Battery Hints and the FT-70

Category: Common Features of Radio Types
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What’s up with the FT-70 battery indicator? Why does it seem like the battery doesn’t last very log?

The FT-70 doesn’t actually know the state of charge of the battery. It only knows the voltage – which can be misleading while the battery is being charged. The Battery Management Unit within the battery pack is responsible for managing the charging and discharging of the battery. While computers and smart phones generally use the BMU to display state of charge, I’ve never seen an HT that does that.

You are correct that the charging indicator does not show a battery level, it displays a timed barograph that slowly fills in since the HT has no data from the BMU.

Also note that the first several charge/discharge cycles on a Li-ion battery will be vastly different from the subsequent cycles. The first couple of cycles are need to condition the battery. Generally capacity will increase for the first few cycles.

To have the battery last as long as possible:
1. Don’t over discharge the battery. My rule-of-thumb is to stop using the battery (if convenient) when the Rx voltage reaches 7.4 V. At this point 80% of the battery capacity has been used. Most of the capacity is given up between 7.4 and 8.0 volts.
2. Don’t charge a hot battery. Heat is the enemy of Li-ion. It really likes nice, comfortable room temperatures around 70F/20C. Best not to leave it in the sun in a parked car!!!
3. Don’t overcharge. It’s fine to pull the battery out of the charger before it is fully charged. Generally the last 10%

(8.0V+) goes slower because of the reduced charge current. Pulling it out at 8.0V will extend the number of charge cycles and have very little impact on stored capacity.
4. Avoid using 5 watts. At high power the radio generates a lot of heat – with the heat sink right up against the battery. It also places the greatest demand on the battery – especially if the battery is more than 70% discharged. The higher discharge current also creates more internal heating within the battery.