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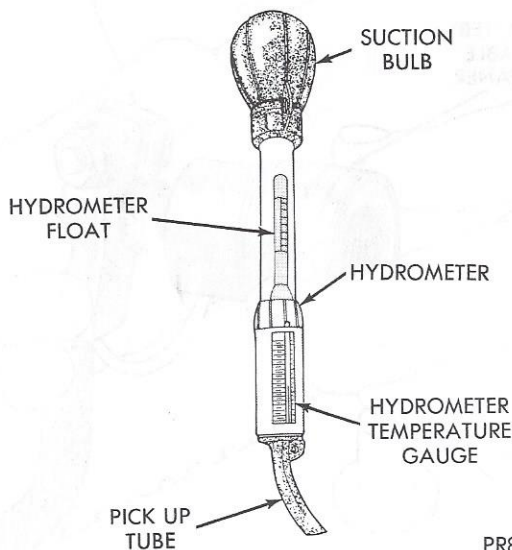
Fig. 9—Battery Test Indicator

ity of the electrolyte in the battery cells. This will give an indication of how much unused sulphuric acid remains in the solution, which determines the state of charge the battery is in. A hydrometer should be graduated to read from 1.160 to 1.320. In graduations of .005 specific gravity. Graduated markings should be accurate to within .002 specific gravity.

In reading a hydrometer, the gauge barrel must be held vertically and just right amount of fluid be drawn up into gauge barrel, with pressure bulb fully expanded, to lift float freely so it does not touch the sides, top or bottom of the barrel. Take a reading with eye on level with liquid level in the gauge barrel. **Do not tilt hydrometer.**

Electrolyte

Liquid level of each battery cell should be up to the bottom of each vent plug hole. Add mineral free water when necessary, to obtain proper electrolyte level. Electrolyte should be thoroughly mixed with any



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Fig. 10—Hydrometer

water which may have just been added to the battery by charging the battery before taking hydrometer readings.

Specific gravity of battery electrolyte strength or density varies not only with the quantity of the acid in solution but also with temperature. As temperature increases, the density of the electrolyte decreases and specific gravity decreases. As temperature decreases the density of the electrolyte increases and the specific gravity increases.

Specific gravity variations caused by temperatures must be considered and corrected to 80°F (27°C) in the analysis of the battery, otherwise specific gravity readings will not give a true indication of state of charge.

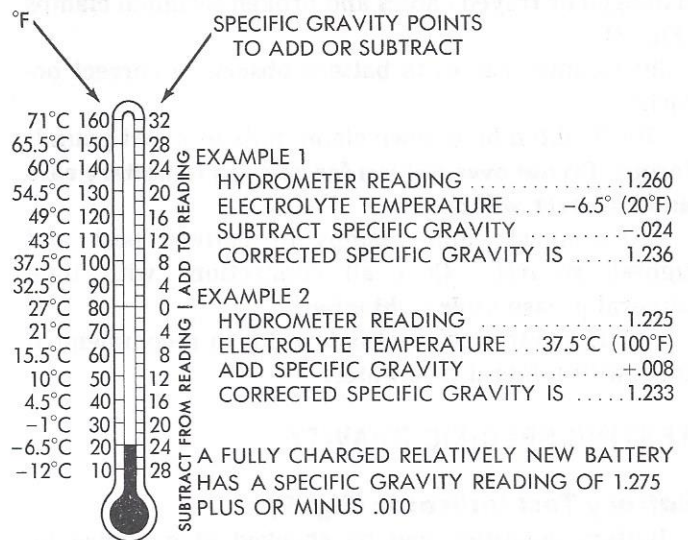
Test

Draw electrolyte in and out of the hydrometer barrel several times to bring the temperature of the hydrometer float to that of the acid in the cell and then measure the electrolyte temperature in the cell.

If the hydrometer is equipped with a thermometer, electrolyte temperature may be read from it. If the hydrometer is not equipped with a thermometer, use a battery immersion type thermometer of the mercury-in-glass type, having a scale reading as high as 125°F (52°C) or if not available a suitable dairy type thermometer may be used to obtain the electrolyte temperature.

The electrolyte temperature correction in specific gravity reading at 80°F(27°C) is zero. Add .004 specific gravity points for every 10 degrees over 80°F (27°C) and subtract .004 specific gravity points for every 10 degrees under 80°F (27°C). All readings must be corrected to 80°F(27°C). Refer to (Fig. 11).

A fully charged relatively new battery has a specific gravity reading of 1.265 plus or minus .010 for the



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Fig. 11—Hydrometer Correction Chart