

# Microgram

## *Bulletin*

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**VOL. XXXVIII, NO. 4**

**APRIL 2005**

**- INTELLIGENCE ALERT -**

**COCAINE BRICKS CONTAINING INTERNAL HEROIN BRICKS  
IN NOGALES, ARIZONA**

The DEA Southwest Laboratory (Vista, California) recently received 17 bricks wrapped in plastic, brown tape, and cellophane, containing a compressed white powder, suspected cocaine. The exhibits were seized by the U.S. Border Patrol at the Nogales, Arizona Port of Entry (circumstances not further reported). Upon further examination, however, each brick was also found to contain a second, internal brick, wrapped in brown tape and cellophane, which contained an unknown, compressed, tan colored powder (see Photo 1). The net mass of the white powder in the outer bricks averaged 600 grams per brick, while the net mass of the tan powder in the inner bricks averaged 500 grams per brick



**Photo 1**

(both values very consistent from brick to brick). Analysis of the white powder by GC/FID, LC, GC/MS and FTIR/ATR confirmed 85 percent cocaine hydrochloride adulterated with caffeine, while analysis of the tan powder (same analytical techniques) indicated a mixture of 72 percent heroin hydrochloride and 7.2 percent cocaine hydrochloride. This is the first submission of heroin mini-bricks inside cocaine bricks to the Laboratory.

[Editor's Notes: This appears to be the first ever report of concealing heroin bricks inside cocaine bricks. It is postulated that this unusual concealment technique was utilized to deceive mid-level transporters, who charge higher rates for heroin shipments versus cocaine shipments.]

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**- INTELLIGENCE ALERT -**

**THREAD SPOOLS FROM PERU (CONTAINING COCAINE)  
AT THE NEWARK INTERNATIONAL AIRPORT**

The DEA Northeast Laboratory (New York, New York) recently received eight spools of white and/or red colored thread, each including a plastic bag containing a white powder within the spool cavities, suspected cocaine (see Photos 2 and 3). The exhibits were seized by Customs and Border Protection personnel from the luggage of a passenger arriving at Liberty



**Photo 2**



**Photo 3**

International Airport (Newark, New Jersey) on a flight from Lima, Peru. It appears that the thread was wrapped onto the spools after the bags of powder were secreted within the spool cavities. Analysis of the powder (total net mass 1,990 grams) by GC/FID, FTIR-ATR, GC/MS, and 1H-NMR confirmed 94 percent cocaine hydrochloride. The Northeast Laboratory routinely encounters cocaine concealed in various objects and containers, but this is the first submission of cocaine concealed within spools of thread [Editorial remarks, next page].

[Editor's Note: A similar exhibit was reported in the April 2003 issue of *Microgram Bulletin*. In that case, the spools contained hashish packaged in brown tape, which were wrapped around the central cannisters of the spools.]

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**- INTELLIGENCE ALERT -**

**METHAMPHETAMINE IN PLASTIC/TAPE BOXES IN LAREDO, TEXAS**

The DEA South Central Laboratory (Dallas, Texas) recently received nine rigid bricks wrapped in layers of plastic and black electrical tape, containing a white crystalline powder, suspected methamphetamine. The exhibits were initially seized by Immigration and Customs Enforcement Agents in Laredo, Texas from a hidden compartment in a recent model sedan (details not provided). Unusually, the bricks were found to be encased in a homemade box (10 x 5.75 x 1.5 inches) of white plastic (1.5 millimeters thick), held together with green tape at the seams (see Photos 4 and 5). Analysis of the powder (total net mass 8,065 grams) by FTIR, GC/MS, and HPLC confirmed 86 percent d-methamphetamine hydrochloride. This is the first such submission to the South Central Laboratory. It is unclear why this technique was employed.



**Photo 4**



**Photo 5**

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**- INTELLIGENCE ALERT -**

**UNUSUAL HEROIN PELLETS AT THE MIAMI INTERNATIONAL AIRPORT**

The DEA Southeast Laboratory (Miami, Florida) recently received 75 body-pack pellets, all containing a white powder, suspected heroin. The pellets were recovered by Immigration and Customs Enforcement personnel from an individual arriving at the Miami International Airport on a flight from Venezuela. Very unusually, the pellet "shells" appeared to consist of cut

sections of plastic syringes (or less likely plastic graduated cylinders), capped at both ends, and covered with an outer layer of rubber (see Photo 6). Analysis of the powder (total net mass 546 grams) by GC/MS and FTIR confirmed 7.3 percent heroin hydrochloride adulterated with caffeine. This was the first submission of pellet shells of this type to the Southeast Laboratory. It is unclear as to why this unusual construction was employed.

[Editor's Notes: This appears to be the first report of pellet shells of this type construction to *Microgram Bulletin*. The purity (7.3 percent) is also a strikingly low percentage for controlled substance pellets arriving from overseas.]



**Photo 6**

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**- INTELLIGENCE ALERT -**

**MISSOURI STATE HIGHWAY PATROL TROOPERS SEIZE MARIJUANA  
TRANSPORTED IN A SIMULATED FEDEX VAN**

[From the NDIC *Narcotics Digest Weekly* 2005;4(11):2  
Unclassified, Reprinted with Permission;  
Some Details Withheld in Accordance with *Microgram* Policy.]

On February 25, 2005, a Missouri State Highway Patrol (MSHP) trooper stopped a rental vehicle for [suspicious driving near] what appeared to be a FedEx van. Both vehicles were traveling east on Interstate 44 in Greene County, near Springfield. The driver of the rental vehicle, a Hispanic male, told the trooper he was escorting the FedEx van, which he said was delivering pharmaceutical supplies to Chicago. [When stopped] the van driver, a Caucasian male, also stated that he was delivering pharmaceuticals to Chicago but could not explain the presence of the [escort] vehicle. Troopers searched the van and discovered 18 large boxes containing 1,266 pounds of marijuana. The investigation is continuing.

NDIC Comment: The van was the same make and model driven by FedEx employees. According to the driver, the van was purchased in 2004 and picked up in Houston. The exterior FedEx decals and logos apparently were produced using computer graphics software and, according to troopers, were indistinguishable from the real thing. The vehicle was also outfitted with a fake global positioning system (GPS) antenna and a fake laptop, which was mounted on the interior center console. The driver of this simulated FedEx van was dressed in dark trousers, a dark blue shirt, and blue baseball cap, the same types of clothing and colors worn by FedEx

drivers. Troopers also found fake bills with FedEx logos inside the van. (Late last year, law enforcement officers in New Mexico seized marijuana from two trucks that had been modified to resemble New Mexico Department of Transportation vehicles.)

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**- INTELLIGENCE BRIEF -**

**MDMA CAPSULES IN VOLUSIA COUNTY, FLORIDA**

The Florida Department of Law Enforcement Daytona Beach Crime Laboratory (Daytona Beach) recently received two clear capsules containing a dark, granular substance with an odor similar to fertilizer, submitted as an unknown/possible controlled substance (see Photo 7). The capsules (total net mass 0.72 grams) were seized in Volusia County by the Volusia County Sheriff's Office (exact location and circumstances of seizure not reported; Daytona Beach is located within Volusia County). Analysis of the solid by Marquis, and of a methanolic extract by GC/FID and GC/MS, indicated MDMA (not quantitated). The cause(s) of the dark coloration and unusual odor were not determined. This was the first ever submission of MDMA in capsule form to the Laboratory.



**Photo 7**

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**- INTELLIGENCE BRIEF -**

**2,5-DIMETHOXY-4-ETHYLPHENETHYLAMINE (2C-E) CAPSULES  
IN BETTENDORF, IOWA**

The Iowa Criminalistics Laboratory (Des Moines, Iowa) recently received a polydrug case with 14 bags of marijuana (total net mass 143.8 grams) and thirteen clear capsules (20 x 8 millimeters) containing a white powder, suspected mescaline (photo not available). The exhibits were seized by the Quad City (Moline, Rock Island, Davenport, Bettendorf) Metropolitan Enforcement Group (MEG) Task Force during the execution of a search warrant in Bettendorf, Iowa (Bettendorf is located in far eastern Iowa, on the Mississippi River (border with Illinois)). Analysis of the powder (total net mass not exactly measured, but less than one gram) by Marquis, Davidow TLC, and GC/MS, however, indicated not mescaline but rather 2,5-dimethoxy-4- ethylphenethylamine (also known as 2C-E). No standard was available for confirmation; therefore, the identification was based on the mass spectrum of 2C-E as reported in the November 2004 issue of *Microgram Bulletin*, and is tentative. This is the first ever submission of 2C-E to the Laboratory.

**- INTELLIGENCE BRIEF -**

**METHAMPHETAMINE "SUPER LAB" SEIZED IN SMYRNA, GEORGIA**

[From the NDIC *Narcotics Digest Weekly* 2005;4(9):2  
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On February 9, 2005, DEA agents seized a methamphetamine laboratory from a Smyrna residence and arrested three illegal aliens from Mexico. During a search of the residence, agents seized over 10 pounds of crystal methamphetamine, 39 pounds of powdered methamphetamine, and several 30- to 55-gallon containers filled with liquid methamphetamine. In addition, agents discovered 24 garbage bags full of empty pseudoephedrine packages that would have held an estimated 240,000 tablets.

*NDIC Comment:* Demand for powdered and crystal methamphetamine has been increasing in Atlanta. Law enforcement reporting indicates that Atlanta is becoming a distribution center for methamphetamine destined for drug markets throughout the Southeast. As demand for methamphetamine increases in the Atlanta area and as the city becomes a more prominent distribution center, law enforcement officers may encounter an increasing number of methamphetamine super labs not only in Atlanta but also throughout Georgia.

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**- INTELLIGENCE BRIEF -**

**OKLAHOMA HIGHWAY PATROL TEAM SEIZES 10 POUNDS OF MEXICAN  
BLACK TAR HEROIN INTENDED FOR DISTRIBUTION IN PENNSYLVANIA**

[From the NDIC *Narcotics Digest Weekly* 2005;4(10):2  
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On February 4, 2005, an Oklahoma Highway Patrol (OHP) Interdiction Team seized 10 pounds of Mexican black tar heroin during a vehicle stop on the Will Rogers Turnpike in Craig County. An OHP trooper stopped the driver of an eastbound Pennsylvania-licensed sport-utility vehicle for failure to signal a lane change. [Due to the driver's behavior], the OHP trooper requested a driver's license check. While awaiting receipt of the information, the trooper walked his drug-detection canine around the vehicle, and the dog alerted to the [SUV's] passenger side. A probable cause search of the vehicle revealed two false compartments in the rocker panels in which seven plastic-wrapped bundles of heroin weighing a total of 10 pounds were discovered. In conjunction with this incident, another OHP trooper executed a safety check stop on a second vehicle, an Oklahoma-licensed [vehicle] with three male occupants. [Due to some common items found in both vehicles], OHP troopers determined that the drivers had been traveling together. The driver of the SUV eventually explained that the four men had departed from Pennsylvania, paid for the heroin shipment in El Paso (TX), and picked up the heroin in Santa

Rosa (NM). They were transporting the heroin to Pennsylvania when they were stopped. All four were arrested.

NDIC Comment: This 10-pound seizure of Mexican black tar heroin surpasses the 9.5-pound total seized by the OHP over the last 3 years combined. Heroin is not commonly seized along Oklahoma's highways. In fact, heroin ranks well below marijuana, cocaine, methamphetamine, and crystal methamphetamine in quantities seized during highway interdictions in the state. Most of the heroin available in Pennsylvania is South American white powdered heroin obtained from sources of supply in New York City. Mexican black tar heroin is not commonly available or abused in Pennsylvania.

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**- INTELLIGENCE BRIEF -**

**LEGISLATION INTRODUCED TO FIGHT ILLEGAL SALE  
OF PRESCRIPTION DRUGS ON THE INTERNET**

[From the NDIC *Narcotics Digest Weekly* 2005;4(10):3  
Unclassified, Reprinted with Permission.]

On February 16, 2005, the Ryan Haight Internet Pharmacy Consumer Protection Act of 2005 (H.R. 840) was introduced in Congress. The bill--which is named after an 18-year-old who died in 2001 after overdosing on Vicodin (hydrocodone) purchased from an Internet pharmacy without a prescription--would amend the Federal Food, Drug, and Cosmetic Act to ban the sale of prescription drugs over the Internet without a valid prescription. Key components of the bill include requiring Internet pharmacy web sites to clearly identify the business, pharmacist, and physician associated with the pharmacy and the states in which these persons are authorized to dispense or prescribe prescription drugs; prohibiting a web site from referring a customer to a physician who will write a prescription without having examined the patient; and providing state attorneys general with the authority to shut down rogue Internet pharmacy sites across the country rather than only in their state. The bill is being endorsed by the Office of National Drug Control Policy (ONDCP) and several medical and consumer protection associations. An identical bill will be introduced in the Senate.

NDIC Comment: Online pharmacies that sell prescription drugs without requiring a valid prescription are an increasing problem. In 2004 the National Center on Addiction and Substance Abuse (CASA) at Columbia University conducted a study involving 495 web sites that linked to 157 anchor web sites where Schedule II through V controlled prescription drugs could be ordered. According to the CASA White Paper published in February 2004, which detailed the results of the study, of the 157 Internet web sites selling controlled prescription drugs, only 6 percent (10) required a prescription, 90 percent (141) did not require a prescription, and 4 percent (6) made no mention of prescriptions. Of the sites that did not require a prescription, 64 stated that no prescription was needed, and the remaining 77 sites offered an "online consultation." While the Ryan Haight Act will not provide a means to prosecute owners of web

sites operating from overseas, it will provide a means for prosecuting owners of web sites selling prescription drugs within the United States, even if those sites are not physically located in the jurisdiction of the prosecuting office.

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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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2. Brandt SD, Freeman S, Fleet IA, McGagh, Alder JF. **Analytical chemistry of synthetic routes to psychoactive tryptamines - Part I. Characterisation of the Speeter and Anthony route to 5-methoxy-N,N-diisopropyltryptamine using ESI-MS-MS and ESI-TOF-MS.** *Analyst* 2004;129(11):1047. [Editor's Notes: Presents the title study. Contact: UMIST, Dept Instrumental & Analyt Sci, Manchester M60 1QD, Lancs, England.]
3. Kochana J, Wilamowski J, Parczewski A. **SPE-TLC profiling of impurities in 1-(3,4-methylenedioxyphenyl)-2-nitropropene, and intermediate in 3,4-methylenedioxymethamphetamine (MDMA) synthesis.** *Chromatographia* 2004;60(7-8):481. [Editor's Notes: Presents the title study. Appears to be closely related to a similarly titled article published in the *Journal of Liquid Chromatography & Related Techniques* 2004;27(15):2463. Contact: Jagiellonian Univ, Fac Chem, Dept Analyt Chem, Ingardena 3, PL-30060 Krakow, Poland.]
4. Lapachinske SF, Yonamine M, Moreau RLdM. **Validation of a gas chromatographic method for the determination of 3,4-methylenedioxymethamphetamine (MDMA) in ecstasy tablets.** *Revista Brasileira de Ciencias Farmaceuticas* 2004;40(1):75. [Editor's Notes: Uses nitrogen/phosphorus detection. This article is written in Portuguese. Contact: Laboratorio de Analises Toxicologicas, Departamento de Analises Clinicas e Toxicologicas, Faculdade de Ciencias Farmaceuticas, Universidade de Sao Paulo, Brazil.]
5. Lehner AF, Craig M, Fannin N, Bush L, Tobin T. **Fragmentation patterns of selected ergot alkaloids by electrospray ionization tandem quadrupole mass spectrometry.** *Journal of Mass Spectrometry* 2004;39(11):1275. [Editor's Notes: Compounds included ergovaline, ergotamine, ergocornine, ergocryptine, ergocrystine, ergonovine, lysergic acid, and lysergol. Contact: Univ Kentucky, Dept Vet Sci, Maxwell H Gluck Equine Res Ctr, Lexington, KY 40546.]
6. Milhazes N, Borges F, Calheiros R, Marques MPM. **Identification of synthetic precursors of amphetamine amphetamine-like drugs using Raman spectroscopy and ab initio calculations: beta-Methyl-beta-nitrostyrene derivatives.** *Analyst* 2004;129(11):1106. [Editor's Notes: The study includes the nitrostyrene precursors for MDMA, MDA, PMA, and

- 4-MTA. Contact: Univ Coimbra, Fac Ciencias & Tecnol, Unidade I&D Quim Fis Mol, Ap 3126, P-3001401 Coimbra, Portugal.]
7. Napoli JD. **Device for testing surfaces of articles for traces of explosives and/or drugs.** (Patent) Chemical Abstracts 2005:77931.
  8. Qi XH, Mi JQ, Zhang XX, Chang WB. **Preparation and application of an immunoaffinity column for direct extraction of morphine and its analogs from opium.** Chinese Chemical Letters 2004;15(11):1323. [Editor's Notes: The presented method uses an IAC for isolation and CE for analysis. The four alkaloids that are selectively isolated are morphine, codeine, dionin, and thebaine. Contact: The Key Lab of Bioorganic Chemistry and Molecular Engineering, Peking University, Beijing, Peop. Rep. China 100871.]
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  10. Song SM, Marriott P, Wynne P. **Comprehensive two-dimensional gas chromatography - quadrupole mass spectrometric analysis of drugs.** Journal of Chromatography A 2004;1058(1-2):223. [Editor's Notes: 77 underivatized drug standards (not specified in the abstract) were analyzed by the title technique. Appears to be related to a similarly titled article published in *Forensic Science International*, using TOF mass spectrometry: 2004;143(2-3):87. Contact: Australian Ctr Res Separat Sci, Sch Appl Sci, GPO Box 2476 V, Melbourne, Vic 3001, Australia.]
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#### Additional References of Possible Interest:

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3. Claxton LD. **Scientific authorship.** Mutation Research 2005;589(1):17. [Editor's Notes: A review of scientific fraud in papers. Contact: Environmental Carcinogenesis Division, U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Mail Drop B143-06, Research Triangle Park, NC 27709.]

4. Fischer I. **Analogue-based drug research: Lead and drug optimization.** Medicinal Chemistry Research 2004;13(3-4):218. [Editor's Notes: An overview of approximately 350 (legal) drugs, with analysis of their discovery/timing, and commonalities of action. Contact: Gedeon Richter Chem Works Ltd, Res Lab, POB 27, H-1475 Budapest 10, Hungary.]
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6. Iio R, Chinaka S, Takayama N, Hayakawa K. **Simultaneous chiral analysis of methamphetamine and related compounds by capillary electrophoresis/mass spectrometry using anionic cyclodextrin.** Analytical Sciences 2005;21(1):15. [Editor's Notes: Focus is on urinalysis. Contact: Forensic Science Laboratory, Ishikawa Prefectural Police Headquarters, Kanazawa 920-8553, Japan.]
7. Jehanli AMT. **Detection of methamphetamine class of drugs.** (Patent) Chemical Abstracts 2005:45418.
8. Jehanli AMT, Hand CW. **Delta-9-tetrahydrocannabinol detection method.** (Patent) Chemical Abstracts 2005:45419.
9. Laviana L, Mangas C, Fernandez-Mari F, Bayod M, Blanco D. **Determination and in-process control of Zolpidem synthesis by high-performance liquid chromatography.** Journal of Pharmaceutical and Biomedical Analysis 2004;36(4):925. [Editor's Notes: Includes HPLC analysis of the drug and its synthetic intermediates. Contact: Univ Oviedo, Dept Phys & Analyt Chem, Julian Claveria, Oviedo, Spain.]
10. Lin DL, Liu HC, Yin RM, Chen DT, Soong SJ, Liu RH. **Effectiveness of multiple internal standards: Deuterated analogues of methylenedioxyamphetamine, methylenedioxyamphetamine, methamphetamine, and amphetamine.** Journal of Analytical Toxicology 2004;28(8):650. [Editor's Notes: Focus is toxicological. Contact: Fooyin Univ, Dept Med Technol, 151 Ching Hsueh Rd, Kaohsiung 831, Hsien, Taiwan.]
11. Srinivas NR. **Simultaneous chiral analyses of multiple analytes: Case studies, implications and method development considerations.** Biomedical Chromatography 2004;18(10):759. [Editor's Notes: A review; includes some illustrative case studies. Contact: Drug Development, Discovery Research, Dr. Reddy's Laboratories, Hyderabad 500 049, India.]
12. Tirumalai PS, Shakleya DM, Gannett PM, Callery PS, Bland TM, Tracy TS. **Conversion of methamphetamine to N-methylmethamphetamine in formalin solutions.** Journal of Analytical Toxicology 2005;29(1):48. [Editor's Notes: Focus is on conversion in embalming fluid (formalin). Contact: Department of Basic Pharmaceutical Sciences, School of Pharmacy, West Virginia University, Morgantown, WV (zip code not provided).]
13. Wildemann H. **Forensic Toxicology with chromatography and spectrometer.** Chemie in Unserer Zeit 2004;38(6):384. [Editor's Notes: An overview. This article is written in German. Contact: Wiley-VCH Verlag GmbH & Co., KgaA (no further addressing information provided.)]

14. Yan J, Wang J, Zhao MP, Chang WB. **Determination of papaverine by biotin-avidin amplified ELISA.** Analytical Letters 2004;37(14):2977. [Editor's Notes: Presents the title study (ELISA: Enzyme-linked immuno-sorbent assay). Contact: Beijing Univ, Coll Chem & Mol Engn, Key Lab Bioorgan Chem & Mol Engn, Beijing 100871, Peoples R China.]

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## NEW EMAIL ADDRESSES NEEDED

The email addresses for the following organizations have returned rejection notices to the *Microgram* Editor for the past three email notifications of *Microgram Bulletin*, and will therefore be dropped from the subscription list unless a corrected email address is provided by April 30, 2005. Note that the errors include anti-spamming, mailbox full, user not found, or user unknown messages. The Editor requests your assistance in contacting these organizations, determining if they wish to remain on the *Microgram* subscription e-net, and if so asking them to provide a valid email address to the Editor at: [microgram\\_editor -at- mailsnare.net](mailto:microgram_editor-at-mailsnare.net)

Police - Mossos Desquadra, Barcelona, Spain

**The following organizations (listed in the February issue) will also be dropped on April 30th, 2005:**

Alabama Department of Forensic Sciences - Birmingham, Dothan, and Huntsville Laboratories

Caroline County Sheriff's Department, Denton, MD

Connecticut Department of Public Safety, Division of Scientific Services, Meriden, CT

Georgia Bureau of Investigation, Central Region Medical Examiner's Office, Dry Branch, GA

G.J. Kupferschmidt Consulting, Ontario, Canada

Glendale Police Department, Special Investigations Unit, Glendale, AZ

Kaiser-Permanente Regional Laboratory, Portland, OR

Kentucky State Police - All Laboratories (ISP appears to have changed)

Laboratory for Clinical and Forensic Toxicology, Antwerp, Belgium

Morris County Sheriff's Crime Laboratory, Morristown, NJ

National Bureau of Investigation, Vantaa, Finland

Newark Police Department, Forensic Laboratory, Newark, NJ

Office of the Deputy Assistant Secretary of Defense for Counternarcotics, Washington, DC

Oklahoma City Police Department, Forensic Drug Laboratory, Oklahoma City, OK

Sheridan Police Department, Sheridan, CO

U.S. SOUTHCOM (Herndon, VA Office (Counternarcotics))

USACIL, Hickam AFB, HI

Washington State Patrol - All Laboratories (ISP appears to have changed)

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## THE JOURNAL/TEXTBOOK COLLECTION EXCHANGE

There were no offerings of journals or textbooks made over the past quarter.

**Subscribers are encouraged to donate surplus or unwanted items or collections; if interested, please consult the *Microgram* website or contact the *Microgram* Editor for further instructions.**

The next offering of journals and textbooks will be in the July 2005 issue of *Microgram Bulletin*.

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## THE DEA FY - 2005 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:

May 9 - 13, 2005  
July 11 - 15, 2005  
September 19 - 23, 2005

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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Search warrant narratives must be both clearly phrased and sufficiently comprehensive to ensure that the needed investigative information is properly (legally) collected at the time of seizure. The unusual nature and complexity of digital evidence represents an additional challenge for law enforcement personnel who are charged with drafting search warrant narratives, for both technical and jurisdictional reasons. Some digital evidence search warrant language considerations include:

### **Evidence Removal Contingency**

Search warrant language specifying the intent of law enforcement to duplicate a computer on-site should always contain a statement that a reasonable effort will be made to copy data on-site, but also that *law enforcement retains the right to remove the computer and related accessories to its laboratory for technical reasons or where the time required to complete the search on site will significantly disrupt the owner or business operation.*

Technical concerns may

include, for example, hard drive access problems associated with the duplication of laptop hard drives, or password protected hard drives. Similarly, accessing the inside of a laptop computer is a delicate and time-consuming task. It often involves the removal of many small screws, and requires gentle manipulations once disassembled. Undertaking such a technical task is best accomplished in a laboratory environment. Other examples of scenarios that would require an excessive on-site presence include backing up a very large hard drive, or copying numerous computers.

In such cases, the presence of law enforcement on-site for a long period of time (as long as 24 hours) is much more disruptive than simply removing the target computer. When removal of seized evidence is required by such circumstances, duplication and return of the evidence should be made as soon as practical. This is usually one to four work days, depending on the amount of work effort required and the distance between the seizure site and

the digital evidence laboratory.

### **Off-Site Data Storage**

A second important consideration in search warrant language covers the possibility that some or all of the needed investigative data may be stored at an off-site location. Such remote storage locations can either be part of the business under investigation, or simply a service provided by a third party provider. These services, commonly referred to as Network Area Storage (NAS), web hosts, or data farms, are frequently used in business and are becoming increasingly popular for individuals. In such cases, the data is typically accessible over a network connection (usually closed in-house or through a secure Internet link) from the main business location. In these situations, a second search warrant request should be submitted to a judge once the off-site location has been identified.

Logistically, the second search warrant may be complex since the actual physical location may be difficult to identify and it may

be (and probably will be) located in another jurisdiction. Search warrants for data located in another country are even more complex, and requests should be coordinated through the respective United States Attorney's Office pursuant to international agreements and laws. It is virtually impossible to achieve rapid seizures in such scenarios.

### **Consent Searches**

An alternative strategy that is highly recommended is to secure consent from an authorized person to "pull the data" (using existing data access privileges) from the targeted network. The consent warrant should include an *explicit statement authorizing copying of remotely stored data*. Ideally, it should be written, signed, dated, and witnessed.

In addition, there are special legal considerations for third party entities (e-mail hosting businesses) that store unopened e-mail *that is less than 180 days old* (unopened e-mail that is more than 180 days old requires a subpoena). This is a complex area of law, and it is recommended that all third party e-mail downloading should be closely coordinated with the respective United States Attorney's Office or state prosecutor's office.

### **Wireless Networking**

A third recommended search warrant language consideration involves local networks containing wireless technology. On-site copying of local networks can be a complex undertaking. The use of wireless technology needs to be verified, and the location of the remote wireless devices then need to be established. More and more businesses and individuals are using wireless networks to link computers. Search warrants that authorize the search of a local network should include language that specifies that devices that are *attached through a wireless connection are considered part of the local network*. However, if the remote wireless devices are located outside the physical address authorized in the search, either a second search or consent warrant may be needed to "pull" data from across the wireless network.

### **Installation Software or Specialized Hardware Seizure**

A fourth area of search warrant language involves securing the authority to seize not only the computer evidence but supporting system documentation and software. Frequently, businesses use highly specialized and/or proprietary software, and (as a result) the resulting data cannot be easily recovered without that

software. For example, hard drive duplicates of data formatted in a Unix operating system are not easily examined on a government owned/examination computer. It is therefore important that the warrant include authorization to *seize the installation software to facilitate accurate and rapid recovery of the needed information*.

Similarly, in some instances, it may be appropriate to take special hardware devices that are needed to perform the examination. Examples include unusual tape drives, computers that contain proprietary motherboards, processing chips sets (such as RISC or PERC technology), other unique internal components, or external access devices such as biometric readers. Warrants should contain language giving the seizing officials the flexibility to seize unusual hardware that will possibly be needed in the recovery of data stored on a computer or some form of unusual storage media.

### **Scope of Warrant Language**

A fifth area of concern involving search warrant language involves the description of the type(s) of information to be seized. If the language selection is too broad, the warrant could possibly be challenged with regards to its scope. On the

other hand, wording that is too narrow needlessly restricts the investigator's ability to document criminal activity particularly in suspected conspiratorial cases. Investigators should define the scope consistent with the suspected criminal activity. If evidence of an unrelated crime is identified during the course of a digital evidence examination, then a second search warrant can be obtained at that time.

#### **Technical Terminology**

A sixth area of search warrant language should focus on selection of proper technical terminology. It is not recommended that enumeration of digital storage devices be made unless it includes a general global phrase such as “*any and all digital data storage devices and media*” because inevitably, new forms of storage technology will arise that possibly could not be seized using a stricter interpretation.

Additionally, the warrant should avoid reference to “magnetic” storage media since more and more devices are optically based. It is recommended that the language be kept simple and state “*digital storage media and devices*”.

Similarly, the use of the term “electronic” should be avoided, because this term is

more associated with data transmission (both analog and digital) than it is with digital data storage devices.

The nature of personal and business computing is ever changing. Law enforcement must maintain continuous awareness of where data is located, how it is stored, and how it is accessed. Search warrant authorizations must anticipate remote data storage, networking, and non-magnetic data media. Failure to have the appropriate search warrant language could result in delayed or missed investigative opportunities. Further discussion of computer search and seizure law can found in the US Department of Justice’s July 2002 publication [Searching and Seizing Computers and other Electronic Evidence in a Criminal Investigation](#) located on the web at: [www.usdoj.gov/criminal/cybercrime](http://www.usdoj.gov/criminal/cybercrime).

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