

Microgram

Bulletin

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APRIL 2004

- INTELLIGENCE ALERT -

**STONERS AND BUDDAFINGAS CANDY BARS (CONTAINING THC)
IN SAN FRANCISCO, CALIFORNIA**

The Division of Forensic Toxicology, Armed Forces Institute of Pathology (Rockville, Maryland), recently received two apparent candy bars labelled as Stoners and Buddafinga, that were visually similar to the commercial candy bars Snickers® and Butterfingers® (see Photo 1, right, and 2, next page). The bars, which weighed approximately 60 g each and were packaged in foil wrappers, were forwarded to the laboratory by the Coast Guard Marine Safety Office, San Francisco Bay, where they had been provided by a defense attorney for a merchant marine who tested positive for the tetrahydrocannabinol (THC) metabolite, THC-COOH, during a random urinalysis.



Photo 1

Following a multi-step liquid/solid extraction workup, analysis by GC-MS analysis confirmed THC at 360 micrograms/gram and 496 micrograms/gram for the Stoners and Buddafinga bars, respectively (equalling 21.6 and 29.8 milligrams of THC in the submitted bars). This was the first submission of these products to the laboratory.



Photo 2

[Editor's Notes: A similar exhibit of a "Stoners" candy bar was reported in the February 2004 issue of *Microgram Bulletin*. This is the first report of the "Buddafingas" candy bar. The "Buddafingas" wrapper lists the product as "TaiNTed / Buddafinga / diggety, dankity, peanut-buttery!" and a consumer warning "For MEDICINAL Use Only". Both product wrappers also include marijuana leaf logos - it is therefore difficult to understand why anyone would attempt to present them as an explanation for "unknowingly" ingesting THC.

The source for these bars is currently unknown. An Internet search lists "Tainted Truffle" (a sub-title on the "Stoners" candy bar) as a supporting organization for a California based marijuana legalization lobbying group, with no further information. There is nothing on "Stoners" or "Buddafingas". A number of *Microgram* subscribers have requested information on the source of these products; therefore, if any subscriber is aware of that source, please forward that information to the Editor at: microgram_editor@mailsnare.net]

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- INTELLIGENCE ALERT -

COUNTERFEIT METHYLPHENIDATE (RITALIN) TABLETS CONTAINING OXYCODONE IN SANTA ROSA, CALIFORNIA

The California Bureau of Forensic Services Laboratory (Santa Rosa, California) recently received an apparently routine submission of four white tablets, diameter approximately 7 millimeters, with an "M" in a box on one side and scored with a "5" on the other, presumed methylphenidate (see Photos 3 and 4). The tablets were seized by the Santa Rosa Police Department pursuant to a routine traffic stop. The presumptive identification



Photo 3



Photo 4

was based on the Drug Identification Bible (2003 edition, pps. 162 and 266), indicating a Mallinckrodt Inc. product (Methylin®) containing 5 milligrams of methylphenidate. Analysis by GC/FID and GC/MS, however, indicated not methylphenidate but rather oxycodone with a trace of dihydrocodeinone (not quantitated). This was the first such submission to the laboratory.

- INTELLIGENCE ALERT -

LOLLIPOPS CONTAINING THC IN OAKLAND, CALIFORNIA

The Oakland Police Department Crime Laboratory (Oakland, California) recently received a case that included methamphetamine (0.41 grams), hashish (0.93 grams), MDMA (three clear, unmarked capsules containing white powder, weight not reported), and four green lollipops (total net mass 13.68 grams) suspected of containing THC (see Photo 5). The evidence was seized by the Oakland Police Department from a departing passenger at the Oakland International Airport who attempted to pass through a security checkpoint. The lollipops were 1.5 inches in diameter, were labelled “THCees Candies”, and had the California Health and Safety code for medicinal marijuana. The labels also indicated that the lollipops were flavored (see Photo 5; other flavors included grape and “Dr. Pepper”). Analysis of one of the lollipops by GC/MS confirmed THC (not quantitated). This is the first such submission to the laboratory.



Photo 5

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- INTELLIGENCE ALERT -

**UNUSUAL *l*-METHAMPHETAMINE CLANDESTINE LABORATORY
IN LOS ANGELES, CALIFORNIA**

The DEA Southwest Laboratory (Vista, California) recently assisted agents from the Los Angeles Division in the seizure of an unusual clandestine methamphetamine laboratory in Los Angeles, California. The laboratory operators (all Asians) were manufacturing *l*-methamphetamine by hydrogenolysis of *d*-ephedrine or *l*-pseudoephedrine. In addition to producing the “wrong” isomer of methamphetamine, the reduction route was unusual. The ephedrine/pseudoephedrine was activated *in situ* with either nitric acid and/or sodium acetate, then directly reduced with hydrogen gas over a PdCl₂ / BaSO₄ catalyst in a large (30 L) hydrogenator (see Photo 6). Hydrogenolysis reductions are very common in the Far East; however, in the classical Asian methodology, the ephedrine/pseudoephedrine is first reacted with thionyl chloride to form the intermediate α -chloro-methamphetamine, which is then reduced with hydrogen over a palladium based catalyst. The laboratory operators



Photo 6

also recrystallized the finished product from ethanol and water, to give *apparent* “Ice” methamphetamine HCl. Twenty eight kilograms of 99% *l*-methamphetamine HCl (packaged in Evian® water bottles) were recovered during the seizure (see Photos 7 and 8). Analysis was conducted with GC, IR, and CE. This is not the first ephedrine/pseudoephedrine hydrogenolysis laboratory seized with the assistance of the Southwest Laboratory; however, such laboratories are rarely encountered.



Photo 7



Photo 8

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- INTELLIGENCE ALERT -

HARD-COVER BOOKS CONTAINING COCAINE IN NEW YORK, NEW YORK

The DEA Northeast Laboratory (New York, New York) recently received six hard cover books with hidden (hollowed-out) compartments in each cover, all containing strip packages of white powder, suspected cocaine. The books (dimensions 9.5 x 11 or 12 inches, width not reported) were seized in New York City by agents from the New York Division (see Photo 9). The titles (all Spanish) included five books in the “History of Mankind” series, and also “Diana, Princess of Wales - A Life in Pictures”. The insides of each cover were sealed with paper to conceal the hollowed-out compartments. Analysis of the powder (total net mass 1.18 kilograms) by GC/FID, GC/MS, and FTIR confirmed 86 percent cocaine hydrochloride. The Northeast Laboratory routinely receives cocaine smuggled in different consumer and manufacturing items.



Photo 9

- INTELLIGENCE ALERT -

**WOODEN SHELVING BOXES CONTAINING COCAINE
IN MIAMI, FLORIDA**

The DEA Southeast Laboratory (Miami, Florida) recently received three decorative wooden shelving units, each containing additional wooden figurines (e.g., see Photo 10). Concealed in the back of each box was a clear plastic package of white powder, dimensions 15 x 11.5 x 2 inches, suspected cocaine (see Photo 11). The units originated in Guatemala, and were seized by the Bureau of Immigration and Customs Enforcement at the International Mail Facility in Miami. There was nothing in any of the figurines. Analysis of the powder (total net mass 2,949 grams) by GC/MS and FTIR confirmed 88% cocaine hydrochloride. The laboratory routinely receives controlled substances smuggled within a wide variety of consumer items.



Photo 10



Photo 11

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- INTELLIGENCE ALERT -

**“CLEOPATRA’S MINI BATH TABLETS PASSION” CONTAINING DOVE
LOGO MDMA TABLETS AND “CLEOPATRA’S EXOTIC BATH SALTS
PASSION” CONTAINING “ICE” METHAMPHETAMINE FROM
VANCOUVER, BRITISH COLOMBIA**

The DEA South Central Laboratory (Dallas, Texas) recently received ten cans of bath products, five labelled “Cleopatra’s Mini Bath Tablets Passion” and containing 4,889 tablets with “Dove” logos, suspected MDMA (see Photo 12, right, and 13, next page), and five labelled “Cleopatra’s Exotic Bath Salts Passion” and containing 985.2 grams of “shards” of slightly off-white crystalline material, suspected “Ice” methamphetamine (see Photo 14, next page). The exhibits originated in Vancouver, British Columbia, and were addressed to a location in Dallas,



Photo 12

Texas. The package was intercepted by the Canadian Customs Service and Royal Canadian Mounted Police (RCMP) and subsequently turned over to the DEA for a controlled delivery in Dallas. The tablets were white, round, biconvex, and averaged 280 milligrams; analysis by color tests, FTIR, GC/MS, GC/IRD, and HPLC, however, indicated not MDMA but rather 3,4-methylenedioxyamphetamine (MDA) at 77 milligrams/tablet. Analysis of the crystalline shards by color tests, FTIR, GC/MS, GC/IRD, GC/FID, and HPLC confirmed 98% *d*-methamphetamine HCl. Although the laboratory has received similar exhibits, this is the first example of this type of packaging.



Photo 13



Photo 14

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- INTELLIGENCE BRIEF -

COCAINE BRICKS IN PHILADELPHIA, PENNSYLVANIA

The National Medical Services Laboratory (Willow Grove, Pennsylvania (north of Philadelphia)) recently received two "bricks" of suspected cocaine, one imprinted with an apparent Toyota car logo (see Photo 15), and the second imprinted with an unknown "3-Interlocking Rings" logo (see Photo 16). The bricks originated from a location in Texas (not



Photo 15



Photo 16

further specified), and were seized by the Montgomery County Narcotics Enforcement Team at the UPS Center in Philadelphia. The bricks both measured approximately 8 x 6 x 2 inches, and had a combined net mass of 1,993 grams. Each was wrapped in multiple layers of clear plastic cellophane, black rubber balloons, and brown and clear tape. Ground black pepper was interspersed between the layers of wrapping. Analysis by color tests and GC/MS confirmed cocaine (quantitation and determination of base versus HCl not performed). The laboratory has previously received similar bricks of cocaine, but this is the first submission that had logos.

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- INTELLIGENCE BRIEF -

YOPO SEEDS IN CRETE TOWNSHIP, ILLINOIS

The Illinois State Police, Joliet Forensic Science Laboratory (Joliet, Illinois) recently received a submission of semi-round to oval-shaped, brown, flat seeds, purported “yopo seeds” (see Photo 17). The exhibit was seized from a residence in Crete Township by the Will County Sheriff’s Department, pursuant to a domestic disturbance complaint (Will County is about 35 miles south of Chicago). Included with the seeds was an information sheet for “yopo seeds (*Anadenanthera peregrina*)”, which described its use by South American Indian tribes to induce trance states and visions, and to communicate with spirits. Instructions for usage called for dry-toasting the seeds until they popped like popcorn, and then grinding them into a powder which was to be snuffed.



Photo 17

The thin brown outer layer of the seeds was easy to remove, revealing a homogeneous yellow inner seed (see Photo 18). After grinding, a portion of the resulting powder was subjected to preliminary color testing: Ehrlich’s (purple), and Marquis (orange). A second portion was added to 1 N NaOH and extracted with chloroform. Analysis of the concentrated chloroform extract by GC/MS gave one peak with a fragmentation pattern consistent with psilocin or bufotenine. Analysis by GC versus laboratory standards confirmed bufotenine (not quantitated). The seeds were supposedly received by mail from the Netherlands. This was the first encounter with either yopo seeds or bufotenine at the laboratory.

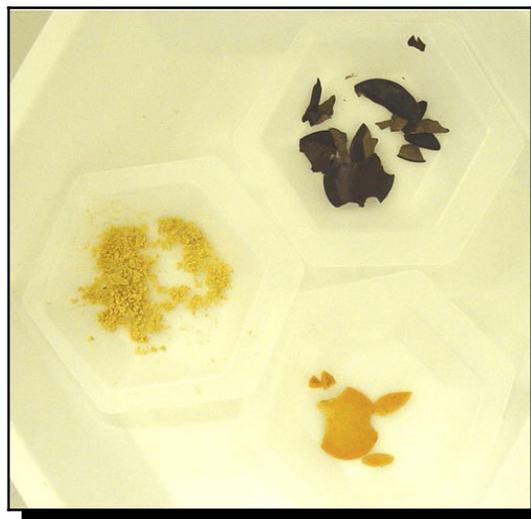


Photo 18

- INTELLIGENCE BRIEF -

PERUVIAN TORCH OR SAN PEDRO CACTI IN WISCONSIN

Wisconsin State Crime Laboratory-Madison (Madison, Wisconsin) recently received two separate submissions of plant material having the physical appearance of sliced and dried cucumbers, suspected Peruvian Torch cacti (total net mass 1,030 grams) and psilocybe mushrooms (total net mass 18 grams), respectively (law enforcement organization, location, and circumstances of seizures not provided). The “mushrooms” were quickly recognized as actually being either Peruvian Torch or San Pedro cacti. These cacti are tubular-type plants from South America that contain mescaline. When harvested, spines are removed from the tubers, which are then sliced into disks and dried, giving them the appearance of dried cucumbers with green edges (see Photo 19). Following an acid-base extraction workup, analysis by GC/MS confirmed mescaline in both exhibits (quantitation not performed). These were the first known submissions of these type cacti to the laboratory.



Photo 19

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- INTELLIGENCE BRIEF -

ANGEL TRUMPET IN MIAMI-DADE COUNTY, FLORIDA

The Miami-Dade Police Department (Miami, Florida) recently received a submission of 21.7 grams of large, wilted, multicolored flowers, suspected Angel Trumpet, genus *Datura* or *Brugmansia* (see Photo 20). The flowers were seized by a Miami-Dade County Public Schools police officer from a middle school student. A literature search indicated that the alkaloidal compounds of interest in Angel Trumpet are scopolamine, atropine, and hyoscyamine. The flowers were chopped and refluxed with methanol, and the resulting solution was filtered and concentrated. Analysis of the extract by GC/MS confirmed scopolamine (quantitation



Photo 20

not performed). Atropine and hyoscyamine were not identified; however, these are more minor constituents and are not always encountered. No botanical examination was performed; therefore, the identification was presumptive. This is the laboratory's first encounter with Angel Trumpet.

[Editor's Note: Abuse of *Datura* species, including Angel Trumpet, has resulted in numerous deaths and injuries, including self-mutilations from extreme psychotic incidents. A overview of Angel Trumpet has been previously reported; see: Churchill KT. Angel Trumpet. *Microgram* 1995;28(8):250. Note that this issue of *Microgram* is law enforcement restricted.]

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- INTELLIGENCE BRIEF -

BUFOTENINE IN MUNDELEIN, ILLINOIS

The Northern Illinois Police Crime Laboratory (Highland Park, Illinois) recently received a submission of an unknown brown solid, total net mass 0.14 grams, in a metal mints container (photo not available). The exhibit was seized by the Mundelein Police Department from an individual involved in a traffic accident (Mundelein is about 20 miles north-northwest of Chicago). The substance superficially resembled "hash" or compressed plant material; however, microscopic and physical examination revealed that it was a hard crystalline solid. Analysis by color testing (cobalt thiocyanate (blue), Marquis (light orange), Mecke (brown), and Ehrlich's (purple)) and GC/MS indicated bufotenine (quantitation not performed). This was the first such submission ever received by the laboratory.

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- INTELLIGENCE BRIEF -

METHAMPHETAMINE "SUPERLAB" SEIZED IN MODESTO, CALIFORNIA

[From the NDIC *Narcotics Digest Weekly* 2004;3(9):2
Unclassified, Reprinted with Permission.]

On February 7, 2004, agents from the Stanislaus Drug Enforcement Agency, California Multijurisdictional Methamphetamine Enforcement Team, and Central Valley High Intensity Drug Trafficking Area (HIDTA) arrested five Mexican nationals and seized an operational methamphetamine laboratory located in a residence in Modesto. Authorities had received information that several men who were staying at the residence had acquired large amounts of chemicals used to manufacture methamphetamine. Agents observed the residence for about a week and, after observing several men taking supplies commonly used to produce methamphetamine into the residence, obtained a search warrant. Shortly after the warrant was obtained, agents observed a suspect loading garbage bags into the back seat of his car before leaving the residence. The suspect was followed until he was away from the residence, when officers stopped his vehicle. A search of the vehicle revealed two garbage bags containing 80

pounds of ephedrine. The driver was arrested and charged with manufacturing methamphetamine and possession of a controlled substance for sale. After his arrest, agents prepared to serve the search warrant on the residence. Just prior to entering the residence, four suspects were observed fleeing. Three suspects were captured, arrested, and charged with manufacturing methamphetamine, criminal conspiracy, and resisting arrest. The fourth suspect was found in a trailer located on the property; he was arrested and charged with manufacturing methamphetamine, criminal conspiracy, battery on a police officer, and resisting arrest. Inside the residence agents found evidence of methamphetamine manufacture in every room. They seized over 300 gallons of alcohol, 96 pounds of red phosphorus, 80 pounds of ephedrine, and several weapons. This laboratory was the largest ever seized in Stanislaus County.

NDIC Comment: This laboratory was designated a super lab because officers concluded that it was capable of producing at least 10 pounds of methamphetamine per production cycle. Super labs located in California supply much of the domestically produced methamphetamine available throughout the country. According to the Drug Enforcement Administration (DEA) El Paso Intelligence Center (EPIC) National Clandestine Laboratory Seizure System (NCLSS), authorities reported that 788 methamphetamine laboratories were seized in California in 2003, of which 123 were super labs. Moreover, of the 55 reported methamphetamine laboratories seized in Stanislaus County in 2003, eight were super labs. Stanislaus County ranked fourth among California counties for the number of methamphetamine laboratories seized (55), after San Bernardino (152), Los Angeles (140), and Riverside (101) Counties.

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- INTELLIGENCE BRIEF -

LSD LABORATORY SEIZED IN SEATTLE, WASHINGTON

[From the NDIC *Narcotics Digest Weekly* 2004;3(9):2
Unclassified, Reprinted with Permission.]

On February 5, 2004, agents from the DEA with assistance from the Seattle Police Department arrested an individual and seized chemicals and glassware necessary to manufacture LSD (lysergic acid diethylamide) from his residence. The suspect, a former computer executive who lived in a Seattle suburban estate valued at \$2.5 million, was arrested while away from his residence allegedly negotiating a purchase of ergotamine tartrate, an LSD precursor, via telephone from a source in Vietnam. After arresting the subject, DEA agents executed a federal search warrant at his residence resulting in the seizure of approximately 30 liters of chemicals including ether, chloroform, nitrogen, anhydrous ammonia, and bromide. Law enforcement officials also seized computers, glassware, a vacuum pump, a distillation unit, a manual explaining how to manufacture LSD, receipts for chemical and glassware purchases, and approximately 500 OxyContin tablets. According to DEA officials, the suspect had not produced any LSD. The suspect was charged with attempted manufacture of LSD and attempted possession of ergotamine tartrate. The King County Sheriff's Office, Seattle Fire Department, and Seattle Medic-1 Unit participated in this investigation.

(continued on page 73)

NDIC Comment: Seizures of LSD laboratories in the United States are rare. According to NCLSS seizure data, law enforcement officials seized one LSD laboratory in Kansas in 2000, one in Missouri in 2002, and one in California in 2003. Most LSD available in the United States is produced primarily in Northern California and the Pacific Northwest by a relatively small network of experienced chemists; however, independent dealers throughout the country produce the drug in limited quantities.

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- INTELLIGENCE BRIEF -

“GRABA” (DRIED KHAT) SEIZED IN KANSAS CITY

[From the *NDIC Narcotics Digest Weekly* 2004;3(13):3
Unclassified, Reprinted with Permission.]

Missouri: On March 4, 2004, officers from the Kansas City Police Department seized three bundles of khat and three small plastic bags filled with a dried form of khat, known as graba, from a Kansas City apartment. Officers went to the apartment after receiving information that several Somali males at the apartment were in possession of khat. An officer knocked on the door of the apartment and, when one of the occupants opened the door, the officer observed several males holding a green leafy substance that he recognized as khat. When the individual who opened the door realized that police were present, he immediately tried to shut the door. However, three officers entered the apartment based on reasonable suspicion that a crime was occurring. Officers conducted a search of the apartment for additional individuals, during which time officers discovered a total of six men as well as three bundles of khat and two plastic bags filled with graba. Officers also requested and obtained consent to search one of the suspect's vehicles, where he located an additional plastic bag filled with graba. According to the Kansas City Police Department, the availability of khat leaves has declined in the Kansas City area. At the same time, the availability of graba has increased. This is at least the third time this year that Kansas City Police Department officers seized graba. On January 4, 2004, officers seized 13.2 pounds of graba from an Ethiopian national and on January 28, 2004, officers seized 38 grams of graba from a Somali national.

NDIC Comment: Graba, often similar in appearance to marijuana, usually is produced in Ethiopia and commonly is dried before it is transported to the United States. Graba, like fresh khat leaves, contains cathinone, a Schedule I drug under the Controlled Substances Act; however, according to DEA, cathinone in khat begins to degrade 48 hours after the plant has been cut. Conversely, the Kansas City Regional Crime Lab reports that dried graba leaves maintain their cathinone content for an extended period of time. Unlike fresh khat, graba does not need to be kept moist prior to consumption, making graba easier to transport and package.

[Editor's Notes: To clarify the apparent ambiguity between the DEA and Kansas City Regional Crime Lab statements, cathinone begins to degrade in fresh cut leaf within 48 hours, unless it is refrigerated or dried. Most of the khat seizures in this country are of fresh leaf, wrapped in a combination of moist paper and banana leaves or similar, and often shipped in coolers. The

appearance of “graba” in the U.S. may be in response to the loss of potency in the fresh leaf, resulting from degradation during extended shipping and/or Customs delays.]

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CORRECTIONS, CLARIFICATIONS, AND UPDATES

Europol is Not Part of Interpol

Sir: With regard to the March 2004 edition of *Microgram Bulletin*, and the item about 2C-I, your notes on page 48 referring to a related article in the May 2003 edition of the Europol *Drugs Intelligence Bulletin* are appreciated. However, please note that Europol is not “the drug arm of Interpol” as stated on page 49. In fact Europol is a totally separate entity - being the (single) law enforcement intelligence agency for the European Union. The Drugs Unit is a part of Europol which is mandated to deal with all areas of major organized crime. Europol co-operates with international organizations, including Interpol.

Additional Information on N-Methylpyrrolidinone - I

Sir: I have just received a copy of the March issue of *Microgram Bulletin* and read the Intelligence Alert regarding N-Methylpyrrolidinone (NMP). This compound was predicted to be a possible GHB analog in early 2001, and there is analytical information regarding it in the January 2001 issue of the CLIC Journal.

[Editor’s Notes: The referenced article is: Morris JA. Analogs of GHB. Part 2: Analytical Perspective. *Journal of the Clandestine Laboratory Investigating Chemists Association* 2001;11(1):16. Note that the *Journal of the Clandestine Laboratory Investigating Chemists Association* is a law enforcement restricted publication.]

Additional Information on N-Methylpyrrolidinone - II

Sir: Some paint strippers contain a mixture of GBL and NMP as solvents. It would not be inconceivable that some entrepreneur attempted to make GHB from such a solvent, not realizing (or caring) about the presence or adverse effects of NMP. The net result would be a combination of GHB and NMP, as mentioned in the March *Microgram Bulletin*.

“Factory-Sealed” Cans May Not Be....

Sir: The January 2004 issue of *Microgram Bulletin* contained an Intelligence Alert on Page 6 referring to the smuggling of marijuana in “factory-sealed” cans. Our laboratory had an

encounter with this technique many years ago (reported in *Microgram**), in an exhibit mailed from the Bahamas. The exhibit consisted of two apparently factory-sealed 5-lb cans of “processed cheddar cheese” which in fact contained compressed marijuana with lead weights incorporated to make the cans weigh a little over 5 pounds each. However, the cans only appeared to be factory-sealed. Removal of the labels revealed that the cans had been slit open along the circumference of the cans at the mid point of the sides, and the original contents removed and replaced; then the cut edges were filed smooth, carefully aligned back together again, and sealed with aluminum tape. With the labels then replaced, the cans appeared to be factory sealed with the tampering very effectively disguised – i.e., the cans exhibited a perfectly normal appearance. The latest report does not mention whether a similar technique was used, but it is important to note that exhibits of this type do not necessarily require commercial canning equipment to produce cans that appear to be “factory sealed.” As our experience demonstrated, the same appearance can be produced with relatively unsophisticated tools found in a home workshop. Investigators are therefore well advised to remove labels from suspicious containers to reveal what may be concealed underneath.

[* The referenced Intelligence Brief citation is: *Microgram* 1987;20(4):48. Note that the *Microgram* was a law enforcement restricted publication in 1987, and remains under that restriction.]

Unusual Solvent Mixture in Methamphetamine May Be NORPAR-15

Sir: The January 2004 issue of *Microgram Bulletin* contained an Intelligence Brief on Page 9 referring to 7.5 kilograms of methamphetamine hydrochloride containing an unusual residual solvent mixture consisting of tridecane, tetradecane, pentadecane, and hexadecane (C-13 through C-16) in an approximate 1:20:4:2 ratio. An article about fire debris analysis published in the September 1995 issue of the *Southern Association of Forensic Sciences Newsletter* presented data for an Exxon product termed NORPAR-15, which contains a mixture of C-13 through C-17 hydrocarbons. The published chromatogram for NORPAR-15 appears to be remarkably similar to the chromatogram reported in the January 2004 *Microgram Bulletin* for the referenced residual solvent mixture, suggesting that it or a similar product was used during the illicit production of these methamphetamine hydrochloride exhibits.

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Selected Intelligence Brief

Piperazines

A number of piperazines have appeared on the illicit markets over the past few years, as MDMA mimics. These include the following compounds:

Piperazine	Most Commonly Used Acronym
1-Benzylpiperazine	BZP
1-(3-Chlorophenyl)piperazine	mCPP
1-(4-Methoxyphenyl)piperazine	MeOPP *
1-(3,4-Methylenedioxybenzyl)piperazine	MDBP
1-(3-Trifluoromethylphenyl)piperazine	TFMPP

* The *meta*- (1-(3-methoxyphenyl)piperazine) and especially the *ortho*- (1-(2-methoxyphenyl)piperazine) isomers *may* also be circulating (to date, there has been no formal GC/MS study comparing the retention times and spectra of the three isomers). At present, all three isomers are abbreviated as MeOPP (the *ortho*- isomer has also been abbreviated as OMPP; however, this acronym is not commonly used at this time).

For a general overview on the piperazines (focusing on BZP and TFMPP), see: DEA Office of Domestic Intelligence, Domestic Strategic Intelligence Unit. BZP and TFMPP: Chemicals Used to Mimic MDMA's Effects. Microgram Bulletin 2002;35(5):123 (Note: Law Enforcement Restricted Issue).

Although there are extensive studies on the pharmacology and toxicology of the piperazines, there have been surprisingly few references providing analytical data for these compounds. Of note, BZP, mCPP, *ortho*-MeOPP, and TFMPP are all human metabolites of various prescription medications.

1. Aunan JE, Ely RA. Presented at the 9th Annual Clandestine Laboratory Investigating Chemists Association Technical Training Seminar, Toronto, Ontario, Canada, September 8 - 11, 1999. [Presents TLC, GC/MS, GC/IR, and FTIR for seven piperazines.]
2. de Boer D, Bosman IJ, Hidvegi E, Manzoni C, Benko AA, dos Reys LJAL, Maes RAA. Piperazine-like compounds: A new group of designer drugs-of-abuse on the European market. Forensic Science International 2001;121(1-2):47. [Presents mass spectral data for various piperazines.]
3. Kercheval JC. GC/MS analysis of BZP and TFMPP. Mid-Atlantic Association of Forensic Sciences Newsletter 2004, Issue 32-2 (no page numbers). [Presents the GC/MS analyses of BZP and TFMPP (includes mass spectra of both compounds)].

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SELECTED REFERENCES

[Note: Selected references are a compilation of recent publications of presumed interest to forensic chemists. Unless otherwise stated, all listed citations are published in English. If available, the email address for the primary author is provided as the contact information. Listed mailing address information (which is sometimes cryptic or incomplete) exactly duplicates that provided by the abstracting services.]

1. Edwards HGM, de Oliveira LFC, Prendergast HDV. **Raman spectroscopic analysis of Dragon's Blood resins - Basis for distinguishing between *Dracaena* (Convallariaceae), *Daemonorops* (Palmae), and *Croton* (Euphorbiaceae).** *Analyst* 2004;129(2):134. [Editor's Notes: The title study is presented. Contact: Chemical and Forensic Sciences, School of Pharmacy, University of Bradford, Bradford BD7 1DP.]
2. Day JS, Edwards HGM, Dobrowski SA, Voice AM. **The detection of drugs of abuse in fingerprints using Raman spectroscopy I: Latent fingerprints.** *Spectrochimica Acta, Part A: Molecular and Biomolecular Spectroscopy* 2004;60(3):563. [Editor's Notes: Codeine phosphate, cocaine hydrochloride, amphetamine sulfate, barbital, nitrazepam, caffeine, aspirin, paracetamol, starch, and talc were successfully identified in fingerprints using the title technique. Contact: Chemical and Forensic Sciences, University of Bradford, West Yorkshire, Bradford BD7 1DP.]
3. Kercheval JC. **GC/MS analysis of BZP and TFMPP.** *Mid-Atlantic Association of Forensic Sciences Newsletter* 2004, Issue 32-2 (no page numbers). [Editor's Notes: Presents the GC/MS analyses of 1-benzylpiperazine and 1-(3-trifluoromethylphenyl)piperazine. Contact: Western Maryland Regional Crime Laboratory, Hagerstown Police Dept. (no further addressing information was provided).]
4. Forgacs E, Cserhati T, Miksik I, Echardt A, Deyl Z. **Simultaneous effect of organic modifier and physicochemical parameters of barbiturates on their retention on a narrow-bore PGC column.** *Journal of Chromatography B - Analytical Technologies in the Biomedical and Life Sciences* 2004;800(1-2):259. [Editor's Notes: Presents the analysis of 22 barbiturates on a narrow-bore porous graphitized carbon column using water-dioxane mobile phases. Contact: E. Forgacs, Hungarian Acad Sci, Chem Res Ctr, Res Lab Mat & Environm Chem, POB 17, H-1525 Budapest, Hungary.]
5. Walker AJ, Bruce NC. **Combined biological and chemical catalysis in the preparation of oxycodone.** *Tetrahedron* 2004;60(3):561. [Editor's Notes: Presents the title synthesis using novel functionalized ionic liquids. Contact: NC Bruce, Univ Cambridge, Inst Biotechnol, Tennis Court Rd, Cambridge CB2 1QT, England.]

Additional References of Possible Interest:

1. Garkani-Nejad Z, Karlovits M, Demuth W, Stimpfl T, Vycudilik W, Jalali-Heravi M, Varmuza K. **Prediction of gas chromatographic retention indices of a diverse set of toxicologically relevant compounds.** *Journal of Chromatography A* 2004;1028(2):287. [Editor's Notes: Kovats retention indices for 846 compounds are presented. Contact: Faculty of Science, Vali-e Asr University of Rafsanjan, Rafsanjan, Iran.]

2. Porrata T. **The Rave and Club Drug phenomenon: Dancing with darkness and danger.** Medical Legal Aspects of Drugs. Burns M, Ed. Lawyers and Judges Publishing Co.:2003, Chapter 10 (pps. 253-278). [Editor's Notes: Presents an overview of the title topic, and discusses its associated health and social problems. Contact: No contact information was provided.]
3. Miller S. **Separations in a monolith.** Analytical Chemistry 2004;76(5):99A. [Editor's Notes: Presents an overview of the use of monolithic columns for liquid chromatography. Contact: No contact information was provided.]
4. Zhang JY, Xie JP, Liu JQ, Tian JN, Chen XG, Hu ZD. **Microemulsion electrokinetic chromatography with laser-induced fluorescence detection for sensitive determination of ephedrine and pseudoephedrine.** Electrophoresis 2004;25(1):74. [Editor's Notes: The two substrates were derivatized with 4-chloro-7-nitrobenzo-2-oxa-1,3-diazol prior to analysis. The technique was applied to Chines traditional herbal preparations. Contact: ZD Hu, Lanzhou Univ, Dept Chem, Lanzhou 730000, Peoples R China.]
5. Buryakov IA. **Express analysis of explosives, chemical warfare agents, and drugs with multicapillary column gas chromatography and ion mobility increment spectrometry.** Journal of Chromatography B - Analytical Technologies in the Biomedical and Life Sciences 2004;800(1-2):75. [Editor's Notes: The title technique was applied to analysis of heroin, cocaine hydrochloride, and cocaine base. Contact: Russian Acad Sci, Siberian Branch, DTIEGE, Pr Akad Koptyuga 3, Block 6, Novosibirsk 630090, Russia.]

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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 issues of *Microgram Bulletin*, and will therefore be dropped from the subscription list unless a corrected email address is provided by the end of April 2004. Note that the errors include anti-spamming comments, mailbox full messages, and 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 microgram_editor@mailsnare.net address.

Bureau of Alcohol, Tobacco, and Firearms, National Laboratory Center, Rockville, Maryland

Lothian and Borders Police, Edinburgh, Scotland

Oklahoma State Bureau of Investigation, Tahlequah Laboratory

The following organizations (listed last month) were dropped on 3/31/04:

Maine State Police Crime Laboratory - Augusta, Maine

Oakland County Sheriff's Department, Pontiac, Michigan

South Bank University London - United Kingdom

THE JOURNAL/TEXTBOOK COLLECTION EXCHANGE

FREE TO ANY SUBSCRIBER

Unless otherwise noted, requests for any of the following offerings should be emailed to the *Microgram* Editor at: microgram_editor@mailsnare.net Requests should include complete mailing address information, **and should confirm that the provided destination is a "safe" (irradiation free) address.** Unless otherwise noted, in cases of competing requests, libraries have precedence. [Note: Postage for offerings from the DEA Office of Forensic Sciences will be covered by the Office.]

- 1) *Forensic Science International* 2002: 128(1-2); 128(3); 129(3); and 130 (2-3).

The next offering of journals and textbooks will be in the July 2004 issue of *Microgram Bulletin*. **Subscribers are encouraged to donate surplus or unwanted items or collections; if interested, please consult the *Microgram* website for further instructions.**

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THE DEA FY - 2004 STATE AND LOCAL FORENSIC CHEMISTS SEMINAR SCHEDULE

The remaining FY - 2004 schedule for the DEA's State and Local Forensic Chemists Seminar is as follows:

June 14 - 18, 2004
September 20 - 24, 2004

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 appended onto the October 2003 issue of *Microgram Bulletin*, and 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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EMPLOYMENT OPPORTUNITIES

1. Broward County Sheriff's Office (BSO)

(Third and Final Posting)

Position: Crime Laboratory Manager

Location: Ft. Lauderdale, Florida

Salary Range: To Be Determined.

Application Deadline: Open Until Filled

Duties: This position directs, administers and manages all forensic services functions for the BSO (a 6,100 member department located in Ft. Lauderdale). Critical functions under charge include the Crime Laboratory, Automated Fingerprint Identification System (AFIS), and Latent Identification. Employees in this classification maintain responsibility for the direction, and management of personnel engaged in latent and ten-print identification, audio/video enhancements, quality control/quality assurance, DNA analysis, firearms and tool mark identification, forensic chemistry, questioned documents examination, and trace evidence analysis.

Qualifications: A Master's degree in chemistry, biology, or another physical science is required; a Ph.D. is preferred. The position also requires ten years experience that includes advanced forensic chemistry, biology or criminalistics preferably in a large national, state or regional laboratory. Thorough knowledge of DNA processing and American Society of Crime Laboratory Directors (ASCLD) certification required; certification by the American Board of Criminalistics (ABC) preferred. Experience in a managerial capacity with responsibility for administrative aspects of the work strongly desired.

Application Procedures: You may view a detailed job description, download an application or apply on-line at: www.sheriff.org. A completed application and accompanying resume will also be accepted by mail: Broward Sheriff's Office, Human Resources Bureau, 2601 W. Broward Blvd., Fort Lauderdale, FL 33312.

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2. Virginia Department of Criminal Justice Services

(Second Posting)

Position: Forensic Scientist II

Location: Roanoke, VA

Salary Range: \$39,901 - \$65,540

Application Deadline: Open Until Filled

Duties: Incumbent will: 1) Use current state-of-the-art methodologies and instrumentation to analyze controlled substances; 2) Prepare Certificates of Analyses on findings for use by the criminal justice system; and 3) Testify in court as a qualified expert for the Commonwealth at criminal proceedings as to the results of laboratory findings. Position requires occasional overnight travel. Employee will provide own transportation as required.

Qualifications: Knowledge, skills and abilities: Knowledge of basic theoretical principles and applications of the instrumentation and methodologies used to analyze controlled substances required. Knowledge of laboratory safety procedures; quality assurance/quality control and laboratory practices; instrumental analysis (GC, GC/MS, FTIR, UV) and experience in forensic drug analysis required. Successful completion of a documented training program and/or demonstration of competency is required. Experience presenting testimony in a court of law, as an expert witness is preferred. Must be able to analyze data, develop sound conclusions, maintain accurate records, and analyze, and solve technical problems. Ability to communicate effectively orally and in writing required. A baccalaureate degree in chemistry or other related science with sufficient chemistry courses is required; graduate degree is preferred. Valid driver's license and/or other means of reliable transportation required.

Application Procedures: Applicants must submit a state application (#10-012). Applications may be mailed to the Department of Criminal Justice Services, 805 East Broad Street, 10th Floor, Richmond, VA 23219, ATTN: Human Resource Office; emailed to: gcolburn@dcjs.state.va.us or faxed to 804-786-6484. State application forms may be obtained by calling (804) 786-4246 or by downloading the form from the employment section of the DCJS web page at www.dcjs.org For assistance, call Gene Colburn at (804) 786-6925.

AN EQUAL OPPORTUNITY EMPLOYER

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3. DEA Special Testing and Research Laboratory

(Second and Final Posting)

Position: Mass Spectrometrist

Location: Dulles, VA

Salary Range: \$85,210 - \$110,775 [Note that this salary range will increase by approximately two percent if the pending (additional) Federal pay raise is enacted.]

Application Deadline: Open Until Filled

Duties: See: jobsearch.usajobs.opm.gov (Vacancy #03-34-HPRF-01S)

Qualifications: Comprehensive knowledge, skills, and abilities in the theory and practice of high-res, tandem, LC/MS, and IRMS is required. Knowledge of organic synthesis and structural elucidation preferred. A Ph.D. in chemistry or related field is preferred. See the vacancy announcement for additional details.

Application Procedures: See the vacancy announcement and/or call 703/668-3300 if you have questions or need clarifications.

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SCIENTIFIC MEETINGS

1. Title: NEAFS 30th Annual Meeting

(First Bimonthly Posting)

Sponsoring Organization: Northeastern Association of Forensic Scientists

Inclusive Dates: September 29 - October 2, 2004

Location: Mystic, CT

Contact Information: Tammi Jacobs Shulman, 914/231-1630; tjl1@westchstergov.com

Website: [None Listed]

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Computer Corner

#181

The March of Time

by Michael J. Phelan
DEA Digital Evidence
Laboratory

Last month's 180th Edition of Computer Corner marked the 15th year that this column has been continuously published in *Microgram* or *Microgram Bulletin*.

The Past

The first ten years of Computer Corner (Editions 1 through 120) were nearly all authored by Senior Forensic Chemist Charles W. Harper of DEA's Special Testing and Research Laboratory, then located in McLean, Virginia. The focus of those columns was the emerging use of PC technology within a forensic drug laboratory. Although it is hard to recall in today's computer-intensive environments, the use of computers in forensic drug laboratories was still rather unusual 15 years ago, when the column started. Issues such as computer and laboratory instrument interfaces, data storage, compatibility issues, and a wide variety of PC hardware, software, and operating system considerations were presented

and discussed. Of course, many of the specific recommendations made 10 to 15 years ago have since been eclipsed by advances in technology, but the fundamental issues and concerns regarding computers in a laboratory environment still remain a pertinent topic for laboratory managers. In addition, the retrospective review of the history of computer use in forensic drug laboratories provided by the first ten years of Computer Corner place today's issues in better context.

Editions 121 through 180 were written by myself, and focus exclusively on computer forensics. This column represents the longest (and possibly the only) continuous chronology of and commentary on the rapidly evolving forensic discipline of digital evidence. A content analysis of the articles published over the last five years clearly shows the evolution of the discipline. Technologically, the era of DOS-based forensic

examination techniques has evolved into Windows-based solutions. Similarly, concerns over software tool capabilities have migrated to broader areas of concern, including (but not limited to) best practices, laboratory accreditation, network data acquisition, volatile memory forensics, and most recently data farm evidence collection.

Archive Now Available

In recognition of the 15 Year Anniversary, and mindful of the value of the historical record for organizations now involved in digital evidence, the DEA Office of Forensic Sciences is making available to law enforcement organizations (only) the complete set of the published Computer Corner articles. This collection, Editions 1 through 180, will be provided in .pdf format on a CD, and will be provided free of charge. Requests for a copy should be written on letterhead stationery and directed to:

Mr. Thomas J. Janovsky
Deputy Assistant Administrator
Office of Forensic Sciences
2401 Jefferson Davis Highway
Alexandria, VA 22301 USA

The Future

Expect an even wider discussion of digital evidence forensic topics to be included in the

Computer Corner columns over the next five years. The convergence of hand held consumer electronics, wireless technology, encryption, and incredibly large storage capacities will force significant changes in both digital evidence collection and examination strategies.

A list of the Computer Corner Editions (by number and title) is included below.

Questions or comments?

E-mail: mphelan@erols.com

Computer Corner No.

- 1 Glossary
- 2 Hardware - Software
- 3 Purchasing Computer Systems
- 4 Setting Up a System
- 5 Data Storage Devices
- 6 Barcoding
- 7 Hard Disks - A Primer
- 8 MS-DOSTM - File Allocation Tables
- 9 LIMS Systems
- 10 LIMS Systems - Operational
- 11 MS-DOSTM - Directory Structure
- 12 MS-DOSTM - Directory Structure
- 13 MS-DOSTM - Directory Structure
- 14 MS-DOSTM - Directory Structure
- 15 Storage Devices - Tape Data
- 16 Trouble Shooting
- 17 Communications - Lab Data
- 18 Communications - Serial (RS-232)
- 19 Communications - Parallel (HPIB)
- 20 Operating Systems
- 21 RAM Memory
- 22 Upgrading
- 23 Ports
- 24 Optical Drives (WORM)
- 25 Optical Drives (WORM)
- 26 Reviewing Scientific Literature
- 27 Cache Memory
- 28 Learning Curves
- 29 Printers
- 30 Printers - Paper Handling
- 31 Printers - Data Flow
- 32 Printers - Fonts
- 33 Programming
- 34 Graphics
- 35 Compilers & Interpreters
- 36 MS-DOSTM - File Attributes
- 37 Printers - Lasers

- 38 Programming - Flow Charts
- 39 Programming - Control Structures
- 40 Operating Systems - Update
- 41 Online Systems
- 42 Hard Disks - Basic Information
- 43 Hard Disks - Magnetic Coordinates
- 44 Hard Disks - Interfaces
- 45 Hard Disks - Installing & Configuring
- 46 Time
- 47 Static Electricity
- 48 Training
- 49 Document Oriented Interfaces - Part 1
- 50 Document Oriented Interfaces - Part 2
- 51 Virus Attack - Part 1
- 52 Virus Attack - Part 2
- 53 Virus Attack - Part 3
- 54 Virus Attack - Part 4
- 55 Main Frames - Dead?
- 56 Protecting Data - Part 1
- 57 Protecting Data - Part 2
- 58 RAID Systems
- 59 A Problem with Dates
- 60 A Five Year Index
- 61 Virus Attack - Revisited
- 62 Data Encryption & Networks
- 63 Random Access Memory - Can You Improve It?
- 64 Random Access Memory - Memory Managers
- 65 A New Computer or Next Time I'll...
- 66 Windows is Fine but MS-DOS is Better
- 67 Config.sys and Autoexec.bat
- 68 SCSI Plug and Play
- 69 It All Works, Finally!
- 70 Odds & Ends
- 71 Configuration Files
- 72 Floating Point Units
- 73 Internet - Part 1 - A History
- 74 Internet - Part 2 - Owners & Payers
- 75 Internet - Part 3 - Netiquette & the End of an Era
- 76 Internet - Part 4 - Hardware & Software
- 77 Internet - Part 5 - Security and a Glossary
- 78 Windows 95 - If It Ain't Broke, Don't Fix It - Yet
- 79 Is Your Battery Dead?
- 80 Recordable CD-ROM
- 81 Software Will It Slow down Your New Computer?
- 82 Usability - What Has Gone Wrong?
- 83 Application Software Usability - Part II
- 84 Quicker Windows 3.x
- 85 Windows 3.x and Printer Drivers
- 86 Cooling Systems
- 87 Upgrade or Replace: Considerations Part 1 of 3
- 88 Upgrade or Replace: Upgrade Recommendations Part 2 of 3

89 Upgrade or Replace: Replacement Recommendations Part 3 of 3
90 Training
91 Software Can Kill
92 Online Blues
93 Applications - Presentation Software
94 A "Cookie" in Your Computer?
95 Backups How Many Are Enough?
96 Chuck Installs Windows 95
97 Installing a Modem
98 Networking - Introduction
99 Networking, II - Physical Components
100 Networking, III - Logical Construction
101 Your Computer and the Year 2000
102 Productivity and Computers
103 Productivity and Computers, Part 2
104 Hardware Costs; Ever Downward!
105 CD-Drives Compatibility Confusion
106 Pointing Devices
107 Year 2000 - The Saga Continues
108 The Archivist Speaks
109 "God" Arrested and Convicted of Computer Felony
110 The Frustration of Passwords
111 Documentation
112 DOJ vs Microsoft - A Confusing Issue
113 How Many Windows?
114 Windows 95/98 & NT - A Comparison
115 Chuck Installs a Network - Part 1 of 2
116 Chuck Installs a Network - Part 2 of 2
117 Anatomy of a Hard Drive Failure - Humbled Again
118 BIOS
119 Y2K Observations
120 A Ten Year Index

#121 Computer Forensics – An Introduction
#122 The Electronic Crime Scene
#123 The Examination Process
#124 A Short History
#125 Computer Forensics – An Emerging Forensic Science Specialization
#126 The Importance of the On-Site Backup Process
#127 Computer Forensics and the Diversion Case
#128 Computer Forensics Interview Check List
#129 Computer Forensics – The DEA Software Tool Box
#130 Digital Evidence Laboratory Design
#131 Cybercrime – The Next Generation
#132 The Scientific Working Group on Digital Evidence
#133 The Sufficiency of Examination Issue
#134 The Examination Check List
#135 Basic Computer Evidence Documentation
#136 Basic Examiner Qualification

- #137 Best Practices or Principles
- #138 Computer Forensics and Internet Follow up (Part 1)
- #139 Computer Forensics and Internet Follow up (Part 2)
- #140 Computer Forensics – The Evolving Use of Definitions
- #141 The Five Examination Stages
- #142 Elements of a Competency Exam
- #143 Instrument Calibration
- #144 Free Space Examination Techniques
- #145 Digital Evidence Vault Operation
- #146 Specialized Digital Processing Platform and Work Station Needs
- #147 Technical Jargon – The Problem of Computerspeak
- #148 Differing Computer Forensic Techniques in Drug Investigations
- #149 Computer Forensics and Internet Chat Dialog Recovery
- #150 Digital Evidence Examination Theory
- #151 The Nature of Digital Evidence – A Working Paradigm
- #152 Report Writing
- #153 Turnkey Forensics – The Next Generation
- #154 Digital Evidence Worksheet
- #155 Computer Forensics – The Impact of Specialization
- #156 Volatile Memory Device Forensics
- #157 Carve Technology
- #158 Computer Examination Strategies
- #159 Proficiency Testing Design
- #160 International Organization of Computer Evidence
- #161 Examination Archive Operation
- #162 Linux Forensics
- #163 Strategic Considerations
- #164 Computer Virus Protocol – Changing Requirements
- #165 History File Data Recovery
- #166 Digital Evidence Collection Strategies
- #167 Examination Backlogs – The Management Challenge
- #168 Digital Evidence Laboratory Accreditation
- #169 DEA Digital Evidence Laboratory Established
- #170 Technical and Administrative Review
- #171 Digital Examination Impact
- #172 Terminology Considerations
- #173 Enhancing Technical Productivity – Doing More With Less
- #174 Examiner Candidate Interview Strategies
- #175 Instrument Monitoring in a Digital Evidence Laboratory
- #176 Examiner Performance Measurement
- #177 Digital Evidence Growing Pains
- #178 Common Abbreviations Used in Digital Examinations
- #179 Digital Evidence – Trends
- #180 Data Farms

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