fig. 63, Power
Supply Subchassis, Voltage
and Resistance Diagram

Page 169, Fig. 85, R390A/URR
Block Diagram
(in Block Rectifiers)

Page 178, Fig 89-(1) Main
Schematic, Power Supply
Subchassis

Delete "Remove V801 and V802"

Delete "Remove V801 and V802"

Correct to read:
"Pin 1 of XV801 and pin 1 of XV802"

Next to Symbols V801 and V802, insert
"Removed by FC 6"

Delete reference to "V801-V802, 26Z5W,
and insert "CR801-CR802, 1N561"

Delete reference to "V801, V802,
26Z5W"
Insert "CR801-CR802, 1N561"

Delete reference to "V801-V802-26Z5W"
Insert "CR801-CR802, 1N561"
Insert symbol for diode connected to
pin 1 and pin 4 with cathode connected
to pin 4 on sockets XV801 and XV802.