Thales Navigation ProMark2 Battery Tests

Part 1:

External Power Kit Test 17-18 November, 2002

(scroll down for Part 2)

The Thales Navigation ProMark2 GPS receiver is factory spec'd for 8 hours continuous use with two Photo Lithium AA batteries at 68 degrees F (20 decrees C). After some comments regarding poor battery life especially in cold weather, Thales released an external battery pack ($95, part # 800947) which holds four more AA batteries. The receiver uses the external power first, and then switches to the internal AA's.

This test comprised setting a ProMark2 up outside, logging continuous data and checking the battery life based on temperature conditions. Early 17 November was a New England ice storm, and when I set the receiver up, it was still raining heavily in my backyard. The first epoch was logged at 21:17:00 EST, it was 36.9 degrees F, and inside the receiver and external power kit were six regular Alkaline Duracell AA batteries, bought at the local wholesale club for $12.99 for 28 batteries ($0.464 per cell). NOTE: My first attempt was with the 1800mah NiMh AA rechargeable batteries I have for my digital camera. Although these are superb at powering the camera, they do not send enough volatge up the antenna cable to power the antenna, and so will not work in the ProMark2. (I am told that rechargeables are 1.2 volts and alkalines are 1.5 volts.)

Because of the heavy rain, I covered the receiver with a quart size sandwich bag. I always keep a couple of these bags in the carrying bag for just such an occasion. The antenna is IPX7 spec'd for waterproof, but the receiver is Mil810E for wind driven rain and dust, and I felt that 12+ hours of driving cold rain was not wise, so used the baggie method of water resistance.

At 7:00 am, the temperature outside was 36.2 degrees F and the thermometer indicated that the outside temp had dropped as low as 35.0 degrees F during the session. So, I had a solid 10 hours of 36 degree weather for the first part of the test. As the day progressed, the sun came out, and it warmed up to 48.7 degrees F maximum during the session.

I guess the average temperature was in the low 40's for the duration of the test. The unit finally turned off from lack of power at 14:38:40, that is a total of 16 hours, 21 minutes and 40 seconds, on $2.79 worth of AA batteries.

Part 2:

External Power Kit Test 18 January, 2003

I have been waiting for a REALLY cold day to continue my test. At 7:30 am, the temperature outside was -1.3 degrees F, so this was a perfect day for a cold weather test. By the time I got fresh Duracell's in the PM2 and external battery kit, the logging started at 7:50am. It was still below zero F.

During the day, the temperature rose to a maximum of 16 degrees F, and by the time the batteries had completely died at 17:34, the temp was back down to under 12 degrees. The six Duracells ran for 9 hours and 44 minutes. My own opinion is that this is excellent battery life working at an approximate average temperature of 10 degrees F.

As always, these are my personal opinions, and not necessarily those of Thales Navigation.