Latent Print

The Latent Print Section is responsible for the examination of fingerprints, palm prints, footwear and tire tracks that have been recovered from a crime scene or from evidence of a crime. The examination of latent prints includes processing evidence from a criminal investigation for the presence of latent finger and palm prints as well as the examination of latent lifts (cards with tape lift of powder developed latent prints). Examiners determine if there are prints of sufficient clarity and detail to be of value for identification. Latent prints of value are then compared to the known fingerprints and palm prints of those individuals that have been requested by the investigating agency. Latent finger and palm prints of sufficient quality that remain unidentified are entered into the Automated Fingerprint/Palm Print Identification System (AFIS/APIS) which is maintained by the Missouri State Highway Patrol. Examiners may also access the Kansas AFIS system as well as the FBI’s IAFIS which allows for a nationwide search. A latent print that remains unidentified after being searched in the AFIS database may be retained to be compared to the entry of new fingerprint records. In addition, the Latent Print Section is responsible for positively identifying subjects who are in custody within the jurisdiction of the Kansas City Police Department. The Section is also called upon to identify the victims of homicides, suicides and unattended deaths. Armed with this valuable information, the officers and detectives involved can quickly proceed with their investigation and make timely notifications to family members.

Firearms

The Firearms Section conducts function testing of firearms, examines and compares expended ammunition components (e.g. bullets and cartridge cases) that have been recovered from a crime scene, and restores obliterated serial numbers. Evidence cartridge cases and test fired cartridge cases obtained from a firearm are entered into NIBIN/IBIS™ (National Integrated Ballistic Information Network/Integrated Ballistic Identification System). NIBIN/IBIS is a database that stores digital images of spent cartridge cases and uses sophisticated pattern-recognition software to compare evidence entered into it. The result is a generated candidate list of potential links of evidence from other cases to which a connection was not previously known.

Trace Evidence

Trace evidence consists of physical materials (often microscopic) that transfer during the commission of a crime. Trace evidence may answer relevant questions for the criminal justice system by determining if there is an association or disassociation between persons, objects, locations, or events. A variety of instruments are utilized to locate, analyze, and compare physical and chemical properties of materials. Glass, paint, hairs, fibers, fabrics, ropes, gunshot residue, lubricant, plastics, tape, cosmetics, and building materials are common types of trace evidence, however, just about any material could be encountered. Investigators should submit a standard of the material from a known verified source for comparison to unknown samples. For instance, a glass standard would simply consist of a ‘handful’ of glass taken directly from each broken window pane. A trace analyst can search for glass samples on items, such as suspect’s clothing. Glass samples can be compared to submitted glass standards. When a standard is not available, the analyst will seek to identify the material and provide investigative leads, if possible. For example, samples of automotive paint collected during a hit-and-run investigation can be analyzed and entered into a database in attempt to get make, model, year, and plant information about the suspect vehicle. Trace analysts have at least a college degree in science along with specialized training in forensic science with a focus on microscopical, chemical, and instrumental methods.
Crime Scene Investigation

Technicians in the Crime Scene Investigation Section have a multitude of responsibilities. They are required to respond to and process crime scenes for evidence relevant to the offenses under investigation. Technicians process crime scenes throughout all of Kansas City and in some cases outside of Kansas City when specifically requested by another law enforcement agency or when a crime scene in another jurisdiction has relevance to a KCPD offense.

The techniques utilized by the CSIS are varied and range from rather simple to highly technical. Some of the processes employed at crimes scenes include: biological evidence collection, searching and testing for blood, latent fingerprint processing, footwear and tire tread print/impression documentation and processing, dental stone casting, silicone casting, dead body processing, live victim/suspect/witness processing, laser scanning, bloodstain pattern recognition, trajectory determination, entomological evidence collection, glass fracture analysis, alternative light sources, and utilizing a metal detector in evidence searches. Crime Scene Technicians also use various types of photography to document scenes.

Chemistry

The Chemistry Section of the Kansas City Police Crime Laboratory is equipped with state-of-the-art laboratory instrumentation and provides forensic analyses of drug and fire debris evidence. The Chemistry Section performs testing for all elements of the Kansas City Police Department and various outside agencies.

The examiners routinely conduct controlled substance analyses through a variety of methods including screening by Handheld Raman Spectrometry, and confirmatory testing by Gas Chromatograph/Mass Spectrometry (GC/MS) and Fourier Transform Infrared Spectrometry (FTIR).

Unknown Substance analysis is conducted by GC/MS and FTIR examination. Fire Debris analysis, including accelerant identification or classification, is performed by GC/MS testing.

The Chemistry Section utilizes National Medical Services for toxicology analysis of urine and blood samples.

DNA/Biology

The primary purpose of the DNA section of the Kansas City Police Crime Laboratory (KCPCL) is to develop genetic profiles from biological evidence for comparison purposes. Genetic profiles can be obtained from just a few skin cells, as well as body fluids like blood and saliva. The genetic profiles are then compared to known individuals to help provide information regarding whose DNA is present. Additionally, KCPCL is a participating member in CODIS (The COmbined DNA Indexing System). CODIS is a national database of genetic profiles primarily derived from convicted offender and crime scene samples. The use of CODIS allows the lab to provide investigative leads through potential suspect development by linking DNA samples to individuals or other cases in the database.

The techniques and capabilities of the DNA section at the KCPCL are constantly evolving and expanding to work samples faster and gather more information from difficult sample types, including samples that consist of DNA from multiple contributors.

Digital Evidence

The Digital Evidence Section is responsible for the collection and/or analysis of video evidence. Television shows often depict unrealistic expectations regarding video analysis. The loss of detailed information during the recording process that is needed for identification in an image or video cannot be restored since the data is lost. However, there is potential for analysis and interpretation using the data that remains.

The analysts within the section use this information to compare clothing, vehicles or objects in a video to suspect clothing, vehicles or objects. This type of comparative analysis can also be used to help link separate crimes that are believed to be committed by the same person. Videos showing different camera angles of an incident can be time-aligned to allow them to be played side-by-side to provide investigators and jurors multiple views at the same time. The analysts can also provide plausible explanations for anomalies that are present in video, whether they are due to lighting, compression, motion detection on the system, or frame rate of the recorded video.

The analysts within the Section are also responsible for the post-production analysis of laser scan data.

The Kansas City Police Crime Lab is located on the 17-acre Leon Jordan Campus. The 57,600 sq foot building shares this campus with the East Patrol Division Station and the Property and Evidence repository. The Crime Lab and other buildings on the campus were purpose-built and designed with care to meet the needs of the metropolitan area.