



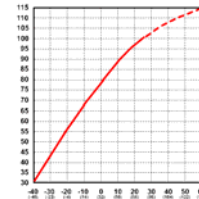
March 25, 2006

Marine Battery Break-in Period

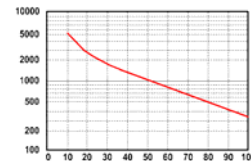
There is a Break-in Period for New Deep Cycle Batteries

READING ELECTRIC, a leading supplier of electro-mechanical equipment, services, and problem solver for Industrial and Commercial customers for over 45 years provides technical information to the Region's Residential, Commercial and Industrial Community. This Bulletin provides information about the break-in period for new Marine Deep Cycle Batteries.

When removing your old batteries, installing and commissioning your new marine battery, be sure to follow safety precautions and always WEAR PROPER EYE PROTECTION.



On all new deep cycle marine batteries, there is a break-in period to prevent a failure mode called 'hydration'. During this break-in period ultra deep discharging of new batteries should be avoided.



The break-in period consists of at least the first fifteen (15) discharges. The initial discharges should be limited to a 10.5 volt cut-off. This will avoid the failure mode called 'hydration', which occasionally occurs when new batteries are completely and totally discharged, and not immediately re-charged.

The chemistry description of hydration is relatively simple. Hydration can occur when the specific gravity of the electrolyte gets very low (1.050 to 1.020). As the electrolyte gets closer to water, lead sulfate from the plates will actually dissolve and then start to crystallize in the separators. These crystals grow through the separator pores and will cause the battery to fail. This is especially true in high heat situations.

This phenomenon can occur in all types of lead acid batteries, flooded, gel and AGM (regardless of brand). After the initial 15 cycles, the plate chemistry is more resistant to sulfating. Hydration aside, to dramatically extend battery life, ultra-deep discharge should be avoided. The shallower the average discharge, the longer the battery life.

READING ELECTRIC is a leading **Authorized Full Service Distributor** and offers a complete line of Deka Batteries. For assistance and additional information on Battery Power Systems, contact Russ Yerger at READING ELECTRIC. Phone: 610-929-5777; Fax: 610-929-1670; Visit our Website at www.readingelectric.com or email us for additional information at info@readingelectric.com