

## Electrical Equipment for Trekkers

Many people will be taking electrical/electronic equipment with them on the expedition. These will range from cameras to Kindles, iPads, iPhones to laptops.

Limited mains power will be available at base camp using mains inverters powered from banks of batteries charged by solar power. This is to supply power for the research projects, but there may (hopefully) be some spare power at times to charge personal equipment.

The Himalayas are a hostile environment for any complex electrical equipment – from extremes of temperature, dust, vibration and low atmospheric pressure. Laptops with hard disc drives can fail catastrophically at altitude – those which use flash drives are much preferred.

The performance of all batteries is compromised at extremes of temperature, especially rechargeable batteries – don't expect the same life from them at base camp as you get in the UK. Alkaline batteries do reasonably well, Lithium best of all – though AA and AAA versions have slightly higher voltage than alkaline, so check they are ok for equipment (especially older head torches).

LCD displays may become very sluggish at low temperatures.

Keeping your camera inside your duvet jacket until you want to take a photo will keep it working longer. Having extra batteries for your camera which you can keep in an inside pocket will also help.

A protective case for your Kindle/iPad type device will reduce the risks of damage.

You may need to consider taking your own power system to recharge items. For items which can charge

from a 5V USB type system there are a number of battery packs and small solar panels available. One of the best is the Powertraveller Solarmonkey Adventurer (~£60), but there are many other manufacturers available. For charging camera batteries, the best option I have seen is the Solar Technology International Camcaddy2 (I have one of the older Camcaddy units which needs a 9V input to charge camera batteries). The Camcaddy2 is an adapter and control unit to charge camera batteries (which in many cases require more than 5V), and it can be powered from any 5V battery pack, or from any of the standard units from Solar Technology International.

The choice for recharging laptops is much more limited since these need mains or 12V systems, and things such as a Solargorilla/Powergorilla combination is required (~£250), though in some circumstances the Solargorilla can be used on its own. Check that whatever system you buy does have the higher output voltage required to charge laptops.

You might have seen reviews of some of these solar chargers – in most cases the reviewer is expecting/hoping for something far beyond what is practical. They do generally need many hours of strong sunshine to be able to charge fully since the solar panel on the unit is normally very small. Additional panels can be bought for some of the systems which will improve their performance, and finding a system of mounting the unit on the back of your rucksack will provide many more hours of charging time as you walk.

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