

CR123As do exist - but runtime would be dismal with these.

So you could use this an occasional 'high beam' light - in conjunction with some other light that will run all night, such as one of the many 1W LED lights now available. Could it be used as a 'main beam' on PBP? Well, unlike the similar lights which depend on rechargeables (such as the Exposure Joystick), it could. Let's assume 22 hours of night-riding on a PBP (10h first night, 6h each 2nd and 3rd nights) - you'll need to carry 16 CR123A cells, total weight 290g, cost £24. That is not a lot of weight, and not a bad lighting budget - and that's for full 3W brightness all the way - in practice there's a lot of bunch riding on PBP, meaning you'd use it in 1W mode some of the time, so you'd have some juice left for a possible 4th night. However, frequent battery changes would be a major irritation and I would rather worry about damaging the light while re-batting - a solution is to fit two lights, but to be honest I don't think any of this is really a sensible PBP strategy.

External power:

The big plus for the **Topeak** is that it has a socket for an external power pack. (It has to be mentioned that this is also the major weatherproofing problem.) Topeak market their own Li-ion pack with a run time of 4h, which is OK, but any old battery delivering between 4V and 7.5V would do - even an old gel cell, or a discarded Cateye nightstick. Make up a pack dedicated to the purpose of nightriding and runtime is limited only by the weight you're prepared to carry and/or the depth of your pocket. Plugging in the external pack disconnects the internal cells, so you can leave them in and treat them as a neat and handy 'reserve' battery if you just need a little extra before dawn. **Dinotte** are inflexible by comparison - all their lights are external power only, some work with NiMH AAs and some work with Li-ion and you have to commit to one or other system when you buy. I got hold of the AAs version, to allow direct comparison with the Topeak (see below) and because I knew this version would also work with my own 6V power packs.

To start with, I just made up a simple 4xAA battery clip, weight 130g and costing less than £10 including 2500mAh NiMH cells. The plug I used to match the Topeak is a 3.5/1.35 DC power plug, available from Maplin. Plug aside, this power pack is pretty much the same as the one included in the Dinotte package. The **Topeak** gave a runtime of about **3h10** at full power before I switched off to protect the cells. I didn't test it in low mode because frankly you'd get better light from a **Halfords**/

Bikehut 1W LED light which will last all night. Using the same NiMH cells with the **Dinotte** gave **2h05** at full power before dropping to 'battery save', less runtime but only to be expected with the more powerful LED. Its safe to continue in 'save' mode for 20 minutes or so. I tried it again, running at low power only, and got 4h05 before 'battery save' - an excellent result because low mode is very usable on this light. Using rechargeables like this brings the running cost right down to sensible levels, but this is no use for PBP - so I did also experiment with alkalines, and got a runtime of about **2h30** in the Topeak, some of that dimming - really this combination is usable but only as a last resort - and just **0h35** in the Dinotte before 'save' mode kicked in. But in low power, this light ran for **2h05**, some of that dimming, and on and on in 'save' mode for another **2h30**, very useful.

We need more power!

For the luxury of running lights like these on PBP, a bigger pack is needed, but it needn't be huge. I've made up an 8xAA clip (two 4x clips fixed together and wired in parallel - so it also works with only 4 cells loaded) and filled it with Energizer Lithium AAs - as you see this is a very compact 6V power pack that can strap on almost anywhere, it weighs 140g and should just about run the Topeak at full power for the entire long first night - no stops for battery changing at all. Sheila used this setup without problems on a recent 600. This pack should run the Dinotte for nearly 6 hours, or 11 hours at low power - but though I have run this combination for a while, I haven't done full tests, what with the cost of lithiums and all.



A second pre-loaded clip stored in the saddlebag might suffice for the 2nd and 3rd nights and if you go into the 4th, alkalines bought along the route should get you by, not forgetting the 'reserve' cells inside the Topeak light as well. Doing the sums again, assuming the Topeak on full power or the Dinotte on low power - 16 Energizer lithiums weigh 240g, cost £18.00 (from 7dayshop). This is very workable, and these are more powerful systems, for lighter weight, than anything that was available 4 years ago. For redundancy I would always have another light fitted as well, such as a self-contained 1W LED light if the PBP rules will allow this combination, or a Cateye Micro Halogen if the rules stay the same as 2003. I'll discuss primary/secondary/backup lighting strategies for PBP in an article in next issue.

LED lights and PBP:

Will LED-only front lighting be allowed at PBP 2007? It was prohibited by ACP in 2003 (although in the event a few riders were seen with LED-only setups, usually 2x Cateye EL300). As I write, we only know that the question is under review. One suggestion has been that certain specified lights only, will be allowed. We wait with bated breath.



Beam Shots:

Apparently not everyone finds these stimulating viewing, so I've kept them small, and anyway they don't tell the whole story. They tend to exaggerate the differences - even

the dimmest light here is actually a usable beam, even the brightest is still only a bike light. All the lights were positioned as though mounted on top of the handlebars and the centre of the beam aimed at the bright plant 5 metres away. This first one shows the state of the LED art at the time of the last PBP, and still a popular LED light. The last is a Lumicycle 5W halogen, as a point of reference. These and several more can be viewed in more detail at

www.audax.uk.net/lights/beams3.htm

