

**Title 210 – National Engineering Manual  
Part 544 -- Equipment**

**PIA544.6 State Procedures**

- A. The following instructions are to be followed for the care, checking, and transportation of engineering equipment. This includes levels, transits, GPS, hand levels, total stations, chains, tapes, etc.
- (1) Engineering instruments are precise, delicate pieces of equipment. All personnel using these instruments will be responsible for their care and proper use of the equipment.
  - (2) Engineering equipment shall be operated and maintained in accordance with the manufacture's recommendations.
  - (3) The Area Engineer is responsible for ensuring that engineering equipment is being checked, properly cared for, and is in proper operating condition.
  - (4) Area Engineers (AE) will arrange for training within their Area where field personnel are not familiar with the field adjustment procedures for instruments used by them.
  - (5) Frequent checking of surveying instruments is essential for high quality work. Check all surveying instruments being used as necessary to ensure that they are in proper adjustment. At a minimum, the equipment will be checked annually. Instruments must also be checked any time they receive rough treatment, such as being dropped or jarred during transportation.
  - (6) A maintenance record card will be placed with each GPS, total station, transit, and level. This card will be used to record any adjustments, cleaning, repair and inspection.
  - (7) Instruments will be transported in carrying cases supplied by the manufacturers or other case that will protect the instrument. The carrying case will be transported securely to prevent overturning, bouncing, shock, etc.
  - (8) Except in cases of emergency, field disassembly shall not exceed that recommended by the manufacturer.
  - (9) All surveying instruments and equipment must be protected at all times from moisture, dust, mud, excessive temperature conditions, transportation vibrations, theft, or other damage or loss.