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DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR VOLTAGE CALIBRATOR, BALLANTINE MODEL 421A

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REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

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*This technical bulletin supersedes TB 9-4931-290-50, dated 31 May 1979, including all changes.

SECTION I IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Voltage Calibrator, Ballantine Model 421A. The manufacturer's manual was used as the prime data source in compiling these instructions. The equipment being calibrated will be referred to as the TI (test instrument) throughout this bulletin.

a. Model Variations. None.

b. Time and Technique. The time required for this calibration is approximately 2 hours, using the dc and low frequency 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
Dc volts	Range: 0 to 111 V Accuracy: $\pm$ (0.2% setting +0.007% range +25 μ V)
Ac volts	Range: 0 to 111 V at 1 kHz Accuracy: $\pm$ (0.15% setting +0.005% range +3 μ V) Range: 0 to 100 V at 400 Hz Accuracy: $\pm$ (0.25% setting +0.005% range +3 μ V) Range: 100 to 1000 V at 400 Hz Accuracy: $\pm$ (0.45% setting +0.005% range +3 μ V)
Stability	Range: 105 to 125 V Accuracy: $\pm$ 0.09%
Frequency	Range: 400 Hz or 1 kHz Accuracy: $\pm$ 3%
Distortion	Less than 0.2%

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 Sets AN/GSM-286; AN/GSM-287; or AN/GSM-705. 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