J26 Detecting Altered and Counterfeit Travel and Identity Documents by Utilizing State- of-the-Art Instrumentation

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After attending this presentation, attendees will become aware of the various methods used to detect counterfeit and altered foreign and U.S. travel and identity documents.

This presentation will impact the forensic science community by providing information and awareness of the challenges the Forensic Document Examiner (FDE) encounters in todays casework. With the sophisticated methods used in counterfeiting and altering travel and identity documents, the use of state-of-the-art instrumentation within the laboratory has become vital in the detection of document fraud techniques.

The Homeland Security Investigations Forensic Laboratory (HSI-FL) is the only U.S. crime laboratory specializing in the scientific authentication and research of foreign and domestic travel and identity documents. The HSI-FL provides document and latent print forensics, intelligence, and investigative support services for the Department of Homeland Security and other law enforcement agencies. The presentation will illustrate various counterfeiting methods and alterations detected in the examination of travel and identity documents using state-of-the-art instrumentation at the HSI-FL.

Technology in today's world is ever evolving; computer technology has become extremely sophisticated, and, as we examine questioned documents for authenticity and fraud, it has become readily apparent that the increase in these capabilities has given the casual counterfeiter many new capabilities to produce a higher level fraudulent document. There are various components involved in the examination of a questioned document. Depending on the type of substrate (paper, hybrid paper, and plastic), the appearance and characteristics of the printing process can be greatly affected. In addition, security features are constantly advancing in the area of questioned documents. The traditional printed security features used in identity cards and passport pages are being supplemented with much more sophisticated secure printing techniques, i.e., iridescent and non-iridescent inks. Security printing incorporates multiple levels of security features such as latent images, guilloche patterns, and rainbow fountain printing. Further, covert security features, i.e., microscopic metallic particles, microstructures, and optically variable devices which contain data, are being incorporated within many security inks. With the use of sophisticated instrumentation, high-quality counterfeits can be detected.

The HSI-FL analyzes travel and identity documents from all over the world; therefore, the range of quality of counterfeiting seen in casework varies. Grommets used in passports for the prevention of photograph substitution have been replaced with more secure and tamper-resistant security measures incorporating holographic laminates, digital encoding, laser engraved tactile features, and embossing techniques. In an effort to increase the efficiency of passenger processing, an increase in the use of machine-readable travel documents is much more prevalent. The use of radio frequency identification devices within travel and identity documents now requires the use of X-ray technology to determine the presence of these devices and to determine attempts of alteration.

Keeping up with advances in document security technology and maintaining a heightened level of awareness of counterfeiting techniques and production methods used by document vendors is crucial in identifying and deterring document fraud.

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