



## Fingerprint Scanning and e-mail Attachment

By Herman Mulden

You are working a hot case with poor quality latent prints and a suspect who has been arrested once, hundreds of miles from your location. You contact the arresting agency, and they send you faxed copies of the suspect's inked prints. Much of the time, the latents will be better than the faxed prints.

Consider the possibility that both agencies have Internet access and a computer with scanning and image software. The agency with the inked prints scans them and sends them to the investigating agency as an attached file to an e-mail message. The quality on the receiving end is the same quality as on the sending end. This can also be used to send photos. As of this writing, I have exchanged both inked prints and photos with several agencies

The following are several things that must be considered:

File size. A long file will take a long time to send and to download. Keep the file size down by scanning at lower resolutions and using file formats that compress the file but, maintain the quality. Also, scan only the prints, not the data.

Printer capabilities. To obtain a hard copy of the inked print or photo, it must be printed on a printer. Printer quality varies greatly. The other option is to do the examination on the monitor.

Security. How secure is your Internet connection for sensitive information?

Follow up with a mailed hard copy of the prints or photo..

The equipment needed is easily obtained from computer stores, Wal-Mart or similar stores, or office supply stores. Many people have the equipment in their homes.

The basic equipment should include the following:

A computer.

A scanning device (usually a flatbed scanner).

Image editing software.

An e-mail account that allows file attachment. Many of the free accounts do not have file attachments features.

A modem (upload and download times are dependent on the speed of the connection).

When working on a single print, I usually scan at 800 dpi to allow enlargement on the monitor without degrading the image. This resolution usually allows me to display two images on a 17-inch monitor at 800x600 resolution and get a high-quality image. I do not enhance the image unless it is needed, and then I use only the minimum amount needed. When working the examination on the screen, I use a color image to allow reference marks in a color that stands out from the print. I also use color on latents that contain color such as ninhydrin developed prints. If the image editing software has the capability, the colors may be dropped in a manner similar to the use of filters in photography. I always complete the examination with a conventional visual comparison.

When Scanning for attachment as e-mail, I lower the resolution to 300 dpi or less and save the image in JPEG format. JPEG offers file compression at various levels. I use a compression that provides good quality with limited compression. A full scan of an inked card saved as a JPEG at 300 dpi may be 500k or less. This equals about 5 minutes of upload/download time with a 28.8 modem.

This set-up is useful for instructing. Fingerprints are scanned and displayed on the monitor. The details in the print can be outlined. This is useful for teaching pattern recognition, ridge counting and whorl tracing. When a technician in our office encounters a print with questionable patterns, we scan the print and view it on the monitor.

If you use faxed images, I encourage you to try e-mail attachments. For additional information, Call (941) 534-6358.

### From The Historian

This article was from a newsletter dated July 1964

Submitted by Elaine J. Ralston

No other investigative tool can equal the camera for preserving disjointed bits of evidence which may later fit significantly into the over-all case. Consider this California case.

**IN A SUSPECT'S TROUSERS:** During a laboratory study of a burglary suspect's trousers, a tiny bit of mysterious matter was found in one of the cuffs. It ultimately was determined to be a portion of the leg of a cockroach. When it was photographed and enlarged it became obvious that the leg had been broken from the body of a dead cockroach photographed in a spider web on the window where the entry oc-

curred. Further examination revealed the remainder of the cockroach still swaying in part of the spider's web.

A composite 35 mm slide was made of the two photos, one showing the body, the other the leg of the cockroach. When the slide was projected in enlargement for the jury, a conviction resulted.

The composite cockroach slide employed a relatively simple photographic technique, but it points out the capability of photography both for recording and presenting evidence that otherwise might never have been brought to bear on the case.