

Agent PDF417 Is On the Case

Mysteriously disappearing evidence, sloppy record keeping, missing chain of custody documentation - such police and other law enforcement personnel mishaps provide screenwriters and mystery genre authors with a rich source of plot twists and turns. That resource will dry up if Porter Lee Corporation's Crime Fighter BEAST Laboratory Information Management System takes widespread hold.

Crime Lab technicians keep accurate evidence records with PDF417 and the Symbol LS 4800 scanner. Already, some jurisdictions working with the Northern Illinois Police Crime Lab (NIPCL), in Highland Park, Ill., are enjoying error-free evidence handling. This accomplishment is made possible by the unique marriage of Porter Lee Corporation software and the PDF417 symbology developed by Symbol Technologies.

The Challenge: Automating the "Chain of Custody"

Porter Lee Corporation, Lake Zurich, Ill., was asked by NIPCL director Jane Homeyer, Ph.D., to develop an application for evidence tracking. Homeyer specified that the system must be reliable, easy to use and cost-effective.

Under the old, manual system, law enforcement officers returning from a crime scene generated paper reports about the evidence they collected. Items requiring analysis were identified with such innocuous sounding descriptions as "white powder substance" and "green plant material." The evidence was then prepared for delivery to the lab. Periodically, an officer would gather the department's assortment of evidence requiring analysis and the accompanying paperwork and deliver it to the crime lab.



As any true crime aficionado could tell you, preserving the "chain of custody" is essential to ensure that materials, often pivotal to the outcome of a prosecution, are legally and properly handled. That means not only carefully handling evidence, but thoroughly documenting its movement from one pair of hands to the next.

Previously, it could take forty-five minutes or longer for the officer delivering the material to the crime lab and a lab technician to log in all the evidence. The manual data entry often meant incomplete or mistyped information. "They had to check-off every item and enter it into the system; everything was double handling," explains Tim Smith, president of Porter Lee. "Pulling in the information was the most tedious part." Paper reports were also being used to track the evidence, not only upon arrival, but as it moved through the lab as well, a practice also subject to errors and loss.

The Solution: The Crime Fighter BEAST and PDF417

Porter Lee Corporation addressed these problems and more with the Crime Fighter BEAST - Bar coded Evidence Analysis Statistics and Tracking - an application that automates much of the chain of custody drudgery. The program automates evidence data acquisition and tracking within the police station, through the lab, and back again.

It ensures that law enforcement officers can accurately and easily record information about evidence. The application prompts the user through the data entry process, with the initial data entry screen capturing information on the case itself. Code 3 of 9 bar code labels are automatically generated for each item. The officer uses the Symbol LS 4804 scanner to select the items that will become a lab submission.

It was while developing the next step in the system, ensuring proper documentation of evidence delivery to the lab, that Porter Lee Corporation's Smith faced a problem: data delivery needed to be faster, more efficient and more reliable than the paper-based method used previously.

A wide area network connecting each department to the lab would prove costly and complex to set up and maintain. The alternative, floppy disks, allowed the possibility of introducing viruses into the system - and created another entity to track.

Enter PDF417

While Porter Lee was still working on the application, Jane Homeyer spotted a story about PDF417 in a trade magazine and brought it to Smith's attention.

"It was exactly what we were looking for," Smith says. "PDF417 provides a secure and reliable way to transfer data."

The PDF417 bar code allowed all of the numeric and digital data generated as part of even very large case files to be converted into its two-dimensional format for easy transport to the lab.

Smith quickly incorporated PDF417 into the Crime Fighter BEAST application. Now, when an officer is preparing crime scene material to be delivered to the lab, the application converts data on the case and the evidence into a PDF417 bar code. The bar code is printed on a label via an Eltron 2242 printer, breaking the data up into multiple PDF417 codes if necessary. The officer affixes the label to the separately printed hard copy of the case submission file.

When the case arrives at the crime lab, a lab technician scans each submission's PDF417 bar code using a Symbol LS 4804 hand-held scanner, as well as a Code 3 of 9 bar code label affixed to each piece of evidence. When the technician hits ENTER, all of the case and evidence data is added to the lab's database.

This process, which could previously require forty-five minutes, "now takes about three minutes," Smith explains. Using the data contained in the PDF417 code, the system now has an instant file on that case, which is updated as the pieces of evidence move from section to section inside the lab. Test results, and the identities of those conducting the tests and approving the results, become a part of the file as analysts key-enter the data and scan their bar coded badges. Whenever an items' Code 3 of 9 label is scanned anywhere in the system, the application can instantly identify it and link it to the appropriate case file.

When the evidence is ready for return to police custody, a similar process creates PDF417-encoded labels for application to the paperwork that accompanies the items back to evidence holding areas. "It updates the chain of custody," Smith explains.

The Result: Easy, Inexpensive Data Flow

The unique marriage of Symbol Technologies and Porter Lee Corporation software has enabled the NIPCL and the departments using the Crime Fighter BEAST to boost productivity, accurately track evidence, ensure proper chain of custody, and produce uniform reports. Establishing such a high level of accuracy also contributes to the lab's success in periodic accreditation reviews. Better yet, prosecutors are rarely hampered by case-damaging instances of misplaced evidence. Great for them. Bad for the crime writers.

Application: The Crime Fighter BEAST - Bar coded Evidence Analysis Statistics and Tracking, by Porter Lee Corp., Lake Zurich, Ill. Tracks evidence through police departments and crime lab.	Environment: All law enforcement agencies, all crime laboratories
Benefits: Increased accuracy, faster evidence check-in, improved productivity, uniform reporting, fast, reliable equipment.	System: PDF417, Code 3 of 9 bar codes, Symbol LS 4804 hand-held scanners, Eltron Model 2242 printers, Symbol LS 4000 scanners.