

Don't Mix Batteries!

If your equipment uses more than one prime power battery, they always need to be replaced in sets of new (or unused) batteries of the same chemistry and voltage.

To prevent equipment damage, and possible injury, never mix batteries with different chemistries or voltages in the equipment at the same time. For example, there are several AA sized batteries with different chemistries and voltages. There are the 1.5 volt alkaline (BA-3058/U) and 1.5 volt lithium iron disulfide (L91) types, and the 3.6 volt lithium thionyl chloride battery (T06/51).

Although the BA-3058/U and the L91 have the same voltages, appear to be interchangeable, and either type may be used in most systems that take AA batteries, you must never mix the BA-3058/U and the L91 batteries (within a compartment at the same time). First, they will not last the same amount of time in your equipment. Secondly, after the BA-3058/U battery dies, the L91 battery will continue discharging, possibly causing the BA-3058/U to go into voltage reversal resulting in rupture. An example in which this could be a problem is with the AN/PSN-11, Precision Lightweight Global Positioning System(GPS) Receiver (PLGR). The PLGR can be powered by eight BA-3058/U or eight L91 batteries using the AA battery holder. Use one battery type or the other, but not both. Furthermore, the PLGR uses a single 3.6 volt, T06/51 memory battery. So, be sure not to mix up the batteries.

For equipment using more than one lithium-sulfur dioxide battery, such as the AN/PRC-104 and the AN/PSN-10, Small Lightweight GPS Receiver (SLGR), they need to be replaced in matched sets of new or unused batteries. Matched sets of batteries are batteries from the same manufacturer, contract number, and date codes. This is to ensure that all batteries are at the same approximate state of charge to minimize voltage reversal during usage. Replacing only one battery, and leaving a discharged battery in the battery compartment has resulted in several accidents with the AN/PRC-104, causing equipment damage or complete loss, and the potential for serious injury.

Primary (non-rechargeable) and secondary (rechargeable) batteries must never be mixed in the equipment. Furthermore, secondary batteries must all be fully charged when installed. These precautions, too, will minimize chances of voltage reversal.

Remember to always refer to the equipment technical documentation before replacing batteries with different types or contact CECOM to minimize damage from incorrect battery usage. A good example of what can happen when incorrect batteries are used can be illustrated by a recent incident with the CYZ-10, which uses three BA-5123/U batteries. When three BA-5372/U batteries were installed in this equipment, the equipment heated up and was destroyed as shown in figures 1 and 2. **The BA-5372/U battery fits in the equipment just like the BA-5123, but this battery has the wrong polarity and a higher voltage; a lethal combination!**



Figure 1. CYZ-10 Keyboard



Figure 2. CYZ-10 Battery Compartment

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