

Top 10 Imaging Questions

Question

1) Is it possible to enhance a vehicle license plate number from a digital CCTV surveillance video?

Answer

(Usually YES) Assuming that the video images are in focus and are recorded individually in a full video frame as opposed to a quad recording in which each camera is recorded on $\frac{1}{4}$ of the full video frame, the answer is usually yes if the front or rear of the vehicle completely fills the width of the video image.

(Maybe) If the width of the front or rear of the vehicle fills half the width of the video image, we may be able to enhance the license plate number.

(NOT likely) If the width of the front or rear of the vehicle fills less than half of the width of the video image, there will not be enough pixels to make a reliable recording of the license plate number.

(Other Factors) There are other factors that can reduce the possibility of being able to enhance the license plate number which include but are not limited to: compression artifacts, blurred image due to motion of the vehicle, image out of focus, poor lighting conditions, and the front or rear of vehicle not directly facing the camera.

(Time Limit) In a CCTV digital video recorder, as soon as the internal hard drive is filled, it will begin recording over the oldest video recording on the hard drive. In some cases this means that you may have as little as 3 days from the date of the video recording to recover the video evidence.

Question

2) How do I recover the video recording from a CCTV digital video recorder?

Answer

(CCTV Installer) Check with the company that installed the CCTV system to see if they can export the video at the highest quality setting to a CD, DVD or USB thumb drive. If so, make sure they export the video recording and/or still video images at the highest quality settings along with any video viewer.

(Video tape the monitor) As a last resort, turn off the room lights, put your video camcorder on a tripod and make a video recording of the CCTV video monitor.

(Forensic Video Capture Devices) If you have a lot of CCTV video evidence, you may want to consider purchasing a dedicated digital video capture device such as Ocean System's Omnivore.

(On-site assistance) Call the Imaging Unit in your area for either on-site assistance or to make an appointment to bring in the CCTV DVR.

(Notes) You should put the following information in your notes:

- i) (Date/Time) Use your cell phone as a reference for the current correct date and time and any difference between the current date and time and the correct date and time. A common problem is either the date/time reset to the default values after a power outage or the time was not reset for a change due to daylight savings time.
- ii) (Time Period of Interest) Write down the time period of interest based on the date/time recorded on the video.
- iii) (Equipment) Write down the make and model of the CCTV DVR. This is needed to be able to locate the owner's manual and related software from the manufacturer.
- iv) (Cameras) Write down the total number of cameras and which cameras you are interested in.
- v) (Diagram) Make a very rough hand drawn sketch of where each camera is located that the area recorded by each respective camera.
- vi) (Objects) Write down a brief description of the objects and/or persons of interest.

Question

3) Where can film be developed?

Answer

- a) The state crime laboratories no longer have the capability of processing film. However we can scan and print processed negatives.
- b) Check at a local camera store to see if they have the capability so that you can watch it being done. If it has to be sent out for processing, find out if you can be there or if they will provide a letter briefly explaining that the film was processed normally according to manufacturer's specifications.
- c) If the film was seized as physical evidence and you have to send the film out for processing, check with your local District Attorney about how to preserve the chain of custody.

Question

4) Our department wants to buy new digital cameras for photographing crime scenes. What does the Imaging Unit recommend?

Answer

We recommend a digital single lens reflex (DSLR) camera system with the following specifications:

- i) Consider keeping the same brand, if the lenses and accessories that you have will work with the new DSLR.
- ii) If you can afford it, get a DSLR with a full frame sensor because it will have less image noise.
- iii) The external electronic flash should have a GN of at least 100 at an ISO setting of 100.
- iv) An off camera flash extension cable.
- v) A sturdy tripod.
- vi) An electronic cable release.
- vii) A case to carry everything.
- viii) In addition to the macro zoom lenses that come with most DSLR's, consider a wide-angle zoom lens and a normal focal length macro lens.
- ix) A small flash light to be able to see the camera controls at night.
- x) A digital timer to time long time exposures.

Question

5) Can we delete bad photographs taken at a crime scene?

Answer

- a) NO.

Question

6) What camera file format setting is recommended for crime scene photography?

Answer

We recommend setting the camera to save in both RAW and JPEG. The highest quality and highest resolution settings should be used for both file formats. The RAW file format will provide the best image quality for enhancement and printing in the crime laboratory. While the JPEG file can be printed locally at any 1 hour digital printing photo lab.

Question

7) What can we tell a store owner to do, at little or no cost, to improve the sharpness and/or focus of CCTV video recordings?

Answer

(Cleaning) Use lens cleaner and lens cleaning solution to clean the lens and/or glass in the camera enclosure. Also, get rid of any spider webs.
(Focus the lens) Have someone check the focus on the camera lens.

Question

8) Where can I get an audio recording enhanced?

Answer

We recommend sending audio recordings to the FBI Laboratory for enhancement.

Question

9) Should our crime scene photographs be stored on the camera cards they were recorded on?

Answer

(General Rule) NO. Camera cards are designed as temporary storage devices for the photographs that you take. You should have a written procedure in place for the immediate downloading, processing and archiving of these image files. The written procedure should also cover the formatting the camera cards in the same make and model of camera that they will be used in.

(Exception) The general rule is for the photographs that you take. If the camera card was seized as physical evidence then you must keep the camera card with the image files on it just like you would any other physical evidence.

Question

10) Can the Forensic Imaging Unit recover photographs from cell phones, computers and formatted camera cards?

Answer

No. This type of evidence should be submitted directly to the Computer Crimes and Evidence Recovery Unit of the Wisconsin Division of Criminal Investigation (DCI). Their telephone number is 608-266-1671.