

EMH TECHNOLOGIES
Memphis, Tn. 38118

SERVICE BULLETIN #1

RVR-222

EQUIPMENT: Model RVR-222 P/N 903-5222-XXX

PURPOSE: Change NVIS lighting to be compatible with US Navy lighting levels.

SCOPE: Replace indicator lenses, add indicator light shields (see attachment #2), modify indicator brightness circuit (see attachment #1), and setup light brightness levels (attachment #1).

REQUIRES: FAA shop certification for the repair, overhaul and modification of CVR control panels.

EQUIPMENT REQUIRED: Power Supply 28VDC @ .20A minimum.
Power Supply 0-28VDC @ .20A minimum.
Oscilloscope 60 MHZ or better
True RMS volt/ohm meter
Audio signal generator. HP200CD or equal.

PROCEDURE:

- 1- Remove the plastic panel from the front of the unit. Set aside.
- 2-
- 3- Remove the lamp board from the plastic panel. Save.
- 4- Remove top and bottom unit covers. Spread unit out.
- 5- Remove rear connector and rear panel PC board assembly from the rear panel. Set the panel aside for later re-assembly.
- 6- Plastic Panel:
 - Remove the three yellow filters. Discard
 - Clean silicon adhesive from counter bored lens holes.
 - Be careful not to remove paint from hole sides.
 - Install three green type A filters. Cement in place with light blocking epoxy black adhesive. (Silicon black adhesive is not acceptable).
 - Set panel aside for 24 hours to allow adhesive to properly set

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REAR CONNECTOR/PC BOARD ASSEMBLY:

- 6.1- Remove 20K ohm pot, R201. Discard.
- 6.2- Remove 1200 ohm 1/4W resistor, R202. Discard
- 6.3- Remove 560 ohm 1/4W resistor, R203. Discard
- 6.4- Cut a break in the PC Board track between R201 pot center pin and the optical coupler U201 pin 1
- 6.5- Install 50 ohm pot in R201 position. Do not cut leads yet. Set pot to center position.
- 6.6- Install 1K ohm 1/8W resistor in R202 position.
- 6.7- Install 1K ohm 1/8W resistor on the FARSIDE of the PC board between R202 and optical coupler U201 pin 1.
- 6.8- Assemble two 1N914A diodes in series as shown on attachment #2.
- 6.9- Install diode set on FARSIDE of PC board between center pin of the 50 ohm pot and ground. Cement in place with a silicon adhesive.
- 6.10- Clean PC board around work area then coat with an AR coating.
- 11- Re-assemble the connector/PC board assembly and the rear panel.
- 12- Connect the RVR-222 to a power source – 28v for unit power input.
0-28v for the lighting bus input
- 13- Connect an oscilloscope between pin 1 of the 556 timer IC located on the A3 assembly and DC ground.

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14- With power applied to the unit and to the lighting bus, adjust the R201 50 ohm pot on the rear panel PC board and the R3xx pot on the A3 front panel display driver board to obtain the HI and LO wave forms shown on attachment #1. The two adjustments are interactive therefore it will require several attempts to get the HI and LO settings as shown.

15- With power on the unit, inject a 50 microvolt RMS 1000hz signal into the microphone input pins in the rear connector.

Place a 5.0K ohm 1/4W resistor across the audio output pins of the rear connector.

Set the audio output adjustment pot located on the preamp assembly, to provide 750mv RMS across the 5.0K ohm resistor.

16- Re-assemble the unit. Do not install the front plastic panel yet.

17- Cut and install three light blocking sleeves for the three indicator lamps. Install them as shown on Attachment #2.

18- After installing the three lamp sleeves, install the plastic panel.

19- Apply power to the unit and make a final go-no-go check of the unit and the plastic panel lighting.

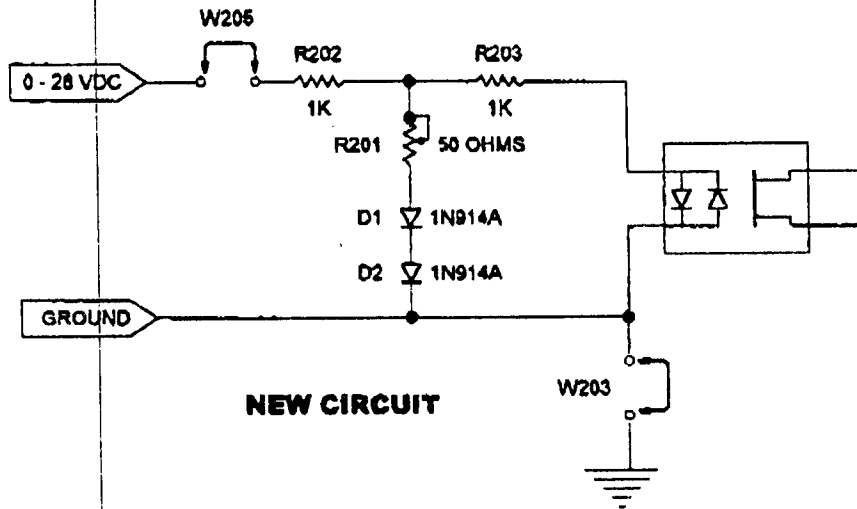
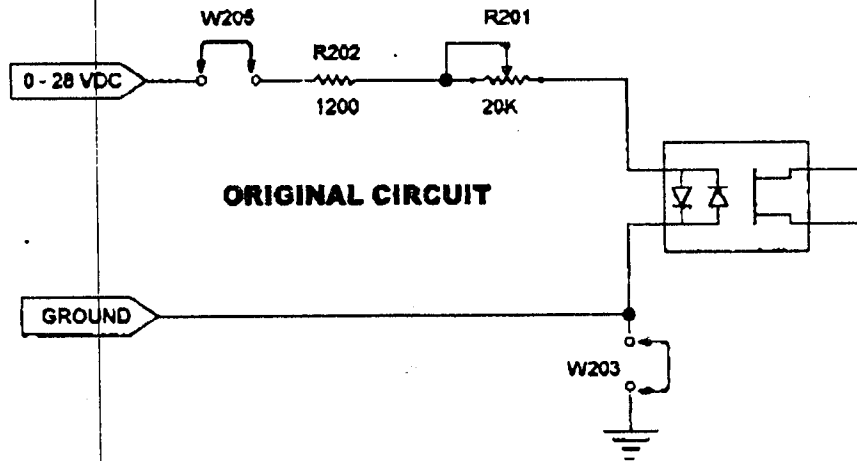
20- Apply a dot of yellow lacquer paint to the 1 on the nameplate.

This completes the modification

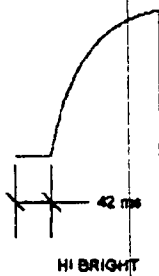
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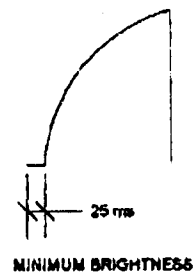
RVR-222



LIGHTING BUS
SET TO 27 VDC



LIGHTING BUS
SET TO 5.0 VDC



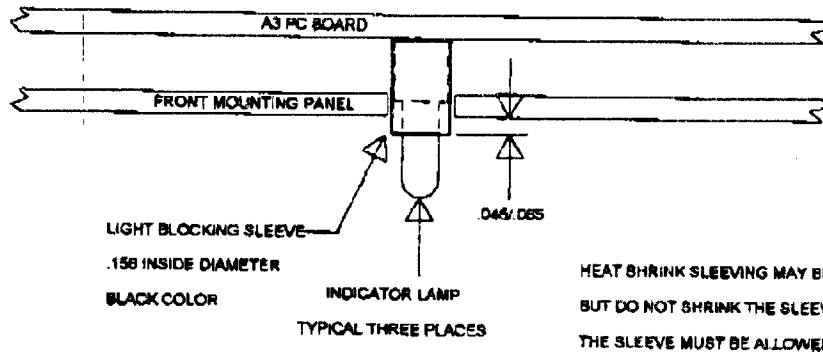
ATTACHMENT #1

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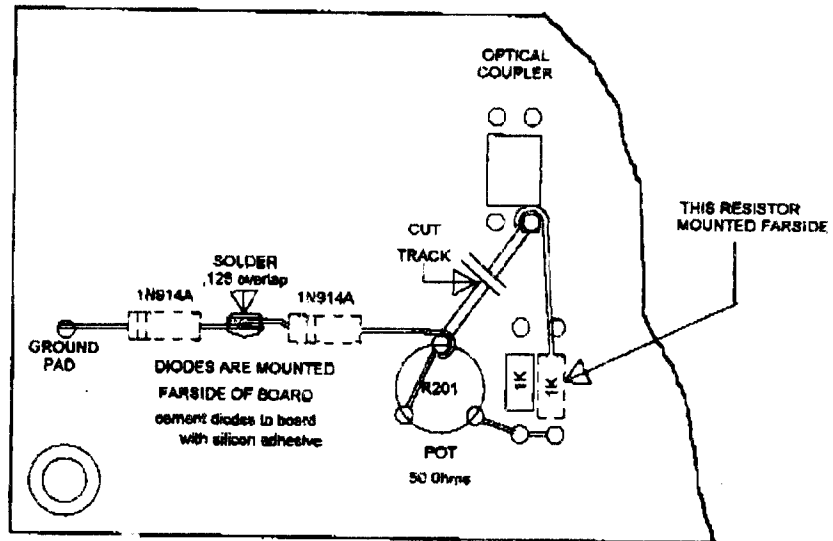
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A2 ASSEMBLY



ATTACHMENT #2