

# The Doc's Battery Test Report

| Battery Details                   |                                     |
|-----------------------------------|-------------------------------------|
| Brand                             | Powerbase 2300                      |
| Size                              | AAA AA C D 9V 6V                    |
| Type                              | Ni-MH Ni-Cd RAM Alkaline Titanium   |
| Current in mAhs                   | 2300                                |
| Stated Voltage                    | 1.5 volts 1.2 volts                 |
| Number of batteries               | Single Set of 2 Set of 4            |
| Battery Set used                  | Set 1                               |
| Times charged before test started | 11                                  |
| Charger used to charge            | Rezap RBC883 Vanson Speedy Box UBA4 |
| Time Batteries charged in charger | See UBA graph.                      |

| Test Procedures                |   |
|--------------------------------|---|
| Spreadsheet name               | Powerbase2300NiMH-AA-Set1.123 (Discharge data file) |
| UBA file name                  | Powerbase2300NiMH-AA-Set1-11.uba (Charge file)      |
| Select Resistance 5 or 10 ohms | 5 ohms 10 ohms                                      |
| Voltage cut off                | 3.5 volts 3.6 volts                                 |
| Date of test                   | 15/02/04  |

| Summary of test  |   |
|------------------|---|
| Voltage          | Starting voltage 5.6 volts, cut off voltage 3.6 volts |
| Test duration    | 8,684 seconds or 144.73 minutes                       |
| Max Battery Temp | 37.0 degrees Celsius                                  |
| Min Battery Temp | 31.1 degrees Celsius                                  |

## Methodology

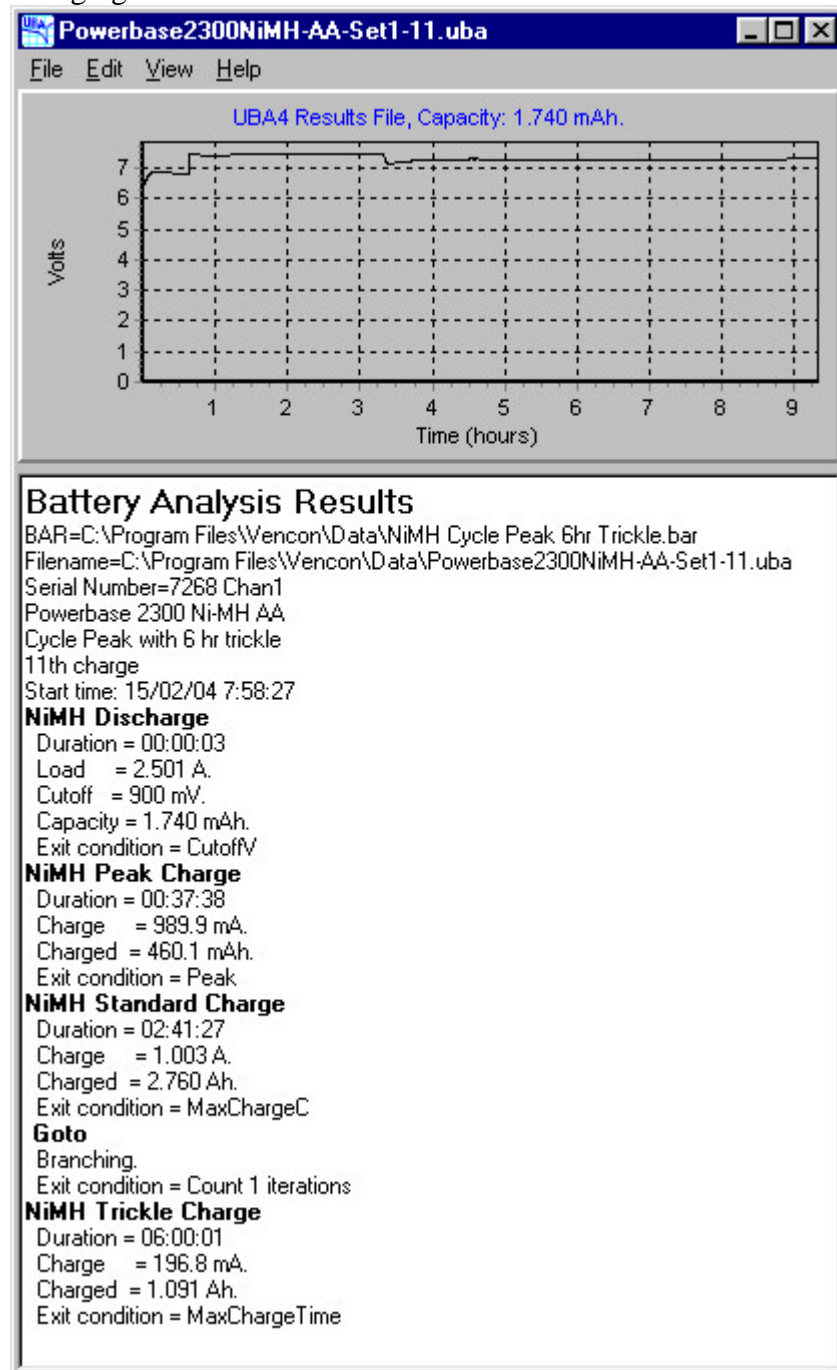
The battery set being tested has been charged at least 5 times. The charge actually used in the test is noted above. The battery set is charged in a Universal Battery Charger (UBA4). It is then tested under a load of 5 ohms, in the scientific dooverlackie. In this test the battery set was also charged in several different types of charger. Once the charger tests were completed, the battery set was charged in the UBA4 and tested. The last test is designed to discover whether the battery set's charging capacity has been materially affected during the tests. The first and last test in the UBA, while not identical, should not be materially different. The following pages give various data, including:

1. charging information from the UBA4;
2. a graph of the voltage during the test (cut off voltage being 3.6 volts);
3. a graph of the battery temperature during the test; and
4. a graph of the battery temperature verse ambient air temperature during the test.

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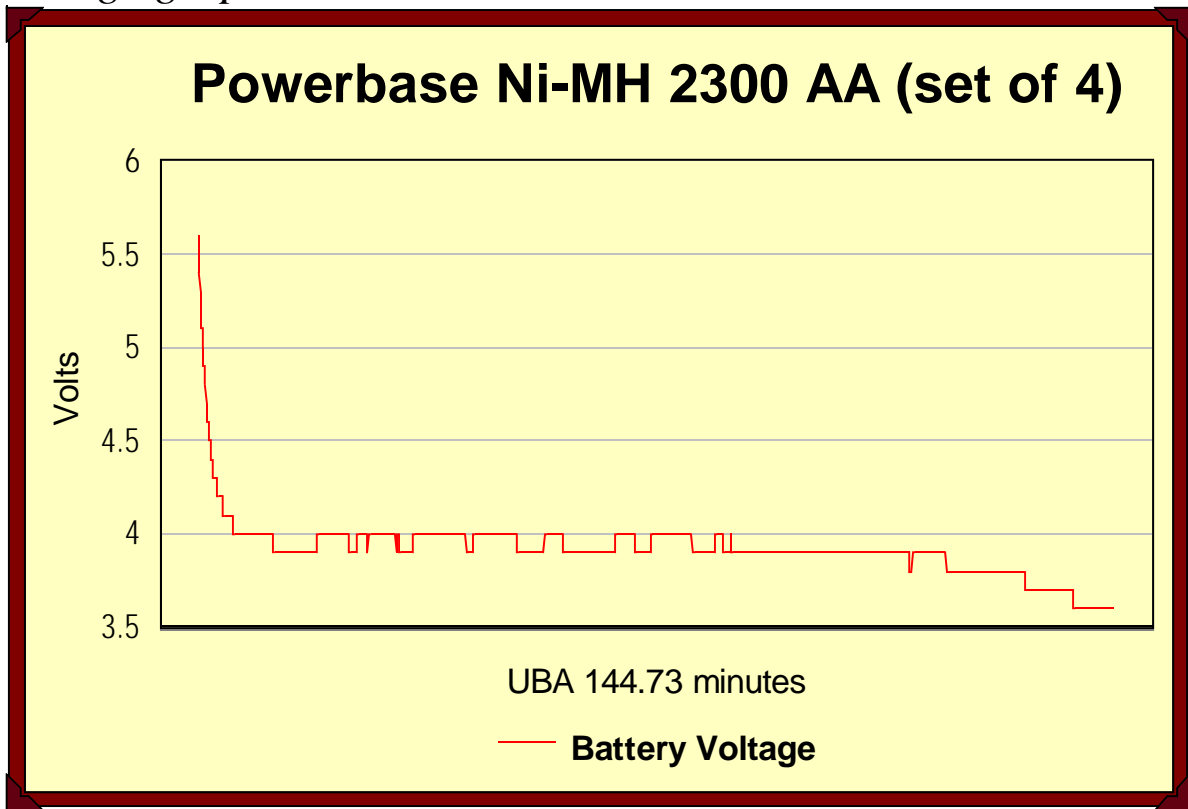
## UBA report

The graph and charging information from the UBA4.

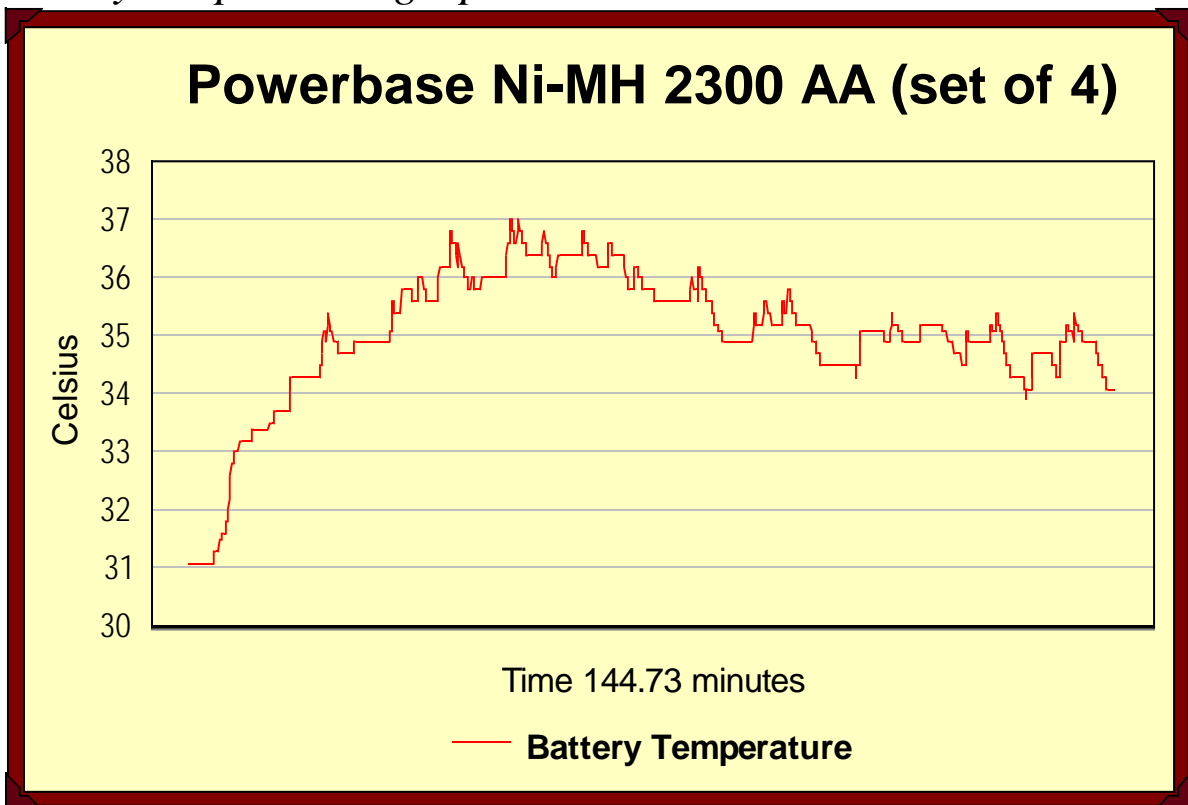


# The Doc's Battery Test Report

*Voltage graph*



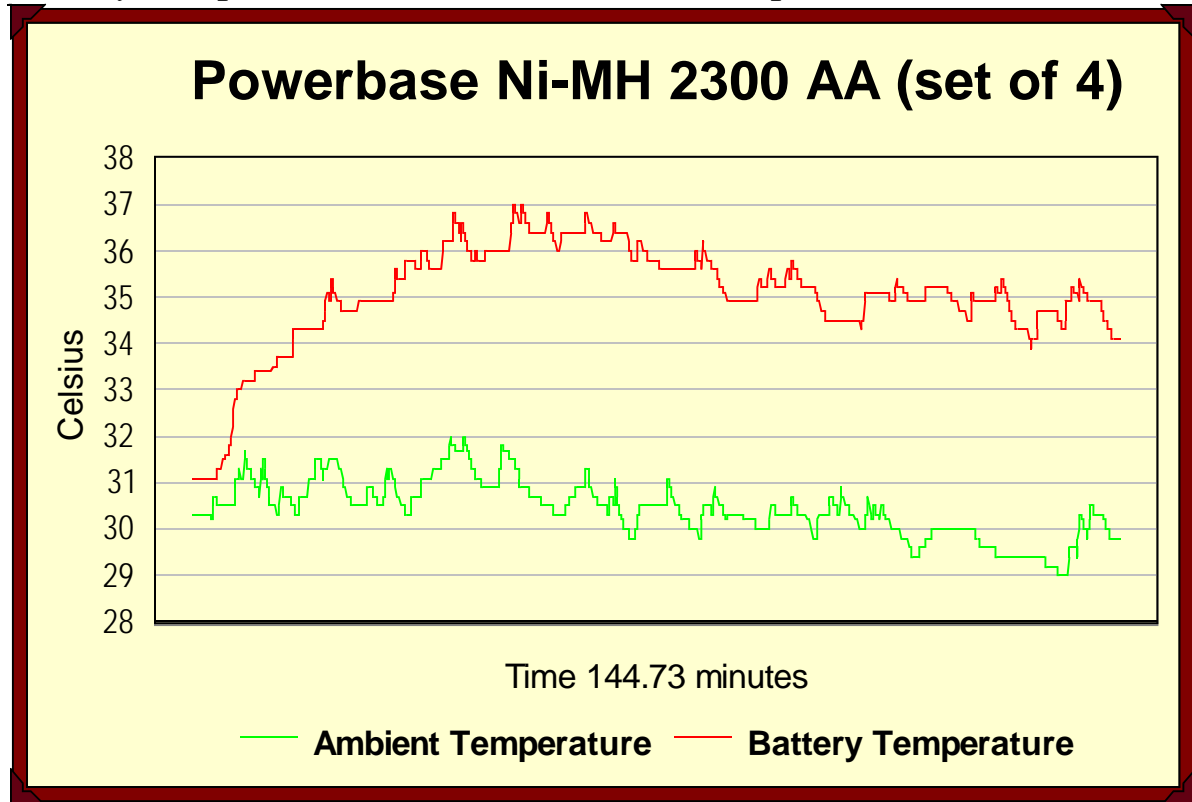
*Battery temperature graph*



The temperature rose to 37 degrees Celsius, the highest The Doc has seen.

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*Battery temperature -v- Ambient air temperature*



## *Conclusion*

Like the Powerbase 2100 a very attractive battery. No issues with the Powerbase 2300 (unlike the 2100) becoming overheated during charging, but during use the battery set went up to 37 degrees Celsius, which was about 6 degrees Celsius above ambient air temperature. The best performing battery set so far, marginally better than the Powerex 2200, but not enough to get The Doc enthusiastic. A battery rated at 2300 mAh, should give more than one 101 seconds better performance. A decent battery set, but The Doc will hold off on final judgment until he tests more batteries rated at 2300 mAh. The Sanyo 2300 are now available in Australia, so stay tuned.

|                              |                       |
|------------------------------|-----------------------|
| <b>Run Time (5 ohm)</b>      | <b>144.73 minutes</b> |
| <b>Battery build quality</b> | <b>Very good</b>      |
| <b>Place of Origin</b>       | <b>China</b>          |
| <b>Cost (set of 4)</b>       | <b>AUD\$25.00</b>     |

*Report date: 29 February 2004*

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