*TB 9-6625-2264-35

SUPERSEDED COPY DATED 24 FEBRUARY 1992

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR TEST SET, AVIATOR'S NIGHT VISION IMAGING SYSTEM, TS-3895A/UV

Headquarters, Department of the Army, Washington, DC
13 February 1995

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*This bulletin supersedes TB 9-6625-2264-35, dated 24 February 1992.

SECTION I
IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Test Set, Aviator's Night Vision Imaging System, TS-3895A/UV.

a. Model Variations. None.

b. Time and Technique. The time required for this calibration is approximately 1 hour, using the dc and low technique.

2. Forms, Records, and Reports

a. Forms, records, and reports required for calibration personnel at all levels are prescribed by TB 750-25.

b. Adjustments to be reported are designated (R) at the end of the sentence in which they appear. When adjustments are in tables, the (R) follows the designated adjustment. Report only those adjustments made and designated with (R).

3. Calibration Description. TI parameters and performance specifications which pertain to this calibration are listed in table 1.

Table 1. Calibration Description

Test instrument parameters	Performance specifications
High light	
ANVIS[1]	6.54 x 10^{-9} w/cm^2.Sr $\pm$50%
NVG[2]	2.41 x 10^{-8}w/cm^2.Sr $\pm$50%
Low light	
ANVIS[1]	2.56 x 10^{-11} w/cm^2.Sr $\pm$32%
NVG[2]	9.44 x 10^{-11} w/cm^2.Sr $\pm$32%

[1]AN/AVS-6
[2]AN/PVS-5 and -7

SECTION II
EQUIPMENT REQUIREMENTS

4. Equipment Required. Table 2 identifies the specific equipment to be used in this calibration procedure. This equipment is issued with Secondary Transfer Calibration Standards Set AN/GSM-286. Alternate items may be used by the calibrating activity. The items selected must be verified to perform satisfactorily prior to use and must bear evidence of current calibration. The equipment must meet or exceed the minimum use specifications listed in table 2. The accuracies listed in table 2 provide a four-to-one ratio between standard and TI.

5. Accessories Required. The accessories required for this calibration are common usage accessories issued as indicated in paragraph **4** above, and are not listed in this calibration procedure. The following peculiar accessories, supplies with the standard, are also required for this calibration: Bit, tamper proof, 1/8 inch, PN MISC 003-F27503, manufacturer: Corland; and lens cap/target, APN 13440044.

Table 2. Minimum Specifications of Equipment Required

Common name	Minimum use specifications	Manufacturer and model (part number)
NIGHT VISION DEVICE DETECTOR STANDARD	Wavelength range: 305 to 1000 nm wavelength peak response: 720 nm $\pm$50 Responsitivity: 4.73×10^{7} V/W.cm^{-2}Sr^{-1} at 820 nm $\pm$10% Dynamic range: 1.0×10^{-12} to 5.0×10^{-8} w/cm^{2}.Sr at 820 nm Gain (elect): 10^{9} V/A	13335470 (13335470)
DIGITAL MULTIMETER	Range: 0.5 mV to 2.00 V dc Resolution: 0.1 Mv	John Fluke, Model 8506A/CT (p/o MIS-35947)

SECTION III
CALIBRATION PROCESS

6. Preliminary Instructions

a. The instructions outlined in paragraphs **6** and **7** are preparatory to the calibration process. Personnel should become familiar with the entire bulletin before beginning calibration.

b. Items of equipment used in this procedure are referenced within the text by common name as listed in table 2.

c. Unless otherwise specified, verify the result of each test and, whenever the test requirement is not met, take corrective action before continuing with the calibration. Adjustments required to calibrate the TI are included in this procedure. Additional maintenance information is contained in TM 11-5855-264-14 for this TI.

d. Unless otherwise specified, all controls and control settings refer to the TI.

7. Equipment Setup

WARNING

HIGH VOLTAGE is used or exposed during the performance of this calibration. DEATH ON CONTACT may result if personnel fail to observe safety precautions. REDUCE OUTPUT(S) to minimum after each step within the performance check where applicable.

a. Remove protective cover from TI as necessary to gain access to adjustments.

b. Ensure the **ON-OFF-POWER CHECK** switch is in the **OFF** position.

c. Connect TI to appropriate power source.

8. Light Level Accuracy

NOTE

If the night vision device detector standard is exposed to overload light conditions, several minutes are needed in low light level conditions for the night vision device detector standard to recover.

a. Performance Check

(1) Connect digital multimeter **HI** and **LO** input terminals to night vision device detector standard **OUTPUT** terminals using BNC CONNECTOR (fig. 1).

(2) Install night vision device detector standard into TI RIGHT COLLIMATOR PORT (fig. 1). Install lens cap/target over TI LEFT COLLIMATOR PORT (fig. 1).

(3) Turn night vision device detector standard power ON/OFF SWITCH (fig. 1) to ON and allow night vision detector standard to warm up 5 minute.

(4) Zero digital multimeter indication.

NOTE

Digital multimeter must not be in autoranging.

(5) Set TI **ON-OFF-POWER CHECK** switch to **ON** and rotate **FUNCTION** switch to **LOW LIGHT LEVEL RESOLUTION**.

(6) Pull TI ANVIS/NVG SELECTOR SWITCH (fig. 2) to NVG (up) position. If digital multimeter does not indicate between 3.04 and 5.90 mV dc, perform b (1), (2), and (4) below.

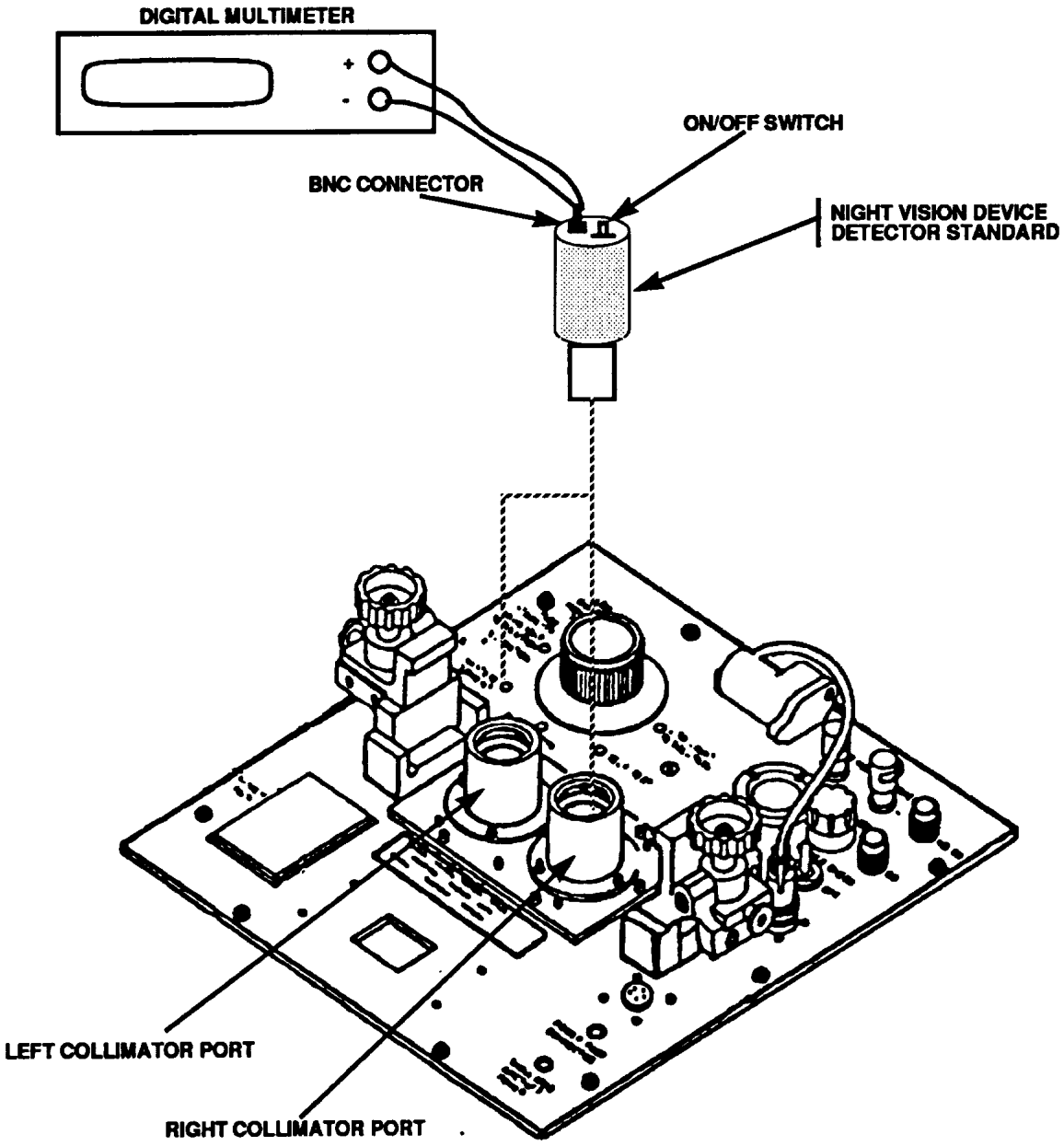

Figure 1. TS-3895A/UV control panel.

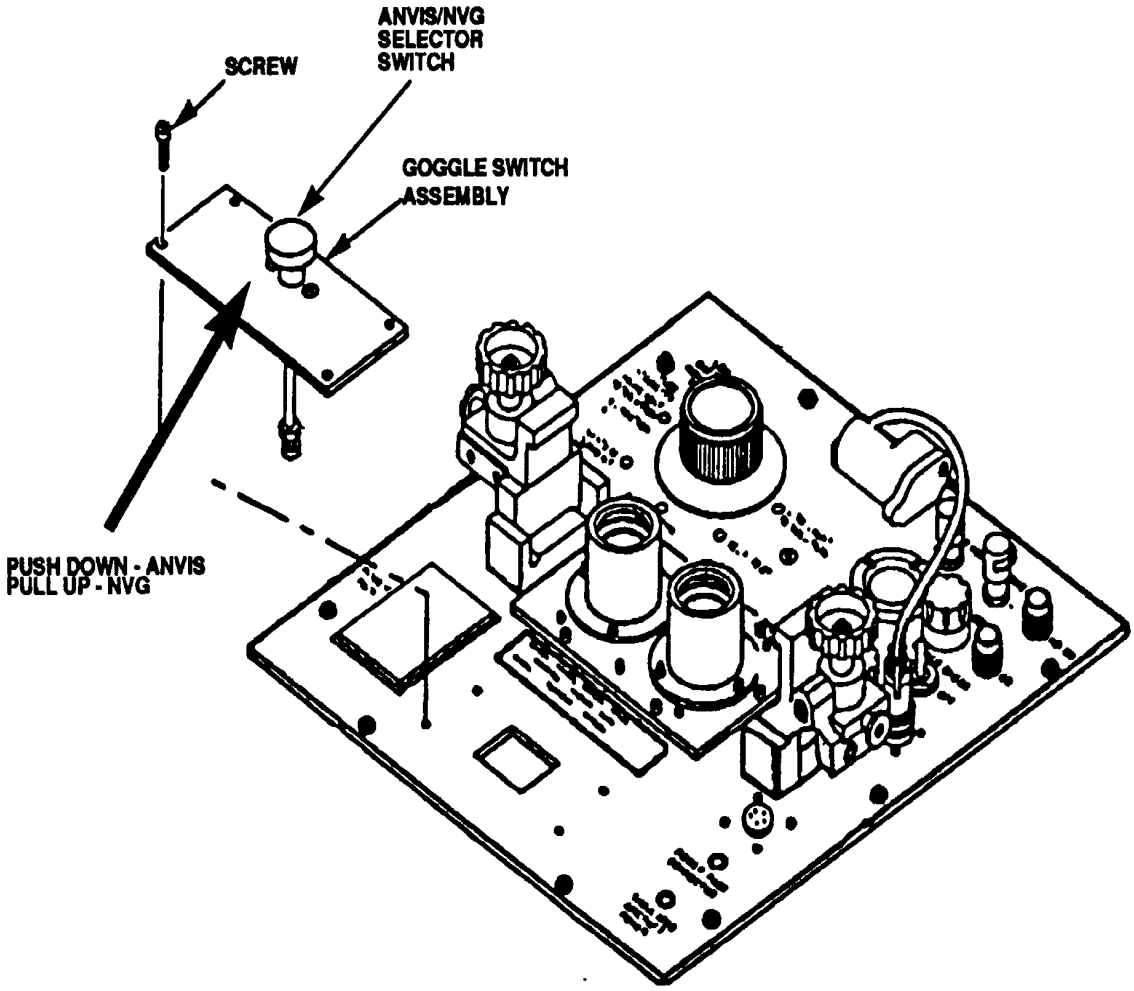

Figure 2. TS-3895A/UV control panel.

(7) Push TI ANVIS/NVG SELECTOR SWITCH (fig. 2) to ANVIS (down) position. If digital multimeter does not indicate between 0.82 and 1.60 mV dc, perform **b**(1), (3), and (4) below.

(8) Remove lens cap/target from TI LEFT COLLIMATOR PORT (fig. 1) and remove night vision device detector standard from RIGHT COLLIMATOR PORT (fig. 1) and install in TI LEFT COLLIMATOR PORT (fig. 1). Install lens cap/target over TI RIGHT COLLIMATOR PORT (fig. 1).

(9) Repeat (6) and (7) above.

(10) Rotate TI **FUNCTION** switch to **SELF TEST**. **GO** (green) light will illuminate.

(11) Rotate TI **FUNCTION** switch to **HIGHLIGHT LEVEL RESOLUTION**.

(12) Pull TI ANVIS/NVG SELECTOR SWITCH (fig. 2) to NVG (up) position. Digital multimeter will indicate between 0.570 and 1.710 V dc.

(13) Push TI ANVIS/NVG SELECTOR SWITCH (fig. 2) to ANVIS (down) position. Digital multimeter will indicate between 0.155 and 0.464 V dc.

(14) Remove lens cap/target from TI RIGHT COLLIMATOR PORT (fig. 1) and remove night vision device detector standard from LEFT COLLIMATOR PORT (fig. 1) and install in TI RIGHT COLLIMATOR PORT (fig. 1). Install lens cap/target over LEFT COLLIMATOR PORT (fig. 1).

(15) Repeat (12) and (13) above.

b. Adjustments

NOTE

TI low light level adjustments may affect TI high light level indications. It may be necessary to make adjustments for best compromise.

(1) Remove GOGGLE SWITCH ASSEMBLY (fig. 2) using tamper-proof bit.

NOTE

Temporarily install GOGGLE SWITCH ASSEMBLY (fig. 2) after making adjustment.

(2) Adjust R43 (fig. 3) for a digital multimeter indication of 4.47 mV dc (R).

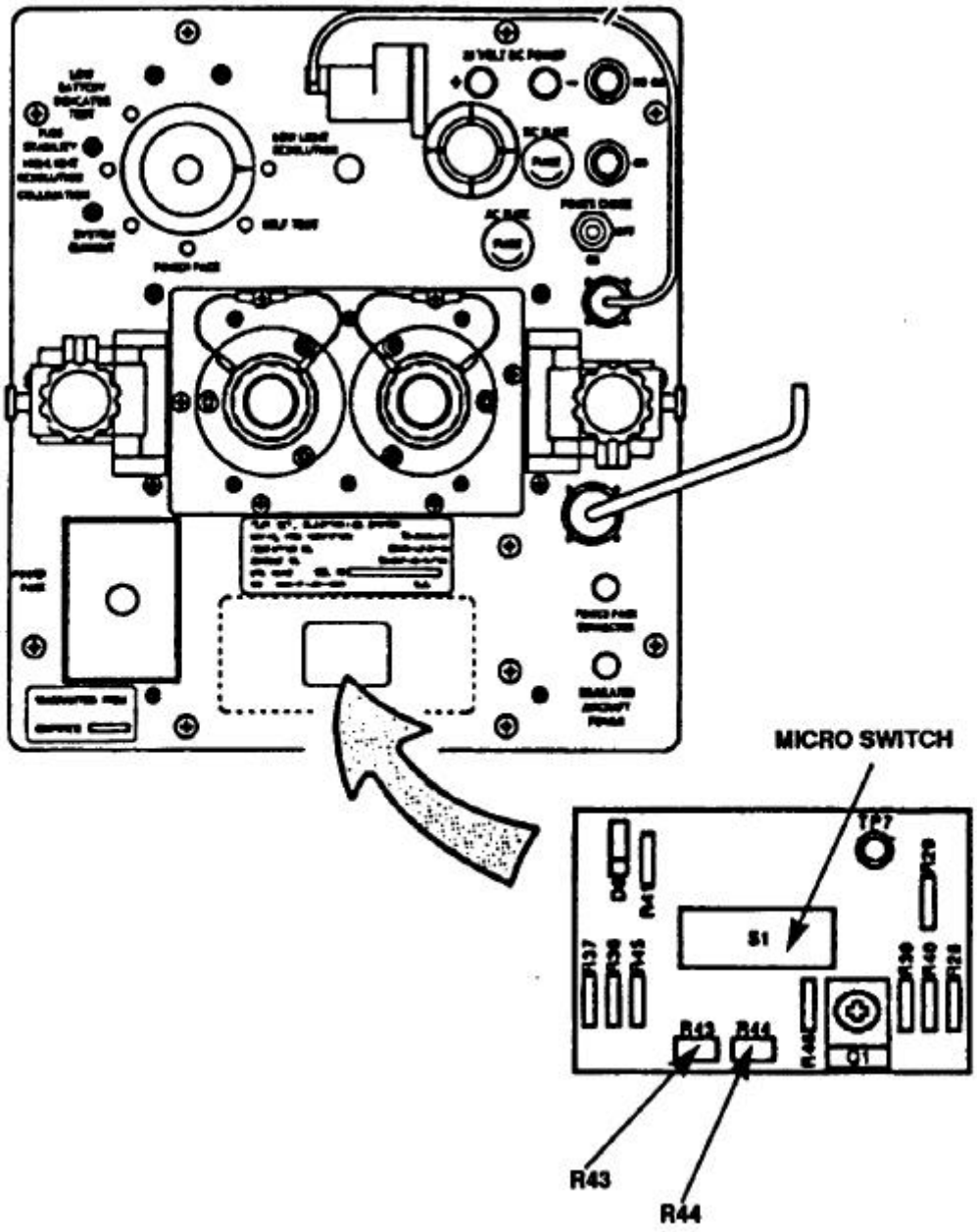

Figure 3. TS-3895A/UV - adjustment locations.

(3) Press S1 MICRO SWITCH (fig. 3) and adjust R44 (fig. 3) for a digital multimeter indication of 1.21 mV dc (R). Temporarily install GOGGLE SWITCH ASSEMBLY (fig. 2) with ANVIS/NVG SELECTOR SWITCH (fig. 2) in the down position.

(4) Install GOGGLE SWITCH ASSEMBLY (fig. 2) using tamper proof bit.

9. Final Procedure

a. Deenergize and disconnect all equipment.

b. Annotate and affix DA label/form in accordance with TB 750-25.

TB 9-6625-2264-35

By Order of the Secretary of the Army:

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To be distributed in accordance with DA Form 12-34-E, Block No. 4400, requirements for calibration procedure TB 9-6625-2264-35.

U.S. GOVERNMENT PRINTING OFFICE: 1995-633-200/00062

PIN: 069464-000