Cyclist Safety Cameras

Why Use a "Safety Camera"?

While negotiating the many hazards of Britain's busy roads, more and more cyclists are opting to use cameras to capture careless, intolerant or intimidatory driving. Primarily as a personal insurance policy in the case of accident, near miss or other incident, good quality video provides an invaluable evidential record particularly in the absence of other witnesses when cycling alone. Some Police forces in the UK are now actively seeking such irrefutable evidence from the general public. One excellent example is "Operation Snap" recently launched by North Wales Police:

http://www.north-wales.police.uk/contact/minor-incident-reporting/op-snap?lang=en-gb

Even conscientious drivers make mistakes (as do careful cyclists), but inattention and carelessness at the wheel of tons of fast moving metal is a far greater hazard to the vulnerable and unprotected cyclist than it is to the driver of the vehicle.

What sort of Camera?

Fly 12 Combined Front Light & Camera

Fly 6 combined Real Light & Camera

It's important to distinguish between two basic types available on the market. Ubiquitous are "sport" or "action" type cameras, typically the popular GoPro and similar which do an excellent job for their intended purpose. Ideal for short high quality action sequences, most however, have **major shortcomings** when used as a cyclist safety camera. Many stop recording without **adequate warning** in as little as an hour when their internal **battery becomes depleted** or the **memory card reaches capacity**. Some are bulky, particularly those needing a supplementary waterproof case.

An effective safety camera needs to be compact, lightweight, waterproof and have a good quality image. For longer rides it must be capable of running continuously **without intervention**. Ideally there should be **no need to swap or recharge batteries or replace memory cards,** even on an extended day ride.

RoadHawk R+

Attaching a Forward Facing Safety Camera.

Garmin Virb XE

Helmet or headband mounting is nearly always going to provide a **superior evidential record** than if the camera is attached to handlebars. High up, on the head, a camera records virtually everything that the rider sees, particularly hazards approaching from the side. Mounted accordingly, video evidence will confirm that you did look right or left and did hand signal your intentions. During the aftermath of an incident, If the rider becomes separated from the bike, a headcam will still remain effective recording both sound and vision. Bullet type cameras are ideal for head mounting, being small, lightweight and unobtrusive. Rectangular cameras tend to be bulky and awkward and look somewhat incongruous stuck on the top of your head!

Attaching Rearward Facing Safety Camera.

Best located on the bike frame, seat post, rack, or on top of a rigid mudguard, a rearward facing camera provides effective evidential footage. Particularly good at identifying vehicles approaching or tailgating from the rear it is also excellent at capturing incidents involving other cyclists during a group ride.

Before you commit to buying any camera, use the table on the following page as a check list of essential features. Take care to verify that your choice is both practical and effective and suites your individual cycling lifestyle.

Cyclist Safety Camera Checklist

Essential Features	Detail	Notes	✓
Waterproof, compact, unobtrusive and lightweight.	Ideally totally waterproof, (not just splash proof) and doesn't need a separate bulky outer case.	At least rated IP66, but better IP67 (i.e. capable of briefly surviving immersion in water).	
Longevity of battery run time.	Virtually all cameras have limited internal battery runtime (as little as an hour or wo). Many stop working without adequate warning.	Unless you only commute or ride for relatively short journeys, consider choosing a camera that (**without compromising water resistance)** has the facility to run on external Lithium Ion/Polymer rechargeable batteries.	
"Unlimited" video capacity by using continuous "Loop Recording".	Loop recording is where the camera records a series of fixed length files. When the card is full, the oldest file is automatically overwritten by the most recent.	Most cameras use solid state SD or Micro SD cards with a capacities of 32 GB or more. Use only fast (suitable for video) "Class 10" memory cards bought from a reputable supplier.	
Time and date stamp.	The camera automatically records time and date directly on the video image.	Important if video is needed for evidential reasons. Check regularly that the time setting is accurate.	
High quality image.	Minimum 720p, but better if HD 1080p. Higher resolutions will fill the memory card faster.	Each video frame is made up of "dots", 720p records 1280 across and 720 down. 1080p captures more detail with 1920 dots across and 1080 down.	
Fast frame rate for a judder free image.	Minimum 25 frames per second. Better 30 FPS or more.	High frame rates will fill the storage card more quickly.	
Wide angle lens to capture peripheral detail.	The wider the angle of view the better, 110 degrees or more. Many sport cameras have a narrower field of view.	Wider angle lenses tend to distort or "Fisheye" the image, not a big issue for a safety camera.	
Continuous sound recording.	Ability to record sound adequately .	Sound recording shouldn't compromise the waterproof integrity.	

Some General Tips:

- Two cameras, (one facing forward the other back) is the best and most effective combination to capture evidential footage of all the events leading up to an incident and its aftermath.
- To ensure the **headcam** captures what you see particularly at junctions, get used to moving your head (not just your eyes), towards potential side hazards! Glance to the side when you hand signal so that the headcam records your actions.
- Don't forget a cameras will record your own misdemeanours, and the Police may use this to prosecute you!
- Don't forget to switch the headcam off when you visit a public convenience!
- For reliability always use high Class 10 quality memory cards from a trustworthy source.
- Memory cards have a limited life span particularly when used to constantly record video. Replace immediately when unreliable.
- Treat manufacturers claims for the runtime of the camera's internal battery with scepticism — their tests will have been carried out in optimum conditions. **Runtime may be considerably less in cold environments**.
- Over time, repeated charge and discharge will progressively reduce a battery's capacity to store power. After 200 cycles the battery may only retain 70% of its original capacity. If you ride regularly and rely on a fixed internal battery, you may be faced with having to replace the whole camera!

Typical Camera Features Compared

Camera Make and Model	Waterproof	Internal Battery Runtime (Hrs)	Waterproof Lead for external battery	Best Resolution	Time Stamp	Loop Record	Sound Recording	Special external Waterproof Battery	Can connect to common USB Battery Packs	Attachment	Wi-Fi	GPS Log	Guide Price
Fly 12	Y	10 *	N	1080p	Y	Y	Y	N	N	H/B Mount	Y	N	£250
Fly 6	Y	6 *	N	720p	Y	Y	Y	N	N	Seat Post	N	N	£120
RoadHawk R+	Y	1.5	Y £10	1080p	Y	Y	Y	Yes £30 4.5 HRs	Y	Multi	N	N	£140
Garmin VIRB XE	Y	2	Y	1440p	Y	Y?**	Y	N	Y	Multi	Y	Y	£260

Notes:

*Camera run time will be reduced depending on light settings

** The loop record feature on the Garmin Virb XE is disappointingly inappropriate for use as a safety camera

What's my Setup?

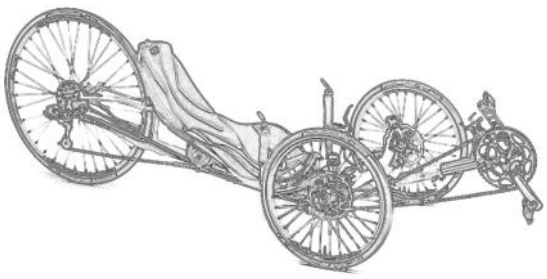
I use two RoadHawk R+'s as they satisfy the safety camera checklist and operate with a high degree of reliability. Waterproof leads facilitate uninterrupted recording throughout an extended day connected to easily obtainable (and cheaply replaceable) lithium rechargeable USB battery packs. Setup is hassle free, simply connect a fully charged USB battery at the commencement of the ride and the camera will automatically start and continue to loop record until the power is disconnected.

The forward facing camera is helmet attached (using supplied mounts) powered by a lead to a water resistant neck pouch containing the battery (pouches intended for a mobile phone are easily obtainable from any outdoor shop). Tucking the bag under clothing keeps the battery warm and away from the elements.

Using the supplied mount, the rear camera is attached to the top of the rear rigid mudguard with the lead connected to a battery in a water resistant bag. USB battery packs can be bought in various capacities— a cheap 5200 mAh unit will power the RoadHawk R+'s for over 9 hours when new. The batteries are not water resistant so do need protecting.

The R+ cameras are designed to accept micro SD up to a maximum of 32 GB. I successfully use 64 GB cards to provide over 8 hours of continuous 1080p recording before the loop record feature starts to overwrites older files. Cards over 32GB do however need to be FAT32 formatted with special software to make them usable.

My YouTube review of 1080p RoadHawk Ride R+: https://www.youtube.com/watch?v=KhplJ71QXEI
RoadHawk RIDE R+ availability: http://cycle.roadhawk.co.uk/
USB battery packs for extended runtimes are available cheaply on line from Amazon.
CYCLIQ Fly 6 & Fly 12: https://cycliq.com/products
Garmin VIRB XE: https://buy.garmin.com/en-GB/GB/sports-recreation/action-cameras/virb-xe/prod165499.html



RecumbentTrikeRider on YouTube

https://www.youtube.com/user/RecumbentTrikeRider

Questions, or if you know of a better camera:

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