

Microgram

Bulletin

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VOL. XXXVIII, NO. 6

JUNE 2005

- INTELLIGENCE ALERT -

**HEROIN SATURATED PAPER FOUND IN A SUITCASE LINING
IN CAMERON COUNTY, TEXAS**

The Texas Department of Public Safety Crime Laboratory in McAllen (McAllen, Texas) recently received a black leather ["Designer" label] suitcase, suspected to contain cocaine or heroin (see Photo 1). The suitcase was seized by Cameron County Drug Enforcement Task Force Agents from a vehicle enroute from Mexico to Houston on U.S. Route 77 (Cameron County is the southernmost point of Texas). Each side of the suitcase and the middle vinyl divider had a posterboard casing sewn inside the vinyl lining (see Photos 2 and 3, next page). Each casing contained 4 sheets of thick paper (total net mass of the impregnated paper 5.65 pounds). Analysis by GC/MS and GC confirmed 60 percent heroin (salt form not determined; calculated as heroin base). This was the first submission of this type to the McAllen Laboratory.



Photo 1



Photo 2



Photo 3

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- INTELLIGENCE ALERT -

**LSD MIMIC BLOTTER PAPER IN NORTHERN NEW JERSEY CONTAINING
5-METHOXY-*ALPHA*-METHYLTRYPTAMINE**

The DEA Northeast Laboratory (New York, New York) recently received a sheet of apparent LSD "blotter acid" (see Photo 4). The exhibit was seized in northern New Jersey by agents from the DEA Newark Field Division. The sheet was 1 inch by 6.25 inches long, had a classic "psychedelic squares" design, and was perforated into a total of 100 squares (all typical of LSD blotter paper). Analysis of the paper (total net mass 1.0 gram) by color testing (acidified Erlich's), TLC, GC/MS, and LC/MS, however, indicated not LSD but rather 5-methoxy-*alpha*-methyltryptamine (5-MeO-AMT) (not quantitated). This is the first submission of 5-MeO-AMT on blotter paper to the Northeast Laboratory.

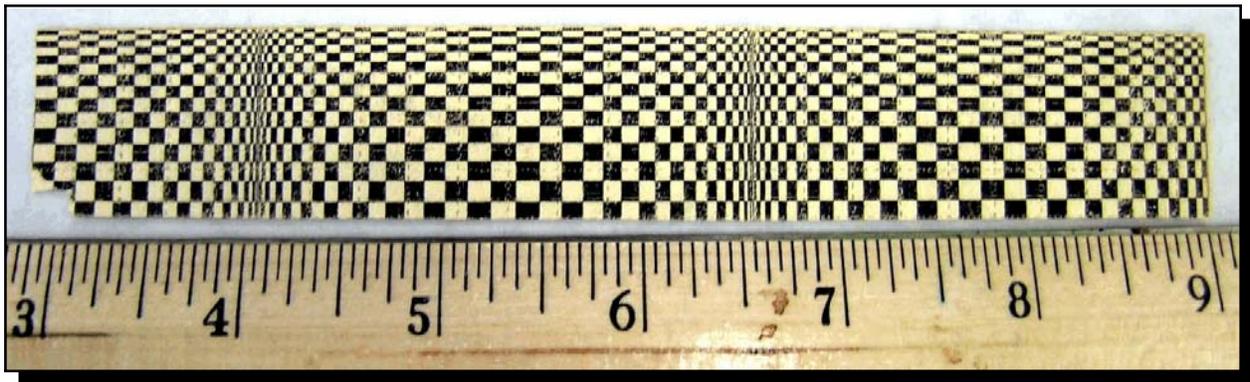


Photo 4

- INTELLIGENCE ALERT -

COCAINE SMUGGLED IN A GRANOLA BOX IN EL PASO, TEXAS

The DEA South Central Laboratory (Dallas, Texas) recently received two paper cartons, each wrapped in plastic and brown tape, labeled in Spanish as “100% Natural Granola”, and each containing a compressed white powder in a clear plastic bag, suspected cocaine (see Photo 5). The exhibits were seized from an individual in El Paso by U.S. Immigration and Customs Enforcement (ICE) agents (further details unavailable). Analysis of the powder (total net mass 1849 grams) by GC/MS, FTIR, and HPLC confirmed 19 percent cocaine hydrochloride, cut with inositol. This is believed to be the first such submission of cocaine in a granola box to the laboratory.



Photo 5

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- INTELLIGENCE ALERT -

RAW OPIUM FORMED INTO PIECES OF CHOCOLATE AT LAX

The DEA Southwest Laboratory (Vista, California) received an exhibit consisting of 225 pieces of apparent chocolate candies with a strong, distinctive opium odor, suspected opium. The “chocolates” were in four different shapes (see Photo 6), and were packaged in three boxes (it was unknown if the boxes were further wrapped to suppress the odor). The boxes were seized by Immigration and Customs Enforcement (ICE) personnel from the suitcase of a passenger arriving at Los Angeles International Airport (LAX) from Iran, via Germany. Analysis of the “chocolates” (total net mass 1886 grams) by GC-FID and GC/MS identified morphine, codeine, papaverine, thebaine, and noscapine (not quantitated), confirming opium. This was the first such submission to the Southwest Laboratory.



Photo 6

- INTELLIGENCE ALERT -

COCAINE SMUGGLED IN A HORSE SADDLE IN TAMPA, FLORIDA

The DEA Southeast Laboratory (Miami, Florida) recently received a highly decorated saddle containing six packages of white powder, suspected cocaine (see Photo 7). The saddle was first identified by Immigration and Customs Enforcement personnel in Tampa, Florida, but was seized in Erlanger, Kentucky following a controlled delivery (the origin of the saddle was not reported). The bags were hidden within a hollowed out portion of the saddle frame (see Photos 8 and 9). Analysis of the powder (total net mass 1985 grams) by GC/MS and FTIR confirmed 76 percent cocaine hydrochloride. This was the first saddle seizure received by the laboratory in recent memory.



Photo 7



Photo 8



Photo 9

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- INTELLIGENCE ALERT -

**MULTI-INGREDIENT COLD MEDICINES USED
TO PRODUCE METHAMPHETAMINE**

[From the NDIC *Narcotics Digest Weekly* 2005;4(17):1
Unclassified, Reprinted with Permission.]

Forensic chemists at the Washington State Patrol (WSP) Crime Laboratory in Marysville, supported by a grant awarded by the National Institute of Justice, recently proved that various over-the-counter, multi-ingredient cold medicines can be used to produce methamphetamine.

Many of these medicines are exempt from state pseudoephedrine legislation based in part on the mistaken belief that they cannot be used in methamphetamine production. The steps necessary for methamphetamine producers to extract pseudoephedrine from multi-ingredient products are not excessively complicated but are more difficult than those used for products in which pseudoephedrine is the only active ingredient. WSP chemists extracted pseudoephedrine from the following types of products and used them in a series of small-scale, iodine/red phosphorus methamphetamine production cycles:

- * Caplets, such as severe cold formulas
- * Powders, such as those that are dissolved in hot liquids
- * Water-based liquids, such as cough syrups
- * Alcohol-based liquids, such as nighttime cough syrups
- * Softgels

NDIC Comment: Methamphetamine producers in many regions of the country have used liquid cold medicines and multi-ingredient tablets successfully, according to information gathered from law enforcement agencies by NDIC Field Program Specialists (FPSs). Further, forensic chemists frequently discover antihistamines and other products in methamphetamine samples, which indicate that multi-ingredient cold medications often are used as a source of pseudoephedrine. Because legislation has been proposed and/or enacted in over a dozen states restricting the sale of pseudoephedrine but exempting multi-ingredient medications, methamphetamine producers in those states increasingly will use multi-ingredient medications.

[Editor's Note: There has been a surprising amount of misinformation concerning the possibility of extracting pseudoephedrine from liquid pharmaceuticals. In fact, and as the above study proves, such extractions are trivially accomplished.. For a related study performed by McNeil Consumer and Specialty Pharmaceuticals (a major manufacturer of OTC pseudoephedrine-containing products), see page 102.]

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- INTELLIGENCE ALERT -

MARIJUANA SEIZED AT INDUSTRIAL STORAGE YARD IN HOUSTON, TEXAS

[From the NDIC *Narcotics Digest Weekly* 2005;4(17):4
Unclassified, Reprinted with Permission.]

On March 13, 2005, ICE agents in Houston seized over 13,000 pounds of marijuana as a result of a multiagency investigation. Law enforcement authorities allege that the marijuana in this seizure is linked to a large-scale DTO that distributes drugs from Houston to other drug markets throughout the country. ICE agents discovered the marijuana concealed in two tractor-trailers parked in a storage yard in Galena Park, which is located near the Houston Ship Channel. A search of the first tractor-trailer led to the discovery of 9,100 pounds of marijuana; a search of the second truck uncovered an additional 4,268 pounds of the drug. The marijuana was

concealed in drywall compartments and flatbed liners of the trucks. Officials have arrested one suspect in connection with this seizure. The DEA, Harris County Sheriff's Office, and Houston and Pasadena Police Departments are participating in the investigation.

NDIC Comment: DTOs commonly target locations such as storage yards to store and transship illicit drug shipments destined for Houston drug markets as well as for redistribution to cities throughout the United States. Galena Park is largely an industrial area with easy access to Interstate 10 and U.S. Highway 59, which provide traffickers with a direct route to drug markets in the Midwest and Southeast and connectivity to the Mid-Atlantic region. Industrial areas typically include security fencing and warehouses large enough to store commercial vehicles and allow traffickers to transship large shipments within a private commercial facility. Moreover, these locations often are separated from neighboring businesses and residential areas, allowing traffickers to operate without attracting attention.

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- INTELLIGENCE ALERT -

FOUR-STATE ROAD TRIP TO PURCHASE PSEUDOEPHEDRINE INTERRUPTED

[From the NDIC *Narcotics Digest Weekly* 2005;4(19):1

Unclassified, Reprinted with Permission;

Some Details Withheld in Accordance with *Microgram* Policy.]

On March 22, 2005, a senior investigator with the New Ulm (Minnesota) Police Department arrested four subjects and seized 6,738 pseudoephedrine tablets from their vehicle. Security employees at a large retail store in New Ulm reported to New Ulm Police that three individuals had each purchased two packages of pseudoephedrine and then left the store parking lot in a vehicle with Iowa license plates. Acting on this information, a New Ulm Police investigator located and stopped the vehicle, which was occupied by four Caucasians - two males and two females. Two of the subjects who spoke with the investigator indicated that they were from Iowa (Spirit Lake, Spencer, and Milford) and were "casino-hopping" in South Dakota, North Dakota, and Minnesota [but there were inconsistencies in their stories]. Upon further questioning, the driver of the vehicle admitted that she had used methamphetamine in the past but denied that the group was involved in methamphetamine abuse or manufacturing; she refused to grant permission for the investigator to search the vehicle. Based upon his own observations as well as information provided by both the retail store's security department and the subjects, the investigator arrested the four individuals, seized the vehicle, and obtained a warrant to search the vehicle. During the search the investigator found two duffel bags - one, located in the trunk, contained 3,906 loose pseudoephedrine tablets separated into plastic bags by color; the other, located in the back seat, contained 2,832 pseudoephedrine tablets still in blister packs. No methamphetamine manufacturing equipment was found in the vehicle, and the subjects did not appear to be under the influence of the drug. Receipts found in the vehicle gave some indication of the subjects' travel route and their pseudoephedrine purchases, which occurred on March 21 in an unknown town in Iowa and in Sioux Falls (SD) and on March 22 in Fargo (ND) and in Melrose, Cold Spring, and New Ulm. The subjects' stops suggest that they were following a

circuitous route that would have ended at their point of departure in Iowa. All four of the subjects have prior drug convictions and were charged under Minnesota state law with conspiracy to manufacture methamphetamine and attempt to manufacture methamphetamine.

NDIC Comment: The levels of methamphetamine production and abuse in the aforementioned states are high. According to the NDIC National Drug Threat Survey (NDTS) 2004, a large percentage of law enforcement respondents in Iowa (92.7%), South Dakota (100%), North Dakota (96%), and Minnesota (85.3%) consider methamphetamine to be the greatest drug threat in their jurisdictions. In response, state legislatures in the Midwest and West are enacting pseudoephedrine regulations intended to decrease the availability of precursor chemicals used in methamphetamine production. Coincidentally, on the date of this incident the governor of Iowa signed Senate File 169, an act regulating the display and sale of pseudoephedrine; the law will take effect on May 21. South Dakota currently has no point-of-sale regulations on ephedrine, but on July 1 a law restricting the sale and purchase of products containing pseudoephedrine and ephedrine will take effect. North Dakota currently has point-of-sale restrictions, which will be strengthened on June 1 when a new methamphetamine precursor law goes into effect. Minnesota currently is considering legislation regarding the sale of pseudoephedrine. The subjects in this case appear to have been aware of the relevant pseudoephedrine regulations along their route and were most likely purchasing limited quantities of pseudoephedrine from various stores along the way in an effort to avoid law enforcement scrutiny.

[Editor's Comments: "Road Trips" to purchase allowable quantities of Over-the Counter (OTC) ephedrine and/or pseudoephedrine-containing products at dozens or even hundreds of stores have been widely predicted, and will certainly become a more common practice as more and more states enact restrictions on displays and sales on such products. The above incident illustrates the large numbers of tablets that can be acquired by this practice - but also illustrates that education and vigilance can be effective in tipping off law enforcement personnel to individuals or groups that are undertaking such trips.]

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- INTELLIGENCE ALERT -

**MARYLAND PHYSICIAN CONVICTED FOR CONSPIRACY
TO MANUFACTURE MDMA**

[From the NDIC *Narcotics Digest Weekly* 2005;4(19):2
Unclassified, Reprinted with Permission;
Some Details Withheld in Accordance with *Microgram* Policy.]

On April 25, 2005, a federal jury in Baltimore convicted a 45-year-old physician for conspiracy to manufacture MDMA (3,4-methylenedioxymethamphetamine, also known as ecstasy) and attempt to manufacture MDMA. Prosecutors argued that the physician conspired to manufacture over 10 kilograms of the drug. The doctor was arrested on January 23, 2004, after a search of two Baltimore residences revealed the presence of a laboratory in one residence and a sealed metal pipe containing green liquid in the oven of his condominium. Forensic laboratory testing

revealed that the liquid, which was in the final stage of MDMA production, contained camphor, methylamine, and safrole. The physician's fingerprints were found on papers describing MDMA production. Investigators also discovered a laboratory manual, drug-packaging paraphernalia, other chemicals (enough to produce at least 35,000 MDMA tablets), and thousands of gelatin capsules--some containing the weight loss drug phentermine, which he allegedly manufactured, although illegally, for his patients. Prosecutors argued that the physician may have begun manufacturing and distributing MDMA after failing to realize large profits from his weight loss clinic. During the trial a Baltimore City narcotics detective described a balance sheet allegedly belonging to the physician that appeared to show more than \$1.3 million in projected sales for MDMA over a 6-month period. The proceeds were to be used to purchase [an expensive sports car], a Caribbean vacation, and a house in Baltimore County. The physician faces a maximum sentence of 20 years in prison and a \$1 million fine on each of the two counts. The physician is scheduled for sentencing on July 29, 2005. His coconspirator, a chemist, pleaded guilty on April 15, 2005, to conspiracy to manufacture MDMA.

NDIC Comment: This case is unique because it involves a physician who attempted to manufacture MDMA for distribution. Most cases in which physicians are involved in drug distribution involve diverted pharmaceuticals. Domestic MDMA production is uncommon. Moreover, MDMA production requires specialized equipment and knowledge, typically demanding an exceptional understanding of chemistry. This physician was very knowledgeable about illicit drugs as he had once worked for the National Institute on Drug Abuse (NIDA) and had published a number of research papers on topics related to illicit drugs. He possessed the requisite skills and equipment to operate an MDMA laboratory.

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- INTELLIGENCE ALERT -

**MARIJUANA AND CURRENCY TRANSPORTED IN A HORSE TRAILER
IN KANSAS AND MISSOURI**

[From the NDIC *Narcotics Digest Weekly* 2005;4(19):3
Unclassified, Reprinted with Permission.]

On March 4, 2005, a Kansas Highway Patrol trooper seized \$114,300 concealed in a horse trailer during a traffic violation stop of a pickup truck on Interstate 35 in Lyon County. The New Mexico-registered horse trailer contained two horses. The driver, an Hispanic male from Texas, and a passenger, an Hispanic male from New Mexico, gave the trooper consent to search the vehicle but refused to give consent to search the trailer. The trooper requested a drug-detection canine, which alerted to the horse trailer. Several plastic bags of currency were found under hay and manure on the trailer's floor. A .38 caliber handgun was found under the backseat of the pickup truck. The driver's destination was a racetrack in southern New Mexico. Both men denied ownership of the gun and the currency. They forfeited rights to the money and were released at the scene.

(Continued on Page 101)

On March 25, 2005, officers with the Missouri State Highway Patrol seized 720 pounds of marijuana from an unoccupied horse trailer during a routine violation stop on I-44 in Lawrence County. Commercial motor vehicle officers became suspicious after questioning the driver of the truck that was pulling the trailer. They requested a drug-detection canine, which subsequently alerted to the trailer. A search revealed 18 bales of marijuana concealed in a false compartment located in the front of the trailer. The driver of the vehicle, a Caucasian male from Illinois, stated that he had made approximately 15 similar trips and that horses were not transported on any of these occasions. Troopers arrested the man and the driver of an escort vehicle, also a Caucasian male from Illinois. The men were transporting the marijuana from Texas to Kentucky.

NDIC Comment: The use of horse trailers to transport marijuana and drug proceeds has increased, based on these and other currency and marijuana seizures. Similar marijuana seizures by troopers from the Kansas Highway Patrol include 1,841 pounds seized in December 2004 and more than 1,000 pounds seized in October 2004, both from unoccupied horse trailers on I-35 in Lyon County. Two large currency seizures from horse trailers occurred in 2004, when officers from the Chicago Police Department seized \$835,645 from an occupied three-stall horse trailer destined for Mexico and when a Shelby County (TN) Sheriff's Office deputy seized over \$100,000 from a horse trailer destined for Arizona.

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- INTELLIGENCE ALERT -

METHAMPHETAMINE DISTRIBUTORS IN FLORIDA USING "DOGGIE BOXES"

[From the NDIC *Narcotics Digest Weekly* 2005;4(19):4
Unclassified, Reprinted with Permission.]

Some Caucasian methamphetamine distributors in Charlotte, DeSoto, and Hardee Counties (Florida) are transporting methamphetamine concealed in camouflaged, aluminum 4-inch by 4-inch containers referred to as doggie boxes. According to a DeSoto County Sheriff's Office contact, distributors place a bag containing one-eighth ounce to a few ounces of methamphetamine inside an aluminum box and glue it closed. The exterior of the box is then covered with glue and rolled in loose dirt to give it the appearance of a clump of dirt. If the distributors believe that they are about to be stopped by law enforcement officers, they toss the doggie box out of the car. After the box has been thrown from the vehicle, it usually blends in with the dirt on which it lands, causing difficulty for law enforcement officers attempting to find the box.

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Selected Intelligence Brief

LABORATORY ANALYSIS OF THE CONVERSION OF PSEUDOEPHEDRINE TO METHAMPHETAMINE FROM COMMON OVER-THE-COUNTER PRODUCTS

[Special Report from McNeil Consumer and Specialty Pharmaceuticals]

Pseudoephedrine (PSE) is a List 1 chemical present in many over-the-counter (OTC) cold and sinus products. Small clandestine lab operators (street cooks) use OTC PSE products to manufacture illicit methamphetamine. There is limited scientific information on the relative ease and extent of PSE conversion to methamphetamine from OTC products. McNeil Consumer and Specialty Pharmaceuticals sponsored a scientific study, conducted by an independent ASCLD/LAB accredited forensic laboratory, to assess two different approaches to convert PSE to methamphetamine from OTC PSE products.

The first approach involved the extraction of PSE from OTC products followed by conversion to methamphetamine using the Birch ("Nazi") method. The OTC products tested included single and multiple-active products (2-4 actives, all with PSE and an analgesic), and included caplet, tablet, liquid, and liquid-filled softgel forms. The extent of PSE conversion to methamphetamine varied among extracts, and was up to 31% of the PSE present in the starting OTC product. PSE extract conversion to methamphetamine was realized regardless of dosage form (i.e., whether solids, liquids, or liquid-filled softgels).

The second approach was to directly convert PSE to methamphetamine using the Birch method. Materials tested included pure PSE powder, and a combination of PSE plus an analgesic either as a powder mixture or as an OTC caplet. The extent of PSE conversion to methamphetamine ranged from 54% to 68% of the PSE present in the starting material.

These study results provide scientific evidence that PSE from OTC products can be converted to methamphetamine using approaches employed by small clandestine lab operators. The ease and extent of PSE conversion from extracts appears to be independent of the PSE starting quantity, dosage forms, and presence of other actives.

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SELECTED REFERENCES

[Notes: Selected references are a compilation of recent publications of presumed interest to forensic chemists. Unless otherwise stated, all listed citations are published in English. Listed mailing address information (which is sometimes cryptic or incomplete) exactly duplicates that provided by the abstracting services. Patents are reported only by their *Chemical Abstracts* citation number.]

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THE DEA FY - 2005 AND FY - 2006 STATE AND LOCAL FORENSIC CHEMISTS SEMINAR SCHEDULE

The remaining FY - 2005 schedule for the DEA's State and Local Forensic Chemists Seminar is as follows:

July 11 - 15, 2005
September 19 - 23, 2005

The FY - 2006 schedule is as follows:

November 14 - 18, 2005
February 6 - 10, 2006
May 8 - 12, 2006
July 10 - 14, 2006
September 11 - 15, 2006

Note that the school is open only to forensic chemists working for law enforcement agencies, and is intended for chemists who have completed their agency's internal training program and have also been working on the bench for at least one year. There is no tuition charge for this course. The course is held at the AmeriSuites Hotel in Sterling, Virginia (near the Washington/Dulles International Airport). A copy of the application form is reproduced on the last page of the August 2004 issue of *Microgram Bulletin*. Completed applications should be mailed to the Special Testing and Research Laboratory (Attention: Pam Smith or Jennifer Kerlavage) at: 22624 Dulles Summit Court, Dulles, VA 20166. For additional information, call 703/668-3337.

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SCIENTIFIC MEETINGS

1. Title: 15th Annual CLIC Technical Training Seminar (Second Monthly Posting)
Sponsoring Organization: Clandestine Laboratory Investigating Chemists Association
Inclusive Dates: September 7 - 10, 2005
Location: St. Louis, MO
Contact Information: O. Carl Anderson, Kansas Bureau of Investigation, [carl.anderson -at- kbi.state.ks.us](mailto:carl.anderson-at-kbi.state.ks.us)
Website: None

2. Title: Midwestern Association of Forensic Scientists (MAFS) Annual Fall Meeting (Second Monthly Posting)
Sponsoring Organization: Midwestern Association of Forensic Scientists
Inclusive Dates: October 3 - 7, 2005
Location: St. Louis, MO
Contact Information: Bryan Hampton, [bhampton -at- saintcharlescounty.org](mailto:bhampton-at-saintcharlescounty.org)
Website: None

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Computer Corner

On-Site Backup Protocols - New Challenges

#195

by Michael J. Phelan
DEA Digital Evidence
Laboratory

Many digital evidence programs provide a dual mission support function, collecting as well as analyzing computer evidence. The collection of digital evidence in the field is commonly referred to as on-site backup.

On-site backup requests are a common occurrence, particularly when businesses or professionals (doctors, lawyers, accountants, etc.) are the subject of the investigation. Courts are increasingly insisting that search warrant language require on-site backups when technically and operationally feasible. In some rare instances, search warrants have been crafted to be extremely limiting requiring that no computer may be shut down, no user disrupted, and all searching completed by a specific time.

The overlapping of the legal and computer forensic domains can create challenges for digital evidence examiners assigned to provide on-site hard drive support.

On-Site Support Justification

The rationale supporting the decision to perform an on-site backup usually involves concerns that the actions of law enforcement will be inordinately disruptive to legitimate businesses that may contain a small amount of potentially

incriminating information, or documentation of overt acts, that are commingled within massive volumes of licit data. Another justification for an on-site collection of digital evidence involves concerns for the community when public assets such as pharmacies, doctor clinics, and even pharmaceutical manufacturers are of interest in the investigation. The removal of entire computer systems or central network servers from these places of business would jeopardize individual safety by (for example) preventing prescriptions being filled/refilled, or interrupting legitimate drug manufacturing. A third concern is the reluctance of the courts to broadly authorize large scale collection of digital information when the potential of a privileged informational relationship may exist that involves doctor-patient or attorney-client information.

The New Challenge

On-site hard drive backup is an effective technical solution to address prosecutor or court concerns. However, digital evidence examiners should consider that the most effective implementation of on-site hard drive backup support requires a comprehensive protocol that encompasses technical, operational, legal, and administrative procedures.

Technical

On-site hard drive backups usually have two primary technical issues. First, computers in most business environments contain such massive amounts of information that the classical computer forensics approach to duplicate every hard drive is often impossible from a practical viewpoint. Therefore, on-site protocols must allow the flexibility to make select copies of needed data such as certain file types (e-mails, financial, documents, spreadsheets, pictures, etc.), databases, files, folders, or hard drive partitions. Second, modern business computer systems are increasingly utilizing complex servers that specialize in front-end web pages, back-end transactional e-commerce business data, and corporate e-mail servers. These computer systems are often hosted on high performance hardware systems (RAIDS, PERC and RISC) that make exporting information outside of the working environment technically difficult. On-site protocols should therefore be supportive of direct solutions involving exporting select raw data or printing the needed data to a file. Often, use of the local computer system to generate data is the most time-effective mechanism when processing a large computer system or network.

Operational

On-site protocols should require that operational constraints be documented and addressed in the digital evidence collection plan. Examples of possible concerns include: 1) A limited scope of investigation; 2) limited time allotted for the search; 3) safety concerns (particularly in manufacturing or laboratory environments), and 4) available personnel. Each constraint can affect the scope of effort and should be discussed with the Case Agent to ensure that the level of support maximizes the opportunity to gather all or at least the most critical investigative information.

Legal

On-site protocols must stay within the legal scope of the search warrant, administrative inspection warrant (if applicable), or owner's consent. The on-site protocol should require that all digital evidence examiners be familiar with the authorizing search document. There may be a need to try to minimize data collection in the field by using only keywords or file type filtering, in order to avoid collecting privileged information. Often, such triaging techniques take additional time by adding to the overall on-site copying time, but they also reduce the amount of data to be examined later on at the laboratory.

Administrative

On-site protocols must not overlook the administrative issues. Since the original evidence is not removed, the technical documentation describing the seized evidence,

forensic techniques and processes used on-site, and examiner notes must be made while on-site. The on-site administrative issues may become complex and require clear documentation. For example, the copy made on-site is a best evidence copy and should be properly annotated. Also, copies of several hard drive exhibits (commonly known as "images") can be placed on a single drive. Multiple exhibits contained (stored) in one physical object may result in evidence recording confusion. Clear and detailed administrative protocols can eliminate most on-site evidence handling and documentation issues.

Field Deployment Kits

Digital Evidence Laboratories also need to have portable equipment to perform on-site digital evidence support. Historically, the equipment taken to the field involves one or more computer systems, hard drive write blockers, a wide assortment of cables, connectors, blank hard drives, and a variety of blank external storage media (CDs, DVDs, diskettes, or tapes). The extensive use of cell phone, Personal Digital Assistant (PDA), and two-way pager devices, has broadened the on-site mission requirements for law enforcement forensics. It is now desirable to also travel with hardware technologies that can download these types of consumer electronic devices. Also, having a portable Subscriber Identity Module (SIM) card reader capability is very useful since SIM cards (more commonly known as

"smart cards") can contain good investigative lead information such as address book entries, user registration information, text messaging, and last call data.

The on-site collection mission is a very important, technical support service that is becoming essential to law enforcement as investigations move beyond individual subjects of interest into corporations. Digital evidence laboratory policies and on-site operating protocols must be sufficiently robust and versatile to provide clear direction on how modern business environments should be handled. The traditional policy to collect and copy everything is not supportable (or desirable) in current commercial or office environments.

Questions or comments?:
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