

Thanks to the wonders of modern technology, keeping a record of your travels and then communicating to others has never been easier, says **Jamie Buchanan-Dunlop**

The digital explorer



THERE'S ONE BIG DRAWBACK TO USING a laptop in the driving rain: no windscreen wipers. It was a miserable night in what passes for summer in Scotland and I was hunched over a ruggedised laptop. I could only type in short bursts as I kept having to wipe the screen to see what I'd written.

It was my own fault. I was sitting outside an extremely remote youth hostel on the Offscreen Student Expedition. My fault, because a mug had been accidentally knocked over while clearing up at 3am the night before. This incurred a stream of vitriol from a rampaging hostel warden ➤



who demanded to know, between gritted teeth, why I was tidying up at three in the morning. The answer must have sounded horribly glib at the time. 'Just finishing off sending multimedia educational content via satellite to young people across the Middle East so that they can learn about the UK.' So, on the second night of our stay, I was forced out with laptop and satellite equipment into the rain.

PROGRESS BARS OF PAIN

Communicating live from an expedition requires the stamina of an ox and the patience of a saint. Titles such as 'buffering', 'rendering' and 'locating satellites' mark progress bars of pain crawling across the computer screen. I'm neither an ox nor a saint, but I've been lucky enough to work with those who are. I think technology on expeditions appeals to my inner masochist, the same facet of my personality that likes to be high up, cold and hungry with optional youth expedition in tow.

'An expedition without a report is a holiday.' This call to action from Nigel Winsor, director of expeditions and fieldwork at the Royal Geographical Society (with IBG) at the time, is just as pertinent now. If it's our privilege as travellers, field scientists and explorers to experience the world and its people in all their rich diversity, it's also our responsibility to communicate our discoveries to others. The internet is just another method of doing so: one that's flexible, engaging and used by more than 1.4 billion people. Moreover, there are corners of the 'net that are well suited to the world of exploration and expeditions.

Communicating via the internet from the field can be a slightly surreal experience. I've sat on the sides of mountains and in the middle of deserts, happily typing away and uploading videos and photographs, knowing that people are reading and watching somewhere else on Earth. It still gives me a thrill, and also provides an extra level of excitement and interaction for the audience. However, it does require using a satellite communications system such as Inmarsat's Broadband Global Area Network or being very close to reliable internet access. An equally valid approach is to wait until you return home and then organise all of your journal entries, photos and video into a website.

Both approaches require a platform to share your story. One popular option is to use a blog. A blog (short for 'weblog') is an online journal composed of a series of entries or 'posts'. Each post can have

photographs, video, maps, text or a mixture of these. WordPress and Blogger are two popular blogging services. Another option is to use online services to host your video and photographs in albums. For video, the most popular choice is YouTube, and for photographs it's Flickr. All of these services are available for free.

THE GOOGLE REVOLUTION

During a youth expedition to Morocco, I started using Google Earth. I sent back the route the expedition had taken during the day, and classes in London followed our

Geo-tagging

Geo-tagging is the 21st-century way of pinning your photographs to a map on the wall to show where they were taken. There are three main methods of geo-tagging photographs, and all of them need a GPS unit to provide the location data.

The simplest method is to buy a camera that has GPS built in, such as the Nikon P6000 or Ricoh 500SE. The second method is to use software that matches the time that your photograph was taken with the location log on your GPS device. The best program for Mac users seems to be HoudahGeo. PC users can download GPicSync. Flickr also provides some add-ons that help you do this.

The final method is to upload your GPS data to a digital mapping platform such as Google Earth and then insert images manually. GPS devices such as Trackstick and Photofinder are designed to help with this process.

progress on computers at their school. I linked pictures and video to certain points on the map so that they showed up in the exact location they were taken.

Google Earth continues to revolutionise the way expeditions are communicated. To place your videos or photographs on this virtual map, you just need to download Google Earth or Google Maps. It's possible to estimate your position and stick a virtual drawing pin in a virtual map, but a Global Positioning System (GPS) can pinpoint your position to a matter of metres. I now use a GPS unit in conjunction with both programs.

I have a predilection for solid, yellow, droppable GPS units. A decent outdoor retailer will be able to make suggestions based on your needs and budget. Like all technology, it doesn't always behave: I've been told that I took a photo standing in the middle of the Strait of Hormuz.

A mini-industry has now sprung up catering to fans of geo-tagging (the system of locating media on a digital map). I have

yet to find a stellar piece of software or a gadget that really simplifies the process. All those I've tried have been slightly unwieldy. One (costly) exception is the Ricoh Caplio 500SE camera and its associated software.

The Caplio is available with a GPS and a compass, and it's a must for anyone looking to create a serious digital record of a field project. Originally designed for surveying, and capable of being dropped in mud on a building site, the Caplio could change the way that field research is documented. Each photo is recorded with the time it was taken, the exact location and the compass direction. The scope for use when examining change to ecosystems over time is outstanding. That said, on an adventurous expedition where weight and bulk are critical, I prefer to carry a conventional GPS (or lightweight Trackstick-type unit) and a compact digital camera.

It would be great if a manufacturer made the electronic equivalent of a Swiss Army knife: GPS, video and stills camera, and web-broadcast functionality all packed into one unit. The latest smart mobiles get near to this dream product, but not quite near enough. The problem is that you have to compromise. The GPS unit might be able to tell you the nearest cinema in Oslo, but not how close you are to a sharp drop, or what your altitude is. If you're lucky, the camera will take photos at an acceptable resolution. But video quality is likely to be below what you expect or need.

When buying new kit, consider your priorities and apportion your budget accordingly. More money will get you greater speed and accuracy with GPS, and higher image quality for digital video and photos.

CAN I DROP IT?

As I found to my cost in Pakistan, where I had to cope with a camera that behaved more like an angry alarm clock than a tool for recording an expedition, the right kit at home may not be ideal for a field research project. So what should you look for? I normally call up manufacturers and ask: 'Do you make anything that will continue to work after I drop it?' After some initial confusion from the marketing department, it transpires that there's a growing number of products available, such as the Panasonic SDR-SW20 digital camcorder, that don't mind getting wet, being dropped, and generally being given a tough time.

In choosing a compact digital camera for expeditions, the first consideration is the robustness of the body: a metal casing is usually a good start. Don't go for a



Become a digital MAPMAKER

The internet has enabled a radical shift in mapmaking to take place. Google's My Maps is doing for cartography what YouTube has done for video. The public are now producers and collaborators as well as consumers. The time has now come for both professional and amateur cartographers to create, share and collaborate on digital maps. My Maps has the ability to invite others to work on the same map. With the click of a button, users can add lines, shade areas, and place photos, text and video. The result can be placed on your own website.

camera with external focusing and zoom. This is when the lens comes out from the body when you switch it on. Dust gets stuck in the mechanism and you

could end up spending hours trying to fix it with a penknife. Think about batteries. How long do they last on full charge? How expensive would it be to carry spares? In terms of quality, you should be thinking seven megapixels and above.

For camcorders, there's a wider range, but one cardinal rule stands: never use a camera that records directly onto a hard disk drive (HDD). HDD is a type of memory in which the information is 'written' onto a spinning disk. I've heard the wails of a filmmaker whose one drop caused the disk surface to be scratched, rendering all the footage unusable. HDD is also unreliable above an altitude of 3,000 metres.

Ruling out HDD doesn't necessarily mean returning to tape, although Mini-DV tapes are no bad option. But the future is flash memory, the same technology currently used in a digital camera's memory card. The drawback of flash memory used

to be capacity, as the small cards simply couldn't hold enough video footage, but that has now changed. The latest memory cards, measuring the size of a thumbnail, hold 250,000 times as much data as the entire memory of my first computer.

With all of the technology involved, it's easy to forget that you're telling a story. No amount of internet wizardry will make up for the online equivalent of a boring slideshow. Expeditions are filled with adversity and triumph, joy and despair, as well as discovery. If you can fill your reports with emotion, wit, humility and insight, your online audience will follow.

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is an expedition leader and educator, and founder of Digital Explorer (www.digitalexplorer.com), a social enterprise set up to pioneer new ways of creating engagement in global and environmental issues through the application of technology



1

GPS UNIT
Garmin eTrex Summit HC
 £130/156 GRAMS

A reliable and accurate GPS system with barometric altimeter that will perform all of the basic functions superbly. It's not too cluttered with functions and connects to a computer using USB rather than the tricky 'serial' method



2

HIGH-IMAGE-QUALITY CAMCORDER
Canon Vixia HF11
 £680/380 GRAMS

A well-made, compact digital video camera that records straight onto flash memory. This camcorder offers superb picture quality (in the AVCHD format) for something so small. Some people may prefer the security of shooting onto mini-DV tape with a camera such as the Canon HV30



3

GPS CAMERA
Ricoh Caplio 500SE
 £550/430 GRAMS (WITHOUT BATTERY)

An absolute must for field research. Captures image, video, GPS location, compass direction and time – and all in a durable and waterproof body. However, it's a bit too cumbersome to shove in a pocket for everyday use



4

GPS STICK
Trackstick II

£119/66 GRAMS (WITHOUT BATTERIES)
 A pocket-sized device that records a track of your route using GPS. Tracks are easily integrated into Google Earth using the software that comes with the device. Can also be used to geo-tag images. A lightweight choice if you're just looking to add GPS data to photos and video



5

STRAIGHT-TO-WEB CAMCORDER
Flip Ultra

£95/147 GRAMS
 The size of your aunt's mobile phone and with really simple controls, the Flip Ultra was specifically designed for people who want to get their video straight to the web. Not great if you want high quality but perfect for everything else



6

SHOCKPROOF CAMCORDER
Panasonic SDR-SW20

£245/224 GRAMS (WITHOUT BATTERY)
 Waterproof to 1.5 metres and capable of surviving a drop of more than a metre, the SDR-SW20 has been constructed to survive the kind of abuse that expedition life regularly dishes out. The dustproof design help to maximise the chance of returning home with your footage intact

TEN OF THE BEST

There's an increasingly bewildering array of devices available for digital explorers. Here, Jamie Buchanan-Dunlop offers his tips on the best technology for making a record of your next expedition

**Don't forget...
 ...to always carry a notebook and a propelling pencil. Sometimes, when technology frustrations get too much, it's nice to relax and scribble thoughts and notes or even attempt a field sketch or rudimentary map**

**NEXT MONTH:
 REMOTE COMMUNICATIONS**



7

COMPACT CAMERA
Olympus Tough µ1030SW
 £260/173 GRAMS

(WITHOUT BATTERY AND CARD)
 This camera is shockproof, waterproof, and likes the cold. At more than ten megapixels, it takes very high quality photographs. A compact 93mm by 62mm by 22.6mm in size, it's ideally suited to all kinds of expeditions and journeys



8

PHOTO SHARING SOFTWARE
Flickr FREE

One of the more popular ways of sharing your photographs online. Images can be uploaded or emailed to your account. You can choose whether to allow your pictures to be viewed by anyone, or restricted to just friends and family. It's easy to organise your photographs into sets, and group them into collections



9

BLOGGING SOFTWARE
WordPress FREE

WordPress has been used as the platform for numerous expedition blogs. It offers great flexibility and an easy to use administration system. Used by experienced web pros and online novices alike, it's free and open source as well. If WordPress looks a bit tricky, try Blogger, Google's blogging tool



10

DIGITAL MAPPING SOFTWARE
Google Earth FREE

Google Earth has changed the way we look at the world. There are several different versions available to meet your specific needs, but all use the same imagery. With Google Earth Plus (US\$20 per year), you can automatically upload data from your GPS unit. The Pro version (US\$400 per year) allows you to make films from your virtual tours