

GUIDANCE FOR THE POLICE USE OF BODY-WORN VIDEO DEVICES

POLICE AND CRIME
STANDARDS DIRECTORATE

JULY 2007



Home Office



Acknowledgements

The Police and Crime Standards Directorate (PCSD) is grateful to the author of this document, Chief Inspector Martin Goodall.

The PCSD extends special thanks to Chief Superintendent Morris Watts and the officers and staff of Plymouth Basic Command Unit (BCU), Devon and Cornwall Constabulary, who have conducted extended use trials of body-worn video as part of the Plymouth BCU Head Camera Project, and in particular the project team comprising:

Chief Inspector Tamasine Matthews
Sergeant Oliver Tayler
Constable Zoë Bateman
Jon Smith

The PCSD is also grateful to the following, who have coordinated local practical trials of the equipment and assisted with the formulation of policy:

Inspector Mike Cox – Avon and Somerset Constabulary
Sergeant Paul Hamilton – Northumbria Police
Sergeant Lee Burns – West Midlands Police

The PCSD would finally like to express gratitude to those who have further assisted with the formulation of the policies and specifications contained within this document, namely:

Esther George – Crown Prosecution Service
Neil Cohen – Home Office Scientific Development Branch
Adam Hunter – Home Office Scientific Development Branch
Katherine Price – Information Commissioner's Office
Jo Wilkinson – National Policing Improvement Agency
Kevin Smith – National Policing Improvement Agency
Colin Monks – Police Federation of England and Wales
Rob Somer – Process Evolution

The following forces have contributed to the examples of good practice contained within this document:

Avon and Somerset Constabulary
Devon and Cornwall Constabulary
Lancashire Constabulary
Northumbria Constabulary
West Midlands Police
West Yorkshire Police

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Foreword

The use of body-worn video has the potential to improve significantly the quality of evidence provided by police officers, police community support officers (PCSOs) and public bodies within the criminal justice system in the drive to reduce crime and the fear of crime and increase the proportion of offences brought to justice.

Police forces have utilised video evidence for several years through local CCTV, police vehicle systems and hand-held devices employed during specific operations. Body-worn equipment will enable the Police Service to make far greater use of video evidence due to its increased availability on the front line, as officers will be able to maintain the use of their hands and peripheral senses while recording an incident.

‘A picture paints a thousand words’, and a video recording from the scene of an incident will capture compelling evidence of the activities of suspects and will enable the raw emotion and action from the scene to be replayed in the courts in a manner that could never be captured in written statements. The courts can see and hear the incident through the eyes and ears of the officer at the scene, thereby gaining a real understanding of the actions of the accused and the challenges that face the Police Service today.

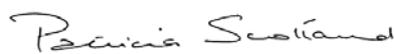


Tony McNulty MP
Minister of State for Security,
Counter Terrorism and Police

Individuals under arrest have been more likely to plead guilty at an early stage in the justice process when confronted with the clear recorded evidence of their actions, saving significant time for all sectors. The video has proved highly beneficial in supporting victims of domestic violence. For the first time, the attitude of the offender at the time of police attendance can be relayed to court, reinforcing the need for effective action and support.

Increased use of these cameras has also allowed officers to develop their personal skills, aiding the professional development of newly appointed staff and their more experienced colleagues who can review their performance at operational incidents in detail. It has also been used to negate malicious complaints.

This manual has been produced following extended trials conducted by Plymouth BCU, whose efforts will no doubt prove to be of great value in assisting other areas of the Police Service when they implement this technology.



Baroness Scotland
Minister of State for Crime Reduction

Executive summary

The use of video in this context provides a compelling evidential record as to the conduct of suspects, and police evidence gathering has become a specialist role within many policing operations, particularly in public order situations. However, while the evidence gathered by hand-held video and CCTV systems is highly beneficial to prosecutions and in the prevention of crime, the manner in which such equipment is employed can be restrictive, discouraging a wider use of video evidence.

The police use of body-worn video (BWV) commenced with small-scale tests of a head-mounted video system in Plymouth BCU (Devon and Cornwall Constabulary) in 2005. First significant deployments of BWV were during the Police Standards Unit (PSU) led Domestic Violence Enforcement Campaign (DVEC) in February and March 2006. The system was recognised as having the ability to significantly improve the quality of the evidence provided by police officers at incidents.

Media coverage of the system led to significant national and international interest, and other BCUs commenced small-scale use of the system. The PSU found that BWV has significant potential to improve the effectiveness of operational policing and has therefore sought to identify the most effective practice in the use of this technology. Through this guidance manual it seeks to standardise practices in the use of the technology, provide guidance on the legal and procedural framework and identify the appropriate technical specifications to make the technology fit for policing purposes in England and Wales.

In October 2006 Plymouth BCU commenced an extended use trial funded by local partners, with 50 head-mounted cameras to be used in as many operational situations as possible by the 300 trained staff in three sectors of the BCU. The PSU has utilised this local trial as an opportunity to assess the effectiveness of the technology for the Police Service nationally and to inform this practice guidance. The independent evaluation of the Plymouth Head Camera Project

conducted by Process Evolution is included as [Appendix A](#) to this manual.

This guidance has also been informed by consultations at national level with the Information Commissioner's Office (ICO), Crown Prosecution Service (CPS), Home Office Scientific Development Branch (HOSDB), National Policing Improvement Agency (NPIA) and various Association of Chief Police Officers (ACPO) lead officers. The aim of this manual is to demonstrate the benefits and drawbacks of these systems in capturing video evidence of police officers, police community support officers (PCSOs) and other partners in the wider police community.

BWV provides significant advantages over normal hand-held video recording systems, primarily the fact that users do not need the support of a minder to engage in recording, as their peripheral vision is not hindered by the use of the equipment and both hands remain free. This encourages a wider use of video evidence than was previously possible.

The recordings from BWV units provide a fairly complete record of what the officers saw and heard at incidents. There are, however, limitations to the technology and users must be aware that some aspects of incidents that are vital to the evidence for the offence may occur out of camera view, that sound recordings may not be complete or that other sounds at the scene may block significant statements by those present. Importantly, there is the further possibility of other technical failures or operator errors that may hinder the production of the recorded evidence. Thus users need to ensure that they remain mindful of standard evidence gathering procedures at scenes and must not rely solely on the BWV evidence to support their case.

The ease of use of this technology is likely to encourage much wider use of video evidence to support prosecutions in court. However, the expense and limited operational availability of this equipment will undoubtedly mean that not all officers or PCSOs will be able to have access to BWV equipment, and forces must

be careful not to create an expectation that all officers will be able to have video equipment with them at all times.

It is crucial that the wider use of such video evidence should not take primacy over other types of evidence, such as statements from police officers or other eyewitnesses. Police officers and other criminal justice agencies, particularly CPS prosecutors, must resist any suggestion that an absence of video images in any way weakens the strength of conventional evidence used in a case.

HOSDB have devised a [technical specification](#) for a police-ready BWV unit which is included within this manual. This specification was devised through consultations with users both in Plymouth and in other police areas where BWV has been in use. Managers should ensure that any future purchases are fully compliant with this specification.

This guidance must be read in conjunction with the [ACPO and Home Office Digital Imaging Procedure \(DIP\) \(2002\)](#)¹ and the forthcoming [ACPO Practice Advice on Police Use of Digital Images](#).² For ease of use, some sections of these documents are reproduced in this guidance; in other sections links are provided as footnotes to guide users to the relevant documents.

KEY FEATURES OF BODY-WORN VIDEO

EVIDENTIAL QUALITY

In providing traditional police evidence, an officer will make a written record of the incident, including the language and gestures that were used, as soon as possible after the incident occurs. Using BWV, the incident is recorded in real time and as precisely as possible, limited only by the field of view and audio range of the device. The evidence is therefore far more accurate than was previously possible, and doubts as to what was done or said by any person present can be minimised.

TIME SAVING

Using BWV at incidents has enabled officers to present their evidence in a consistent and accurate manner. The recording is produced as an exhibit and therefore the officer has to spend less time recording the incident as a statement or in their pocket notebook. Another time-saving effect of BWVs is an increase in guilty pleas, resulting in less time spent preparing court papers and attending court. BWV recordings have also been shown to those wishing to make complaints about police actions at the scene of or en route to incidents. In a number of cases the complainants have reconsidered their complaint after this review, thus reducing investigation time for unwarranted complaints.

PUBLIC ORDER POLICING

As part of the Plymouth BCU trial, officers used the equipment during their Operation Talon public order patrols in the city centre's night-time economy district. Offenders and their solicitors have, in the majority of cases, accepted the evidence captured of public order offences during the investigation when viewed the following day. Previously, the offender may have had no recollection of the incident and may have disputed the allegation. This has resulted in swifter resolution of cases and fewer contested cases going to court, thereby reducing officer time.

FIREARMS DEPLOYMENTS

During the trial period a BWV unit was in use by an authorised firearms officer of Lancashire Constabulary. The unit recorded a deployment to an incident where a Taser was used to subdue a man armed with a knife. The BWV recorded fully the information received by the officer prior to arrival at the scene, the circumstances that led to the officer's use of the Taser and the aftercare given to the subject. BWV may therefore have the significant benefit of providing an accurate record of the justification for police use of firearms or less-than-lethal weapons.

¹ <http://hosdb.homeoffice.gov.uk/publications/docs/digimpro.pdf>

² DIP is currently under review, and version 2.0 is to be published together with the ACPO practice advice document

DOMESTIC ABUSE

The evidence gathered using BWV at the scene of a domestic abuse incident has assisted greatly in supporting reluctant witnesses through the court process. In providing an exact record of the demeanour and language of the accused, the disturbance throughout the scene and the emotional effect on the victim, the use of BWV can significantly strengthen the prosecution case.

ANTI-SOCIAL BEHAVIOUR

Officers using BWV at anti-social behaviour hotspots have noted that persons present significantly reduce the level of their behaviour when officers with head cameras attend, more so than just with the presence of a police officer or PCSO. The equipment can have a greater impact than street CCTV or vehicle-borne cameras as they can be deployed at any position within the incident; those present quickly learn that the recordings include sound, and BWVs are more obvious than other CCTV systems that can blend into the background after a short time.

PROFESSIONAL DEVELOPMENT

BWV has been utilised by Professional Development Units as a training aid for student officers. The ability to review their performance in detail after an incident is a powerful tool for officers to highlight effective and ineffective actions. When reviewing their evidence, experienced officers who have used the equipment have also been able to assess their behaviour and can professionalise their performance accordingly.

IMPLEMENTATION ISSUES

Should a force or BCU consider implementing BWV within their area, they must be aware of the technology, support and storage issues associated with BWV (the precise level and detail of support functions required will depend on the level of BWV usage).

The technology is still relatively new and improvements are regularly made by the manufacturers; flexible service agreements may therefore be beneficial. Any procurement process should also consider the **technical specification** and **health and safety** aspects of this guidance, as well as the training requirements and views of users related to providing new equipment for operational uniform police officers and PCSOs. Forces/BCUs should ensure that the equipment is simple to use and maintain.

Depending on the number of units in use within an area, the provision of this additional technology will probably require support from a 'back office' facility or similar specialist support function. While this may be provided through existing technical support functions, the additional technology and evidence production functions may require additional or redeployed police staff. Wide use of the technology will create a significant increase in the volume of data to be stored – either in the form of CD-ROMs or DVDs, on a RAID server or on force networks.

Finally, the aim of BWV is to provide enhanced evidence in court. It is therefore essential that the local CPS is consulted about the equipment and its use and that local courts have the ability to view the evidence when required. It is also recommended that force technical services or IT departments are consulted prior to any local implementation.

Legal requirements

The use of BWV described in this guidance is ‘overt use’. BWV cameras might be small, but they are not to be worn or used in a hidden or covert manner. BCU managers should ensure that the use of the cameras is widely advertised prior to commencement, and that their use is reiterated by officers wearing a sign/symbol and/or making a verbal announcement where possible to those persons who may be recorded.

This guidance **does not** cover covert use of body-worn video devices.

This section contains outlines of legislation for consideration when implementing BWV at either BCU or force level. Further details of this legislation and its impact on local procedures can be found in the forthcoming [ACPO Practice Advice on Police Use of Digital Images](#) and within the relevant legislation itself.

All digital images obtained for policing purposes are referred to as police information, and should be treated in accordance with the [ACPO Guidance on the Management of Police Information \(2006\)](#)³ and the [Code of Practice on the Management of Police Information \(2005\)](#).

RELEVANT LEGISLATION

DATA PROTECTION ACT 1998

The Data Protection Act 1998 (DPA)⁴ is legislation that regulates the processing of ‘personal data’ or ‘sensitive personal data’, whether processed on computer, CCTV, stills camera or any other media. Any recorded image that is aimed at identifying a particular person or learning about their activities is described as personal data and is covered by the DPA; this is therefore likely to include all images and speech captured using BWV.

The Information Commissioner is the regulator of the Act and has enforcement powers where it is suspected that provisions of the DPA have been contravened.

The Information Commissioner’s Office (ICO) has been contacted with regard to police use of BWV equipment. While their guidance below has been provided in accordance with the DPA, compliance with the Act will depend upon the manner in which the equipment is used in practice, and they are obliged to consider any complaints they receive to ascertain whether any breach of the DPA has in fact taken place.

Principle 1 of the DPA (fair processing) requires that the data subject must be informed of:

- the identity of the data controller;
- the purpose or purposes for which the footage is intended to be processed; and
- any further information that is necessary for processing to be fair.

If possible, this information should be provided at the time they are being recorded or, if this is not practicable due to an ongoing incident, then as soon as possible afterwards. As a general rule, where an officer is in uniform and is clearly carrying or wearing a camera, the ICO would consider that this condition has been satisfied.

However, some versions of the equipment are quite discreet and would not necessarily be identified as cameras by members of the public, especially from a distance. Members of the public may also be unaware that the camera is capable of recording sound. In order to ensure ‘fair processing’, it is important that individual forces raise public awareness of the use of BWV in the relevant area, for example through the local press and on force websites.

³ http://www.acpo.police.uk/asp/policies/Data/MoPI%20Guidance_INTER_03.03.06.pdf

⁴ <http://www.opsi.gov.uk/acts/acts1998/19980029.htm>

BWV users should consider the reasonable expectations of the public. If a member of the public approaches an officer to ask a question, they may not expect to be recorded, and it is good practice to inform them that the camera is switched on. To judge whether a member of the public would reasonably expect to be recorded in a particular situation, officers may find it helpful to ask themselves whether they would normally use their pocket notebook in that situation.

With regard to the retention of footage that will not be used as evidence, it is the data controller's responsibility to devise a flexible policy that takes into account the ongoing relevance of different types of footage. It will be a matter of judgement in each case, since some footage may be relevant to the ongoing monitoring of a situation, while other footage should be deleted immediately.

Recorded footage that is initially considered to be 'non-evidential' should not be retained beyond the time where it is reasonably expected that it may be identified as being part of any investigation. The [Home Office/ACPO CCTV guidance](#)⁵ indicates that systems should retain footage for a period of 31 days for any investigation to become apparent, after which it should be deleted.

Forces should be aware that individuals could make a DPA subject access request or Freedom of Information Act 2000 (FOIA) request for any footage that is retained.

Any force or BCU wishing to use BWV in their area should consider undertaking the following steps in order to comply with the requirements of the DPA.

- Before any use of BWV, ensure that a series of 'fair processing notices' are utilised locally; for example:
 - a local media campaign to advertise the use of BWV, using local newspapers and other media and the force website;

- the use of street signs (see resource CD-ROM for an example) in areas where recordings are likely to take place on a regular and concentrated basis (such as in city centres or on housing estates);
- local community-based forums to advise residents of the use of this technology.
- Recordings should only be made in situations where the BWV wearer would previously have made a written record of the encounter.
- Officers should, where possible/practicable, announce to the subject(s) of an encounter that video and audio recording is taking place using BWV.
- Recordings should commence at the start of any deployment to an incident and should continue uninterrupted until the incident is concluded, either because of resumption of normal patrolling or because recording has commenced through another video system (e.g. at a custody centre).
- Recordings should not be made of general patrolling duties unless this is part of a specific operation (e.g. public order duties at football matches).
- All recordings must be securely held in accordance with force procedures. Access to recordings must be controlled and only persons having the 'operational need' to view specific incidents may view them.
- All footage recorded by the BWV must also be retained in accordance with personal data guidelines. Non-evidential recordings must be disposed of after a maximum of 31 days (as per [ACPO guidelines](#)).
- A record must be made of the destruction of any non-evidential recording.
- Prior to disposal, all reasonable steps must have been taken to ensure that the images are not required as evidence in any case under investigation.

⁵ <http://www.crimereduction.gov.uk/cctv/digitalcctvleaflet.pdf>

- Evidential footage must be retained in accordance with other requirements such as the [ACPO Guidance on the Management of Police Information \(2006\)](#)⁶ and must be disposed of in accordance with those timescales and guidelines.

The sharing of BWV images is covered by the DPA, and reference should be made to the Act and to the [ACPO Media Advisory Group guidelines](#)⁷ to ensure that if any images are shared with any agency or the media, then it is done lawfully. In the event that any images are to be shared with the media for the purpose of identifying any person shown in the images, then care must be taken to ensure that other persons shown in the recording whose identity is not sought are obscured.

The DPA applies to internal police use of BWV as well as external use, and if devices are to be used for monitoring staff or for regular spot checks then all relevant staff will need to be made aware of this. For further information, see the ‘Professional Standards Departments (PSDs) – working practices’ section.

For further information relating to the DPA see the [ACPO Data Protection Manual of Guidance \(2006\)](#)⁸ and the website of the ICO at www.ico.gov.uk

CRIMINAL PROCEDURE AND INVESTIGATIONS ACT 1996

The [Criminal Procedure and Investigations Act 1996](#)⁹ (CPIA) introduced the statutory test for disclosure of material to the defence in criminal cases. Full details of the disclosure test, the duties placed upon the prosecution team and public interest immunity can be found in the [ACPO/Director of Public Prosecutions \(DPP\) Disclosure Manual](#).¹⁰

It is a requirement that the police are in a position to disclose both used and un-used images and be able to demonstrate that this has been done. Deletion of any police-generated images (or a third party’s images in police possession) prior to their respective retention periods may amount to a breach of the Act if they are not then available for disclosure. Images that are relevant to an investigation must be retained in accordance with the Code of Practice issued under Section 23 of the CPIA (see Chapter 17 of the Disclosure Manual).

The forthcoming [ACPO Practice Advice on Police Use of Digital Images](#) will contain further information about this requirement. Police-generated digital images should be accompanied by a full audit trail, from the point of capture of the image throughout the whole management process – including when they are passed to the CPS or the defence or if there is any supervised viewing.

FREEDOM OF INFORMATION ACT 2000

The [Freedom of Information Act 2000 \(FOIA\)](#)¹¹ grants a general right to access to all types of recorded information held by public authorities, which may include digital images recorded by BWV.

The Act provides exemptions to the requirements to disclose information. These include national security (Section 24), investigations or proceedings (Section 30), law enforcement (Section 31) and personal information (Section 40).

For further information about the application of the FOIA to the Police Service and for further detail about the above and other exemptions see the [ACPO Freedom of Information Manual \(2000\)](#).¹²

⁶ http://www.acpo.police.uk/asp/policies/Data/MoPI%20Guidance_INTER_03.03.06.pdf

⁷ <http://www.acpo.police.uk/asp/policies/Data/magguidelines.pdf>

⁸ <http://www.acpo.police.uk/asp/policies/Data/ACPODPMoGV1.06.pdf>

⁹ <http://www.opsi.gov.uk/acts/acts1996/1996025.htm>

¹⁰ http://www.cps.gov.uk/legal/section20/chapter_a.html

¹¹ <http://www.opsi.gov.uk/acts/acts2000/20000036.htm>

¹² <http://www.acpo.police.uk/asp/policies/Data/foipubv1.2.pdf>

HUMAN RIGHTS ACT 1998

The Human Rights Act 1998¹³ brings the European Convention on Human Rights (ECHR) into effect in domestic law.

Article 6 of the ECHR provides for the right to a fair trial. All images from BWV have the potential for use in court proceedings whether they provide information that is beneficial to the prosecution or defence; they must therefore be safeguarded by an audit trail in the same way as other evidence that is retained for court.

Article 8 of the ECHR is the right to respect for private and family life, home and correspondence. Police forces are required to consider this article when dealing with recorded images, whether they were made in public or private areas. Recordings of persons in a public place are only public for those present at the time, so those situations are therefore still regarded as potentially private (*R v Brentwood Borough Council ex parte Peck* [2003]). Recorded conversations between members of the public should always be considered private.

Users of BWV must consider Article 8 when recording and must not record beyond what is necessary for policing purposes. If disclosing recordings for the purpose of tracing suspects or witnesses, this article must also be considered in tandem with the provisions of the DPA.

REGULATION OF INVESTIGATORY POWERS ACT 2000

Part 2 of the *Regulation of Investigatory Powers Act 2000 (RIPA)*¹⁴ covers acts of directed and intrusive surveillance. The Act identifies the procedures and authorities required in these circumstances.

This guidance is intended to provide direction in respect of the overt use of BWV by police officers and other law enforcement staff during the course of their daily patrols. Therefore the provisions of RIPA are not applicable to the use of BWV provided it is used overtly in the manner described in this guidance.

¹³ <http://www.opsi.gov.uk/acts/acts1998/19980042.htm>

¹⁴ <http://www.opsi.gov.uk/acts/acts2000/20000023.htm>

¹⁵ <http://www.opsi.gov.uk/acts/acts2005/50015--k.htm#116>

POLICE AND CRIMINAL EVIDENCE ACT 1984

Section 64A of the *Police and Criminal Evidence Act 1984 (PACE)* (as amended by *Section 116 of the Serious Organised Crime and Police Act 2005*¹⁵) permits a person to be photographed, with or without their consent, by a constable elsewhere than at a police station. The power is applicable if the person has:

- been arrested by a constable for an offence;
- been taken into custody by a constable after having been arrested for an offence, by a person other than a constable;
- been made subject to a requirement to wait by a CSO; or
- been issued with a fixed penalty notice by a constable, CSO or accredited person.

Within Section 64A the definition of a photograph includes a moving image (i.e. BWV). Other circumstances in which BWV might be used to record images are not covered by PACE, but there is also no provision within PACE that specifically prohibits the taking of photographs – whether moving or still – without a person's consent.

Code of Practice D of PACE relates to the identification of persons by police officers and includes the use of video identification. If any BWV footage captured by the police is to be used to assist with the identification of suspects, then officers must ensure that the Code is followed.

CROWN PROSECUTION SERVICE ADVICE

The underlying principle of using BWV is that it can be used as evidence. Therefore, advice from the Crown Prosecution Service (CPS) has been sought in order to ensure that the gathering of BWV evidence is satisfactory and will be admissible in court.

When producing any form of digital evidence it is essential that the *ACPO and Home Office Digital Imaging Procedure (DIP) (2002)*¹⁶ and the forthcoming *ACPO Practice Advice on Police Use of Digital Images* are followed.

The BWV units used within trials to date contain an internal hard drive (or similar initial storage medium) to digitally record the incident, and the CPS agrees that the retention of the whole device for court purposes is not practical due to cost, storage space availability and the possibility of overwriting or corruption during operational use.

Operators must therefore create a master copy disk that must be a 'bit-for-bit' copy of the original recording of the information contained on the hard drive. This master copy must be secured in such a manner that its evidential integrity is preserved throughout the court process.

In accordance with the DIP, a master copy disk can therefore be created on a 'write once, read many' (WORM) media; this should then be sealed and retained as an evidential exhibit item in accordance with local force policy and procedures. Access to this disk should only be allowed in accordance with force procedures. Therefore, officers should also create a working copy from the original media for use during the investigation process, for making notes and disclosures.

In the event that the quality of the original recording (video or audio) requires enhancement, this work should be undertaken using the working copy. At the conclusion of the processing, a copy must be sealed as a master version of the incident post-enhancement. Statements dealing with the technical enhancement process and an audit trail will be required.

EVIDENTIAL STATEMENTS

One of the perceived advantages in using BWV equipment is that the user is able to produce a 'perfect memory' of everything they saw and heard at the incident they have attended. Any video recording of an

incident is likely to provide better evidence than an officer's recollection and subsequent note or statement making.

If the recording covers the whole incident, it is not essential for the officer(s) to produce a written statement detailing the entire nature of the interactions contained in the video footage, as this is avoidable duplication. If two officers are present at the same incident and one of the officers records the whole incident while the other actually deals with the incident, the resultant recording can be utilised as the evidence for both officers as long as it shows the entire incident. The recording officer should also make notes of the incident to cover any additional points that may be outside the view of the camera as well as all evidential information required in the event of technical failure.

The statement must include details of the evidential audit trail for the production of the master disk, and in order to assist prosecution and defence solicitors it is advisable that the statement producing the exhibit contains a summary paragraph outlining the evidential aspects of the incident and the recording. The texts for suggested model statements are shown on the associated resource disk.

It is recommended that the officer records each incident in its entirety, from the time of deployment to the conclusion. If there is any break in the recording, details and the reason for this must be included in the officer's statement.

BWV users must be mindful that although the recording shows significantly greater detail than could be previously possible, the recording contains only what is in the range of the camera and sound that is picked up by the microphone. Some offences, such as breaches of the Public Order Act 1986, require evidence that a person was put in fear. This evidence must still be included in the statements of those who were present and, if applicable, the BWV user.

¹⁶ <http://hosdb.homeoffice.gov.uk/publications/docs/digimpro.pdf>

For some minor offences, such as the offence of being drunk and disorderly, the expert opinion evidence requires the officer to provide a number of observations (smell of intoxicants, eyes glazed, etc.) to prove drunkenness that may not be effectively shown by the recorded BWV evidence. In such cases, the officer may decide that a short written statement is the more expedient way to provide the evidence and that the BWV evidence can be retained as unused material. Each case should be considered on its merits to enable the officer to give the evidence in the most effective manner.

Users must also be mindful that, although the recording shows significant detail, some evidential information may take place out of view or hearing of the camera or microphone. This could be a result of poor alignment or because of the nature of the incident, for example where the main subject of the recording is talking or indicating to someone else outside the field of view. It is important that this information is recorded in statements so that the full detail of the evidence can be properly considered in any subsequent proceedings.

In considering the above, it may prove helpful, if practicable, for the user to provide some kind of running commentary detailing the evidence that is not present in the video (e.g. distinctive smells such as cannabis) to assist subsequent viewers.

TECHNICAL REQUIREMENTS

In order to ensure that the evidence is appropriate for use in court, it is desirable that the unit should record and play video and audio data in the same format – without any loss of data through compression and replay options.

In order to meet disclosure requirements, it is also desirable that the video/audio record and replay format is a common ‘industry standard’ format that will be available to the vast majority of defence solicitors through universally available, computer software.

Having to purchase specialist software to replay the evidence when it is disclosed to defence solicitors may render the recorded evidence unusable for the intended purpose, requiring lengthy transcriptions or the need to routinely enhance or alter the evidence. This should be avoided, as it will cause additional expense.

If police forces or BCUs are intending to make significant or regular use of this type of technology, they must ensure that their local CPS is equipped and able to review the footage, and that the courts in their area are able to show the footage in any hearings.

USE OF BWV IN PRIVATE DWELLINGS

If a BWV user is called to attend a private dwelling, provided this is an incident that would normally be the subject of a pocket notebook entry, the officer should record the incident using BWV in the same way in which any other incident is recorded.

As previously stated, it is a legal requirement under the DPA to provide ‘fair processing information’. Therefore the BWV user should, where practicable, make a general verbal announcement that recording is taking place; this is particularly relevant when in a private dwelling. Recording should only be used when it is relevant to the incident, and users should be mindful of the rights of individuals to respect for a private and family life under Article 8 of the ECHR.

In some circumstances officers may find that one party may object to the recording taking place, for example where there are allegations of domestic abuse. In such circumstances officers should continue to record while explaining the reasons for recording continuously; these reasons might include:

- that an incident has occurred requiring police to attend;
- that the officer’s continued presence might be required to prevent a breach of the peace or injury to any person;

- the requirement to secure best evidence of any offences that have occurred, whether this is in writing or on video, and that the video evidence will be more accurate and of a higher quality and therefore in the interests of all parties;
- that continuing to record would safeguard both parties, with a true and accurate recording of any significant statement made by either party and of the scene;
- that the incident may reoccur in the immediate future; or
- that continuing to record will safeguard the officer against any potential allegations from either party.

It is therefore recommended that officers continue to record where incidents are occurring or allegations of a criminal nature have been made. However, if it becomes clear that the incident is not a police matter (e.g. not an allegation of a suspected or potential offence) and as such would not have been the subject of an entry in an officer's pocket notebook, then the officer should cease recording. In such circumstances it is recommended that the officer make a verbal announcement that the recording is being stopped prior to stopping the video. The officer should also announce that, if any incident begins while the officer is still present, then recording will resume immediately. Footage taken in private dwellings should be deleted as soon as practicable if it is not relevant to any criminal investigation or prosecution.

In relation to incidents of repeat domestic violence, retention for longer periods may be considered necessary in order to protect victims and their children or to provide evidence for courts to consider in respect of proceedings such as non-molestation orders.

TECHNICAL FAILURE

In the event of a technical failure of BWV equipment, either through accidental damage or malfunction, it is vital that the officer is still able to provide the best

possible evidence through a traditional statement. It is therefore crucial that users of BWV remain attentive throughout the incident and, if required, are able to recall evidential aspects of the encounter.

If the event is partially recorded prior to the equipment failure, the officer should produce the recorded evidence as usual and provide a statement covering the entire incident, including the reason, if known, for the equipment failure. If the reason for failure is not apparent then a statement from a suitable engineer should be obtained at the earliest opportunity.

This is equally true for cases where the camera is knocked out of alignment or dislodged during the incident. Officers must ensure that they do not rely solely on the equipment to gather their evidence – they must still be able to provide an evidential account proving any alleged offence without reliance on any BWV recording.

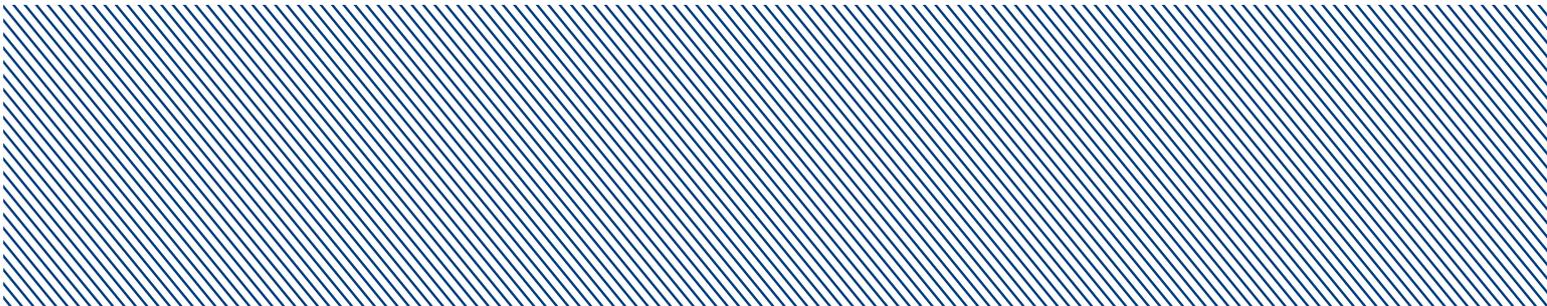
CAPTURING FIRST ACCOUNT EVIDENCE

During any incident it is likely that BWV users may record the first account of victims and/or witnesses. Therefore witnesses may be permitted to review their account prior to the making and signing of any written statement. Care must be taken to ensure that witnesses are not permitted to review any aspect of the recording other than their own initial account. Their statement should also refer to the viewing of the recording of their first account.

This is equally applicable for police officers and staff, who may refer to the BWV recording prior to making any statement.

SIGNIFICANT WITNESS INTERVIEWS

The video or audio recording of key or significant witness interviews is recommended by the [ACPO Murder Investigation Manual](#) in cases of serious crime. An investigator can also consider video or audio recording significant witness interviews in any other serious case where it may be helpful to the case.



For further information and guidance on conducting interviews with key or significant witnesses see the [ACPO Investigative Interviewing Guidance](#).

BWV can be used for such interviews as long as the practice advice relating to these procedures is followed and the interviews are conducted without distractions such as passers-by or background interference. In such cases the witness would be asked to provide a short statement to confirm that the evidence provided by them on video is accurate.

If the equipment is used to record a witness's evidence-in-chief under the special measures provisions outlined in the joint publication [Achieving Best Evidence in Criminal Proceedings: Guidance for Vulnerable or Intimidated Witnesses, including Children](#),¹⁷ the normal procedures for that situation must be followed. Care must be taken in particular to ensure that the setting for such recordings is appropriate and that specially trained staff conduct the interview. In general, however, where other more appropriate or bespoke technology exists for these purposes then it should be used instead of BWV.

TRANSCRIPTION

As the BWV recording is an exhibit produced by a police officer, there should not be a need for it to be transcribed. Only in exceptional circumstances should a transcription be required, for example if the sound is of a poor quality, or if the speech contains a high degree of slang or is in a foreign language, in which case the services of a translator should be obtained.

Even when the exhibit concerned has been the subject of an audio transcription, the video contains a great degree of visual information such as actions and gestures that put the language into context. Hence, even if a transcript is provided, the video exhibit should still be shown in conjunction with the written text.

¹⁷ <http://www.homeoffice.gov.uk/documents/achieving-best-evidence/guidance-witnesses.pdf?view=Binary>

Standard operating procedures

The use of BWV devices must complement the use of other video and digital evidence gathering devices within forces. The procedures below should be considered a minimum standard for the use of BWV devices; they should be used as a basis for force operating procedures or standing orders related to the use of this equipment.

These procedures have been designed with regard to the current legislation and guidance for the use of overt video recording of police evidence. Before implementation, BCUs must consider the impact of the BWV on the force IT network and the need to store a significant volume of recorded digital images on a server or as CD-ROMs or DVDs.

All recorded images are the property of the force or organisation that creates them and must be retained in accordance with force procedures and the forthcoming [ACPO Practice Advice on Police Use of Digital Images](#). They are recorded and retained for policing purposes and must not be shown or given to unauthorised persons other than in accordance with specified exemptions.

OBJECTIVES

BWV is an overt method by which officers can obtain and secure evidence at the scenes of incidents and crimes. This procedure is intended to enable officers to comply with legislation and guidance to create evidence for use in court proceedings.

When used effectively, BWV can promote public reassurance while detecting and reducing crime and anti-social behaviour. Recordings will provide irrefutable evidence that will improve the quality of prosecution cases and may reduce the reliance on victim evidence, particularly those who may be vulnerable or reluctant to attend court.

Using recordings can also impact on the professionalism of the Police Service and on the professional development of officers. Officers, trainers and supervisors can utilise the equipment to review and improve how incidents are dealt with.

BWV EQUIPMENT

BWV equipment provided for police users should be compliant with the recommendations in the ‘[Technical specifications](#)’ section of this guidance. Equipment should be password-protected so that unauthorised users cannot access recordings and so that only administrative users are able to delete images after they have been saved to a suitable WORM media for evidential purposes or retention in accordance with the [Code of Practice on the Management of Police Information \(2005\)](#).

TRAINING

In order to use BWV equipment, officers should receive training in all the necessary technical aspects of the specific equipment being used. A training package for the equipment should include:

- legal implications
 - Police and Criminal Evidence Act 1984
 - Criminal Procedure and Investigations Act 1996
 - Data Protection Act 1998
 - Human Rights Act 1998
 - Freedom of Information Act 2000
 - Regulation of Investigatory Powers Act 2000
- local procedures
 - tactical options
- equipment familiarisation
 - assembly
 - wearing
 - use
 - securing of images

- practical use issues
 - when to commence and cease recording
 - recording an incident
 - creating master and working copy disks
 - using video to prepare statements
 - reviewing first accounts with witnesses
- evidential continuity
- health and safety
- diversity issues
- professional standards

At the successful conclusion of training, officers will be locally authorised to use the equipment in operational policing situations. This training does not replace full optical evidence gathering training. Officers who have completed the BWV training are not fully trained in optical evidence gathering and must only be used in situations appropriate to the training that they have received.

A record of successful training should be maintained in force or BCU personnel records and resource management staff should be informed of the new skills; these can then be entered into command and control systems so that appropriate deployment can be made when necessary.

A PowerPoint presentation detailing a suggested training package, together with lesson plans to assist instructors, are included on the attached resource disk to inform and assist BCUs that are planning to implement this technology.

EQUIPMENT ISSUE

When not in use, all equipment must be securely stored in a suitable location within the police station.

BCUs should ensure that a suitable issue and returns log is available in order to show evidential continuity if required. A supervisory officer should issue equipment to trained officers when appropriate to the operational situation.

When issued with the equipment the user must ensure that it is working correctly prior to leaving the station. This should include the following basic checks:

- unit is correctly assembled;
- recording picture is the right way up;
- sound recording level is appropriate to use;
- date and time stamp is accurate.

The user must record in the issue log, their pocket notebook or similar that the checks were made and that the unit was functioning correctly prior to patrol. The officer should then set the unit to standby mode so that the unit is ready for use as and when required.

RECORDING AN INCIDENT

After issue, the decision to record or not to record any incident remains with the user. The user must be mindful that failing to record an incident is likely to require explanation in court. Therefore, if the user is present at an evidential encounter, they must record the incident.

Recording must be incident-specific: users should not indiscriminately record entire duties or patrols and must only use recording to capture video and audio at incidents that would normally be the subject of pocket notebook entries, whether or not these are ultimately required for use in evidence. There are some instances when recording should not be undertaken, and further guidance on when not to record is included later in this section.

All recordings have the potential to be used in evidence, even if it appears to the user at the time of the incident that this is unlikely (e.g. a stop and search with a negative

result). Therefore it is important that all recordings are treated as evidential in the first instance – until it is confirmed otherwise.

It is evidentially important to record as much of an incident as possible. Recording should begin at the earliest opportunity at the start of an incident, so users should commence recording:

- when deployed to an incident by the control room, a supervisor or other source; or
- as soon as the user becomes aware that any other encounter is likely to be the subject of a pocket notebook entry.

At the commencement of any recording, the user should, where practicable, make a verbal announcement to indicate why the recording has been activated. If possible, this should include:

- the date, time and location;
- the nature of the incident to which the officer is deployed; and
- confirmation to those present that the incident is now being recorded using both video and audio.

If the recording has commenced prior to arrival at the scene of an incident, the user should, as soon as is practicable, announce to those persons present that recording is taking place and that actions and sounds are being recorded. Specific words for this announcement have not been prescribed in this guidance, but users should use straightforward speech that can be easily understood by those present, such as “I am video recording you”, “I am video recording this incident” or “everything you say and do is being recorded on video”.

Wherever practicable, users should restrict recording to the areas and persons necessary in order to obtain evidence and intelligence relevant to the incident; they should attempt to minimise collateral intrusion on those not involved.

Unless specific circumstances dictate otherwise (see below), recording must continue uninterrupted from the commencement of recording until the conclusion of the incident or resumption of general patrolling. It is advisable that the officer continues to record for a short period after the incident to clearly demonstrate to any subsequent viewer that the incident has concluded and that the user has resumed other duties or activities.

Recording may also be concluded when the officer attends another area such as a custody centre where other recording devices are able to take over the recording.

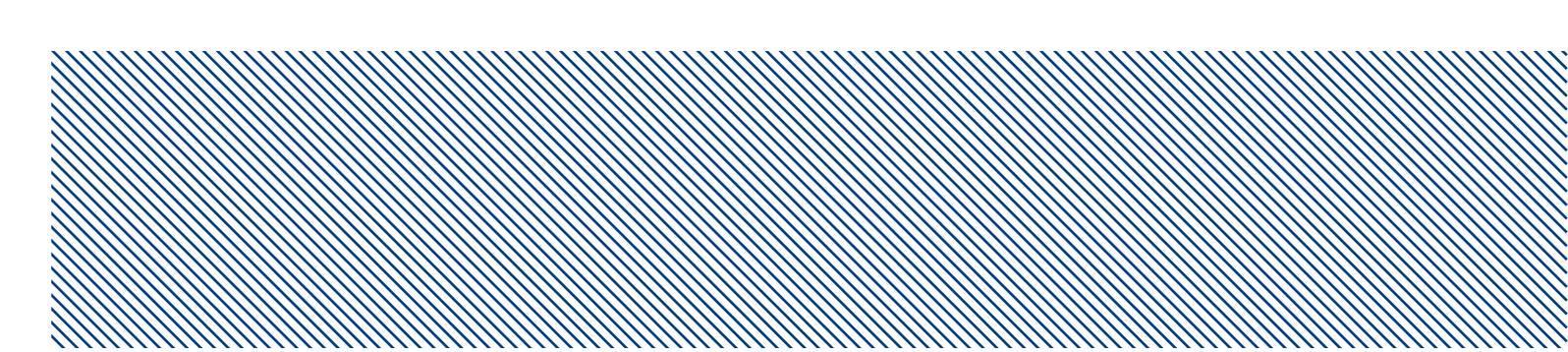
Prior to concluding recording, the user should make a verbal announcement to indicate the reason for ending the recording. This should state:

- the date, time and location; and
- the reason for concluding recording.

Once a recording has been completed, it becomes police information and must be retained and handled in accordance with the [Code of Practice on the Management of Police Information \(2005\)](#). Therefore any recorded image must not be deleted by the BWV user and must be retained as required by the code of practice. Any breach of the code may render the user liable to disciplinary action or adverse comment in criminal proceedings.

PARTIAL RECORDINGS

There may be occasions where an incident is only partially recorded, such as through technical failure, the equipment being knocked, covered or dislodged during a struggle or through the nature of the incident where the camera view is restricted. There may also be occasions where the sound recording is unclear or verbal responses are difficult to hear because of other more prominent sounds such as police radio traffic or noise created by strong winds.



A partial video or audio recording will not in itself cause a case to fail at court, but other evidence will be needed to prove the case to the required evidential standards. In such cases the user must retain and produce any recording that is created and then be able to provide a statement detailing the other necessary evidence. Users of BWV must therefore ensure that they gather and retain evidence through normal (non-video) means and must not become reliant on video recording for provision of their evidence.

Similarly, the existence of a recording will not in itself prove all aspects of an offence, and users must be mindful to note – and be able to give evidence of – factors not visible in the recording, such as emotions or details that occur outside the range of the camera.

STOP AND SEARCH AND STOP AND ACCOUNT

The conduct of any ‘stop and search’ or ‘stop and account’ process must comply with the relevant legislation and codes of practice. They must be carried out with due regard to the sensitivities of the person being stopped and any local community tensions surrounding the use of such powers by police. Recording of searches using video must not be carried out if the search is an ‘intimate’ or strip search and if the search requires removal of more than the outer clothing.

A video recording does not replace the need for a written ‘record of search’ to be completed by the officer and given to the person stopped or searched at the time or within the specified time period.

BWV users are reminded that although officers conducting stop checks must ask for personal details, persons searched are not obliged to give their name, address and date of birth to the officer conducting a search. In such cases, officers must record a description of the person searched as part of the search record. There is currently no specific power within PACE to take a photographic or video image of a person during a stop and search, although such action is not explicitly

prohibited. Therefore, if requested, officers should consider whether it is necessary to record the encounter with a BWV device.

Recording a stop and search or stop and account encounter with BWV will:

- record the conduct of the officer during the search, therefore safeguarding both parties and protecting the officer from false allegations;
- enable the officer to secure the best possible evidence of any offences that are disclosed during the search; and
- accurately record any disclosures made by the subject.

In the event that the subject of an encounter requests that the BWV be switched off, the user should ensure that the subject is aware of the above points. They should also consider advising the subject that:

- any non-evidential footage is only retained for 31 days, in accordance with the ACPO guidelines and the DPA;
- this information is therefore restricted and cannot be disclosed to third parties without their express authority unless prescribed by law; and
- recorded data is police information and that it can be accessed on request in writing in accordance with the FOIA.

It is then for the user to consider on a case-by-case basis whether or not to switch the recording off. If the equipment is turned off at the subject’s request and items are then found that may be subject of further investigation or proceedings, recording should then resume in order to capture the subsequent evidence, thereby overriding the subject’s request.

SELECTIVE CAPTURE AND BOOKMARKING

Selective capture does not involve deletion of any images; it is merely the user making a choice of when to



record and when not to record. It also describes the process of temporarily stopping and restarting recording in order to 'bookmark' the recorded footage.

There are no circumstances in which the unauthorised deletion by the user of any images that have already been recorded can be justified, and any such action may result in legal or disciplinary proceedings.

SELECTIVE CAPTURE

In general the BWV user should record entire encounters from beginning to end without the recording being interrupted; however, the nature of some incidents may make it necessary for the user to consider the justification for continuing to record throughout entire incidents.

For example, the recording may be stopped in cases of a sensitive nature or if the incident has concluded prior to the arrival of the BWV user. In all cases the user should exercise their professional judgement in deciding whether or not to record all or part of an incident. In cases where the user does interrupt or cease recording at an ongoing incident, they should record their decision in a pocket notebook or similar log, including the grounds for making such a decision.

One such example of where ceasing recording may be appropriate might be the following: a domestic assault has taken place in a private dwelling, the offender has been removed from the scene, and the BWV user has recorded an initial account from the victim and recorded the scene of the alleged offence. In these circumstances the user should consider whether continuing to record through statement-taking or other administrative processes is appropriate or necessary.

BOOKMARKING

In recording an incident, it is likely that BWV users will encounter victims, offenders and witnesses, as well as recording the visual evidence at the scene itself. Selective capture is a means by which users may separate encounters with each of these types of person or occurrence in order to allow for easier retrieval and disclosure at a later time. For example, if a police officer

has recorded an encounter with a witness that includes their name and address, then this section should not be shown to the suspect or their legal representative.

It is recognised that bookmarking is not always practicable due to the nature of incidents; therefore it should only be attempted if the situation is calm and the operator is easily able to undertake this procedure.

Prior to any temporary suspension for the purpose of bookmarking, the user should make a verbal announcement, for the purpose of the recording, to clearly state the reason for briefly suspending recording. Following the pause, the user should also announce that they have recommenced recording.

The bookmarking process will be demonstrated on the final whole recording of the incident by a missing section of a few seconds. In creating the master disk exhibit for court, the user must include all bookmarked sections for the incident as one complete master recording of the incident.

WITNESS FIRST ACCOUNTS

If the BWV user is approached by victims or witnesses who are giving their first account of the crime, the user may record the encounter using BWV. However, this should be considered against the needs of the individual, with due sensitivity to the nature of the offence being reported. Any initial disclosure from victims and witnesses recorded by BWV should be treated as an evidential recording.

Where possible, if multiple witnesses wish to give their accounts to an officer with a head camera, then the bookmarking process should be adopted so that individual accounts can easily be separated.

Such recordings do not replace the need for formal written statements from victims or witnesses, but they can be used as supporting evidence for the statements and can also be considered as hearsay evidence and used in accordance with the provisions of the [Criminal Justice Act 2003](#).¹⁸

¹⁸ <http://www.opsi.gov.uk/acts/acts2003/20030044.htm>

Initial questioning of victims and witnesses should be to obtain answers to significant questions that will assist the early investigation. Officers should use ‘open’ and ‘non-leading’ questions to establish whether an offence has been committed, assess the current risk to the victim and witnesses, and identify and prioritise areas of the investigation.

If this recording amounts to the victim’s first notes or initial description of suspects, then they may refer to the relevant section of the video when making their written statement. Care must be taken to ensure that only the witness’s own account is recorded and then reviewed by the witness. They must not be allowed access, in any way, to other sections of the recording. Nor must their account be prompted by other persons not present at the scene. The extent of any review by the witness must also be included in their statement.

In the case of victims of serious sexual offences, the user must consider the [ACPO Guidance on Investigating Serious Sexual Offences \(2005\)](#). The victim’s explicit permission for the video recording of the initial disclosure should be sought; if the victim is in any way unsure of the need for the recording to be made, or is uncomfortable with the thought of being recorded, then the user should not record using video. Recording the initial disclosure to the police can have significant benefits to the progress of the subsequent investigation, as the content of the disclosure will be accurately recorded and is easily passed to the investigating officer.

If the victim does not consent to being video recorded, the user may consider the option of diverting the camera away from the victim, disconnecting the camera or obscuring the lens (e.g. placing the camera inside a pocket) and then recording the encounter using only the audio facility. Again, the explicit consent of the victim must be obtained prior to beginning the recording.

Initial accounts from the victim should be limited to establishing:

- any need for medical assistance;
- the nature of the incident (to ascertain whether a specially trained officer is required);
- the identity of the suspect (if known);
- the location of the suspect (if known);
- a first description of the suspect (for circulation if appropriate);
- the time of the offence (in order to prioritise action);
- the location of the crime scene(s);
- any forensic opportunities, including information for forensic medical examinations;
- any activities since the offence took place (to establish forensic evidence opportunities);
- the identity of any other person(s) informed of the incident by the victim (to ascertain early complaint); and
- the existence and identity of any witness(es) to the offence or to events immediately prior to or after the offence.

(ACPO Guidance on Investigating Serious Sexual Offences, Checklist 4)

SCENE REVIEW AND PREMISES SEARCHING

An additional use of BWV is to record the location of objects and evidence at the scene of a crime or during the search of premises. This can be particularly beneficial in allowing the senior investigating officer an opportunity to review scenes of serious crime or in effectively recording the positions of vehicles and debris at the scene of a serious road traffic collision. This should be

treated as an evidential recording and where possible the officer should provide a ‘running commentary’ of factual information to assist later viewers.

When conducting a premises search, the BWV can be used to show the conduct of the search, to confirm where items were found and to record significant statements made by persons present at the scene. This could greatly assist the completion of search logs and the evidence presented at court will be enhanced.

LIMITATIONS ON USE

BWV is an overt recording medium and can be used across a wide range of policing operations. In all cases users and supervisors must use their professional judgement with regard to recording. There are some examples of situations where the use of BWV is not appropriate; the following list is for guidance only and is not exhaustive.

- Intimate searches – BWV must not, under any circumstances, be used for the video or photographic recording of intimate searches or in any other circumstances where persons are in a state of undress.
- Legal privilege – users must be careful to respect legal privilege and must not record material that is, or is likely to be, subject to such protections.
- Private dwellings – while the use of video at the scene of domestic violence incidents is covered in other sections, users must consider the right to private and family life (Article 8 of the ECHR) and must not record beyond what is necessary for the evidential requirements of the case.

AUDIT TRAIL

In order to prove the authenticity of recordings, it may be necessary for evidential continuity statements to be produced to confirm that any sealed master copy has not been tampered with in any way. The BWV operator must therefore include the following within their statement:

- unit serial number/identifying mark;
- day, date and time they took possession of the equipment (time A);
- day, date, time and location they commenced recording (time B);
- day, date, time and location they concluded recording (time C);
- day, date, time and location that master copy disk was created and sealed (time D); and
- whether any other person had access to or used the unit between time A, B or C and time D (if so a statement will be required from that person).

PRODUCTION OF EXHIBITS

In order for the recorded evidence to be presented in court, the master copy must be preserved as an exhibit. It is recommended for reasons of security that this takes place as soon as practicable after the footage is recorded and that users do not start duty with a recording device that contains evidence of cases from a previous duty or day.

Creation of exhibits must follow the *ACPO and Home Office Digital Imaging Procedure (DIP) (2002)*¹⁹ and a master disk in the form of a CD-ROM or DVD (WORM) computer disk containing all footage of the incident must be created and sealed in accordance with local force procedures. The master disk must be a ‘bit-for-bit’ copy of the recording on the device. Users should also create a working copy disk for use and review in preparing case papers and from which any disclosure can be made to the defence.

It is not essential for the master disk to be created by the user who made the recording, although this method may be preferred if the number of cameras or authorised users in an area is small. An alternative in areas where large volumes of BWV evidence are being captured is to have master disk exhibits created by a technical assistant.

¹⁹ <http://hosdb.homeoffice.gov.uk/publications/docs/digimpro.pdf>

If the master disk is created by a second person, then evidence of continuity in procedure must be provided through statements showing the audit trail of the equipment.

Where more than one BWV device is present at the scene of an incident or the area of the incident is also covered by a CCTV system, the officer in the case must ensure that all available footage of the incident is secured as exhibits in consideration of any defence arguments that may be presented.

Officers dealing with all cases involving video and CCTV evidence must be mindful of the 'Birmingham defence', whereby:

A video recording had not been disclosed to the defence, even after specific requests for unused material to be served were made. By the time of the trial the tape could not be found and there was no prospect of it being found. It was held that the prosecution was under a duty to disclose; that the defence was prejudiced as a result of the non-disclosure; and that a fair trial was therefore impossible.

PROVISION OF COPIES FOR THE DEFENCE

In general terms BWV recordings should be disclosed to the defence in the same manner as other case exhibits. It should only be necessary to provide copy disks to the defence in the case of actual or anticipated not guilty pleas. Where Criminal Justice: Simple, Speedy, Summary (CJSSS) schemes are in place, local consultation should take place to ensure that while necessary information is provided as swiftly as possible, resources (both time and physical) are not wasted through the provision of materials that will not be used.

STORAGE, RETENTION AND DELETION

All recorded material must be stored and retained in a secure manner in accordance with force procedures, the forthcoming ACPO Practice Advice on Police Use of

Digital Images and the ACPO and Home Office Digital Imaging Procedure (DIP) (2002).²⁰ (Note that the DIP is currently under review and any amendments to that document will affect the required procedure for data obtained using BWV.)

MAINTENANCE OF EQUIPMENT

Equipment must be kept in good working order and it is the responsibility of each trained user to ensure that the equipment is well maintained. Forces or BCUs that wish to adopt the technology must be aware of the routine maintenance requirements of the equipment prior to undertaking significant investment in the technology.

During the Plymouth Head Camera Project, 50 cameras were purchased for use across three sectors of the BCU. In order to service the cameras and to produce the evidential exhibits, the BCU set up a back office facility with two police staff, an office and additional IT equipment. This represented a significant investment for the BCU. Further detail can be found in the section on the Plymouth BCU Head Camera Project.

Units must be checked prior to deployment to ensure that they are working correctly and this should be confirmed when the unit is returned. In particular:

- Batteries should be charged prior to use and immediately recharged on return.
- The time and date settings should be synchronised with a central clock.
- The camera lens should be clean and the picture clarity of suitable quality.
- A suitable central maintenance staff member should be identified to ensure that the units are well maintained and that units are regularly (preferably daily) downloaded so that recorded footage is not retained on the units.
- A fault-reporting system should be in place, with an agreed contractual support and repair system with suppliers.

²⁰ <http://hosdb.homeoffice.gov.uk/publications/docs/digimpro.pdf>

Tactical options

Attached to this manual is a DVD that includes example footage from the Plymouth Head Camera Project. This will allow managers to examine the results that can be achieved through the use of this technology.

During the Plymouth project the cameras were used to gather evidence across a wide range of policing situations, including domestic abuse incidents, roads policing, public order policing, stop and search, anti-social behaviour patrols, and premises and crime scene searching. The camera's constant availability to users enabled digital video evidence gathering across the whole spectrum of operational policing and in essence there is no limit to the types of situation where the equipment could be used – provided it is used overtly and in accordance with this guidance.

In other areas of the country where trials have taken place, BWV has been used by authorised firearms users, where the cameras have the potential to capture the justification for the police use of firearms and to show how the officers reacted to these highly stressful situations.

FUTURE DEVELOPMENTS

Future developments of this technology include the ability for live streaming of the images from the BWV unit to a nearby vehicle or command centre, or in combination with automatic number plate recognition technology. These types of technology are already available through some suppliers and may be of particular relevance to pre-planned operational situations such as enforcement warrants and public order or firearms policing, where the operational controller or commander would benefit from live views from the front line. Such developments must ensure that recording still takes place and is not compromised through the streaming or other additional processes.

The technology used during the trial in Plymouth had some features that the project team believed could be improved upon in future versions. Firstly, having the battery contained within the recording unit meant that the units were 'offline' while their batteries were charging. Allowing for interchangeable batteries would require fewer units, since batteries could charge while units are in use.

Secondly, the method for storing footage on the units in the trial was a hard drive contained within the unit. Technology for removable media such as Flash memory cards would improve the turnaround time of the units because users could simply remove and seal their memory card for processing while the device is passed on to the next user. These two changes could combine to make the BWV units more efficient.

Professional Standards Departments (PSDs) – working practices

Please note that this section relates to complaints about the conduct of police officers and staff and not to complaints about the policy of whether to use BWV in different policing operations. Such complaints about the control and direction of the force do not form part of the complaints system monitored by the Independent Police Complaints Commission (IPCC). Such a complaint should be referred in the first instance to the local police BCU Commander for reply and/or further action as appropriate.

The Police Service has well-established complaints and discipline procedures. All police officers and staff are subject to the code of conduct. Any member of the public, fellow officer or staff member is able to make a complaint about the conduct of any officer or member of staff, and all officers have a responsibility to secure and preserve evidence of any complaint made about the conduct of officers and staff. Such complaints are subject to independent review and scrutiny by the IPCC.

While BWV evidence is usually obtained and retained for criminal proceedings, any recordings are also evidence in relation to complaints against police officers and staff, and must be secured at the earliest opportunity.

USE OF BWV AND POTENTIAL MISCONDUCT

OFFICERS USING BWV

If an officer attends an incident and is recording evidence using a BWV camera, the whole incident should be recorded in accordance with force procedures. Users must not intentionally fail to record an incident by, for example, turning away without good cause or deliberately obstructing the camera lens. Such calculated actions may render the BWV user liable to a misconduct investigation.

MISCONDUCT IDENTIFIED DURING REVIEW

Recordings from incidents are likely to be reviewed by supervisory staff, for example during the gatekeeping process for decision making prior to charge, or by police staff such as technicians during review to produce exhibits.

If, during such a review, evidence is identified that indicates actual or potential misconduct, the person who has witnessed the conduct must bring this to the attention of an officer who is not involved in the recorded activity and who is of at least the rank of inspector. This officer should consider the nature of the recorded conduct and deal with the matter in accordance with force misconduct procedures.

THE RECEIPT OF COMPLAINTS AGAINST POLICE

All complaints received from the public about the conduct of any officer or member of staff must be recorded on the appropriate forms in accordance with existing national and force procedures.

Upon receipt of a complaint against an officer or a member of police staff, the supervisor who initially deals with the complaint must ascertain whether a BWV camera was used during the incident in question. Such information should be readily available from the officers who attended the incident, and by studying local issue/return logs and control logs.

If BWV camera footage is available, it should be viewed by the supervisor receiving the complaint, who should ensure that the complainant is aware that the recording exists. The supervisor viewing the footage should make master and working copy disks from the original recording; these should be created and sealed in accordance with force procedures.

The supervisor may show the footage to the complainant and provide a commentary of the facts shown in the footage together with an explanation of any procedures disclosed. If the complainant subsequently withdraws their complaint, the matter should be fully recorded on



the force's relevant forms and the complainant should sign to confirm that their complaint has been withdrawn.

If, due to the timing of the complaint, the original recording has been deleted but a master disk has been created and is still in existence, this master disk must be secured by the officer receiving the complaint and the PSD must be made aware of its location. If the master disk is part of an ongoing criminal investigation relating to the same incident, it must also be retained for the complaint investigation.

If a force or BCU has established a back office facility, then master and working copy disks should be requested for the complaint investigation in accordance with local procedures for obtaining the exhibits.

Only footage relating to the incident that is the subject of the complaint should be reviewed and retained.

INVESTIGATION OF COMPLAINTS AGAINST POLICE

LOCAL RESOLUTION

The majority of complaints against police officers and staff are dealt with through local resolution procedures. This includes those complaints that are immediately resolved by supervisors.

If a complaint is to be dealt with by means of local resolution and BWV footage is viewed by the local supervisor, then a record of this and a summary of that footage must be included on the complaints form prior to submission.

In undertaking a local resolution, the local supervisor may consider it useful to show the footage captured by the BWV camera to the complainant. Such action should be recorded and, while showing the recording, the supervisor may also give procedural or legal explanations of the activity shown in the recording.

Complainants have a right of appeal regarding the local resolution procedure. Therefore any footage relating to a complaint that has been locally resolved must be retained for at least 28 days following the incident concerned, in case an appeal is lodged.

INVESTIGATION BY THE PSD

Upon receipt of a complaint that is to be investigated by the PSD, the nominated investigating officer should establish whether BWV evidence is available and must secure the evidence for the complaint investigation at the earliest opportunity.

Footage not directly relating to the incident(s) concerned will not be obtained by the investigating officer, and open access to any BWV database or library of footage will not be granted unless exceptional circumstances exist and authority is granted by the head of the PSD.

During the course of an investigation into a complaint, the relevant BWV recording may reveal evidence of another minor misconduct that is not subject of a complaint. It is then at the discretion of the investigating officer to contact the supervisor of the individual concerned in order to give appropriate 'words of advice' to the individual in question. Such action will also need to be recorded.

If, during an investigation into a complaint against police, BWV footage reveals evidence of serious misconduct or a criminal offence that is not the subject of the original complaint, then that will be investigated by the PSD in line with current policies. Any subsequent or additional footage relating to the incident(s) will be secured by the PSD for use in the investigation.

Health and safety risk assessment

With the use of any equipment there is a legal requirement for employers and employees to assess the level of risk when undertaking any task. The following are considered to be risks associated with the use of BWV by police officers and staff.

While every care has been taken to consider all possible risks, this list is not exhaustive and local risk managers and individual users should consider the possibility of additional risk factors and take appropriate action to manage the identified risk.

Individual force risk assessment policies and procedures will vary; the model risk assessment below should therefore be appropriately adapted to suit local policy and procedures. It is recommended that this list of considerations be combined with local risk assessments for general patrols or operational risk assessments where BWV is being deployed.

Hazard	Specific risk	Risk level	Control measures
Assault	Wearer becomes target for assault through overt use of video camera	Low	Ensure that BWV is used at all incidents Avoid confrontation unless necessary Non-BWV users also present to be aware that the head camera user may be targeted and to assist where necessary
Injury	Wearing the unit on the head can cause injury to the neck through repetitive strain	Low	The head camera unit is lightweight and must be worn in accordance with the manufacturer's instructions Users should remove the camera from their head when not on patrol or at incidents
Injury	Electric shock from equipment if damaged	Low	Equipment to be inspected prior to deployment, any faults to be reported to a supervisor and equipment not to be used if damaged If damage occurs during deployment, stop using the unit and return to station
Injury	Entanglement with camera lead	Low	Ensure that leads are appropriately secured prior to use; where possible, keep leads under outer clothing or stab or equipment vests Ensure that equipment cabling is 'curled' (like a telephone cable) by the manufacturer to contain the excess cabling in the neck area Provide suitable physical break point in cable

Hazard	Specific risk	Risk level	Control measures
Injury	Camera becomes warm during use	Low	Heat from the camera is considered to be low; if the unit does become hot, the user should remove it and allow it to cool or return it to store
Radio interference	Interference between a BWV unit and Airwave police radio if worn in close proximity, causing temporary radio failure	Low	Ensure that BWV and radio are worn on different sides of body Compliance with Police Information Technology Organisation Automotive Conformance Specification 5 will prevent this potential problem (see paragraph 3.3 of the 'Camera and video recording system' section of the 'Technical specifications' section) and the letter on page 42
Assault	Strangulation of the user with the lead by an offender	Medium	Leads to be routed beneath outer clothing or stab or equipment vests to ensure that they cannot easily be seized by an assailant Utilise appropriate officer safety techniques to avoid close physical contact with other persons/offenders Provide suitable physical break point in cable
Assault	Head injury through impact of the camera by an assailant when worn against the head	Medium	Utilise appropriate officer safety techniques to avoid close physical contact with other persons/offenders
Contagion between users	Sharing units between multiple users may lead to the transfer of infectious agents or bodily fluid through skin and hair transfer	Medium	Ensure that suitable wipes are available to disinfect each unit after use Consider issuing personal headbands to each user
Injury or illness	Wearing the unit on the head may cause soreness or discomfort from the headband leading to headache or similar condition	Medium	Remove the headband at regular intervals and whenever in the station Identify headband suitability or consider other options for positioning the camera on the body or uniform

Plymouth BCU Head Camera Project

BACKGROUND

In July 2005, the Plymouth BCU commander Chief Superintendent Watts tasked Sergeant Tayler with evaluating the potential of head cameras for local police use. PS Tayler was selected because of his significant experience in optical evidence gathering. A system was sourced through a local company and in November 2005 PS Tayler used a prototype head camera over a weekend shift. The unit was returned to the company with a list of recommended developments and in December 2005 a second version of the head camera which incorporated the suggested improvements was made available to PS Tayler, who considered the revised unit suitable for extended testing in an operational environment.

One head camera unit was purchased by the Plymouth Crime and Disorder Reduction Partnership (CDRP) and was ready for deployment in January 2006. It was utilised in Plymouth during the Police Standards Unit's Domestic Violence Enforcement Campaign, which ran during February and March 2006 with some excellent results. The successful prosecution in March 2006 of Fiona Linehan for a domestic violence incident led to world-wide media coverage of body-worn digital recording systems.

The initial success of the first unit resulted in a further five units and associated laptop computers being purchased for Plymouth BCU by the CDRP. This enabled each sector within Plymouth to have the capability to capture evidence and create exhibits for court.

In May 2006 Chief Superintendent Watts extended the use of head cameras within the BCU through a pilot project to fully test the technology and its potential effectiveness for the Police Service nationally. PS Tayler was asked to lead this pilot Head Camera Project and funding was secured from the following sources to ensure that an effective trial could be mounted within the BCU: Government Office for the South West (GOSW) (£40,000); Neighbourhood Renewal Fund (NRF)

(£85,000); Devon and Cornwall Police Authority (£80,000); and the Home Office Police Standards Unit (independent evaluation and guidance).

Due to the significant size of the project, a project team was identified and PC Bateman was seconded to the team as assistant lead officer for PS Tayler. The project was overseen by Chief Inspector Matthews for the BCU senior management team.

Prior to the commencement of the pilot, a showcase event was held in Plymouth jointly hosted by GOSW and Devon and Cornwall Constabulary, which 19 police forces attended. Further presentations have taken place both locally and nationally to other forces and also to the Policing Minister on his visit to the Devon and Cornwall Constabulary area.

The head camera project team trained 300 officers and staff to use the equipment in the selected sectors of the Plymouth BCU. A further 50 head-mounted cameras with recording units were purchased and a supporting back office facility was established with two police staff technicians responsible for the maintenance of the equipment and the production of exhibits for officers. The project formally commenced on 27 October 2006 (following a two-week phased implementation) and concluded on 31 March 2007.

AIMS AND OBJECTIVES

- To provide police officers with an optical evidence technological solution that will reduce bureaucracy, improve sanction detections and streamline the criminal justice process.
- To reduce challenges to police officer evidence in court.
- To increase early guilty pleas, reducing wasted police officer and court time.
- To reduce the number of malicious complaints made against police officers.

- To reduce incidents of violent crime in the South and Central sectors of Plymouth – these are predominantly areas for business and the evening and night-time economy.

The aim of the pilot project was to test the concept that using the head camera can realise the benefits above. It required very close consultation with local and national criminal justice partners and resulted in the forging of an excellent working relationship that has been extremely beneficial to all the partner agencies.

This was designed to be a six-month project that would look specifically at violent offences, including violence in public places, alcohol-related violence and domestic violence incidents.

The team identified challenging targets for the project, which were as follows:

- Reduce violent crime in Plymouth's South and Central sectors by 10% by the end of March 2007 (measurable through police violent crime statistics).
- Increase sanction detections for violent crime – specifically violence in public places and domestic violence (measurable through police and CPS data) – by 15%.
- Reduce the sanction detection attrition rate for violent crime by 10% by the end of March 2007 (measurable through police statistics for violent crime sanction detections).
- Increase the offences brought to justice (OBTJ) for violent crime – specifically violence in public places and domestic violence (measurable through police and CPS data) – by 15%.
- Reduce the OBTJ attrition rate for violent crime by 10% by the end of March 2007 (measurable using CPS statistics).
- Reduce by 30% the time spent by officers on paperwork and file preparation in incidents where the

head camera has been deployed (measurable through internal activity-based costing surveys).

- Reduce complaints against police – specifically for incivility and excessive use of force where head cameras are deployed (measurable through Professional Standards Departments' data) – by 40%.

Due to the early successes of the project, some local partner funding has been secured for the next two years, Plymouth BCU has further expanded its use of BWV across all sectors and all frontline staff are now trained in its use.

EQUIPMENT USED

The equipment that was identified at the time as a potentially suitable product was the Archos AV500 100GB digital hard drive. This is a consumer product which has been adapted to include security software in the form of a date and time stamp and password protection for the deletion facility. The unit is connected to a full-colour overt camera worn on a headband resting just above the user's left ear. This ensured that the camera equipment was clearly visible to members of the public.

A back office facility was set up to manage the data recorded and to facilitate retrieval of footage for interview and court purposes. This required a standalone computer with a storage capacity of approximately 900GB set out as two drives. This allows the footage to be divided according to whether it is evidential or non-evidential, and therefore ensures that footage is deleted after 31 days in accordance with ACPO and DPA standards. This is supported by a Buffalo RAID back-up device with a 4 x 500MB back-up facility.

BACK OFFICE FACILITY

Prior to the extended pilot, Plymouth BCU had 10 BWV units and the data collected was managed by means of a standalone laptop in each of the six stations within the BCU. This involved individual officers being personally responsible for the management of the footage they

captured, including the production of disks for evidence as required. While this was a relatively simple process, it did require more than basic computer literacy and officers found the process complicated if they did not undertake the task on a regular basis.

It was considered that a standalone laptop would be sufficient to manage a maximum of five BWV units as more than this would make the potential demand on a single laptop unmanageable. With an increase in the number of BWV units used during the pilot to 50, the cost of the laptops to enable officers to effectively manage footage made this system of working financially unviable.

To overcome this problem, a back office facility was created at a central police station. The purpose of the back office facility was to be a 'one-stop shop' for all aspects of the management of BWV devices, including storing and maintaining all the equipment, liaising with the supplier in the event of equipment failure and giving technical advice to frontline officers.

The primary role of the back office facility staff was the management of all the data and recordings captured by officers using BWV. This included:

- inputting the submission forms completed by officers;
- synchronising the equipment with a secure computer system;
- ensuring that all the captured images were appropriately stored within a suitable software management system;
- producing evidential media (WORM CD-ROM or DVD) for investigation or prosecution purposes;
- providing still images from recordings for briefing purposes or media appeals as appropriate; and
- ensuring that current legislation was being adhered to in respect of the deletion of non-evidential recordings.

All disks produced by the back office facility were stored at the office in secure cabinets that were easily accessible if required for court purposes. This storage system contained its own unique reference-numbering system to make it easy to search the large number of disks produced during the pilot.

Once a BWV device had been processed, it was the responsibility of the back office facility to ensure that the footage on the unit was deleted, the batteries were charged and the unit was ready for the next deployment as soon as practicable.

During the pilot, the back office facility (BOF) was staffed with two head camera technicians (HCTs) who were seconded members of police staff who both had extensive backgrounds in IT and software development. To run the BOF for the period of the pilot, it was established that it would require two full-time HCTs and a third trained person from the project team to cover one weekend in three as well as cover for sickness and leave, etc. The BOF was therefore available seven days a week.

ADDITIONAL BENEFITS TO DATE

There have been a number of positive results from using head cameras in the Plymouth BCU:

- A number of complaints against police have been negated by supervisors at the earliest opportunity after viewing the footage available on the head camera units.
- Officers have reported that they are now more aware of how they interact with members of the public, which may lead to a subconscious improvement in professionalism by individuals and lead to a better quality of service to the public.
- Favourable feedback was received from a CPS lawyer about the impact that the head camera evidence had during a domestic violence case at court. The footage was very powerful because it showed how the defendant presented himself at the time of the



incident and reinforced the history of violence shown by him towards his partner.

- The project team has received feedback that members of the public positively adapt their behaviour when cameras are present and are less likely to be abusive or troublesome in front of police and PCSO BWV users.

PROBLEMS ENCOUNTERED AND RESOLUTIONS

During the first three months of the pilot project, users reported some difficulties with the equipment; some officers lacked confidence in the equipment due to the unit not recording when the remote switch had been activated.

The headband has been identified as uncomfortable for some users and others are unable to wear it due to the discomfort it causes to the temple area, resulting in fewer users. These issues have been raised with the supplier and steps are being taken to resolve them. A prototype headband designed by the project team is currently under trial within Plymouth BCU and has received favourable feedback. It also enables the head camera user to position the camera over either ear and thus reduce the risk of interference with the Airwave radio set

During the trial, there were a few occasions where users reported interference with Airwave radio transmissions when using BWV, so units from the trial were submitted to the HOSDB and Police Information Technology Organisation (PITO) for testing in accordance with their Automotive Conformance Specification 5 tests. They identified that this interference was caused by close proximity of electromagnetic field leakage at the cable joints and switch, and could be easily eliminated through additional shielding or through ensuring that BWV and Airwave units and cabling were at least 3cm apart on the user's body.

PITO will be providing test details to testing houses and new units should be submitted by manufacturers through testing houses for certification of compliance with this test to avoid any compatibility problems.

For more information about the Plymouth BCU Head Camera Project, visit www.devon-cornwall.police.uk/headcamera or email plymouthheadcampro@devonandcornwall.pnn.police.uk

Operational feedback

PLYMOUTH BCU COMMANDER

Chief Superintendent Morris Watts initiated and oversaw the trials in Plymouth and believes that head cameras are key to the future of policing and could eventually replace the notebook and pen, further reducing the volume of paperwork.

“I wanted to do everything I could to support this project. My personal contribution was working with various agencies to secure enough money to ensure this wasn't just a small pilot. I think even the sceptics would admit we've demonstrated proof of concept.

“The pilot provided a reduction in violent crime and improved detection rates as well as reducing officers' time spent preparing files and attending court. It's been a total success, and now we will make the equipment more widely accessible by increasing the numbers trained to include PCSOs, special constables and other specialist roles.

“This technology could eventually see much of our paperwork reduced, a substantial reduction in time spent on investigations and the provision of better quality evidence for the courts. This will increase our OBTJ outcomes and, will in doing so, raise levels of confidence in the service we provide.

“I have been fortunate that the Devon and Cornwall Constabulary is such a forward-thinking and innovative force. Without the flexibility to allow me to develop this project locally we would not have enjoyed the great successes we have had during this pilot.”

PLYMOUTH CPS

During the BWV pilot in Plymouth, a common assault charge relating to a domestic abuse case was heard at Plymouth Magistrates' Court. This was believed to be the first case where the evidence recorded by BWV was shown in court as direct evidence of domestic violence. The evidence showed the police officers taking the complaint from the victim and the offender being arrested at a neighbouring address. The offender reacted aggressively to being arrested and made further threats towards the victim. The prosecutor made the following comments:

“It was a new experience for me as a prosecutor to have the use of head camera footage but I must say that I found it extremely useful. It showed direct evidence of the behaviour and demeanour of the defendant and showed both his violent and aggressive behaviour.

“This related strongly to previous behaviour of the defendant and strengthened the witness evidence in what was essentially a case of one person's word against another's.

“The victim was deemed to be a particularly vulnerable female who had withdrawn her statement but, after close consultation with multiple agencies, she felt able to attend court when made aware that there was strong evidence to show the behaviour and demeanour of the defendant.

“The quality of the evidence was very good and ensured that the verbal threats that were made were clearly presented to the court.”

The defendant was found guilty of common assault and the breach of an anti-social behaviour order and was sentenced to six months in prison.

Technical specifications

The specifications listed below have been designed by the HOSDB in consultation with the Plymouth Head Camera Project team and other operational users. Due regard has been given to the requirements of operational policing to ensure that the equipment is practical and capable of producing evidence that can be played in a court.

The specifications are therefore strong recommendations for the Police Service to consider when purchasing BWV systems. However, if a system does not comply in every respect with these specifications, it will not render the evidence gathered inadmissible.

CAMERA AND VIDEO-RECORDING SYSTEM

SYSTEM OVERVIEW

The system will consist of a recording device linked to a camera and microphone. It will be capable of being operated by one person and will be worn in such a way as to allow the user to retain full mobility and to keep both hands free. It is intended as an overt recording system and full or partial concealment is not required.

MANDATORY REQUIREMENTS

1. Video

1.1 Recording

- 1.1.1 It should be possible to start recording by pressing a single button.
- 1.1.2 There should be a 'positive action' on/off button, so that the user can feel (with gloves on) whether they have successfully switched the recorder on or off.
- 1.1.3 Stopping recording should require a minimum of two actions (e.g. pressing two buttons), to reduce the possibility of accidental shutdown.
- 1.1.4 A clearly visible indicator(s) should denote when the device is on and actively recording.
- 1.1.5 The field of view to be covered by the lens should approximate the human visual

system, i.e. about a 40° horizontal angle of view.

- 1.1.6 The camera(s) must have a focal length such that an object 1.8m (5'9") tall will fill 50% of the viewing height at a distance of 7m.
 - 1.1.7 Recording must be in a non-proprietary, standard file format to enable replay on domestic DVD players and computers (PCs and Macs) without conversion.
 - 1.1.8 The recording device should **not** permit the editing or deletion of recordings. (The data will be deleted only after it has been archived to a computer, at which point the hard disk drive (HDD) or other storage medium will be wiped clean. However, the procedure to wipe the drive will be controlled from the archive computer to which the storage medium is connected, and not from the recording unit itself.)
 - 1.1.9 Each recorder should have a unique serial number.
- #### 1.2 Image quality
- 1.2.1 Recording should be at 25 frames per second.
 - 1.2.2 Recording should be at a minimum of VGA (640 x 480) resolution.
 - 1.2.3 The quality of the recording should be such that an individual should be recognisable up to a distance of 7m from the camera.
- #### 1.3 Storage
- 1.3.1 The recording device must be able to store a minimum of 24 hours of video for a hard disk-based recorder. For a Flash card-based system, the recording capacity should be more than the expected battery life.
 - 1.3.2 Filling the recording device should cause the device to cease recording – existing data must not be overwritten.

- 1.3.3 Data should be filed in a Windows-readable directory structure.
 - 1.3.4 Incidents should be stored in separate directories. (An incident is defined as the period between the start and stop buttons being pressed.)
 - 1.3.5 Long recordings should be split into segments, each of which is a maximum of 2GB in size. These files should be stored in the same directory and must be playable as one continuous piece of footage.
 - 1.3.6 File names should comprise the serial number of the unit and the date and time of the recording.
 - 1.3.7 Metadata (comprising unit serial number, date and time) must be displayed on the screen in a legible but unobtrusive manner.
 - 1.3.8 Data must be stored on a removable medium (e.g. removable HDD, Flash memory card etc.) and/or it should be possible to download the data from the recorder via a cabled download mechanism of a suitable speed, such as USB 2.0 or a Firewire (400 or 800). The download rate must be no lower than 350MB per second. USB 1.0 is not suitable for this purpose as the download rate is inadequate.
- 1.4 Playback
- 1.4.1 The recording device should provide a replay facility via an inbuilt screen.
 - 1.4.2 The display screen on the recording device will be high resolution to clearly display the metadata overlay on the image.
 - 1.4.3 The device should be capable of searching the incidents recorded by date and time to find the incident of interest. Once this recording has been loaded into the replay window, it should be possible to wind through it to identify the specific event of interest by means of fast forward, rewind, play, pause and stop controls or with a scroll-bar mechanism.
 - 1.4.4 Where a long recording has been split into separate files, the playback mechanism should retrieve the complete recording and allow seamless replay of the entire incident.
 - 1.4.5 A 'live view' display option should be available, to assist the officer to set the camera position and provide confirmation that the system is connected correctly.
- 1.5 Audio
- 1.5.1 Audio should be stored in a non-proprietary format, replayable on domestic DVD players and computers.
 - 1.5.2 Audio should be synchronised with the video recording.
- 2. Physical**
- 2.1 The mounting for the camera will not move after being set by the officer.
 - 2.2 The recorder must have the means to be securely attachable to a police officer's belt.
 - 2.3 The microphone will be positioned along the cable connecting the camera to the recorder, in order to capture both the officer's speech and that of the other parties to the conversation.
 - 2.4 Cable connections from the camera and microphone to the recording device will have a 'break point' as a safety feature to reduce the risk of injury to the officer. This should be located after the microphone but before the camera in the recording chain. The cable should be coiled to reduce the amount of exposed cable and so that it moves easily with the officer's head.
 - 2.5 Capture, record and storage device(s) should be sufficiently robust to withstand daily use in an operational police environment; for example, the recorder should have physical protection against knocks, should be shock and vibration-proof and should be able to record while the officer is running.

- 2.6 Interface controls must be of sufficient size and easily used by an officer who may be wearing gloves.
- 2.7 The unit must have a maximum total weight of 500g.

For head-mounted cameras

- 2.8 The camera will be attached to the officer's head or to the side of protective headwear (to capture the same view as seen by the officer) and fixed in place with a headband.
- 2.9 The headset should be secure and fully adjustable for the comfort and safety of the user.
- 2.10 The headset must be compatible with the wearing of all standard issue police headgear for male and female officers and PCSOs.

For body-mounted cameras

- 2.11 Body-mounted cameras should face forward and capture the scene that the officer has their body facing towards.

3. Environment

- 3.1. Ingress protection of camera (i.e. protection from dust and water) to IP 65²¹ standard.
- 3.2. The temperature range of operation should be -5°C to +30°C.
- 3.3 The system should not interfere with other electronic equipment carried by the officer, particularly the Airwave radio system. Therefore, compliance with Automotive Conformance Specification 5 of PITO guidance is essential.²²

4. Battery

- 4.1 Rechargeable batteries are essential.
- 4.2 A fully charged battery should provide power for at least eight hours' continual recording.
- 4.3 Batteries should be removed from the recording unit to be recharged, so that the recorder does not have to be withdrawn from service while recharging occurs.

5. Troubleshooting

- 5.1 Suppliers of the system should provide an adequate support network in the event of equipment failure.

DESIRABLE FEATURES AND CONSIDERATIONS

6. Additional features

- 6.1 Checksum of each file as it is created.
- 6.2 An audit trail in the device should be able to monitor usage, activation, replay and copying of footage from the device and further down the evidential chain to prevent unauthorised release of video or arguments over system deployments. This should be separate from the image file and completely unalterable. It should be in an easily readable form that a layperson can understand.
- 6.3 A function to allow recording and simultaneous replay of material would be desirable.
- 6.4 A camera with a rating of IP 67.
- 6.5 Upgrading firmware/software should be straightforward and should not require any connection to the internet.
- 6.6 There should be time synchronisation capabilities that an administrator can perform to ensure the units are all locked to exactly the same date and time.
- 6.7 Measures should be taken to prevent accidental unit shutdowns.
- 6.8 Screensavers would be desirable to save on battery life.
- 6.9 A targeting device on the camera is desirable to enable accurate recording for the officer. This should raise no safety issues and it should not be possible to activate this accidentally.
- 6.10 Devices/recording media should be tied to a particular workgroup of computers (as with multimedia players such as iPods) to prevent

²¹ www.aquatext.com/tables/ip_ratings.htm

²² For further information, please contact Jim Mathieson of the National Policing Improvement Agency (NPIA) on 07887 821 392, or email jim.mathieson@npia.pnn.police.uk

accidental download of material onto an unsecured computer, but there must be a facility for administrator override.

- 6.11 The supplier should provide data recovery assistance in the event of a catastrophic system failure.
- 6.12 An audible alarm should sound when the device is 95% full.
- 6.13 Metadata could be displayed onscreen in a user-defined position.
- 6.14 A global positioning system (GPS) could be integrated into the device that activates when the system is recording to document officer movement within an incident; this would be to show, at minimum, officer location (longitude and latitude), heading and altitude.
- 6.15 A barcode system of checking units in and out from the storage facility.
- 6.16 Provision of a range of mounting options to enable users in different situations to use the equipment (e.g. helmet, cycle helmet, NATO helmet, epaulette).
- 6.17 Provision of a range of mounting options for the head, so that each individual officer can select the most appropriate/secure/comfortable one.

ARCHIVE AND RETRIEVAL SYSTEM

SYSTEM OVERVIEW

This section sets out the specification for the back office facility for the storage, replay and archiving of video taken from BWV devices.

The solution will ideally be computer (PC) based and should allow the user to:

- download video from the body-worn camera;
- review video on the system;
- create master and working copies of evidential material on WORM media; and

- store non-evidential material for 31 days before deletion.

MANDATORY REQUIREMENTS

1. Hardware

- 1.1 The minimum amount of storage space required is 1TB, although upgradeable storage is desirable.
- 1.2 A RAID 1 redundant drive for hard drive failure should be incorporated, with alarm functionality to notify failure. Operation should continue unaffected using the remaining hard drive.
- 1.3 Master and working copies to be created on WORM media. WORM creation facility must consist of at least two drives to create a master and working copy simultaneously, although more drives may be required depending on police force requirements. Given the large volume of data to be archived, DVD drives (as a minimum) would be appropriate.
- 1.4 Connection to the BWV systems must be present, i.e. USB 2.0 devices, Flash card reader, Firewire port, caddy for removable hard drive etc.

2. Software

- 2.1. The graphical user interface should be a simple wrapper to allow a user to perform only the following functions:
 - 2.1.1 Log in to system.
 - 2.1.2 Download new video to the system from the recorder.
 - 2.1.3 Add label of officer ID (and the ID of person entering data onto system if different).
 - 2.1.4 Software should prompt the officer to decide whether the footage is evidential or non-evidential.
 - 2.1.5 Search data on the system by date and time of recording, recorder serial number, officer ID, and whether data is evidential or non-evidential.

- 2.1.6 Review data using simple play, pause, fast-forward and rewind buttons.
- 2.1.7 Frame-grabbing function to save stills from the file, and the ability to print out these images.
- 2.1.8 Allow officer to change status of the footage from non-evidential to evidential or vice-versa.
- 2.1.9 Create a master and a working copy by clicking one button.
- 2.1.10 User access must be limited to the graphical user interface and prevent access to the desktop.
- 2.1.11 Officer incident logs must be added to the system and filed alongside the video data, either by scanning in a handwritten document or by means of computer-generated forms.
- 2.2 Administrator function (password protected) to allow access to the desktop, install upgrades to firmware and software and to view and print the audit log.
- 2.3 The decision as to the status of the evidence must be made at the point of data input. The software will then tag evidential and non-evidential material differently. Non-evidential data should be auto-deleted after 31 days. Evidential footage should be deleted after the creation of the master and working copies (and verification).
- 2.4 The verification process must occur after the footage has been downloaded (from BWV to computer, and then from computer to WORM) to ensure that all data has been accurately transferred.
- 2.5 When it has been confirmed that the video has been transferred successfully from the BWV to the back office system, the data should be wiped from the BWV so that the unit can be redeployed.
- 2.6 There must be no facility for editing files.

3. Audit trail

- 3.1. The audit trail must contain the following items, with dates, times and user details of their creations and amendments:
 - when data is added to the archive system;
 - when data is reviewed;
 - when the status is amended;
 - who has viewed the file;
 - when the master is created;
 - when a working copy is created; or
 - when the data is deleted.

4. Disk management

- 4.1 The system should not over-write existing material that is either:
 - non-evidential and less than 31 days old; or
 - evidential and not archived to WORM.
- 4.2 A warning message must occur when the HDD fills to 95% of its capacity. If the HDD is full, then the system should stop accepting new data.
- 4.3 A warning message should appear on log-in if evidential data has not been archived, detailing those files that need to be archived.

5. Troubleshooting

- 5.1 Suppliers of the system should provide an adequate support network in the event of equipment failure.

DESIRABLE FEATURES AND CONSIDERATIONS

6. Additional features

- 6.1 Frame advance and rewind so that video can be closely scrutinised.
- 6.2 The supplier should provide data recovery assistance in event of a catastrophic system failure.
- 6.3 Automated writer, stacker and label printer for master and working copy creation.

Glossary

ACPO	Association of Chief Police Officers	PCSD	Police and Crime Standards Directorate
BCU	basic command unit	PCSO	police community support officer
BWV	body-worn video	PITO	Police Information Technology Organisation
CCTV	closed-circuit television	PSD	Professional Standards Department
CD-ROM	compact disk read-only memory	PSU	Police Standards Unit
CDRP	Crime and Disorder Reduction Partnership	RAID	redundant array of independent disks
CPIA	Criminal Procedure and Investigations Act 1996	RIPA	Regulation of Investigatory Powers Act 2000
CPS	Crown Prosecution Service	USB	universal serial bus
CSO	community support officer	VGA	video graphics array
DIP	Digital Imaging Procedure	WORM	write once, read many (times)
DPA	Data Protection Act 1998		
DPP	Director of Public Prosecutions		
DVD	digital video disk		
DVEC	Domestic Violence Enforcement Campaign		
ECHR	European Convention on Human Rights		
FOIA	Freedom of Information Act 2000		
GOSW	Government Office for the South West		
GPS	global positioning system		
HDD	hard disk drive		
HOSDB	Home Office Scientific Development Branch		
ICO	Information Commissioner's Office		
ID	identification		
IO	investigating officer		
IP	ingress protection		
IPCC	Independent Police Complaints Commission		
IT	information technology		
NPIA	National Policing Improvement Agency		
NRF	Neighbourhood Renewal Fund		
OBTJ	offences brought to justice		
PACE	Police and Criminal Evidence Act 1984		
PC	personal computer		

Resource disk (list of contents)

Example recordings from Plymouth Head Camera Project

Proactive patrols for anti-social behaviour and underage drinking

Football match

Misuse of drugs warrants

Stop and search

Professional development

Camera, knocked offline during use and not recording what was intended

Multiple cameras deployed at the same incident

Domestic violence incidents

Example recording from Lancashire Constabulary

Police use of Taser (recording of justification for use)

Example recordings are not to be shown outside a police environment without the express permission of the Home Office, Police and Crime Standards Directorate

Sample statements from Plymouth Head Camera Project

Statement of arrest – without creating own evidential disks

Statement of arrest – with creation of own evidential disks

Statement of use without arrest

Posters used during Plymouth Head Camera Project

‘Glass head’

‘Police van door’

‘Police, camera, action’

‘Video screen’

‘Handcuffed’

Plymouth street sign (fair processing notice under the DPA)

Plymouth Head Camera Project logo

‘Prevent, deter, catch, convict’

Training package:

PowerPoint presentation: training packages devised by and copyright to Plymouth Head Camera Project team and Devon and Cornwall Constabulary

Lesson plans to accompany PowerPoint presentation:

- 1 Introduction
- 2 RIPA
- 3 Concept and technology
- 4 Practical use
- 5 Professional standards
- 6 Diversity
- 7 Downloading and continuity

Letter to body-worn video suppliers from HOSDB Sandridge (29 March 2007)

For the attention of suppliers of overt body-worn video systems for police use

This note is to highlight that one of the key requirements for police use of body-worn video cameras is that there is no interference between these units and the Tetra radio (as well as other electronic equipment that the police are likely to carry).

It has come to our attention, following preliminary tests using a basic Archos AV500 with digital mini camera, that interference can occur due to radio frequency emissions from the region around the control switch that is on the cable between the camera and the recorder. Where the switch and the Tetra radio are in close proximity, this interference will result in reduced airwave coverage.

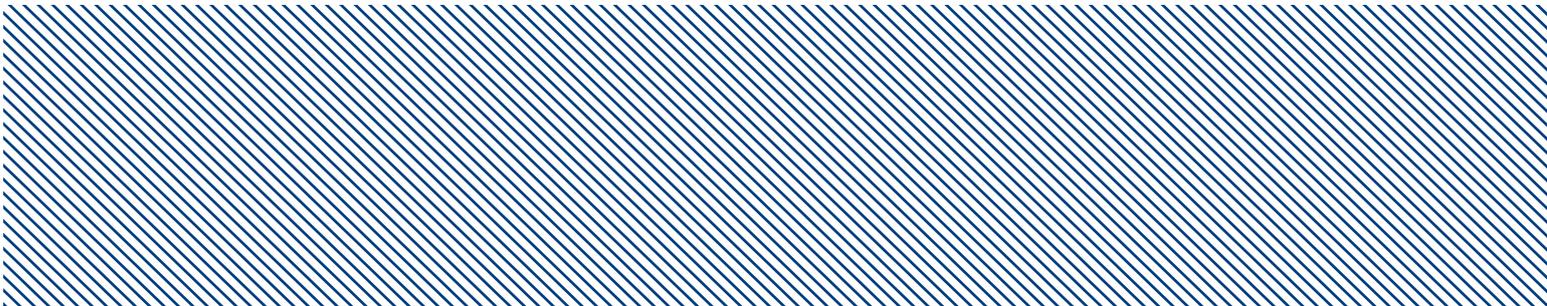
In order to ensure that any body-worn video recording equipment is suitable for police use it should conform to PITO Specification 5. For further details of Specification 5 and details of the appropriate tests that should be carried out on body-worn video camera systems, please contact Jim Mathieson, Head of the PITO Automotive and Equipment Section on 07887 821 392, or jim.mathieson@npia.pnn.police.uk

Neil Cohen
Programme Manager
Video Evidence Analysis

Appendix A: Plymouth Head Camera Project –
Body-Worn Video Recording System
(Head Cameras): National Pilot, Final Report,
April 2007

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Executive summary

The Home Office has been working with Devon and Cornwall Constabulary to analyse the results from the pilot use of head cameras by police officers. The pilot has been funded by Plymouth Basic Command Unit (BCU) in conjunction with local partners, the Neighbourhood Renewal Fund (NRF), Government Office South West (GOSW) and the Devon and Cornwall Police Authority. The pilot has primarily taken place within the South and Central sectors of Plymouth BCU, which encompass the business, evening and night-time economy districts of Plymouth City.

Process Evolution Limited was commissioned to examine the results. This was with the aim of quantifying any benefits associated with the use of head cameras, at the same time noting any issues. This report comments on the technology, the process and the resultant benefits. In addition, a simulation has been developed to model the potential impact of wider implementation.

Headline findings are as follows:

- increase in converting a violent incident into a crime (71.8% to 81.7%);
- increase in Penalty Notices for Disorder (and administration detections) (2.4% to 3.9%);
- increase in charge/summons (10.2% to 15%);
- increase in sanction detections (29% to 36.8%);
- complaints against the police reduced by 14.3% and significantly there were no complaints against officers wearing head cameras;
- reduction of 22.4% in officer time spent on paperwork and file preparation;
- increase of 9.2% of officer time spent on mobile and foot patrol (which equates to 50 minutes of a 9-hour shift);
- 90% of a random sample of the public surveyed in the city centre in the early evening were positive about the use of head cameras, and to date there has been no adverse media coverage.

TECHNOLOGY

During the pilot, cameras were booked out 1,564 times for a total duration of 10,000 hours; 3,054 recordings were made, totalling 530 hours of video (an average of 10.4 minutes for each recording submitted). Of the recordings submitted, 883 (28.9%) were tagged as ‘evidential’ for potential use within the criminal justice system (CJS). The technology offered some very good evidence. Unfortunately, it has not been possible to comment on the effect on court outcomes, owing to insufficient availability of data. Some minor issues were reported with the technology that reduced the uptake by officers, to do with comfort of the headgear and actual operation.

PROCESS

Currently the process for handling the evidence is robust, with a secure audit trail of evidence. However, the process could be streamlined further and thus is under review by the project team. The simulation model outlines one potential process, designed by the author.

The purpose of the pilot was to set out to demonstrate whether or not head cameras can enhance policing. The findings contained within this report appear to support the premise that they can make a valuable contribution. There is a reduction in officer time spent on paperwork and an increase in officer time spent on patrol. The high quality of the recorded evidence tends to increase the rate of guilty pleas. These factors serve to improve the efficiency and effectiveness of the justice process. Overall, quantitative and anecdotal evidence indicates an increase in the number of offences brought to justice, which is a desirable result for any policing service.

1. Introduction

Head cameras are small video cameras with the ability to record video and sound, mounted at the side of a police officer's head. They are clearly visible and used overtly. In addition to capturing evidence of an incident, officers are able to confront offenders with their actions by replaying footage to them in interview. On being shown evidence of their behaviour, offenders are more likely to plead guilty, or to accept cautions or Penalty Notices for Disorder (PNDs), rather than to contest their cases in court.

The Plymouth Head Camera Project evolved following a review of optical evidence gathering (OEG) within the Plymouth BCU, as a result of experiences during Operation Talon. Operation Talon concerned the policing of the business, evening and night-time economy areas of Plymouth City. It was apparent that there was a need for new technology and appropriate training because of physical obstructions in certain areas of the city which meant that CCTV footage could not be captured. Furthermore, within those obstructed areas, there had been serious assaults and disorder. In January 2006, Plymouth BCU took possession of a prototype version of a body-worn digital recording system (BWDRS), purchased through the Community Safety Partnership.

This pilot does not represent the first use of head cameras in Plymouth. They were used on a limited basis during a domestic violence enforcement campaign. This ran during February and March 2006 (eight weeks) and served to prove the potential value of such technology.

1.1 THE PILOT

The South and Central sectors of Plymouth BCU have had most involvement with the pilot, with limited use of head cameras by the other sectors. The focus of the pilot has been on violence-related incidents, including alcohol-related violence, violence in public places and domestic violence. The trial included the Christmas period, with its associated increase in alcohol-related incidents.

For the pilot, 300 police officers and police community support officers (PCSOs) were trained to use any of the 50 cameras available during day and night patrols; this trial therefore covers a wide breadth of incident types. There is also the potential to capture evidence of other crimes and any secondary crimes.

The relevant laptops and computer equipment were provided to the Crown Prosecution Service (CPS) and Magistrates' and Crown Courts by the Project Team, so that the head camera footage could be viewed when required, i.e. in preparation of the case or within the court itself.

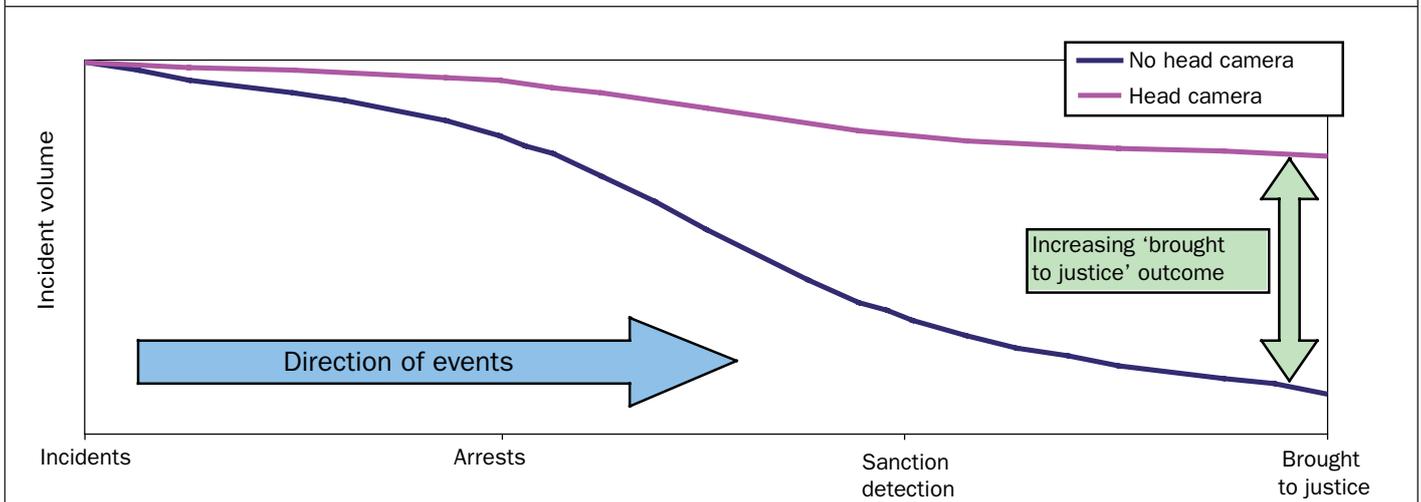
1.2 EXPECTED BENEFITS

Deploying the head camera technology is expected to provide a number of benefits as follows:

- **prevent** and **deter** crime, as the presence of a head camera is anticipated to change the behaviour of potential offenders;
- **catch** and **convict**, as the head camera footage will provide best evidence for the CPS to act upon.

The value added to the process of bringing offenders to justice is shown in Graph 1. If head cameras are used, there is an increased chance of making an arrest. If an arrest has been made, there is an increase in obtaining a sanction detection and 'brought to justice' outcome, compared to incidents that are not attended with a head camera.

Graph 1: Incident attrition



1.3 THIS REPORT

The objective of this report is to provide the Home Office and Devon and Cornwall Constabulary with independent analysis of the issues raised and benefits offered by the head camera in everyday policing.

In essence, this analysis has examined four key areas:

- analysis of the benefits against the key project measures;
- attrition analysis showing the effect along the process as the case progresses from initial report to officer attendance, to arrest, to charge, to court and finally to sentence;
- qualitative assessment – issues and benefits that cannot be quantified with hard data analysis but are supported by some anecdotal evidence; and
- an assessment of the workload and benefits of expanding the pilot.

2. Measured performance

This section analyses data to quantify the impact that can be attributed to the use of head cameras. Data from 2005/06 is analysed against data from 2006/07 to assess the change over the same period of each year. In addition, data from 2006/07 is analysed and those incidents that were attended with a head camera and those that were not are identified.

The analysis focuses on assessing the performance against the key project measures followed by some incident attrition and trend analysis.

2.1 KEY MEASURES LINKED TO FUNDING

Table 1 lists the performance measures and corresponding target improvements, relating to Plymouth South and Central sectors combined, as defined by the Project Team.

The following subsections examine the detail behind the final results of each of the seven key measures as stated in the table below.

Table 1: Performance measures and results – Plymouth Head Camera Project

Measure	Description	Result
1	10% reduction in violent crime in South and Central sectors by end of March 2007	Reduction of 1.2% (wounding reduced by 12.8%)
2	15% increase in sanction detections for violent crime, specifically violence in public places and domestic violence	Increase of 26.9%
3	10% reduction in the sanction detection attrition rate for violent crime by end of March 2007	Reduction of 8.8%
4	15% increase in offences brought to justice (OBTJs) (relating to all violent crime)	Increase of 7.3%
5	10% reduction in OBTJ attrition rate for violent crime by end of March 2007	Reduction of 3.9% in attrition rate
6	30% reduction in officer time spent on paperwork and file preparation in incidents where the head camera has been deployed	Reduction of 22.4%
7	40% reduction in complaints against police, specifically for incivility and excessive use of force where head cameras are deployed	Overall complaints reduced by 14.3%

2.1.1 Measure 1: 10% reduction in violent crime in South and Central sectors by end of March 2007

Comparison of 2005/06 data with 2006/07

This section evaluates the change in crime volumes compared to the same period of 2005/06.

Graph 2 shows a four-week rolling average of violent crimes for both years of data. The period of the trial is the shaded area and within this graph it is apparent that both trial sectors combined have seen a decrease in recorded violent crime.

The graph shows the pilot fully running by week 29. In comparing the activity during the pilot, 20 weeks, from week 33 to week 52, were compared. This shows a reduction in violent crimes of 15, equating to a reduction of 1.2%. However, it is also clear from the graph that something significant happened around week 42 of 2005/06 to produce a drop in violent crime. Had this been repeated in 2006/07, the reduction during the trial would have been much higher. It is not possible, therefore, to comment definitively on the role of head cameras as a causal factor in crime reduction on the basis of the results of this pilot.

Graph 2: Plymouth South and Central: Violent crime 2005/06 and 2006/07

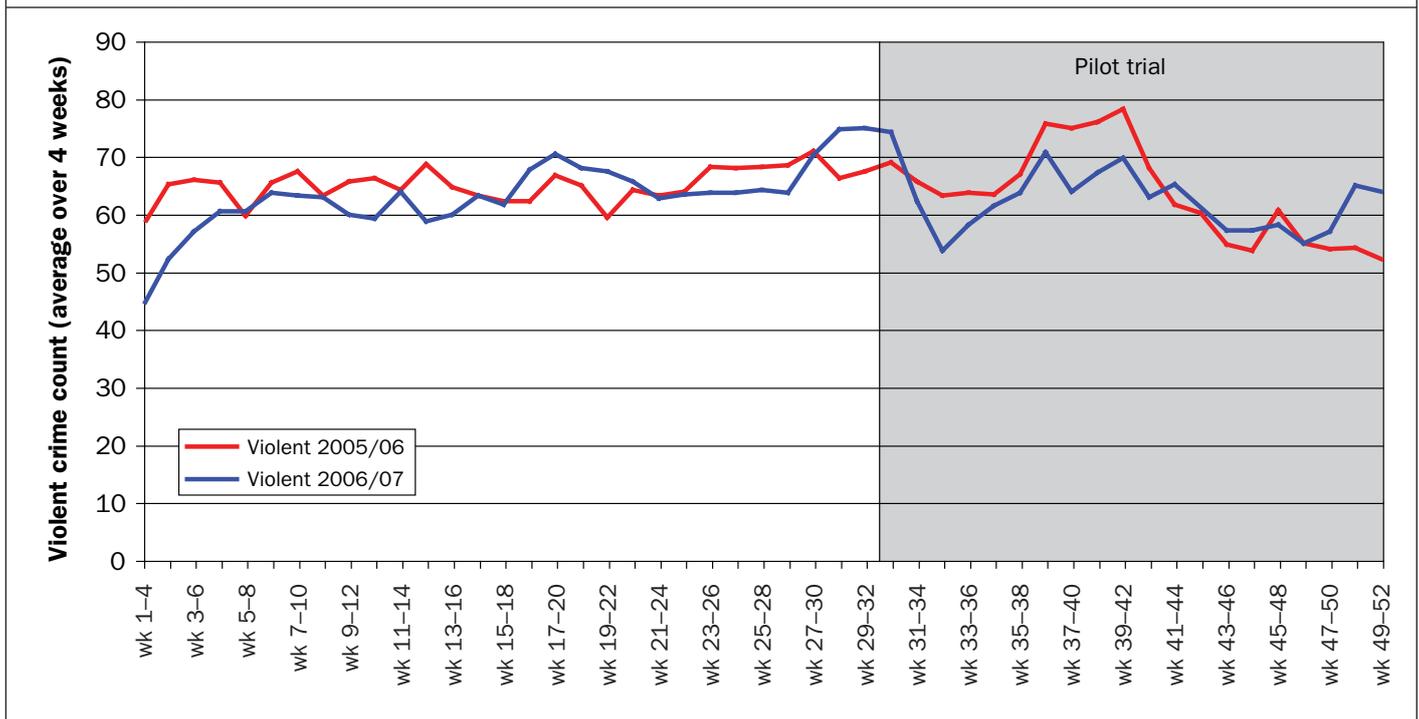
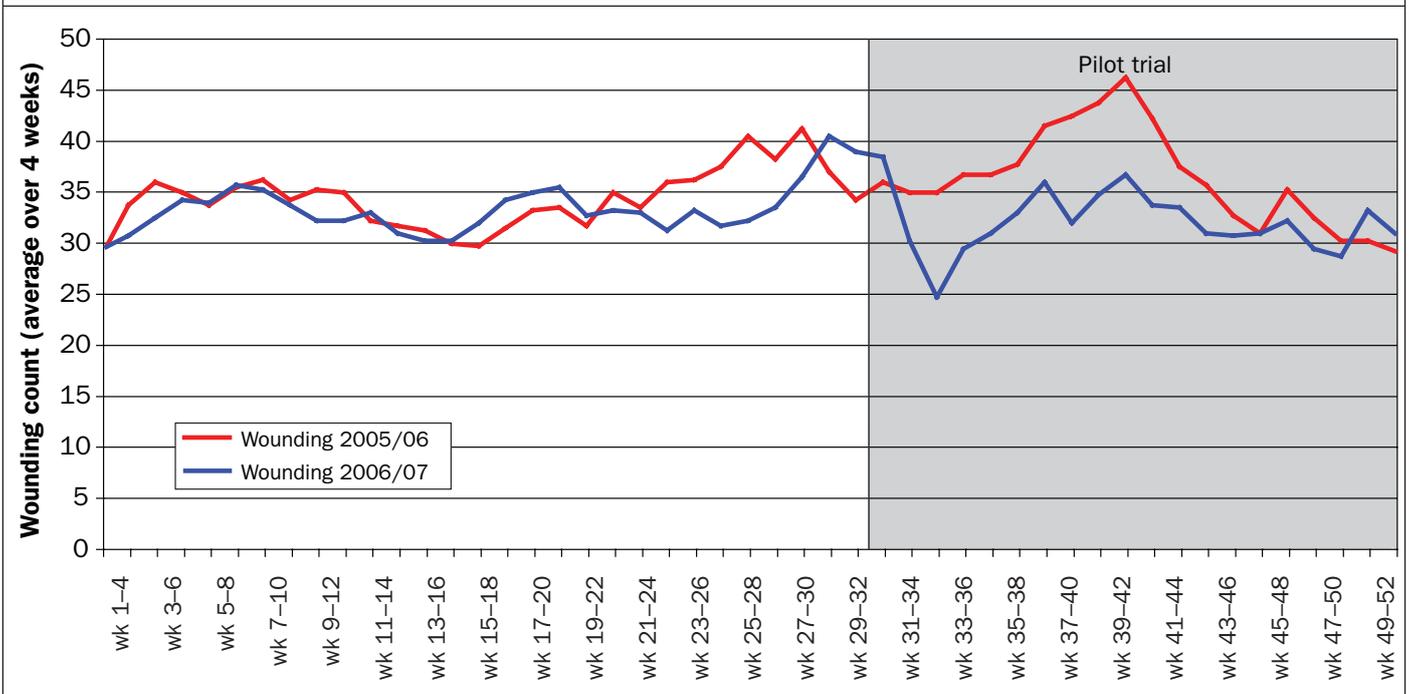


Table 2: Violent crime

	All violence 2005/06	All violence 2006/07	Change	% change
20 weeks (weeks 33 to 52)	1,249	1,234	-15	-1.2%

Within the violent crime category is wounding. The reduction in wounding during the pilot and compared with the previous year is shown in Graph 3.

Graph 3: Plymouth South and Central: Wounding 2005/06 and 2006/07



Applying the same calculation here shows a reduction in **wounding** of 92 equating to a **drop of 12.8%**. Again, a sharp drop in wounding is shown for 2005/06 that is not repeated during the trial. It is not possible to comment definitively on the relationship of head cameras to reductions in this crime type on the basis of these results.

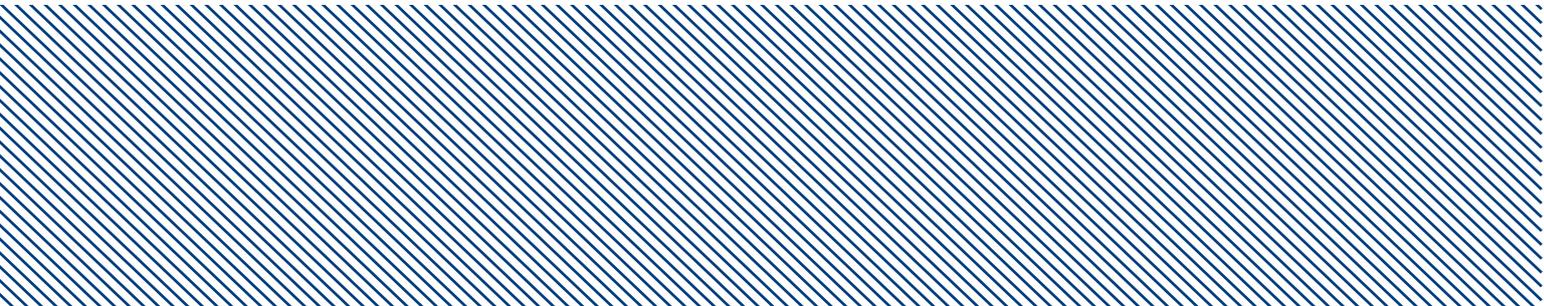


Table 3: Wounding offences				
	All wounding 2005/06	All wounding 2006/07	Change	% change
20 weeks (weeks 33 to 52)	720	628	-92	-12.8%

2.1.2 Measure 2: 15% increase in sanction detections for violent crime, specifically violence in public places and domestic violence

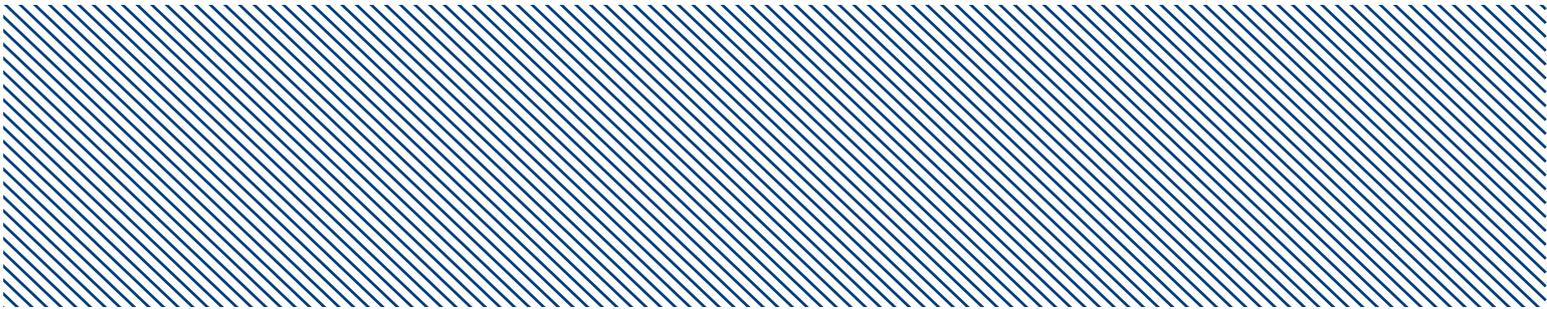
The comparison in Table 4 examines South and Central data for 2006/07, for violent and domestic violence crimes where a head camera was used/not used.

Table 4: Violent crime and domestic violence sanction detections							
	Crimes		Sanction detection		Violent crime detection rate	Domestic violence detection rate	Total detection rate
	Violent crime (public place)	Domestic violence	Violent crime (public place)	Domestic violence			
No head camera	462	156	129	50	27.9%	32.1%	29.0%
Head camera	178	42	62	19	34.8%	45.2%	36.8%

Against the measure the calculation could be interpreted as **an increase equal to 7.8%** divided by 29.0% = 26.9%, i.e. almost double the target set by the project.

2.1.3 Measure 3: 10% reduction in the sanction detection attrition rate for violent crime by end of March 2007

Table 5 compares the attrition rate for violent crimes in the South and Central sectors where the head camera was used/not used. Here the attrition rate falls from 61.5% to 56.1%.



	Violent Crimes			Attrition
	Crimes	Sanction detection	No sanction detection	
No head camera	652	181	401	61.5%
Head camera	221	59	124	56.1%

Against the measure the calculation could be interpreted as a **decrease equal to 5.4%** divided by 61.5% = 8.8%, i.e. almost the target set by the project.

2.1.4 Measure 4: 15% increase in OBTJs (relating to all violent crime)

As some cases may take several months to come to court, it is not possible to make a full comparison of OBTJs in 2005/06 against 2006/07. This analysis may be possible when all of the cases initiated during the trial have progressed to a court outcome.

Initial findings are that there has been an improvement of 7.3% in violent crime OBTJs with a rise from 34.1% to 36.6%.

This is an initial success, but further comparison will be required and this is ongoing.

2.1.5 Measure 5: 10% reduction in OBTJ attrition rate for violent crime by end of March 2007

There has been a reduction of 3.9% in the attrition rate for OBTJs from 65.9% to 63.4%.

As with Measure 4, this is an initial success, but further comparison will be required and this is ongoing.

Anecdotal evidence

To date it is possible to provide anecdotal evidence where head camera evidence has resulted in early guilty pleas on a case-by-case basis:

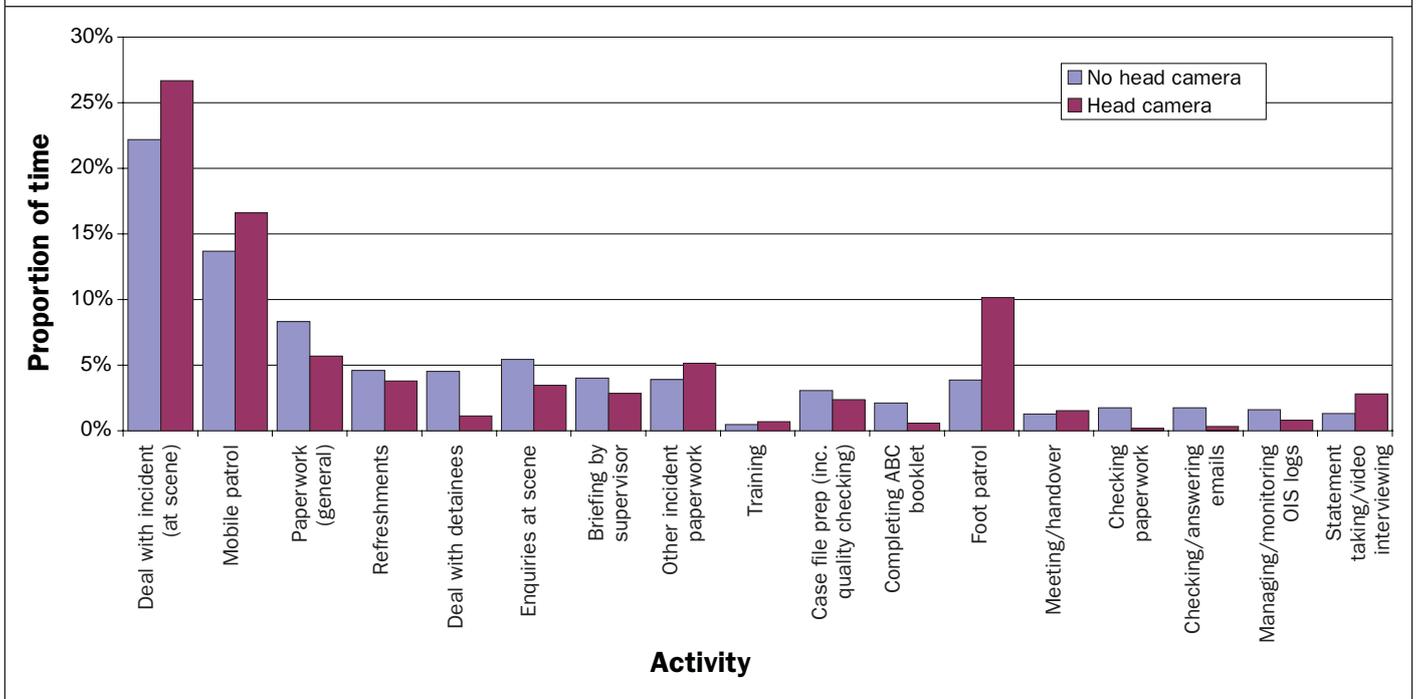
- A female was arrested and charged with a number of violence offences on both her partner and police following a domestic incident. The case was brought to justice within 17 days from arrest to sentence, supported by compelling evidence from the head camera footage. The female's solicitor stated that the evidence was beyond question.
- A male received a significant custodial sentence at court for common assault on his partner following a domestic incident. Head camera evidence was able to show his demeanour and aggressive behaviour, both verbal and physical, towards his partner and police. This was used to reinforce the history of violence shown by this male to his partner. The CPS was impressed by the quality of the evidence and its impact in court.

2.1.6 Measure 6: 30% reduction in officer time spent on paperwork and file preparation in incidents where the head camera has been deployed

An activity-based costing (ABC) analysis was carried out for one week during the pilot and the results analysed to compare activity times of officers with and without head cameras. The analysis looked to compare the same number of total hours for officers with and without head cameras.

Graph 4 shows the comparison of percentage time spent on each of the main activities. Seventy-one activities were listed in total, but the first 16 accounted for 85% of the total time recorded, and activities 17 to 71 were too insignificant to appear clear on the graph.

Graph 4: Activity-based costing analysis



The time spent on case file preparation has fallen from 3.1% to 2.4% of total time spent. This equates to a **reduction of 22.5%**. There is also a noticeable increase in time spent on mobile and foot patrol of 9.2% (or 50 minutes of a 9-hour shift). This supports the force objectives of greater visibility on the street, and improved community access.

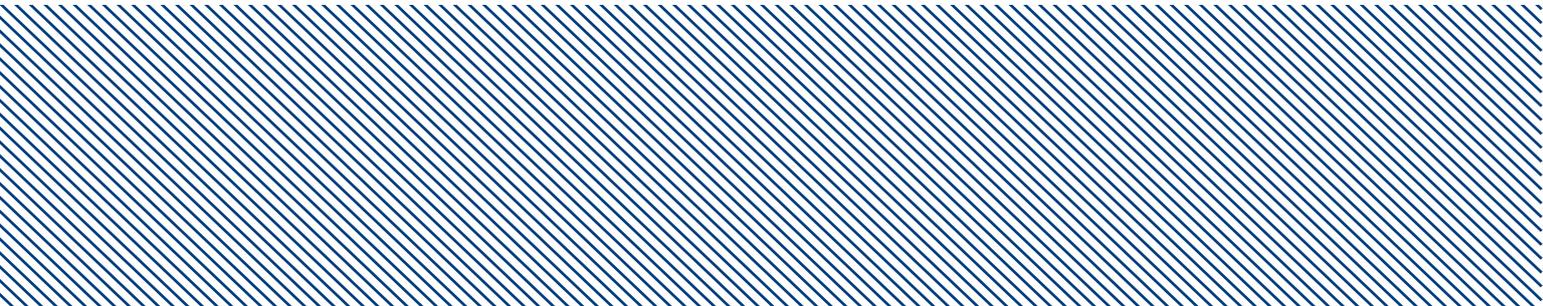


Table 6: ABC analysis

Name	Head camera used	Day	No time saved	0–30 mins	31–60 mins	61–90 mins	Total time
Officer 1	yes	Saturday	Y				
Officer 2	yes	Monday			Y		45
Officer 2	yes	Tuesday			Y		45
Officer 2	yes	Wednesday				Y	75
Officer 2	yes	Thursday	Y				0
Officer 3	yes	Saturday	Y				
Officer 3	yes	Sunday	Y				
Officer 4	yes	Friday	Y				
Officer 4	yes	Saturday		Y			15
Officer 4	yes	Sunday			Y		45
Officer 5	yes	Tuesday		Y			15
Officer 6	yes	Friday	Y				
Officer 6	yes	Saturday	Y				

Total	240	minutes
Per shift average	18.5	minutes
	3.4%	of 9-hour shift
Officer 2 total	165	minutes
Per shift average	41.3	minutes
	7.6%	of 9-hour shift

Within the ABC analysis booklet an additional head camera section was available to be filled in; although it was missed by some officers, the results of those who did fill it in are shown in Table 6.

The average saving based on these results is 18.5 minutes per officer per 9-hour shift.

Focus on regular users

In Table 6, Officer 2 is a regular user of the head camera and the time saving demonstrated equates to approximately 40 minutes in a 9-hour shift.

It would be expected that as officers use the technology they will become more proficient at processing the submission paperwork than those who are less used to it. Likewise, as officers use the technology more, not only will their proficiency increase, but identification of further process improvements may be gleaned.

Anecdotal evidence

In addition to the ABC analysis, a number of officers were interviewed.

- For crimes where an arrest is made, officers estimate that approximately 30 minutes of time is saved in writing up the case.
- Officers cited additional future benefits if the witness statements could be recorded and presented in court as video. This could save an additional 2 hours per crime where arrests are made.
- An officer who is a regular user of the head camera has noticed a significant reduction in warnings for court attendance. This is another area of time saving that will increase as the use of the head cameras is expanded.

2.1.7 Measure 7: 40% reduction in complaints against police, specifically for incivility and excessive use of force where head cameras are deployed

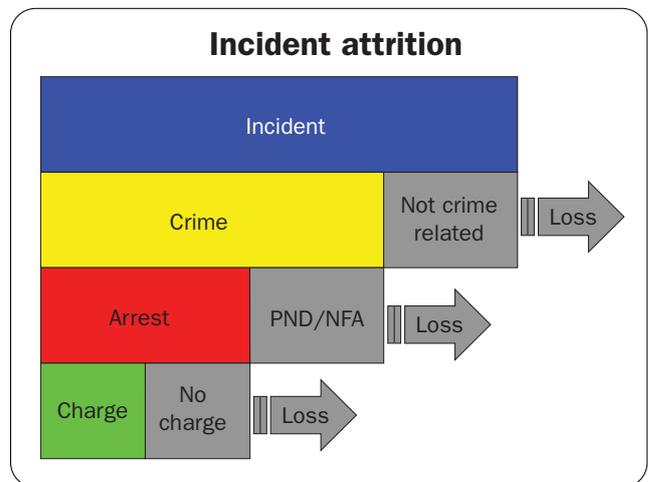
Police complaints data for 2006/07 was compared with 2005/06 in the South and Central sectors. The figures are shown in Annex 2; however, the volumes are too small to draw any conclusions, due to the low proportion of incidents attended by officers with head cameras (about 5%). However, to date no complaints have been progressed against officers who were wearing a head camera.

Anecdotal evidence

Some anecdotal evidence was given showing incidents where the head camera had prevented complaints against the police. One such example was a complaint received from an offender claiming excessive force was used when they were arrested. The head camera contained evidence which disproved the allegation and the offender subsequently withdrew their complaint after viewing the footage.

2.2 INCIDENT ATTRITION

This section examines the journey of an incident to a crime, arrest and finally a charge. The data analysis examines separately incidents attended with and without head cameras.



Graph 5 shows the attrition for the main incident types (where the main types of incident account for 90% of total charges given). The (R) denotes 'recordable' crime. In the majority of incident categories the head camera has a positive impact in reducing the attrition rate.

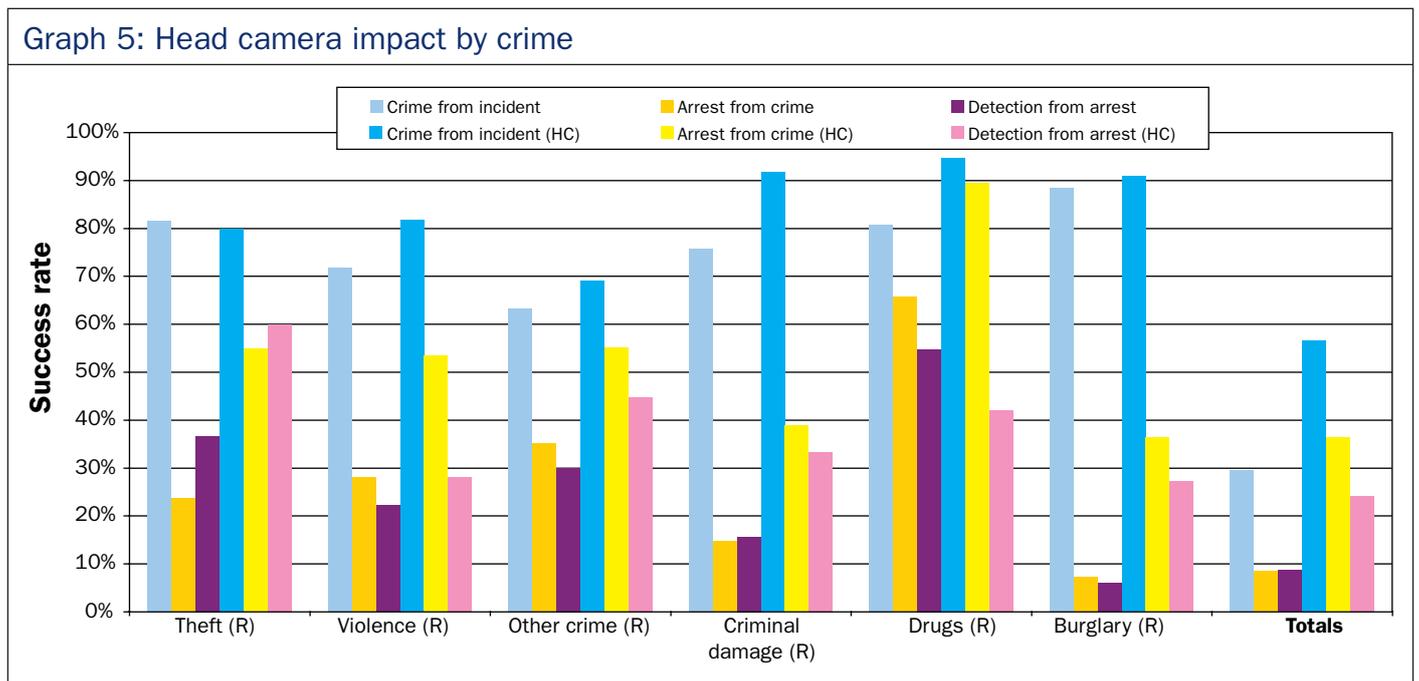


Table 7 shows a significant increase in detections in all crime types except drugs when a head camera is used.

	No head camera			Head camera		
Crime	Crime from incident	Arrest from crime	Detection from arrest	Crime from incident	Arrest from crime	Detection from arrest
Theft (R)	81.6%	23.8%	36.6%	80.0%	55.0%	60.0%
Violence (R)	71.8%	28.2%	22.2%	81.7%	53.6%	28.1%
Other crime (R)	63.4%	35.3%	30.0%	69.0%	55.2%	44.8%
Criminal damage (R)	75.9%	14.8%	15.6%	91.7%	38.9%	33.3%
Drugs (R)	80.8%	65.8%	54.8%	94.7%	89.5%	42.1%
Burglary (R)	88.5%	7.3%	5.9%	90.9%	36.4%	27.3%
Totals	29.6%	8.6%	8.6%	56.6%	36.3%	24.2%

Note: (R) = recordable

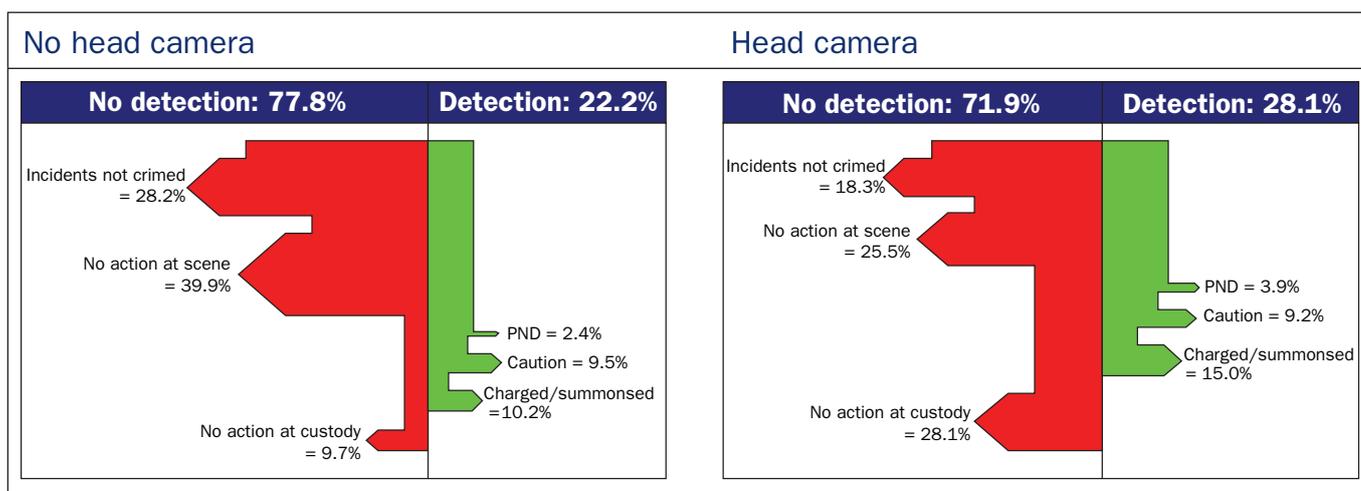
There are other positive results outside of this attrition, for example, Penalty Notices for Disorder (PNDs) without arrest and cautions following arrest.

When examining the combined average of these main incident types, the use of head cameras resulted in 27% more incidents being converted to a crime report. That crime is then nearly five times as likely to result in an arrest. The chance of the arrest resulting in a detection is almost four times higher. However, there is a higher level of no further action (NFA) at custody which requires further investigation and this is ongoing.

2.2.1 Violent incident analysis

This section focuses on the attrition for violent recordable crime.

No head camera						Head camera			
Step	Process stage	No detection: 77.8%	Detection: 22.2%	% no detection	% detection	No detection: 71.9%	Detection: 28.1%	% no detection	% detection
	Number of incidents	996				153			
1	Incidents not crimed	281		28.2%	0.0%	28		18.3%	0.0%
2	No action at scene	397		39.9%	0.0%	39		25.5%	0.0%
3	PND		24	0.0%	2.4%		6	0.0%	3.9%
4	Caution		95	0.0%	9.5%		14	0.0%	9.2%
5	Charged/summonsed		102	0.0%	10.2%		23	0.0%	15.0%
6	No action at custody	97		9.7%	0.0%	43		28.1%	0.0%
		775	221	77.8%	22.2%	110	43	71.9%	28.1%



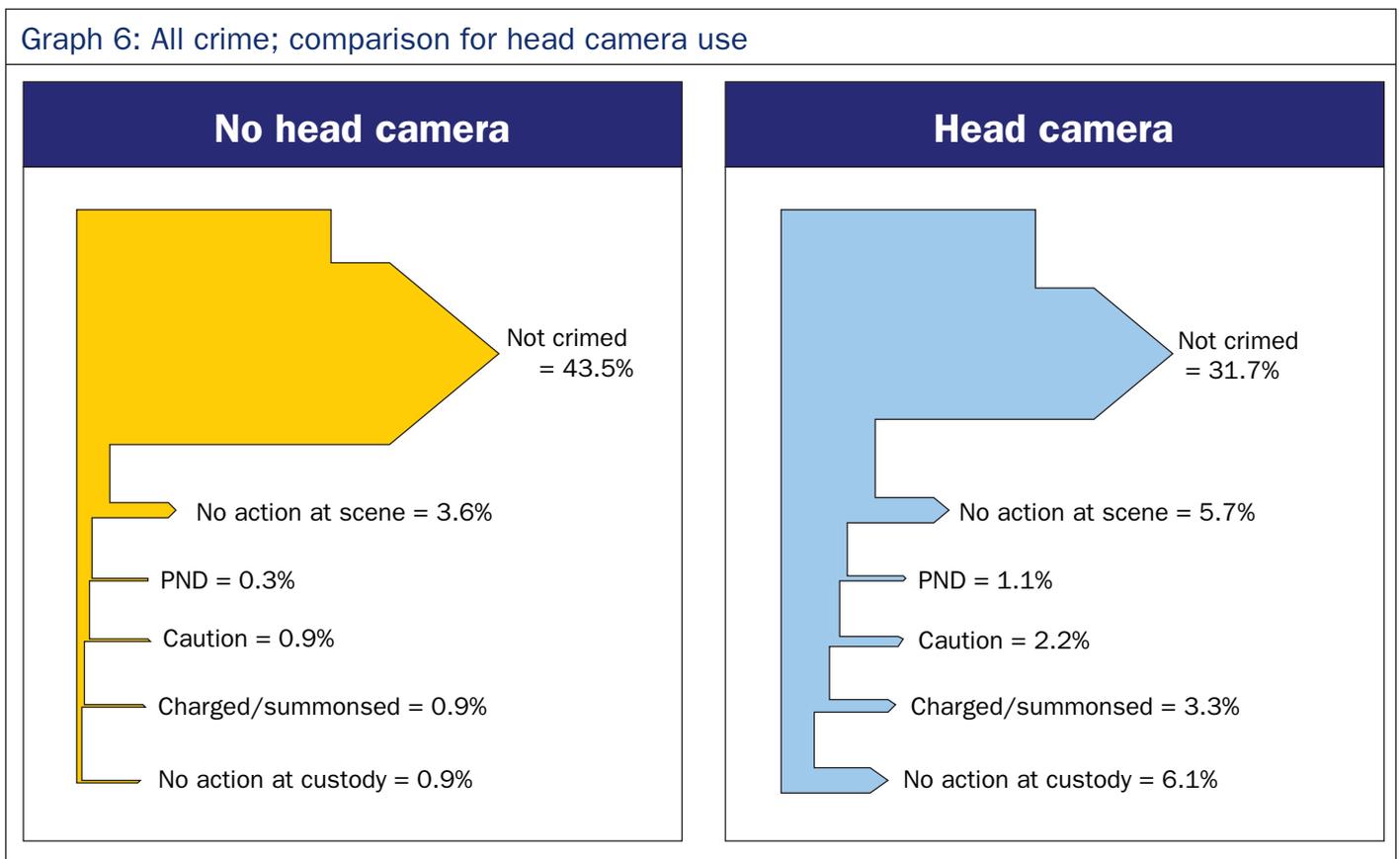
The use of a head camera shows:

- increase in the number of incidents resulting in a crime (71.8% to 81.7%);
- no action at scene reduced (39.9% down to 25.5%);

- increase in PNDs (and administration detections) (2.4% up to 3.9%);
- decrease in cautions (9.5% down to 9.2%);
- increase in charge/summons (10.2% to 15.0%); and
- no action at custody increased (9.7% to 28.1%).

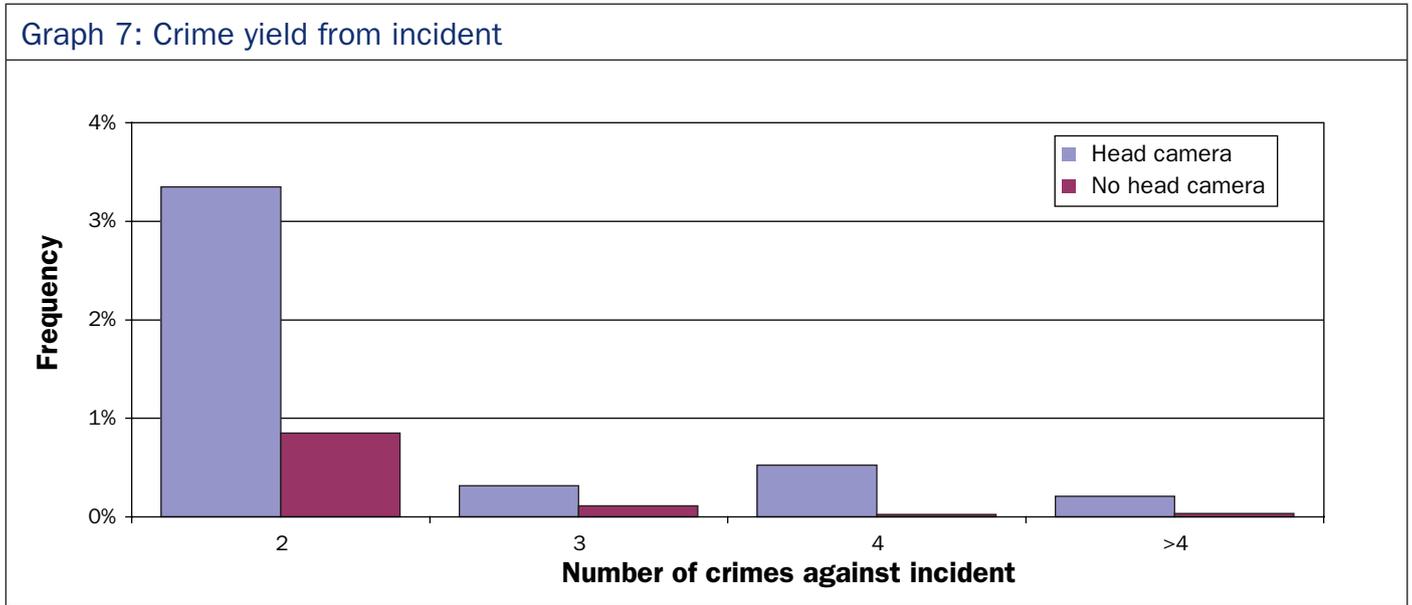
2.2.2 All crime analysis

Graph 6: All crime; comparison for head camera use



During any pilot it is possible that the improvement will arise simply by the fact that there is a focus on the use of head cameras. Also it may be the case that those officers booking out head cameras are generally more proactive.

2.2.3 Crime yield analysis



The analysis in Graph 7 examines how individual incidents are converted into one or more crimes. Further analysis shows that where a head camera has been used, the chance of generating more than one crime is also higher. This is effectively the crime yield from an incident. Graph 7 shows a comparison of crime yield from incidents where head cameras were and were not used.

The number of incidents converted into only one crime dominates at over 90%. This bar is not shown in the graph for clarity.

2.3 CRIME RECORDING TO DETECTION TIMESCALES

Table 9 shows that the average time taken to resolve a case with a head camera was marginally longer than cases where the head camera was not used. The data used was the incident response date to the time that the outcome was made.

It had been anticipated that the resolution time would be quicker in cases where the head camera had been used.

Table 9: Case resolution comparison

Oct 2006 to March 2007 Outcome	No head camera			Head camera		
	Count	Total time for all cases (days)	Average time per case (days)	Count	Total time for all cases (days)	Average time per case (days)
Charged or summonsed	415	5,999	14.5	83	1,267	15.3
Cautioned	201	2,294	11.4	44	632	14.4
PND	191	610	3.2	31	41	1.3
Admin detection	49	1,288	26.3	6	216	36.0
	856	10,191	11.9	164	2,156	13.1

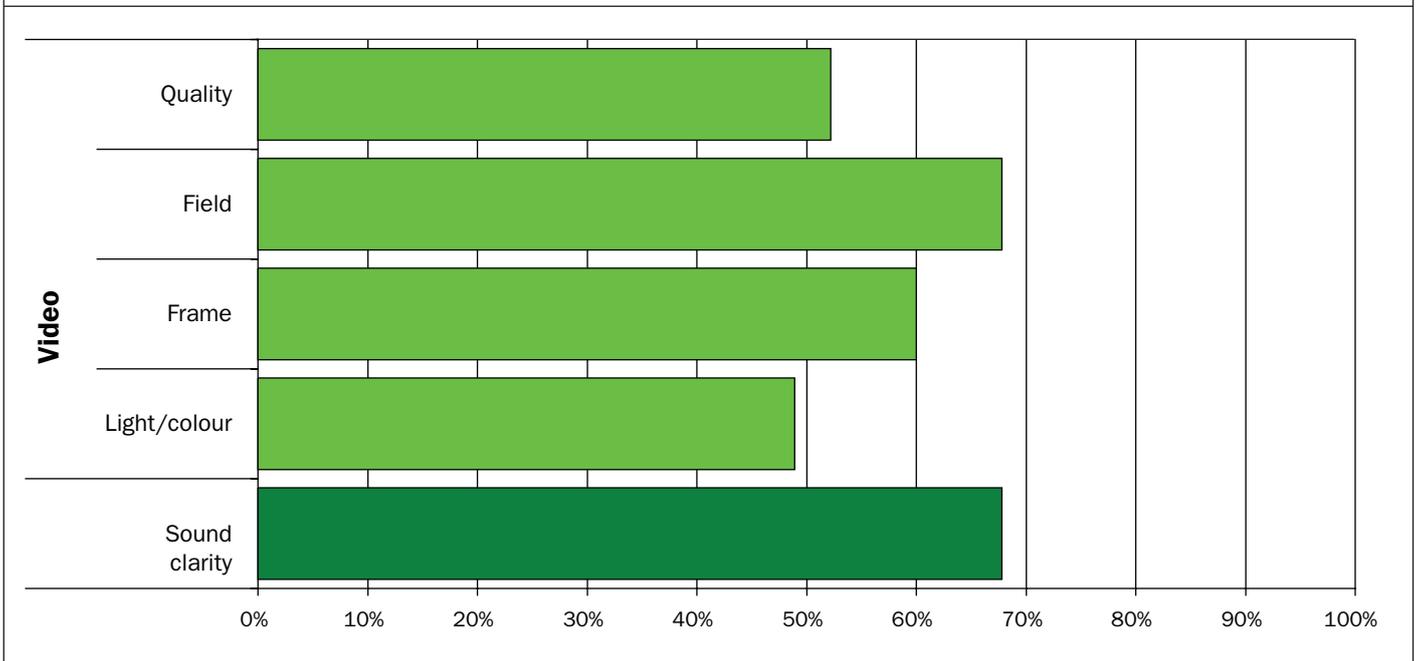
2.4 VIDEO SUBMISSION SCORECARD

An independent review was made of 45 individual video clips picked at random to assess their quality and value. The assessment was subjective, rating each measure from one to three. It is stressed that the equipment used was commercial rather than designed specifically for police use. Therefore further developments could be possible.

The following measures were used:

Measure	Description
Video quality	General assessment of video quality – focus, vibration and movement
Field of view	How much of the subject area is captured
Framing of subject	How well the subject is framed – an indication of camera direction
Light/colour	What the lighting/colour balance is like
Sound clarity	How clear the sound is – volume

Graph 8: Subjective assessment of recorded footage



Video quality

Generally the video quality was adequate for reviewing. There were a number of clips that were out of focus but still offered some evidence. The image enhancement is good. However, night-time footage out of town (in very low light conditions) was poorest.

Field of view

In general the field of view was good and the subject action was captured well. On occasion action was missed that could be heard off camera.

Framing of subject

Generally this was good, but at times and sometimes for the entire recording the alignment of the camera was off to the side of the action – often cutting the subject vertically down the middle.

Light/colour

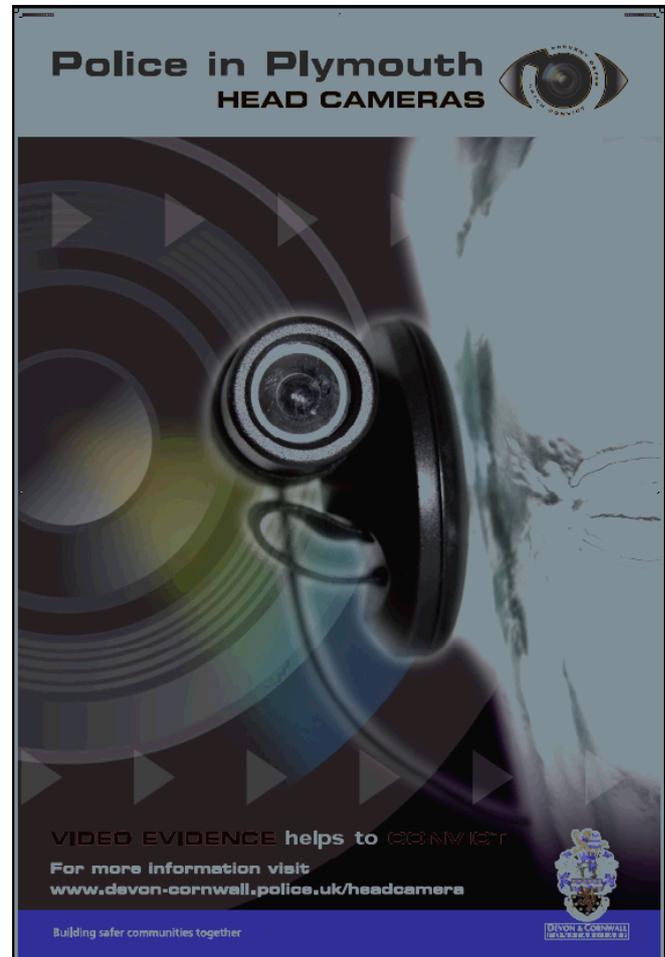
The colour balance in low or street lighting may be an issue, as the black/blue officer uniform can appear light blue. This may cause conflict with statements in court where perhaps the court see the offender's dark blue garment compared with a light blue garment shown in the recorded video footage.

Sound clarity

The sound quality was usually good. However, some of the recordings suffered, as it appears that the volume may have accidentally become adjusted on the recording unit.

Availability

The assessment looked to view 55 recordings. However, due to some software issues, 7 would not play on the software and 3 were not present.



2.5 MARKETING

It was apparent during the evaluation that attention had been paid to ensuring that marketing of the pilot was effective. To this end the following was observed:

- good marketing of the pilot around the city, with evidence of posters (see above) in the public houses and specifically designed street signage in and around the centre of the night-time economy areas;
- good media liaison with the local newspaper and frequent national coverage;
- good presence on the force website – 19,523 hits from October 2006 to the end of March 2007;

- local, national and international television coverage; and
- to date there has been no adverse publicity in relation to the use of head cameras.

2.6 VICTIM FEEDBACK

The victim survey questioned 36 people. The questionnaire can be found in Annex 3.

The profile of the group questioned is as follows:

Gender	Count
Male	26
Female	10
	36

Ethnicity	Count
White British	34
Bangladesh/British citizen	1
Asian/Arab	1

Age range	Count
17	1
18–25	19
26–35	5
36–45	3
46–55	6
Not stated	2
	36

Where victims were not aware that the head camera was being used the reason given often related to the victim being embroiled in an assault or under the influence of alcohol.

The majority of victims thought that the head camera was beneficial during the incident.

All but one of the victims thought that head cameras should be used by all police officers. The majority of victims felt safer as a result of the police wearing head cameras.

When asked to make a general comment on the use of head cameras, the majority of victims who volunteered a response were positive about the use of the technology as shown by the results below.

Comment	Count	Percent
Positive comment	18	50.0%
Negative comment	2	5.6%
No comment	16	44.4%
	36	

2.7 PUBLIC AWARENESS

While very limited public feedback has been received as above, the Project Team have commissioned a full independent survey, the results of which will be available at the time of the launch in mid-July 2007.

Summary of results from victim feedback survey.

	Yes	No	Don't know
Were you aware that the head camera was being used?	15	21	0
Do you feel that the use of the head camera was beneficial at the time of the incident?	26	5	5
Do you think that the head camera should be used by all police officers?	35	1	0
Do you feel safer as a result of police wearing head cameras?	29	5	2

3. Technology

3.1 BACKGROUND TECHNOLOGY

This section provides a brief overview of the technology.

3.1.1 Equipment

As a police service, Devon and Cornwall Constabulary are not in a position to make any recommendations for or against any individual supplier regarding the head camera equipment used during the pilot. Each force should make its own judgement regarding the appropriate company that could provide the necessary equipment. A full **technical specification** of the equipment is available earlier in this document.

Essentially, the system consists of a small camera fixed to a headband. The camera is connected to a recording unit consisting of a digital hard disk drive (HDD) and a small liquid crystal display (LCD) screen for reviewing images recorded.



It is anticipated that the police officer would wear the head camera unit with the recorder placed within their utility vest.

3.1.2 Safety and ergonomics

Previous small-scale pilot trials have already identified a number of potential issues relating to safety and comfort of the system. These are being investigated with a view to further develop the system in future models. A new style of headband for holding the camera has been

developed by the Project Team that is lighter, has more adjustment and better padding for improved comfort.

The cable linking the camera to the recording unit (via the microphone) originally could have posed a strangle risk, but a newer model used has a break point and coiled cable device to minimise risk.

3.1.3 Durability and quality

The camera produces a good image, with the newer generation of cameras offering even better performance in very low levels of light by automatically switching from colour to monochrome. The camera works well in conditions of variable lighting as is common in some public houses and clubs. Good recording quality of moving images was demonstrated by the images captured while an officer was driving to an incident.

The heavy duty battery for the unit takes approximately 6 hours to fully charge and will run for 8 to 12 hours. The hard drive that records the footage is shock resistant to minimise sudden movement disrupting the recording and has the capacity to hold 400 hours of footage. The unit is supplied with a compact (3-hour) battery. During the project there were no problems reported relating to battery life. A potential problem identified is that while officers are wearing the unit within their utility vest, the battery may move from the contact points, resulting in a powering down of the recording unit.

3.2 ADOPTION OF TECHNOLOGY

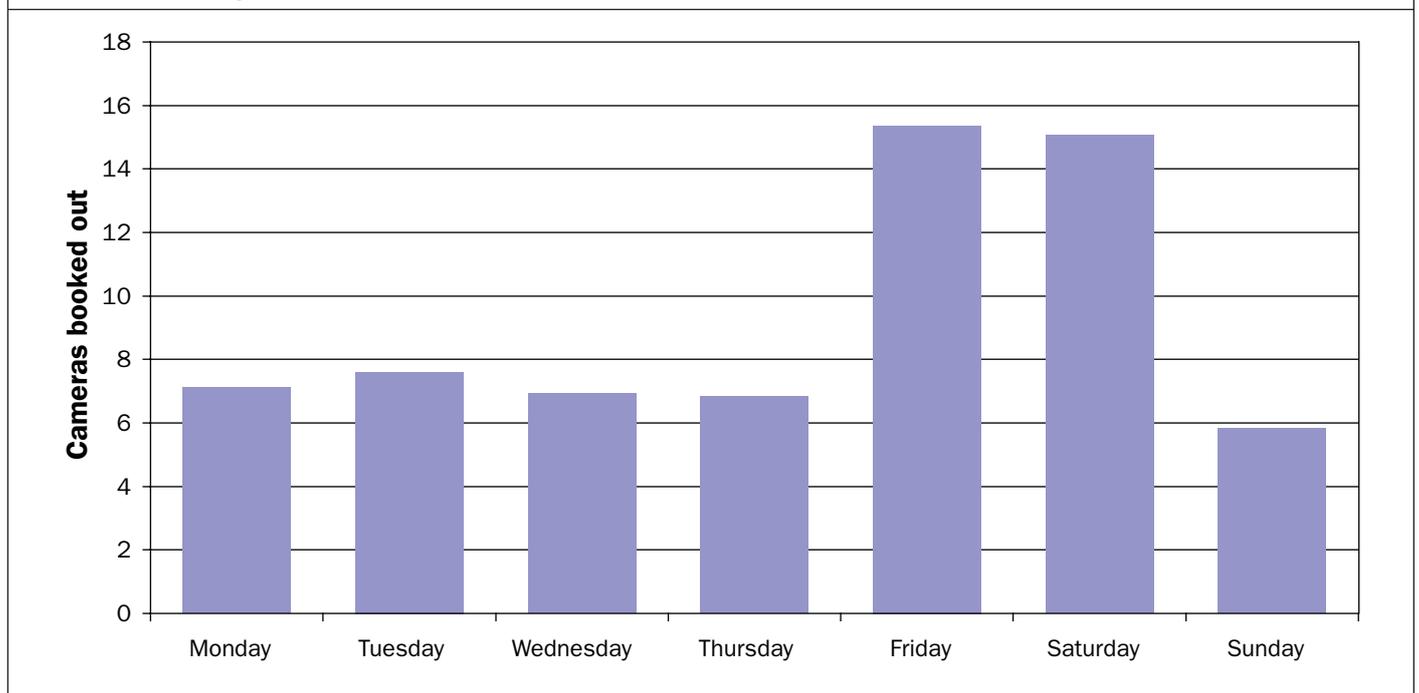
This section examines the uptake of the technology during the trial. Information was made available by the back office facility (BOF) and included information on:

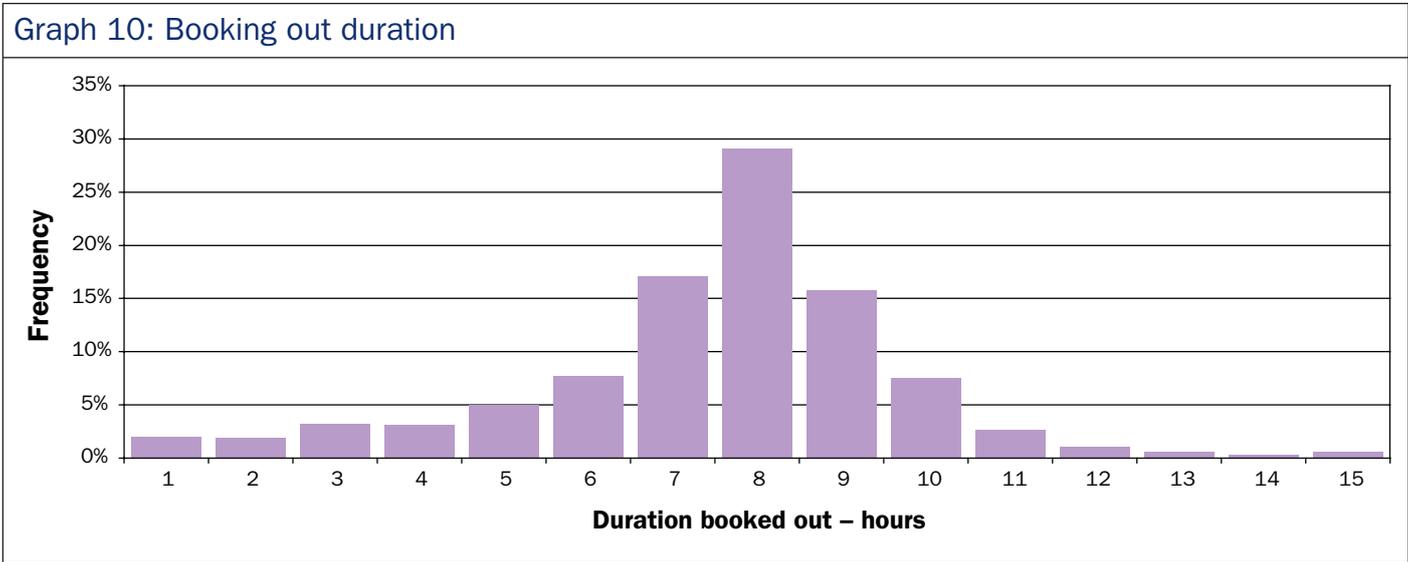
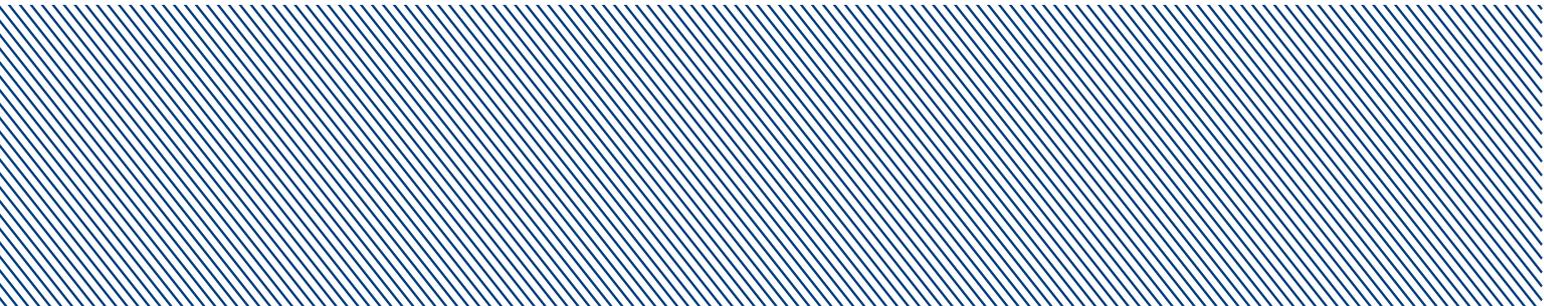
- when head cameras were booked out and by whom;
- what footage was submitted and for which incident logs; and
- which incidents and crimes the cameras were used for.

3.2.1 Deployment and use of head cameras

Graph 9 shows the average number of cameras in use during each day of the week. The increase on Friday and Saturday nights is because the pilot focused on crimes of violence and their prevalence during the evening and night-time economy.

Graph 9: Average number of head cameras booked out





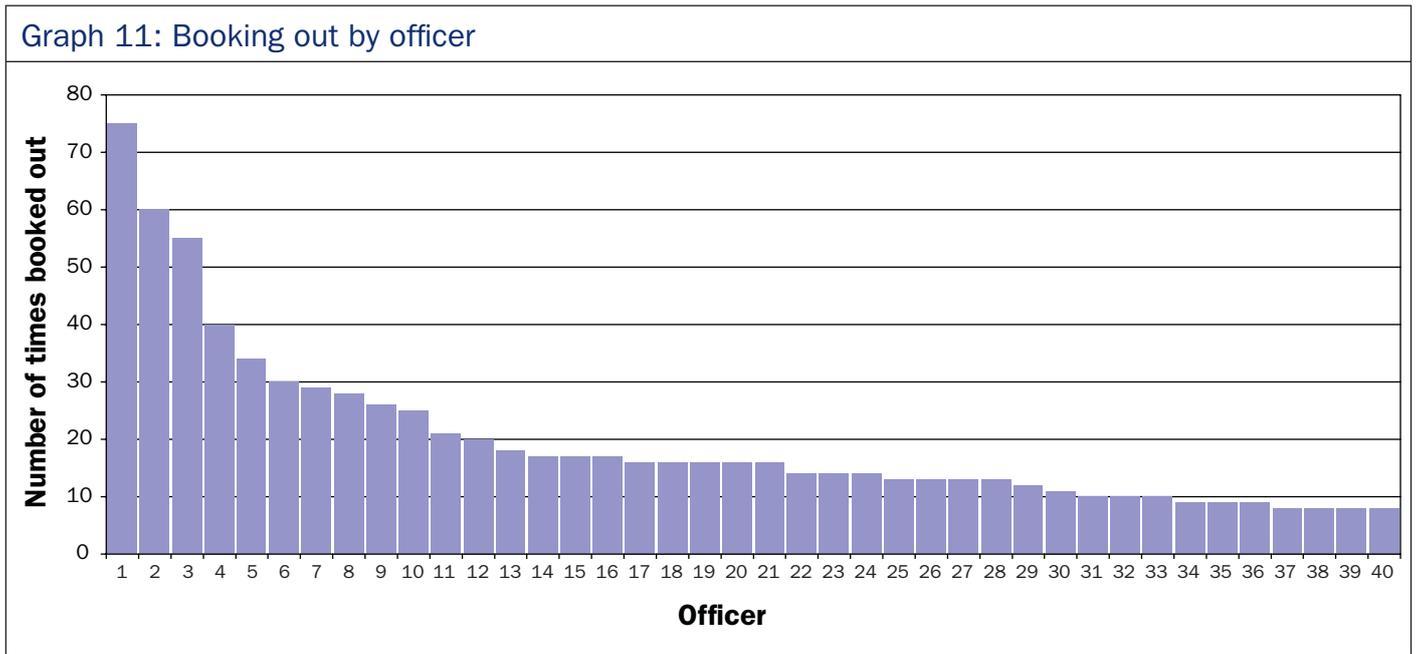
The frequency graph above shows the duration for which the cameras were booked out. The majority were booked out for the entire shift of between 8 and 10 hours.

Usage by officer

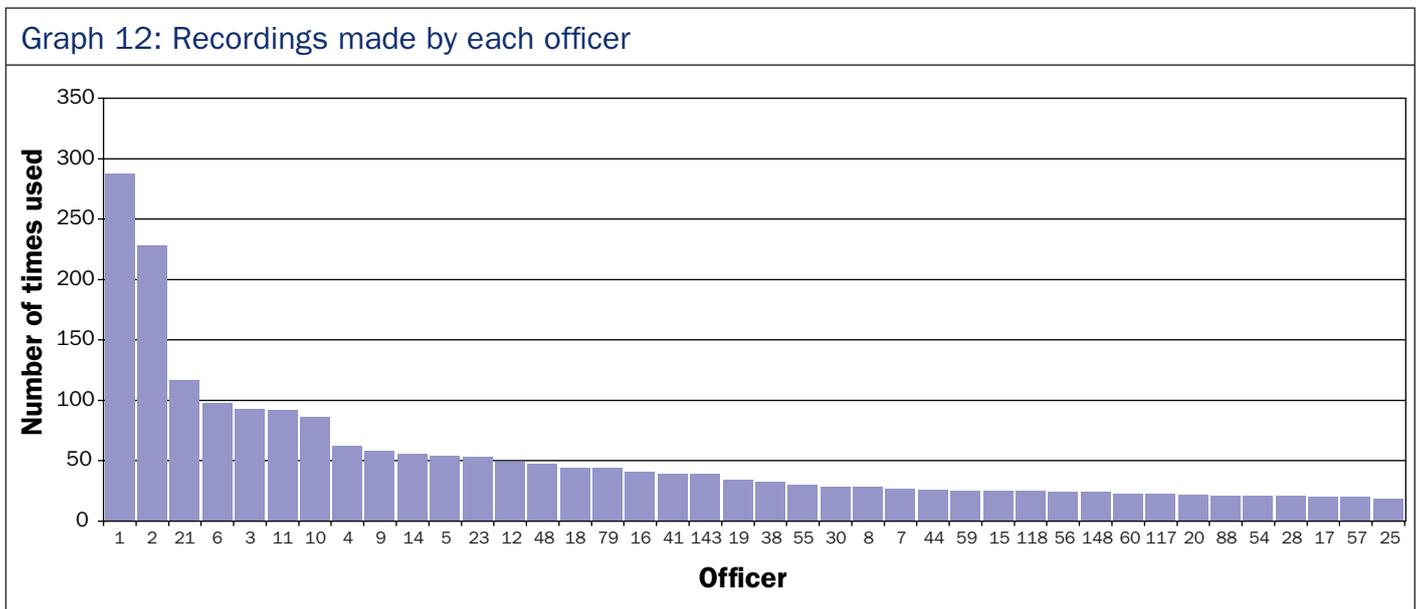
According to the feedback from the officer survey conducted, only three officers used the camera on every shift, the majority using them less often – as shown by the table below.

	Never	Sometimes	Always
Do you use a head camera on each shift?	19	78	3

Graph 11 shows the number of times each regular user (i.e. officers who used the camera at least once a week) booked out a head camera.

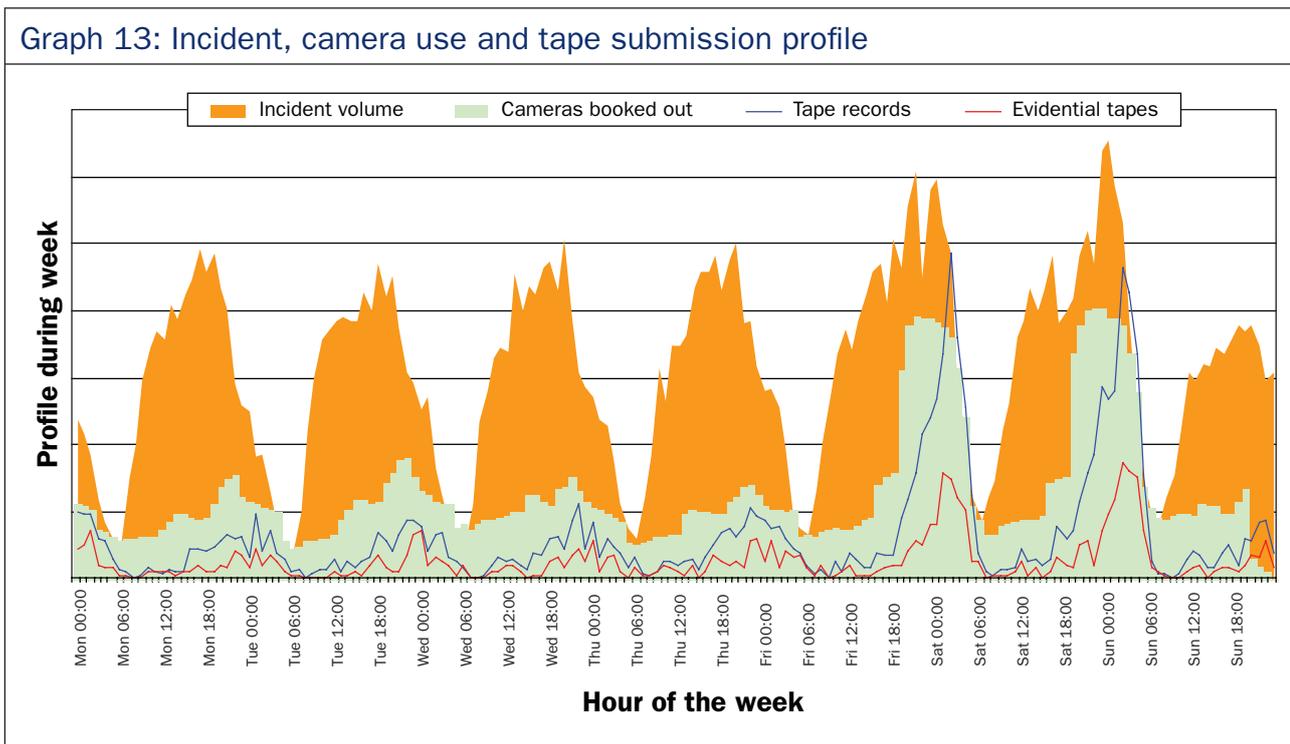


In total, records existed for 150 officers, but many had only booked cameras out a few times and are not shown on Graph 11. Clearly the technology has been accepted by some more than others, so as another indicator Graph 12 shows the number of recordings made by each officer.



Usage over the week

Graph 13 compares the number of incidents, cameras in use, number of recordings submitted and the number of evidential recordings on each hour of the week for Plymouth BCU.

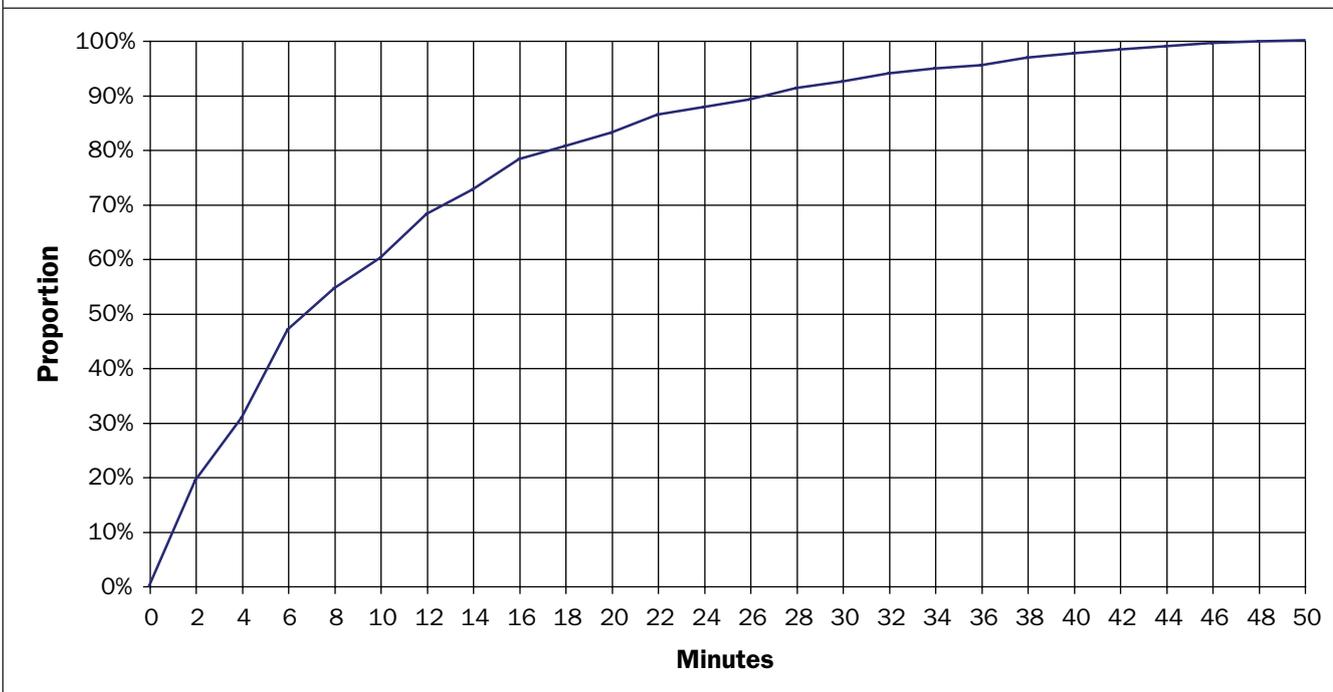


Unsurprisingly, footage submitted follows a similar profile to cameras booked out. However, there is potential opportunity to use the cameras more outside of the Friday and Saturday evening periods, dependent on resources available.

3.2.2 Length of footage

Analysis of the length of recording is shown in Graph 14, indicating that 30% of submitted footage was less than 4 minutes long and 60% under 10 minutes long. This analysis has implications if any force were considering sharing footage over their force computer network where file size should be considered.

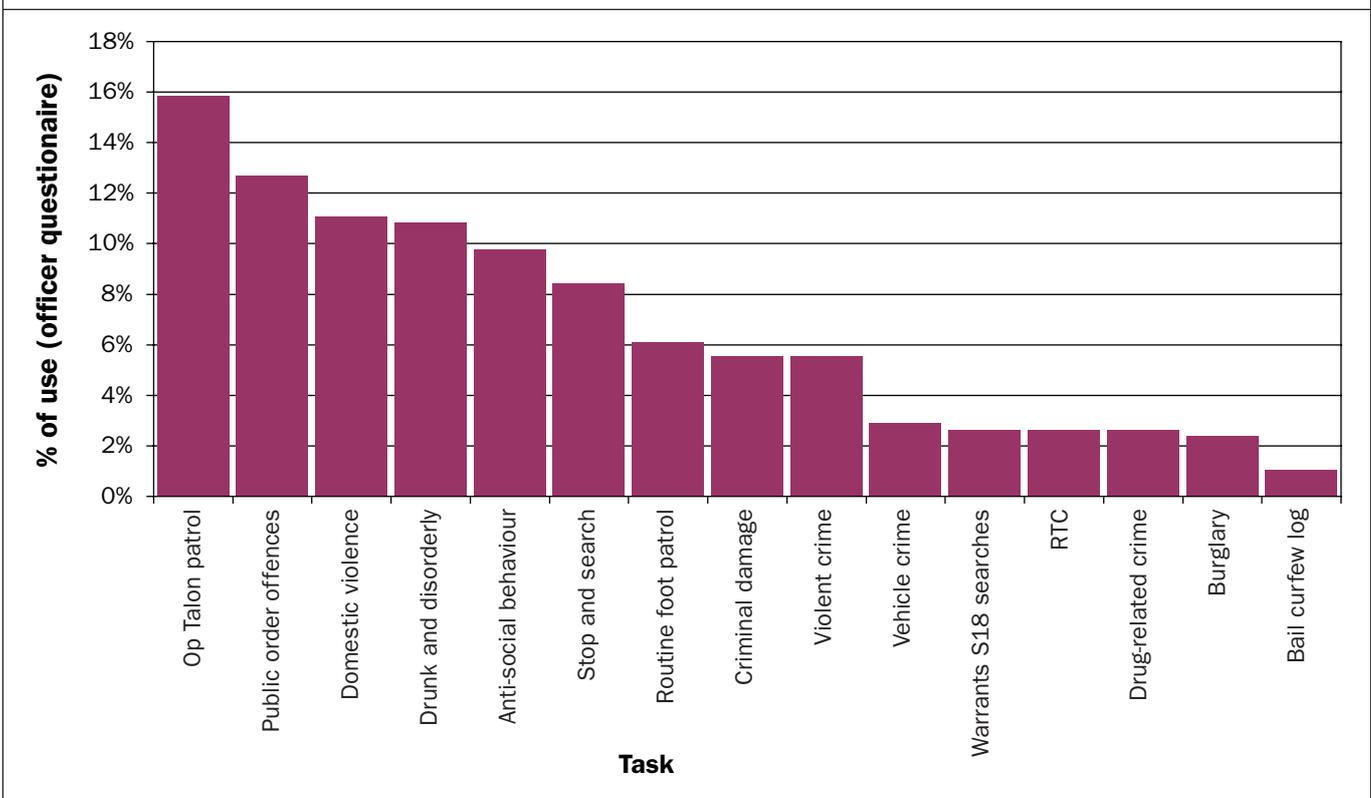
Graph 14: Event recording duration



3.2.3 Use at incident types

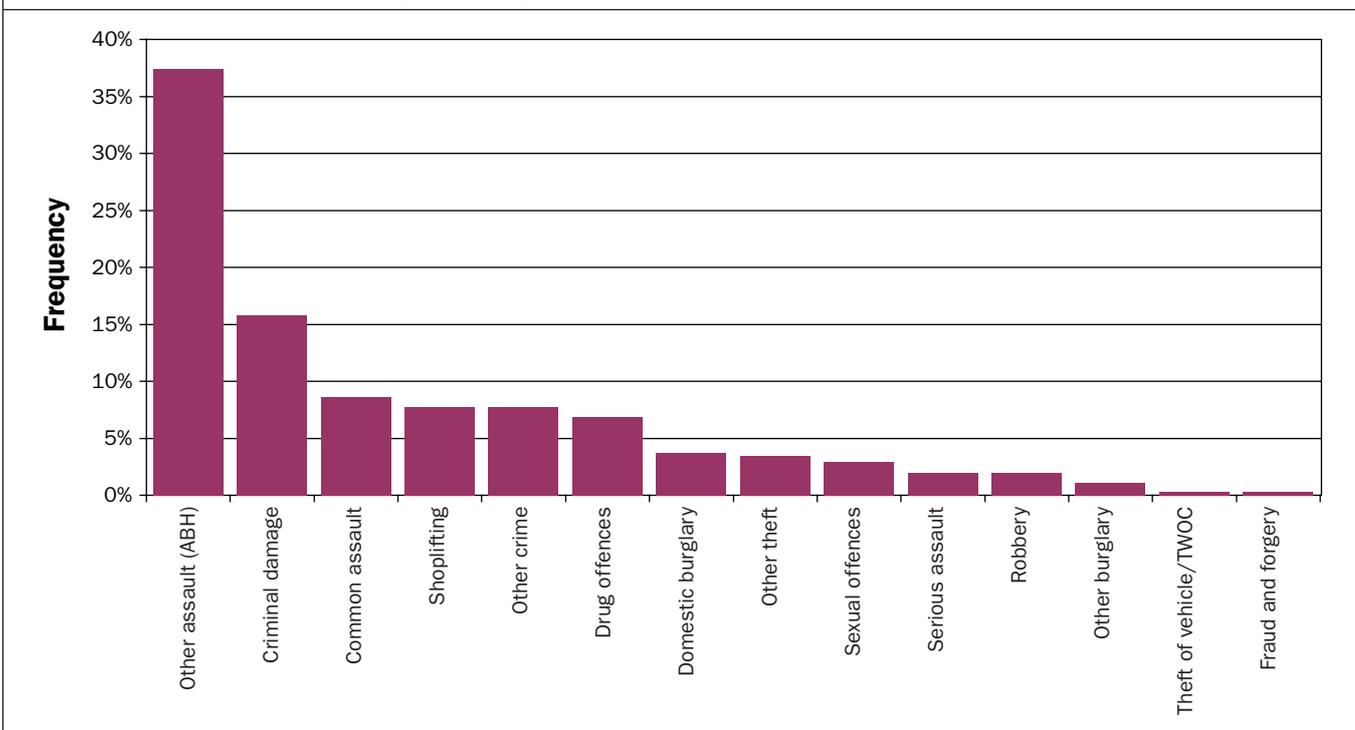
A summary of the feedback from the officer questionnaire sheet is shown in Graph 15. Officers reported that the majority of time they used the camera it was for Operation Talon (Plymouth BCU evening and night-time policing strategy).

Graph 15: Head camera applications



The officers perceived that they used the head cameras on Operation Talon, public order and domestic violence the most. Analysis of the recordings submitted in Graph 16 shows that the majority of footage was against ‘Other assault (ABH)’.

Graph 16: Use of camera by crime type



3.3 HEAD CAMERA ISSUES

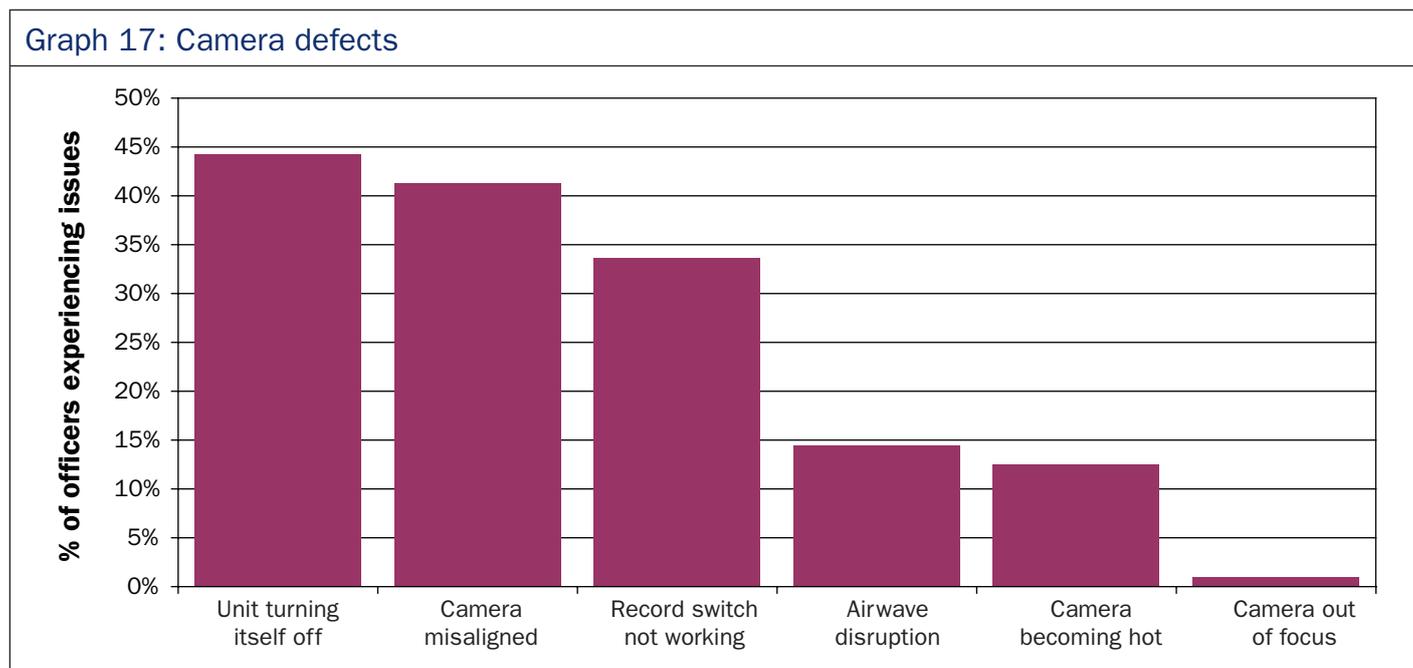
The officer questionnaire also asked for feedback on the technology. From an early stage the headband that holds the camera was reported to be uncomfortable. In the questionnaire only 12 officers found no issue with the comfort of the headband.

	Never	Sometimes	Always
Is the headband uncomfortable?	12	45	44

For other defects officers were able to complete a defect report form. Where officers had concerns or had identified defects, only 45.6% of these were reported.

Have you encountered any problems with the head camera?	79
If yes, did you submit a defect report?	36
	45.6%

The questionnaire asked for officer feedback on the issues identified, with the results shown in Graph 17.



Home Office questionnaire

The issues above are similar to those reported in a feedback survey carried out with other forces by the Home Office.

A questionnaire was sent to a number of forces known to be examining the application of head cameras. In total 17 questionnaires were returned with information relating to the use of head cameras. In the main, forces were all using a head camera with the recorder secured in a utility pouch. Three forces are not using head-mounted cameras: North Wales Police had the camera mounted on the shoulder, West Midlands Police had a chest-mounted camera, and Greater Manchester Police had the camera mounted on a cycle helmet.

Across those responding to the questionnaire, a total of 119 cameras were in operation by the forces questioned. The problems encountered are summarised below and show that the head mounting has been identified as an area for concern.

Issue	Count	Forces	%
Headband	13	14	92.9%
Camera	6	17	35.3%
Hard drive	5	17	29.4%
Software	5	17	29.4%

Headbands were in use by 14 forces and 13 of them identified a comfort issue.

The camera, hard drive and software posed fewer problems.

The majority of the forces questioned were storing recorded files on laptops or standalone computers. Some had integrated the system into the force network.

Data management	Count	%
Standalone	13	76.5%
Network	4	23.5%

Minimal issues were reported with the data side of the technology as shown below.

Data issues	Count	%
Quality	3	17.6%
Other	1	5.9%
Loss	1	5.9%

Several comments were returned relating to possible improvements. These are summarised below in no particular order of importance or viability.

Improvement	Comment
WiFi	To join camera to recorder
Switch	Improve operation
Robustness	Make recorder more durable
Quick start	Remove standby mode
Process	Optimise submission process
Levelling device	Method to ensure correct framing of image
Headgear	Improve comfort of headband
Zoom	Option for camera to zoom in/out
HDD harness	Improved holder for recorder
Compact	Make device more compact
Body armour mount	Provide attachment for body armour

3.4 OFFICER QUESTIONNAIRE RESULTS

The questionnaire asked officers participating in the Plymouth pilot for reasons why they had not worn or were put off wearing the head camera, and about what should be addressed in order to resolve the issues.

A précis of the results of the officer questionnaire can be found in Annex 1 and are summarised below.

3.4.1 Reasons for not wearing the head camera

The answers given for not wearing the head camera fall into the following categories.

Ergonomics

Half of the questionnaires returned stated that the comfort of the equipment was the main reason for not wearing it more often. Issues relating to the headband, the location of the recording unit in the utility vest and the integration with body armour or helmet were all mentioned.

Role based

From the officer questionnaire replies, 20% stated that they did not use the head camera due to the nature of their role at the time (i.e. supervisor, driver of a police vehicle or role restrictions).

Technical

Some officers found that they could not grasp the technology, and were concerned about some of the issues relating to accidental activation of cameras (which could be attributable to software or user error issues).

Process

A few officers cited the logistical issues of submitting recorded evidence and obtaining the cameras from a station other than their base, and that this may limit their use of the technology.

Other

Some officers commented that they were not convinced the technology would save them time.

3.4.2 What would change your view?

Following the first question, officers were asked what would persuade them to use the head camera more often. The answers were split into the following categories.

Ergonomics

The vast majority of suggestions related to improving the comfort of wearing the unit and its integration into police uniform.

Technical

Comments were specifically aimed at making the unit more compact, robust and user friendly.

Process

One suggestion related to improving the evidence submission process and integration with existing force computer systems.

3.5 ISSUES WITH EQUIPMENT AND TECHNOLOGY

The issues raised in the questionnaire are discussed in further detail below.

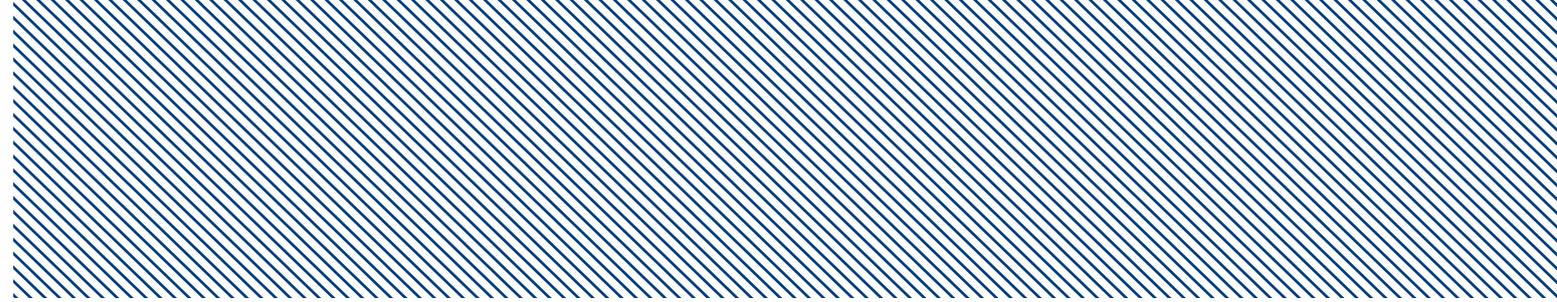
3.5.1 Headband

There have been issues with comfort when wearing the head camera for long durations. These are focused around the headband and include:

- pressure from the headband, resulting in pain around the temples and nausea;
- the fitting of the camera is uncomfortable when a helmet is worn; and
- the headband can squeeze the officer's ear around their radio earpiece.

Some other issues relating to the headband include:

- wearing while driving can be a distraction; and
- alignment of the camera, i.e. ensuring that the camera is pointing directly ahead.



Some officers favour specific cameras as they find a particular headband is more comfortable and the directional stability of the camera bracket is more positive than others.

It is perceived that head-mounted is the best option, as it captures what the officer sees. Wearing the device on the body may leave the officer open to attack as they may have to turn their back fully on others present at an incident. There are smaller and lighter cameras on the market that could reduce the load of the headband; however, a smaller camera may be classified as covert.

This issue is being addressed through the User Group with the trial of some prototypes designed by one of the team members and is being independently manufactured.

3.5.2 Integration with uniform

In addition to the camera, the officer carries a recording unit (complete with screen) which is carried within the utility pouch. The Project Team has revised the cable design to make it shorter and incorporate a safety break point. Some minor modifications could be made to a utility vest to securely hold the recording unit.

The Project Team has identified the need to develop the technology further. One system under consideration could utilise flash memory, standard AA batteries and be splash proof.

3.5.3 Software issues

Some software issues have arisen during the trial and are currently being addressed. It was hoped to have a more detailed update regarding the software, but investigations are still ongoing.

3.5.4 Remote switch

There have been issues with the remote switch used to operate the recording unit. The small switch (incorporating the microphone) is designed to be worn on the officer's lapel and can be difficult to operate, especially if the officer is wearing gloves. There is little feedback sensation from the switch to indicate if it has

activated. This is being addressed by the Project Team – a development under consideration is a more positive 'on' switch and the need to press a combination of buttons to turn the unit off.

3.5.5 Interference with AirWave

There have been reports that the unit interferes with the AirWave system and vice versa. Further testing by the Home Office Scientific Development Branch (HOSDB) indicates this to be the case and this is addressed fully in the 'Technical specifications' section of this document which stipulates the testing required to ensure compatibility.

3.6 TRAINING COURSE

During the introduction to this project, a representative of 'Process Evolution' attended a training course to understand more about the technology and review the training material and delivery.

A qualified police trainer led the course supported by a member of the Project Team who presented the technical aspects of the head camera. The training package has been further developed and has been sent to the National Policing Improvement Agency (NPIA) for accreditation.

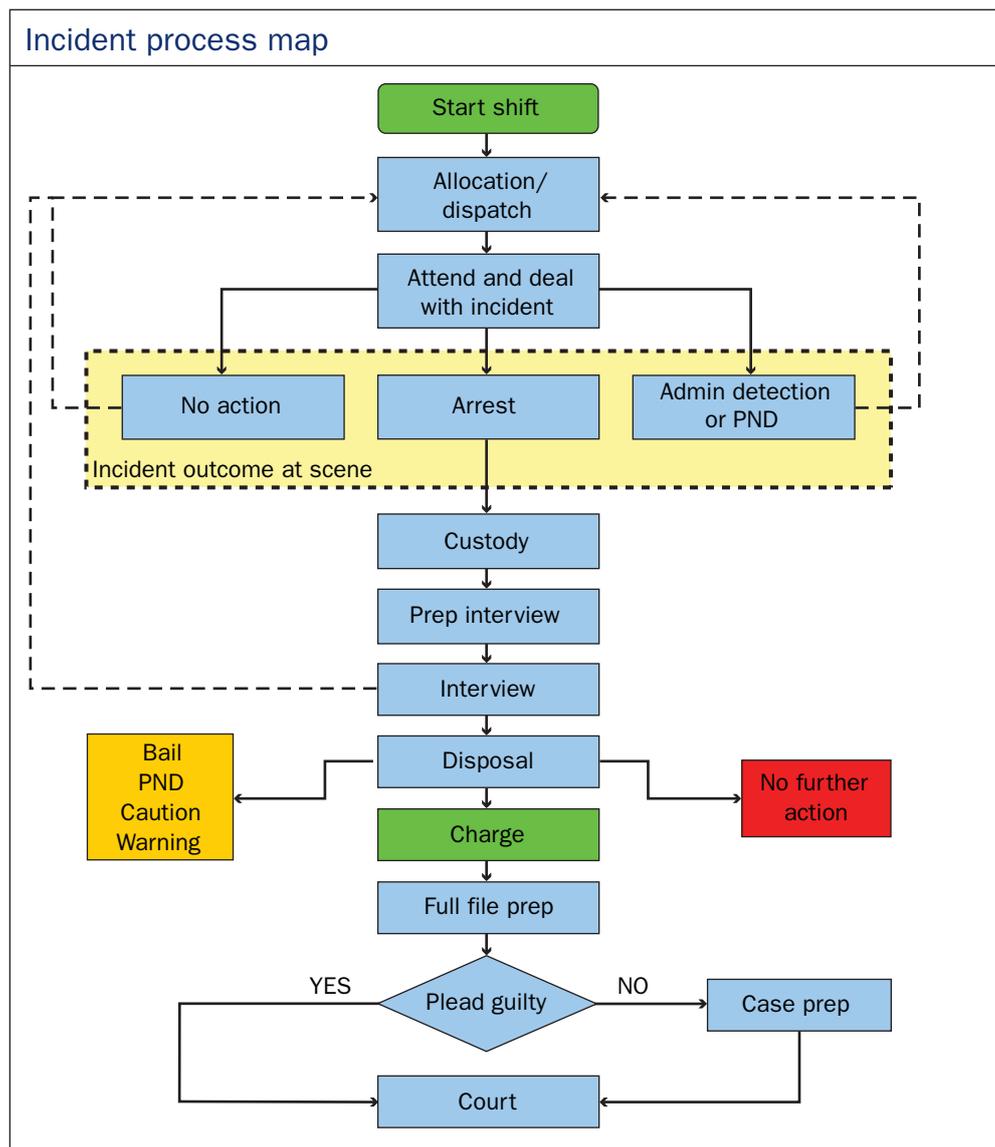
3.7 USER GROUP

A User Group has been set up to identify issues and benefits during the pilot. This User Group has already started to address some of the issues raised and share good practice and ideas.

4. Process

4.1 PROCESS ANALYSIS

This section documents some of the key activities along the process.





The process map on page 81 shows where incidents could potentially terminate along the process.

During the pilot, officers submitted 3,055 recordings. Approximately 1,000 of the recordings related to general patrol and did not link to specific incident logs. Of the 3,055 recordings, 1,170 related to specific incident log records. Of these, 479 related to crimes and 256 resulted in arrest.

4.2 THE BOOKING IN AND OUT PROCESS

In Plymouth the officer attends the back office facility (BOF) located at Charles Cross Police Station in order to book out a head camera. The South and Central sectors are also based within the same building; therefore the booking out process is fairly quick. However, if the pilot were to be more widely implemented across either the BCU or the force, then the booking out procedure would need further development.

4.3 OFFICER PATROL

The officers take the camera on patrol, and as soon as they are tasked to respond to an incident the camera should be turned on. This will provide evidence that could show suspects leaving the scene. While at the scene, the camera should continue to record the events. If an arrest is made the recording should continue until the prisoner is handed over to the custody staff for processing. During the pilot, good evidence was captured of a detainee in transit to custody where his words and behaviour demonstrated his intention to commit further more serious offences.

4.4 SUBMISSION OF EVIDENCE

At the end of the shift, officers complete a submission form detailing the incidents at which the head camera was used. The submission form is available electronically for officers to complete, but it is not possible at this time to submit it electronically. This therefore requires staff at the BOF to input this information manually. If there is evidence relating to a prisoner in custody and the footage is required immediately, the officers have the facility to produce their own copies of the recording via a local standalone laptop computer.

4.4.1 Back office facility (BOF)

The BOF requires two technicians to staff the office from 07:00 to 15:00, seven days a week. There is extra cover between 10:00 and 18:00, Monday to Wednesday, to accommodate requests for the burning of disks for court and Crown Prosecution Service (CPS) requirements. Their primary tasks are file management, equipment maintenance and archive database management.

File management

Head camera recordings are retained for a period of time in line with the legislation on data collection and retention. Information within the footage may become relevant at a later date. File management involves maintaining the recorded evidence on the computer system and providing appropriate sections of footage to interested parties.

Equipment maintenance

The BOF technician makes a copy of the evidential information recorded by the head camera and saves it onto a master and a working disk. The head camera unit is then cleaned of all footage and charged for the next usage.

Archive database management

The BOF technicians record the incident log details against the footage on the database, detailing information such as:

- date/time
- location
- offence type (or types)
- offender visual description
- MO (modus operandi)
- arrests

4.5 PRISONER HANDLING

The Prisoner Handling Unit (PHU) has access to the recorded footage and will take a decision to review the recording to assist them in preparing for interview, or following an initial interview, in order to seek clarification of events. In one example, a victim of domestic violence aged 19 years old stated on head camera that she had been seeing her older boyfriend for 5 years. This then led to additional charges being brought against the detainee following the review of the footage.

4.6 CPS

The data provided by the CPS throughout the pilot has been limited and thus does not provide an accurate picture on finalisation categories. This has been due to various reasons and it is clear that an improved protocol of procedures to follow on both sides should be developed. CPS Direct will still not be able to view the head camera footage due to their location and the current procedures in place, for the same reasons that they are unable to view CCTV.

4.7 COURT ISSUES

As stated previously, the courts were provided with the appropriate facilities and training to enable them to play head camera footage, but to date specific data is not available. However, through anecdotal evidence it is apparent that when shown head camera footage, the courts are able to assimilate the demeanour of the offender and the nature of the offence in more detail. It affords the judiciary a more realistic overview and first-hand experience of the incident and the circumstances surrounding it.

5. Issues and benefits

The focus of this pilot was to prove or disprove the concept of head camera technology for use by the police. This section reports on the issues that have arisen to date in adopting the new technology. The benefits, concerns and feedback from the officers using the equipment are discussed in anecdotal form. These should not distract from the overall positive indications around head camera usage by the police, but nevertheless represent issues that require further consideration before wider adoption of the technology.

5.1 OFFICER QUESTIONNAIRE

This section examines the results from the questionnaire sent to all officers trained in using the head cameras. A précis of the results/comments can be found in Annex 1.

5.1.1 Positive comments

Evidence

Half of the questionnaires suggested that the quality of evidence captured by the head camera was the most positive aspect.

Respect

A quarter of questionnaires stated that the respect gained from the public when using the head camera and its value as a deterrent and in calming the situation down were of significant value.

5.1.2 Negative comments

Comfort

The majority (over 60%) of the negative comments related to the comfort of wearing the head band.

Technology

A third of officers cited issues with the recording unit being bulky and occasionally unreliable.

Process

Some officers found negative issues with the process of submitting the forms and the need to continue to submit statements.

5.2 BENEFIT EXAMPLES TO DATE

The following examples were raised during discussions with police officers during the course of the project.

- A domestic violence incident where injuries were sustained by the victim and an initial account of how they were inflicted was recorded. This was followed up with a written statement which was subsequently withdrawn. A victim-reluctant prosecution was pursued and a successful conviction with a custodial sentence of 90 days for assault was achieved.
- A serious violent assault occurred in the street following an incident within a public house, during which a male had half his ear bitten off. The police were able to track the departure and subsequent location of the offender in a taxi by using CCTV in conjunction with head camera footage. This secured vital evidence and maintained the continuity of the incident, which led to an early guilty plea and successful prosecution. A sentence of two years' imprisonment was passed.

Good use has also been made of the head cameras for observations at football matches and intelligence purposes. It is also useful in addressing high-volume crime, such as anti-social behaviour, criminal damage, graffiti tagging, etc.

5.3 CONCERNS

There have been a few incidents reported where the head camera has been accidentally knocked off during scuffles (while making arrests). As the footage was not available, the Crown Prosecution Service (CPS) decided not to

include the charge of resisting arrest, a charge that may have been pursued before the introduction of head cameras. These examples demonstrate that officers must not rely solely on head camera evidence for their case and must ensure that they have the necessary evidence from traditional sources.

- An incident of a drunk and disorderly arrest resulted in the CPS rejecting the case as insufficient evidence was recorded on the head camera. “The camera can be a bit of a double-edged weapon, as without the video I [the officer] would have got a charge.”
- At another incident, the officer’s camera was knocked off and did not capture an assault. “Even though I submitted my notes, the CPS didn’t progress case as no footage.”

5.4 OFFICER FEEDBACK (ANECDOTAL)

Example 1: Officer

An officer with 13 years’ policing experience uses the head camera every shift and thinks they are an invaluable piece of equipment.

“Can’t see any reasons why everybody isn’t wearing them!”

“All officers trained but some shy away from the technology, thinking that it is a bit daunting. All they need to do is turn on, check the date and check it is working. Any submitted evidence is a simple procedure with submission sheet attached to the case.”

“When processing an arrestee the submission of the report is reduced. A decent arrest statement could be 5–6 pages and take (typically) 45–60 minutes. This reduces to 20–30 minutes with the head camera.”

The officer felt that further benefit will result from a reduced need to call officers to court, an increase in the number of offenders admitting the offence and a better conviction rate. The officer finds the camera comfortable to wear but is concerned by the ease with which the camera could be knocked off during a fight.

Example 2: Police community support officer

A police community support officer (PCSO) was interviewed for feedback on the head camera. They use the head camera at every opportunity, and for comfort keep it resting around the neck when not in use. The biggest benefit they have noticed is respect when engaging with the public.

“People change the way they speak once they realise that the camera is there. I now see some people looking for a camera and this can arouse suspicion. When I’m not wearing the camera I see a noticeable change in perceived attitude.”

The PCSO finds that the camera is an excellent deterrent and is very effective for capturing footage of underage drinking and people drinking in areas designated alcohol free – where before offenders would throw away drinks and claim that they had not been drinking.

One example given was in addressing a long-term (six months) issue of youths abusing city centre cleaners. This quickly stopped when the PCSO started to wear the head camera, resulting in praise from cleaners and their managers and increased motivation in their job.

Issues experienced by the PCSO included:

- discomfort after approximately six to eight hours’ use (despite taking it off during the day for breaks);
- poor durability (of the camera mount/headband); and
- on/off switch issues.

Prisoner Handling Unit

Feedback from the Prisoner Handling Unit is positive. For example:

- footage of an aggrieved person who had been assaulted allowed the interviewing officer to clearly see the severity of their injuries;
- picture quality is good and clearly identifies the offender;

- officers are capturing the arrest – this is useful because it shows the mood and demeanour of the person arrested; and
- footage is easily obtained from the back office facility technicians for interview.

5.5 OTHER COMMENTS

During the course of the project, numerous positive comments were made by police officers, some of which are documented below:

“I would feel naked without it” (Officer)

“Fantastic piece of evidence” (Officer)

“I take one out every shift” (Officer)

“I can’t speak highly enough of the technology” (Pre-Charge Case Review)

“I do not go out on patrol now unless I have my radio and head camera”

5.6 OTHER USES OF THE TECHNOLOGY

It has been identified that head camera technology could be of benefit to the police in a wide variety of applications, including the ongoing development of officers, the training of officers, use by forensics officers at major crime scenes and during searches/warrants.

5.7 SUMMARY OF OFFICER QUESTIONNAIRE FEEDBACK

Benefit/ issue	Description	Implication
Benefit	Respect on patrol	Members of the public, and noticeably youths, show more respect
Benefit	Dealing with large groups	Large groups are less confrontational when the officer is wearing the head camera
Benefit	Capturing of information	'A picture tells a thousand words'
Benefit	Capturing witnesses' details	Good tool for capturing witness names and addresses
Benefit	Stop-checking cars – and ensuring that the driver does not give false details	Good record of exactly who was driving the vehicle
Benefit	Recording details of vehicles (description, condition and position) following a road traffic collision	Could be revenue generating, providing information to insurance companies in the same way as the National Collision Recording Form (currently charged at £110)
Issue	Wearing camera headband	In limited reported cases can be uncomfortable and cumbersome
Issue	Record switch	In limited reported cases resulted in missed recordings and accidental recordings
Issue	Recording unit design	A little bulky and does not integrate well with existing uniform options

6. Conclusions

This section of the report summarises the main conclusions that we can draw from the findings contained in Sections 2 to 5.

6.1 KEY OBJECTIVES

Below are listed the conclusions relating to the key objectives defined for the trial.

6.1.1 Crime reduction

A small reduction was observed in the overall level of violent crime; while in the right direction, the reduction is not considered statistically significant, and given the scale of reduction it is not possible to isolate the effect of head cameras on this statistic.

6.1.2 Sanction detection

A significant improvement in the detection rate of violent crime has occurred during the period of the trial.

6.1.3 Offenders brought to justice

Due to the elapsed process time from crime occurrence to court, it is not possible to quantify the benefits on offences brought to justice. However, anecdotal evidence suggests that head camera footage affords the judiciary a more realistic overview of the circumstances and first-hand experience of the incident.

6.1.4 Efficiency

Both quantitative and qualitative evidence supports the view that head cameras reduce the amount of time spent by officers on paperwork and file preparation.

6.1.5 Complaints

While statistically significant evidence is not available, there were no specific instances during the trial period where complaints were received against police officers using head cameras.

6.1.6 Public satisfaction

It is important to note that a significant reduction in police officer time spent on paperwork has been achieved due to the use of the head camera and

statistically detections have increased and violent crime has decreased. These, combined with the increased time officers spend on patrol as a result of head camera use, are important factors in increasing police visibility and public reassurance.

6.2 ISSUES

This subsection contains conclusions relating to the use of the technology and the process by which it was implemented in Devon and Cornwall.

6.2.1 Technology

- Overall image and sound quality were sufficient for purpose. There were some concerns about the accuracy of colour reproduction under certain lighting conditions. It therefore needs to be recognised that, for practical reasons, there may be occasions when there is a disparity between written evidence and available footage.
- Many officers stated that they found the equipment uncomfortable to wear, in extreme cases citing nausea after prolonged use. These concerns need to be addressed in order for the technology to be widely accepted.
- A minority of officers found the technology complex to use, and in some cases evidence was not captured from incidents due to issues with the recording switch. Of most concern is where the prosecution does not progress due to a lack of head camera footage, even though other sufficient evidence may have been available.
- A combination of comfort, usability and other issues meant that there was significant variation in usage rates by individual officers.

6.2.2 Process

- The location and implementation process of back office facility functions need to be considered so that officers do not spend longer than necessary collecting and returning cameras.

- 
- The overall number of cameras required could be reduced by using separate batteries that could be charged offline.
 - The overall number of cameras required could be reduced by using removable memory that could be processed separately.

6.3 IN SUMMARY

We believe that the use of head cameras is a positive step that will make a difference to detection rates and crime levels for violent crime and disorder in particular. At this stage in the trial, there are some areas where the extent of these benefits cannot be stated. The issues that we have raised should all be surmountable; their resolution should contribute further to the successful adoption of the technology and hence to realisation of the benefits.

We therefore recommend that:

- the extended pilot is assessed further in 12 months using the quantitative measures we have developed; and
- re-engagement with officers who have yet to embrace the technology occurs once some of the issues raised with the head cameras have been addressed and the success of this re-engagement measured.

7. Future use of head cameras

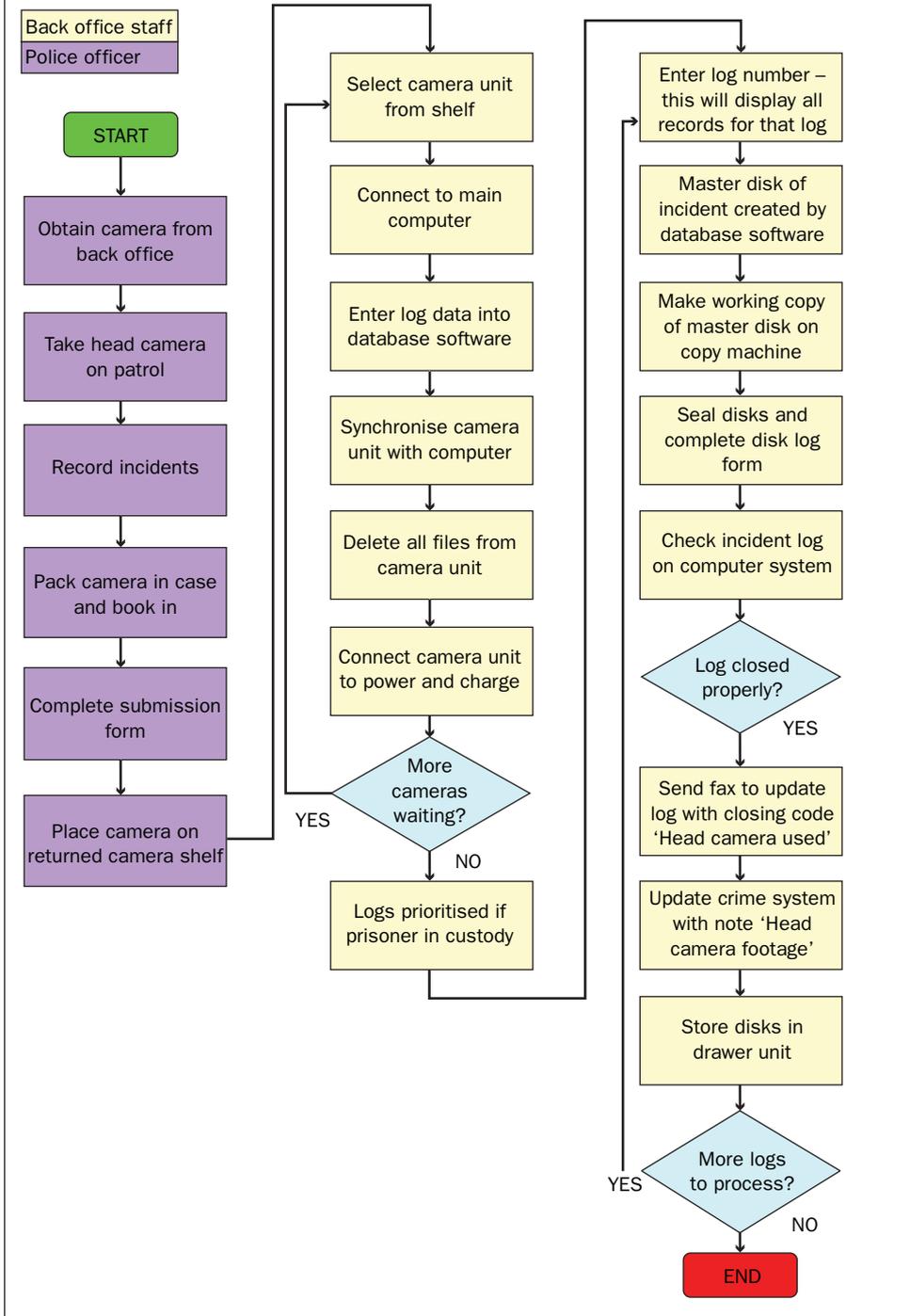
This section examines some of the aspects relating to using the technology in a higher proportion of crimes across the Police Service. The need to adapt the process to enable easy submission of recorded footage and maximise camera utilisation is discussed and evaluated in two simulation models.

7.1 CURRENT PROCESS

7.1.1 Process map

The current process for head cameras is shown in the process map opposite. Officers obtain the device from the back office facility (BOF), use the cameras on shift and return them to the BOF. The BOF then processes the cameras, copying the data from the camera recording unit to a standalone computer. The camera units are then recharged before being made available for another officer to use.

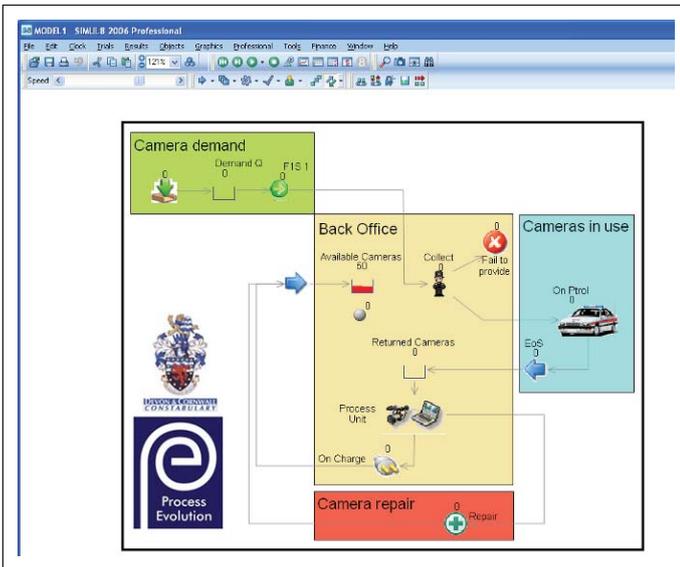
Head camera process map



7.1.2 Dynamic simulation

A dynamic simulation model was built of the current pilot process to establish the utilisation of the camera units. Unlike a static model, a dynamic model caters for variances in process demands and can emulate more closely the real process.

The model was built in SIMUL8™ to represent the process employed in the pilot. To facilitate easy interaction with the model, a Microsoft® Excel® interface was also built to set model parameters and analyse model results. A screen shot of the model is shown below.



The model was populated with appropriate data from the pilot project, including:

- camera demand over the course of the week;
- number of cameras available;
- duration camera was used for;
- process times of the BOF activities to download camera data and to charge camera units; and
- operational shift pattern of the BOF.

The key process times are shown in the diagram at the top of page 93.

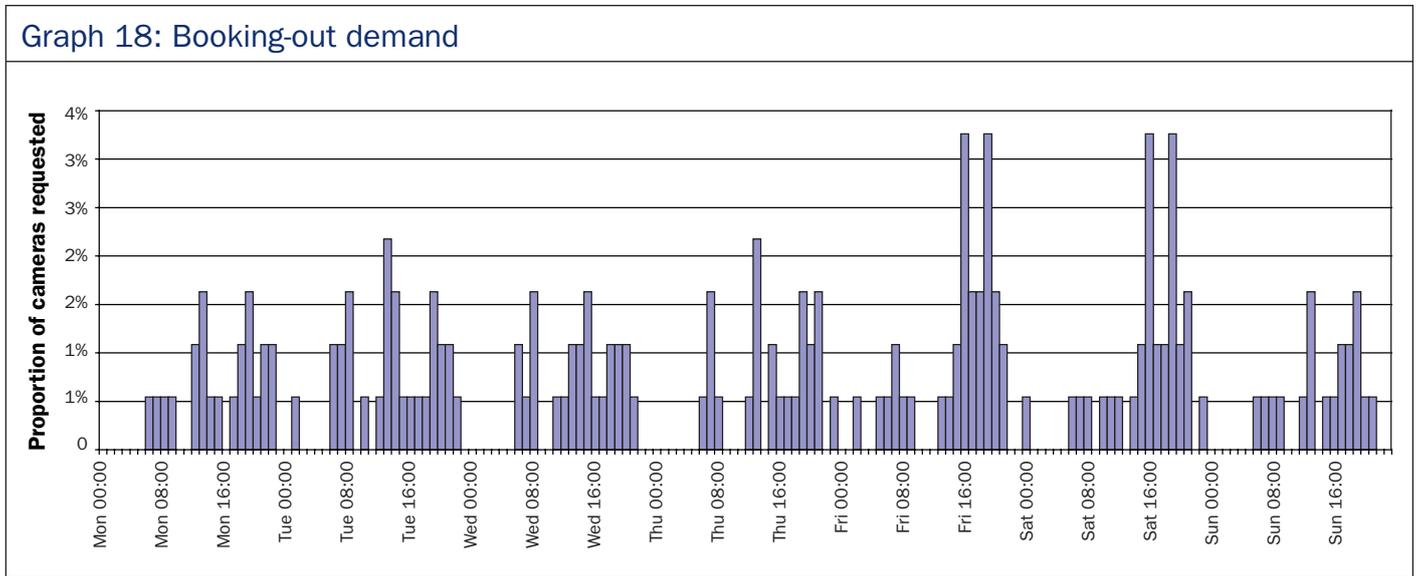
Model inputs

Step	Icon	Description	Comments	Data source					Resource	
1		Obtain camera, plug in to computer and enter details into database	For each camera returned with footage (even non-evidential)	Time	Distribution	Min	Most likely	Max	Mins	Pool Officer
				Process	Triangle	1	1.5	2		
2		Probability of camera needing repair	Repair duration then probability	Repair	Distribution	Min	Most likely	Max	Days	% chance 0.60%
				Duration away	Triangle	20	22	25		
3		Place on charge	Time taken to charge the camera – minimum delay (no resource required)	Repair	Distribution	Mean	Std Dev	x	Mins	Pool None
				Charge	Normal	480	50			

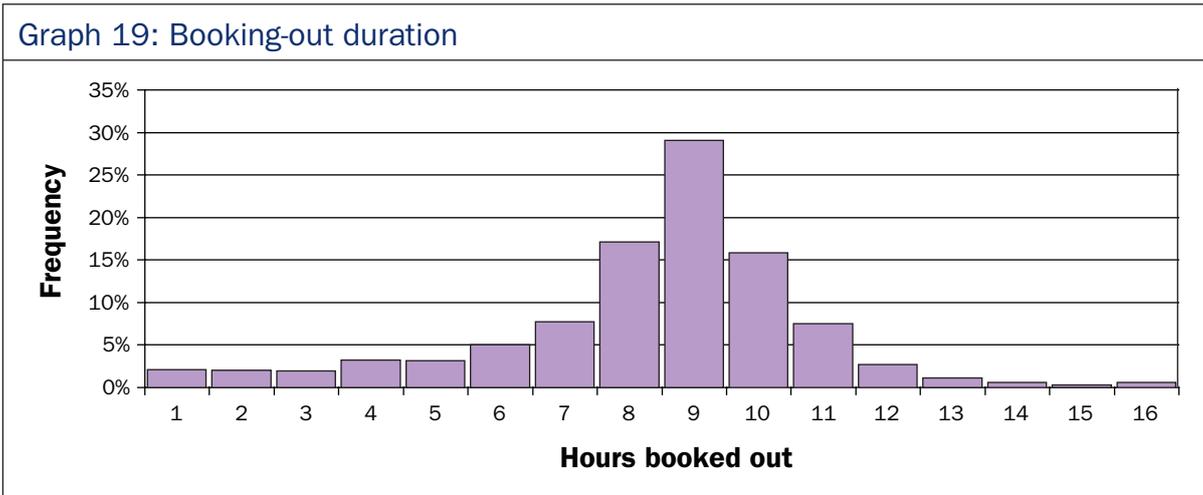
Cameras available in pool	50
---------------------------	----

The demand profile over the week was taken from an amalgamation of the pilot data, then the demand scaled up with the officers requesting 180 cameras in the week. The demand profile is shown in Graph 18.

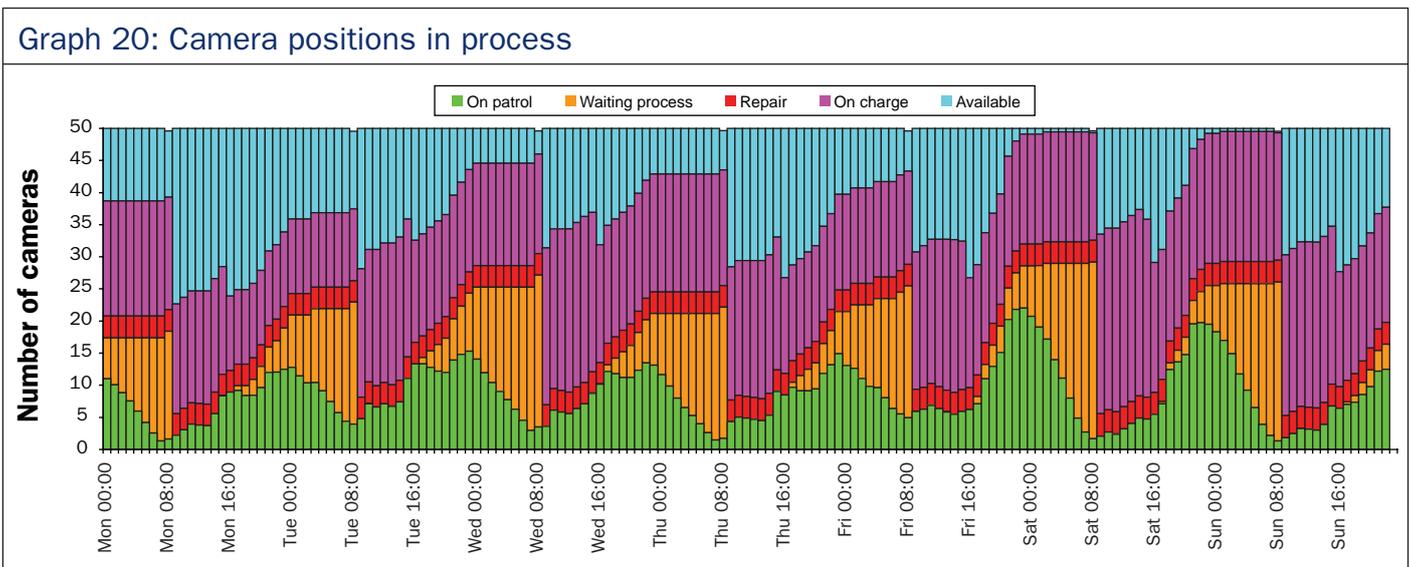
Graph 18: Booking-out demand



Each time a camera is booked out, the following distribution (Graph 19) is sampled to obtain a duration time for which the camera is used by the officer.

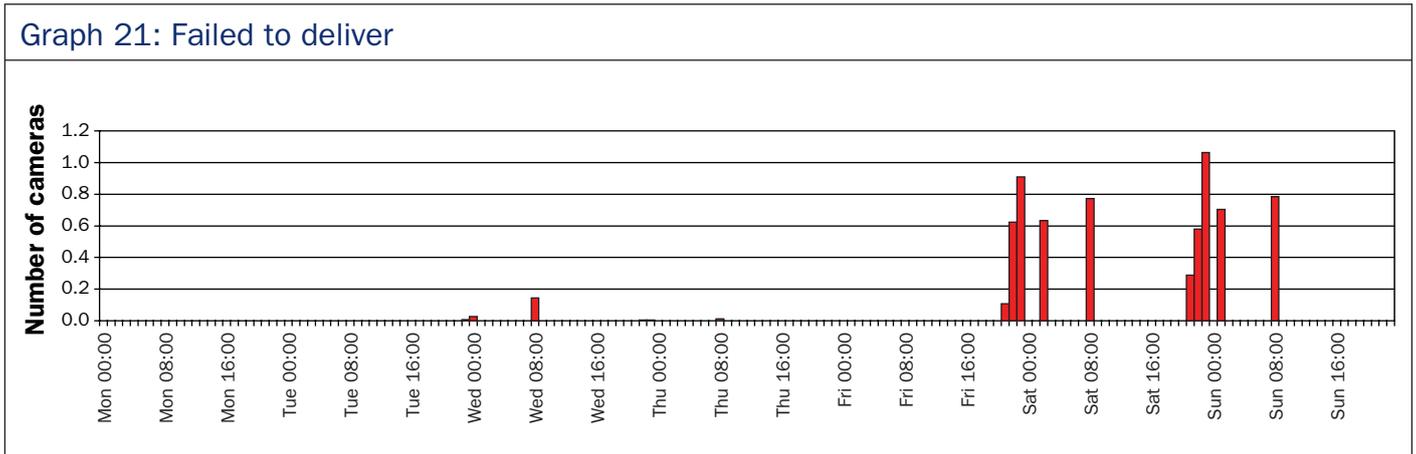


When run, the model produced the results shown in Graph 20.



The number of cameras in different stages of the process is shown by the hourly profile in Graph 20. Most cameras are in use on Friday and Saturday nights.

Graph 21 shows the average number of times during the week that cameras were not available in the simulation model and a failure to meet demand was recorded.

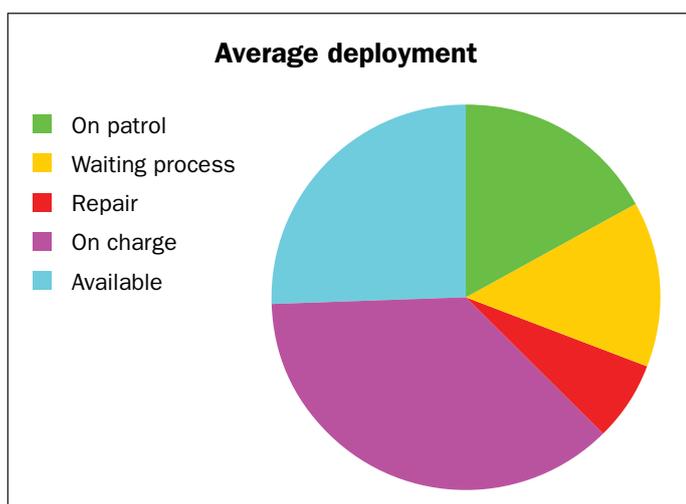


Summary data

Detail	
Cameras available	50
Average cameras requested	184
Failed to supply	6.7
Hours of camera use	1,432

each week
each week
each week

Average deployment		
On patrol	8.5	17.2%
Waiting process	6.8	13.7%
Repair	3.4	6.7%
On charge	18.4	36.9%
Available	12.7	25.5%
	49.7	



7.1.3 Static calculation

The workload of officers and the BOF staff is calculated in Tables 10 and 11. The data is based on data from the trial, where the officers used the cameras for 65 shifts in the week and each camera captured evidence from two incidents, one of which was of evidential value.

Table 10 relates directly to the process map (as at 7.1.1 above) and includes officer activity visiting the BOF to collect and later return the equipment along with any submissions. The table also shows the process of the BOF staff copying the footage to the computer and documenting it on the database.

The summary results above show that over 50% of camera utilisation is lost due to time spent waiting to process the cameras, charging the camera units and repairing cameras.

Findings

- Fifty cameras are sufficient to enable deployment of 180 units in the week over a similar demand profile exhibited in the pilot.
- With a camera demand profile varying over the week, as discussed, the average camera utilisation will be less than 20%. In addition, utilisation opportunity is lost waiting for camera units to be processed and charged.

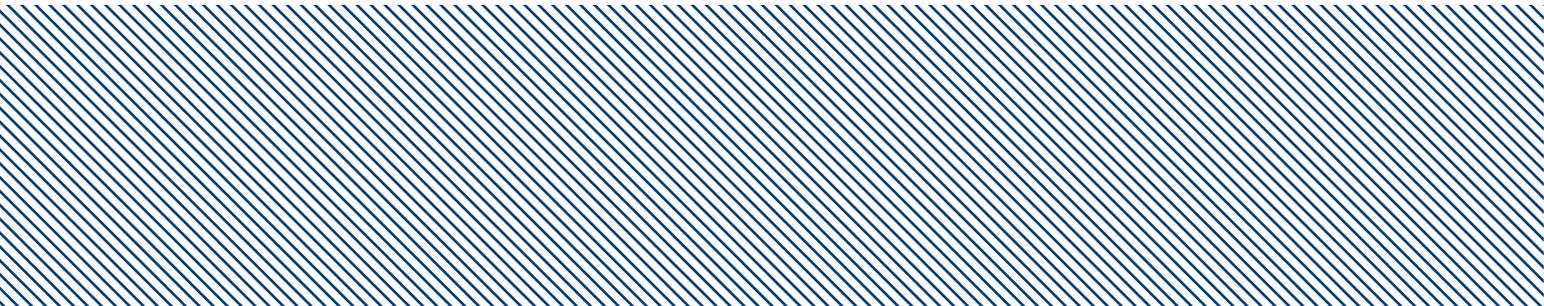


Table 10: BOF static workload calculation

		Average camera use time (min)		Average camera use per week	Weekly workload (min)		
No.	Activity	Officer	BOF		Officer	BOF	
1	Go to back office * other stations	2.5		65	162.5	0	
2	Book camera out	0.6		65	39	0	
3	Return to back office	2.5		65	162.5	0	
4	Book camera in	0.4		65	26	0	
5	Fill in submission form (may do before return)	20		65	1,300	0	
6	Package camera	1		65	65	0	
7	Connect camera to computer		0.5	65	0	32.5	
8	Enter log data		4	150	0	600	
9	Synchronise recording unit		2	65	0	130	
10	Delete recorded files		1	65	0	65	
11	Set unit to charge		1	65	0	65	
12	Search through to next log		1	50	0	50	
13	Burn master disk and write labels and other things		10	50	0	500	
14	Create working copy		5	50	0	250	
15	Seal disks		0.5	50	0	25	
16	Complete disk log		0.5	50	0	25	
17	Store disks		0.5	50	0	25	
					Minutes per week	1,755	1,767.5
					Hours per week	29.25	29
					Hours per year	1,521	1,532
					Staff per year	0.9	0.9

Table 11 shows additional activity undertaken by the BOF in maintaining the equipment and supplying evidence to interested parties. Many of the initial recordings are now being requested if the case progresses to court. The Project Team believes that this will rise over the next few months when the positive evidential implications of head camera footage become more widely recognised.

		Average camera use time (min)		Average camera use per week	Weekly workload (min)	
No.	Activity	Officer	BOF		Officer	BOF
1	Officer enquiries	20	30	20	400	600
2	Other use of technology by staff/officers	10	10	21	210	210
3	Maintaining log sheets		10	7	0	70
4	Printing photographs		14	1	0	14
5	Issuing disks		15	13	0	195
6	Unpackaging disks		10	7	0	70
7	Fault tracking and reporting (defects)		10	10	0	100
8	Checking officer opinion of fault		5	10	0	50
9	Date folder issues		1.5	14	0	21
10	Maintaining sign-out sheets		30	7	0	210
Minutes per week					610	1,540
Hours per week					10.2	25.7
Hours per year					529	1,335
Staff per year					0.30	0.76
Total staff/year (Tables 10 + 11)					1,755.30	1,768.26

Officers surveyed, acknowledged that the existence of the BOF encouraged them to use the cameras.

	No	Less	Same	Total	Percent no or less
Would you use as much if no back office?	34	52	15	101	85.1%

7.1.4 Implications of the roll-out

The implications of expanding the pilot with the same process design include the following:

- More cameras will be required if the deployment is to rise above 180 shifts in the week.
- More staff in the BOF will be required to process the evidence. In addition, depending on the size of the scale-up, an additional computer terminal may be required to process the cameras quickly enough to allow them to be redeployed.
- If the roll-out were to incorporate other stations, the time taken for officers to collect and return cameras to the BOF would have to be taken into consideration. Potentially, cameras in transit would be another factor limiting utilisation.

At the end of the shift all cards containing any data would be returned by courier to the BOF for processing in a similar way as at present. The BOF would not, however, have to spend time managing working copies of evidential cards.

With a second battery and an offline charging unit, the camera would then be ready for immediate redeployment.

7.2 PROPOSED PROCESS

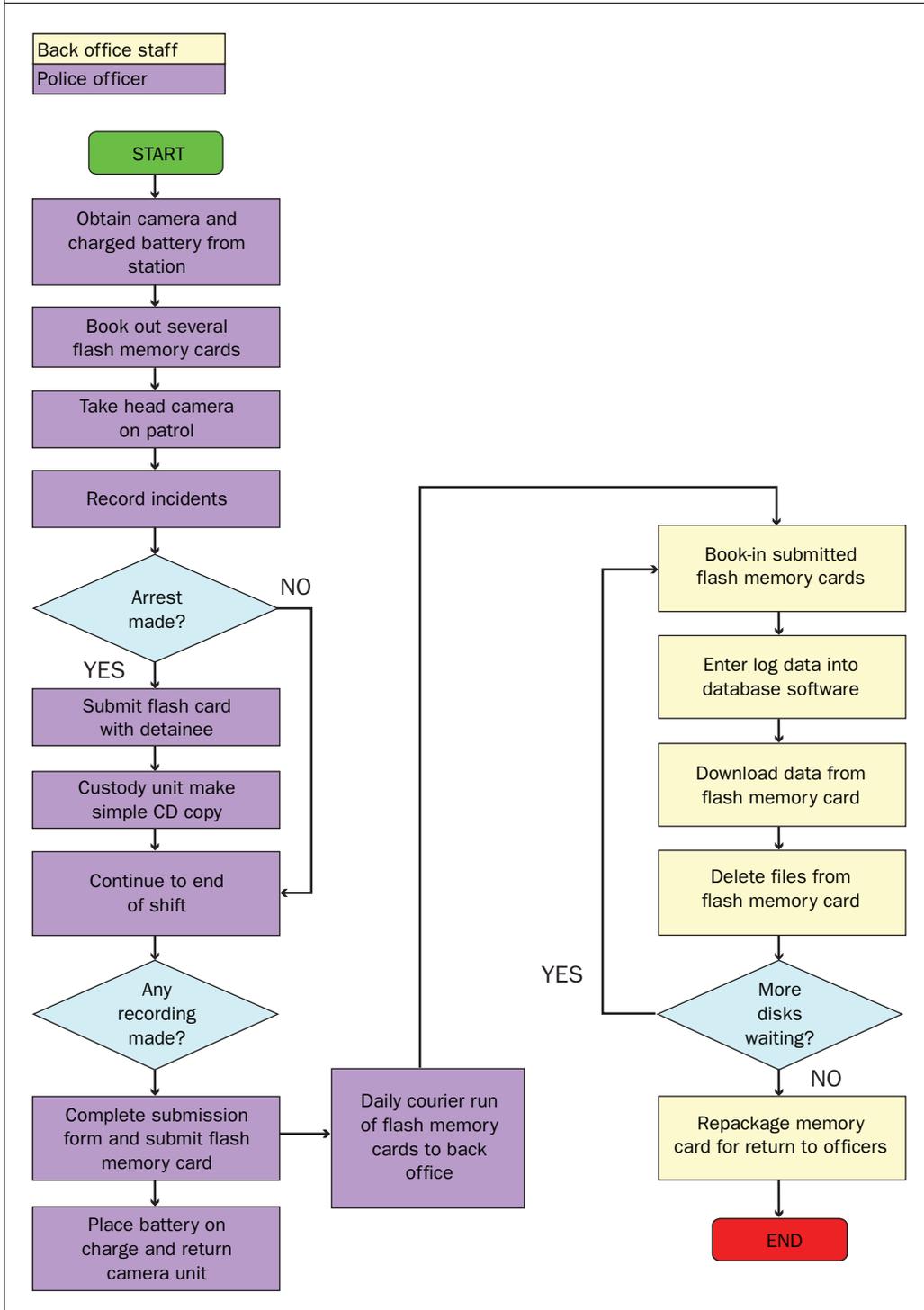
The process described below is a possible way of handling the benefits of using removable flash memory disks and separate batteries that can be charged offline. This will address the two main issues restricting camera utilisation. *This process has not been developed with Devon and Cornwall Police.*

7.2.1 Process map

The process map on page 100 shows how the process could look.

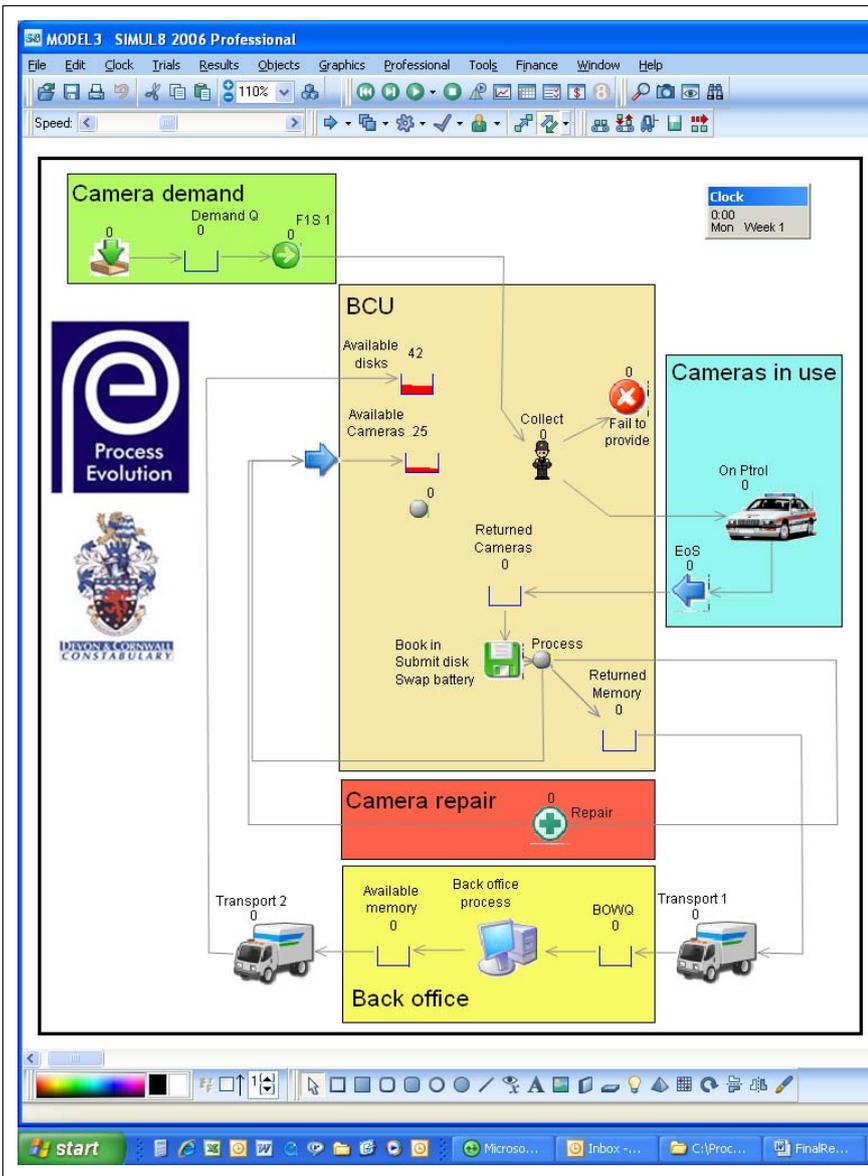
The camera population is managed locally at sector level. Memory cards are booked out for use by the officers and submitted in the same way as evidence. When an arrest is made, custody makes a simple CD working copy from the memory card – this would be a very simple process (taking less than a minute) using a copy machine/ memory card reader, not a computer.

Process map for using removable flash memory cards



7.2.2 Dynamic simulation

A simulation model was built to replicate the proposed process with the aim of quantifying the number of cameras and memory disks required to deliver the same service level as under the current process. A screen shot of the model is shown below.



The process times used are shown below.

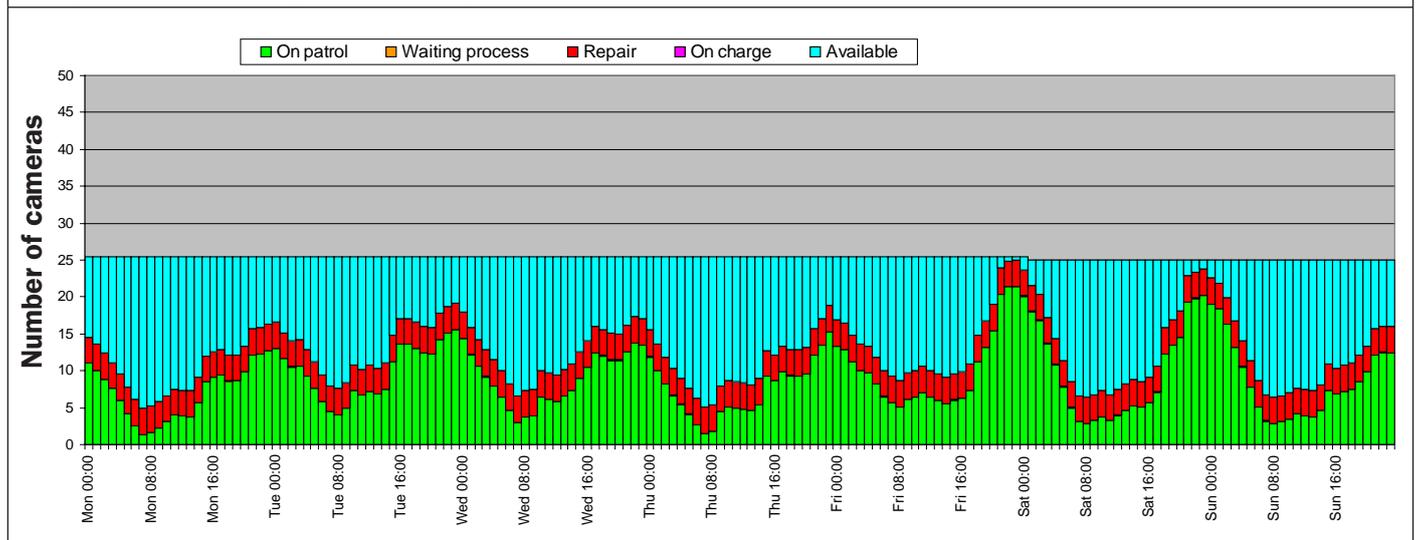
Model inputs

Step	Icon	Description	Comments	Data source					Resource	
				Time	Distribution	Min	Most likely	Max		
1		Obtain camera, plug in to computer and enter details into database	For each camera returned with footage (even non-evidential)	Process	Triangle	1	1.5	2	Mins	Pool
										None
2		Probability of camera needing repair	Repair duration then probability	Repair	Distribution	Min	Most likely	Max	Days	% chance
				Duration away	Triangle	20	22	25		0.60%
3		Place on charge	Time taken by office to process memory card	Delay	Distribution	Mean	Most likely	Max	Mins	Pool
				Charge	Triangle	1	1.5	2		Officer

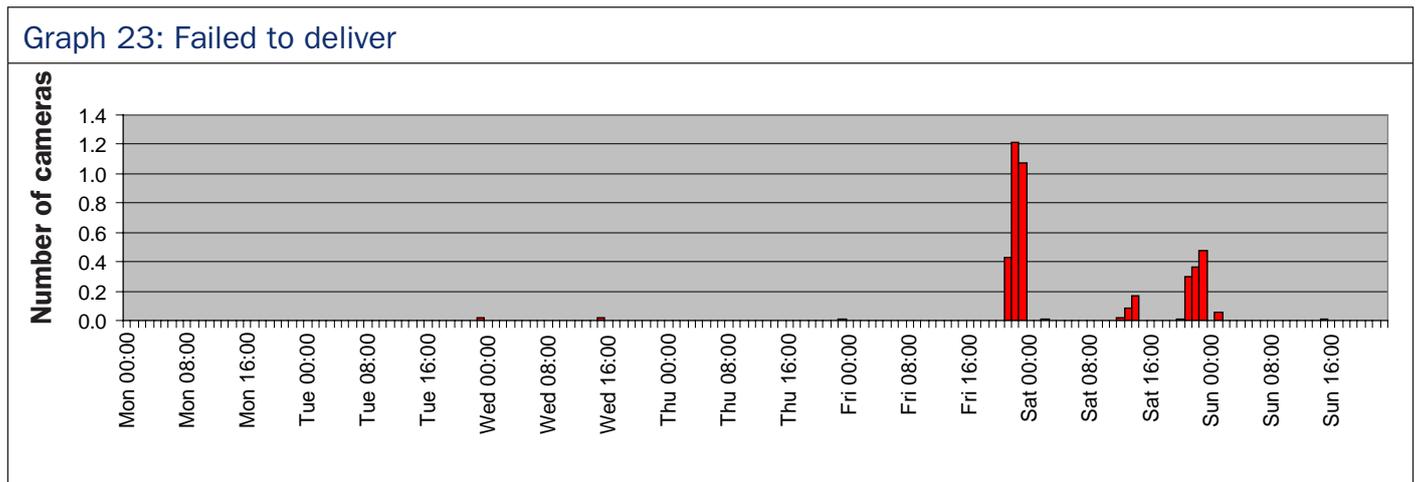
Cameras available in pool	25
Memory disks in pool	42

The number of cameras was reduced by half to 25 and the number of memory cards available was set at 125. All other model parameters, including demand level, remained the same. When run, the model produced the results shown in Graph 22.

Graph 22: Camera positions in process



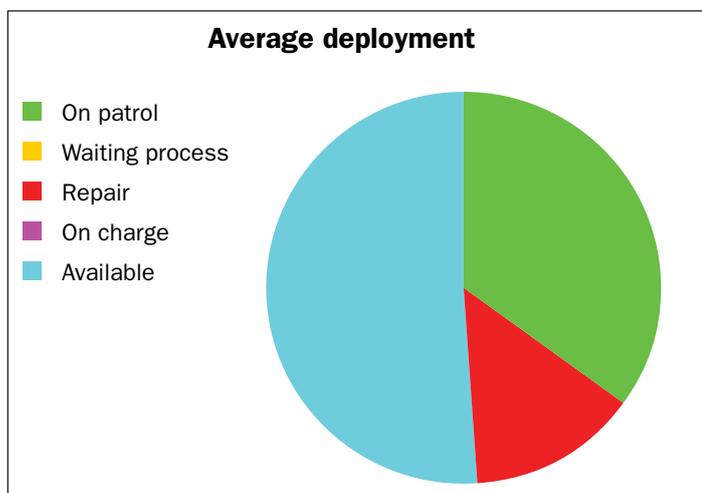
Graph 23 shows the number of times during the week that cameras were not available and a failure to meet demand was recorded.



Summary data

Detail		
Cameras available	50	
Average cameras requested	184	each week
Failed to supply	4.3	each week
Hours of camera use	1,485	each week

Average deployment		
On patrol	8.8	34.8%
Waiting process	0.0	0.1%
Repair	3.5	14.0%
On charge	0.0	0.0%
Available	13.0	51.1%
	25.4	



The summary results above show that the only restriction to camera utilisation is the need to repair faulty cameras.

Findings

- Twenty-five cameras and 125 flash memory cards will deliver the same service level as 50 of the current cameras. Within this scenario, three memory cards are used with each camera provision.
- The delivery system for transferring the memory cards to and from the BOF will be essential.

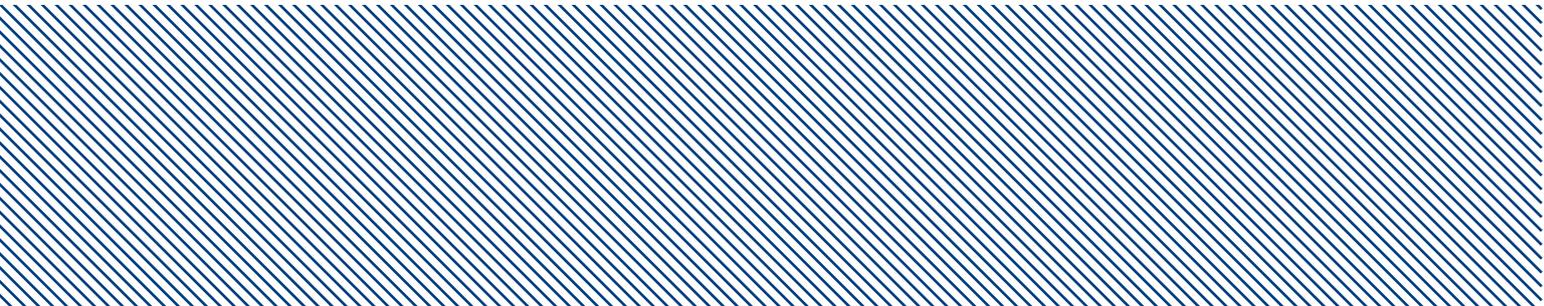
- With fewer cameras in the population, reliability is more critical. Improved reliability and a good service level from the supplier will be essential to maintain performance.

7.2.3 Static calculation

The increase in disk submission will be managed in the BOF by enabling the custody units to easily manufacture and manage the working and master copies of the evidence. They will do this by creating a simple copy of the submitted memory card in a memory card copying machine.

The estimated workload is given below as a comparison with the same figures from the pilot (see Table 10, section 7.1.3).

No.	Activity	Average camera use time (min)		Average camera use per week	Weekly workload (min)		
		Officer	BOF		Officer	BOF	
1	Book camera out	1		60	60	0	
2	Book camera in	1		60	60	0	
3	Fill in submission form (may do before return)	2		60	1,200	0	
4	Submit memory card	0.5		60	30	0	
5	Create working CD of detainee footage	2		100	200	0	
6	Book in disks (once per day)		5	7	0	35	
7	Enter log data		3.5	300	0	1,050	
8	Copy memory card data to database		0.1	60	0	6	
9	Delete memory card data		0.1	60	0	6	
10	Return memory card		0.2	60	0	12	
					Minutes per week	1,500	1,109
					Hours per week	25	18
					Hours per year	1,343	961
					Staff per year	0.8	0.6



		Average camera use time (min)		Average camera use per week	Weekly workload (min)	
No.	Activity	Officer	BOF		Officer	BOF
1	Officer enquiries	20	30	20	400	600
2	Other use of technology by staff/officers	10	10	21	210	210
3	Printing photographs		14	1	0	14
4	Fault tracking and reporting (defects)		10	10	0	100
5	Checking officer opinion of fault		5	10	0	50
				Minutes per week	610	1,540
				Hours per week	10.2	25.7
				Hours per year	529	1,335
				Staff per year	0.3	0.5
Total staff/year (Tables 12 + 13)					1.0	1.0

7.2.4 Implications of the roll-out

The implications of expanding the pilot with the same process design include:

- provision of a transportation system to return memory disks to the BOF;
- provision of memory disk copying machines; and
- potentially, the BOF will still have to manage the existing camera population.

7.3 SCALED-UP BENEFITS

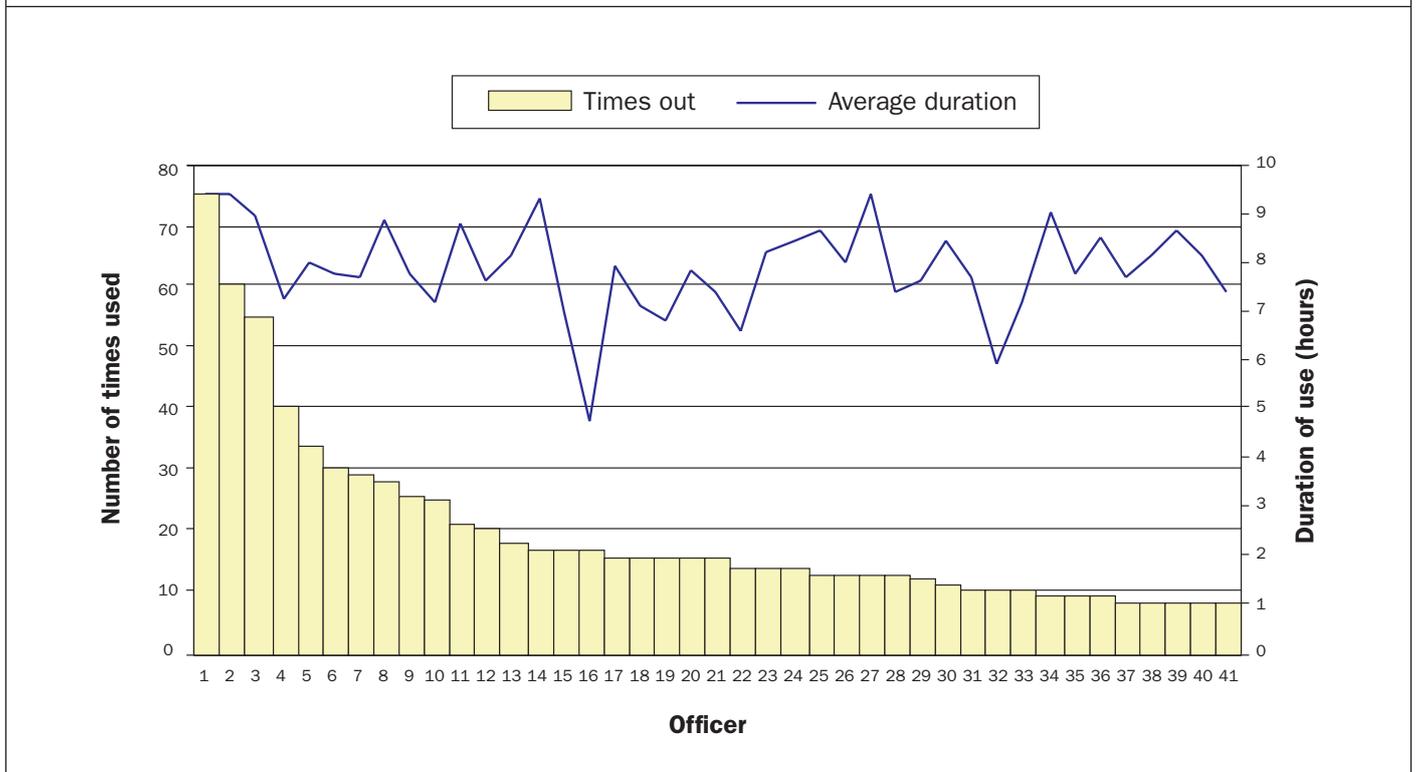
Assuming that the benefits demonstrated in the pilot are a fair representation of the technology, then the scaled-up benefits will have a linear relationship to the pilot's benefits.

7.4 ROLL-OUT GUIDANCE

The pilot project has captured some very good data relating to camera usage by officers. This information should be utilised to identify officers still to be persuaded to adopt the technology. Some of the reasons for officers not using the technology have been documented and are being addressed (such as the headband and operation switch). Once viable solutions have been found, the officers who in the past have shied away from the technology should be re-introduced to it and their response captured.

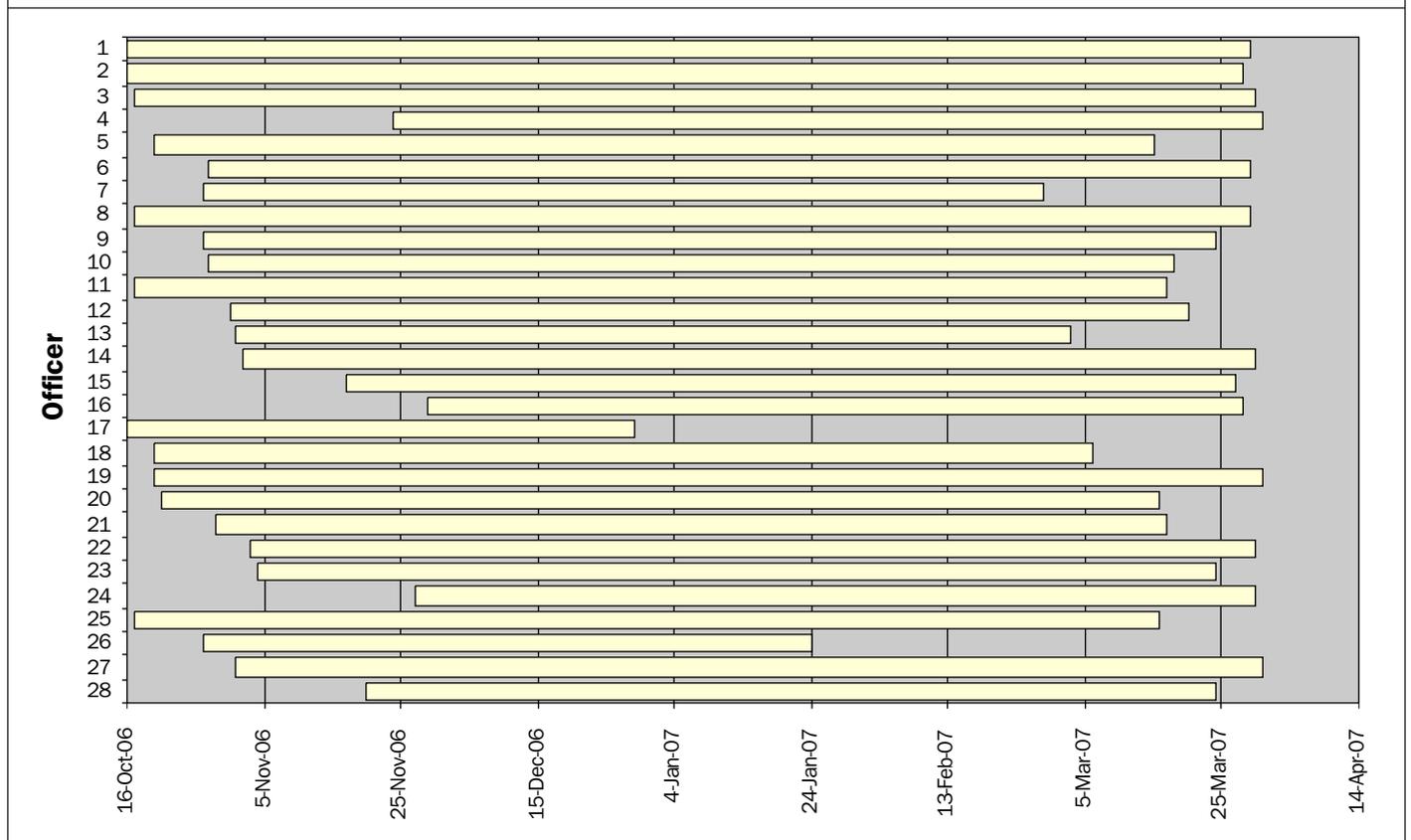
Graph 24 shows the number of times officers have booked out the head cameras. Some officers have adopted the technology well and used the cameras frequently.

Graph 24: Booking-out by officer



Graph 25 shows the earliest and last date that each of the top 28 officers booked out the cameras. This information should be used to identify officers who initially adopted the technology but have not done so in more recent weeks, such as officers 17 and 26.

Graph 25: Date span for camera use by officer



Annex 1: Summary of head camera questionnaire results

WHY ARE OFFICERS NOT USING THE HEAD CAMERAS?

Role-based

Acting duties, usually van driver on Operation Talon or crewed with officer who has already got a head camera on.

As a supervisor I ensure that staff have headcams on. I do not routinely wear one as more often than not a headcam is already present at incidents I attend.

Currently on South/Central LPA Endurance Team in plain clothes. Unable to use in plain clothes but have called marked units with head cameras in to record new nominals/vehicles.

Currently the supervisor of an Endurance Team. Our role is predominantly proactive and covert, therefore the use of an overt headset is not practical.

Supervisory role sometimes and on the occasions when I have been operational I have been driving and my colleague has used the head camera.

My duties are supervisory although when I know I will be on patrol I will endeavour to use one.

Ergonomics

Headband very uncomfortable, unit very heavy and bulky to wear. Also been driving a bit so not been using it, but main reasons are heavy and bulky.

I find wearing it extremely uncomfortable. I have a small head and have to bend the headband inwards to prevent it from slipping down. This then causes the headband to dig into my temples, causing headaches.

Mainly due to being uncomfortable and causing headaches.

Uncomfortable. Headband unit comes off belt easily but is bulky for the utility vest pocket.

Too uncomfortable to wear, problems wearing radio earpiece with it, unit itself too big and nowhere to put it.

Prolonged wear extremely uncomfortable and unable to wear custodian helmet/flat cap.

Technical

Camera blocks signal to my Airwave radio, it does not stay turned on, very uncomfortable to wear, very bulky, camera keeps riding up so miss what want to see.

Forget to turn unit on when reacting to public order on Union Street and would prefer a switch to record.

Kept turning on as I moved.

They turn themselves on occasionally.

Process

It is regarded as a complicated process to get from Devonport to back office – if it was just a case of picking it up, going on patrol and upon return burning your own CD as evidence, it would get used a lot more.

Sometimes there is not the time to book one out. It can be uncomfortable to wear, particularly when wearing a hat.

Other

Haven't found that it decreases paperwork at all – still feel the need to write a full statement. Far too uncomfortable to wear and the unit is far too big – we carry enough kit as it is and the unit makes it unbearable.

My crewmate has been using it.

WHAT WOULD CHANGE YOUR VIEW?

Improved comfort

A pocket on my vest for it and a more stable headpiece that remains in place when you take it off.

Headband that you could leave on permanently, negating the need to realign all the time. Smaller hand-held unit or a specifically designed pouch on uniform.

More practical headband – it slides down my head or if pressed tighter it causes pain to head.

It is a very good product – headband fine for me but other options or attachments for helmets would be good.

User-friendly headband.

Would wear it on each shift if it was more comfortable.

Technical

Smaller hard drive, better camera set-up, something user friendly and also robust.

More slim-line and user friendly.

Process

Instead of completing incident form for every job, is there a better way of utilising the IT systems we have, i.e. OIS? Or the jobs that need saving/exhibiting be kept on the camera and those that do not need to be retained can be deleted by the using officer.

Other

Ability to use camera in plain clothes.

On/off device being more stable.

POSITIVE COMMENTS

Evidence

Best evidence – good for initial evidence gathering, good deterrent – have noticed on Operation Talon can deter people from fighting as know being filmed.

Concept extremely good and is of good evidential value – this should be used at all times. It makes good use of patrol time by cutting down on some of the paperwork.

Good evidence as captures whole incident from police arrival, shows more detail than trying to write it down in statement and acts as a deterrent for some when they see they are being filmed.

Generally camera is useful – excellent way to record evidence for use in interviews.

Great evidentially and back office facility very good.

Great for evidential reasons and back office facility a lifesaver.

Head camera project is excellent and great for visual evidence.

Principal idea of head camera is excellent one for evidence gaining and it is useful to be able to watch an incident back with regards to training and development, ID purposes, etc. The head camera visibility has acted as a deterrent to people in some cases.

Provides good evidence for traffic-related offences and stop/searches. Useful for domestic violence to show initial actions of aggrieved person/detained person and good evidence when offenders become aggressive after arrest.

Respect

Excellent for public order situations when offences are unfolding in front of you and to catch prisoners' demeanour. Counter any false allegations/complaints by prisoners.

Excellent tool in dispersing groups of youths – anti-social behaviour.

Has been used during domestic. Male was very aggressive and obstructive. When he saw he was being filmed he calmed down straight away and was compliant.

I have used head camera footage in interview – it's very clear to watch and listen to even when footage is at night. Have had lots of positive comments from members of public and is effective on abusive people as they stop swearing when they see the camera.

When completing a stop/search and the detainee saw I had a camera he handed over some drugs straight away. I don't think he would have done this had I not been wearing the camera.

Other

Very useful – especially during those incidents involving a large number of people. Excellent evidence for court.

We could use the footage when a store detective gives an account of theft/shoplifting and if PND is issued and no statement is taken from them, but if PND not paid we could use this as their evidence or at least use it as their notes made at the time.

Back office

Back office facility makes it a lot easier so less time spent by officers downloading footage so able to spend more time on patrol.

Head camera back office is invaluable and reduces the likelihood that officers will incur overtime downloading footage. If back office ceased to exist I can see officers not using the equipment.

NEGATIVE COMMENTS

Comfort

Camera too easy to tilt, headband uncomfortable and difficult to wear under helmet – OK if attached to helmet but requires disconnecting when remove helmet.

Difficult to wear with hat and difficult to run with camera on. Sometimes record the sky as camera moves too easily and not aware camera pointing up.

Head camera should be worn on officer's vest.

If only it were more user friendly and not so heavy/bulky to wear/carry.

Uncomfortable and impractical for use in violent crime, unit switches off so officers spend more time checking that than on their colleagues, and unit not user friendly.

Technology

Recording unreliable, camera attachment to headband loose, headband can become uncomfortable. Needs a more 'positive' recording switch. Main pack quite bulky – we carry a lot of kit as it is. Some people rely on it for

taking details – sometimes this is forgotten on hand-ons, resulting in witnesses being missed or failure in recordings. You can't beat writing it down.

Although concept is good the tools are not. Have had occasions when unit records when don't want it to and not when you do! Headband presses on the temples and gives you a bad headache – it has to be on tight or it falls off.

Camera should have a ratchet system which needs to be clicked to move camera as moves up too easily. A proper switch to record as current button very sensitive and records in error too often.

Can be frustrating to use but once teething problems, i.e. loss of Airwave and unit switching itself off, are resolved I think more officers will use them.

Switched camera on at incident, made sure red light came on only to find it has not recorded anything later. It has interfered with my Airwave set where it appeared the communications room could hear me but I could not hear or receive what they were saying. A little awkward to find where to put it – another bit of kit to carry. And it broke when I fell and landed on it!

Process

CPS still request statements on top of video evidence, duplicating workload. Comfort, switches off, and be police officer proof and simple to use.

A more clear definition of what form is required for relevant action, e.g. evidential footage/footage taken but nothing of value/no footage taken, and what goes on each form and where.

Other

Possible use against officer. Not an easy process to acquire, use and return, and possible headaches.

Would not use the head camera if the back office were to be removed.

Annex 2: Complaints against the police

COMPLAINTS AGAINST PLYMOUTH STAFF: OCTOBER 2006 TO MARCH 2007 COMPARED WITH OCTOBER 2005 TO MARCH 2006

October 2005 to March 2006

	Total complaints	No. of incidents
South	14	8
Central	14	6
South and Central	28	14
Percentage of BCU complaints	58.3%	51.9%
Total BCU complaints	48	27

October 2006 to March 2007

	Total complaints	No. of incidents
South	13	8
Central	11	8
South and Central	24	16
Reduction on 2005/06	-4.3%	14.3%
Percentage of BCU complaints	52.6%	64.0%
Total BCU complaints	46	25
Reduction on 2005/06	-4.2%	-7.4%

South and Central Sector staff only

Type of complaint	Total complaints
Other assault	7
Discriminatory behaviour	1
Irregularity in evidence/perjury	2
Corrupt practice	2
Mishandling of property	7
Other neglect or failure in duty	7
Incivility, impoliteness and intolerance	1
Other irregularity in procedure	0
Oppressive conduct or harassment	0
Unlawful/unnecessary arrest or detention	0
Lack of fairness and impartiality	0
Other	1
Total	28

South and Central Sector staff only

Type of complaint	Total complaints
Other assault	5
Discriminatory behaviour	0
Irregularity in evidence/perjury	0
Corrupt practice	0
Mishandling of property	0
Other neglect or failure in duty	3
Incivility, impoliteness and intolerance	10
Other irregularity in procedure	1
Oppressive conduct or harassment	2
Unlawful/unnecessary arrest or detention	1
Lack of fairness and impartiality	2
Other	0
Total	24

Outcome	Total complaints
Complaint process not completed	0
Dispensation	0
Substantiated	0
Withdrawn	6
Local resolution	20
Unsubstantiated	1
Waiver	1
Total	28

Outcome	Total complaints
Complaint process not completed	11
Dispensation	5
Substantiated	0
Withdrawn	0
Local resolution	7
Unsubstantiated	1
Waiver	0
Total	24

The wide variance of figures shows how difficult it is to obtain any sensible analysis from the data.

Annex 3: Victim survey

1. CRIME NUMBER

2. NAME (OPTIONAL)

3. AGE 18–25 26–35 36–45 46–55 56–65 66–75 76–85 OTHER

4. GENDER MALE/FEMALE

5. ETHNICITY

PART OF THE PROJECT'S OBJECTIVE WAS FOR THE HEAD CAMERA TO BE VISIBLE

6. Were you aware that the head camera was being used?

YES/NO

If 'NO', is there any reason why you were not aware?

.....

7. Do you feel that the use of the head camera was beneficial at the time of the incident?

YES/NO

8. Do you think that the head camera should be used by all police officers?

YES/NO

9. Do you feel safer as a result of police officers wearing head cameras?

YES/NO

10. Any other comments please?

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Produced by COI on behalf of the Home Office. July 2007. Ref: 281579. CSOR.

ISBN: 978-1-84726-344-5