# URINALYSIS

## DOCUMENTARY

## **SUPPLEMENT**

2012

## **Criminal Law Department**

The Judge Advocate General's Legal Center and School U.S. Army Charlottesville, Virginia

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# TAB A

### **Urinalysis: Cut-off Levels**

DOD and urine testing laboratories have established "cut-off" levels. Samples which give test results below these cut-off levels are reported as negative. A sample is reported as positive only if it gives test results above the cut-off level during both the screening (every positive screened twice) and the confirming test.

#### Cut-off levels for screening tests (EMIT and IA):

Drug	ng/ml
Marijuana (THC)	50
Cocaine (BZE)	150
Amphetamine/Methamphetamine	500
Designer Amphetamines (MDMA, MDA, MDEA)	500
Opiates	
Morphine/Codeine	2000
Oxycodone/Oxymorphone	100
6-monoacetylmorphine (heroin)	10
Phencyclidine (PCP)	25

#### Cut-off levels for GC/MS test:

Drug	ng/ml
Marijuana (THC)	15
Cocaine (BZE)	100
Amphetamine/Methamphetamine	100
Designer Amphetamines (MDMA, MDA, MDEA)	500
Opiates	
Morphine	4000
Codeine	2000
Oxycodone/Oxymorphone	100
6-monoacetylmorphine (heroin)	10
Phencyclidine (PCP)	25

### **Urinalysis: Drug Detection Times**

Time periods which drugs and drug metabolites remain in the body at levels sufficient to detect are listed below. Source: U.S. Army Drug Oversight Agency & Technical Consultation Center, Syva Company, San Jose, California, telephone: 1-800-227-8994.

Drug	Approximate Retention Time
Marijuana (THC) (Half-life 36 hours)	
Acute dosage (1-2 joints)	2-3 days
Marijuana (eaten)	1-5 days
Moderate smoker (4 times per week)	5 days
Heavy smoker (daily)	10 days
Chronic smoker	14-18 days (may exceed 20 days)
Cocaine (BZE) (Half-life 4 hours)	2-4 days
Amphetamines	1-2 days (2-4 days if heavy use)
Barbiturates	
Short-acting (e.g. Secobarbital)	1 day
Long-acting (e.g. Phenobarbital)	2-3 weeks
Opiates	2 days
Phencyclidine (PCP)	14 days (may exceed 30 days with chronic use)

# TAB B



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### Marijuana

#### Overview

Marijuana is a mind-altering (psychoactive) drug, produced by the Cannabis sativa plant. Marijuana contains over 400 chemicals. THC (delta-9-tetrahydrocannabinol) is believed to be the main chemical ingredient that produces the psychoactive effect.

#### Street names

Aunt Mary, BC Bud, Blunts, Boom, Chronic, Dope, Gangster, Ganja, Grass, Hash, Herb, Hydro, Indo, Joint, Kif, Mary Jane, Mota, Pot, Reefer, Sinsemilla, Skunk, Smoke, Weed, Yerba



#### Looks like

Marijuana is a dry, shredded green/brown mix of flowers, stems, seeds, and leaves from the Cannabis sativa plant. The mixture typically is green, brown, or gray in color and may resemble tobacco.

#### Methods of abuse

Marijuana is usually smoked as a cigarette (called a joint) or in a pipe or bong. It is also smoked in blunts, which are cigars that have been emptied of tobacco and refilled with marijuana, sometimes in combination with another drug. Marijuana is also mixed with foods or brewed as a tea.

#### Affect on mind

When marijuana is smoked, the THC passes from the lungs and into the bloodstream, which carries the chemical to the organs throughout the body, including the brain. In the brain, the THC connects to specific sites called cannabinoid receptors on nerve cells and influences the activity of those cells. Many of these receptors are found in the parts of the brain that influence pleasure, memory, thought, concentration, sensory and time perception, and coordinated movement. The short-term effects of marijuana include problems with memory and learning, distorted perception, difficulty in thinking and problem-solving, and loss of coordination. The effect of marijuana on perception and coordination are responsible for serious impairments in driving abilities. Long-term chronic marijuana use is associated with Amotivational Syndrome, characterized by apathy, impairment of judgment, memory and concentration, and loss of motivation, ambition and interest in the pursuit of personal goals. High doses of marijuana can result in mental confusion, panic reactions and hallucinations. Researchers have also found an association between marijuana use and an increased risk of depression; an increased risk and earlier onset of schizophrenia and other psychotic disorders, especially for teens that have a genetic predisposition.

#### Affect on body

Short-term physical effects from marijuana use may include sedation, blood shot eyes, increased heart rate, coughing from lung irritation, increased appetite, and decreased blood pressure. Like tobacco smokers, marijuana smokers experience serious health problems such as bronchitis, emphysema, and bronchial asthma. Extended use may cause suppression of the immune system. Because marijuana contains toxins and carcinogens, marijuana smokers increase their risk of cancer of the head, neck, lungs and respiratory track. Withdrawal from chronic use of high doses of marijuana causes physical signs including headache, shakiness, sweating, stomach pains and nausea, as well as

behavioral signs including restlessness, irritability, sleep difficulties and decreased appetite.

#### **Drugs causing similar effects**

Hashish and hashish oil are drugs made from the cannabis plant that are like marijuana, only stronger. Hashish (hash) consists of the THC - rich resinous material of the cannabis plant, which is collected, dried, and then compressed into a variety of forms, such as balls, cakes, or cookie like sheets. Pieces are then broken off, placed in pipes or mixed with tobacco and placed in pipes or cigarettes, or smoked. The main sources of hashish are the Middle East, North Africa, Pakistan and Afghanistan. Hashish Oil (hash oil, liquid hash, cannabis oil) is produced by extracting the cannabinoids from the plant material with a solvent. The color and odor of the extract will vary, depending on the solvent used. A drop or two of this liquid on a cigarette is equal to a single marijuana joint. Like marijuana, hashish and hashish oil are both Schedule I drugs.

#### **Overdose effects**

No death from overdose of marijuana has been reported.

#### Legal status in the United States

Marijuana is a Schedule I substance under the Controlled Substances Act. Schedule I drugs are classified as having a high potential for abuse, no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use of the drug or other substance under medical supervision. Marinol, a synthetic version of THC, the active ingredient found in the marijuana plant, can be prescribed for the control of nausea and vomiting caused by chemotherapeutic agents used in the treatment of cancer and to stimulate appetite in AIDS patients. Marinol is a Schedule III substance under the Controlled Substances Act. Schedule III drugs are classified as having less potential for abuse than the drugs or substances in Schedules I and II, and have a currently accepted medical use in treatment in the U.S., and abuse of the drug may lead to moderate or low physical dependence or psychological dependence.

#### Common places of origin

Marijuana is grown in the United States, Canada, Mexico, South America and Asia. It can be cultivated in both outdoor and in indoor settings.





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### Cannabis

#### Overview

Cannabis sativa L. is a plant that grows wild throughout most of the tropic and temperate regions of the world. Three drugs that come from cannibis - marijuana, hashish, and hashish oil - are distributed on the U.S. illicit market. THC (delta-9tetrahydrocannabinol) is believed to be the main chemical ingredient that produces the psychoactive effect.



#### Street names

Blubbers, Boom, Gangster, Ganja, Grass, Hashish/Chara, Herb, Pot, Reefer, Weed

#### Looks like

Marijuana is a dry, shredded green/brown mix of flowers, stems, seeds, and leaves from the Cannabis sativa plant. The mixture typically is green, brown, or gray in color and may resemble tobacco. Hashish is collected, dried, and pressed into a variety of forms, such as balls, cakes, or cookie-like sheets. Hashish oil is a viscous liquid ranging from amber to dark brown in color.

#### Methods of abuse

Cannabis products are usually smoked.

#### Affect on mind

Cannabis is abused for its euphoric effects. When cannabis is smoked, the THC passes from the lungs and into the bloodstream, which carries the chemical to the organs throughout the body, including the brain. In the brain, the THC connects to specific sites called cannabinoid receptors on nerve cells and influences the activity of those cells. Many of these receptors are found in the parts of the brain that influence pleasure, memory, thought, concentration, sensory and time perception, and coordinated movement. The short-term effects of cannabis include problems with memory and learning, distorted perception, difficulty in thinking and problem-solving, and loss of coordination. The effect of marijuana on perception and coordination are responsible for serious impairments in driving abilities. Long-term chronic use is associated with "Amotivational Syndrome", characterized by apathy, impairment of judgment, memory and concentration, ambition and interest in the pursuit of personal goals. High doses can result in mental confusion, panic reactions and hallucinations.

#### Affect on body

Short-term physical effects may include sedation, blood shot eyes, increased heart rate, coughing from lung irritation, increased appetite, and decreased blood pressure. Like tobacco smokers, cannabis smokers experience serious health problems such as bronchitis, emphysema, and bronchial asthma. Extended use may cause suppression of the immune system. Because cannabis contains toxins and carcinogens, cannabis smokers increase their risk of cancer of the head, neck, lungs and respiratory track. Withdrawal from chronic use of high doses of cannabis causes physical signs including headache, shakiness, sweating, stomach pains and nausea, as well as behavioral signs including restlessness, irritability, sleep difficulties and decreased appetite.

#### **Overdose effects**

There have been no reported deaths by overdose.

#### Legal status in the United States

Cannabis and THC are schedule I substances under the Controlled Substances Act. Schedule I drugs are classified as having a high potential for abuse, no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use of the drug or other substance under medical supervision. Marinol, a synthetic version of THC, the active ingredient found in the marijuana plant, can be prescribed for the control of nausea and vomiting caused by chemotherapeutic agents used in the treatment of cancer and to stimulate appetite in AIDS patients. The FDA approved product, Marinol is a schedule III substance under the Controlled Substances Act. Schedule III drugs are classified as having less potential for abuse than the drugs or substances in Schedules I and II and have a currently accepted medical use in treatment in the U.S., and abuse of the drug may lead to moderate or low physical dependence or psychological dependence.

#### Common places of origin

Cannabis is grown in the United States, Canada, Mexico, South America and Asia. It can be cultivated in both outdoor and in indoor settings.

#### **Related Paraphernalia**





## Drug Fact Sheet GetSmartAboutDrugs A Resource for Parents from the DEA



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### Cocaine

#### **Overview**

Cocaine is an intense, euphoria-producing stimulant drug with strong addictive potential.

#### Street names

Coca, Coke, Crack, Flake, Snow, Soda Cot

#### Looks like

Cocaine is usually distributed as a white, crystalline powder.



Cocaine is often diluted ("cut") with a variety of substances, the most common of which are sugars and local anesthetics. It is "cut" to stretch the amount of the product and increase profits for dealers. In contrast, cocaine base (crack) looks like small, irregularly shaped chunks (or "rocks") of a whitish solid.

#### Methods of abuse

Powdered cocaine can be snorted or injected into the veins after dissolving in water. Cocaine base (crack) is smoked, either alone or on marijuana or tobacco. Cocaine is also abused in combination with an opiate, like heroin, a practice known as "speedballing." Although injecting into veins or muscles, snorting, and smoking are the common ways of using cocaine, all mucous membranes readily absorb cocaine. Cocaine users typically binge on the drug until they are exhausted or run out of cocaine.

#### Affect on mind

The intensity of cocaine's euphoric effects depends on how quickly the drug reaches the brain, which depends on the dose and method of abuse. Following smoking or intravenous injection, cocaine reaches the brain in seconds, with a rapid buildup in levels. This results in a rapid-onset, intense euphoric effect known as a "rush." By contrast, the euphoria caused by snorting cocaine is less intense and does not happen as quickly due to the slower build-up of the drug in the brain. Other effects include increased alertness and excitation, as well as restlessness, irritability, and anxiety. Tolerance to cocaine's effects develops rapidly, causing users to take higher and higher doses. Taking high doses of cocaine or prolonged use, such as binging, usually causes paranoia. The crash that follows euphoria is characterized by mental and physical exhaustion, sleep, and depression lasting several days. Following the crash, users experience a craving to use cocaine again.

#### Affect on body

Physiological effects of cocaine include increased blood pressure and heart rate, dilated pupils, insomnia, and loss of appetite. The widespread abuse of highly pure street cocaine has led to many severe adverse health consequences such as: cardiac arrhythmias, ischemic heart conditions, sudden cardiac arrest, convulsions, strokes, and death. In some users, the long-term use of inhaled cocaine has led to a unique respiratory syndrome, and chronic snorting of cocaine has led to the erosion of the upper nasal cavity.

#### **Drugs causing similar effects**

Other stimulants, such as methamphetamine, cause effects similar to cocaine that vary mainly in degree.

#### **Overdose effects**

Overdose effects include agitation, increased body temperature, hallucinations, convulsions and possible death.

#### Legal status in the United States

Cocaine is a Schedule II drug under the Controlled Substances Act, meaning it has a high potential for abuse and limited medical usage. Cocaine hydrochloride solution (4% and 10%) is used primarily as a topical local anesthetic for the upper respiratory tract. It also is used to reduce bleeding of the mucous membranes in the mouth, throat, and nasal cavities. However, better products have been developed for these purposes, and cocaine is rarely used medically in the United States.

#### Common places of origin

Cocaine is derived from coca leaves grown in Bolivia, Peru, and Colombia. The cocaine manufacturing process takes place in remote jungle labs where the raw product undergoes a series of chemical transformations. Colombia produces about 90% of the cocaine powder reaching the United States. According to the 2005 Colombia Threat Assessment, 90% of the cocaine shipped to the United States comes from the Central America-Mexico corridor.



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### Heroin

#### Overview

Heroin is a highly addictive drug and the most rapidly acting of the opiates.

#### Street names

Big H, Black Tar, Chiva, Hell Dust, Horse, Negra, Smack, Thunder

#### Looks like

Heroin is typically sold as a white or brownish powder, or as the black sticky substance known on the streets as "black tar heroin." Although purer heroin is becoming more common, most



street heroin is "cut" with other drugs or with substances such as sugar, starch, powdered milk, or quinine.

#### Methods of abuse

Heroin can be injected, smoked, or sniffed/snorted. High purity heroin is usually snorted or smoked.

#### Affect on mind

Because it enters the brain so rapidly, heroin is particularly addictive, both psychologically and physically. Heroin abusers report feeling a surge of euphoria or "rush," followed by a twilight state of sleep and wakefulness.

#### Affect on body

One of the most significant effects of heroin use is addiction. With regular heroin use, tolerance to the drug develops. Once this happens, the abuser must use more heroin to achieve the same intensity. As higher doses of the drug are used over time, physical dependence and addiction to the drug develop. Physical symptoms of heroin use include: drowsiness, respiratory depression, constricted pupils, nausea, a warm flushing of the skin, dry mouth, and heavy extremities.

#### **Drugs causing similar effects**

Other opioids such as OxyContin®, Vicodin®, codeine, morphine, methadone, and fentanyl can cause similar effects as heroin.

#### **Overdose effects**

Because heroin abusers do not know the actual strength of the drug or its true contents, they are at a high risk of overdose or death. The effects of a heroin overdose are: slow and shallow breathing, blue lips and fingernails, clammy skin, convulsions, coma, and possible death.

#### Legal status in the United States

Heroin is a Schedule I substance under the Controlled Substances Act meaning that it has a high potential for abuse,

no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use under medical supervision.

#### Common places of origin

Heroin is processed from morphine, a naturally occurring substance extracted from the seed pod of certain varieties of poppy plants grown in: Southeast Asia (Thailand, Laos, and Myanmar (Burma)), Southwest Asia (Afghanistan and Pakistan), Mexico, and Colombia. It comes in several forms, the main one being "black tar" from Mexico (found primarily in the western United States) and white heroin from Colombia (primarily sold on the East Coast).



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## Ecstasy or MDMA

#### Overview

MDMA acts as both a stimulant and psychedelic, producing an energizing effect, distortions in time and perception, and enhanced enjoyment of tactile experiences. Adolescents and young adults use it to reduce inhibitions and to promote: euphoria, feelings of closeness, empathy, and sexuality. Although MDMA is known among users as Ecstasy, researchers have determined that many Ecstasy tablets contain not only MDMA but also a number of other drugs or drug combinations that can be harmful, such as: methamphetamine, ketamine, cocaine, the over-the-counter cough suppressant dextromethorphan (DXM), the diet drug ephedrine, and caffeine. In

addition, other drugs similar to MDMA, such as MDA or PMA,



are often sold as Ecstasy, which can lead to overdose and death when the user takes additional doses to obtain the desired effect.

#### Street names

Adam, Beans, Clarity, Disco Biscuit, E, Ecstasy, Eve, Go, Hug Drug, Lover's Speed, MDMA, Peace, STP, X, XTC

#### Looks like

MDMA is mainly distributed in tablet form. MDMA tablets are sold with logos, creating brand names for users to seek out. The colorful pills are often hidden among colorful candies. MDMA is also distributed in capsules, powder, and liquid forms.

#### Methods of abuse

MDMA use mainly involves swallowing tablets (50-150 mg), which are sometimes crushed and snorted, occasionally smoked but rarely injected. MDMA is also available as a powder. MDMA abusers usually take MDMA by "stacking" (taking three or more tablets at once) or by "piggy-backing" (taking a series of tablets over a short period of time). One trend among young adults is "candy flipping," which is the co-abuse of MDMA and LSD. MDMA is considered a "party drug." As with many other drugs of abuse, MDMA is rarely used alone. It is common for users to mix MDMA with other substances, such as alcohol and marijuana.

#### Affect on mind

MDMA mainly affects brain cells that use the chemical serotonin to communicate with each other. Serotonin helps to regulate mood, aggression, sexual activity, sleep, and sensitivity to pain. Clinical studies suggest that MDMA may increase the risk of long-term, perhaps permanent, problems with memory and learning. MDMA causes changes in perception, including euphoria and increased sensitivity to touch, energy, sensual and sexual arousal, need to be touched, and need for stimulation. Some unwanted psychological effects include: confusion, anxiety, depression, paranoia, sleep problems, and drug craving. All these effects usually occur within 30 to 45 minutes of swallowing the drug and usually last 4 to 6 hours, but they may occur or last weeks after ingestion.

#### Affect on body

Users of MDMA experience many of the same effects and face many of the same risks as users of other stimulants such as cocaine and amphetamines. These include increased motor activity, alertness, heart rate, and blood pressure. Some unwanted physical effects include: muscle tension, tremors, involuntary teeth clenching, muscle cramps, nausea, faintness, chills, sweating, and blurred vision. High doses of MDMA can interfere with the ability to regulate body temperature, resulting in a sharp increase in body temperature (hyperthermia), leading to liver, kidney and cardiovascular failure. Severe dehydration can result from the combination of the drug's effects and the crowded and hot conditions in which the drug is often taken. Studies suggest chronic use of MDMA can produce damage to the serotonin system. It is ironic that a drug that is taken to increase pleasure may cause damage that reduces a person's ability to feel pleasure.

#### **Drugs causing similar effects**

No one other drug is quite like MDMA, but MDMA produces both amphetamine-like stimulation and mild mescaline-like hallucinations.

#### **Overdose effects**

In high doses, MDMA can interfere with the body's ability to regulate temperature. On occasions, this can lead to a sharp increase in body temperature (hyperthermia), resulting in liver, kidney, and cardiovascular system failure, and death. Because MDMA can interfere with its own metabolism (that is, its break down within the body), potentially harmful levels can be reached by repeated drug use within short intervals.

#### Legal status in the United States

MDMA is a Schedule I drug under the Controlled Substances Act, meaning it has a high potential for abuse, no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use under medical supervision.

#### Common places of origin

MDMA is a synthetic chemical made in labs. Seized MDMA in the U.S. is primarily manufactured in, and smuggled across our borders from, clandestine laboratories in Canada and, to a lesser extent, the Netherlands. A small number of MDMA clandestine laboratories have also been identified operating in the U.S.



## Drug Fact Sheet GetSmart About Drugs A Resource for Parents from the DEA



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### Methamphetamine

#### Overview

Methamphetamine (meth) is a stimulant. The FDA-approved brand-name medication is Desoxyn®.

#### Street names

Batu, Bikers Coffee, Black Beauties, Chalk, Chicken Feed, Crank, Crystal, Glass, Go-Fast, Hiropon, Ice, Meth, Methlies Quick, Poor Man's Cocaine, Shabu, Shards, Speed, Stove Top, Tina, Trash, Tweak, Uppers, Ventana, Vidrio, Yaba, Yellow Bam



#### Looks like

Regular meth is a pill or powder. Crystal meth resembles glass fragments or shiny blue-white "rocks" of various sizes.

#### Methods of abuse

Meth is swallowed, snorted, injected, or smoked. To intensify the effects, users may take higher doses of the drug, take it more frequently, or change their method of intake. In some cases, meth abusers go without food and sleep while taking part in a form of binging known as a "run." Meth users on a "run" inject as much as a gram of the drug every two to three hours over several days until they run out of meth or become too disorganized to continue.

#### Affect on mind

Meth is a highly addictive drug with potent central nervous system (CNS) stimulant properties. Those who smoke or inject it report a brief, intense sensation, or rush. Oral ingestion or snorting produces a long-lasting high instead of a rush, which reportedly can continue for as long as half a day. Both the rush and the high are believed to result from the release of very high levels of the neurotransmitter dopamine into areas of the brain that regulate feelings of pleasure. Long-term meth use results in many damaging effects, including addiction. Chronic meth abusers exhibit violent behavior, anxiety, confusion, insomnia, and psychotic features, including paranoia, aggression, visual and auditory hallucinations, mood disturbances, and delusions — such as the sensation of insects creeping on or under the skin. Such paranoia can result in homicidal or suicidal thoughts. Researchers have reported that as much as 50% of the dopamine-producing cells in the brain can be damaged after prolonged exposure to relatively low levels of meth. Researchers also have found that serotonin-containing nerve cells may be damaged even more extensively.

#### Affect on body

Taking even small amounts of meth can result in increased wakefulness, increased physical activity, decreased appetite, rapid breathing and heart rate, irregular heartbeat, increased blood pressure, and hyperthermia (overheating). High doses can elevate body temperature to dangerous, sometimes lethal, levels as well as cause convulsions and even cardiovascular collapse and death. Meth abuse may also cause extreme anorexia, memory loss, and severe dental problems.

#### **Drugs causing similar effects**

Cocaine and potent stimulant pharmaceuticals, such as amphetamines and methylphenidate, produce similar effects.

#### **Overdose effects**

High doses may result in death from stroke, heart attack, or multiple organ problems caused by overheating.

#### Legal status in the United States

Methamphetamine is a Schedule II stimulant under the Controlled Substances Act, which means that it has a high potential for abuse and limited medical use. It is available only through a prescription that cannot be refilled. Today there is only one legal meth product, Desoxyn<sup>®</sup>. It is currently marketed in 5-milligram tablets and has very limited use in the treatment of obesity and attention deficit hyperactivity disorder (ADHD).

#### Common places of origin

Mexican drug trafficking organizations have become the primary manufacturers and distributors of methamphetamine to cities throughout the United States, including in Hawaii. Domestic clandestine laboratory operators also produce and distribute meth but usually on a smaller scale. The methods used depend on the availability of precursor chemicals. Currently, meth is mainly made with diverted products that contain pseudoephedrine. The Combat Methamphetamine Epidemic Act of 2005 requires retailers of non-prescription products containing pseudoephedrine, ephedrine, or phenylpropanolamine to place these products behind the counter or in a locked cabinet. Consumers must show identification and sign a logbook for each purchase.





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### Oxycodone

#### Overview

Oxycodone is a semi-synthetic narcotic analgesic and historically has been a popular drug of abuse among the narcotic abusing population.

#### Street names

Hillbilly Heroin, Kicker, OC, Ox, Oxy, Perc, Roxy

#### Looks like

Oxycodone is marketed alone as OxyContin® in 10, 20, 40 and 80 mg controlled-release tablets and other immediaterelease capsules like 5 mg OxyIR®. It is also marketed in combination products with aspirin such as Percodan® or acetaminophen such as Roxicet®.

#### Methods of abuse

Oxycodone is abused orally or intravenously. The tablets are crushed and sniffed or dissolved in water and injected. Others heat a tablet that has been placed on a piece of foil then inhale the vapors.

#### Affect on mind

Euphoria and feelings of relaxation are the most common effects of oxycodone on the brain, which explains its high potential for abuse.

#### Affect on body

Physiological effects of oxycodone include: pain relief, sedation, respiratory depression, constipation, papillary constriction, and cough suppression. Extended or chronic use of oxycodone containing acetaminophen may cause severe liver damage.

#### **Drugs causing similar effects**

Drugs that cause similar effects to oxycodone include: opium, codeine, heroin, methadone, hydrocodone, fentanyl, and morphine.

#### **Overdose effects**

Overdose effects include: extreme drowsiness, muscle weakness, confusion, cold and clammy skin, pinpoint pupils, shallow breathing, slow heart rate, fainting, coma, and possible death.

#### Legal status in the United States

Oxycodone products are in Schedule II of the federal Controlled Substances Act of 1970.

#### Common places of origin

Oxycodone is synthesized from thebaine, a constituent of the poppy plant.



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### PCP

#### **Overview**

PCP is an illegal drug abused for its hallucinogenic effects.

#### Street names

Angel Dust, Embalming Fluid, Killer Weed, Rocket Fuel, Supergrass

#### Looks like

In its pure form, PCP is a white crystalline powder that readily

dissolves in water. However, most PCP on the street is tan/brown in color, powdery or gummy in consistency, and is typically transported in small foil wraps. PCP is most commonly sold as a powder or liquid, and applied to a leafy material such as oregano, parsley, mint, or marijuana and then smoked.

#### Methods of abuse

Smoked, injected, snorted, taken orally

#### Affect on mind

PCP use often causes a user to feel detached, distant and estranged from his surroundings. Auditory hallucinations and severe mood disorders can occur. In some users, acute anxiety, paranoia and hostility, as well as psychosis can occur.

#### Affect on body

Numbness, slurred speech, and loss of coordination can be accompanied by a sense of strength and invulnerability. A blank stare, rapid and involuntary eye movements, and an exaggerated gait are among the more observable effects.

#### Drugs causing similar effects

PCP's effects are similar to other hallucinogens, such as mescaline and peyote.

#### **Overdose effects**

Longer, more intense "trip" episodes, psychosis and possible death.

#### Legal status in the United States

Originally designed as a human anesthetic and later produced only as a veterinary anesthetic, PCP is no longer produced or used for legitimate purposes.

#### Common places of origin

PCP is generally produced in clandestine laboratories in the United States.





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### LSD

#### Overview

LSD is a potent hallucinogen that has a high potential for abuse, but currently has an accepted medical use in treatment in the United States.

#### Street names

Acid, Blotter Acid, Dots, Mellow Yellow, Window Pane

#### Looks like

LSD is sold on the street in tablets, capsules, and occasionally in liquid form. It is an odorless and colorless substance with a slightly bitter taste. LSD is often added to absorbent paper, such as blotter paper, and divided into small decorated squares, with each square representing one dose.

#### Methods of abuse

LSD is abused orally.

#### Affect on mind

During the first hour after ingestion, users may experience visual changes with extreme changes in mood. While hallucinating, the user may suffer impaired depth and time perception accompanied by distorted perception of the shape and size of objects, movements, colors, sound, touch and the user's own body image. The ability to make sound judgments and see common dangers is impaired, making the user susceptible to personal injury. It is possible for users to suffer acute anxiety and depression after an LSD "trip" and flashbacks have been reported days, and even months, after taking the last dose.

#### Affect on body

The physical effects include: dilated pupils, higher body temperature, increased heart rate and blood pressure, sweating, loss of appetite, sleeplessness, dry mouth, and tremors.

#### **Drugs causing similar effects**

LSD's effects are similar to other hallucinogens, such as PCP, mescaline, and peyote.

#### **Overdose effects**

Longer, more intense "trip" episodes, psychosis, and possible death.

#### Legal status in the United States

LSD is a Schedule I substance under the Controlled Substances Act, meaning that it has a high potential for abuse, no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use under medical



supervision.

#### Common places of origin

LSD is produced in clandestine laboratories in the United States.





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### Rohypnol

#### Overview

Rohypnol® is a trade name for flunitrazepam, a central nervous system (CNS) depressant that belongs to a class of drugs known as benzodiazepines. Flunitrazepam is also marketed as generic preparations and other trade name products outside of the United States. Like other benzodiazepines, Rohypnol® produces sedativehypnotic,anti-anxiety, and muscle relaxant effects. This drug has never been approved for medical use in the United States by the Food and Drug Administration. Outside the United States, Rohypnol® is commonly prescribed to treat insomnia. Rohypnol® is also referred to as a "date rape" drug.



#### Street names

Circles, Forget Pill, Forget-Me-Pill, La Rocha, Lunch Money

Drug, Mexican Valium, Pingus, R2, Reynolds, Roach, Roach 2, Roaches, Roachies, Roapies, Robutal, Rochas Dos, Rohypnol, Roofies, Rophies, Ropies, Roples, Row-Shay, Ruffies, Wolfies

#### Looks like

Prior to 1997, Rohypnol® was manufactured as a white tablet (0.5-2 milligrams per tablet), and when mixed in drinks, was colorless, tasteless, and odorless. In 1997, the manufacturer responded to concerns about the drug's role in sexual assaults by reformulating the drug. Rohypnol® is now manufactured as an oblong olive green tablet with a speckled blue core that when dissolved in light-colored rinks will dye the liquid blue. However, generic versions of the drug may not contain the blue dye.

#### Methods of abuse

The tablet can be swallowed whole, crushed and snorted, or dissolved in liquid. Adolescents may abuse Rohypnol® to produce a euphoric effect often described as a "high." While high, they experience reduced inhibitions and impaired judgment. Rohypnol® is also abused in combination with alcohol to produce an exaggerated intoxication. In addition, abuse of Rohypnol® may be associated with multiple-substance abuse. For example, cocaine addicts may use benzodiazepines such as Rohypnol® to relieve the side effects (e.g., irritability and agitation) associated with cocaine binges. Rohypnol® is also misused to physically and psychologically incapacitate women targeted for sexual assault. The drug is usually placed in the alcoholic drink of an unsuspecting victim to incapacitate them and prevent resistance to sexual assault. The drug leaves the victim unaware of what has happened to them.

#### Affect on mind

Like other benzodiazepines, Rohypnol® slows down the functioning of the CNS producing drowsiness (sedation), sleep (pharmacological hypnosis), decreased anxiety, and amnesia (no memory of events while under the influence of the substance). Rohypnol® can also cause increased or decreased reaction time, impaired mental functioning and judgement, confusion, aggression, and excitability.

#### Affect on body

Rohypnol® causes muscle relaxation. Adverse physical effects include slurred speech, loss of motor coordination, weakness, headache, and respiratory depression. Rohypnol® also can produce physical dependence when taken regularly over a period of time.

#### **Drugs causing similar effects**

Drugs that cause similar effects include GHB (gamma hydroxybutyrate) and other benzodiazepines such as alprazolam (e.g., Xanax®), clonazepam (e.g., Klonopin®), and diazepam (e.g., Valium®).

#### **Overdose effects**

High doses of Rohypnol® particularly when combined with CNS depressant drugs (e.g., alcohol and heroin) can cause severe sedation, unconsciousness, slow heart rate, and suppression of respiration which may be sufficient to result in death.

#### Legal status in the United States

Rohypnol® is a Schedule IV substance under the Controlled Substance Act. Rohypnol® is not approved for manufacture, sale, use or importation to the United States. It is legally manufactured and marketed in many countries. Penalties for possession, trafficking, and distribution involving one gram or more are the same as those of a Schedule I drug.

#### Common places of origin

Rohypnol® is smuggled into the United States from other countries, such as Mexico.

This content came from a United States Government, Drug Enforcement Administration (DEA) website, www.getsmartaboutdrugs.com.

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### GHB

#### Overview

Gamma-Hydroxybutyric acid (GHB) is another name for the generic drug sodium oxybate. Xyrem® (which is sodium oxybate) is the trade name of the Food and Drug Administration (FDA)approved prescription medication. Analogues that are often substituted for GHB include GBL (gamma butyrolactone) and 1,4 BD (also called just "BD"), which is 1,4-butanediol. These analogues are available legally as industrial solvents used to produce polyurethane, pesticides, elastic fibers, pharmaceuticals, coatings on metal or plastic, and other products. They are also are sold illicitly as supplements for bodybuilding, fat loss, reversal of baldness, improved eyesight, and to combat aging, depression, drug addiction, and insomnia. GBL and BD are sold as "fish tank cleaner," "ink stain remover," "ink cartridge cleaner" and "nail enamel remover" for approximately \$100 per bottle - much more expensive than comparable products. Attempts to identify the abuse of GHB analogues are hampered by the fact that routine toxicological screens do not detect the presence of these analogues.



#### Street names

Easy Lay, G, Georgia Home Boy, GHB, Goop, Grievous Bodily Harm, Liquid Ecstasy, Liquid X, Scoop

#### Looks like

GHB is usually sold as a liquid or as a white powder that is dissolved in a liquid, such as water, juice, or alcohol. GHB dissolved in liquid has been packaged in small vials or small water bottles. In liquid form, GHB is clear and colorless and slightly salty in taste.

#### Methods of abuse

GHB and its analogues are abused for their euphoric and calming effects and because some people believe they build muscles and cause weight loss. GHB and its analogues are also misused for their ability to increase libido, suggestibility, passivity, and to cause amnesia (no memory of events while under the influence of the substance) — traits that make users vulnerable to sexual assault and other criminal acts.GHB abuse became popular among teens and young adults at dance clubs and "raves" in the 1990s and gained notoriety as a date rape drug. GHB is taken alone or in combination with other drugs, such as alcohol (primarily), other depressants, stimulants, hallucinogens, and marijuana. The average dose ranges from 1 to 5 grams (depending on the purity of the compound, this can be 1-2 teaspoons mixed in a beverage). However, the concentrations of these "home-brews" have varied so much that users are usually unaware of the actual dose they are drinking.

#### Affect on mind

GHB occurs naturally in the central nervous system in very small amounts. Use of GHB produces Central Nervous

System (CNS) depressant effects including euphoria, drowsiness, decreased anxiety, confusion and memory impairment. GHB can also produce visual hallucinations and—paradoxically—excited and aggressive behavior. GHB greatly increases the CNS depressant effects of alcohol and other depressants.

#### Affect on body

GHB takes effect in 15 to 30 minutes, and the effects last 3 to 6 hours. Low doses of GHB produce nausea. At high doses, GHB overdose can result in unconsciousness, seizures, slowed heart rate, greatly slowed breathing, lower body temperature, vomiting, nausea, coma, and death. Regular use of GHB can lead to addiction and withdrawal that includes insomnia, anxiety, tremors, increased heart rate and blood pressure, and occasional psychotic thoughts. Currently, there is no antidote available for GHB intoxication. GHB analogues are known to produce side effects such as topical irritation to the skin and eyes, nausea, vomiting, incontinence, loss of consciousness, seizures, liver damage, kidney failure, respiratory depression, and death.

#### **Drugs causing similar effects**

GHB analogues are often abused in place of GHB. Both GBL and BD metabolize to GHB when taken and produce effects similar to GHB. CNS depressants such as barbiturates and methaqualone also produce effects similar to GHB.

#### **Overdose effects**

GHB overdose can cause death.

#### Legal status in the United States

GHB is a Schedule I controlled substance, meaning that it has a high potential for abuse, no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use under medical supervision. GHB products are Schedule III substances under the Controlled Substances Act. In addition, GBL is a List I chemical. It was placed on Schedule I of the Controlled Substances Act in March 2000. However, when sold as GHB products (such as Xyrem®), it is considered Schedule III, one of several drugs that are listed in multiple schedules.

#### Common places of origin

GHB is produced illegally in both domestic and foreign clandestine laboratories. The major source of GHB on the street is through clandestine synthesis by local operators. At bars or "rave" parties, GHB is typically sold in liquid form by the capful or "swig" for \$5 to \$25 per cap. Xyrem® has the potential for diversion and abuse like any other pharmaceutical containing a controlled substance. GHB has been encountered in nearly every region of the country.



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### K2 or Spice

#### Overview

K2 or "Spice" is a mixture of herbs and spices that is typically sprayed with a synthetic compound chemically similar to THC, the psychoactive ingredients in marijuana. The chemical compounds typically include HU-210, HU-211, JWH-018, and JWH-073. K2 is commonly purchased in head shops, tobacco shops, various retail outlets, and over the Internet. It is often marketed as incense or "fake weed." Purchasing over the Internet can be dangerous because it is not usually known where the products come from or what amount of chemical is on the organic material.

#### Street names

Bilss, Black Mamba, Bombay Blue, Fake Weed, Genie, Spice, Zohai



#### Looks like

K2 is typically sold in small, silvery plastic bags of dried leaves and marketed as incense that can be smoked. It is said to resemble potpourri.

#### Methods of abuse

K2 products are usually smoked in joints or pipes, but some users make it into a tea.

#### Affect on mind

Psychological effects are similar to those of marijuana and include paranoia, panic attacks, and giddiness.

#### Affect on body

Physiological effects of K2 include increased heart rate and increase of blood pressure. It appears to be stored in the body for long periods of time, and therefore the long-term effects on humans are not fully known.

#### **Drugs causing similar effects**

Marijuana

#### **Overdose effects**

There have been no reported deaths by overdose.

#### Legal status in the United States

On Tuesday, March 1, 2011, DEA published a final order in the Federal Register temporarily placing five synthetic cannabinoids into Schedule I of the CSA. The order became effective on March 1, 2011. The substances placed into Schedule I are 1-pentyl-3-(1-naphthoyl) indole (JWH-018), 1-butyl-3-(1-naphthoyl) indole (JWH-073), 1-[2-(4-morpholinyl) ethyl]-3-(1-naphthoyl)indole (JWH-200), 5-(1,1-dimethylheptyl)-2-[(1R,3S)-3-hydroxycyclohexyl]-phenol (CP-47,497), and 5-(1,1-dimethyloctyl)-2-[(1R,3S)-3-hydroxycyclohexyl]-phenol (cannabicyclohexanol; CP-47,497 C8 homologue). This action is based on a finding by the Administrator that the placement of these synthetic cannabinoids into Schedule I of the CSA is necessary to avoid an imminent hazard to the public safety. As a result of this order, the full effect of the CSA and its implementing regulations including criminal, civil and administrative penalties, sanctions, and regulatory controls of Schedule I substances will be imposed on the manufacture, distribution, possession, importation, and exportation of these synthetic cannabinoids.

#### Common places of origin

Manufacturers of this product are not regulated and are often unknown since these products are purchased via the Internet whether wholesale or retail. Several websites that sell the product are based in China. Some products may contain an herb called damiana, which is native to Central America, Mexico, and the Caribbean.



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### Bath Salts or Designer Cathinones (Synthetic Stimulants)

#### Overview

Synthetic stimulants that are marketed as "bath salts" are often found in a number of retail products. These synthetic stimulants are chemicals. The chemicals are synthetic derivatives of cathinone, a central nervous system stimulant, which is an active chemical found naturally in the khat plant. Mephedrone and MDPV (3-4 methylenedioxypyrovalerone) are two of the designer cathinones most commonly found in these "bath salt" products. Many of these products are sold over the Internet, in convenience stores, and in "head shops."

#### Street names

Bilss, Blue Silk, Cloud Nine, Drone, Energy-1, Ivory Wave, Lunar Wave, Meow Meow, Ocean Burst, Pure Ivory, Purple Wave, Red Dove, Snow Leopard, Stardust, Vanilla Sky, White Dove, White Knight, White Lightening

#### Looks like

"Bath salt" stimulant products are sold in powder form in small plastic or foil packages of 200 and 500 milligrams under various brand names. Mephedrone is a fine white, off-white, or slightly yellow-colored powder. It can also be found in tablet and capsule form. MDPV is a fine white or off-white powder.

#### Methods of abuse

"Bath salts" are usually ingested by sniffing/snorting. They can also be taken orally, smoked, or put into a solution and injected into veins.

#### Affect on mind

People who abuse these substances have reported agitation, insomnia, irritability, dizziness, depression, paranoia, delusions, suicidal thoughts, seizures, and panic attacks. Users have also reported effects including impaired perception of reality, reduced motor control, and decreased ability to think clearly.

#### Affect on body

Cathinone derivatives act as central nervous system stimulants causing rapid heart rate (which may lead to heart attacks and strokes), chest pains, nosebleeds, sweating, nausea, and vomiting.

#### **Drugs causing similar effects**

Drugs that have similar effects include: amphetamines, cocaine, Khat, LSD, and MDMA.

#### **Overdose effects**

These substances are usually marketed with the warning "not intended for human consumption." Any time that users put uncontrolled or unregulated substances into their bodies, the effects are unknown and can be dangerous.

#### Legal status in the United States

On Friday, October 21, 2011, DEA published a final order in the Federal Register exercising its emergency scheduling

authority to control three synthetic stimulants that are used to make bath salts, including: Mephedrone, 3,4 methylenedioxypyrovalerone (MDPV) and Methylone. Except as authorized by law, this action makes possessing and selling these chemicals, or the products that contain them, illegal in the United States. This emergency action was necessary to prevent an imminent threat to the public safety. The temporary scheduling action will remain in effect for at least one year while the DEA and the United States Department of Health and Human Services (DHHS) further study whether these chemicals should be permanently controlled. As a result of this order, these synthetic stimulants are designated as Schedule I substances under the Controlled Substances Act. Schedule I status is reserved for those substances with a high potential for abuse, no currently accepted use for treatment in the United States and a lack of accepted safety for use of the drug under medical supervision.

#### Common places of origin

Law enforcement officials believe that the stimulant chemicals contained in these products are manufactured in China and India and packaged for wholesale distribution in Eastern Europe. Many countries have banned these products.





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### Salvia Divinorum

#### Overview

Salvia divinorum is a perennial herb in the mint family that is abused for its hallucinogenic effects.

#### Street names

Maria Pastora, Sally-D, Salvia

#### Looks like

The plant has spade-shaped variegated green leaves that look similar to mint. The plants themselves grow to more than three feet high, have large green leaves, hollow square stems, and white flowers with purple calyces.

#### Methods of abuse

Salvia can be chewed, smoked, or vaporized.

#### Affect on mind

Psychic effects include perceptions of bright lights, vivid colors, shapes, and body movement, as well as body or object distortions. Salvia divinorum may also cause fear and panic, uncontrollable laughter, a sense of overlapping realities, and hallucinations. Salvinorin A is believed to be the ingredient responsible for the psychoactive effects of Salvia divinorum.

#### Affect on body

Adverse physical effects may include: loss of coordination, dizziness, and slurred speech.

#### **Drugs causing similar effects**

When Salvia divinorum is chewed or smoked, the hallucinogenic effects elicited are similar to those induced by other hallucinogenic substances.

#### **Overdose effects**

Adverse physical effects may include lack of coordination, dizziness, and slurred speech.

#### Legal status in the United States

Neither Salvia divinorum nor its active constituent Salvinorin A has an approved medical use in the United States. Salvia is not controlled under the Controlled Substances Act. Salvia divinorum is, however, controlled by a number of states. Since Salvia is not controlled by the CSA, some online botanical companies and drug promotional sites have advertised Salvia as a legal alternative to other plant hallucinogens like mescaline.

#### Common places of origin



Salvia is native to certain areas of the Sierra Mazaleca region of Oaxaca, Mexico. It is one of several plants that are used by Mazatec Indians for ritual divination. Salvia divinorum plants can be grown successfully outside of this region. They can be grown indoors and outdoors, especially in humid semitropical climates.





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### Ketamine

#### Overview

Ketamine is a dissociative anesthetic that has some hallucinogenic effects. It distorts perceptions of sight and sound and makes the user feel disconnected and not in control. It is an injectable, short-acting anesthetic for use in humans and animals. It is referred to as a "dissociative anesthetic" because it makes patients feel detached from their pain and environment. Ketamine can induce a state of sedation (feeling calm and relaxed), immobility, relief from pain, and amnesia (no memory of events while under the influence of the drug). It is abused for its



ability to produce dissociative sensations and hallucinations. Ketamine has also been used to facilitate sexual assault.

#### Street names

Cat Tranquilizer, Cat Valium, Jet, Jet K, K, Kit Kat, Purple, Special K, Special La Coke, Super Acid, Super K, Vitamin K

#### Looks like

Ketamine comes in a clear liquid and a white or off-white powder. Powdered ketamine (100 milligrams to 200 milligrams) typically is packaged in small glass vials, small plastic bags, and capsules as well as paper, glassine, or aluminum foil folds.

#### Methods of abuse

Ketamine, along with the other "club drugs," has become popular among teens and young adults at dance clubs and "raves." Ketamine is manufactured commercially as a powder or liquid. Powdered ketamine is also formed from pharmaceutical ketamine by evaporating the liquid using hot plates, warming trays, or microwave ovens, a process that results in the formation of crystals, which are then ground into powder. Powdered ketamine is cut into lines known as bumps and snorted, or it is smoked, typically in marijuana or tobacco cigarettes. Liquid ketamine is injected or mixed into drinks. Ketamine is found by itself or often in combination with MDMA, amphetamine, methamphetamine, or cocaine.

#### Affect on mind

Ketamine produces hallucinations. It distorts perceptions of sight and sound and makes the user feel disconnected and not in control. A "Special K" trip is touted as better than that of LSD or PCP because its hallucinatory effects are relatively short in duration, lasting approximately 30 to 60 minutes as opposed to several hours. Slang for experiences related to Ketamine or effects of Ketamine include: "K-land" (refers to a mellow and colorful experience), "K-hole" (refers to the out-of-body, near death experience), "Baby food" (users sink in to blissful, infantile inertia), and "God" (users are convinced that they have met their maker). The onset of effects is rapid and often occurs within a few minutes of taking the drug, though taking it orally results in a slightly slower onset of effects. Flashbacks have been reported several weeks after ketamine is used. Ketamine may also cause agitation, depression, cognitive difficulties, unconsciousness, and amnesia.
# Affect on body

A couple of minutes after taking the drug, the user may experience an increase in heart rate and blood pressure that gradually decreases over the next 10 to 20 minutes. Ketamine can make users unresponsive to stimuli. When in this state, users experience: involuntarily rapid eye movement, dilated pupils, salivation, tear secretions, and stiffening of the muscles. This drug can also cause nausea.

# **Drugs causing similar effects**

Other hallucinogenic drugs such as LSD, PCP, and mescaline can cause hallucinations. There are also several drugs such as GHB, Rohypnol and other depressants that are misused for their amnesiac or sedative properties to facilitate sexual assault.

# **Overdose effects**

An overdose can cause unconsciousness and dangerously slowed breathing.

### Legal status in the United States

Since the 1970s, ketamine has been marketed in the United States as an injectable, short-acting anesthetic for use in humans and animals. In 1999, ketamine including its salts, isomers, and salts of isomers, became a Schedule III nonnarcotic substance under the Federal Controlled Substances Act. It has a currently acceptable medical use but some potential for abuse, which may lead to moderate or low physical dependence or high psychological dependence.

#### Common places of origin

Ketamine is produced commercially in a number of countries, including the United States. Most of the ketamine illegally distributed in the United States is diverted or stolen from legitimate sources, particularly veterinary clinics, or smuggled into the United States from Mexico. Distribution of ketamine typically occurs among friends and acquaintances, most often at raves, nightclubs, and at private parties; street sales of ketamine are rare.

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# Opium

# **Overview**

Opium is a highly addictive non-synthetic narcotic that is extracted from the poppy plant, Papaver somniferum. The opium poppy is the key source for many narcotics, including morphine, codeine, and heroin.



#### Street names

Ah-pen-yen, Aunti, Aunti Emma, Big O, Black pill, Chandoo, Chandu, Chinese Molasses, Chinese Tobacco, Dopium, Dover's

Powder, Dream Gun, Dream Stick, Dreams, Easing Powder, Fi-do-nie, Gee, God's Medicine, Gondola, Goric, Great Tobacco, Guma, Hop/hops, Joy Plant, Midnight Oil, Mira, O, O.P., Ope, Pen Yan, Pin Gon, Pox, Skee, Toxy, Toys, When-shee, Ze, Zero

#### Looks like

Opium can be a liquid, solid, or powder, but most poppy straw concentrate is available commercially as a fine brownish powder.

# Methods of abuse

Opium can be smoked, intravenously injected, or taken in pill form. Opium is also abused in combination with other drugs. For example, "Black" is a combination of marijuana, opium, and methamphetamine, and "Buddha" is potent marijuana spiked with opium.

# Affect on mind

The intensity of opium's euphoric effects on the brain depends on the dose and route of administration. It works quickly when smoked because the opiate chemicals pass into the lungs, where they are quickly absorbed and then sent to the brain. An opium "high" is very similar to a heroin "high"; users experience a euphoric rush, followed by relaxation and the relief of physical pain.

### Affect on body

Opium inhibits muscle movement in the bowels leading to constipation. It also can dry out the mouth and mucous membranes in the nose. Opium use leads to physical and psychological dependence, and can lead to overdose.

### **Drugs causing similar effects**

Drugs that cause similar effects include: morphine, codeine, heroin, methadone, hydroquinone, fentanyl, and oxycodone.

#### **Overdose effects**

Overdose effects include: slow breathing, seizures, dizziness, weakness, loss of consciousness, coma, and possible death.

# Legal status in the United States

Opium is a Schedule II drug under the Controlled Substances Act. Most opioids are Schedule II, III, IV, or V drugs. Some drugs that are derived from opium, such as heroin, are Schedule I drugs.

# Common places of origin

The poppy plant, Papaver somniferum, is the source of opium. It was grown in the Mediterranean region as early as 5,000 B.C., and has since been cultivated in a number of countries throughout the world. The milky fluid that seeps from its incisions in the unripe seed pod of this poppy has been scraped by hand and air-dried to produce what is known as opium. A more modern method of harvesting for pharmaceutical use is by the industrial poppy straw process of extracting alkaloids from the mature dried plant (concentrate of poppy straw). All opium and poppy straw used for pharmaceutical products are imported into the United States from legitimate sources in regulated countries.





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# Peyote and Mescaline

# Overview

Peyote is a small, spineless cactus. The active ingredient in peyote is the hallucinogen mescaline.

# Street names

Buttons, Cactus, Mesc, Peyoto

#### Looks like

The top of the peyote cactus is referred to as the "crown" and consists of disc-shaped buttons that are cut off.

# Methods of abuse

The fresh or dried buttons are chewed or soaked in water to produce an intoxicating liquid. Peyote buttons may also be ground into a powder that can be placed inside gelatin capsules to be swallowed, or smoked with a leaf material such as cannabis or tobacco.



Abuse of peyote and mescaline will cause varying degrees of: illusions, hallucinations, altered perception of space and time, and altered body image. Users may also experience euphoria, which is sometimes followed by feelings of anxiety.

### Affect on body

Following the consumption of peyote and mescaline, users may experience: intense nausea, vomiting, dilation of the pupils, increased heart rate, increased blood pressure, a rise in body temperature that causes heavy perspiration, headaches, muscle weakness, and impaired motor coordination.

#### **Drugs causing similar effects**

Other hallucinogens like LSD, psilocycbin (mushrooms), and PCP.

#### Legal status in the United States

Peyote and mescaline are Schedule I substances under the Controlled Substances Act, meaning that they have a high potential for abuse, no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use under medical supervision.

#### Common places of origin

From earliest recorded time, peyote has been used by natives in northern Mexico and the southwestern United States as a part of their religious rites. Mescaline can be extracted from peyote or produced synthetically.



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# Psilocybin

# Overview

Psilocybin is a chemical obtained from certain types of fresh or dried mushrooms.

# Street names

Magic Mushrooms, Mushrooms, Shrooms

# Looks like

Mushrooms containing psilocybin are available fresh or dried and have long, slender stems topped by caps with dark gills on the underside. Fresh mushrooms have white or whitish-gray stems; the caps are dark brown around the edges and light brown or white in the center. Dried mushrooms are usually rusty brown with isolated areas of off-white.



### Methods of abuse

Psilocybin mushrooms are ingested orally. They may also be brewed as a tea or added to other foods to mask their bitter flavor.

# Affect on mind

The psychological consequences of psilocybin use include hallucinations and an inability to discern fantasy from reality. Panic reactions and psychosis also may occur, particularly if a user ingests a large dose.

# Affect on body

The physical effects include: nausea, vomiting, muscle weakness, and lack of coordination.

#### **Drugs causing similar effects**

Psilocybin effects are similar to other hallucinogens, such as mescaline and peyote.

#### **Overdose effects**

Effects of overdose include: longer, more intense "trip" episodes, psychosis, and possible death. Abuse of psilocybin mushrooms could also lead to poisoning if one of the many varieties of poisonous mushrooms is incorrectly identified as a psilocybin mushroom.

#### Legal status in the United States

Psilocybin is a Schedule I substance under the Controlled Substances Act, meaning that it has a high potential for abuse, no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use under medical supervision.

# Common places of origin

Psilocybin mushrooms are found in Mexico, Central America, and the United States.

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# Steroids

# Overview

Anabolic steroids are synthetically produced variants of the naturally occurring male hormone testosterone that are abused in an attempt to promote muscle growth, enhance athletic or other physical performance, and improve physical appearance. Testosterone, nandrolone, stanozolol, methandienone, and boldenone are some of the most frequently abused anabolic steroids.

#### Street names

Arnolds, Juice, Pumpers, Roids, Stackers, Weight Gainers

#### Looks like

Steroids are available in: tablets and capsules, sublingual-tablets, liquid drops, gels, creams, transdermal patches, subdermal implant pellets, and water-based and oil-based injectable solutions. The appearance of these products varies depending on the type and manufacturer.



# Methods of abuse

Steroids are ingested orally, injected intramuscularly, or applied to the skin. The doses abused are often 10 to 100 times higher than the approved therapeutic and medical treatment dosages. Users typically take two or more anabolic steroids at the same time in a cyclic manner, believing that this will improve their effectiveness and minimize the adverse effects.

# Affect on mind

Case studies and scientific research indicate that high doses of anabolic steroids may cause mood and behavioral effects. In some individuals, steroid use can cause dramatic mood swings, increased feelings of hostility, impaired judgment, and increased levels of aggression (often referred to as "roid rage"). When users stop taking steroids, they may experience depression that may be severe enough to lead one to commit suicide. Anabolic steroid use may also cause psychological dependence and addiction.

# Affect on body

A wide range of adverse effects is associated with the use or abuse of anabolic steroids. These effects depend on several factors including: age, sex, the anabolic steroid used, amount used, and duration of use. In adolescents, anabolic steroid use can stunt the ultimate height that an individual achieves. In boys, steroid use can cause early sexual development, acne, and stunted growth. In adolescent girls and women, anabolic steroid use can induce permanent physical changes, such as deepening of the voice, increased facial and body hair growth, menstrual irregularities, male pattern baldness, and lengthening of the clitoris. In men, anabolic steroid use can cause shrinkage of the testicles, reduced sperm count, enlargement of the male breast tissue, sterility, and an increased risk of prostate cancer. In both men and women, anabolic steroid use can cause high cholesterol levels, which may increase the risk of

coronary artery disease, strokes, and heart attacks. Anabolic steroid use can also cause acne and fluid retention. Oral preparations of anabolic steroids, in particular, can damage the liver. Abusers who inject steroids run the risk of contracting various infections due to non-sterile injection techniques, sharing of contaminated needles, and the use of steroid preparations manufactured in non-sterile environments. All these factors put users at risk for contracting viral infections such as HIV/AIDS or hepatitis B or C, and bacterial infections at the sight of injection. Abusers may also develop endocarditis, a bacterial infection that causes a potentially fatal inflammation of the heart lining.

# Drugs causing similar effects

There are several substances that produce effects similar to those of anabolic steroids. These include human growth hormone (hHG), clenbuterol, gonadotropins, and erythropoietin.

# **Overdose effects**

Anabolic steroids are not associated with overdoses. The adverse effects a user would experience develop from the use of steroids over time.

# Legal status in the United States

Anabolic steroids are Schedule III substances under the Controlled Substances Act. Only a small number of anabolic steroids are approved for either human or veterinary use. Steroids may be prescribed by a licensed physician for the treatment of testosterone deficiency, delayed puberty, low red blood cell count, breast cancer, and tissue wasting resulting from AIDS.

# Common places of origin

Most illicit steroids are smuggled into the U.S. from abroad. Steroids are also illegally diverted from legitimate sources (theft or inappropriate prescribing). The Internet is the most widely used means of buying and selling anabolic steroids. Steroids are also bought and sold at gyms, bodybuilding competitions, and schools from teammates, coaches, and trainers.



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# Amphetamines

# Overview

Amphetamines are stimulants that speed up the body's system. Many are legally prescribed and used to treat attention-deficit hyperactivity disorder (ADHD).

#### Street names

Bennies, Black Beauties, Crank, Ice, Speed, Uppers

### Looks like



Amphetamines can look like pills or powder. Common prescription amphetamines include methylphenidate (Ritalin® or Ritalin SR®), amphetamine and dextroamphetamine (Adderall®), and dextroamphetamine (Dexedrine®).

#### Methods of abuse

Amphetamines are generally taken orally or injected. However, the addition of "ice," the slang name of crystallized methamphetamine hydrochloride, has promoted smoking as another mode of administration. Just as "crack" is smokable cocaine, "ice" is smokable methamphetamine.

# Affect on mind

The effects of amphetamines and methamphetamine are similar to cocaine, but their onset is slower and their duration is longer. In contrast to cocaine, which is quickly removed from the brain and is almost completely metabolized, methamphetamine remains in the central nervous system longer, and a larger percentage of the drug remains unchanged in the body, producing prolonged stimulant effects. Chronic abuse produces a psychosis that resembles schizophrenia and is characterized by: Paranoia, picking at the skin, preoccupation with one's own thoughts, and auditory and visual hallucinations. Violent and erratic behavior is frequently seen among chronic abusers of amphetamines and methamphetamine.

### Affect on body

Physical effects of amphetamine use include increased blood pressure and pulse rates, insomnia, loss of appetite, and physical exhaustion.

### **Drugs causing similar effects**

Drugs that cause similar effects include: dexmethylphendiate, phentermine, benzphetamine, phendimetrazine, cocaine, crack, methamphetamine, and khat.

#### **Overdose effects**

Overdose effects include agitation, increased body temperature, hallucinations, convulsions, and possible death.

# Legal status in the United States

Amphetamines are Schedule II stimulants, which means that they have a high potential for abuse and limited medical

uses. Pharmaceutical products are available only through a prescription that cannot be refilled.

# Common places of origin

Amphetamine was first marketed in the 1930s as Benzedrine® in an over-the-counter inhaler to treat nasal congestion. By 1937 amphetamine was available by prescription in tablet form and was used in the treatment of the sleeping disorder, narcolepsy, and ADHD. Over the years, the use and abuse of clandestinely produced amphetamines have spread. Today, clandestine laboratory production of amphetamines has mushroomed, and the abuse of the drug has increased dramatically.



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# **Barbiturates**

#### Overview

Barbiturates are depressants that produce a wide spectrum of central nervous system depression from mild sedation to coma.

Barbiturates are depressants that produce a wide spectrum of central nervous system depression from mild sedation to coma. They have also been used as sedatives, hypnotics, anesthetics, and anticonvulsants. Barbiturates are classified as Ultrashort, Short, Intermediate, Long-acting.



#### Street names

Barbs, Block Busters, Christmas Trees, Goof Balls, Pinks, Red Devils, Reds & Blues, Yellow Jackets

#### Looks like

Barbiturates come in a variety of multicolored pills and tablets. Abusers prefer the short-acting and intermediate barbiturates such as Amytal® and Seconal®.

#### Methods of abuse

Barbiturates are abused by swallowing a pill or injecting a liquid form. Barbiturates are generally abused to reduce anxiety, decrease inhibitions, and treat unwanted effects of illicit drugs. Barbiturates can be extremely dangerous because overdoses can occur easily and lead to death.

# Affect on mind

Barbiturates cause mild euphoria, lack of inhibition, relief of anxiety and sleepiness. Higher doses cause impairment of memory, judgment and coordination, irritability, and paranoid and suicidal ideation. Tolerance develops quickly and larger doses are then needed to produce the same effect, increasing the danger of an overdose.

#### Affect on body

Barbiturates slow down the central nervous system and cause sleepiness.

#### **Drugs causing similar effects**

Drugs with similar effects include alcohol, benzodiazepines like Valium® and Xanax®, tranquilizers, sleeping pills, Rohypnol®, and GHB.

#### **Overdose effects**

Effects of overdose include shallow respiration, clammy skin, dilated pupils, weak and rapid pulse, coma, and possible death.

#### Legal status in the United States

Barbiturates are Schedule II, III, and IV depressants under the Controlled Substances Act.

# Common places of origin

Barbiturates were first introduced for medical use in the 1900s, and today about 12 substances are in medical use.





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# Benzodiazepines

#### Overview

Benzodiazepines are depressants that produce sedation, induce sleep, relieve anxiety and muscle spasms, and prevent seizures.

# Street names

Benzos, Downers

#### Looks like

The most common benzodiazepines are the prescription drugs



Valium®, Xanax®, Halcion®, Ativan®, and Klonopin®. Tolerance can develop, although at variable rates and to different degrees. Shorter-acting benzodiazepines used to manage insomnia include estazolam (ProSom®), flurazepam (Dalmane®), temazepam (Restoril®), and triazolam (Halcion®). Midazolam (Versed®), a short-acting benzodiazepine, is utilized for sedation, anxiety, and amnesia in critical care settings and prior to anesthesia. It is available in the United States as an injectable preparation and as a syrup (primarily for pediatric patients). Benzodiazepines with a longer duration of action are utilized to treat insomnia in patients with daytime anxiety. These benzodiazepines include alprazolam (Xanax®), chlordiazepoxide(Librium®), clorazepate (Tranxene®), diazepam (Valium®), halazepam (Paxipam®), lorzepam (Ativan®), oxazepam (Serax®), prazepam (Centrax®), and quazepam (Doral®). Clonazepam (Klonopin®), diazepam, and clorazepate are also used as anticonvulsants.

#### Methods of abuse

Abuse is frequently associated with adolescents and young adults who take the drug orally or crush it up and snort it to get high. Abuse is particularly high among heroin and cocaine abusers.

#### Affect on mind

Benzodiazepines are associated with amnesia, hostility, irritability, and vivid or disturbing dreams.

### Affect on body

Benzodiazepines slow down the central nervous system and may cause sleepiness.

#### Drugs causing similar effects

Alcohol, barbiturates, sleeping pills, and GHB

# **Overdose effects**

Effects of overdose include shallow respiration, clammy skin, dilated pupils, weak and rapid pulse, coma, and possible death.

# Legal status in the United States

Benzodiazepines are controlled in schedule IV of the Controlled Substance Act.

# Common places of origin

Benzodiazepines are only legally available through prescription. Many abusers maintain their drug supply by getting prescriptions from several doctors, forging prescriptions, or buying them illicitly. Alprazolam and diazepam are the two most frequently encountered benzodiazepines on the illicit market.





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# Depressants

### Overview

Includes barbiturates (barbs), benzodiazepines (benzos) and sedative-hypnotics.

Depressants will put you to sleep, relieve anxiety and muscle spasms, and prevent seizures.Barbiturates are older drugs and include butalbital (Fiorina®), phenobarbital, Pentothal®, Seconal® and Nembutal®. You can rapidly develop dependence on and tolerance to barbiturates, meaning you need more and more of them to feel and function normally. This makes them unsafe, increasing the likelihood of coma or death.



Benzodiazepines were developed to replace barbiturates, though they still share many of the undesirable side effects. Some examples are Valium®, Xanax®, Halcion®, Ativan®, Klonopin® and Restoril®. Rohypnol® is a benzodiazepine that is not manufactured or legally marketed in the United States, but it is used illegally. Ambien® and Sonata® are sedative-hypnotic medications approved for the short-term treatment of insomnia that share many of the properties of benzodiazepines. Other CNS depressants include meprobamate, methaqualone (Quaalude®), and the illicit drug GHB.

# Street names

Barbs, Benzos, Downers, Georgia Home Boy, GHB, Grievous Bodily Harm, Liquid X, Nerve Pills, Phennies, R2, Reds, Roofies, Rophies, Tranks, Yellows

# Looks like

Depressants come in the form of pills, syrups, and injectable liquids.

# Methods of abuse

Individuals abuse depressants to experience euphoria. Depressants are also used with other drugs to add to the other drugs' high or to deal with their side effects. Abusers take higher doses than people taking the drugs under a doctor's supervision for therapeutic purposes. Depressants like GHB and Rohypnol® are also misused to facilitate sexual assault.

#### Affect on mind

Depressants used therapeutically do what they are prescribed for to put you to sleep, relieve anxiety and muscle spasms, and prevent seizures. They also: cause amnesia, leaving no memory of events that occur while under the influence, reduce your reaction time, impair mental functioning and judgment, and cause confusion. Long-term use of depressants produces psychological dependence and tolerance.

# Affect on body

Some depressants can relax the muscles. Unwanted physical effects include slurred speech, loss of motor coordination, weakness, headache, lightheadedness, blurred vision, dizziness, nausea, vomiting, low blood pressure, and slowed breathing. Prolonged use of depressants can lead to physical dependence even at doses recommended for medical treatment. Unlike barbiturates, large doses of benzodiazepines are rarely fatal unless combined with other

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drugs or alcohol. But unlike the withdrawal syndrome seen with most other drugs of abuse, withdrawal from depressants can be life threatening.

### **Drugs causing similar effects**

Some antipsychotics, antihistamines, and antidepressants produce sedative effects. Alcohol's effects are similar to those of depressants.

### **Overdose effects**

High doses of depressants or use of them with alcohol or other drugs can slow heart rate and breathing enough to cause death.

#### Legal status in the United States

Most depressants are controlled substances that range from Schedule I to Schedule IV under the Controlled Substances Act, depending on their risk for abuse and whether they currently have an accepted medical use. Many of the depressants have FDA-approved medical uses. Rohypnol® is not manufactured or legally marketed in the United States.

### Common places of origin

Generally, legitimate pharmaceutical products are diverted to the illicit market. Teens can obtain depressants from the family medicine cabinet, friends, family members, the Internet, doctors, and hospitals.



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# Dextromethorphan (DXM)

# Overview

DXM is a cough suppressor found in more than 120 overthecounter (OTC) cold medications, either alone or in combination with other drugs such as analgesics (e.g., acetaminophen), antihistamines (e.g., chlorpheniramine), decongestants (e.g., pseudoephedrine), and/or expectorants (e.g., guaifenesin). The typical adult dose for cough is 15 or 30 mg taken three to four times daily. The cough-suppressing effects of DXM persist for 5 to 6 hours after ingestion. When taken as directed, side-effects are rarely observed.



#### Street names

CCC, Dex, DXM, Poor Man's PCP, Robo, Rojo, Skittles, Triple C, Velvet

#### Looks like

DXM can come in the form of: cough syrup, tablets, capsules, or powder.

# Methods of abuse

DXM is abused in high doses to experience euphoria and visual and auditory hallucinations. Abusers take various amounts depending on their body weight and the effect they are attempting to achieve. Some abusers ingest 250 to 1,500 milligrams in a single dosage, far more than the recommended therapeutic dosages described above. Illicit use of DXM is referred to on the street as "Robotripping," "skittling," or "dexing." The first two terms are derived from the products that are most commonly abused, Robitussin and Coricidin HBP. DXM abuse has traditionally involved drinking large volumes of the OTC liquid cough preparations. More recently, however, abuse of tablet and gel capsule preparations has increased. These newer, high-dose DXM products have particular appeal for abusers. They are much easier to consume, eliminate the need to drink large volumes of unpleasant-tasting syrup, and are easily portable and concealed, allowing an abuser to continue to abuse DXM throughout the day, whether at school or work. DXM powder, sold over the Internet, is also a source of DXM for abuse. (The powdered form of DXM poses additional risks to the abuser due to the uncertainty of composition and dose.) DXM is also distributed in illicitly manufactured tablets containing only DXM or mixed with other drugs such as pseudoephedrine and/ or methamphetamine. DXM is abused by individuals of all ages, but its abuse by teenagers and young adults is of particular concern. This abuse is fueled by DXM's OTC availability and extensive "how to" abuse information on various web sites.

## Affect on mind

Some of the many psychoactive effects associated with high-dose DXM include: confusion, inappropriate laughter, agitation, paranoia, and hallucinations. Other sensory changes, including the feeling of floating and changes in hearing and touch. Long-term abuse of DXM is associated with severe psychological dependence. Abusers of DXM describe the following four dose-dependent "plateaus": Plateau Dose (mg) Behavioral Effects 1st 100-200 Mild stimulation 2nd 200-400 Euphoria and hallucinations 3rd 300-600 Distorted visual perceptions Loss of motor coordination 4th 500-1500 Out-of-body sensations

# Affect on body

DXM intoxication involves: over-excitability, lethargy, loss of coordination, slurred speech, sweating, hypertension, and involuntary spasmodic movement of the eyeballs. The use of high doses of DXM in combination with alcohol or other drugs is particularly dangerous, and deaths have been reported. Approximately 5-10% of Caucasians are poor DXM metabolizers and at increased risk for overdoses and deaths. DXM taken with antidepressants can be life threatening. OTC products that contain DXM often contain other ingredients such as acetaminophen, chlorpheniramine, and guaifenesin that have their own effects, such as: liver damage, rapid heart rate, lack of coordination, vomiting, seizures, and coma. To circumvent the many side effects associated with these other ingredients, a simple chemical extraction procedure has been developed and published on the Internet that removes most of these other ingredients in cough syrup.

# **Drugs causing similar effects**

Depending on the dose, DXM can have effects similar to marijuana or Ecstasy. In high doses its out-of-body effects are similar to those of Ketamine or PCP.

### **Overdose effects**

DXM overdose can be treated in an emergency room setting and generally does not result in severe medical consequences or death. Most DXM-related deaths are caused by ingesting the drug in combination with other drugs. DXM-related deaths also occur from impairment of the senses, which can lead to accidents. In 2003, a 14-year-old boy in Colorado who abused DXM died when he was hit by two cars as he attempted to cross a highway. State law enforcement investigators suspect that the drug affected the boy's depth perception and caused him to misjudge the distance and speed of the oncoming vehicles.

#### Legal status in the United States

DXM is a legally marketed cough suppressant that is neither a controlled substance nor a regulated chemical under the Controlled Substances Act.

# Common places of origin

DXM abusers can obtain the drug at almost any pharmacy or supermarket, seeking out the products with the highest concentration of the drug from among all the OTC cough and cold remedies that contain it. DXM products and powder can also be purchased on the Internet.





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# Hallucinogens

### Overview

Hallucinogens are found in plants and fungi or are synthetically produced and are among the oldest known group of drugs used for their ability to alter human perception and mood.

#### Street names

Acid, Blotter, Blotter Acid, Cubes, Doses, Fry, Mind Candy, Mushrooms, Shrooms, Special K, STP, X, XTC



Hallucinogens come in a variety of forms. MDMA or ecstasy tablets are sold in many colors with a variety of logos to attract young abusers. LSD is sold in the form of impregnated paper (blotter acid), typically imprinted with colorful graphic designs.

#### Methods of abuse

The most commonly abused halluncinogens among junior and senior high school students are hallucinogenic mushrooms, LSD, and MDMA or ecstasy. Hallucinogens are typically taken orally or can be smoked.

#### Affect on mind

Sensory effects include perceptual distortions that vary with dose, setting, and mood. Psychic effects include distortions of thought associated with time and space. Time may appear to stand still, and forms and colors seem to change and take on new significance. Weeks or even months after some hallucinogens have been taken, the user may experience flashbacks — fragmentary recurrences of certain aspects of the drug experience in the absence of actually taking the drug. The occurrence of a flashback is unpredictable, but is more likely to occur during times of stress and seems to occur more frequently in younger individuals. With time, these episodes diminish and become less intense.

# Affect on body

Physiological effects include elevated heart rate, increased blood pressure, and dilated pupils.

## **Overdose effects**

Deaths exclusively from acute overdose of LSD, magic mushrooms, and mescaline are extremely rare. Deaths generally occur due to suicide, accidents, and dangerous behavior, or due to the person inadvertently eating poisonous plant material. A severe overdose of PCP and ketamine can result in: respiratory depression, coma, convulsions, seizures, and death due to respiratory arrest.

# Legal status in the United States

Many hallucinogens are Schedule I under the Controlled Substances Act, meaning that they have a high potential for abuse, no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use under medical supervision.



# Common places of origin

Hallucinogens can be synthetically produced in illicit laboratories or are found in plants.





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# Hydrocodone

# Overview

Hydrocodone is the most frequently prescribed opioid in the United States and is associated with more drug abuse and diversion than any other licit or illicit opioid. It is an orally active agent most frequently prescribed for the treatment of moderate to moderately severe pain. It's analgesic potency is similar to morphine. Hydrocodone is also an antitussive (cough suppressant) agent with an efficacy similar to that of codeine. There are numerous brand and generic hydrocodone products marketed in the United States. All are combination products. The



most frequently prescribed combination is hydrocodone and acetaminophen (for example, Vicodin®, Lorcet®, and Lortab®). Other examples of combination products include those containing aspirin (Lortab ASA®), ibuprofen (Vicoprofen®) and antihistamines (Hycomine®).

#### Street names

Hydro, Norco, Vikes

#### Looks like

Hydrocodone has a chemical structure that is related to that of codeine and morphine. Hydrocodone combination products are formulated in tablets, capsules, and syrups.

#### Methods of abuse

Most often these drugs are abused by oral rather than intravenous administration.

# Affect on mind

Hydrocodone, like most other opioids, induces euphoria, sedation and alters the perception of painful stimuli.

# Affect on body

Hydrocodone can cause drowsiness, dizziness, nausea, constipation, urinary retention and in higher amounts, depressed respiration. Long term use can lead to dependence and addiction. Withdrawal symptoms include restlessness, muscle and bone pain, insomnia, diarrhea, and vomiting.

### **Drugs causing similar effects**

Morphine, heroin, oxycodone, codeine, propoxyphene, fentanyl, and hydromorphone.

# **Overdose effects**

Like other opioids, hydrocodone overdose is associated with cold and clammy skin, severely constricted pupils, and slow breathing that can lead to a loss of consciousness and death. Large doses of hydrocodone in combination with acetaminophen may cause severe liver damage.

# Legal status in the United States

Hydrocodone is a Schedule II narcotic that is marketed in multi-ingredient Schedule III products. The Schedule III drug products have accepted medical use in treatment and have a moderate to low physical dependence or high psychological dependence.

# Common places of origin

A legitimate pharmaceutical, Hydrocodone is found in the illicit market most often in tablets, capsules and liquid form. Tablets containing acetaminophen are the most frequently encountered products. Hydrocodone can be obtained from illicit internet sources, altered or fraudulent prescriptions, doctor-shopping, drug theft, and from friends or acquaintances.



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# Hydromorphone

# Overview

Hydromorphone belongs to a class of drugs called "opioids," which includes morphine. It has an analgesic potency of two to eight times that of morphine, but has a shorter duration of action and greater sedative properties.

#### Street names

D, Dillies, Dust, Footballs, Juice, Smack

#### Looks like

Hydromorphone comes in: tablets, rectal suppositories, oral solutions, and injectable formulations.

#### Methods of abuse

Users may abuse hydromorphone tablets by ingesting them. Injectable solutions, as well as tablets that have been crushed and dissolved in a solution may be injected as a substitute for heroin.

# Affect on mind

When used as a drug of abuse, and not under a doctor's supervision, hydromorphone is taken to produce feelings of euphoria, relaxation, sedation, and reduced anxiety. It may also cause mental clouding, changes in mood, nervousness, and restlessness. It works centrally (in the brain) to reduce pain and suppress cough. Hydromorphone use is associated with both physiological and psychological dependence.

### Affect on body

Hydromorphone may cause: constipation, pupillary constriction, urinary retention, nausea, vomiting, respiratory depression, dizziness, impaired coordination, loss of appetite, rash, slow or rapid heartbeat, and changes in blood pressure.

#### Drugs causing similar effects

Drugs that have similar effects include: heroin, morphine, hydrocodone, fentanyl, and oxycodone.

#### **Overdose effects**

Acute overdose of hydromorphone can produce: severe respiratory depression, drowsiness progressing to stupor or coma, lack of skeletal muscle tone, cold and clammy skin, constricted pupils, and reduction in blood pressure and heart rate. Severe overdose may result in death due to respiratory depression.

#### Legal status in the United States

Hydromorphone is a Schedule II drug under the Controlled Substances Act with an accepted medical use as a pain reliever. Hydromorphone has a high potential for abuse and use may lead to severe psychological or physical dependence.



# Common places of origin

Hydromorphone is legally manufactured and distributed in the United States. However, abusers can obtain hydromorphone from forged prescriptions, "doctor-shopping," theft from pharmacies, and from friends and acquaintances.





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# Inhalants

# Overview

Inhalants are invisible, volatile substances found in common household products that produce chemical vapors that are inhaled to induce psychoactive or mind altering effects.

#### Street names

Gluey, Huff, Rush, Whippets

#### Looks like

Common household products such as glue, lighter fluid, cleaning fluids, and paint all produce chemical vapors that can be inhaled.

#### Methods of abuse

Although other abused substances can be inhaled, the term "inhalants" is used to describe a variety of substances whose main common characteristic is that they are rarely, if ever, taken by any route other than inhalation. Inhalants are breathed in through the nose or the mouth in a variety of ways, such as: "sniffing" or "snorting"; "bagging" — sniffing or inhaling fumes from substances sprayed or deposited inside a plastic or paper bag; and "huffing" from an inhalant-soaked rag stuffed in the mouth, or inhaling from balloons filled with nitrous oxide. Inhalants are often among the first drugs that young children use. About 1 in 5 kids report having used inhalants by the eighth grade. Inhalants are also one of the few substances abused more by younger children than by older ones.



#### Affect on mind

Inhalant abuse can cause damage to the parts of the brain that control thinking, moving, seeing, and hearing. Cognitive abnormalities can range from mild impairment to severe dementia.

#### Affect on body

Inhaled chemicals are rapidly absorbed through the lungs into the bloodstream and quickly distributed to the brain and other organs. Nearly all inhalants produce effects similar to anesthetics, which slow down the body's function. Depending on the degree of abuse, the user can experience slight stimulation, feeling of less inhibition or loss of consciousness. Within minutes of inhalation, the user experiences intoxication along with other effects similar to those produced by alcohol. These effects may include slurred speech, an inability to coordinate movements, euphoria, and dizziness. After heavy use of inhalants, abusers may feel drowsy for several hours and experience a lingering headache. Additional symptoms exhibited by long-term inhalant abusers include: weight loss, muscle weakness, disorientation, inattentive- ness, lack of coordination, irritability, depression, and damage to the nervous system and other organs. Some of the damaging effects to the body may be at least partially reversible when inhalant abuse is

stopped; however, many of the effects from prolonged abuse are irreversible. Prolonged sniffing of the highly concentrated chemicals in solvents or aerosol sprays can induce irregular and rapid heart rhythms and lead to heart failure and death within minutes. There is a common link between inhalant use and problems in school — failing grades, chronic absences, and general apathy. Other signs include: paint or stains on body or clothing; spots or sores around the mouth; red or runny eyes or nose; chemical breath odor; drunk, dazed, or dizzy appearance; nausea; loss of appetite; anxiety; excitability; and irritability.

#### Drugs causing similar effects

Most inhalants produce a rapid high that is similar to the effects of alcohol intoxication.

### **Overdose effects**

Because intoxication lasts only a few minutes, abusers try to prolong the high by continuing to inhale repeatedly over the course of several hours, which is a very dangerous practice. With successive inhalations, abusers may suffer loss of consciousness and/or death. "Sudden sniffing death" can result from a single session of inhalant use by an otherwise healthy young person. Sudden sniffing death is particularly associated with the abuse of butane, propane, and chemicals in aerosols. Inhalant abuse can also cause death by asphyxiation from repeated inhalations, which lead to high concentrations of inhaled fumes displacing the available oxygen in the lungs, suffocation by blocking air from entering the lungs when inhaling fumes from a plastic bag placed over the head, and choking from swallowing vomit after inhaling substances.

#### Legal status in the United States

The common household products that are misused as inhalants are legally available for their intended and legitimate uses. Many state legislatures have attempted to deter youth who buy legal products to get high by placing restriction on the sale of these products to minors.

#### Common places of origin

There are more than 1,000 products that are very dangerous when inhaled — things like typewriter correction fluid, air conditioning refrigerant, felt tip markers, spray paint, air freshener, butane, and even cooking spray. See products abused as inhalants at www.inhalants.org/product.htm (National Inhalant Prevention Coalition).



FOR MORE DRUG FACTS, VISIT www.GetSmartAboutDrugs.com/facts

# Khat

# Overview

Khat is a flowering evergreen shrub that is abused for its stimulant-like effect. Khat has two active ingredients, cathine and cathinone.

# Street names

Abyssinian Tea, African Salad, Catha, Chat, Kat, Oat

### Looks like

Khat is a flowering evergreen shrub. Khat that is sold and abused is usually just the leaves, twigs, and shoots of the Khat shrub.



#### Methods of abuse

Khat is typically chewed like tobacco, then retained in the cheek and chewed intermittently to release the active drug, which produces a stimulant-like effect. Dried Khat leaves can be made into tea or a chewable paste, and Khat can also be smoked and even sprinkled on food.

# Affect on mind

Khat can induce manic behavior with grandiose delusions, paranoia, nightmares, hallucinations, and hyperactivity. Chronic Khat abuse can result in violence and suicidal depression.

### Affect on body

Khat causes an immediate increase in blood pressure and heart rate. Khat can also cause a brown staining of the teeth, insomnia, and gastric disorders. Chronic abuse of Khat can cause physical exhaustion.

## **Drugs causing similar effects**

Khat's effects are similar to other stimulants, such as cocaine and methamphetamine.

#### **Overdose effects**

The dose needed to constitute an overdose is not known, however it has historically been associated with those who have been long-term chewers of the leaves. Symptoms of toxicity include delusions, loss of appetite, difficulty with breathing, and increases in both blood pressure and heart rate. Additionally, there are reports of liver damage (chemical hepatitis) and of cardiac complications, specifically myocardial infarctions. This mostly occurs among long-term chewers of khat or those who have chewed too large a dose.

# Legal status in the United States

The chemicals found in khat are controlled under the Controlled Substances Act. Cathine is a Schedule IV stimulant, and cathinone is a Schedule I stimulant under the Controlled Substances Act, meaning that it has a high potential for abuse, no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use

under medical supervision.

# Common places of origin

Khat is native to East Africa and the Arabian Peninsula, where the use of it is an established cultural tradition for many social situations.





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# Methadone

# Overview

Methadone is a synthetic (man-made) narcotic.

# Street names

Amidone, Chocolate Chip Cookies, Fizzies, Maria, Pastora, Salvia, Street Methadone, Wafer

# Looks like

Methadone is available as a tablet, disc, oral solution, or injectable liquid. Tablets are available in 5 mg and 10 mg formulations. As of January 1, 2008, manufacturers of methadone hydrochloride tablets 40 mg (dispersible) have voluntarily agreed



to restrict distribution of this formulation to only those facilities authorized for detoxification and maintenance treatment of opioid addiction, and hospitals. Manufacturers will instruct their wholesale distributors to discontinue supplying this formulation to any facility not meeting the above criteria.

# Methods of abuse

Methodone can be swallowed or injected.

# Affect on mind

Abuse of methadone can lead to psychological dependence.

# Affect on body

When an individual uses methadone, he/she may experience physical symptoms like sweating, itchy skin, or sleepiness. Individuals who abuse methadone risk becoming tolerant of and physically dependent on the drug. When use is stopped, individuals may experience withdrawal symptoms including: anxiety, muscle tremors, nausea, diarrhea, vomiting, and abdominal cramps.

# Drugs causing similar effects

Although chemically unlike morphine or heroin, methadone produces many of the same effects.

#### **Overdose effects**

The effects of a methadone overdose are: slow and shallow breathing, blue fingernails and lips, stomach spasms, clammy skin, convulsions, weak pulse, coma, and possible death.

# Legal status in the United States

Methadone is a Schedule II drug under the Controlled Substances Act. While it may legally be used under a doctor's supervision, its non-medical use is illegal.

# Common places of origin

German scientists synthesized methadone during World War II because of a shortage of morphine. Methadone was introduced into the United States in 1947 as an analgesic (Dolophinel).



# Drug Fact Sheet GetSmartAboutDrugs A Resource for Parents from the DEA



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# Morphine

# **Overview**

Morphine is a non-synthetic narcotic with a high potential for abuse and is the principal constituent of opium. It is one of the most effective drugs known for the relief of severe pain.

#### Street names

Dreamer, Emsel, First Line, God's Drug, Hows, M.S., Mister Blue, Morf, Morpho, Unkie

## Looks like

Morphine is marketed under generic and brand name products, including: MS-Contin®, oramorph SR®, MSiR®, Roxanol®, Kadian®, and RMS®.

### Methods of abuse

Traditionally, morphine was almost exclusively used by injection, but the variety of pharmaceutical forms that it is marketed as today support its use by oral and other routes of administration. Forms include: oral solutions, immediateand sustained-release tablets and capsules, suppositories, and injectable preparations. Those dependent on morphine prefer injection because the drug enters the blood stream more quickly.

#### Affect on mind

Morphine's effects include euphoria and relief of pain. Chronic use of morphine results in tolerance and physical and psychological dependence.

### Affect on body

Morphine use results in relief from physical pain, decrease in hunger, and inhibition of the cough reflex.

## **Drugs causing similar effects**

Drugs causing similar effects as morphine include: opium, codeine, heroin, methadone, hydrocodone, fentanyl, and oxycodone.

#### **Overdose effects**

Overdose effects include: cold, clammy skin, lowered blood pressure, sleepiness, slowed breathing, slow pulse rate, coma, and possible death.

#### Legal status in the United States

Morphine is a Schedule II narcotic under the Controlled Substances Act.

# Common places of origin

In the United States, a small percentage of the morphine obtained from opium is used directly for pharmaceutical



products. The remaining morphine is processed into codeine and other derivatives.



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# Narcotics

# Overview

Also known as "opioids," the term "narcotic" comes from the Greek word for "stupor" and originally referred to a variety of substances that dulled the senses and relieved pain. Though some people still refer to all drugs as "narcotics," today "narcotic" refers to opium, opium derivatives, and their semi-synthetic substitutes. A more current term for these drugs, with less uncertainty regarding its meaning, is "opioid." Examples include the illicit drug heroin and pharmaceutical drugs like OxyContin®, Vicodin®, codeine, morphine, methadone, and fentanyl.



#### Street names

Big H, Black Tar, Brown Sugar, Dover's Powder, Hilbilly Heroin, Horse, Junk, Lean or Purple Drank, MPTP (New Heroin), Mud, OC, Ox, Oxy, Oxycotton, Paregoric, Sippin Syrup, Smack

#### Looks like

Narcotics/opioids come in various forms, including: tablets, capsules, skin patches, powder, chunks in varying colors (from white to shades of brown and black), liquid form for oral use and injection, syrups, suppositories, and lollipops.

# Methods of abuse

Narcotics/opioids can be swallowed, smoked, sniffed, or injected.

# Affect on mind

Besides their medical use, narcotics/opioids produce a general sense of well-being by reducing tension, anxiety, and aggression. These effects are helpful in a therapeutic setting but contribute to the drugs' abuse. Narcotic/opioid use comes with a variety of unwanted effects, including drowsiness, inability to concentrate, and apathy. Use can create psychological dependence. Long after the physical need for the drug has passed, the addict may continue to think and talk about using drugs and feel overwhelmed coping with daily activities. Relapse is common if there are not changes to the physical environment or the behavioral motivators that prompted the abuse in the first place.

# Affect on body

Narcotics/opioids are prescribed by doctors to treat pain, suppress cough, cure diarrhea, and put people to sleep. Effects depend heavily on the dose, how it's taken, and previous exposure to the drug. Negative effects include: slowed physical activity, constriction of the pupils, flushing of the face and neck, constipation, nausea, vomiting, and slowed breathing. As the dose is increased, both the pain relief and the harmful effects become more pronounced. Some of these preparations are so potent that a single dose can be lethal to an inexperienced user. However, except in cases of extreme intoxication, there is no loss of motor coordination or slurred speech. Physical dependence is a consequence of chronic opioid use, and withdrawal takes place when drug use is discontinued. The intensity and character of the physical symptoms experienced during withdrawal are directly related to the particular drug used, the total daily dose, the interval between doses, the duration of use and the health and personality of the user. These symptoms usually appear shortly before the time of the next scheduled dose. Early withdrawal symptoms often include: watery eyes,

runny nose, yawning, and sweating. As the withdrawal worsens, symptoms can include: restlessness, irritability, loss of appetite, nausea, tremors, drug craving, severe depression, vomiting, increased heart rate and blood pressure, and chills alternating with flushing and excessive sweating. However, without intervention, the withdrawal usually runs its course, and most physical symptoms disappear within days or weeks, depending on the particular drug.

#### Drugs causing similar effects

With the exception of pain relief and cough suppression, most central nervous system depressants (like barbiturates, benzodiazepines, and alcohol) have similar effects, including slowed breathing, tolerance, and dependence.

#### **Overdose effects**

Overdoses of narcotics are not uncommon and can be fatal. Physical signs of narcotics/opioid overdose include: constricted (pinpoint) pupils, cold clammy skin, confusion, convulsions, extreme drowsiness, and slowed breathing.

## Legal status in the United States

Narcotics/opioids are controlled substances that vary from Schedule I to Schedule V, depending on their medical usefulness, abuse potential, safety, and drug dependence profile. Schedule I narcotics, like heroin, have no medical use in the U.S. and are illegal to distribute, purchase, or use outside of medical research.

# Common places of origin

The poppy papaver somniferum is the source for all natural opioids, whereas synthetic opioids are made entirely in a lab and include meperidine, fentanyl, and methadone. Semi-synthetic opioids are synthesized from naturally occurring opium products, such as morphine and codeine, and include heroin, oxycodone, hydrocodone, and hydromorphone. Teens can obtain narcotics from friends, family members, medicine cabinets, pharmacies, nursing homes, hospitals, hospices, doctors, and the Internet.



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# **Stimulants**

#### Overview

Stimulants speed up the body's systems. This class of drugs includes prescription drugs such as amphetamines (Adderall® and Dexedrine®), methylphenidate (Concerta® and Ritalin®), diet aids (such as Didrex®, Bontril®, Preludin®, Fastin®, Adipex P®, Ionomin®, and Meridia®) and illicitly produced drugs such as methamphetamine, cocaine, and methcathinone.



# Street names

Bennies, Black Beauties, Cat, Coke, Crank, Crystal, Flake, Ice, Pellets, R-Ball, Skippy, Snow, Speed, Uppers, Vitamin R

#### Looks like

Stimulants come in the form of pills, powder, rocks, injectable liquids.

#### Methods of abuse

Stimulants can be pills or capsules that are swallowed. Smoking, snorting, or injecting stimulants produces a sudden sensation known as a "rush" or a "flash." Abuse is often associated with a pattern of binge use —sporadically consuming large doses of stimulants over a short period of time. Heavy users may inject themselves every few hours, continuing until they have depleted their drug supply or reached a point of delirium, psychosis, and physical exhaustion. During heavy use, all other interests become secondary to recreating the initial euphoric rush.

# Affect on mind

When used as drugs of abuse and not under a doctor's supervision, stimulants are frequently taken to: produce a sense of exhilaration, enhance self esteem, improve mental and physical performance, increase activity, reduce appetite, extend wakefulness for prolonged period, and "get high." Chronic, high-dose use is frequently associated with agitation, hostility, panic, aggression, and suicidal or homicidal tendencies. Paranoia, sometimes accompanied by both auditory and visual hallucinations, may also occur. Tolerance, in which more and more drug is needed to produce the usual effects, can develop rapidly, and psychological dependence occurs. In fact, the strongest psychological dependence observed occurs with the more potent stimulants, such as amphetamine, methylphenidate, methamphetamine, cocaine and methcathinone. Abrupt cessation is commonly followed by depression, anxiety, drug craving, and extreme fatigue, known as a "crash."

#### Affect on body

Stimulants are sometimes referred to as uppers and reverse the effects of fatigue on both mental and physical tasks. Therapeutic levels of stimulants can produce exhilaration, extended wakefulness, and loss of appetite. These effects are greatly intensified when large doses of stimulants are taken. Taking too large a dose at one time or taking large doses over an extended period of time may cause such physical side effects as dizziness, tremors, headache, flushed skin, chest pain with palpitations, excessive sweating, vomiting, and abdominal cramps.

#### **Drugs causing similar effects**

Some hallucinogenic substances, such as Ecstasy, have a stimulant component to their activity.

## **Overdose effects**

In overdose, unless there is medical intervention, high fever, convulsions, and cardiovascular collapse may precede death. Because accidental death is partially due to the effects of stimulants on the body's cardiovascular and temperature-regulating systems, physical exertion increases the hazards of stimulant use.

#### Legal status in the United States

Many stimulants have a legitimate medical use for the treatment of conditions such as obesity, narcolepsy, and attention deficit and hyperactivity disorder. Such stimulants vary in their level of control from Schedules II to IV, depending on their potential for abuse and dependence. A number of stimulants have no medical use in the United States but have a high potential for abuse. These stimulants are controlled in Schedule I. Some prescription stimulants are not controlled, and some stimulants like tobacco and caffeine don't require a prescription — though society's recognition of their adverse effects has resulted in a proliferation of caffeine-free products and efforts to discourage cigarette smoking. Stimulant chemicals in over-the-counter products, such as ephedrine and pseudoephedrine can be found in allergy and cold medicine. As required by The Combat Methamphetamine Epidemic Act of 2005, a retail outlet must store these products out of reach of customers, either behind the counter or in a locked cabinet. Regulated sellers are required to maintain a written or electronic form of a logbook to record sales of these products. In order to purchase these products, customers must now show a photo identification issued by a state or federal government. They are also required to write or enter into the logbook: their name, signature, address, date, and time of sale. In addition to the above, there are daily and monthly sales limits set for customers.

#### Common places of origin

Stimulants are diverted from legitimate channels and clandestinely manufactured exclusively for the illicit market.
# TAB C

g. Does the ASAP check the DAMIS for prior enrollment information on Soldiers currently evaluated and/or enrolled?

h. Is a DA Form 4466 completed and entered in DAMIS for each Soldier in a PCS loss or gain status?

*i*. Has an effective monitoring procedure been implemented to ensure that open file cases on Soldiers who are in a PCS status are forwarded to the gaining ASAP?

j. Does the counseling staff provide timely input to the ADCO for completion of the quarterly DUI/UA Report?

### Appendix E Standing Operating Procedures (SOP) For Urinalysis Collection, Processing, and Shipping

### E-1. General

This SOP provides guidance and standardizes urinalysis collections throughout the U.S. Army. (The DTC Guidebook and Commander's Guide and UPL Urinalysis Collection handbook contain additional guidance and DA requirements. These handbooks are designed to assist the unit commander, UPL and DTC by providing detailed information on collection, handling, processing and shipping procedures for urinalysis specimens.)

### E-2. Applicability

This SOP is applicable to all urinalysis collections conducted on all Soldiers, regardless of component.

### E-3. Related material

The ACSAP Commanders Guide and UPL Urinalysis Collection handbook, ACSAP DTC Guidebook and DOD Instruction 1010.16, Technical Procedures for Military Personnel Drug Abuse Testing Program.

### E-4. Pre-collection procedures

a. The unit commander will-

(1) Direct that a urine test be conducted, identify individual Soldiers, parts of the unit, and/or the entire unit for testing, and ensure identified Soldiers are available for testing.

(2) Select an adequate location for testing and a holding area for Soldiers waiting to render a urinalysis specimen.

(3) Ensure the UPL is certified to collect urinalysis specimens for drug testing.

- b. The UPL obtains supplies for testing-
- (1) The DOD prescribed urine specimen bottles with boxes.
- (2) Optional wide mouth collection cup (for females).
- (3) Tamper evident tape.
- (4) Specimen bottle labels.
- (5) Unit ledger (unit ledger).
- (6) DD Forms 2624.
- (7) Disposable rubber gloves.
- (8) Disinfectant for disinfecting specimen collection area.

(9) References: AR 600-85, ACOM/ASCC/DRU SOP, Installation SOP, Unit SOP, and Commander's Guide and UPL Urinalysis Collection handbook.

c. Personnel to be tested are notified. Notification will take place no more than 2 hours prior to reporting time.

*d*. Commander appoints Observers, E–5 or above, of the same gender as Soldier being tested, (no more than 3 observers will be assigned to each UPL at any given time) and a holding area NCO/officer, E–5 or above, to maintain control of personnel waiting to be tested.

e. The UPL will brief observers on their duties and responsibilities and demonstrate the observers' tasks (see fig E–4 for an example). The observers will sign an affidavit to acknowledge understanding of their duties and responsibilities as observers.

f. The UPL will inspect latrines and post "Off Limits" signs on them; they will also post signs for "Holding Area" and "UPL Testing Station" at those locations.

g. Commander or designated representative will brief all Soldiers selected for testing (see fig E-2 for an example).

h. The UPL will brief the selected Soldiers on the specimen collection procedure (see fig E-3 for an example).

*i*. Each Soldier will remain in the holding area until a specimen is provided unless the commander temporarily permits the Soldier to leave and an NCO or officer escorts the Soldier.

*j*. If more than one UPL conducts the collection, avoid having each DD Form 2624 handled by more than one UPL (see paragraph E-7b).

### E-5. Collection procedures

All steps of this procedure must be followed in the correct sequence.

a. The UPL puts on disposable rubber gloves.

*b*. Soldier approaches the UPL station with their military ID card when prepared to give a urinalysis specimen. If the Soldier does not have an ID card in their possession, the commander (or 1SG or XO) will positively identify the Soldier and verify the Soldier's SSN by a reliable method (see paragraph E–12a).

c. Soldier will remove excess outer garments such as battle dress uniform or Army combat uniform jackets, coats, or sweat tops.

*d.* The UPL initiates all required paperwork (if preprinted forms and labels are used, the UPL will verify all information with the military ID Card). If a clerical mistake is made while filling out entries on the DD Form 2624, the specimen bottle label, or the unit ledger prior to the discrepancy inspection required by the DTC, the mistake may be corrected by its maker by lining through (single line) the mistake, placing the corrected information above the mistake, initialing and dating the corrected entry. No other method of correction is authorized except by memorandum, titled "Certificate of Correction," as described in paragraph E–8b.

(1) The UPL prepares label with the following information:

(a) Date Specimen Collected (YYYYMMDD).

*(b)* BAC.

(c) Soldier's SSN.

(2) The UPL prepares a DD Form 2624 with the following information (See the Commanders' Guide and UPL Urinalysis Collection handbook for specific guidance on completing the DD Form 2624):

(a) Block 1 will have the unit information for the unit conducting the collection.

(b) Block 2 will have the installation ASAP (in garrison), state JSAPC/O (NG units in garrison), RSC (USAR units in garrison), or BACM information (all deployed units).

(c) BAC (block 3). This is the unique code for reporting results.

(d) Unit Identification Code (UIC) (block 4).

(e) Document/Batch Number (block 5). Begin with batch '0001" each day.

(f) Date Specimen Collected (YYYYMMDD) (block 6).

(g) Soldier's SSN (block 8).

(h) Test Basis (block 9). For each DD Form 2624, use only one appropriate code (IR, IU, IO, CO, PO, RO, MO, AO, VO, NO, OO) (see para 4–5).

(*i*) Test Information (block 10). Designate letter "A" for E-4 and below and letter "B" for E-5 and above and officers. Leave the remaining rows blank if less than 12 specimens are collected.

(3) UPL prepares the unit ledger with the following information (see the Commanders Guide and UPL Urinalysis Collection handbook for specific guidance on completing the DD Form 2624):

(a) Date Specimen Collected.

(b) Batch and Specimen number (blocks 5 and 7 from DD Form 2624).

(c) Soldier's Rank.

(d) Soldier's printed name (Soldier will sign upon completion of specimen collection procedure).

(e) Soldier's SSN.

(f) Test basis.

(g) Observer will print and sign their name on the unit ledger upon completion of specimen collection procedure.

(*h*) Comments and Disposition.

*e*. The UPL directs the Soldier to verify the information on the specimen bottle label, unit ledger, and DD Form 2624. The Soldier will then initial the specimen bottle label indicating that all data is correct.

*f.* The UPL will remove a new specimen bottle from the box in front of the Soldier and replace it with the Soldier's military ID Card. The UPL will then affix the label to the specimen bottle, in full view of both the Soldier and the observer, and hand it to the Soldier. The UPL will remind the observer not to take possession of the specimen bottle and to constantly maintain direct eye contact with the bottle until the UPL places it in the collection box.

g. The Soldier will ensure that the observer has full view of the specimen bottle at all times until the UPL takes custody of the specimen. At no time will the observer take custody of the urine specimen.

*h.* If the Soldier is female, the optional wide mouth collection cup will be issued to the Soldier at this time. *i.* The Soldier and observer will move to a secure latrine; the Soldier will walk in the front with the specimen bottle held above their shoulder to keep it in full view of the observer. The observer will keep the specimen bottle in sight at all times.

*j*. Once in the latrine, the observer will direct the Soldier to wash their hands without the use of soap. The Soldier will then move to the appropriate facility (urinal or toilet) to collect the specimen.

k. The Soldier will remove the cap of the specimen bottle in full view of the observer, and will hold it or place it face up on a clean surface. The specimen bottle and cap must be in full view of the observer.

*l*. The Soldier will then fill the specimen bottle with at least 30 mL of urine (approximately half the specimen bottle). The observer must see urine leaving the Soldier's body and entering the specimen bottle (or collection cup). The Soldier will recap the specimen bottle in full view of the observer.

m. The following procedure applies to female Soldiers who utilize the wide mouth collection cups:

(1) The Soldier will remove the cap from the collection cup, and provide the specimen. The observer will keep the wide mouth collection cup and the specimen bottle in full view and directly observe urine leaving the body and entering the collection cup.

(2) The Soldier will then open the specimen bottle, and pour the urine from the wide mouth collection cup into the specimen bottle. The Soldier will recap the specimen bottle in full view of the observer. The observer will watch this entire procedure.

*n*. The specimen bottle must contain at least 30 mL of urine (regardless of specimen volume collected, the specimen bottle must be returned to the UPL). See paragraph E-12b for instructions on insufficient volume.

o. The Soldier should wash their hands with soap after recapping the specimen as described in steps 1 and m above, but the Soldier and observer must keep the specimen in full view.

*p*. The observer and the Soldier will return to the UPL's station. The Soldier will walk in front with the specimen bottle held above their shoulder. The observer will keep the specimen bottle in sight at all times.

q. The Soldier will hand the specimen bottle containing their specimen to the UPL; both the Soldier and observer will continue to keep the specimen bottle in sight at all times until the UPL places the specimen in the collection box.

r. The UPL will take the specimen bottle, verify that the cap is secure, and inspect the specimen for sufficient volume and possible adulteration. If adulteration is suspected, the UPL will secure the specimen, order the Soldier to stand fast, and ensure that the commander is notified (see para E-12d).

s. The UPL will then place tamper evident tape across the specimen bottle cap. The tape will be one continuous piece that runs across the top of the specimen bottle and touches the label on both ends without obscuring any information.

t. The UPL will then initial the specimen bottle label. The UPL's initials signify that they have received the specimen from the Soldier, checked the specimen for adulteration and sufficient volume, ensured the cap was secure, and placed tamper evident tape across the cap.

*u*. The UPL will place the specimen in the collection box and remove the Soldier's ID card. The UPL retains the Soldier's ID Card until the Soldier signs the unit ledger.

v. The observer will then sign the unit ledger in front of the UPL and Soldier to verify their complied with the collection process and directly observed the Soldier provide the specimen and maintained eye contact with the specimen bottle from the time it was handed to the Soldier until it was placed in the collection box.

*w*. The Soldier will then sign the unit ledger in front of both the observer and UPL verifying that they provided the urine in the specimen bottle and that they observed the specimen being sealed with tamper evident tape and placed into the collection box. The UPL should check the specimen bottle label, unit ledger, and DD Form 2624 and correct errors before releasing the Soldier.

x. The ID Card will be returned to the Soldier at this time, and they are released from testing.

#### E-6. Post-collection procedures

After all specimens have been collected the UPL will-

a. Verify that all SSNs on the unit ledgers, DD Forms 2624 and specimen bottle labels match.

b. Ensure that all required information, signatures, and initials are on the specimen bottle labels, unit ledgers, and DD Forms 2624.

c. Place each DD Form 2624 into the corresponding specimen shipping container(s).

d. Disinfect the specimen handling area and close down the collection station.

e. Transport all specimens to the DTCP as soon as possible (normally the same duty day).

f. If unable to transport to the DTCP immediately, the specimens, DD Forms 2624, and unit ledgers will be placed into temporary storage at the unit as described in paragraph E-11.

#### E-7. Specimen Chain of Custody (Back side of DD Form 2624)

*a*. Once the UPL accepted a complete specimen from the Soldier, the specimen chain of custody began. This chain of custody must remain continuously and forensically intact until the specimens are received by the courier/shipping agency and subsequently the drug testing laboratory (FTDTL).

*b.* If two or more UPLs conduct the collection, avoid having each DD Form 2624 handled by more than one UPL. A change of custody should be done only on a completed batch of specimens and its DD Form 2624. If the UPL cannot complete their batch due to an emergency, the DD Form 2624 (front) should be closed-out, and a change of custody to an alternate UPL should be initiated on the back side of the DD Form 2624. The alternate UPL should prepare a new DD Form 2624 with a new batch to collect specimens from the remaining Soldiers.

c. Each change of custody must be annotated at the time of the occurrence; do not predate or postdate the event.

When the specimens are transferred from one specimen custodian to another or to temporary storage or shipping agency, correct and complete information must be annotated in block 12a, b, c, and d on the back side of DD Form 2624 as following:

(1) Block 12a-Date of specimen custody transfer (use U.S. date format YYMMDD to avoid confusions,).

(2) Block 12b-Name and signature of the person or temporary storage facility (building and room) releasing custody.(3) Block 12c-Name and signature of the person or temporary storage facility (building and room) accepting

custody.

(4) Block 12d-Reason for transfer/change of custody (for example, "Specimens transferred to primary UPL", "Specimens placed in Temporary Storage", "Specimens retrieved from Temporary Storage", "Specimens received by DTC", "Specimens mailed to FTDTL", and so forth).

### E-8. Transfer of specimens at the DTCP

*a.* At the DTCP, the unsealed specimen boxes will be opened by the DTC or the DTC's designated representative. The actions of the DTC outlined below may be performed by the DTC's designated representative. If there is no DTC, the actions will be performed by the person designated by the ADCO. The UPL (or the last person on the chain of custody before transferring specimens to the DTC) will observe the entire specimen transfer process until the DTC signs the DD Forms 2624 accepting the custody of specimens. The DTC will conduct the quality control check of the specimen (Note: a deployed UPL or a UPL without a local ASAP may have to perform this quality control check):

(1) Ensure that the information contained on the front side of each DD Form 2624 is correct.

(a) Complete address of submitting unit (address of the Installation ASAP or battalion-level command or above).(b) Additional Service Information (Name of unit that conducted testing and contact information (for example,

phone number, e-mail address, and so forth)).

(c) Base area code.

(d) Date Specimens Collected.

(e) Social Security Number.

(f) Test Basis (Correct code for the type of urinalysis and only one code per DD Form 2624).

(g) Test Information.

(2) Ensure that the information contained on the unit ledger is correct and corresponding with the information on the DD Form 2624:

(a) Name of unit that conducted testing (block 2 on DD Form 2624—Additional Service Information).

(b) Unit UIC.

(c) Date Specimens Collected.

(d) Batch and specimen numbers.

(e) Rank, Name, SSN, and signatures of the Soldiers.

(f) Test Basis.

(g) Names and signatures of the observers.

(h) Comments and disposition (unusual circumstances and/or testing status of a Soldier or specimen).

(3) Ensure that the information contained on the specimen bottle label is correct and corresponding with information on the DD Form 2624. At a minimum, each specimen bottle label must contain the Date Specimen Collected, SSN, BAC, Soldier's initials and UPL's initials.

(4) Ensure minimum 30 mL of urine is contained in each specimen bottle and that an unbroken piece of tamper evident tape is correctly placed on each specimen bottle.

(5) Ensure the chain of custody (back side) on the DD Form 2624 is complete and accurate. Each event of change of custody must be annotated:

(a) Correct dates of change of custody.

(b) Names and Signatures of UPL or temporary storage releasing custodian.

(c) Names and Signatures of UPL or temporary storage accepting custodian.

(d) The "Purpose of change/remarks" column clearly explains each change of custody.

*b*. If a discrepancy is found during the check, the DTC shall initiate appropriate action to correct the discrepancy or error, if possible. All discrepancies that can be corrected must be explained in a memorandum titled, "Certificate of Correction," which explains:

(1) The discrepancy.

- (2) The circumstances.
- (3) The corrective action taken.

(a) All personnel involved including the person(s) who made the error and the DTC must sign this certificate. (b) If the error is a missed entry or an incorrect entry either on the specimen bottle label or on the DD Form 2624, corrections will not be made on the label or on the form. The evidence that a correction was made will be the memorandum titled, "Certificate of Correction" (see fig E-1). (c) The memorandum titled "Certificate of Correction," will be attached to the original and all copies of the DD Form 2624. The memorandum titled "Certificate of Correction," will be attached to the DTC's DD Form 2624 until destruction date.

c. If no discrepancies are noted, or all discrepancies have been corrected with a memorandum titled "Certificate of Correction," the UPL will enter:

- (1) The date the specimens were delivered in block 12a
- (2) Print their name and sign in block 12b
- (3) Print "Specimens released by UPL to DTC" in block 12d
- (4) Ensure that the DTC prints and signs in block 12c to document receipt of the specimens.
- d. After the DD Form 2624 is completed it will be placed in a business size envelope.

*e*. Liquid absorbent pads will be placed in each specimen box (containing up to 12 specimens) to absorb any leakage that may occur. Either the UPL or the DTC may complete this step. The specimen box will be sealed with adhesive tape over all open sides, edges and flaps. The UPL or the DTC then signs his or her signature across the tape on the top and bottom of each container, and secures the unsealed envelope, with DD Form 2624 enclosed, to the outside of the specimen container. For complete packing instructions, see the Commander's Guide and UPL handbook.

### E-9. Shipping to the FTDTL

a. All urinalysis specimens will be forwarded to the supporting FTDTL.

- b. If the DTC is going to ship the specimens to the FTDTL on the day received from the UPL then they will-
- (1) Sign each DD Form 2624 releasing it for shipment to the FDTL. Properly complete block 12a to 12d.
- (a) Date the specimens delivered to carrier (block 12a).

(b) Name and Signature of person releasing custody to carrier (block 12b).

(c) Name of carrier/shipper if known (for example, USPS). If actual shipping mode is unknown, write "Shipper." (block 12b)

(d) Purpose of change (for example, "Specimens shipped to FTDTL by USPS") (block 12d).

- (2) Prepare the specimen boxes as required for shipment.
- (a) All specimen containers will be wrapped for shipping.
- (b) Ensure that each DD Form 2624 remains inside an envelope taped to the specimen container.
- (c) Place specimen container inside a leak proof bag.

(d) Package the outermost shipping container according to the carrier's requirements and local policy. Hand write or affix a label that says "Diagnostic Specimens" near the mailing address.

(3) Ship containers to the drug testing laboratory by transportation priority one. One of the following transportation modes will be used:

(a) Registered mail.

(b) US Postal Service by First Class Mail.

- (c) Hand-carried by surface transportation.
- (d) Military aircraft transportation system.
- (e) US flag commercial air freight, air express, and air freight forwarder.
- (f) When none of the above satisfies the movement required, by foreign flag air carrier.

*c*. If the DTC is unable to ship the specimens until the next duty day, the specimens must be placed in temporary storage and the DD Form 2624 annotated. The temporary storage must be a limited access area. The facility will meet the physical security requirements for evidence storage as described in paragraph E–10. This will include a biennial physical security evaluation by qualified personnel, a posted access roster, and an access log to annotate all personnel entering the limited access area.

### E-10. Temporary storage of urine specimens at the DTCP

The following describe the minimum requirements for temporary storage of urinalysis specimens at the installation level. This is the preferred site for temporary storage.

*a.* Windows to the specimen storage room that are accessible from the exterior of the room will be covered with steel or iron bars or steel mesh as follows:

(1) When bars are used, they will be at least 3/8-inch thick and vertical bars will not be more than 4-inches apart. Horizontal bars will be welded to the vertical bars and spaced so those openings do not exceed 32 square inches. Ends of the bars will be securely embedded in the wall or welded to a steel channel frame fastened securely to the window casing.

(2) Acceptable steel mesh will be made from high carbon manganese steel no less than 15/100-inch thick, with a grid of not more than 2-inches from center to center. 6-gauge steel mesh with a 2-inch diamond grid may be used when high carbon manganese steel is not readily available. The steel mesh will be welded or secured to a steel channel frame and fastened to the building by smooth headed bolts that go through the entire window casing. It will be spot welded or branded on the interior, or cemented into the structure itself to prevent easy forced entry.

(3) Air conditioners may be installed in windows or outside walls provided equivalent security measures are taken.

b. Doorways: There must be only one doorway that allows access to and from the specimen storage room.

c. Additional Requirements:

(1) Method 1 (Evidence Room) - allows specimens to be stored inside the interior of the room, when not in full view of the specimen custodian.

(a) Construction: Walls must extend from the floor to the ceiling. Walls and ceilings may be made of masonry or wood. Walls or ceiling that are of wooden stud construction must have a combined exterior and interior thickness of at least 1-inch. Permanently installed flooring (other than masonry) may be used, if the floor cannot be breached without causing considerable damage to the building structure.

(b) Entrance into the room will require opening two successive doors.

(c) When an interior steel mesh cage is used, the door to the cage will serve as the second door. In this case, the outer door will be of solid core wood or metal.

(d) When a steel mesh cage is not used two doors hung one behind the other will be used. One door may be of steel mesh welded to a steel frame. The second door may be of solid core wood or steel; or it may be a hollow wooden door with the exterior reinforced with a steel plate not less than 1/8-inch thick.

(e) If a barred door is used, the vertical steel bars will be at least 3/8-inch thick and spaced no more that 4-inches apart. Horizontal bars will be welded to the vertical bars and spaced so that openings do not exceed 32 square inches.

(f) Either door may be hung on the outside of the doorway. They will be hung so that the doorframe is not separated from the door casing.

(g) Door hinges will be installed so that doors cannot be removed without seriously damaging the door or door jam. All exposed hinge pins will be spot welded or branded to prevent removal. This is not required when safety stud hinges are used or when the hinge pins are on the inside of the doors. (A safety hinge has a metal stud on the face of one hinge leaf and a hole in the other leaf. As the door closes, the stud enters the hole and goes through the full thickness of the leaf. This creates a "bolting" or "locking" effect).

(h) The outer door will be secured by one high security, key-opened padlock. These padlocks will conform to military specifications MIL–P43607 (GL) (High Security Padlock). The changeable combination padlock for the inner door will conform to requirements of military specification FF–P–110 (S&G 8077A and 8078A series). This changeable combination padlock is intended only as an indoor or protected area reusable seal. It is not intended for use on the outer door or for protection against forced entry.

(i) All locks will be used with a heavy steel hasp and staple. The hasp and staple will be attached with smooth headed bolts or rivets that go through the entire thickness of the door or door jam. They will be spot welded or branded on the inside of the door. Heavy duty hasps and staples attached so that they cannot be removed when the doors are closed are acceptable.

(2) Method 2 (Evidence Container) - specimens must be stored within a safe or cabinet, when not in full view of the specimen custodian.

(a) One door will be hung that is made of solid core wood or metal or a barred door. The solid door will, at a minimum, have a high security dead bolt lock.

(b) Inside the room will be a safe, filing cabinet or metal wall locker that weighs at least 500 pounds or is secured to the structure of the building with a chain.

(c) If a filing cabinet is used, then a metal bar hasp will be attached to run the entire height of the cabinet. This bar will be locked with a 200 series padlock (key-opened with 2 keys, no combination lock). Note: a hasp may be welded to the top drawer, but then only the top drawer may be utilized for temporary storage.

(d) All opening/closing of the safe/cabinet will be annotated on a SF 702 (Security Container Check Sheet).

d. Key and combination control of the temporary storage.

(1) Only primary and alternate custodians will know the combinations of inner door locks of the evidence room. However, copies of all combinations will be recorded on SF 700 and kept in sealed envelopes (signed by the specimen custodian, across the seal) in the safe of the appropriate supervisor.

(2) Each key-operated lock will have two keys. One key to each lock will always be kept by the primary custodian. The duplicate key will be put in a separate sealed envelope (signed by the specimen custodian, across the seal) and secured in the safe of the appropriate supervisor.

(3) Lock combinations will be changed when the primary or alternate custodian changes. All combinations and key locks will be changed upon possible compromise.

(4) Keys will be transferred from the primary to the alternate custodian only if the primary custodian is to be absent for more than 1 duty day or 3 non-duty days. The transfer of keys will be documented on the Key Control Register and Inventory, DA Form 5513.

(5) Master key padlocks or set locks will never be used in the evidence room.

*e*. Each event involving temporary storage of specimens must be written on the chain of custody (back of DD Form 2624, see paragraph E–7).

#### E-11. Temporary storage of urine specimens at the unit level (by the unit prevention leader)

a. A safe, secure filing cabinet, or metal wall locker will be used to store specimens. This container must be in a lockable room or office.

b. The safe, filing cabinet, or metal wall locker must weigh at least 500 pounds or be attached to the structure of the building with a chain or heavy duty bolts.

c. If a filing cabinet is used, then a metal bar hasp will be attached to run the entire height of the cabinet. A hasp may be welded to the top drawer, but then only the top drawer may be utilized for temporary storage.

d. The safe or filing cabinet will have a 200 series padlock (with only 2 keys, no combination lock), which is used to secure the hasp.

*e*. One key will be issued to the primary UPL, the other key will be secured in a sealed envelope (signed by the UPL across the seal) and issued to the commander's safe. Both keys will be issued in accordance with paragraph E-10d of this regulation and key control SOPs.

f. All opening/closing of the safe/cabinet will be annotated on a SF 702.

g. Each event involving temporary storage of specimens must be written on the chain of custody (back of DD Form 2624) (see para E-7).

*h*. Commanders in deployed areas where facilities are not available to fully comply with the preceding temporary storage guidelines will make every attempt to ensure that specimens requiring temporary storage are properly secured to avoid any tampering or perception thereof. This may include locking them in a foot locker or similar container using a padlock to which the primary UPL has the only key and storing that foot looker in the unit's tactical operations center or other area under constant surveillance.

### E-12. Unusual Circumstances

All unusual circumstances will be written on the unit ledger (Unit ledger).

*a*. If the Soldier does not have an ID card in their possession, the commander (or 1SG, XO) will positively identify the Soldier and verify the Soldier's SSN against a reliable personnel roster or record. The UPL will write that the Soldier had no ID card and how the ID was verified in the "Remarks" section of the unit ledger and/or in a MFR that is attached to the unit ledger.

*b.* If less than 30 mL of urine is collected, the entire specimen will be discarded and the specimen bottle will be destroyed by crushing (after obliteration of the SSN on the specimen bottle label). The Soldier will be sent back to the holding area until they can provide a full specimen. The Soldier will be allowed to drink 8 ounces of water every 30 minutes but not to exceed a total volume of 40 ounces in 3 hours. The holding area NCO/officer will monitor each Soldier's water consumption to prevent the Soldier from encountering any health hazards. When the Soldier is ready to provide a specimen, the procedure will begin at step E–5b, original entries on the DD Form 2624 and unit ledger may be utilized for the second specimen collected.

c. If a Soldier refuses to provide a specimen, the appropriate command authority will be notified. The Soldier's chain of command should give the Soldier a direct order to provide a specimen. If the Soldier refuses, it will be a violation of a direct order, which may subject the Soldier to disciplinary action.

*d.* If adulteration is suspected, the UPL will secure the specimen, order the Soldier to stand fast, and send someone to notify the commander. When the commander verifies the evidence of a possible adulteration and after consulting the supporting legal advisor, they may immediately pursue testing the Soldier under "PO" with the collection being observed by a different observer. A second specimen will be submitted for testing on a separate DD Form 2624. The first specimen will be submitted and the circumstance written on the unit ledger.

*e*. If the tamper evident tape breaks in such a fashion that it does not touch both sides of the specimen bottle label, apply a second piece of tape across the bottle cap and touching the label on both sides, but not directly over the tamper evident tape that broke and annotate on the unit ledger that a second piece of tape was applied and that the Soldier observed this process; prepare a MFR and/or Certificate of Correction after the collection and attach it to the original DD Form 2624.

#### E–13. Legal Provisions

The provisions of this appendix are not intended to, and do not, provide any rights or privileges as to the relevancy or admissibility of laboratory documents that are not otherwise afforded by the UCMJ, the Manual for Courts-Martial, or regulations governing adverse administrative and disciplinary actions. In no case will failure to comply with the provisions of this appendix be used to invalidate an otherwise valid and legally sufficient adverse administrative or disciplinary action.

### Certificate of Correction (Blank)

# **CERTIFICATE OF CORRECTION**

### **MEMORANDUM FOR:**

SUBJECT: Certificate of Correction

1. This letter is to certify the following corrections were made as indicated below for urine specimen enclosed with this shipment for testing.

2. REFERENCE: ( ) BOTTLE LABEL ( ) DD FORM 2624

DOCUMENT/BATCH\_\_\_\_\_\_SPECIMEN\_\_\_\_\_

READS AS:	
CORRECTED TO READ AS:	

SIGNATURE: _		
DATE: _		
TITLE:		
VERIFIED BY:_		
DATE:	-	······································
TITLE:		

Figure E–1. Certification of Correction Example

Certificate of correction (Example)

### **CERTIFICATE OF CORRECTION**

MEMORANDUM FOR: The FTDTL for your installation, street address, city, state, zip code

SUBJECT: Certificate of Correction

1. This letter is to certify the following corrections were made as indicated below for urine specimen enclosed with this shipment for testing.

2. REFERENCE: ( ) BOTTLE LABEL (X) DD FORM 2624

DOCUMENT/BATCH 02 SPECIMEN 05

READS AS:

110-54-4224

CORRECTED TO READ AS:

118-54-4224

SIGNATURE	E: <u>Alan R. York</u>
Date:	<u>8 Jan 99</u>
TITLE:	<u>UPL, HQ BN</u>
VERIFIED BY:	Edward B. Commander
Date:	<u>8 Jan 99</u>
TITLE:	Commander, HQ BN

Figure E-1. Certification of Correction Example-Continued

# **Commander's Briefing**

Today our Unit will be drug tested for illegal substance use. The primary purpose of this test is to ensure our unit's military fitness, and that we are maintaining proper standards of readiness.

Individuals in this unit have been selected on a random basis for drug testing. There is no probable cause or reasonable suspicion that anyone in the unit is using or abusing drugs or a controlled substance.

Everyone selected for testing will be tested. Anyone not present will be rescheduled for testing at a later date.

Every specimen collected will be tested for Marijuana (THC), Cocaine, Amphetamines (which includes methamphetamines, MDMA (ecstasy), MDA, and MDEA), heroin, plus one to three other drugs. The additional drug(s) will be chosen by the lab on a rotational basis from a group that includes Opiates (which includes morphine and codeine), PCP and synthetic opiates (Oxycodone/oxymorphone known commonly as OxyContin).

Testing procedures outlined in AR 600-85 will be followed.

All Soldiers must be aware that all verbal orders connected with the testing are lawful and are to be followed as such.

A refusal to comply with orders relating to this test; subjects the Soldier to punitive or administrative actions under AR 600-85, AR 135-18, AR 135-178, and AR 635-10.

DOES ANYONE HAVE ANY QUESTIONS?

The UPL will now provide you with details about the drug testing procedures that will be used today.

Figure E–2. Commander's Urinalysis Briefing

### UPL UNIT BRIEF

You have four major responsibilities during the collection procedure:

1. Initial the specimen bottle label verifying your personal data is correct

2. Provide more than 30ml of specimen.

3. Keep specimen bottle in full sight until sealed with tamper evident tape.

4. Sign your payroll signature to verify that the specimen was yours and you watch it be sealed by the UPL with tamper evident tape and placed in the collection box.

Your urine specimen will be provided in a labeled plastic bottle (an optional wide mouth collection cup is available for females).

Each bottle will have a label affixed to it with today's date that identifies you by your SSN. Do not accept a bottle that does not have a completed label affixed with your correct SSN and today's date.

Collection of the specimen will be conducted using direct observation in full view of an observer. Do not go to the UPL station until you feel you are ready to provide at least 30ml (approximately ½ bottle) of urine. If you are unable to provide a specimen or an adequate quantity of urine, you will be held in the holding area until you are able to provide a specimen. You will be provided an adequate amount of liquid to help facilitate the collection process. You will not be released from duty today until you have provided a proper specimen.

Your tasks include:

You will provide your military ID card. If you do not have your military ID card or other photo identification, the commander will be called to verify your identification.

Remove excess outer garments such as ACU/BDU jackets and coats or PT jacket.

You will initial the bottle label after you verify your SSN, full name, and date on the Unit Urinalysis Ledger; verify SSN on DD Form 2624; and verify the date and your SSN on the bottle label.

Provide a urine specimen under direct observation.

Sign your payroll signature on the Unit Urinalysis Ledger verifying that the urine specimen provided was yours, the specimen was sealed with tamper evident tape and was placed into the collection box.

**Note:** I do not need to know if you are taking or have taken prescription medications. If your specimen result comes back from the laboratory as positive for a drug that could have been a result of prescription medication, a medical doctor will review the result before any other actions are taken. The doctor will review your medical record, any prescriptions from outside providers, and possibly interview you, prior to making a medical determination of valid

Figure E-3. Unit Prevention Leader's Urinalysis Briefing

prescription use or illegal use. If the doctor determines the drug positive was a result of valid prescription medication, then no actions will be taken against you. Are there any questions? Any questions about the collection procedure will be directed to me or your observer.

Figure E–3. Unit Prevention Leader's Urinalysis Briefing-Continued

### MEMORANDUM FOR OBSERVERS

# SUBJECT: Responsibilities of Observers During Drug Testing

### General:

1. Observers are a critical link in the process of collecting urine specimens to be tested for substance abuse. Instances have occurred in the past where observers did not follow proper collection procedures and positive drug tests were not usable in legal and/or administrative actions. In order to prevent similar occurrences in the future, the observer will read and sign this Memorandum for Record.

2. The testing procedures do not violate a Soldier's Fourth or Fifth Amendment rights, nor does the observation procedure violate the right to privacy. A refusal to produce a specimen is a violation of a direct order and may result in the Soldier being processed for separation.

3. The results of tests may be used in legal proceedings and consequently the urine specimen may be considered as evidence. A valid chain of custody is mandatory for a successful prosecution. As an observer, you may be asked to provide testimony at legal or administrative proceedings. You may be subject to UCMJ or administrative action if it is discovered that the specimen was altered in any way while it was under your control. Actions may include, but are not limited to the following:

Article 92: Knowingly failing to obey a lawful general order or regulation by not maintaining direct line of sight of the urine into the bottle.

Article 107: Making a false official statement in signing the UPL's urinalysis ledger acknowledging the urination process was directly observed and no tampering occurred.

Article 134: False swearing by authenticating that no substitution or tampering of the urine sample occurred.

### Criteria for Observers:

- 1. Be an Officer or NCO in the rank of E-5 or above.
- 2. Be of the same gender as the Soldier being tested.

3. Possess sufficient maturity and integrity to preserve the dignity of the Soldier being observed.

4. Not be currently enrolled within the ASAP Rehabilitation Program or currently be under investigation for any substance abuse related offenses.

**Responsibilities**: As outlined in AR 600-85, an observer must follow protocol during urinalysis collection procedures.

### Figure E–4. Urinalysis Observer's Briefing and Memorandum

### SUBJECT: Responsibilities of Observers During Drug Testing

### Once assigned to a specific Soldier:

1. Observer controls the urine collection process at all times.

2. Maintains visual contact with the bottle at all times.

3. Ensures the Soldier washes his/her hands with water only, no soap, prior to providing a specimen.

4. Ensures that the specimen provided is not contaminated or altered.

5. Directly observes the Soldier (one Soldier at a time per observer) voiding urine into the specimen bottle. (When the optional wide mouth specimen collection container is used, immediately after the collection and while still under direct observation of the observer, the urine must be poured into the currently approved urine specimen bottle and tightly capped by the Soldier providing the specimen.)

6. Ensures direct observation of the flow of urine from the Soldier's body into the bottle.

7. Supervises the Soldier tightly capping the bottle.

8. Ensures the bottle is not reopened after the cap is tightened.

9. Escorts the Soldier back to the UPL station/table with bottle in full view.

10. Observes the UPL placing tamper evident tape over the top of the bottle, and across the label. Not to cover printed information.

11. Observes the UPL place the specimen in the collection box.

12. The observer will sign the unit ledger in front of the UPL and Soldier verifying the collection process and direct observation was conducted.

# OBSERVER AFFIDAVIT: I have read and understand this document. I will comply with the responsibilities as stated above and will report anything out of the ordinary immediately to the UPL or Commander.

**Observer's Printed Name** 

**Observer's Signature** 

Date

UPL's Printed Name

**UPL's Signature** 

Date

Figure E-4. Urinalysis Observer's Briefing and Memorandum-Continued

### Appendix F Drug Testing Supplies

### F-1. Required military collection supplies

The following supplies are required in order to conduct a military urinalysis collection:

# TAB D



Figure B-1. A Commander's Actions When a Soildier is Suspected of Abusing Drugs or Alcohol



# TAB E

# Forensic Toxicology Drug

Testing Laboratory Fort George G. Meade

### Maryland



Tour our Lab

# PROCESSING

The laboratory receives specimens by various methods, including U.S. Postal Service, commercial couriers, and hand-delivery. The DD Form 2624, which documents a specimen's chain of custody, must accompany the specimen. Chain of custody is a record of the possession and control of the specimen. The laboratory may classify the specimen as a discrepancy if there is any evidence of tampering with either the specimen bottle or package. The laboratory will not test the effected specimen(s). The laboratory also rejects the specimen(s) if required documentation, including the label on the specimen bottle, is incomplete, incorrect, or illegible.

Receipt of the specimen, the laboratory maintains a record of the bottle location and of each individual who had custody of the bottle in the laboratory (intralaboratory chain of custody). Before processing the specimen, a processing technician compares the information on the bottle to the information on the DD Form 2624 to insure correctness. For identification, each specimen bottle is marked by the social security number on a label affixed to the bottle that is matched to the information on the DD Form 2624. The laboratory also assigns each specimen a bar-coded laboratory accession number (LAN) which is unique to that specimen. A Processing technician applies corresponding LAN labels to the chain of custody document, the bottle, and the bottle cap. To insure accuracy, laboratory technicians continually verify laboratory accession numbers at each step of the testing process.

After receipt, processing technicians place the urine bottles in boxes in the order that they appear on the chain of custody. For the initial screen, the technicians process the original specimen one at a time. A technician labels a new test tube, and then the technician opens the bottle and pours a two to three milliliter (mL) aliquot into the barcoded labeled test tube. The technician closes the bottle and places the bottle into a tray for temporary storage and places the urine aliquot test tube in an assay rack. On completion of processing and pouring, a technician returns the specimen bottles to temporary storage. The laboratory documents all movement and handling of the specimen bottle on the DD Form 2624 and a continuation intralaboratory form (FTDTL Form 6). The laboratory documents all subsequent aliquot handling on the intralaboratory chain of custody forms (FTDTL Form 201).

The processing of the urine specimens is tightly controlled by a SOP and monitored by the section supervisor. The technicians are not allowed to have more than one bottle open on the processing table at one time. Furthermore, to obtain an aliquot for analysis, the technician must always pour from the bottle. Nothing is ever allowed to enter the original specimen bottle. The original bottle is always maintained under chain of custody within a secure area in the Specimen Processing Section.

# **Quality Control**

The Laboratory Quality Control (QC) procedures are used to insure accurate results. The Processing Section inserts blind negative and positive quality control specimens into every set/batch of specimens to be tested. These blind QC specimens are tested with no indication that they are controls. The testing personnel insert open QC specimens to validate instrument and method performance. The Quality Control Section directs the repeat of the entire process if the testing procedure fails to meet control requirements.

# Screening

The laboratory uses immunoassay for the screening assays. These assays are all accepted in both scientific and forensic communities. The immunoassay for urine drug testing occurs in two phases. First, a specific protein antibody binds the drug metabolite in the sample and forms a bound complex. The second step is the indicator phase in which this binding reaction is detected and measured. The FTDTL uses a variety of immunological techniques with different binding and indicator phases. The screening section initially tests the specimen sample aliquots with one of these assay techniques. If a sample screens positive, the processing section prepares another aliquot from the specimen bottle and the screening section performs a second screening assay. A specimen is presumptive positive only if two separate aliquots from the specimen screen positive.



When reviewing the data from the screening assay, it is important to keep two points in mind. The assay is not designed to be quantitative. The manufacturer formulates the assay to be highly specific and sensitive at the established cutoff value for the drug. Any measurement above the cutoff measurement is considered presumptive positive. Establishing a quantitative value for that measurement would not be an accurate value. The second point involves the number printed on the data sheet. When the analyzer is calibrated at the cutoff, this measurement is at 100 percent. Subsequent output is reported in relationship to the index value of 100, i.e. <99 = negative result, >100 presumptive positive.

# Confirmation

DoD instruction 1010.16 requires that the FTDTL perform two separate testing procedures, each based on a different analytical, scientific principle. Federal courts have found that the combined use of two independent testing methodologies, each based on a separate, scientifically valid procedure, provides a highly accurate test for the presence of drugs or drug metabolites. After the second screening immunoassay, the confirmation section tests a third aliquot from the original urine specimen by an entirely different methodology; gas chromatography-mass spectrometry (GC-MS). The GC-MS procedure uses both the physical and chemical properties of the drug metabolite for identification and measurement. Before the specimen is analyzed by GC/MS, an aliquot is put through an extraction procedure designed to concentrate the drug into a small volume of organic solvent and to isolate the drug from the rest of the other compounds that normally exist in urine. This extract is then injected into a small bore capillary column that is installed in the GC instrument. The drug is forced through the column by a low pressure carrier gas such as helium. Because of the nature of the compounds in the extract and the chemical structure of the walls of the column, the drug is separated from other compounds. This is analogous to placing dirt on a screen and shaking the screen to separate out particles of dirt. When the drug exits the column at an established calibration time, the drug is subjected to high energy ionization which cause fragmentation. This fragmentation consistently forms a distinctive pattern for a given compound which establishes a "fingerprint" of that compound. Early in the extraction process, a known amount of an internal standard is added to each sample. The analysis of this internal standard allows for quantitation calculations.



GC-MS is the method of choice in forensic toxicology for the unequivocal identification of chemical compounds. GC-MS is the most accurate test available to

the scientific community for chemical, drug, or drug metabolite identification. Confirmed positive specimens are retained in freezer storage for one year.

# **Proficiency Testing Program**

The FTDTL, Fort Meade, participates in a proficiency testing program to ensure that the laboratory performs to required standards. A blind sample program is an effective method for ensuring high quality and identifying problems, if any, in the drug testing programs. The highly respected Armed Forces Institute of Pathology (AFIP) conducts one such proficiency service for the Department of Defense. The Toxicology Division at AFIP sends sets of urine samples to various military installation submitting activities, every month. The Installation Biochemical Testing Coordinator (IBTC) assures that the specimens are coded and included with personnel specimens, and sent to various drug testing laboratories. The results are returned to the submitting activities, which in turn send the results to AFIP. The Fort Meade FTDTL receives over 2000 of these specimens each year. There has never been a single false positive result reported by the drug testing laboratories on an AFIP blind sample.

The AFIP also administers the Open Monthly Proficiency Program. This program involves AFIP directly shipping control specimens of the same material to all the DoD FTDTLs. The labs knowingly receive and test the samples under their service member SOPs. The results are then compiled by AFIP and comparison statistics calculated. This program ensures that the laboratories within the DoD Drug Testing Program can produce similar results.

# Personnel

The personnel of the FTDTL, Fort Meade, are well trained and qualified in their respective positions. They are certified within their respective section tasks. Certification requires successful completion of written and verbal examinations and demonstrated proficiency in the procedures. Individuals must complete a annual re-certification.

# **Results Report**

A positive result is reported by the laboratory only after the specimen is positive on two screening immunoassays and the GC-MS confirmation. In order to be considered positive on any given test the concentration of the drug or drug metabolite must exceed the defined cutoff concentration. Cutoff concentration is a pivotal value used to establish a presumptive positive on immunoassay and positive in GC-MS confirmation. The interpretative significance of the cutoff value relates to the ability to detect substances at a quantity, which is unlikely to have resulted from incidental exposure. The DoD sets the cutoff concentrations well above the detection sensitivity of the instruments or procedures. Metabolites are the products of metabolism, the process by which the body converts the things we take in to a form the body can use, transport, or eliminate. The interpretation of the amount of metabolite detected in the urine must consider many variables such as drug metabolism, fluid intake, time since ingestion, frequency, amount of ingestion and the individual's physical condition. The urine concentration should not be used to determine how much drug was consumed or the degree of impairment of the individual at the period of drug exposure. The detection of the drug or drug metabolite in a properly collected urine specimen can only establish exposure to a drug.

# **QA Program**

The FTDTL also has an internal Quality Assurance (QA) Program. A QA meeting is held each month and a report generated. Various QA audits and indicators are reviewed and discussed at each meeting. The QA process and evaluation is continuous and ensures a forensically and scientifically acceptable result.



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# TAB F

# The History of Drug Testing

# in the Military



# April 4, 1974

Department of Defense (DOD) Instruction 1010.1 issued. This instruction established random testing of all eligible members of the Armed Forces on active duty for more than 30 days. Biochemical testing of urine samples is the acceptable screening method with tests sufficiently sensitive and specific to identify with a high degree of certainty those individuals who are excreting the drugs in question. Results of biochemical testing of urine samples conducted as part of the DOD drug testing program cannot be used for forensic purposes.

# May 30, 1974

DOD Drug testing laboratories cutoff concentrations for Radioimmunoassay (RIA) testing opiates, barbiturates, and amphetamines established with effective date of 1 July 1974.

July 5, 1974 U.S. Court of Military Appeals (US vs. Ruiz) affirms lower court decision of legal basis to request urinalysis testing. Unwillingness to provide such sample is misconduct.

### June 16, 1976

Assistant Secretary of Defense – Health Affairs (ASD-HA) reaffirms policy that the drug screening laboratories would not perform any urinalysis, which may be used for legal, judicial, or punitive purposes.

### May 2, 1977

ASD-HA revises RIA cutoff concentrations for opiates, barbiturates, and amphetamines.

June 14, 1978 ASD-HA revises RIA and confirmation cutoff concentrations for opiates, barbiturates, amphetamines, methaqualone, cocaine, and PCP.

December 20, 1978

ASD-HA discontinues urine test screening of officer accessions. Also permits the use of drug detection urinalysis for punitive purposes.

September 21, 1979

ASD-HA revises RIA and confirmation cutoff concentrations for opiates, barbiturates, amphetamines, methaqualone, cocaine, and PCP.

November 5, 1979

Deputy Secretary of Defense issues policy memorandum regarding cannabis use and establish guides for pre-service use of cannabis, identification of active duty cannabis users and appropriate disposition of identified cannabis users.

January 7, 1980 ASD-HA issues guidance regarding regionalized drug of abuse testing requirements.

April 1, 1980 ASD-HA issues guidance exempting commissioned officers assigned to alcohol and drug abuse treatment staffs from mandatory urine testing.

April 21, 1980 ASD-HA establishes mandatory testing for cocaine in all samples collected on the West Coast due to high prevalence of cocaine abuse.

April 29, 1981 ASD-HA extends mandatory testing for cocaine to all samples at all drug laboratories.

August 28, 1981 ASD-HA indicates that 10% of all urine samples submitted to DOD drug testing laboratories will be tested for THC.

February 1, 1982 ASD-HA issues guidance regarding the disciplinary use of positive drug testing obtained from field drug test kits.

February 2, 1982 The drug screening lab at Oakland is decertified by ASD-HA due to an unacceptably high false positive rate.

February 16, 1982 The drug screening laboratory at Oakland is recertified by ASD-HA for drug testing.

February 19, 1982

ASD-HA decertifies the drug screening laboratory at Oakland for all drug testing. ASD-HA issues guidance permitting the use of Certified Contact Laboratories to reduce drug detection backlogs of testing.

February 23, 1982 ASD-HA establishes THC cutoff concentrations for RIA testing at 100 ng/mL. March 12, 1982

ASD-HA recertifies the drug screening laboratory at Oakland for all drugs except THC and cocaine.

March 25, 1982 ASD-HA restores full certification to the drug screening laboratory at Oakland.

March 26, 1982

ASD-HA establishes Drug Screening Laboratory Workloads for equitable distribution of testing and assignment of maximum quotas.

April 12, 1982 ASD-HA certifies Army Drug Laboratory at Wiesbaden, Germany for THC testing.

April 19, 1982 ASD-HA issues Chain of Custody Procedures Guidance.

May 6, 1982 ASD-HA certifies Army Drug Laboratory at Scholfield Barracks, Hawaii.

May 1982

ASD-HA certifies laboratories at Fort Meade, MD; NRMC Jacksonville, FL; NRMC, Portsmouth, VA; and, Brooks AFB, Texas.

August 6, 1982

Deputy Secretary of Defense rescinds designated geographic region laboratory testing system. Interservice regional cooperation is encouraged to the maximum extent possible.

August 11, 1982 Biochemistry Testing Advisory Committee established replacing the DOD Laboratory Committee for Drug Abuse Testing.

October 18, 1982

Approval given by ASD-HA to contract with civilian laboratories for GC-MS confirmation testing of field screen positive samples.

March 16, 1983

DOD 1010.1 "Drug Abuse Testing Program" issued. Permits Secretaries of the Military Departments to operate or contract for the operation of drug testing laboratories with enough capacity to meet their drug testing requirements.

July 19, 1983

ASD-HA appoints the Navy to serve as the executive agent for a project to finalize standardization of the laboratory processes at all DOD Drug Testing Laboratories.

# December 13, 1983 White House sponsors a Conference on Drug Urinalysis in the Military.

### August 31, 1984

Navy transitions to GC/MS for confirmation testing of all marijuana positive specimens.

# December 28, 1984

DOD 1010.1, "Drug Abuse Testing Program" issued. Provides guidelines and limitations on the use of urinalysis testing, and provides a laboratory procedures section. Use of GC/MS for confirmation testing standardized.

### August 4, 1987

Opiates testing level changed. Initial RIA morphine level 300 ng/mL Confirmation testing 6MAM 10 ng/mL; codeine 2,000 ng/mL; morphine 4,000 ng/mL.

# October 15, 1987

ASD-HA approves request by White House to make the military drug testing laboratories available for use by all Federal agencies until the HHS national laboratory certification program is established in May or June 1988. This arrangement will permit a rapid and orderly implementation of the resident's Federal Drug program.

# October 23, 1987

ASD-HA establishes cutoff concentration for LSD. Screening cutoff concentration of 0.5 ng/mL and confirmation cutoff concentration of 0.4 ng/mL.

### March 8, 1991

ASD-HA changes initial test level for Amphetamines, Cannabinoids and Cocaine to 500, 50 and 150 ng/ml respectively and confirmation testing for Benzoylecogonine (Cocaine), Codeine and Morphine to 100, 300, and 300 ng/ml respectively.

### June 10, 1991

Responsibility for technical oversight proficiency testing and quality assurance of drug testing laboratories is transferred from ASD-HA to Department of Defense Coordinator for Drug Enforcement Policy and Support (DOD-DEPS).

# July 6, 1992

DOD-DEPS lowers confirmation cutoff for LSD to .20 ng/ml. DOD-DEPS sets Opiate confirmation cutoff for Morphine, Codeine & 6-Monacetylmorphine to 4000, 2000 and 10 ng/ml respectively.

October 12, 1994 DOD-DEPS sets cutoff for Opiate initial screen at 2000 ng/ml Morphine.

October 17, 1995 DOD-DEPS certifies Fort Meade FTDTL to conduct immunochemistry drug screening using the Olympus AU800. May 9, 1997

DOD-DEPS directs confirmation screen for designer Amphetamines, MDA, MDMA & MDEA.

June 4, 1997

DOD-DEPS directs laboratories to conduct confirmation analysis for Phenobarbital, Secobarbital and Butalbital.

November 1997 Fort Meade FTDTL certified for designer amphetamine (MDMA, MDA, MDEA) confirmation testing.

May 14, 1998 DOD DEPS certifies Fort Meade FTDTL to conduct confirmation analysis for Barbituates.

August 1998 Fort Meade certified for methamphetamine D/L isomer analysis.

October 2000

Fort Meade FTDTL eliminates radio-immunoassay in screening section relying entirely on non-radioactive immunoassay techniques.

October 2001

Fort Meade was certified by the U.S. Department of Health and Human Services (HHS) to perform urine drug testing for Federal agencies on 1 October 2001. FTDTL started testing those samples the same month.

December 2002 Dec 2002 Hitachi modular screening analyzer placed in all DoD labs.

June 2004

Screening kit for 6-acetlymorphine adopted by DoD labs. Ft Meade screens 100% of specimens received for 6-AM

December 2004

Ft Meade implements 100% screening for designer amphetamines by use of ecstasy only kit.

February 2005

Ft Meade successfully acquires contract for testing of Dept of Interior and 15 other government agencies. This contract increased the civilian work volume by 4 times to a total of 100,000 specimens per year.

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#### \*7 PROSECUTING A URINALYSIS CASE: A PRIMER

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#### **Pre-Preferral Considerations**

#### Legal Basis For Administering Urinalysis

In assessing the **case** before preferral of charges, the trial counsel must begin with a consideration of the legal basis upon which the accused was required to submit a urine sample. If there was not a proper basis to require the accused to provide a urine sample, the results will be suppressed as having been procured in violation of the fourth amendment. A compulsory **urinalysis** is a seizure within the meaning of the fourth amendment. [FN2] Trial counsel should always anticipate a motion to suppress the **urinalysis** results. A successful motion to suppress the **urinalysis** results usually ends the government's **case**, because in most instances the **urinalysis** result is the only evidence of the accused's misconduct. There are three frequent bases for obtaining a urine sample: a health and welfare inspection, [FN3] a seizure based on probable cause, [FN4] and a seizure pursuant to the accused's consent. [FN5]

<u>Health and Welfare Inspection</u>. Perhaps the most frequent basis for administering a **urinalysis** is pursuant to a health and welfare inspection under Military Rule of Evidence 313(b). An inspection is 'an examination of the whole or part of a unit . . . conducted as an incident of command the primary purpose of which is to determine and to ensure the security, military fitness or good order and discipline of

#### Introduction

A new trial counsel receives a telephone call from a brigade commander. The commander has just learned of the results of a recent **urinalysis**, showing that one of the soldiers in the brigade tested positive. The commander wants to prosecute the soldier, and tells the trial counsel to prepare the **case** for trial. What actions should the trial counsel take?

The purpose of this article is to provide both new trial counsel and experienced trial counsel who have never tried a **urinalysis case** an overview of the issues that may arise in prosecuting such a **case**. [FN1] Although a **urinalysis** 

**case** is similar to many other **cases** involving scientific evidence, there are recurrent issues in **urinalysis cases**, and other considerations that are particular to **urinalysis cases**.

This article will address these issues in two general categories: (1) pre-preferral consideration, including the legal basis for administering the **urinalysis**, proper administration of the **urinalysis**, and the decision to proceed to trial; and (2) considerations in preparing for trial, including proving use, proving wrongfulness, and anticipating possible defenses. **\*8** the unit.' [FN6] Evidence obtained during a proper inspection is admissible. [FN7]

If the commander, with a proper purpose, selects both the time and the portion of the unit to be inspected, the inspection is proper. [FN8] When the commander has specified a period of time within which the unit is to provide urine samples, it may be permissible for a subordinate to choose the exact date within that period of time. [FN9] The Court of Military Appeals has upheld the **urinalysis** testing of a prison staff where a Naval petty officer, not the commander, selected the date of testing based on operational considerations to comply with a command regulation to conduct **urinalysis** monthly. [FN10]

Even if the commander directs the **urinalysis**, the inspection is not proper unless done with the primary purpose of ensuring security, fitness, or good order and discipline. [FN11] If the commander directs the **urinalysis** with the primary purpose of obtaining evidence, the inspection is not proper. This does not mean, however, that the **urinalysis** fails as an inspection merely because the commander contemplated using the results for disciplinary proceedings. [FN12] A commander may have a *secondary* purpose of using the results in disciplinary proceedings, as long as the *primary* purpose is proper. [FN13]

The trial counsel should determine whether the commander had previously scheduled the **urinalysis**, and if so, when and why the commander selected the date. An inspection need not be previously scheduled, but prior scheduling would tend to show that the primary purpose was proper. If the **urinalysis** was not previously scheduled and was directed immediately after a report that soldiers in the unit were using illegal drugs, the trial counsel would have to prove by clear and convincing evidence that the **urinalysis** was indeed an inspection rather than a subterfuge for a search. [FN14]

If only part of the unit is required to provide urine samples, the trial counsel should determine how the commander selected those to be tested. The commander may choose only a part of the unit to inspect, and there is no requirement that the commander choose the part to inspect at random. [FN15] Random selection, however, tends to show that the inspection was for a proper primary purpose, and not a subterfuge to search particular individuals. [FN16] If the commander selects specific soldiers by name to provide a urine sample, the trial counsel would again have the more difficult burden of proving by clear and convincing evidence that the **urinalysis** was indeed an inspection. [FN17]

<u>Probable Cause.</u> A second common basis for administering a **urinalysis** occurs when there is probable cause to believe that the soldier has recently used illegal drugs. Probable cause determinations frequently arise in two contexts in **urinalysis cases**. The first occurs when a soldier in the unit reports to the commander that other soldiers in the unit used drugs at a particular time. [FN18] The second occurs when a noncommissioned officer in the unit reports to the commander that a soldier is acting peculiarly without an apparent reason. [FN19]

The first situation-where an informant provides information to the commander-implicates all federal and military **cases** concerning probable cause based on an informant's report. The commander must look to the 'totality of the circumstances' to determine the existence of probable cause. [FN20] In looking to the totality of the circumstances in a **urinalysis case**, the commander and the trial counsel must be especially sensitive to the 'freshness' of the informant's report relative to the drug detection time. Urine testing can detect the presence of a drug only within **\*9** a limited time after the soldier ingested the drug. [FN21] The detection time depends chiefly on the type and quantity of the drug the

soldier has ingested. The Department of the Army has determined the maximum drug detection time for seven illegal drugs. **[FN22]** If the time between the accused's reported use of drugs and the taking of the urine sample exceeds the maximum detection time for that drug, the **urinalysis** result will be inadmissible because it was procured without probable cause. The positive **urinalysis** result could have detected only a second use, for which there was no probable cause to direct a **urinalysis**.

The second situation in which probable cause determinations frequently arise in **urinalysis cases** is where a noncommissioned officer reports to the commander that a subordinate is acting strangely without apparent explanation. This is a prime situation for confusing the *possibility* that drugs caused the unusual behavior with the *probability* that drugs caused the behavior. In *United States v. Shepherd*, [FN23] the base commander authorized the seizure of the accused's urine and blood, which contained drugs and alcohol, based on the fact that the accused was found asleep on fire watch, was exceptionally difficult to awaken, and smelled of alcohol. The Air Force Court of Military Review reversed his conviction, holding that the **urinalysis** lacked probable cause. The court advised that ' w hether evidence of alcohol use is present or not, the record should reveal some articulable indicia whereby a trained observer might surmise that an individual recently used a controlled substance.' [FN24] Thus, in this situation the trial counsel must ascertain from the commander the 'articulable indicia' which led to a conclusion that drugs, rather than something else, caused the behavior. A commander's belief that drugs might explain the behavior is insufficient, because ' p ossibility does not equate with probability.' [FN25]

The 'good faith' and 'inevitable discovery' exceptions to the probable cause requirement will, where applicable, allow the admission of **urinalysis** results procured without probable cause. [FN26] Trial counsel who are forced to rely on these exceptions should be sensitive to the possible conflict between these exceptions and the 'limited use' policy. [FN27] The limited use policy prohibits **urinalysis** results from being used against a soldier in any action under the Uniform Code of Military Justice, when the urine sample was 'taken to determine a soldier's fitness for duty and need for counseling, rehabilitation, or other medical treatment.' [FN28] This prohibition arguably applies whenever probable cause is lacking, because, absent probable cause, the test is taken to determine the soldier's fitness for duty. The better approach, however, is to construe this prohibition to apply only when no Military Rule of Evidence would allow admission of the evidence.

<u>Consent.</u> The third basis for administering a **urinalysis** is pursuant to the accused's consent. [FN29] The government must prove by clear and convincing evidence that the accused consented voluntarily. [FN30] The voluntariness of the consent is determined by looking at the 'totality of the circumstances.' [FN31] In evaluating the totality of the circumstances, trial counsel must determine whether the commander said anything to the accused about the effect of the accused's failure to consent to the **urinalysis**. When the commander requests consent, the accused may not be misled by implying that probable cause exists to order the accused to provide a urine sample if the accused does not consent. [FN32] If the accused asks what will happen if consent is not granted, the accused may be informed that the commander has the authority under Army Regulation 600-85 to direct the accused to provide a sample. [FN33] Such a statement is true and not misleading. The commander is not obligated to explain to the accused that the results of such a non-consensual **urinalysis** generally are not admissible, absent probable cause. Such an explanation, however, may help establish that the consent was voluntary.

#### Proper Administration of the Urinalysis

After determining whether there was a proper basis for seizing the accused's urine, the trial counsel must determine whether the **urinalysis** was properly administered. The trial counsel can assess the administration of the **urinalysis** by determining if procedures used to collect and handle the **\*10** urine samples were in accordance with the requirements set forth in Appendix E to Army Regulation 600-85. [FN34]

Violations of the procedures mandated by Appendix E to Army Regulation 600-85 fall into two general categories: those that implicate the chain of custody, and those that do not. Errors implicating the chain of custody are clearly more significant, because they are more likely to preclude successful prosecution. Although weak links in the chain of custody generally go only to the weight of the evidence, rather than to the admissibility, the military judge must nevertheless be reasonably certain, before admitting the **urinalysis** results as evidence, that the urine was not changed in any important respect before testing. [FN35] If the unit alcohol and drug coordinator (UADC) or observer administering the **urinalysis** failed to properly secure and account for the specimen, thus breaking the clain of custody, the military judge may well suppress the urine test results.

Other technical violations of Appendix E to Army Regulation 600-85 which do not implicate the chain of custody, are not as significant. Examples of such technical violations include having the UADC also perform duties as an observer, rather than having a separate observer; having an observer below the grade of E-5; failing to maintain a separate unit **urinalysis** ledger; and failing to have the observer initial the label on the bottle. There is no rigid exclusionary rule requiring the suppression of evidence merely because it was collected in violation of an agency's regulations. [FN36] Such evidence is excluded only when the violated regulation: (1) is mandated by the Constitution or federal law; or (2) establishes an important protection of privacy. [FN37] Neither prong is applicable to violations of Appendix E to Army Regulation 600-85 because the regulation is not mandated by the Constitution or federal law, and it does not establish any protection of privacy. [FN38] Thus, technical violations of the regulation should not result in exclusion of the **urinalysis** results at trial, if the trial counsel can establish the chain of custody.

Although technical violations do not mandate exclusion of the results, the nature and number of the deviations from the regulation may cause the fact-finder to equate failure to comply with technical procedures with failure to maintain an adequate chain of custody. Technical violations undermine the credibility of the observer and UADC as witnesses. This is particularly true when the accused is a noncommissioned officer with an otherwise excellent record. In such a **case**, the fact-finder may be looking for any colorable reason to disbelieve the scientific evidence. Thus, in assessing the **case** before preferral of charges, the trial counsel must be alert for any violations of the required procedures, regardless of whether such violations directly implicate the chain of custody.

To discovery violations of Appendix E to AR 600-85, the trial counsel should interview not only the UADC and the observer, but also other soldiers who provided samples to the same observer as the accused during the **urinalysis**. The UADC and observer may describe their administration of the **urinalysis** in a light most favorable to them. If they are familiar with how the **urinalysis** should be run, they may represent that they did it that way, forgetting to mention short-cuts they may have taken to collect the samples faster. Other soldiers may give a more objective account of how the samples were collected. They will certainly have a feel **\*11** for whether the **urinalysis** was tightly controlled, or whether there were possibilities for tampering with or confusing samples. These interviews of other soldiers will often provide the trial counsel excellent information for use at trial in rebutting the accused's account of how the samples were collected.

The trial counsel should conduct these interviews as soon as possible after learning that the command is contemplating court-martial charges. Prompt interviews will reduce the chance that the witnesses may confuse the **urinalysis** in question with another in which they participated. Prompt interviews will also increase the likelihood that the UADC and the observer will specifically remember the accused providing a specimen on the day in question. This will allow them to testify with better effect than if they can testify only about their customary procedures, without independent recollection of collecting the accused's sample.

#### Decision To Proceed To Court-Martial

In recommending whether to proceed to court-martial with the case, the trial counsel must carefully weigh the

likelihood of successful prosecution and the likely sentence against the consequence of unsuccessful prosecution. The likelihood of success depends upon many factors, including whether there was a proper legal basis for seizing the accused's urine and whether the accused's sample was collected and processed in accordance with Appendix E, AR 600-85. [FN39] The likely sentence also depends upon many factors, including the accused's rank, record, past duty performance, and the drug involved. The consequence of failure is that the command will be precluded from later administratively discharging the accused based on the same drug use of which he was acquitted. [FN40]

After analyzing the **case** the trial counsel may recommend that the command administratively separate the accused rather than prefer charges. An administrative proceeding has several advantages to the government, especially in **cases** where the evidence may be suppressed at trial, or where reasonable doubt may exist. First, the government's burden of proof is lighter: a preponderance versus beyond a reasonable doubt. [FN41] Second, exclusionary rules generally do not apply. [FN42] Third, the matter may be resolved more quickly and inexpensively, because the government need not produce an expert witness from the laboratory. [FN43] The trial counsel should fully apprise the command of his or her assessment of the **case**.

#### Other Pre-Preferral Considerations

Before preferring charges, trial counsel should be sure to request the 'litigation report' from the laboratory. [FN44] Although there is no legal requirement to have the litigation report before preferring charges, it is prudent to do so for three reasons. First, it may take up to a month to receive the litigation packet after requesting it; if charges have been preferred, the speedy trial clock has been running. Second, the trial counsel usually cannot prosecute the **case** without the test results contained in the litigation packet. Third, after preferral of charges the defense counsel will certainly serve a discovery request seeking, among other documents, the litigation report; the government should be prepared to respond in a timely manner.

Before preferring charges, the trial counsel must also determine the time window within which the government alleges that the accused used the drug. It is probably safe to use a charging window of 30 days for marijuana and 15 days for all other drugs. [FN45] A prudent trial counsel will also confer with an expert from the laboratory where the accused's urine was tested. The expert, knowing the quantity of the drug metabolites in the accused's urine, the rate at which the human body rids itself of the drug, and the maximum level of drug metabolites possible in urine, can render a professional opinion as to the maximum number of days before the accused provided the urine sample that the drug could have been ingested. The trial counsel should then use as the charging window whichever time is longer: that recommended by Department of the Army or that recommended by the expert. [FN46]

A final pre-preferral consideration is determining what level of court-martial the trial counsel should recommend that the **case** be referred to. [FN47] In addition to the considerations that apply in determining appropriate referral in any **case**, [FN48] the trial counsel should be sensitive to the potential impact of Army regulations mandating the processing for separation of all soldiers in the grade of E-5 and above who are first-time drug abusers, and all other soldiers who are **\*12** second-time drug abusers. [FN49] Such soldiers must be processed for separation by either initiating an administrative separation action or by referring their charges to a court-martial authorized to impose a punitive discharge. [FN50] Accordingly, the trial counsel should consider recommending referral of these **cases** to a court authorized to impose a punitive discharge. [FN51]

#### **Considerations in Preparing for Trial**

# Proving Use

Because 'use' is one of the two elements of the offense, [FN52] the trial counsel must decide how to prove this

element at trial. In some early **urinalysis cases** the government proved use by introducing the testimony of the UADC and observer linking the accused to a particular urine sample, and then introducing the positive **urinalysis** results as a business record. [FN53] The government was able to convict the accused without the testimony of an expert witness.

In 1987 the Court of Military Appeals in *United States v. Murphy* ended this practice, holding that '[e]xpert testimony interpreting the [ **urinalysis**] tests or some other lawful substitute in the record is required to provide a rational basis upon which the fact-finder may draw an inference that [a controlled substance] was used.' [FN54] The court in *Murphy* reasoned that there was no basis in the record for the fact-finder to conclude that the metabolite found in the urine had any relation to the drug which the accused was alleged to have used. The court further noted that there was no evidence that the drug metabolite was not naturally produced by the accused's body, or produced as a result of consuming some lawful substance. The court did not hold that the government must always produce an expert witness in a **urinalysis case**. If the government does not produce an expert witness, however, it must provide 'some other lawful substitute' to establish the required facts. The court suggested two such lawful substitutes: stipulation of fact, and judicial notice. [FN55]

<u>Stipulation</u>. The accused and the defense counsel may well be reluctant to enter into a stipulation of fact, absent some *quid pro quo* from the government. If, however, the accused is defending on the basis that his ingestion was not wrongful, he may be willing to stipulate. Such a situation arose in *United States v. Spann*, where the accused stipulated to the validity of the Air Force drug testing program, to the procedures used to collect and process his urine, and to the fact that the presence of cocaine metabolites in his urine indicated that he had ingested cocaine. [FN56] The accused then defended on the basis that the government failed to prove wrongfulness. The accused testified that his medication must have caused his positive **urinalysis**.

The Air Force Court of Military Review affirmed Spann's conviction, holding that the stipulation of fact, coupled with the laboratory reports, provided a factual basis for the fact-finder to conclude that the accused used cocaine. The court specifically held that such a stipulation is an 'adequate substitute' for an export witness under *Murphy*. [FN57]

The trial counsel should always consider asking the defense counsel to stipulate to key facts. The defense's willingness to stipulate could eliminate the need for the government to produce an expert witness for its **case**-in chief. [FN58] Such a stipulation would also serve to alert the trial counsel that the defense will be that the accused's use was not wrongful.

<u>Judicial Notice</u>. Judicial notice is a second possible 'other lawful substitute' for an expert witness to explain the **urinalysis** results. There are no reported **cases** since *Murphy* in which the trial counsel attempted to use judicial notice as a substitute for an expert witness.

There are at lease two facts 'capable of accurate and ready determination,' [FN59] such that they should be judicially noticed. [FN60] First, military drug testing procedures, which consist of a radioimmunoassay screening test and a gas chromatography/mass spectrometry confirmation test, can prove that tested urine contains a certain illegal drug metabolite. [FN61] Second, the presence of a sufficient concentration of a certain drug metabolite in the urine can prove that the provider of the urine ingested the drug that produces the drug metabolite in the urine. [FN62] If the trial counsel can convince the military judge to judicially notice these two facts, this could be a 'lawful substitute' for the expert witness. **\*13** Because judicial notice in this area is novel, the trial counsel seeking judicial notice should do so in an Article 39a session well in advance of trial, so that if the judge declines to take judicial notice of these key facts, the trial counsel can still arrange to produce an expert witness at trial.

<u>Expert Witness.</u> If the trial counsel is unable to procure a stipulation or get the military judge to take judicial notice, an expert witness can be used to explain the laboratory reports. Often this will be an expert from the laboratory

where the accused's urine was tested. Because of the importance of the expert witness' testimony to the successful prosecution of the **case**, trial counsel must very carefully plan their questions to ensure that the expert testifies on all key points. After establishing the witness as an expert, the trial counsel should use the expert's testimony to: explain how the laboratory receives, processes, and tests urine samples; explain the scientific principles behind the radioimmunoassay (RIA) test and the gas chromatography/mass spectrometry (GC/MS) test that the laboratory uses; explain the results of the tests of the accused's sample; explain the meaning of the results; explain the internal and external quality control procedures that guarantee that the result is accurate; and introduce into evidence the accused's urine bottle and the laboratory reports pertaining to that sample. This section of this article will summarize the key facts about which the expert can testify.

Urine samples typically arrive by registered mail in the laboratory's mail room. The unopened boxes are thereafter transferred to the receiving and processing section. [FN63] A technician inspects each sealed box, which contains up to twelve urine samples, to ensure that the box is sealed with tape. If the box is not sealed, or there are other signs of tampering, the samples in that box are rejected, and not tested. If everything is in order, the processing technician opens the box and compares the social security number and specimen number on each bottle with the numbers on the DA Form 5180-R that accompanied the box. Each number must exactly correspond. The technician assigns each accepted sample a laboratory accession number, by which the sample is tracked throughout the laboratory. The technician places this number on the urine bottle and on the DA Form 5180-R. The samples are then configured into batches for testing, and are put into temporary storage in a secure, limited-access area. Other technicians later conduct tests by removing aliquots from the bottles kept in temporary storage. All tests are documented to establish a proper chain of custody. The bottles remain in temporary storage until the sample is determined to be negative and is discarded, or until it is determined to be positive and is transferred to long-term storage. The laboratory determines that a sample is negative when the sample contains no drug or drug metabolites or contains drug or drug metabolites at threshold levels below those established by Department of Defense ('DOD'). The laboratory determines that a sample is positive when two separate tests by RIA and GC/MS confirm that it contains drugs or drug metabolites at levels exceeding the DOD thresholds. [FN64]

Technicians use a radioimmunoassay (RIA) to screen every sample that the laboratory accepts. [FN65] The RIA test is based on the interaction of a radioactive antigen, an antibody, and the urine. [FN66] The antibody, commercially prepared, is developed by injecting an animal with a drug metabolite, causing the animal to develop antibodies to that drug. The antibodies are harvested from the animal's blood-stream. The laboratory adds a specific quantity of the antibodies to a specific quantity of urine. The laboratory also adds a specific quantity of radioactively-labeled antigen, a specific drug metabolite, to the urine. The radioactive antigen will bind with the antibodies. If the tested urine also contains drug metabolites, those non-radioactive metabolites will compete with, and proportionately displace, the radioactive metabolites for limited binding sites with the antibodies. The more drug metabolites are in the urine, the more they will bind with the antibodies, leaving fewer available binding sites for the radioactive metabolites. [FN67]

The laboratory then isolates the antibodies, to which the drug metabolites have bound, either from the accused's urine or from the radioactive antigen added. [FN68] The laboratory measures the radioactivity of the antibodies with a gamma counter. A negative urine sample will yield a high gamma count, because there was no drug metabolite in the urine to displace the radioactive metabolites that bound to the antibodies. Conversely, if the urine sample contained a high level of drug metabolites, the antibodies will register a low gamma count, because the drug metabolites in the urine took some of the binding sites on the antibodies that the radioactive drug metabolite otherwise would have occupied. [FN69]

The laboratory can determine the approximate concentration of drug metabolites in the urine by comparing the gamma counts associated with antibodies from the urine sample to the gamma counts associated with antibodies that have reacted with known quantities of drug metabolites. [FN70] If the urine sample contains a concentration of drug metabolites greater than the DOD threshold, the sample is considered presumptively positive, but it is not reported as

positive until confirmed by GC/MS. [FN71]

GC/MS testing allows the laboratory to confirm the presence of the drug metabolite in the presumptively positive urine sample by identifying the drug metabolites' **\*14** unique chemical structure. [FN72] To conduct GC/MS testing, technicians procure a separate aliquot from the presumptively positive sample, prepare the urine for testing, and inject the urine into a gas chromatograph portion of the GC/MS instrument. [FN73] The gas chromatograph separates the components of the urine by vaporizing it and routing it through a long, thin column, which consists of materials that cause different components to emerge from the end of the column at different times. [FN74] The length of time that it takes a component to travel through the column identifies the component, but this is not a positive identification, because several chemicals may take the same time to travel through the column. [FN75] The gas chromatograph routes into the mass spectrometer those substances with retention times in the column corresponding to known drug metabolities. [FN76]

The mass spectrometer uses an electron beam to bombard the suspected drug metabolites, which the gas chromatograph has separated from the rest of the urine. [FN77] This bombardment causes the metabolites to fragment into a unique pattern, which the mass spectrometer records. [FN78] An analyst can positively identify the metabolites by their unique fragmentation pattern. [FN79]

The GC/MS instrument also precisely quantifies the amount of drug metabolite in the urine sample. [FN80] If the quantity is greater than DOD standards, the sample is reported as positive.

The expert can testify as to the scientific acceptability of the RIA and GC/MS tests, when used together, in identifying the presence of drugs or drug metabolites in urine. [FN81] He can also testify, after examining the laboratory results concerning the entire batch of samples in which the accused's sample was tested, that both the RIA instrument and the GC/MS instrument were working properly, and that the technicians properly operated these instruments. The expert should also be able to authenticate all the entries by laboratory personnel on the DA Form 5180-R, on the RIA laboratory results and accompanying chain of custody, on the GC/MS laboratory results and accompanying chain of custody, and on the urine bottle.

The trial counsel should move to admit these documents and urine bottle into evidence, having accounted for all entries on these documents and urine bottle through the testimony of the observer, UADC, installation biochemical testing coordinator, and the laboratory expert. The expert can testify that the drug metabolite found in the urine could have been there only because the person who provided the sample ingested, inhaled or injected, the drug. [FN82] No legal substance causes the body to produce the drug metabolite, in those quantities, and the body does not naturally produce the metabolite. [FN83] The ultimate opinion will be that the person who provided the urine sample in question ingested, inhaled or injected, a particular illegal drug within a particular time period before he provided the urine sample.

The expert should finally testify to the rigid quality control procedures, both internal and external to the laboratory, used to ensure that reported results are accurate. Internal quality control procedures include incorporating 'open' and 'blind' control samples into each batch of urine tested. [FN84] An 'open' control sample is one whose location within the batch is known to the technicians. A 'blind' control sample is one whose location is known to the laboratory's quality assurance branch, but not to the technicians. The purpose of an 'open' control sample is to provide immediate feedback to the technicians operating the RIA and GC/MS instruments; they can immediately see whether the instruments are correctly identifying all 'open' quality control samples. The purpose of the 'blind' samples is to allow the laboratory's quality assurance branch to ensure that the technicians properly identified all positive and negative 'blind' samples in the batch. This review of the technicians' work by both the quality assurance branch and by the certifying laboratory official is an important aspect of the laboratory's internal quality control. [FN85] External quality control is conducted by the Division of Toxicology, Armed Forces Institute of Pathology (AFIP). [FN86] Each month AFIP sends known positive and negative samples to each certified laboratory. The laboratory is aware that the samples are from AFIP, but it is not aware of which samples are positive or negative. The laboratory must test the samples, identify the positive samples **\*15** by type of drug, quantify the drug metabolites in the positive samples, and return the results to AFIP for evaluation. [FN87]

AFIP also monitors each certified laboratory by sending pre-tested samples to the laboratories in a way that they cannot know that the samples came from AFIP. [FN88] These samples are called 'double blind.' On a quarterly basis, AFIP assigns fictitious social security numbers to these 'double blind' samples, and sends the samples to Army installations. AFIP instructs the installation biochemical testing coordinator to integrate these control samples with the real samples sent to the laboratory. Thus, the laboratory cannot know that some of the samples in a particular shipment are from AFIP. The laboratory reports all results to AFIP and to the installation that provided the samples. AFIP thereby can determine whether the laboratory correctly reported the results of the AFIP 'double blind' samples. If the laboratory incorrectly reports that any of the negative AFIP samples are positive, the laboratory can be decertified. [FN89]

Testimony on internal and external quality control can be critical in overcoming the skepticism that some panel members may have about **urinalysis** results. [FN90] The expert must be careful not to assert that the technicians are perfect, and never err. The key is that the internal and external quality control is so rigorous and thorough that any mistakes made are identified and corrected before the laboratory certifies and reports any results. [FN91]

The trial counsel must carefully plan to present the expert's testimony in a way that ensures that the fact-finder can follow the testimony and references to laboratory documents. The trial counsel and expert should first agree that the expert's testimony will be as simple and non-technical as possible. Confusion is always the trial counsel's enemy, particularly in a **urinalysis case**. There are at least three options for helping the fact-finder understand the expert's testimony through visual aids. First, the expert can use an overhead projector to show transparencies of critical laboratory documents pertaining to the accused's sample. Second, the expert can use an easel to show enlarged copies of the documents. Third, the expert can use a colored marker to highlight key portions of the documents, even though the fact-finder does not see the laboratory documents until they are received during deliberations. The first two options require the trial counsel to prepare the visual aids in advance, but the aids better assist the fact-finder in following the expert's testimony as it is given. Before attempting to use these two visual aids, however, trial counsel should know whether the judge will permit their use, as their use would allow the panel to see the documents before they were admitted into evidence. [FN92]

#### Proving Wrongfulness

The trial counsel must also consider how to prove the second element of the offense: that the use was wrongful. [FN93] The most common way of establishing wrongfulness is by relying on the fact-finder to draw the permissive inference that use of drugs is wrongful, absent evidence to the contrary. [FN94] Application of this presumption is straightforward when the accused presents no evidence that the use was not wrongful. [FN95]

The more difficult questions are whether this inference survives when the defense raises evidence that the use was not wrongful, and, if so, whether as a matter of law the inference alone is sufficient to support a conviction. The Court of Military Appeals answered both of the questions in the affirmative in *United States v. Ford.* [FN96] In *Ford*, a **urinalysis case**, the accused denied using marijuana during the period charged, and suggested that his now-estranged wife cooked the marijuana into his food. Other defense evidence established that the wife had both the motive and the opportunity to do so, and that she occasionally used marijuana. The accused was convicted, despite the government's

inability to rebut the defense evidence concerning lack of wrongfulness.

On appeal, the Court of Military Appeals rejected the accused's argument that the permissive inference does not apply when the defense presents evidence that the use was \*16 not wrongful. [FN97] The court also rejected the argument that when the defense raises evidence showing the use was not wrongful, the government must rebut this evidence. The court noted, however, that unless the government rebuts this evidence it runs an increased risk that the fact-finder will acquit the accused, either because it does not draw the inference or because it finds that the inference is insufficient to prove wrongfulness beyond a reasonable doubt.

#### Anticipating Defenses

In a **urinalysis case**, as in any **case**, the trial counsel should anticipate and prepare for possible defenses. There are five general matters that the accused might raise to challenge either the use or its wrongfulness: (1) the chain of custody was defective; (2) the laboratory erred in analyzing the accused's sample; (3) the accused passively inhaled drug smoke; (4) the accused unknowingly ate the drug; and (5) the accused is a good soldier and could not have used drugs.

The first possible challenge is that the chain of custody of the urine was defective, raising the possibility that it was not the accused's urine that was positive. The trial counsel will address this challenge during the **case**-in-chief, by presenting the testimony of everyone who handled the sample at the installation-usually the observer, UADC, and the installation biochemical test coordinator [FN98]-and the testimony of the laboratory expert concerning the handling of the sample at the laboratory. [FN99] Together, this testimony will explain and authenticate every significant entry on the DA Form 5180-R, the labels on the urine bottle, the **urinalysis** ledger that the UADC maintains, and all the laboratory documents, thereby establishing that it was the accused's urine that the laboratory tested as positive. The accused, challenging the chain of custody, may testify that the observer or UADC left the urine samples unattended or otherwise handled the samples in a way permitting confusion or tampering. The trial counsel can rebut this allegation with testimony from the observer, the UADC, or others who provided a sample during the **urinalysis** in question. The trial counsel's thorough preparation of the **case**-in-chief should preclude successful assertion of this defense.

The second possible defense is that the laboratory erred in analyzing the accused's urine. To raise the defense effectively the accused will need to have an expert witness testify, specifying the error. The accused's vague assertions of laboratory error, without an expert witness, are unlikely to be credible. Before trial, the trial counsel will know from the accused's request for the expert witness that the accused is calling an expert witness, and will know the essence of that testimony. [FN100] The trial counsel prepares for this defense by interviewing the defense expert and a government expert. These interviews provide the trial counsel with the information to prepare the cross-examination of the defense expert and to prepare the government expert to rebut. By having the government expert testify to the laboratory's handling procedures, scientific tests, and quality control during the **case**-in-chief, the trial counsel puts the defense is further reduced if the trial counsel effectively cross-examines the defense's expert witness, and produces the government expert to rebut the defense's expert witness, and produces the government expert to rebut the defense's expert witness, and produces the government expert to rebut the defense's expert witness, and produces the government expert to rebut the defense expert witness' specific allegations of error.

The third possible defense is that the accused passively inhaled smoke containing the drug, usually marijuana. This defense is based on a number of scientific studies that have documented the possibility of a person having measurable levels of marijuana metabolites in the urine after passively inhaling marijuana smoke. [FN101] Passive inhalation is unlikely to be a successful defense at trial for two reasons. First, passive inhalation of marijuana smoke will not result in the presence of marijuana metabolites at levels that would be deemed to be positive by the RIA screening test. [FN102] Thus, a urine sample having enough marijuana metabolites in it to be screened as positive by RIA at DOD threshold levels has more of the marijuana metabolites than could have been caused by passive inhalation. Second, to assert the defense **\*17** of passive inhalation the accused must necessarily produce evidence that he

was in the presence of marijuana smoke for some period of time shortly before he provided the urine sample. This evidence is unlikely to impress the fact-finder, and may do more harm than good to the accused.

If the accused asserts that he or she passively inhaled marijuana smoke, the trial counsel should cross-examine the accused to elicit as much detail as possible concerning the circumstances, such as the size of the room, the ventilation of the room, how long the accused was in the room, how much marijuana was smoked in the room, [FN103] the number of marijuana cigarettes being smoked simultaneously, how long after the passive inhalation the accused provided his urine sample, [FN104] and how many times he urinated between the passive inhalation and providing his urine sample for the **urinalysis**. [FN105] The trial counsel, having pinned the accused to this story on passive inhalation, can demonstrate the implausibility of the accused's version either by calling the laboratory expert in rebuttal, or by asking the military judge to take judicial notice of the studies and data available on passive inhalation. [FN106]

The fourth possible defense is that the accused unknowingly ate the drug. This defense is based on scientific studies documenting the possibility that unknowing ingestion of a drug can result in the presence of drug metabolites in the urine at levels exceeding DOD screening levels. [FN107] Unknowing oral ingestion, like passive inhalation, would negate the 'wrongfulness' elements of the offense.

Although this defense is scientifically possible and may be easy for the accused to raise, the real issue is whether the fact-finder will believe the accused. [FN108] If the fact-finder does not believe the accused, the government can still prove the element of wrongfulness by the permissive inference, without producing evidence to rebut the accused's testimony. [FN109] The trial counsel's effective cross-examination of the accused may help the fact-finder to disbelieve the accused. The trial counsel should pin down the accused on what he believes he ate that contained drugs, how much of that food he ate, when and where he ate this food, who put the drugs in his food and why, and whether anyone can corroborate this story. The success of this cross-examination will depend on the trial counsel's advance warning of and preparation for this defense. The accused's answers to these questions should give the trial counsel something to rebut.

If the accused is able to answer these questions on cross-examination, the best rebuttal witness for the government is the person who the accused alleges tampered with the food. An expert witness may also rebut some of the accused's testimony by showing that the scenario that the accused described could not have caused any urine to be positive at such a level. For example, if the accused claimed to have drunk 'herbal tea' (marijuana boiled in tea), the expert could testify that this does not explain marijuana metabolites in the accused's urine. [FN110]

If the accused is unable to answer these questions, but is asserting only that someone must have spiked the food, the accused's credibility will be diminished. The trial counsel will be able to argue the inherent unlikelihood of someone unknowingly eating drugs, the apparent lack of motive for anyone to spike the accused's food, and the unlikelihood of someone without a motive purchasing or using costly illegal drugs just to spike the accused's food.

The fifth possible defense is that the accused is a good soldier and could not have used drugs. This is the 'good soldier' defense. This defense is authorized by Military Rule of Evidence 404a(1), permitting the accused to introduce evidence of a pertinent character trait, and military **cases** holding that good military character is pertinent when the accused is charged with an offense, such as use of drugs, that strikes at the heart of military discipline and readiness. [FN111] This defense permits the accused to introduce good military character evidence on the merits to show that the accused is not the type of soldier to use drugs. The accused can introduce this evidence without regard to whether the trial counsel has attacked the accused in any way.

The best way to rebut this defense is to produce witnesses who can testify that the accused's military character really is not good, or to cross-examine the defense character witnesses about their knowledge of specific instances of

the **\*18** accused's conduct. [FN112] If the accused truly does have a good military character, however, the trial counsel will not have any 'ammunition' with which to cross-examine or rebut. In such a **case**, the trial counsel can cross-examine the defense character witnesses concerning their lack of knowledge of the accused's 'off-duty' activities and lack of knowledge of whether the accused actually used the drugs as charged. The trial counsel can also argue in closing that good duty performance does not preclude the conclusion that the accused used drugs, citing any number of sports personalities who are proficient at their sport, yet use drugs. The trial counsel must refocus the fact-finder's attention on the scientific evidence conclusively establishing the accused's guilt.

If the accused raises any of several of the above defenses, the trial counsel may wish to offer the testimony of an expert witness to rebut either the accused or a defense expert witness. If so, the trial counsel should consider designating the expert as a government representative under Military Rule of Evidence 615. Such designation would allow the government expert to remain at the trial counsel's table while other witnesses testify, including the accused and any defense expert. The expert's presence may facilitate later rebuttal testimony, and will allow the expert to provide immediate suggestions to the trial counsel in cross-examining defense witnesses.

### Conclusion

When a trial counsel first learns that a commander is contemplating a court-martial based on a positive **urinalysis**, the trial counsel must carefully assess the **case**. An important initial consideration is the legal basis upon which the commander seized the accused's urine. A health and welfare inspection is frequently the legal basis, but probable cause and consent may also form the basis. The trial counsel must carefully examine the facts surrounding the **urinalysis** to ensure that the commander had a proper basis to conduct the **urinalysis**. If there was not a proper basis, the **urinalysis** results will be suppressed at trial, terminating the government's **case** against the accused.

A second important preliminary consideration is whether the **urinalysis** was properly administered in accordance with the requirements of Appendix E to Army Regulation 600-85. If errors in the administration of the **urinalysis** implicate the chain of custody, charges should not be preferred. Procedural errors not directly implicating the chain of custody do not mandate exclusion of the **urinalysis** results, but these errors may result in an acquittal if they cause the fact-finder to have a reasonable doubt about the chain of custody.

Weaknesses in the government's **case**, resulting from an improper basis for administering the **urinalysis** or an improperly conducted **urinalysis**, may cause the trial counsel to recommend administrative separation of the accused, rather than court-martial.

After the decision is made to proceed to court-martial, the trial counsel must begin preparing for trial. The trial counsel must decide how to prove use. Introduction of the laboratory reports alone is insufficient. The government must provide an additional basis upon which the fact-finder can conclude that the accused used the drug. This additional basis can be an expert witness, a stipulation, judicial notice, or some combination. The trial counsel will most frequently rely on an expert witness from the laboratory that tested the urine. The trial counsel will most often prove wrongfulness by relying on the fact-finder to draw a permissive inference of wrongfulness.

The trial counsel must also deliver, anticipate, and prepare for possible defenses: defective chain of custody, laboratory error, passive inhalation, unknowing ingestion, and the 'good soldier' defense.

Contested **urinalysis cases** will continue to be difficult **cases** to prosecute successfully, because they almost always rely solely on circumstantial, uncorroborated scientific evidence. When new trial counsel are aware of the issues that frequently arise in such **cases**, **urinalysis** prosecution's become less difficult and more successful.

[FNa] This article is based upon a paper originally submitted in May 1988 in satisfaction of the Writing for Publication elective of the 36th Judge Advocate Officer Graduate Course.

[FN1] Although this article is written primarily for trial counsel, it should also prove useful to defense counsel who are trying a **urinalysis case**.

[FN2] Murray v. Haldeman, 16 M.J. 74 (C.M.A. 1983).

[FN3] Manual for Courts-Martial, United States, 1984, Military Rule of Evidence 313(b) [hereinafter Mil. R. Evid.].

[FN4] Mil R. Evid. 315.

[FN5] Mil R. Evid. 314(e).

[FN6] Mil R. Evid. 313(b).

[FN7] Id.

[FN8] All inspections need not be conducted or directed by a commander; 'any individual placed in a[n]... appropriate supervisory position may inspect the personnel and property within his or her control.' Mil R. Evid. 313(b) analysis. For example, a platoon leader may inspect his platoon. **Urinalyses** typically must be directed by a commander, however, because he is the only person in the unit in a command or supervisory position over all the persons to be tested in the unit.

[FN9] See United States v. Johnston, 24 M.J. 271 (C.M.A. 1987).

[FN10] Id.

[FN11] Mil R. Evid. 313(b).

[FN12] United States v. Rodriguez, 23 M.J. 896 (A.C.M.R. 1987).

[FN13] *Id. Rodriguez* recognizes that it is not unreasonable or improper for a commander directing urine testing to intend to take disciplinary action against soldiers who are identified as drug users. Many commanders contemplate disciplinary action against drug abusers because such abuse undermines the fitness of the abuser, and the good order, discipline, and fitness of the entire unit.

[FN14] Mil. R. Evid. 313(b). *See* <u>United States v. Austin, 21 M.J. 592 (A.C.M.R. 1985)</u>, affirming the military judge's suppression of **urinalysis** results, where the company commander, within three days of receiving a report that sergeants in his unit were using drugs, directed a **urinalysis**. The military judge held that the commander's primary purpose in ordering the **urinalysis** was to locate drug abusers and to initiate disciplinary actions against them.

[FN15] Mil. R. Evid. 313(b).

[FN16] There are at least two ways that commanders often select soldiers at random to provide urine samples, when the entire unit does not provide samples. One way is for the commander to pull numbers from a hat, requiring that all

soldiers present for duty with a social security number ending in the same number as that drawn from the hat provide a sample. A similar method is to pull platoon numbers from a hat, requiring that all soldiers present for duty in the selected platoons provide a sample. Trial counsel should encourage commanders to select soldiers at random, even though random selection is not required. Random selection precludes a successful challenge that the command selected particular soldiers to provide samples. It may also help deter drug abuse by preventing soldiers from being able to predict which platoon will take the next **urinalysis**; such predictions are possible when the commander selects soldiers by systematically rotating through platoons.

[FN17] Mil R. Evid. 313(b).

[FN18] See, e.g., United States v. Rodriguez, 23 M.J. 896 (A.C.M.R. 1987).

[FN19] See, e.g., United States v. Shepherd, 24 M.J. 596 (A.F.C.M.R. 1987).

[FN20] Illinois v. Gates, 462 U.S. 213 (1983).

[FN21] See Message, HQ, Dept. of Army, 021937Z Sep 83, subject: Recommended Drug Testing Intervals.

[FN22] *Id.* The suggested maximum drug detection times for the seven drugs are: amphetamines-7 days; barbiturates-7 days; cocaine-4 days; heroin/morphine-4 days; marijuana-16 days; methaqualone-5 days; and phencyclidine-8 days.

[FN23] 24 M.J. 596 (A.F.C.M.R. 1987).

[FN24] Id. at 599.

[FN25] Id. at 599.

[FN26] Mil. R. Evid. 311(b)(3) (good faith) and Mil. R. Evid. 311(b)(2) (inevitable discovery). Thus, if a commander authorized a person acting in a law enforcement capacity to obtain a urine sample from a soldier, the **urinalysis** results may be admissible under the good faith exception if the commander had a substantial basis for his belief that he had probable cause to do so, notwithstanding a court's later determination that the commander lacked probable cause. *But see*, <u>United States v. Queen, 26 M.J. 136 (C.M.A. 1988)</u>. Likewise, if a commander directed a soldier to provide a urine sample, not based on probable cause, the **urinalysis** results are admissible under the inevitable discovery exception if the sample inevitably would have been taken in the near future, such as if a unit-wide **urinalysis** had been previously scheduled for the next morning.

[FN27] The limited use policy is defined in Army Reg. 600-85, Personnel: General-Alcohol and Drug Abuse Prevention and Control Program, para. 6-4 (3 November 1986) [hereinafter AR 600-85].

[FN28] *Id.* para. 6-4a(1).

[FN29] Mil. R. Evid. 314(e).

[FN30] Id.

[FN31] United States v. Stoecker, 17 M.J. 158 (C.M.A. 1984).

#### [FN32] United States v. Pellman, 24 M.J. 672 (A.F.C.M.R. 1987).

# [FN33] United States v. White, 24 M.J. 923 (A.F.C.M.R. 1987).

[FN34] AR 600-85, Appendix E establishes the standard operating procedures for the proper administration of a **urinalysis**. A **urinalysis** is administered by at least two people at the unit. The first is the unit alcohol and drug coordinator (UADC), who is primarily responsible for ensuring that all the paperwork is correct. The UADC will often perform his duties at a desk outside the latrine where the soldiers are providing samples. At the desk the UADC will have the items he needs to conduct the **urinalysis**: empty plastic bottles with lids, labels to attach to the bottles, small 12-bottle boxes in which to place the bottles, DA Forms 5180-R (**Urinalysis** Custody and Report Record), **urinalysis** ledger, pens, and a copy of AR 600-85 to remind him how to administer the **urinalysis** properly. The second person involved in administering the **urinalysis** is the observer, who is primarily responsible for watching soldiers urinate into the bottle and preventing tampering with samples. The observer must be at least an E-5 of the same sex as the soldier providing the sample.

A soldier who is ready to provide a sample goes to the UADC's desk. The UADC writes the soldier's social security number, often taken from the soldier's identification card, the julian date, and an assigned specimen number on a label. The UADC puts the label on an empty bottle and gives the bottle to the soldier in the presence of the observer. The soldier verifies his or her social security number by initialling the label and by signing a separate **urinalysis** ledger. The UADC has recorded the soldier's social security number, julian date, specimen number, and observer's name on the ledger. The observer then verifies the label and signs the ledger.

The observer then escorts the soldier with the bottle to the latrine, where the observer watches the soldier urinate into the bottle. The soldier caps the bottle, and gives it to the observer, who retains custody until it is returned to the UADC. When transferring custody to the UADC, the observer initials the label on each bottle, and signs the chain of custody section of the DA Form 5180-R, which the UADC has prepared, releasing up to twelve samples to the UADC. Upon receipt, the UADC also initials the label of each bottle and acknowledges receipt by signing the chain of custody section of the DA Form 5180-R.

The UADC puts the DA Form 5180-R, which contains the record of the chain of custody for up to twelve samples, into the small box that contains the corresponding samples. The UADC secures all boxes until he transports them to the installation biochemical collection point, which must be within 24 hours after collection. At the collection point, the installation biochemical testing coordinator opens the unsealed boxes, reviews each DA Form 5180-R for completeness and accuracy, compares the information on each labelled bottle to the information on the corresponding DA Form 5180-R, and ensures that each has a sufficient quantity of urine. If the testing coordinator finds no deficiencies, he directs the UADC to again sign the chain of custody section of each DA Form 5180-R, releasing custody of the samples to the testing coordinator, who also signs the DA Form 5180-R. The UADC then uses tape to seal each edge and flap of each box, signs across the top and bottom of each box, and gives all the boxes to the testing coordinator sends the boxes by courier or registered mail to the laboratory for analysis. The coordinator may decide to prescreen all samples at the installation, in which **case** he would forward to the laboratory only those samples that screened positive, discarding the negative samples. If the testing coordinator pre-screens the samples, he must do so in accordance with the procedures specified in Appendix F to AR 600-85.

# [FN35] United States v. Hudson, 20 M.J. 607 (A.F.C.M.R. 1987), pet. denied, 21 M.J. 32 (C.M.A. 1985).

[FN36] <u>United States v. Caceres, 440 U.S. 741 (1979)</u> (Internal Revenue Service agent's tape recordings of conversation with the accused were not suppressed, even though the agent failed to procure the proper authorization to record specified in agency regulations).

[FN37] Id. For a military case applying the Caceres analysis to a violation of a Navy regulation requiring

second-echelon command authorization for **urinalyses** involving more than 200 sample or 20% of a unit, *see* <u>United</u> <u>States v. Hilbert, 22 M.J. 526 (N.M.C.M.R. 1986)</u> (regulation was not mandated by the Constitution or federal law, and was not designed to protect individual rights).

[FN38] Regarding the first prong, the procedures of Appendix E to AR 600-85 are generally mandated by Dep't. of Defense Directive 1010.1, Drug Abuse Testing Program (Dec. 28, 1984). Regarding the second prong, it would be ludicrous to assert that Appendix E to AR 600-85, which requires that an observer watch the soldier urinate directly into a bottle, was promulgated to confer privacy rights on soldiers.

[FN39] The legal bases for conducting **urinalyses** and the proper administration of a **urinalysis** are discussed above. Other factors that may affect the likelihood of successful prosecution include the relative skill and experience of counsel, whether the accused has some colorable explanation of how the drug got into his system, such as innocent ingestion, and whether the accused can raise the 'good soldier' defense by calling witnesses to attest to his character. These defenses are discussed below.

[FN40] Army Reg. 635-200, Personnel Separations: Enlisted Personnel, para. 1-19b (5 July 1984) [hereinafter AR 635-200].

[FN41] AR 635-200, para. 2-12a(1).

[FN42] AR 635-200, para. 2-11a.

[FN43] See AR 635-200, para. 2-10.

[FN44] The litigation packet is a multi-page document, typically containing a certified DA Form 5180-R (**Urinalysis** Custody and Report Record), the RIA results, the GC/MS results, and the laboratory chain of custody.

[FN45] See Message, HQ, Dept. of Army, 021937Z Sep 83, subject: Recommended Drug Testing Interval, which recommends minimum drug testing intervals of 30 days for marijuana and 15 days for all other drugs. This recommendation is based on the maximum drug detection time, plus a safety buffer, and is designed to preclude the possibility that a second **urinalysis** will reflect drug use measured at an earlier **urinalysis**.

[FN46] It is better for the trial counsel to charge a liberal, wide window, because the specification can always be amended at trial to narrow the window to conform to the testimony, including the possible testimony of a defense expert witness. Narrowing the window, as opposed to expanding it, reduces the likelihood that the defense can claim that the amended specification failed to put the accused on notice of the charges against which must be defended. *See* Manual for Courts-Martial, United States, 1984, Rule for Courts-Martial 603 [hereinafter R.C.M.].

[FN47] The decision on the level of the court-martial need not be made before preferral, but the trial counsel will want to have discussed this matter with the company, battalion, and brigade commanders before preferral, so that the **case** may be expeditiously referred after preferral.

[FN48] See R.C.M. 306(b) discussion.

[FN49] See AR 600-85, para. 1-11c, d; AR 635-200, para. 14-12c(2).

[FN50] See AR 635-200, para. 14-12.

**[FN51]** Such a referral avoids the need to initiate a concurrent administrative separation action for the same drug use that forms the basis of the court-martial. It also avoids the contradiction in seeking the soldier's administrative separation while concurrently suggesting, by not referring the **case** to a court empowered to impose a punitive discharge, that discharge is not warranted. Of course, if the **case** is at court-martial because the accused turned down nonjudicial punishment, the trial counsel must be prepared to show that referral to a court-martial authorized to impose a punitive discharge is not vindictive prosecution.

[FN52] Manual for Courts-Martial, United States, 1984, Part IV, para. 37(b)2 [hereinafter MCM, 1984].

[FN53] See, e.g., United States v. Mercer, 23 M.J. 580 (N.M.C.M.R. 1986), rev'd, 25 M.J. 160 (C.M.A. 1987); United States v. Cordero, 21 M.J. 714 (A.F.C.M.R. 1985).

[FN54] United States v. Murphy, 23 M.J. 310, 312 (C.M.A. 1987).

[FN55] Id.

[FN56] United States v. Spann, 24 M.J. 508 (A.F.C.M.R. 1987).

[FN57] Id. at 511.

[FN58] The government still might have to produce an expert in rebuttal if, for example, the defense has an expert testify regarding passive inhalation. In other **cases** the government could rebut with a local expert witness. For example, if, as in *Spann*, the accused asserts that the cocaine metabolites in his urine came from his codeine pills, a local expert could probably testify that codeine, a derivative of opium, is chemically unrelated to cocaine, which is obtained from coca leaves. *Id.* at 511 n.1.

[FN59] Mil. R. Evid. 201(b).

[FN60] W. Anderson, Judicial Notice in Urinalysis Cases, The Army Lawyer, Sept. 1988, at 19.

[FN61] See id. at 22.

[FN62] See id. at 25.

[FN63] Interview with Major Jeffrey A. Gere, United States Army Medical Services Corps, Officer in Charge, United States Army Forensic Toxicology Drug Testing Laboratory, Fort Meade, Maryland, at the Fort Meade Laboratory (June 1, 1987) and at Fort Riley, Kansas (June 10-11, 1987). These interviews were conducted in preparation for Major Gere's testimony as an expert in the fields of chemistry and forensic toxicology at a contested **urinalysis case**.

[FN64] Id.

[FN65] Id.

[FN66] Id.

[FN67] Id.

[FN68] Id.

[FN69] Id.

[FN70] Id.

[FN71] Id.

[FN72] Id.

[FN73] Bleser and Imwinkleried, Gas Chromatography-Mass Spectrometry (GC/MS), 7 The Champion 6 (1983).

[FN74] Id.

[FN75] Id.

[FN76] Id.

[FN77] Id.

[FN78] Id.

[FN79] Id.

[FN80] Id.

[FN81] Interview with Major Jeffrey A. Gere, *supra* note 63.

[FN82] Id.

[FN83] *Id.* Poppy seeds produce the same metabolites that are produced by heroin; codeine and morphine. Amphetamines produce the same metabolites as some prescription drugs. Nevertheless, toxicologists can usually determine if the metabolites were the result of illegal drug use by the concentration levels of the metabolites in the urine. *See generally*, Anderson, *supra* note 60.

[FN84] *Id.* A batch is a configuration of urine samples. A batch to be tested by RIA has 320 samples: 219 unknown samples; 60 quality control standards having various known concentrations of drugs, which are used to create the calibration curve to quantify those unknown samples that are determined to positive; and 41 other quality control samples. Of these 41 quality control samples, 26 are 'open' (13 positive and 13 negative) 15 are 'blind' (8 positive and 7 negative). A batch to be tested by GC/MS has 13 samples: 8 unknown samples and 5 quality control samples, 3 of which are 'open' (all positive), and two of which are 'blind' (1 positive and 1 negative). *Id.* 

[FN85] Id.

[FN86] Id.

[FN87] Id.

[FN88] Id.

[FN89] Id.

**[FN90]** This skepticism may have originated with the well-publicized problems that military drug testing laboratories had when the DOD drug testing program started in 1983. *See, e.g.*, Roland, *Meade Laboratory Misidentifies Two Soldiers as Drug Users*, Army Times, Oct. 17, 1983, at 1, and Roland, *Army to Reverse Actions in Drug Case*, Army Times, Jan. 23, 1984, at 1. In a **urinalysis case** with members, one way to confront the early problems with the military's drug testing program, with which many members will be familiar, is to address the issue in voir dire. This may be done by asking if any member has read or heard any negative reports about military drug testing laboratories. The trial counsel can then ask each responding member whether he or she can judge the laboratory, not on what has been heard or read about how laboratories operated in the past, but on what is heard in court about current procedures. Then, unless the defense counsel raises past problems at the laboratories, the trial counsel need not again address the past problems, except perhaps to remind the members during closing argument that they promised to base their judgment of the laboratory based on the evidence presented in court. If the defense does raise the past problems, the trial counsel can have the expert witness testify in detail as to how the current procedures differ from those used in 1983, and the effect of these changes.

[FN91] Interview with Major Jeffrey A. Gere, *supra* note 63.

[FN92] A good way for the trial counsel to determine how the judge feels about such visual aids is to raise the matter in a conference under R.C.M. 802. If the judge hesitates to allow the trial counsel to show the laboratory documents to the panel before they are admitted into evidence, the trial counsel should point out to the judge that if the laboratory reports are not later admitted into evidence, the government's **case** is ended, so there could not be any danger of the panel being improperly influenced by seeing documents not later admitted. If the judge remains reluctant, the trial counsel wishing to use these visual aids could admit them into evidence in an Article 39a session; this procedure would be cumbersome, requiring much duplication of testimony.

[FN93] See MCM, 1984, Part IV, para. 37c(5).

[FN94] MCM, 1984, Part IV, para. 37c(5); see United States v. Mance, 26 M.J. 244 (C.M.A. 1988).

[FN95] See, e.g., United States v. Bassano, 23 M.J. 661 (A.F.C.M.R. 1986).

[FN96] 23 M.J. 331 (C.M.A. 1987).

[FN97] This argument was based on the MCM's language that '[u]se . . . may be inferred to be wrongful in the absence of evidence to the contrary.' *See* MCM, 1984, Part IV, para. 37c(5).

[FN98] For a summary of the testimony that the observer, UADC, and installation biochemical testing coordinator typically can give, *see* note 34, *supra*.

[FN99] For a discussion of the testimony that any expert witness from the laboratory can give, see text accompanying

notes 64 through 92.

[FN100] See R.C.M. 703(c)(2)(B).

[FN101] See Cone, Johnson, Darwin, Yousefnejad, Mell, Paul, and Mitchell, Passive Inhalation of Marijuana Smoke: Urinalysis and Room Air Levels of Delta-9-tetraphydrocannabinol, 11 J. Analytical Toxicology 89 (1987); Cone and Johnson, Contact Highs and Urinary Cannabinoid Excretion After Passive Exposure To Marijuana Smoke, 40 Clinical Pharmacology & Therapeutics 247 (1986); Moreland, Bugge, Skuterud, Steen, Weth, and Kjelddsen, Cannabinoids in Blood and Urine after Passive Inhalation of Cannabis Smoke, 30 J. Forensic Sci. 997 (1985); Law, Mason, Moffat, King, and Marks, Passive Inhalation of Cannabis Smoke, 36 J. Pharmacy and Pharmacology 578 (1984); Perez-Reyes, DiGuiseppi, and Davis, Passive Inhalation of Marijuana Smoke and Urinary Excretion of Cannabinoids, 34 Clinical Pharmacology & Therapeutics 36 (1983); Zeidenberg, Bourdon, and Nahas, Marijuana Intoxication by Passive Inhalation: Documentation by Detection of Urinary Metabolites, 134 Am. J. Psychiatry 76 (1977). For an excellent, short, readable summary and analysis of the studies on passive inhalation of marijuana smoke, see R. Willette, Passive Inhalation of Marijuana Smoke (Dec. 1987) (unpublished manuscript), and R. Willette, A Study on Chronic Passive Exposure To Marijuana Smoke, (Dec. 1987) (unpublished manuscript).

[FN102] Affidavit of Major Freddy C. Davis, United States Air Force, then the Chief of the Air Force Drug Testing Laboratory, Brooks Air Force Base, p. 9 (9 Nov. 1984). For example, in one study two to five people were put into a room measuring 10 by 11 by 7 feet with a smoking machine that consumed the equivalent of 40 marijuana cigarettes. They remained in the closed room for two hours. Their urine was then tested at various hours after they left the room. No sample contained more than 75 nanograms of total marijuana metabolites per milliliter of urine. None of these samples would have been screened positive by DOD, because DOD uses a screening threshold of 100 nanograms of total marijuana metabolites per milliliter. This unpublished study by Waterhouse is summarized in R. Willette, Passive Inhalation of Marijuana Smoke (Dec. 1987) (unpublished manuscript). In another more severe experiment, five people were put into a room measuring 8 by 7 by 8 feet for one hour for six consecutive days. Each hour in the room they passively inhaled the smoke from 16 marijuana cigarettes. Their urine was tested at various times after they left the room. Despite this prolonged, repeated passive inhalation, none of samples would have been screened positive by RIA at the 100 nanogram per milliliter level that DOD laboratories use. This study, funded by the Navy, was conducted at the National Institute on Drug Abuse. It is summarized in R. Willette, A Study on Chronic Passive Exposure to Marijuana Smoke (Dec. 1987) (unpublished manuscript). The study is reported in full in Cone and Johnson, Contact Highs and Urinary Cannabinoid Excretion After Passive Exposure to Marijuana Smoke, 40 Clinical Pharmacology & Therapeutics 247 (1986) and Cone, Johnson, Darwin, Yousefnejad, Mell, Paul, and Mitchell, Passive Inhalation of Marijuana Smoke: Urinalysis and Room Air Levels of Delta-9-tetrahydrocannabinol, 11 J. Analytical Toxicology 89 (1987).

[FN103] One study on passive inhalation of marijuana smoke concludes that the amount of marijuana metabolites in the urine after passive inhalations depends 'on the concentration of smoke which would be a function of room size, mass of THC smoked . . . and ventilation.' Law, Mason, Moffat, King, and Marks, *Passive Inhalation of Cannabis Smoke*, 36 J. Pharmacy and Pharmacology 578, 580 (1984).

[FN104] The highest levels of marijuana metabolites in the urine will be within two to four hours after passive inhalation. See Cone and Johnson, Contact Highs and Urinary Cannabinoid Excretion After Passive Exposure to Marijuana Smoke, 40 Clinical Pharmacology & Therapeutics 247 (1986) and Cone, Johnson, Darwin, Yousefnejad, Mell, Paul, and Mitchell, Passive Inhalation of Marijuana Smoke: Urinalysis and Room Air Levels of Delta-9-tetrahydrocannabinol, 11 J. Analytical Toxicology 89 (1987).

[FN105] The highest concentrations of marijuana metabolites in the urine usually come from the first or second uri-

nation after passive inhalation. R. Willette, *Passive Inhalation of Marijuana Smoke* (Dec. 1987) (unpublished manuscript).

[FN106] See W. Anderson, supra note 60 at 25.

[FN107] See Law, Mason, Moffat, Gleadle, and King, Forensic Aspects of the Metabolism and Excretion of Cannabinoids Following Oral Ingestion of Cannabis Resin, 36 J. Pharmacy and Pharmacology 289 (1984); Ohlesson, Lundgren, Wahlen, Agurell, Hollister, and Gillespie, Plasma Delta-9-tetraphydrocannabinol Concentrations and Clinical Effects After Oral Intravenous Administration and Smoking, 28 Clinical Pharmacology & Therapeutics 409 (1980). For an excellent, readable summary of studies on oral ingestion of marijuana, see R. Willette, Oral Ingestion of Cannabis Products (Dec. 1987) (unpublished manuscript).

[FN108] 'We admonish all future offenders that a defense of innocent or unknowing use of marijuana will not overcome a permissive inference of wrongfulness unless and until such defense is found sufficiently credible to be contrary to and overcome such inference. Any other conclusion . . . would permit future offenders a windfall from the introduction of perjured of otherwise absurd testimony.' <u>United States v. Douglas, 22 M.J. 891, 895 (A.F.C.M.R. 1986)</u> (Raby, J., concurring), *aff'd*, <u>24 M.J. 129 (C.M.A. 1987)</u> (summary disposition), *cert. denied*, <u>108 S. Ct. 83 (1987)</u>.

[FN109] United States v. Ford, 23 M.J. 331 (C.M.A. 1987); United States v. Mance, 26 M.J. 244 (C.M.A. 1988).

[FN110] R. Willette, *Oral Ingestion of Cannabis Products*, (Dec. 1987) (unpublished manuscript). Marijuana must be heated to at least 300 degrees Fahrenheit to activate the tetrahydrocannabinol, the major psychoactive ingredient of marijuana. Boiling marijuana in water at 212 degrees Fahrenheit is insufficient.

[FN111] See, e.g., United States v. Kahakauwila, 19 M.J. 60 (C.M.A. 1984).

[FN112] See Mil R. Evid. 405(a), permitting cross-examination into relevant specific instances of conduct, when the witness has testified on direct examination as to reputation or in the form of an opinion as to the accused's character.

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# TAB H

# Army Lawyer April, 1995

### Department of the Army Pamphlet 27-50-269

# **\*3 URINALYSIS** ADMINISTRATIVE SEPARATION BOARDS IN RESERVE COMPONENTS

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# WESTLAW LAWPRAC INDEX

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#### Introduction

The Army has long recognized drug use as a serious problem. In particular, drug use poses a special problem in the Reserve Components (RC) of the Army. [FN1] Because RC soldiers are not subject to the rigors of military inspections and drug testing on a daily basis, detecting drug use is often more difficult. Additionally, because of legal and practical hurdles, [FN2] disciplining RC soldiers for drug abuse is frequently more difficult.

When an RC soldier is identified as a drug abuser through a **urinalysis** test, that soldier's commander typically will initiate an administrative separation action. [FN3] Many RC soldiers processed for separation are entitled to an administrative separation board. [FN4] Although governed by regulations similar to those governing separations of active duty personnel, [FN5] these board actions present many legal and practical problems unique to RC units. This article will address these problems and offer suggested approaches for government and defense counsel involved in RC **urinalysis cases**. [FN6]

#### **Commander's Options**

An RC commander has several options when a **urinalysis** test yields a positive result indicating that a soldier in the unit has abused drugs. The commander may take no action, take administrative action, or pursue disciplinary options such as nonjudicial punishment under Article 15 of the Uniform Code of Military Justice (UCMJ) [FN7] or court-martial. The commander also may be required to process the soldier for administrative separation. [FN8]

#### Nonjudicial Punishment

Because the punishments that can be imposed under Article 15 are limited in the RC, commanders rarely use nonjudicial punishment under Article 15 to deal with an RC soldier's positive **urinalysis**. Most RC soldiers cannot effectively be restricted or required to serve extra duty, because they may only serve punishment while on active duty, active duty training, annual training, or inactive duty training. [FN9] Additionally, a **\*4** commander's ability to reduce in rank some RC personnel is limited. [FN10]

Another major obstacle in imposing nonjudicial punishment on an RC soldier for drug abuse is proving jurisdiction. To establish subject matter jurisdiction, the government must prove that the RC soldier used drugs while on active duty or inactive duty training under Title 10 of the United States Code. [FN11] Because many drugs remain in the body for a substantial period of time, [FN12] this may be difficult, if not impossible, to prove, especially if the **urinalysis** test was administered during a drill weekend.

#### Courts-Martial

Another option that commanders rarely use in response to an RC soldier's positive **urinalysis** is trial by court-martial. Courts-martial pose the same jurisdictional problems discussed above. [FN13] Reserve Component courts-martial also pose considerable logistical difficulties. The accused must be recalled to active duty to be tried by a special or general court-martial under the UCMJ. [FN14] The RC commander ordinarily must obtain the consent of the supporting active component commander to refer the **case** to trial, because only active component commanders may convene special and general courts-martial. [FN15] Additionally, the costs of trying an RC soldier must be paid out of RC funds, if the RC commander initiates the court-martial. [FN16]

Another hurdle in **urinalysis** courts-martial is obtaining all the necessary evidence and witnesses. At a court-martial, live testimony from an expert from the drug testing laboratory usually is required; the test result alone is inadequate. [FN17] Therefore, **urinalysis** courts-martial can be very expensive.

#### Administrative Separations

Administrative separation is the option that commanders use most frequently to deal with an RC soldier's positive **uri-nalysis**. This option is used primarily because the procedural \*5 and evidentiary rules that apply to administrative separation actions are not as rigorous as those that apply to courts-martial [FN18] and because subject matter jurisdiction need not be proven. [FN19]

Reserve Component enlisted soldiers with six or more years regular and reserve military service and those being considered for a discharge under other than honorable conditions are entitled to an administrative separation board. [FN20] Additionally, all RC officers being considered for separation are entitled to an administrative separation board. [FN21] Although simpler than a court-martial, these board actions can present many legal and practical problems for both the government representative (recorder) [FN22] and the defense counsel (respondent's counsel). [FN23]

#### **Prosecuting a Urinalysis Separation Board**

Before prosecuting an RC **urinalysis** separation board, [FN24] the recorder must thoroughly prepare the **case**. When the board meets, the first issue that a recorder may need to address is the constitutional validity of the **urinalysis** test. [FN25] The recorder should then attempt to demonstrate that the test was conducted in accordance with the regulations governing **urina**-

lysis testing, [FN26] was scientifically valid, and indicated that the soldier wrongfully used drugs.

#### Initial Preparation

When the recorder is initially notified that he or she is responsible for a **urinalysis** board, the recorder should first check the separation packet to ensure that it has been prepared properly. The recorder should ensure that the respondent was correctly notified of the separation action. [FN27] The recorder also should ensure that the board was properly appointed [FN28] and is composed of the proper personnel. [FN29]

Additionally, as soon as the recorder learns of the assignment to a **urinalysis case**, the recorder should contact the servicing laboratory and request that a litigation packet be sent to the unit. The litigation packet is crucial to the recorder's **case**; it contains a summary of the laboratory test results indicating the amount of drugs detected during the test. It also contains a memorandum explaining the laboratory drug testing procedures. [FN30] Request the packet well in advance of the hearing to ensure that the laboratory has enough time to prepare the packet and mail it to the unit and to allow the recorder to provide a copy of the packet to the respondent's coursel in a timely manner. Once the recorder has received the litigation packet, the recorder should contact the laboratory to resolve any questions. If the recorder anticipates any questions concerning the packet that the defense will raise during the hearing,\***6** the recorder should arrange to have an expert from the laboratory available to testify by telephone. [FN31]

As soon as a date has been set for the board hearing, the recorder should immediately notify the respondent. The recorder is required to notify the respondent in writing of the date, time, location, and uniform for the hearing. The notification must include the specific allegation to be addressed, the respondent's right to counsel, the witnesses expected to be called, and the respondent's right to be present, present evidence, and call witnesses. [FN32]

Once the hearing date has been set, the recorder should contact the observer involved in the test as well as the Unit Alcohol and Drug Coordinator (UDAC) who supervised the test to ensure that they will be available, at least telephonically, [FN33] as witnesses. If the recorder is not prepared to do anything other than introduce the test results, without more, the government's **case** is in trouble if the respondent or respondent's witnesses testify about irregularities in the collection of the urine specimens. The recorder always should have these crucial witnesses present, or at least on telephonic standby, for rebuttal.

Furthermore, as soon as the hearing date has been set, the recorder also should contact the respondent's counsel to ensure that the counsel has been notified of the time, date, and location of the hearing. If a conditional waiver is acceptable to the commander, the recorder should ask the respondent's counsel whether the respondent is willing to submit this waiver. [FN34] Additionally, the recorder should ask whether the respondent is willing to stipulate to the alleged drug use. [FN35]

Prior to the hearing, the recorder should ensure that the facilities where the hearing will be held are adequate. [FN36] If telephonic testimony is anticipated (as it is in most **cases**), the hearing room should have a speaker phone. The recorder should have at least one copy for each board member of all of the documents that the recorder plans to introduce at the board, especially the litigation packet. [FN37] The recorder also should have a Privacy Act statement [FN38] and rights warning form [FN39] available, if the respondent chooses to testify. Additionally, the recorder usually will need to prepare a findings and recommendations worksheet. [FN40] A sample findings and recommendations worksheet for an RC enlisted separation board is located at Appendix A of this article.

While these steps may seem obvious to experienced RC judge advocates who handle boards routinely, they often are overlooked until the week prior to the board hearing. Delay in carrying out these simple tasks can be fatal to the government's **case**. Even if not fatal, failure to properly notify the respondent, for example, could cause the board to be delayed, move the board members to question the professionalism of the recorder, and afford the respondent undue consideration when the board members deliberate or when the separation authority takes final action.

#### Proving Constitutional Validity of the Test

The first issue that the recorder may need to address at the board hearing is the constitutional validity of the **urinalysis** test. Because a **urinalysis** test is essentially a search and seizure, [FN41] it must be conducted in accordance with the Fourth Amendment of the United States Constitution. [FN42] If the test \*7 was conducted in bad faith (*i.e.*, if officials conducting or directing the test knew it was unconstitutional) the test is not admissible at the board. [FN43] However, other violations of the Fourth Amendment will not preclude admission of the test. [FN44]

Typically, the recorder will need to establish that the test was conducted in good faith only in response to an objection by the respondent's counsel. [FN45] However, the recorder may want to establish this basis in the government's **case** in chief to show the board that the test was conducted properly. [FN46] The recorder may rely on any of the theories discussed below to demonstrate good faith. However, the recorder should realize that if he or she bases the validity of the test on either of the last two theories (fitness for duty or medical tests) the respondent may be entitled to an honorable discharge. [FN47]

#### Inspections

A **urinalysis** test is constitutional if it is part of a valid random inspection. [FN48] The recorder can establish that the personnel who conducted the test believed it to be a proper inspection by calling the commander who ordered it. Alternatively, the recorder may offer a statement of the commander or testimony of individuals who witnessed this order. [FN49]

Ordinarily, the RC unit commander must order an inspection. [FN50] However, in some situations, inspections ordered by individuals other than the RC commander may be valid. For example, if the RC unit is attached to an active duty unit, the active duty commander may properly order the inspection. [FN51]

### Probable Cause Tests

A **urinalysis** test is constitutional if based on probable cause [FN52] and properly authorized by a military judge, magistrate, or appropriate commander. [FN53] The recorder can demonstrate that the personnel who conducted the test believed it to be a proper probable cause **urinalysis** by offering the testimony or statement [FN54] of the person who authorized the test. Alternatively, the recorder may introduce the authorization itself, if it is in writing. [FN55]

Probable cause to order a **urinalysis** may be based on information that the soldier used drugs or that he or she appears intoxicated from something other than alcohol. [FN56] If probable cause is based on a report of drug use, the report must be sufficiently recent to justify a conclusion that traces of drugs or drug metabolites are still in the soldier's urine, because drugs dissipate from the body over time. [FN57]

#### Consent Tests

A **urinalysis** is constitutional if obtained with the consent of the soldier tested. [FN58] The recorder may demonstrate that the person conducting the test believed that he or she had valid consent by presenting testimony or a statement. Alternatively, **\*8** if the consent was in writing, the recorder may introduce the document on which the consent was recorded. [FN59]

The respondent's consent must have been voluntary under the totality of the circumstances. [FN60] If the respondent asked what would happen if consent was not given and the commander simply replied that the test would be ordered anyway, the resulting consent is invalid. [FN61] However, if the commander replied by meaningfully explaining the consequences of a consent test, the respondent's consent is probably valid. [FN62]

#### Fitness for Duty Tests

A **urinalysis** is constitutional if a commander orders it based on reasonable suspicion to determine the soldier's fitness for duty. [FN63] The recorder can demonstrate that the personnel conducting the test believed it to be a proper fitness for duty test by introducing the testimony or statement of the commander who directed it. [FN64]

The reasonable suspicion required for a fitness for duty test is the same as the reasonable suspicion required for a "stop and frisk." [FN65] Reasonable suspicion is more than a mere hunch; it must be based on articulable facts, although it need not rise to the level of probable cause. [FN66]

A fitness for duty test is subject to the limited use policy. [FN67] This means that, although such test results are admissible in an administrative separation proceeding, the soldier is entitled to receive an honorable discharge if the government initially introduces such evidence. [FN68] However, the limited use policy does not apply if the government introduces a fitness for duty test for rebuttal or impeachment purposes. [FN69]

#### Medical Tests

A **urinalysis** is constitutional if conducted for a valid medical purpose. [FN70] For example, if a soldier reports for medical treatment and acts unusually, a physician may order a drug screen to determine whether the patient is under the influence of drugs. [FN71] The recorder may demonstrate that the person conducting a test believed it to be a valid medical **urinalysis** by introducing his or her testimony or statement. [FN72]

Nearly all medical tests are subject to the limited use policy. [FN73] If the government initially introduces these test results at an administrative separation proceeding, the respondent must receive an honorable discharge. [FN74] However, the limited use policy does not apply to a test obtained during a soldier's emergency medical care for a drug overdose, if the treatment resulted from the soldier's apprehension. [FN75] Additionally, **\*9** medical tests unrelated to suspected drug abuse or the soldier's participation in the Alcohol and Drug Abuse Prevention and Control Program (ADAPCP) may not be subject to the limited use policy. [FN76]

# Proving That the Test Was Properly Conducted

The recorder at an RC **urinalysis** board should address the procedures used at the unit to obtain the urine sample. The recorder must demonstrate that the respondent submitted the sample shipped to the laboratory. As a practical matter, this is often the "weak link" in the government's **case** and the primary point that the respondent will challenge at the board. Therefore, this should be the focus of preparation by the recorder.

Reserve Component units use basically the same procedures that active Army units use to conduct **urinalysis** tests. [FN77] *Army Regulation 600-85* describes these procedures. [FN78] The UDAC is responsible for conducting the **urinalysis**. Soldiers who provide urine samples must be directly observed by another soldier. [FN79] The label on the sample bottle must include the social security number of the soldier providing the sample and the initials of the soldier, the observer, and the UDAC. [FN80] The chain of custody of the bottle is recorded on a specimen custody document. [FN81] The bottle is sealed and shipped directly to the appropriate drug testing laboratory. [FN82]

To demonstrate that the test was conducted properly, the recorder may introduce testimony from the observer and UDAC who administered the test. These individuals should describe the procedures used during the test, explain how the specimen custody document is used, and describe what they did with the sample and custody document. These individuals need not recall

precisely how the sample was handled, as long as they can reasonably establish that the sample sent to the laboratory was the respondent's. [FN83]

The observer or UDAC also should describe the procedures used to maintain the urine sample once it left their custody. Alternatively, these procedures may be established through official notice [FN84] by introducing copies of appropriate portions of *AR 600-85*. [FN85] Appendices B and C of this article contain suggested direct examination questions for the observer and UDAC.

The recorder need not demonstrate an unbroken chain of custody, as required at a court-martial, as long as the recorder demonstrates that the test result is reasonably relevant and material. [FN86] Deviations from the procedures required by regulation generally do not affect the admissibility of a **urinalysis** test. [FN87] However, the defense can use deviations in procedures to attack the weight that board members should give the test.

# Proving Scientific Validity of Test

The next issue that the recorder at an RC **urinalysis** board should address is the procedures used to test the sample and the scientific validity of these tests. The recorder should first determine what procedures the laboratory used in testing the respondent's sample and then gather the evidence necessary to demonstrate to the board that these procedures were scientifically valid.

\*10 Army **urinalysis** laboratories [FN88] test all properly received urine samples for metabolites of marijuana and cocaine. [FN89] They also test each sample for at least one additional drug or drug metabolite. [FN90] The laboratories conduct two basic types of tests. The first, a radioimmunoassay (RIA) test, is a screening test which is conducted on all samples properly received at the laboratory. [FN91] The Department of Defense has established cut-off levels for the various drugs detected during this test; if the test does not reveal an amount of drugs or drug metabolites above this level, the sample is reported as negative. [FN92] Only if the screening test reveals an amount of drugs or drug metabolites above the cut-off level will the second test be performed. [FN93]

The second test conducted by the laboratories, a gas chromatography/mass spectroscopy test, confirms the presence of drugs or metabolites in the sample. [FN94] This test is the best scientific method available for detecting drugs or drug metabolites. [FN95] The Department of Defense has established separate cut-off levels for the various drugs detected during this test as well. [FN96] A urine sample will be reported as positive only if this test reveals an amount of drugs or metabolites above the cut-off level. [FN97]

To allow the board to consider the test results, the recorder should introduce the litigation packet prepared by the drug testing laboratory. [FN98] The packet should be sufficient to establish\*11 the scientific validity of the test. [FN99] The litigation packet contains a summary of the test results, indicating the amount of drugs detected, all of the chain of custody documents pertaining to the specimen, and a detailed listing of all the data pertaining to the tests performed on the sample. Additionally, it contains a memorandum explaining the laboratory's testing procedures--such as the chain of custody and quality control measures used to ensure that the test results are accurate. It also explains the tests themselves and their scientific validity. [FN100]

Although an administrative separation board does not require live testimony of an expert, the recorder should consider having an expert from the laboratory on stand-by to be interviewed over the telephone. [FN101] The expert can explain the tests and vouch for the validity of the tests, if the board is not convinced by the litigation packet. Additionally, the expert can answer specific technical questions, such as the plausibility of the respondent's defense to the alleged drug use.

# Proving Wrongful Use

The recorder's final task at a **urinalysis** separation board is to prove that the soldier knowingly ingested illegal drugs. [FN102] The recorder may do this by relying on the inference that the presence of a drug or drug metabolite in a soldier's urine indicates that the soldier knowingly and wrongfully used drugs. [FN103] This permissive inference of wrongfulness may be sufficient to prove wrongful use of drugs, even if the respondent presents evidence that the ingestion was not knowing or wrongful. [FN104]

The recorder also should interview other members in the respondent's unit to determine if any evidence of drug use exists independent of the **urinalysis** test. If the respondent confessed or made any statements indicating drug use, the recorder should offer these statements into evidence. [FN105]

#### **Defending a Urinalysis Separation Board**

To defend an RC **urinalysis** board, [FN106] the respondent's counsel should consider challenging the constitutional validity of the test, the chain of custody procedures used at the unit to collect the urine sample, and the scientific validity of the test. Of these issues, the chain of custody procedure used at the unit is most frequently exploited by defense counsel. The respondent's counsel should interview, at least by telephone, all of the individuals involved in the collection of the sample to determine if the chain of custody contains any weaknesses.

The respondent's counsel also may be able to demonstrate that the respondent's use of drugs was not wrongful. For example, the respondent or other witnesses may be willing to testify that someone slipped drugs into the respondent's food or drink, which the respondent unwittingly ingested.

Another defense tactic is for the respondent to admit to drug use but claim to have been successfully rehabilitated for his or her substance abuse problem. This strategy is most effective when the test occurred long before the hearing date, which, unfortunately, is fairly common. A related tactic is to present character witnesses to demonstrate that the respondent should be retained in the service despite the use of illegal drugs.

Finally, the respondent's counsel should consider whether to attempt to obtain any additional tests to support any of the above defenses. These tests may be either at the government's or, more likely, the respondent's expense.

The facts of each **case**, the respondent's record and background, the general practice in the RC organization, [FN107] and the experiences of the respondent's counsel and his or her colleagues before boards within the organization [FN108] will dictate which of the above defenses the respondent's counsel pursues.

# \*12 Attacking the Chain of Custody

Challenging the collection procedures used by the unit conducting the test is sometimes an effective defense. Failures by the unit to ensure that proper testing procedures were followed [FN109] can result in serious questions about the reliability of a facially valid test. If the defense points out mistakes or omissions in the collection procedures and the respondent denies drug use, the board may find that the government has not met its burden of proof. This is especially true if the recorder is not prepared to rebut the defense allegations with testimony demonstrating that proper chain of custody procedures were employed.

Army Regulation 600-85 establishes the urine collection procedures. [FN110] In addition to these regulatory requirements, individual commands may have their own written standard operating procedures; if so, the respondent's counsel should review them.

While minor errors or omissions may not cause a sample to be found inadmissible, [FN111] many board members are uncomfortable with a failure to meet regulatory requirements. A respondent's counsel who senses a cavalier attitude toward the regulation on the part of the UDAC, the observer, or the recorder, may be able to exploit this posture. Most board members are senior commissioned officers who often view regulations as binding authority.

The respondent's counsel should exploit gross errors in the chain of custody. [FN112] However, for tactical reasons, respondent's counsel may decide not to challenge the admissibility of a test in advance of the proceedings, unless the respondent's counsel is fairly certain that the error is so egregious that the Staff Judge Advocate will advise the convening authority to halt the separation action. Challenging the test's admissibility at the board hearing may be more effective. Another variation of this tactic is not to object to the actual admissibility of the results, but then present evidence during the respondent's **case** that will cause the board to question the weight to be given the test. This can produce especially good results if an ill-prepared recorder simply has introduced the litigation packet, without calling the UDAC or the observer, and apparently has no rebuttal witnesses available on the chain of custody issue.

#### Disproving Wrongful Use

Showing that the respondent's use of drugs was not wrongful sometimes is a successful defense. The respondent may allege that his or her positive **urinalysis** test resulted from passive inhalation or innocent ingestion of drugs. In other **cases**, the respondent simply may deny any use of illegal drugs but not specifically recall an instance in which he or she could have inhaled or ingested the drugs without knowledge. [FN113]

The respondent's counsel must analyze the respondent's allegations and determine how best to present them or, if they are not believable, whether to present them at all. The respondent's counsel also may want to determine if expert testimony or literature is available to support the soldier's allegations.

#### Passive Inhalation [FN114]

The respondent may allege that he or she passively inhaled drugs when in a room with others who were smoking the drugs. [FN115] Typically, this defense is raised when the soldier is charged with use of marijuana, [FN116] but it also may be raised in cocaine **cases**. [FN117] This type of defense raises several problems.

A soldier who passively inhales a drug is unlikely to absorb sufficient quantities of the drug to test positive during a **uri-nalysis** test unless he or she was in a very confined area (such \*13 as an automobile) [FN118] for a significant amount of time. [FN119] The soldier's allegation will be even less plausible if his or her urine contained a large quantity of drug metabolites. [FN120] The allegation also will not be believable if the passive inhalation occurred a significant amount of time before the urine test. [FN121]

Another problem with passive inhalation is that it may not amount to a defense. A soldier who voluntarily and knowingly remains in an area permeated with drug smoke may be guilty of wrongful use of drugs. [FN122]

The respondent's counsel must carefully scrutinize claims of passive inhalation. If the board finds that the respondent's testimony concerning passive inhalation is implausible or unbelievable, the members may, without hesitation, label the respondent a liar and recommend discharge, under other than honorable conditions.

#### Innocent Ingestion

The respondent may allege that he or she innocently ingested drugs that someone surreptitiously placed in the respondent's

drink or food. Typically this defense is used in cocaine [FN123] and marijuana **cases**, [FN124] although it can apply to any drug use. Depending on the respondent's allegations, experts frequently will testify that this defense is plausible.

Allegations of innocent ingestion of marijuana (the "brownie defense") pose several problems. Delta 9 tetrahydrocannabinol, the main psychoactive ingredient of marijuana, is released only when the marijuana leaves are heated over 300 degrees Fahrenheit by burning or baking. THC metabolites appear in urine more slowly when marijuana is eaten, rather than smoked, and remain in the body longer. [FN125] Defense counsel should carefully scrutinize claims of innocent ingestion of marijuana.

Allegations of innocent ingestion of cocaine pose fewer problems. Cocaine is soluble in soda and other drinks and need not be heated to release its active ingredients. [FN126] However, the respondent's counsel should ascertain when the passive ingestion may have occurred. No matter how ingested, cocaine generally will stay in a soldier's body only for approximately two to four days. [FN127] The defense of innocent cocaine ingestion probably will be successful only if the ingestion occurred within a few days of the **urinalysis** test.

Some soldiers allege that they unwittingly ingested cocaine when drinking coca leaf tea. While this type of ingestion is possible, [FN128] it does not amount to a defense, because the *Federal Schedules of Controlled Substances* prohibit ingestion of coca leaf tea. [FN129]

\*14 The respondent also may allege that he or she unwittingly absorbed cocaine by handling currency contaminated with cocaine. [FN130] Although traces of cocaine have been found on currency, which is often used to snort cocaine, [FN131] the amount of cocaine that can be absorbed in this manner is minimal. [FN132]

If the respondent's urine tested positive for opiates, the respondent may allege that he or she innocently ingested opiates by eating baked goods containing poppy seeds (the "poppy seed defense"). The poppy plant yields not only illegal opiates--such as heroin--and controlled drugs--such as codeine and morphine--but also lawful substances--such as poppy seeds. When one ingests poppy seeds, the body produces small amounts of the same metabolites produced by morphine and codeine. [FN133] However, the amounts produced are usually well below the current cut-off level for reporting a urine sample positive for opiates. [FN134] Furthermore, the poppy seed defense will not work if the respondent tested positive for heroin, because poppy seeds will not cause a positive heroin result. [FN135]

Closely related to the defense of innocent ingestion is the defense of innocent inhalation. For example, the respondent may claim that he or she innocently inhaled cocaine surreptitiously placed in the respondent's cigarette. However, this allegation is unlikely to be true, because cocaine ordinarily does not vaporize and will not pass through a filtered cigarette. [FN136] Defense counsel should carefully scrutinize innocent inhalation claims as well.

A soldier who alleges innocent ingestion is often not believed. [FN137] The board may find it unlikely that someone would surreptitiously place drugs, which are often quite expensive, in the respondent's food or drink, knowing that the respondent may be punished as a result. However, an innocent ingestion defense may be successful if supported by believable testimony from the respondent or other witnesses. This is especially true if the defense produces testimony that the respondent is an excellent soldier as well as scientific studies supporting the defense. An innocent ingestion defense may be particularly effective if the recorder is unprepared to produce expert testimony to rebut it.

# The Rehabilitation Defense

In some **cases**, the best defense strategy [FN138] may be for the respondent to admit to the wrongful use and offer evidence of successfully completing some type of drug rehabilitation treatment program. In some commands, this approach may be disastrous for the respondent. [FN139] However, in other commands, strong evidence of rehabilitation may produce favorable results, particularly if the respondent has a better than average record, strong character witnesses, and has completed a

somewhat rigorous treatment program. Respondent's counsel should attempt to have a witness from the program available to testify, [FN140] at least telephonically, [FN141] as well as documentary evidence, if it exists, of the soldier's performance in the program. Lastly, it may be appropriate to introduce at least some evidence of the respondent's civilian job performance to show **\*15** a reliable record of attendance and to attempt to prove the soldier's day-to-day conduct has changed since entering rehabilitation.

If counsel employs this defense strategy, great care should be given to the soldier's testimony at the hearing. If the soldier appears only to be sorry that he or she was caught, and not to have genuinely overcome a substance abuse problem, the board will have little difficulty in recommending discharge.

#### Character Witnesses

The respondent almost always will want to offer evidence of good military character. This evidence not only indicates that the respondent should be retained in the service, it also may demonstrate that he or she would not knowingly use drugs. This evidence may be sufficient to defeat the government's **case**. [FN142]

The respondent's counsel should, at a minimum, interview all of the soldiers in the respondent's chain of command to determine if any would be useful as character witnesses. These witnesses can be crucial to the defense; the respondent is much more likely to be retained if the respondent's commander testifies on his or her behalf. [FN143] Additionally, the respondent's counsel may want to interview other soldiers in the respondent's unit and the respondent's civilian supervisors, friends, and family members.

If witnesses are willing to testify about the respondent's good military character, the respondent's counsel should consider having at least some of them testify in person at the board. [FN144] These witnesses can not only testify about the respondent's good military character, but also offer opinions as to whether the respondent used drugs or whether the respondent should be retained in the service. [FN145] Appendix D contains suggested direct examination questions for a character witness.

The respondent's counsel also should be prepared to present statements from the character witnesses. [FN146] The respondent's counsel may ask for the respondent to obtain these statements. This not only saves the respondent's counsel time, but also gives the respondent a feeling of contributing to the preparation of the **case**.

#### **Defense-Requested Tests**

One method of supporting the respondent's defense is to obtain additional tests. The respondent may want to have a series of additional tests performed on his or her urine sample to ensure that the original test was accurate. The respondent also may want to have a polygraph or hair test conducted to corroborate innocence. The defense may request that the government pay for these tests or the respondent may have to pay for them.

The defense may want the respondent's urine sample retested to ensure that the initial test was accurate. The respondent is entitled to have his or her urine sample retested at government expense, if there is enough sample left to retest. [FN147] The respondent also is entitled to have a private laboratory retest the sample at the respondent's own expense. [FN148]

The respondent may want his or her urine sample tested to determine if it was contaminated. One such test used in cocaine **cases** is a test for the ecgonine methyl ester (EME) metabolite of cocaine. The Department of Defense drug testing laboratories test only for the primary metabolite of cocaine, benzoylecgonine (BZE). However, BZE can be produced by sprinkling raw cocaine into a urine sample. EME, on the other hand, can only be produced in the body. Some experts have argued that the laboratories should test for EME to reduce the possibility of contamination of samples. However, the government is generally not required to test samples for EME. [FN149] Therefore, any such tests would have to be paid for by the respondent.
\*16 The respondent may request blood or DNA tests to prove that he or she did not provide the sample which tested positive. However, as in the **case** of EME tests, the government generally is not required to perform these tests. [FN150]

The respondent may request a polygraph to prove that he or she did not use drugs. Although polygraph test results are inadmissible without the consent of the respondent and the recorder, [FN151] the defense may have a constitutional right to introduce favorable polygraph results. [FN152] If the soldier can afford it, he or she should take a private polygraph before submitting to a government polygraph. If the results of the private polygraph are not favorable, they will be protected by the attorney-client privilege. [FN153]

The respondent also may want to have his or her hair analyzed to disprove drug use. Because drugs are deposited in hair over time, it can create a record of the respondent's use or abstinence from use of drugs. [FN154] Unfortunately, hair analysis generally cannot disprove a one-time use of drugs. [FN155]

If the respondent took other **urinalysis** tests that yielded negative results, the respondent's counsel should attempt to obtain these results [FN156] and consider presenting them to the board. [FN157] These tests will be especially relevant if they were administered at or near the time of the positive test on which the board action is based. [FN158] If the respondent took drug tests administered by a civilian employer, the respondent's counsel should consider obtaining the results of these tests as well and presenting them to the board. [FN159]

#### Conclusion

Urinalysis cases can be complex. Neither the government nor the defense should be satisfied with a paper case where the test results and related documents are the only matters submitted. Both sides should be prepared to present live or telephonic testimony.

Administrative separation board members will differ greatly from organization to organization. It is just as important to know the members of a separation board as it is to know the judge in a criminal trial. Counsel for both sides should attempt to discover all they can about the reputation and experience of the board members prior to the hearing.

Thorough preparation is essential to successfully prosecute or defend a **urinalysis case**. This article may assist in that preparation. However, because the facts of each **case** differ, the suggestions offered here should only serve as a point of departure.

[FN1]. The RC of the Army include both the Army National Guard of the United States and the United States Army Reserve. This article will discuss policies that apply to both.

[FN2]. See infra notes 7-17 and accompanying text.

[FN3]. See infra notes 18 and 19 and accompanying text.

[FN4]. DEP'T OF ARMY, REG. 135-178, ARMY NATIONAL GUARD AND ARMY RESERVE: SEPARATION OF EN-LISTED PERSONNEL, para. 2-4c (1 Sept. 1994) [hereinafter AR 135-178]; DEP'T OF ARMY, REG. 135-175, ARMY NATIONAL GUARD AND ARMY RESERVE: SEPARATION OF OFFICER PERSONNEL, para. 2-19a(3) (1 May 1971) [hereinafter AR 135-175].

[FN5]. See DEP'T OF ARMY, REG. 635-200, PERSONNEL SEPARATIONS: ENLISTED PERSONNEL (17 Sept. 1990);

DEP'T OF ARMY, REG. 635-100, PERSONNEL SEPARATIONS: OFFICER PERSONNEL (1 May 1989) (addressing separation of active duty personnel). The following two regulations, AR 135-178, *supra* note 4, and AR 135-175, *supra* note 4, deal with separation of RC personnel.

[FN6]. Although this article focuses on RC administrative separation actions, many of the suggestions and approaches discussed apply equally to active duty separation actions.

[FN7]. UCMJ art. 15 (1988).

[FN8]. Commanders are required to process soldiers involved in drug distribution for administrative separation. *See* DEP'T OF ARMY, REG. 600-85, PERSONNEL-GENERAL: ALCOHOL AND DRUG ABUSE PREVENTION AND CONTROL PROGRAM, paras. 9-4, 1-11b(1) (21 Oct. 1988) (IO3, 1 Oct. 1993) [hereinafter AR 600-85]. Commanders also are required to process officers, noncommissioned officers (sergeant and above), and soldiers with three or more years of service (active and reserve) for administrative separation if they are identified as illegal drug abusers, and must process other soldiers for administrative separation if they have been identified in two separate instances of drug abuse. *Id.* para. 1-11b(3) (IO3, 1 Oct. 1993); AR 135-178, *supra* note 4, para. 7-11c1(1), (2). Additionally, commanders are required to process soldiers for administrative separation if they have been medically diagnosed as drug dependent. AR 600-85, *supra* para. 1-11d(1) (IO3, 1 Oct. 1993); AR 135-178, *supra* note 4, para. 7-11c1(3). The requirement to process a soldier for separation does not mean that the commander must recommend separation or that the soldier must be discharged; it only requires that the action be processed through the chain of command to the separation authority for appropriate action. *Id.* para. 7-11c1.

[FN9]. DEP'T OF ARMY, REG. 27-10, LEGAL SERVICES: MILITARY JUSTICE, para. 21-6 (8 Aug. 1994) [hereinafter AR 27-10].

[FN10]. Under DEP'T OF ARMY, REG. 140-158, ARMY RESERVE: ENLISTED PERSONNEL CLASSIFICATION, PROMOTION AND REDUCTION, para. 7-9a (1 July 1990), a commander may not reduce an active guard reserve (AGR) soldier in the grade of E-6 or above through nonjudicial punishment under Article 15, UCMJ.

[FN11]. See <u>United States v. Chodara, 29 M.J. 943 (A.C.M.R. 1990)</u> (government must prove that RC accused was on federal duty at time the soldier ingested drugs to establish subject matter jurisdiction at court-martial) *and* UCMJ art. 2(d)(2) (1988) (RC personnel may be involuntarily recalled to active duty for purposes of nonjudicial punishment only with respect to offenses committed while on active duty or federal inactive duty training). *But see* <u>United States v. Lopez, 37 M.J. 702 (A.C.M.R. 1993)</u> (court in dicta questioned the validity of *Chodara* and stated that the body continues to use drugs so long as they remain within the body).

[FN12]. The approximate amount of time that drugs can be detected in the body are as follows:

Marijuana:

Acute dosage (1-2 joints):

2-3 days

Oral ingestion:

1-5 days

Moderate smoker (4 times per week):	5 days
Heavy smoker (daily):	10 days
Chronic smoker (more than 5 joints per day):	14-18 days (may be 20 days or longer)
Cocaine:	2-4 days
Amphetamines:	1-2 days
Barbiturates:	
Short acting ( <i>e.g.</i> secobarbital):	1 day
Long acting (e.g. phenobarbital):	2-3 weeks
Opiates:	2 days
Phencyclidine (PCP):	14 days (up to 30 days in chronic users)
LSD:	8-30 hours

Many factors can influence the "detection times" listed above, such as the amount and quality of the drug ingested and the size, metabolism, and health of the subject. This information was obtained from Syva Company, San Jose, California and LTC Aaron Jacobs, United States Army Forensic Toxicology Drug Testing Laboratory, Tripler Medical Center, Honolulu, Hawaii. Lieutenant Colonel Jacobs provided the authors with a great deal of technical advice; the authors greatly appreciate his assistance.

[FN13]. See supra note 11 and accompanying text.

[FN14]. See AR 27-10, supra note 9, para. 21-8a. Reserve Component soldiers may be tried by summary court-martial under the UCMJ only while serving in a Title 10 status. *Id.* para. 21-7a. The Secretary of the Army, or the Secretary's designee, must approve the accused's orders to involuntary active duty before the accused can be sentenced to confinement or deprived of

liberty at a court-martial. *Id.* para. 21-8a. *See also* MANUAL FOR COURTS-MARTIAL, United States, R.C.M. 204 (1984) [hereinafter MCM].

[FN15]. AR 27-10, *supra* note 9, para. 21-8b.

[FN16]. Id. para. 21-2d.

[FN17]. United States v. Murphy, 23 M.J. 310 (C.M.A. 1987). Some have argued that judicial notice is an adequate substitute for the testimony of a laboratory expert in a **urinalysis case**. *See* Wayne E. Anderson, *Judicial Notice in Urinalysis Cases*, ARMY LAW., Sept. 1988, at 19; Willis Hunter & Michael Davidson, *Urinalysis Cases and Judicial Notice*, ARMY LAW., July 1990, at 34. However, the courts generally have found that judicial notice is an inadequate substitute for expert testimony. *See, e.g.*, <u>United States v. Hunt, 33 M.J. 345 (C.M.A. 1991)</u>.

[FN18]. For example, the Military Rules of Evidence generally do not apply to administrative separation boards. DEP'T OF ARMY, REG. 15-6, PROCEDURE FOR INVESTIGATING OFFICERS AND BOARDS OF OFFICERS, para. 3-6a (11 May 1988) [[[[hereinafter AR 15-6].

[FN19]. AR 135-178, *supra* note 4, para. 7-11c1, permits separation of RC enlisted soldiers for abuse of illegal drugs. AR 135-175, *supra* note 4, para. 2-12, permits separation of RC officers for moral or professional dereliction. Neither provision contains any requirement that the drug abuse or dereliction occur while the RC soldier is on duty.

[FN20]. AR 135-178, *supra* note 4, para. 2-4c.

[FN21]. AR 135-175, *supra* note 4, para. 2-19a(3).

[FN22]. AR 15-6, *supra* note 18, para. 5-3.

[FN23]. Id. para. 5-6.

[FN24]. For general guidance on prosecuting a **urinalysis** court-martial, *see* David E. Fitzkee, *Prosecuting a Urinalysis Case: A Primer*, ARMY LAW., Sept. 1988, at 7.

[FN25]. U.S. CONST. amend. IV.

[FN26]. AR 600-85, *supra* note 8, para. 9-12, ch. 10.

[FN27]. Under AR 135-178, *supra* note 4, para. 2-9, an RC enlisted respondent must be notified of the specific allegations on which the separation action is based and the least favorable characterization of service that he or she could receive. For similar notification requirements for RC officers being considered for involuntary separation, *see* AR 135-175, *supra* note 4, para. 2-17.

[FN28]. AR 135-178, *supra* note 4, para. 2-8, provides that an enlisted separation board will be appointed by the area commander in the **case** of a United States Army Reserve soldier, and by the state adjutant general in the **case** of a National Guard soldier. The area commander may delegate his or her authority to appoint such boards. *See, e.g.*, Memorandum, Commander, U.S. Army Reserve Command, AFRC-PRR-E, subject: Delegation of Involuntary Separation Authority Under AR 135-178 (13 Dec. 1994). AR 135-175, *supra* note 4, para. 2-17f(3), provides that the area commander appoints officer separation boards.

[FN29]. AR 135-178, *supra* note 4, para. 2-12, requires that an RC enlisted separation board consist of at least three commissioned, warrant, or noncommissioned (sergeant first class or above) officers, at least one of whom is a major or higher. The majority must be commissioned or warrant officers. Noncommissioned officers may not serve when an other than honorable discharge may result and all members must be senior to the respondent. Female or minority members are not required. At least one officer on the board must be from the same RC as the respondent. *Id.* para. 2-8c. AR 135-175, *supra* note 4, para. 2-17f(3), requires that officer separation boards be composed of three or more commissioned officers, all senior in rank to the respondent. One member will be a Regular Army officer, if one is available, and one member must be of the same sex, and, if reasonably available, same branch of service, as the respondent. The Reserve Officer Personnel Management Act will require that all members of an RC officer separation board be in the grade of 0-6 or above. Reserve Officer Personnel Management, *contained in* National Defense Authorization Act for Fiscal Year 1995, Pub. L. No. 103-337, 108 Stat. 2663, 2960 (to be codified at 10 U.S.C. § 14906). This provision will be effective on 1 October 1996. *Id.*, 108 Stat. at 3026.

[FN30]. Memorandum, Walter Reed Army Medical Center (HSHL-UDL), subject: U.S. Army Forensic Toxicology Drug Testing Laboratory Drug Testing Procedures (9 Feb. 1994) [hereinafter Laboratory Drug Testing Procedures Memorandum].

[FN31]. See infra note 101 and accompanying text.

[FN32]. AR 15-6, *supra* note 18, para. 5-5. In enlisted boards, this notification must be completed at least five working days prior to the hearing. *Id.* In officer boards, the notification must be completed at least ten days prior to the hearing. AR 135-175, *supra* note 4, para. 2-24.

[FN33]. Although AR 15-6, *supra* note 18, does not specifically authorize telephonic testimony, it permits the introduction of anything that, in the minds of reasonable persons, is relevant and material. *Id.* para. 3-6a. Telephonic interviews are relevant and material. *See also* MCM, *supra* note 14, R.C.M. 405g(4)(B)(ii), which states that telephonic interviews are admissible at investigations under Article 32, UCMJ, over defense objection.

[FN34]. AR 135-178, supra note 4, para. 2-11b.

[FN35]. The suggested procedure for conducting a formal board of officers mentions that the recorder and respondent may agree to stipulate. AR 15-6, *supra* note 18, fig. 3-1, at 17. *See also* AR 135-178, *supra* note 4, para. 2-15a(4).

[FN36]. AR 15-6, *supra* note 18, para. 5-3a, requires the recorder to ensure the hearing site is adequate and arrange for the necessary support personnel, equipment, and supplies.

[FN37]. See id. The recorder also should have all of the documents in the separation packet, including the appointment and notification memoranda, so that they can be submitted as enclosures to the board proceedings.

[FN38]. See id. app. B.

[FN39]. Dep't of Army, (DA), Form 3881, Rights Warning Procedure/Waiver Certificate (Nov. 1984).

[FN40]. See AR 135-178, supra note 4, paras. 2-16, 2-17, for a listing of the requirements of the findings and recommendations in an RC enlisted separation board. See AR 135-175, supra note 4, para. 2-34, for a listing of the requirements of the findings and recommendations in an RC officer separation board.

[FN41]. See MCM, supra note 14, MIL. R. EVID. 312(d), 313(b).

#### [FN42]. U.S. CONST. amend. IV.

[FN43]. AR 15-6, *supra* note 18, para. 3-6c(7). Such a **urinalysis** test will be admissible only if it can reasonably be determined that the evidence would inevitably have been discovered. *Id.* This is unlikely, given the speed with which drugs dissipate from the body. *See supra* note 12.

[FN44]. AR 15-6, *supra* note 18, para. 3-6c(7).

[FN45]. Id. para. 5-8a(2).

[FN46]. *Id.* para. 5-3b(5).

[FN47]. See infra notes 68, 73 and accompanying text.

[FN48]. MCM, supra note 14, MIL. R. EVID. 313(b); United States v. Bickel, 30 M.J. 277 (C.M.A. 1990).

[FN49]. These alternatives are proper because the Military Rules of Evidence do not apply to separation boards. AR 15-6, *supra* note 18, para. 3-6a.

[FN50]. AR 600-85, supra note 8, para. 10-3a.

[FN51]. United States v. Evans, 37 M.J. 867 (A.F.C.M.R. 1993).

[FN52]. MCM, *supra* note 14, MIL. R. EVID. 312(d), 315.

[FN53]. See United States v. Kalscheuer, 11 M.J. 373 (C.M.A. 1981). Arguably, an authorization is not required because the speed with which drugs dissipate from the body may create exigent circumstances. See Schmerber v. California, 384 U.S. 747 (1966) (warrantless blood alcohol test was justified by exigent circumstances). However, this argument is not usually successful, at least in courts-martial. See United States v. Pond, 36 M.J. 1050 (A.F.C.M.R. 1993) (warrantless **urinalysis** to determine methamphetamine use was not justified by exigent circumstances because methamphetamines do not dissipate sufficiently quickly from the body).

[FN54]. AR 15-6, *supra* note 18, para. 3-6a.

[FN55]. AR 27-10, supra note 9, at 101-06, contains reproducible forms to record a written search authorization.

[FN56]. MCM, *supra* note 14, MIL. R. EVID. 312(d).

[FN57]. Id. MIL. R. EVID. 315. See supra note 12 for a listing of the approximate amount of time that drugs can be detected in the body.

[FN58]. Id. MIL. R. EVID. 314(e).

[FN59]. AR 15-6, *supra* note 18, para. 3-6a.

[FN60]. MCM, *supra* note 14, MIL. R. EVID. 314(e)(4).

[FN61]. United States v. White, 27 M.J. 264 (C.M.A. 1988).

[FN62]. *Id.* Generally, a commander must explain the consequences of a consent sample versus a fitness for duty sample. The commander must explain that a fitness for duty test may only be used for limited administrative actions while a consent test may be used for disciplinary or any other action.

[FN63]. United States v. Bair, 32 M.J. 404 (C.M.A. 1991). See AR 600-85, supra note 8, para. 10-3a(1).

[FN64]. AR 15-6, *supra* note 18, para. 3-6a.

[FN65]. Bair, 32 M.J. at 404.

[FN66]. Id.; Terry v. Ohio, 392 U.S. 1 (1968).

[FN67]. AR 600-85, *supra* note 8, paras. 10-3a(1), 6-4a(1).

[FN68]. Id. para. 6-5d.

[FN69]. *Id.* para. 6-4e(1).

[FN70]. MCM, supra note 14, MIL. R. EVID. 312(f).

[FN71]. United States v. Fitten, 39 M.J. 659 (N.M.C.M.R. 1993), petition for review granted, 40 M.J. 40 (C.M.A. 1994).

[FN72]. AR 15-6, *supra* note 18, para. 3-6a.

[FN73]. If a physician directs a **urinalysis** based on reasonable suspicion that a soldier has abused drugs to determine the soldier's need for counseling or treatment (the medical equivalent of a fitness for duty test), the test is subject to the limited use policy. AR 600-85 *supra* note 8, paras. 10-3b(1), 6-4a(1). Tests taken in conjunction with a soldier's participation in the Alcohol and Drug Abuse Prevention and Control Program (ADAPCP) also are subject to the limited use policy. *Id.* para. 6-4a(1). Additionally, tests obtained as a result of a soldier's emergency medical treatment for a drug overdose are subject to the limited use policy, unless the treatment resulted from the soldier's apprehension. *Id.* para. 6-4a(5).

[FN74]. Id. para. 6-5d.

[FN75]. Id. para. 6-4a(5).

[FN76]. Id. paras. 6-4a, 10-3b(2).

[FN77]. Id. para. 9-12.

[FN78]. Id. para. 9-12, ch. 10, app. E.

[FN79]. *Id.* para. 10-3a, app. E, para. E-6. Direct observation does not make the collection of urine an unreasonable search and seizure. *See*<u>Unger v. Zemniak, 27 M.J. 349 (C.M.A. 1989)</u>.

[FN80]. AR 600-85, *supra* note 8, app. E, paras. E-2 to E-8.

[FN81]. *Id.* app. E, paras. E-3 to E-9. A Department of Defense (DD) Form 2624 (Feb. 1993) is used. This form replaced DA Form 5180-R (Aug. 1986), which is now obsolete.

[FN82]. Id. para. 9-12c.

[FN83]. See <u>United States v. Gonzalez, 37 M.J. 456 (C.M.A. 1993)</u> (chain of custody objection was properly overruled at a court-martial despite the observer's inability to recall exactly how the urine specimen was transferred from one container to another).

[FN84]. AR 15-6, *supra* note 18, para. 3-6b.

[FN85]. AR 600-85, *supra* note 8. The recorder should introduce copies of chapters 9 and 10 and appendix E of this regulation.

[FN86]. AR 15-6, *supra* note 18, para. 3-6a.

[FN87]. See United States v. Pollard, 27 M.J. 376 (C.M.A. 1989), in which slight deviations in **urinalysis** testing procedures did not make the test inadmissible at a court-martial. However, in <u>United States v. Strozier, 31 M.J. 283 (C.M.A. 1990)</u>, gross deviations in **urinalysis** testing procedures were held to be sufficient to make a **urinalysis** test inadmissible at a court-martial. Although the Military Rules of Evidence do not apply at administrative separation boards, matters presented to such boards must be reasonably relevant and material. AR 15-6, *supra* note 18. Arguably, gross deviations in procedures may make a **urinalysis** test result irrelevant.

[FN88]. The Army currently uses four laboratories to test urine samples: the United States Army Forensic Toxicology Drug Testing Laboratory at Fort Meade, Maryland, telephone: (301) 621-7023; the United States Army Forensic Toxicology Drug Testing Laboratory at Tripler Medical Center, Honolulu, Hawaii, telephone: (808) 433-5176; Northwest Toxicology Corporation in Salt Lake City, Utah, telephone: (801) 268-2431; and Pharmachem Corporation in Menlo Park, California, telephone: (415) 328-6200. Northwest Toxicology Corporation currently tests all National Guard urine samples. The Fort Meade laboratory currently tests the majority of United States Army Reserve urine samples, although the Tripler laboratory tests some samples.

[FN89]. A drug metabolite is a waste product that the body produces in response to ingestion of a drug. A soldier's ingestion of a drug can be established by the presence of either the drug or drug metabolites in his or her urine. Laboratory Drug Testing Procedures Memorandum, *supra* note 30, at 1.

[FN90]. The additional drugs tested for include LSD, opiates, PCP, amphetamines, and barbiturates. The laboratory tests for these on a rotating basis or on request. Anabolic steroids also are tested for on a command directed basis or on request. Memorandum, Assistant Secretary of Defense (Health Affairs), subject: Drug **Urinalysis** Testing Levels (8 Mar. 1991) [[[[he-reinafter Drug **Urinalysis** Testing Levels Memorandum]; Office of Dep't of Defense Coordinator for Drug Enforcement Policy and Support, subject: Interim Policy on Anabolic Steroids (20 Oct. 1993).

[FN91]. DEP'T OF DEFENSE DIRECTIVE 1010.1, DRUG ABUSE TESTING PROGRAM, encl. 3, para. E1 (28 Dec. 1984) [hereinafter DOD DIR. 1010.1].

[FN92]. Id. encl. 3, paras. E2, H1. Currently, these cut-off levels are:

Marijuana metabolite (9-carboxyl THC):	50 ng/ml
Cocaine metabolite (benzoylecgonine):	150 ng/ml
Amphetamines:	500 ng/ml
Barbiturates:	200 ng/ml
Opiates:	2000 ng/ml
PCP:	25 ng/ml
LSD:	0.5 ng/ml

Drug **Urinalysis** Testing Levels Memorandum, *supra* note 90; Office of Department of Defense Coordinator for Drug Enforcement Policy and Support, subject: Drug Screen Testing Levels for Opiates (12 Oct. 1994). [FN93]. DOD DIR. 1010.1, *supra* note 91, encl. 3, para. F1.

[FN94]. Id.

[FN95]. Laboratory Drug Testing Procedures Memorandum, *supra* note 30, at 3-4.

[FN96]. DOD DIR. 1010.1, *supra* note 91, encl. 3, para. F2. Currently, these cut-off levels are:

Marijuana metabolite (9-carboxyl THC):	15 ng/ml
Cocaine metabolite (benzoylecgonine):	100 ng/ml
Amphetamines:	500 ng/ml
Barbiturates:	200 ng/ml

Opiates:

Morphine:	4000 ng/ml
Codeine:	2000 ng/ml
Heroine metabolite (6-MAM):	10 ng/ml
PCP:	25 ng/ml
LSD:	0.2 ng/ml

Memorandum, Assistant Secretary of Defense (Health Affairs), subject: Drug **Urinalysis** Testing Levels (8 Mar. 1991); Memorandum, Department of Defense Coordinator for Drug Enforcement Policy and Support, subject: Drug **Urinalysis** Testing Levels (6 July 1992); Memorandum, Office of Department of Defense Coordinator for Drug Enforcement Policy and Support, subject: Drug Screen Testing Levels for Opiates (7 Dec. 1993). [FN97]. DOD DIR. 1010.1, *supra* note 91, encl. 3, para. H1.

[FN98]. The litigation packet is admissible at an administrative separation board under AR 15-6, *supra* note 18, para. 3-6a.

[FN99]. At a court-martial, on the other hand, the litigation packet alone generally has been held to be insufficient. <u>United</u> <u>States v. Murphy, 23 M.J. 310 (C.M.A. 1987)</u>. *See also\_*<u>United States v. Harper, 22 M.J. 157 (C.M.A. 1986)</u> (test results and expert testimony were sufficient to support drug conviction); <u>United States v. Hunt, 33 M.J. 345 (C.M.A. 1991)</u> (test results and judicial notice were insufficient to support drug conviction).

[FN100]. Laboratory Drug Testing Procedures Memorandum, *supra* note 30.

[FN101]. See supra note 33. Most drug testing laboratories are willing to make an expert available for a telephone interview during the weekend when RC separation boards are usually held. Unfortunately, because of time differences and past misuse of expert witnesses, most laboratories are only willing to make the expert available during a short window of time, such as one hour.

[FN102]. To be guilty of wrongful use of drugs under UCMJ art. 112a (1988), a soldier must have known that he or she was consuming a controlled substance. <u>United States v. Mance, 26 M.J. 244 (C.M.A. 1988)</u>.

[FN103]. Mance, 26 M.J. at 244; United States v. Alford, 31 M.J. 814 (A.F.C.M.R. 1990).

[FN104]. United States v. Ford, 23 M.J. 331 (C.M.A. 1987). *But see* United States v. Williams, 37 M.J. 972 (A.C.M.R. 1993) (court stated in dicta that when accused reasonably raises defense of innocent ingestion, this trumps the presumption of wrongfulness and the accused must be found not guilty as a matter of law unless the government introduces additional evidence to establish wrongfulness).

[FN105]. Under AR 15-6, *supra* note 18, para. 3-6c(6), these statements are admissible unless they were obtained by unlawful coercion or inducement likely to affect the statements' truth. In many commands, a common practice is to read Article 31 rights to any soldier who tests positive for illegal drugs. UCMJ art. 31 (1988). The recorder should introduce any incriminating statements made by such soldiers.

[FN106]. For general guidance on defending a **urinalysis** court-martial, *see* Joseph J. Impallaria, Jr., *An Outline Approach to Defending Urinalysis Cases*, ARMY LAW., May 1988, at 27.

[FN107]. In some commands, an admission of drug use before a board may constitute, as a practical matter, a virtually certain discharge recommendation by the board.

[FN108]. Some commands will have "standing boards" of the type recommended by AR 135-178, *supra* note 4, para. 2-13a. Others will use boards only for one or two individual **cases**.

[FN109]. See AR 600-85, supra note 8, app. E.

[FN110]. Id.

[FN111]. See supra note 87 and accompanying text.

[FN112]. Id.

[FN113]. In these **cases**, the respondent's counsel also may want to attack the chain of custody of the urine sample, particularly if the unit apparently violated **urinalysis** testing procedures.

[FN114]. To prepare this portion of the article, the authors relied on the research of Major Daniel Poling, Headquarters, Department of the Army, Office of The Judge Advocate General, Personnel Plans and Training Office. The authors greatly appreciate his assistance.

[FN115]. See Anderson, supra note 17, at 25.

[FN116]. Mario Perez-Reyes, et al., Passive Inhalation of Marijuana Smoke and Urinary Excretion of Cannabinoids, 34 CLINICAL PHARMACOLOGY & THERAPEUTICS 36 (July 1983) [hereinafter Perez-Reyes study]; Edward J. Cone & Rolley E. Johnson, Contact Highs and Urinary Cannabinoid Excretion After Passive Exposure to Marijuana, 37 CLINICAL PHARMACOLOGY & THERAPEUTICS 247 (1986); Edward J. Cone, et al., Passive Inhalation of Marijuana Smoke: Urinalysis and Room Air Level of Delta-9-Tetrahydrocannabinol, 11 J. ANALYTIC TOXICOLOGY 89 (1987) [[[[hereinafter Cone study].

[FN117]. R.C. Baselt, et al., Passive Inhalation of Cocaine, 37 CLINICAL CHEMISTRY 2160 (1991).

[FN118]. In the Perez-Reyes study, *supra* note 116, the subjects were passively exposed to marijuana smoke in a small unventilated room (8' x 8' x 10') and a medium sized station wagon. In the Cone study, *supra* note 116, the subjects were passively

exposed to marijuana smoke in a small unventilated room (7' x 8' x 8'). Goggles were worn to minimize eye irritation.

[FN119]. In the Perez-Reyes study, *supra* note 116, two tests were conducted in which two subjects were passively exposed to marijuana smoke for one hour. In a later test, two subjects were passively exposed to marijuana smoke for one hour on three consecutive days. In the Cone study, *supra* note 116, three tests were conducted in which a total of seven subjects were passively exposed to marijuana smoke for one hour on six consecutive days.

[FN120]. In the Perez-Reyes study, *supra* note 116, 76 urine samples were collected from the subjects passively exposed to marijuana smoke. Only two samples tested slightly above 20 ng/ml on a screening test. In the Cone study, *supra* note 116, the samples collected from the subjects tested between 10 to over 100 ng/ml on a radioimmunoassay test and between 0 and 87 ng/ml on a gas chromatography/mass spectroscopy test.

[FN121]. In the Perez-Reyes study, *supra* note 116, the urine samples were collected within 24 hours of passive exposure. In the Cone study, *supra* note 116, all of the urine samples were collected within ten days after the last exposure.

[FN122]. UCMJ art. 112a (1988); *see also United States v. Mance, 26 M.J. 244 (C.M.A. 1988)* (in court-martial for use of illegal drugs, government must prove that accused knew that he or she was ingesting substance and knew that the substance was of a contraband nature).

[FN123]. See United States v. Prince, 24 M.J. 643 (A.F.C.M.R. 1987); United States v. Scaff, 29 M.J. 60 (C.M.A. 1989); United States v. Sparks, 29 M.J. 52, 57 (C.M.A. 1989).

[FN124]. See United States v. Ford, 23 M.J. 331 (C.M.A. 1987); United States v. Causey, 37 M.J. 308 (C.M.A. 1993).

[FN125]. Anderson, *supra* note 17, at 27; B. Law et al., *Forensic Aspects of the Metabolism and Excretion of Cannabinoids Following Oral Ingestion of Cannabis Resin*, 36 J. PHARMACY & PHARMACOLOGY 289 (1984); A. Ohlsson et al., *Plasma Delta-9-tetrahydrocannabinol Concentrations and Clinical Effects After Oral and Intravenous Administration and Smoking*, 28 CLINICAL PHARMACOLOGY & THERAPEUTICS 409 (1980).

[FN126]. <u>Scaff, 29 M.J. at 62</u>; R.C. Baselt & R. Chang, Urinary Extraction of Cocaine and Benzoylecgonine Following Oral Ingestion in a Single Subject, 11 J. ANALYTICAL TOXICOLOGY 81 (1987).

[FN127]. See supra note 12.

[FN128]. Mahmoud A. Elsohly et al., *Coca Tea and Urinalysis for Cocaine Metabolites*, 10 J. ANALYTICAL TOXICOL-OGY 256 (1986).

[FN129]. 21 C.F.R. § 1308.12(4) (1994). See Anderson, supra note 17, at 27.

[FN130]. See United States v. Smith, 34 M.J. 200 (C.M.A. 1992).

[FN131]. In United States v. U.S. Currency, \$30,060.00, 39 F.3d 1039 (9th Cir. 1994), the court cited several studies showing that between 75% to 97% of United States currency is contaminated with cocaine.

[FN132]. See Mahmoud A. Elsohly, Urinalysis and Casual Handling of Marijuana and Cocaine, 15 J. ANALYTICAL TOXICOLOGY 46 (1991); see also R.C. Baselt et al., On the Dermal Absorption of Cocaine, 14 J. ANALYTICAL TOXI-COLOGY 383 (1990).

[FN133]. Lyle W. Hayes et al., Concentration of Morphine and Codeine in Serum and Urine After Ingestion of Poppy Seeds, 33 CLINICAL CHEMISTRY 806 (1987); Anderson, supra note 17, at 27; Carl M. Selavka, Poppy Seed Ingestion as a Contributing Factor to Opiate-Positive Urinalysis Results: The Pacific Perspective, 36 J. FORENSIC SCIENCES 685 (1991).

[FN134]. The cut-off levels for the screening and confirmatory tests for morphine were recently increased from 300 ng/ml to 4000 ng/ml. This increase was, in part, designed to eliminate the poppy seed defense. Memorandum, Office of the Department of Defense Coordinator for Drug Enforcement Policy and Support, subject: Drug Screen Testing Levels for Opiates (7 Dec. 1993) [[[[hereinafter Drug Screen Testing Levels for Opiates Memorandum]; Memorandum, Office of the Department of Defense Coordinator for Drug Enforcement Policy and Support, subject: Drug Screen Testing Levels for Opiates (12 Oct. 1994). Although obtaining a positive test result for opiates by eating poppy seed products is still possible, such a result is unlikely. Selavka, *supra* note 133.

[FN135]. A positive test result will be reported for heroin only if the confirming test indicates the presence of 10 ng/ml or more of 6-monoacetylmorphine (6-MAM), a metabolite specific for heroin. Drug Screen Testing Levels for Opiates Memorandum, *supra* note 134.

[FN136]. See <u>United States v. Perry, 37 M.J. 363 (C.M.A. 1993)</u>. While cocaine in the hydrochloride form--the form most often used for "snorting" cocaine--will not vaporize, cocaine in the "crack" form can be vaporized.

[FN137]. For example, in <u>United States v. Ford, 23 M.J. 331 (C.M.A. 1987)</u>, the accused was convicted despite his claims that his estranged wife surreptitiously mixed marijuana into his food.

[FN138]. Ethical considerations sometimes may mean that this is the "only" defense strategy, because a lawyer may not offer evidence that the lawyer knows to be false. DEP'T OF ARMY, REG. 27-26, RULES OF PROFESSIONAL CONDUCT FOR LAWYERS, rule 3.3(a)(4) (1 May 1992). Additionally, in many commands, it is a common (and sound) practice for the soldier to be read his or her Article 31 rights and questioned on testing positive for illegal drugs. UCMJ art. 31 (1988). If the soldier makes an incriminating statement after being advised of his or her rights, or has otherwise made incriminating statements that will be admissible at the board proceedings, the defense strategy will be limited accordingly.

[FN139]. In some commands, the respondent's admission of wrongful use of drugs will virtually guarantee a discharge recommendation by the board.

[FN140]. The respondent has the right to call witnesses, if their testimony is not cumulative and if its significance outweighs the delay, expense, or difficulty of obtaining it. AR 15-6, *supra* note 18, para. 5-8b(2); *see also* AR 135-178, *supra* note 4, para. 2-14c.

[FN141]. See supra note 33.

[FN142]. MCM, supra note 14, MIL. R. EVID. 404(a)(1); United States v. Vandelinder, 20 M.J. 41, 47 (C.M.A. 1985).

[FN143]. It is not unprecedented for the respondent's commander to recommend retention at a **urinalysis** board hearing. Because some separation boards are mandatory, a commander who may want to retain a soldier may be required to process that soldier for separation. The requirement to process a soldier for separation does not mean that the commander must recommend separation or that the soldier must be discharged; it only requires that the action be processed through the chain of command to the separation authority for appropriate action. *See* AR 135-178, *supra* note 4, para. 7-11c1 (I03, 1 Oct. 1993). [FN144]. The respondent has the right to call witnesses if their testimony is not cumulative and if its significance outweighs the delay, expense, or difficulty of obtaining it. AR 15-6, *supra* note 18, para. 5-8b(2); *see also* AR 135-178, *supra* note 4, para. 2-14c.

[FN145]. Because the Military Rules of Evidence do not apply at separation boards, the witnesses may testify about any relevant and material matters. AR 15-6, *supra* note 18.

[FN146]. Id. para. 3-6a. See also AR 135-178, supra note 4, para. 2-15a(4).

[FN147]. AR 600-85, *supra* note 8, para. 10-8a.

[FN148]. Id. 10-8b.

[FN149]. At an administrative separation board, the defense is not entitled to government-conducted tests. AR 15-6, *supra* note 18, para. 5-8. Even at a court-martial, the government is not required to test urine samples for EME unless there is some evidence of tampering. *See* <u>United States v. Metcalf</u>, 34 M.J. 1056 (A.F.C.M.R. 1992) (defense had no right to have government test for EME where chain of custody was uncontested); <u>United States v. Thompson</u>, 34 M.J. 287 (C.M.A. 1992) (positive test for BZE was sufficient to support conviction for cocaine use; test for EME was unnecessary). *But see* <u>United States v. Mack</u>, 33 M.J. 251 (C.M.A. 1991) (test results inadequate to support conviction where test for BZE was positive and test for EME was negative).

[FN150]. AR 15-6, *supra* note 18, para. 5-8. The government also is not required to perform these tests at a court-martial unless there are discrepancies in the collection or testing of the sample. <u>United States v. Robinson, 39 M.J. 88 (C.M.A. 1994)</u>.

[FN151]. AR 15-6, *supra* note 18, para. 3-6c(2). *See also* MCM, *supra* note 14, MIL. R. EVID. 707 (polygraph results are inadmissible at a court-martial).

[FN152]. United States v. Williams, 39 M.J. 555 (A.C.M.R. 1994), cert. of review filed, <u>39 M.J. 408 (C.M.A. 1994)</u> (accused had constitutional right to establish foundation for admissibility of favorable polygraph evidence at a court-martial).

[FN153]. MCM, *supra* note 14, MIL. R. EVID. 502.

[FN154]. See Samuel J. Rob, Drug Detection by Hair Analysis, ARMY LAW., Jan. 1991, at 10; Note, Hair Analysis-Overcoming Urinalysis Shortcomings, ARMY LAW., Feb. 1990, at 69.

[FN155]. See United States v. Nimmer, 39 M.J. 924 (N.M.C.M.R. 1994), petition for review granted, <u>40 M.J. 299 (C.M.A.</u> 1994).

[FN156]. Under DOD DIR. 1010.1, *supra* note 91, encl. 3, para. H3a, the respondent or respondent's counsel may obtain the underlying data related to a negative test result. However, if the respondent offers such a negative test result, the recorder also may obtain the underlying data. *Id*. Unfortunately for the respondent, this data actually may reveal the presence of drugs or drug metabolites, although at a level below the Department of Defense cut off for reporting the test positive.

[FN157]. Negative test results taken at or near the time of the respondent's alleged drug use almost are certainly admissible at an administrative separation board. *See* AR 15-6, *supra* note 18, para. 3-6a. *But see* United States v. Johnston, 41 M.J. 13 (C.M.A. 1994) (in a court-martial, military judge properly excluded defense evidence of a negative test taken three days after alleged marijuana use because the test result would have been too confusing).

[FN158]. Arguably, negative test results would be irrelevant and, therefore inadmissible at the board unless they were taken at or near the time of the positive test. *See* United States v. Jones, 30 M.J. 898 (A.F.C.M.R. 1990) (at a court-martial, military judge properly excluded defense evidence of negative **urinalysis** test administered six months after the period of charged drug use). However, because many drugs are addictive, even tests administered long before or after the positive test probably would be admissible at an administrative separation board. *See* AR 15-6, *supra* note 18, para. 3-6a.

[FN159]. Unfortunately, the respondent's counsel may not compel production of such tests. *See* AR 15-6, *supra* note 18, para. 5-8b.

#### \*17 APPENDIX A

#### SAMPLE FINDINGS AND SENTENCING WORKSHEET, ENLISTED BOARD

IN COMPLETING THIS WORKSHEET, LINE THROUGH ALL INAPPLICABLE PARENTHETI-CALS. WHEN ANNOUNCING THE FINDINGS AND RECOMMENDATIONS, DO NOT READ THE LANGUAGE IN BOLD PRINT.

The board finds that the allegation of commission of a serious offense, specifically the use of cocaine by the respondent, Private Richard J. Schmedlap, on or about 21 January 1995, (is) (is not) supported by a preponderance of the evidence.

### IF YOU FIND THAT THE ABOVE ALLEGATION IS NOT SUPPORTED BY A PREPONDERANCE OF THE EVIDENCE, STOP HERE. OTHERWISE, CONTINUE AS FOLLOWS:

The board finds that the above finding (does) (does not) warrant separation.

The board recommends that Private Schmedlap be: (retained in the service; the board believes that he can perform the following type of duty satisfactorily:\_\_\_\_\_\_.)

(separated because of misconduct.)

#### IF YOU RECOMMEND THAT THE RESPONDENT SHOULD BE RETAINED, STOP HERE. OTH-ERWISE, CONTINUE AS FOLLOWS:

The board recommends that Private Schmedlap be furnished:

(an honorable discharge certificate)

(a general discharge certificate)

(a discharge order under other than honorable conditions).

#### **APPENDIX B**

#### SUGGESTED DIRECT EXAMINATION QUESTIONS: OBSERVER

- 1. Please state your name, rank, social security number, and organization.
- 2. What is your duty position?
- 3. Do you know the respondent?
- 4. Did you serve as an observer in a **urinalysis** test on (date)?
- 5. Who was the Unit Alcohol and Drug Coordinator for this test?
- 6. Who ordered this test?
- 7. Why did he/she order this test? (Was it a unit-wide inspection?)
- 8. Did the respondent participate in this test?
- 9. Please describe the procedures used at a **urinalysis** test.
- 10. Were these procedures followed during the test on (date)?
- 11. Were the urine specimen bottles labeled prior to the test?
- 12. Was the DD Form 2624, Specimen Custody Document, properly prepared prior to the test?

13. Was a urinalysis ledger used during the test?

14. Did the Unit Alcohol and Drug Coordinator give the respondent his/her specimen bottle in your presence?

15. Did the respondent verify the information on the bottle label by signing his payroll signature in the ledger and initialing the bottle label?

16. Did you directly observe the respondent urinating into the bottle?

17. Please describe how you did this.

18. Are you sure the bottle contained nothing but the respondent's urine?

19. Did the respondent give you the bottle?

20. Did you return the bottle to the Unit Alcohol and Drug Coordinator, initial the bottle label, and sign the Specimen Custody Document?

21. Did the respondent initial the bottle label and sign the Specimen Custody Document?

22. Was the bottle sealed? Who did this?

23. Did you see what happened to the bottle once it left your custody? Please describe what was done.

24. Did your unit receive a report from the laboratory that the respondent's sample tested positive for (drug)?

25. I hand you exhibit 1. Is that the report?

26. Is that your signature on the Specimen Custody Document contained in the report?

27. Does that report indicate that the respondent used (drug) on or about (date)?

#### APPENDIX C

#### SUGGESTED DIRECT EXAMINATION QUESTIONS: UNIT ALCOHOL AND DRUG COORDINATOR

1. Please state your name, rank, social security number, and organization.

2. Are you the Unit Alcohol and Drug Coordinator for your unit?

3. What, if any, training did you receive for this position?

4. Do you know the respondent?

5. Did you supervise a **urinalysis** test on (date)?

6. Who ordered this test?

7. Why did he/she order this test? (Was it a unit-wide inspection?)

8. Did the respondent participate in this test?

\*18 9. Please describe the procedures used at a **urinalysis** test.

10. Are these procedures described in Army Regulation 600-85?

11. I hand you exhibit 3. Is this a copy of the applicable provisions of Army Regulation 600-85?

12. Were the procedures described in this regulation followed during the test on (date)?

13. How did you label the urine specimen bottles prior to the test?

14. Please describe how you prepared the DD Form 2624, Specimen Custody Document, prior to the test.

15. Please describe how you prepared the **urinalysis** ledger prior to the test.

16. Who was the observer for the respondent's test?

17. Did you give the respondent his/her specimen bottle in the presence of the observer?

18. Did the respondent verify the information on the bottle label by signing his/her payroll signature in the ledger and initialing the bottle label?

19. As far as you know, did the observer properly observe the respondent urinating into the bottle?

20. Did the observer return the bottle to you, initial the bottle label, and sign the Specimen Custody Document?

21. Did you initial the bottle label and sign the Specimen Custody Document?

22. Please describe how you packaged and mailed the respondent's sample to the laboratory.

23. Do you know what happened to the sample once it left your custody? Do you know whether the sample was received at the laboratory?

24. Are you familiar with the laboratory's testing procedures? How did you become familiar with them? What are these procedures?

25. Did you receive a report from the laboratory that the respondent's sample tested positive for (drug)?

26. I hand you exhibit 1. Is that the report?

27. Is that your signature on the Specimen Custody Document contained in the report?

28. When and how did you receive this report?

29. Did you subsequently receive a litigation packet concerning the respondent's positive drug test from the laboratory?

30. I hand you exhibit 2. Is that the litigation packet?

31. Please describe what that packet contains and what it indicates.

32. Does that packet indicate that the respondent used (drug) on or about (date)?

#### APPENDIX D

#### SUGGESTED DIRECT EXAMINATION QUESTIONS: CHARACTER WITNESS

1. Please state your name, (rank), social security number, and organization/address.

2. What is your (duty position) (job)?

3. Do you know the respondent?

4. How long have you known the respondent?

5. In what capacity have you known the respondent?

6. Have you supervised the respondent?

7. Have you had contact with the respondent (off-duty) (outside of the workplace)?

8. Have you ever been to (summer camp) (annual training) (\_\_\_\_\_) with the respondent?

9. What is your opinion of the respondent's (duty) (work) performance?

10. Could you give some examples of his/her (duty) (work) performance?

11. In your opinion, does the respondent have good military character?

12. Could you give some examples of his good military character?

13. Have you ever seen any indication that the respondent uses drugs?

14. Were you surprised by the report that the respondent's urine tested positive for drug use? Why?

15. In your opinion, did the respondent use drugs on (date)?

16. Do you believe that the respondent should be retained in the service?

17. If the respondent is discharged, what type of discharge do you believe he should receive?

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Tab H-28

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# TAB I

## PUT SOME CLOTHES ON THAT NAKED URINALYSIS CASE

#### Major Charlie Johnson-Wright

What is a naked urinalysis case? Prosecutors refer to reported a false positive result.<sup>8</sup> Although it was an an illegal drug case as a "naked urinalysis case" when the only evidence of drug use is the scientific laboratory report. That lab report identifies a specific urine sample as having tested positive for the presence of an illegal drug metabolite. In the late 1980's and early 1990's, it was fairly easy to successfully prosecute naked urinalysis cases. Unfortunately, over the years it has become more challenging to convict a drug user based solely on a scientific test. This article addresses two prevailing challenges prosecutors face when trying mark cases, United States v. Campbell<sup>9</sup> has caused a naked urinalysis case, provides suggested solutions to those challenges, and addresses two landmark cases: U.S. v.  $Campbell^1$  and U.S. v. Green.<sup>2</sup>

One challenge is a belief by some that the laboratory tests that are performed at the Air Force Drug Testing Lab at Brooks Air Force Base, Texas (Brooks Lab)<sup>3</sup> are scientifically unreliable. We know that the prosecutor's burden in an illegal drug use case is to prove beyond a reasonable doubt two elements: (1) that the accused used a controlled substance, and (2) that that use was wrongful.<sup>4</sup> Knowledge of the presence of the illegal drug is a required component of the use element of a crime.

Arguments that challenge the reliability of the test results from the Brooks Lab are not new. Defense counsel in the late 1980's and early 1990's routinely attacked the reliability of the lab test. Defense arguments during that period were not as convincing as they are today. What has changed since then? The answer is the occurrence of a glitch at the Brooks Lab in June 1997 in which the lab reported an administrative false positive.

Essentially, in September 1997 notification was made indicating a urine sample tested positive for cocaine. While the urine sample contained the cocaine metabolite, the sample should not have been reported positive because the concentration of the cocaine metabolite in the sample did not exceed the DoD cutoff level of 100 ng/ml.<sup>6</sup> Human error in the review process caused the mistake, not the test.<sup>7</sup> This was the first time in over 13 years of testing that the Brooks Lab

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isolated incident, it tarnished the reputation of the Brooks Lab thereby making it easier for defense counsel to argue reasonable doubt.

The second challenge to the successful prosecution of the naked urinalysis case is getting the scientific evidence (lab report, expert testimony, etc) admitted as evidence during the government's case in chief. In recent years, we have seen many cases that have focused on naked urinalysis evidence. One of the landprosecutors much concern. In Campbell, the appellant had been convicted of wrongful use of lysergic acid diethylamide (LSD).<sup>10</sup> The prosecution's sole evidence of wrongful use of LSD consisted of a urinalysis test.<sup>11</sup> At trial, the accused challenged the reliability of the scientific test, alleging the scientific methodology used in the test did not meet reliability standards.<sup>1</sup> The U.S. Court of Appeals for the Armed Forces (CAAF) held that the prosecution failed to prove that the particular scientific test (gas chromatography tandem mass spectrometry) reliably detected the presence of LSD metabolites.<sup>13</sup> Further, the prosecution failed to prove that the DoD cutoff level of 200 pg/ml was greater than the margin of error and sufficiently high enough to reasonably exclude the possibility of a false positive and establish the wrongfulness of the use.<sup>14</sup> Of particular concern to the court was the fact that the prosecution failed to introduce evidence to show it had taken into account what is necessary to eliminate the reasonable possibility of unknowing ingestion or a false positive.<sup>15</sup> CAAF held if the prosecution seeks to rely on the permissible inference of knowledge from the presence of the drug in a urine sample, the cutoff level must be such as to rationally permit factfinders to find beyond a reasonable doubt that the accused's use was knowing.<sup>16</sup> The court reversed the conviction and dismissed the charge. Not only was the scientific evidence insufficient, but also the Campbell court seemingly added an additional component to the elements for drug use in naked urinalysis cases.

The Campbell court held the prosecution may demonstrate the relationship between the laboratory test result and the permissive inference of knowing and wrongful use through expert testimony, by showing:

- 1. That the metabolite is not naturally produced by the body or any substance other than the drug in question;
- 2. That the cutoff level and reported concentration are high enough to reasonably discount the possibility of unknowing ingestion AND to *indicate a reasonable likelihood that the user at some time would have experienced the physical and psychological effects of the drug* (emphasis added); and
- 3. That the testing methodology reliably detected the presence and reliably quantified the concentration of the drug or metabolite in the sample.<sup>17</sup>

Naturally, it is quite challenging, if not impossible, to prove that at some point the accused would have experienced the physical and psychological effects of the drug. In these cases, we don't have a statement by the accused or other witnesses who observed the illegal drug use. Therefore, we don't know exactly when the illegal drug was ingested. We don't know exactly how much was ingested, what was felt, or how the accused acted while under the influence of the drug. Fortunately, for prosecutors, CAAF provided additional guidance on naked urinalysis cases on 11 June 2001 in *U.S. v Green.*<sup>18</sup>

In *Green*,<sup>19</sup> appellant had been convicted of AWOL and 2 specifications of wrongful use of cocaine. The court granted review of the following issues:

- 1. Whether the lower court erred by ignoring the *Campbell* case as binding precedent;
- Whether the appellant's conviction for wrongful use of cocaine was legally sufficient because the prosecution failed to establish predicate facts necessary to sustain a permissible inference; and
- 3. Whether the lower court's decision to affirm the conviction of wrongful use of cocaine *without* (emphasis added) expert testimony concerning the physiological effects violated the due process clause.

At trial, the government's evidence of wrongful use consisted of a lab report and the testimony of an expert in the field of forensic chemistry. The expert described the lab procedures and explained the results of the test.

CAAF held the lower court had not erred by ignoring the *Campbell* case. One of the deficiencies in that case was the "absence of evidence establishing the frequency of error and the margin of error in the testing

process with respect to the novel scientific procedure."<sup>20</sup> The deficiency in the reliability of the test rendered the scientific test inadmissible.<sup>21</sup> Concerning the second issue on appeal in Green, CAAF reiterated where scientific evidence provides the sole basis to prove the wrongful use of a controlled substance, expert testimony is required to provide a rational basis upon which the factfinder may draw an inference that the substance was wrongfully used.<sup>22</sup> Whether the prosecution has offered sufficient expert testimony to establish this rational basis is a question for each military judge to determine.<sup>23</sup> The court reiterated military judges are the "gatekeepers" charged with admitting into evidence expert testimony that is relevant and reliable. This is not a new requirement. The judge has the discretion to determine the admissibility of the expert testimony by considering whether:

- 1. The metabolite is naturally produced by the body or any substance other than the drug in question;
- 2. The permissive inference of knowing use is appropriate in light of the cutoff level, the reported concentration, and other appropriate factors; and
- 3. The testing methodology is reliable in terms of detecting the presence and quantifying the concentration of the drug or metabolite in the sample.<sup>24</sup>

Concerning the last issue on appeal in *Green*, CAAF held "a urinalysis properly admitted under the standards applicable to scientific evidence, when accompanied by expert testimony, provides a legally sufficient basis upon which to draw the permissive inference of knowing and wrongful use *without* (emphasis added) testimony on the merits concerning physiological effects."<sup>25</sup> What does this all mean? Prosecutors are challenged to provide sufficiently relevant and reliable expert testimony/evidence to convince the military judge to admit it into evidence in a naked urinalysis case.

In light of the substantial challenges discussed above, what is the solution to secure a conviction in a litigated naked urinalysis case? The simple answer is to "put some clothes" on that naked urinalysis case. The 'clothing' is made by a thorough and intense investigation.

As the prosecutor, it is imperative that you get deeply involved early on with the investigators and guide and assist them in their evidence-gathering. Ensure the investigators 'turn over every rock' to develop corroborating evidence. The completed Office of Special Investigation (OSI) or Security Forces (SF)

#### FYI

Report is just the beginning for the prosecutor. First, you must read <u>every</u> word in the report. There are leads in virtually every report—follow them. On occasion, you will get a report with no witness statements and no leads and just an attempt to interview the accused who elected to remain silent. (In some cases, you won't have a completed report because OSI or SF has not yet completed it.) Look beyond the report and think logically. Who knows the accused and his/her habits? Who might the accused tell about his illegal drug activity? The answers are his friends, supervisors, co-workers, neighbors, etc. Find out where the accused spends his/her leisure time. Talk to those people in that environment.

Take the time to thoroughly research the illegal drug. Visit with your OSI detachment or SF drug unit and read the multitude of manuals, pamphlets and books on the pertinent drug. You need to know how to identify it, what physical and psychological effects it has on the human body (both short and long term), and whether and how long the drug can be detected in the urine, blood or hair follicle. Knowing all of this beforehand makes your interviews more effective and efficient. Thorough preparation of this nature also provides you with an excellent method to establish a good rapport with potential witnesses and a means to determine the evidence that will help you meet your burden of proof at trial.

Interview the urinalysis monitors (chain of custody witnesses), the orderly room trusted agent, co-workers and supervisors. How did the accused act when notified of the random urinalysis test? Was the accused nervous, worried, or reluctant to provide a sample? Answers to these questions could be the corroboration you need. Obviously, you must interview all witnesses (prosecution and defense) before they testify interview them before the Article 32 hearing and certainly before the trial. Often, you will interview your main witnesses several times before calling them to testify.

After you have interviewed all witnesses, review the accused's medical records. Medical records can be very helpful. For example, chronic cocaine abusers typically suffer nasal complications. Snorting this powdery substance through the nose tends to irritate the nasal mucous membranes. This is evidence that you might be able to use to corroborate the scientific urinalysis data. Interview the doctor who treated the accused for the nasal condition. Identify a medical expert who can testify that the medical condition is consistent with someone who abuses cocaine. (Naturally, you will have to do some legal research to lay the proper foundation for admission of this evidence. Always anticipate that the defense will chal-

lenge every piece of evidence you intend to introduce.)

This turn-over-every-rock investigation technique is the solution to the challenges of the typical and fartoo-frequent naked urinalysis case. Before *Green*, many prosecutors were concerned about trying naked urinalysis cases and believed it might be more prudent to dispose of the case by other means. Now that the perceived burden of proving the physiological effects of the illegal substance created by *Campbell* has been lifted, the litigator must now concentrate on reducing the number of naked urinalysis cases. Prosecutors, let's clothe these naked cases by thoroughly investigating and effectively prosecuting them.

<sup>1</sup> 50 M.J. 154 (C.A.A.F. 1999).

<sup>2</sup> 54 M.J. \_\_\_\_ (C.A.A.F. 2001).

<sup>3</sup> Although the Air Force Drug Testing Laboratory is officially called the "Armstrong Lab," it is routinely referred to as the "Brooks Lab." <sup>4</sup> Paragraph 37b(2), Part IV, Manual for Courts-Martial (2000 Edition).

<sup>5</sup> Paragraph 37c(10), Part IV, Manual for Courts-Martial (2000 Edition).

<sup>6</sup> Special Inspection Report on the Drug Testing Division, Armstrong Laboratory, Brooks AFB, TX, by the Office of the Department of Defense Coordinator For Drug Enforcement Policy and Support, Washington DC, dated 8 October 1997.

<sup>7</sup> Id. <sup>8</sup> Id.

<sup>9</sup> 50 M.J. 154 (C.A.A.F. 1999).

- <sup>10</sup>*Id*.
- $^{11}$  *Id.* at 156.  $^{12}$  *Id.*
- $^{13}$  *Id.* at 161.
- $^{14}$  Id.
- $^{15}$  *Id*.

<sup>16</sup> Id. at 162.

- <sup>17</sup> Id. at 160.
- <sup>18</sup>54 M.J. (C.A.A.F. 2001)

<sup>19</sup> The court dismissed one of the specifications of wrongful use of cocaine on grounds unrelated to the issues on appeal. *Id.* <sup>20</sup> *Id.* 

<sup>21</sup> Id. <sup>22</sup> Id. <sup>23</sup> Id.

<sup>24</sup> Id. <sup>25</sup> Id. THIS PAGE INTENTIONALLY LEFT BLANK

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#### Military Law Review Summer, 2006

Article

#### \*38 TIME FOR ANOTHER HAIRCUT: A RE-LOOK AT THE USE OF HAIR SAMPLE TESTING FOR DRUG USE IN THE MILITARY

Major Keven Jay Kercher [FNa1]

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#### I. Introduction

The Army's urinalysis program has made great strides in reducing drug use in the military ranks. [FN1] However, the current military operational tempo and the prevalence of illegal drugs in local communities [FN2] warrant a more comprehensive approach to eliminating drug use in the service. [FN3] An annual national drug survey by the U.S. Department of Health and **\*39** Human Services' Substance Abuse and Mental Health Services Administration reflects the gravity of the drug problem in America. [FN4] According to the 2004 survey, 19.1 million Americans, age twelve and over, currently use illegal drugs. [FN5] Seventy-five percent of the 16.4 million drug users, aged eighteen and older, had current employment. [FN6] Since those serving in our armed forces are a cross-section of society as a whole, commanders can expect servicemembers to have easy access to people who use drugs and to people who sell drugs.

Also, increased servicemember usage of popular "club drugs", especially ecstasy, has left commanders wondering whether current urinalysis programs sufficiently ensure good order and discipline in their units. [FN7] Several dilution products, cleansing products, chemical adulterants, and prosthetic devices (e.g., an artificial penis) currently exist to assist servicemembers in avoiding a positive urinalysis test result. [FN8] An Internet Google search using the words "beat a drug test" provided over 1,200,000 hits. [FN9] Many of these sites offer to provide pills or chemical solutions that counter urinalysis tests. [FN10] These products claim to help avoid a positive drug test result by flushing drugs out of a person's urine prior to a test. [FN11]

**\*40** Additionally, a urinalysis can only detect, for most drugs, drug use occurring a few days prior to the test. [FN12] This inherent testing limitation greatly reduces a urinalysis's ability to catch drug users. As a result, servicemembers could easily avoid testing positive by abstaining from drug use for a short period of time prior to an expected test. [FN13]

Drug testing of a servicemember's hair sample serves as a viable addition to a commander's current arsenal of tools to combat continued drug use among the ranks. Commanders should utilize drug testing of hair samples to curtail servicemember drug use for several reasons. Drug testing of hair samples: (1) increases the drug detection "window" to several months; [FN14] (2) satisfies any Fourth Amendment concerns; [FN15] (3) provides

commanders with reliable results; [FN16] and (4) requires only minor adjustments to current military drug testing programs. [FN17] Accordingly, this article advocates the wide spread implementation of hair testing as a much needed and complementary addition to the military's current urinalysis program.

#### II. A Forensic Overview of Hair Sample Testing (The Science)

An understanding of the scientific concepts of hair drug testing will assist commanders and military lawyers in successfully utilizing hair drug testing. [FN18] The concepts include: how drugs deposit in the hair; how authorities collect hair samples; and how laboratories analyze these samples. [FN19] These concepts will highlight hair drug testing's advantages and disadvantages by explaining the biological process behind the test. [FN20]

#### \*41 A. Dynamics of Drug Deposits in the Hair

When a servicemember ingests a drug by injecting, snorting, smoking, or other methods, the body metabolizes the drug. [FN21] The drug and its metabolites then enter the servicemember's blood stream and circulate throughout his body. [FN22] As the blood brings nutrients to the hair, the blood also deposits the drug and drug metabolites in the hair follicles. [FN23] The drug metabolites and actual drug traces come to rest permanently in the hair strand. [FN24]

As the hair grows, the hair section containing the drug deposit grows beyond the skin's surface. [FN25] Normally, a hair must grow for five to seven days before the hair containing the drug deposit emerges from the skin's surface. [FN26] Hair grows at an average rate of about 1/2 inch (approximately 1.3 centimeters) per month. [FN27] Chronic drug use creates a band-like pattern of drug deposits within the exposed hair, similar to rings in a raccoon's tail. [FN28] The hair continues to grow until it becomes dormant and eventually falls out of the head. [FN29]

#### \*42 B. Forensic Collection Procedures

Based on a hair growth rate of 1/2 inch per month, hair collection procedures usually require a 1 1/2 inch long hair sample, [FN30] with this sample size covering a three-month period. [FN31] The back of the crown of the head is the primary area used for sample collection. [FN32] The hair is collected using a pair of sterilized scissors, using a 1/2 inch wide hair sample taken as close to the scalp as possible. [FN33] Keeping the hair root ends of the sample aligned, the collector then deposits the hair sample into a foil packet. [FN34] Next, the collector places the foil packet into a sealed envelope secured with an integrity seal. [FN35] Finally, the collector mails the sample and accompanying paperwork to the designated laboratory. [FN36]

#### C. Analyzing the Test Results

Upon arrival at the laboratory, technicians subject the hair sample to rigid procedures. [FN37] First, the technicians inspect the hair sample and accompanying paperwork for any existing discrepancies that may upset the integrity of the sample. [FN38] Next, the technicians wash the hair. [FN39] The washing procedures eliminate any drugs or oils that may have attached to the hair strands through external exposure. [FN40] The technicians then cut the **\*43** hair strands into 1/2 inch segments for separate testing. [FN41] Segmentation establishes a monthly drug history; each segment represents roughly thirty days of hair growth. [FN42] If a laboratory finds

drug metabolite in a segment, the laboratory will then know that the drug use occurred within that thirty-day window. [FN43]

After segmentation, the lab combines each hair sample segment with an enzymatic solution that breaks down the hair. [FN44] This procedure converts the hair into liquid form for testing. [FN45]

The laboratory technicians then further subject the hair solution to a radioimmunoassay (RIA) screening test and a subsequent gas chromatography/mass spectrometry confirmatory (GC/MS) test. [FN46] The laboratory reports the drug results of both the RIA and GC/MS tests in nanograms per ten milligrams (NPM) of hair [FN47] or in picograms per one milligram of hair. [FN48] Each laboratory has established drug cut-off levels for each drug. [FN49] Although laboratory differences in drug cut-off levels for **\*44** hair do exist, the DOD Coordinator for Drug Enforcement Policy and Support would likely ensure uniform drug cut off levels for hair sample testing across the DOD. [FN50] The cut off levels require the hair sample to contain an amount of drug or drug metabolite at or above the drug cut-off level before a laboratory will report a positive test result for that particular drug. [FN51]

#### D. Advantages of Hair Sample Analysis

The long drug detection window of hair drug testing represents the greatest advantage of hair drug testing over the currently used urine testing method. [FN52] The average hair sample allows for the detection of drug use within the past three months, while the detection window for urine testing is generally only a few days. [FN53] If the command tested a servicemember's urine for cocaine, a urine test would only expose illegal cocaine use occurring in the past seventy-two hours. [FN54] In contrast, a hair drug test could show cocaine use over a three-month period. [FN55] As a \*45 result, the typical hair test would give the command a three-month "snapshot" of the servicemember's drug use. [FN56] The hair drug test, like a urinalysis, cannot reveal exact dates of drug use, but the hair drug test can indicate low, moderate, or chronic use. [FN57]

In addition to a long drug detection window, hair drug testing also provides several other advantages. [FN58] First, testing of hair samples taken from the head is less of an invasion of the servicemember's privacy than a urine test, which requires direct observation of the urine flow. [FN59] Second, hair drug testing does not have the potential inherent adulteration problems of urine testing such as dilution or usage of prosthetics. [FN60] Third, the command can easily transport and store hair samples. [FN61] In austere environments, the command would not have to worry about crushed samples, contaminated samples, or the effects of extreme heat or cold. [FN62] For example, the current conflict in Iraq \*46 represents such an environment, where the extreme heat could cause the drug concentrations in urine samples to decrease. [FN63] The intense heat could also stimulate rapid bacteria growth in the urine sample. [FN64] Fourth, the command could obtain another similar hair sample if the laboratory indicated a problem with the original hair sample. [FN65] Fifth, hair drug testing can help discriminate heroin users from codeine users or poppy-seed consumers, which urine testing allegedly cannot do. [FN66]

#### E. Limitations of Hair Analysis

Although hair drug testing has many advantages, it cannot detect a use that occurred only a few days prior to a drug test. [FN67] After a servicemember consumes an illegal drug, the actual drug and drug metabolite must circulate through the blood to reach the hair. [FN68] Once the drug reaches the hair root, the hair must then

grow long enough to \*47 expose the drug deposits above the skin's surface. [FN69] Consequently, a commander would have to wait almost a week to obtain a hair sample reflecting present-day drug use. [FN70]

Hair drug testing also might not detect a one-time use based upon selected, drug detection, cut-off levels. [FN71] For example, the average amount of cocaine ingested during one use is 125 mg. [FN72] A hair sample test would require the user to ingest approximately 200 mg of cocaine to return a positive result. [FN73] However, if a servicemember ingested several 125-mg "lines" of cocaine at one time, sometimes called "binge" use, the hair test would detect that use. [FN74] Hair drug testing can also estimate the number of one-time drug uses over a period of time because the lab analyzes the cumulative amount of drug deposits in a segment of hair. [FN75] This limitation represents one negative aspect associated with hair drug testing.

#### III. The Fourth Amendment & Military Rule of Evidence (MRE) 313

Beyond the technical benefits of hair drug testing, it also satisfies the legal requirements of the Fourth Amendment, which protects persons from unreasonable government searches and seizures. [FN76] Unless an exception applies, the government actor must operate with a proper warrant issued upon probable cause to conduct a search or a seizure. [FN77] \*48 Specifically, the Fourth Amendment applies to situations where a government actor intrudes into an area where a person has a reasonable expectation of privacy. [FN78] Hair drug testing raises three areas of Fourth Amendment concern: (1) the seizure of the servicemember to obtain the hair; [FN79] (2) the seizure of the hair; [FN80] and (3) the search of the hair for illegal substances. [FN81]

The Supreme Court has established certain tests for the lower courts to use in determining when a government official's actions will trigger Fourth Amendment protections. [FN82] In *Katz v. United States*, the Supreme Court created a two-part test to determine when an individual has a reasonable expectation of privacy in his person or in a particular place or item. [FN83] The Court will find a reasonable expectation of privacy: (1) if the person believes he has a subjective expectation of privacy; and (2) if society accepts that expectation of privacy as objectively reasonable. [FN84] If a reasonable expectation of privacy exists, the government must possess a valid search authorization [FN85] or a search authorization exception prior to searching and/or seizing a particular person or item or prior to searching a particular place. [FN86]

When applying these rules to hair drug testing, three questions emerge. First, does a servicemember have a reasonable expectation of privacy in his hair? [FN87] Second, if the servicemember does have an **\*49** expectation of privacy in his hair, does the government actor taking the hair sample have a search authorization based upon probable cause, [FN88] or does an exception to the search authorization requirement exist? [FN89] Third, is the manner in which the government actor collected the hair sample reasonable? [FN90] Hair drug testing must satisfactorily navigate these legal checkpoints before military counsel may use hair sample results in court. [FN91]

#### A. Reasonable Expectation of Privacy

Controversy over whether an individual has a reasonable expectation of privacy in his hair currently exists in both federal and state courts. [FN92] If an individual does not have an expectation of privacy in his hair, law **\*50** enforcement officials could conduct a warrantless seizure of it. [FN93] The courts often analyze whether a hair sample is more akin to a handwriting or voice sample, or to a blood or urine sample. [FN94] The Supreme Court has found that a person has no reasonable expectation of privacy in a handwriting sample [FN95] or a

voice sample. [FN96] However, the Court has held that a person does have an expectation of privacy in a blood sample [FN97] and a urine sample. [FN98] The question then becomes where a hair sample seizure would fall on this spectrum.

Military appellate courts have not yet addressed the question of whether a servicemember has a reasonable expectation of privacy in his hair. [FN99] In *United States v. Ruiz*, government counsel argued that the accused did not have an expectation of privacy in his drug-tested hair sample. [FN100] However, the Air Force Court of Criminal Appeals (AFCCA) found that a valid search authorization existed in the case. [FN101] Therefore, the Air Force court avoided confronting the privacy issue. [FN102] In comparison, the same court in *United States v. Pyburn* held that a forcible taking of an uncooperative servicemember's hair to compare the hair to a crime scene hair sample did not violate the Fourth **\*51** Amendment. [FN103] At the time of the hair seizure, the military police had Pyburn in custody, but did not have a search authorization. [FN104]

*Pyburn* highlights the distinction between and consequent implications of a hair sample obtained for drug testing purposes, with one obtained for comparison purposes. [FN105] A hair sample seized to compare to another hair sample more closely aligns with the expectation of privacy analysis associated with the taking of a handwriting sample. [FN106] However, a hair sample seized to chemically analyze the sample for drugs arguably correlates more to a seizure of a urine sample. [FN107] Therefore, even if military courts find no reasonable expectation of privacy in a hair sample, the defense could still argue for the courts to bifurcate hair sample testing into two separate "expectation of privacy" categories. [FN108] One category, "drug testing", would create a reasonable **\*52** expectation of privacy. The other category, "comparison testing", would not involve a reasonable expectation of privacy.

Separate from the test's purpose, the hair sample removal site may also play a role in assessing intrusiveness. [FN109] Removing hair from a person's head differs in level of intrusiveness from removing hair from the body, especially from the pubic region. [FN110] The seizure of a pubic hair sample could push a court to apply Fourth Amendment protection, where the seizure of a hair sample taken from the head would not. [FN111] This difference could create difficulties for commanders who have servicemembers with short or shaved haircuts. [FN112] A commander may counter this problem by first seizing hair from a servicemember's chest or underarm. [FN113] A commander could also require a servicemember to grow out the hair on his head. [FN114] This order would flow from the same logic that allows a commander to order a servicemember to drink water to provide a sample pursuant to a urinalysis. [FN115]

\*53 The method of hair collection method may also affect the reasonable expectation of privacy analysis. [FN116] In *Coddington v. Evanko* the Third Circuit Court of Appeals examined the hair collection method used. [FN117] The court held that Officer Coddington did not have a reasonable expectation of privacy in his head, neck, and back hair because the government official clipped hair that was in plain view. [FN118] The *Coddington* court found no reasonable expectation of privacy in a hair sample that was "above the body surface and on public display." [FN119] However, the court noted that plucking the hair from the root may raise an expectation of privacy. [FN120] Consequently, the court created an expectation of privacy for subsurface hair but not for surface hair. [FN121] The court equated the clipping of hair to obtaining fingerprints or handwriting exemplars and the plucking of hair to obtaining blood samples or fingernail scrapings. [FN122]

\*54 Consequently, a legal window is currently open for military counsel to argue that a servicemember does not have a reasonable expectation of privacy in his hair. [FN123] This argument, if successful, could preserve evidence from a command-directed hair collection regardless of whether sufficient probable cause exists.

[FN124] Additionally, a commander could order a hair drug test based on less than probable cause and still have the results admitted. [FN125]

For example, assume a commander hears rumors that three of his servicemembers consumed illegal drugs over the past weekend. [FN126] However, the commander does not have probable cause for a search authorization. Unfortunately, a last minute inspection would raise subterfuge concerns that the inspection is only a quest for evidence which the Manual for Courts-Martial prohibits. [FN127] In consultation with his legal advisor, the commander might decide to order a fitness-for-duty urinalysis test. [FN128] Unfortunately, this test triggers the Army's limited use policy, which prohibits the commander's use of the results of the urinalysis for judicial and nonjudicial punishment. [FN129]

If servicemembers had no expectation of privacy in their hair, a hair sample test might legally sidestep the limitations of the Army's limited **\*55** use policy. [FN130] The limited use policy covers "results of a commanddirected biochemical testing that [are] inadmissible under the Military Rules of Evidence." [FN131] However, MRE 311 only makes the evidence of a search inadmissible if "the accused had a reasonable expectation of privacy in the person ... searched." [FN132] A hair sample test could occur under the same premise used to justify an order to a servicemember suspected of wrongful entry to provide fingerprint samples for possible comparison. [FN133] In both cases, the evidentiary rule would not preclude introduction of the evidence since the servicemembers would have no reasonable expectation of privacy in their fingerprints or in their hair. [FN134]

Even if a commander had valid ground to seize the hair, a commander would not be authorized to conduct the hair sample test in a dragnet fashion. [FN135] A finding of no reasonable expectation of privacy in the hair would justify only the seizure of the hair and the search of the hair. [FN136] The Fourth Amendment would still require a legitimate reason for temporarily detaining a servicemember temporarily to obtain a hair sample, such as pursuant to a law enforcement investigation. [FN137] A commander must be able to articulate a reasonable suspicion about a **\*56** certain servicemember, [FN138] or at least possess a reasonable belief that a hair sample test would identify a perpetrator. [FN139]

Additionally, the hair sample seizure must utilize reasonable collection procedures. [FN140] In *Bouse v. Bussey*, the Ninth Circuit Court of Appeals held that a hair sample collection violated the Fourth Amendment. [FN141] The Ninth Circuit found that two police officers acted inappropriately when they subdued a pretrial detainee, unzipped his trousers, and forcibly pulled a pubic hair sample. [FN142] The court found that these actions exceeded the "minor intrusions upon privacy and integrity that ... are not generally considered searches or seizures." [FN143] "[W]hat is reasonable depends upon all of the circumstances surrounding the search or seizure and the nature of the search or seizure itself." [FN144]

In sum, military appellate courts have not ruled on the threshold question of whether a servicemember has an expectation of privacy in his hair for drug testing purposes. [FN145] However, commanders should always try to obtain samples of hair from the head instead of the body to \*57 minimize any intrusiveness concerns. [FN146] Commanders should also obtain hair samples using cutting, not plucking, methods. [FN147] These techniques will strengthen the government's argument that a servicemember does not have a reasonable expectation of privacy in his seized hair. [FN148] Finally, the commander should be able to articulate a basis for seizing hair from the servicemember and should follow established collection procedures. [FN149]

#### B. Search Authorization

Although military appellate courts have not yet addressed the expectation of privacy issue for hair drug testing, they have routinely upheld search authorizations for hair samples. [FN150] Witness observations and positive urinalysis results usually provide the facts necessary to **\*58** support a probable cause determination. [FN151] In several military cases, however, the defense challenged the commander or magistrate's probable cause determination based on inaccurate information provided by witnesses about the capabilities of hair sample testing. [FN152]

For example, *United States v. Bethea* involved confusion over the ability of hair sample testing to detect a one time drug use. [FN153] When a Criminal Investigation Division (CID) special agent confronted the accused with a positive urinalysis test, the accused denied using cocaine. [FN154] The special agent then sought a magistrate's search authorization for a hair sample. [FN155] The special agent's affidavit stated that hair sample testing analysis could detect only chronic or binge drug use. [FN156] The defense argued that the positive urinalysis result lacked probable cause for a second test that could detect one time use. [FN157] Therefore, the defense claimed the magistrate lacked probable cause to order a follow-up hair test because the hair test could only detect multiple uses. [FN158]

Even if a hair sample analysis might not detect all one time uses, [FN159] the Court of Appeals for the Armed Forces (CAAF) stated that this possible limitation did not invalidate the search authorization. [FN160] The court held that because a urinalysis could detect not only a one time use but also multiple uses, [FN161] a urinalysis could provide sufficient probable **\*59** cause for a hair sample test. [FN162] The court effectively dodged the one time use issue by focusing on a urinalysis's ability to detect multiple drug uses. [FN163]

*Bethea* represents the problems that lack of precise wording in affidavits can create in the search authorization process. [FN164] Law enforcement officers and special agents should always contact hair sample analysis experts prior to executing an affidavit that is geared toward seizure of a hair sample. [FN165] This simple step can help ensure commanders and magistrates obtain accurate hair drug testing information prior to being confronted with a probable cause determination.

#### C. Military Rule of Evidence 313

Although a proper search authorization complies with the Fourth Amendment, a commander's inspection authority provides a lawful exception to Fourth Amendment requirements. [FN166] Military Rule of Evidence 313 outlines the legal standards applicable to a command inspection. [FN167] These standards provide guidance on inspection procedures and regulate the admissibility of evidence collected pursuant to an inspection. [FN168] Hair drug testing complies with these standards because it satisfies the rule's underlying "special needs" exception to the Fourth Amendment's warrant clause. [FN169] Hair drug testing also mirrors the rules urinalysis exception criteria because the rationale used to justify hair drug testing can be analogized to that used with urinalysis testing. [FN170] \*60 Adhering to these proscribed requirements also helps prevent subterfuge inspections. [FN171]

#### 1. The "Special Needs" Exception

The Supreme Court has created a "special needs" exception to the Fourth Amendment's probable cause and warrant requirement to deal with unique government interests. [FN172] A compulsory urinalysis ordered pursuant to MRE 313 already complies with this exception both in the rule's text and supportive case law. [FN173]

The "special needs" exception permits a suspicionless, warrantless search into an area in which a person has a reasonable expectation of privacy if the government interest or "special need" outweighs that person's privacy rights. [FN174] "In limited circumstances, where the privacy interests implicated by the search are minimal, and where an important governmental interest furthered by the intrusion would be placed in jeopardy by a requirement of individualized suspicion, a search may be reasonable despite the absence of such suspicion." [FN175]

The Supreme Court has analyzed the "special needs" exception in five separate cases. [FN176] These cases developed factors the Court applies in **\*61** articulating a special governmental need and in weighing that need against a person's privacy interests. [FN177] First, the Court will not find a special need that serves simply as a pretext for criminal prosecution. [FN178] Second, the Court will look favorably upon a special need that does not subject an individual to arbitrary testing. [FN179] Third, the Court will give great weight to the deterrent effect of the government tests when the Court finds a special need. [FN180] Fourth, the Court will consider the temporal applicability of the government test—whether the test can prevent destruction of evidence or determine immediate impairment. [FN181]

Additionally, the Supreme Court prefers a special need that minimally intrudes on a person's privacy. [FN182] When analyzing a unit drug testing program, the Court will consider the intrusiveness of the collection procedures. [FN183] The Court will also examine the amount of restriction the test places on a person's freedom of movement. [FN184] The nature of the person's employment will also receive close review by the Court. [FN185] The Court has found that an employee has a lower expectation of privacy in a heavily regulated work environment. [FN186]

In United States v. Bickel, the Court of Military Appeals (COMA) found a special need for the military's urine testing program. [FN187] The Bickel court identified several distinctions between the Supreme Court's \*62 "special needs" drug cases and the military urinalysis inspections. [FN188] First, the court recognized that the military used the test results in criminal prosecutions but that the Supreme Court favored an administrative use of the results. [FN189] Second, the court noted that the military required direct observation of a servicemember providing a urine sample while the Supreme Court emphasized no such observation. [FN190]

Despite these differences, the *Bickel* court "remain[ed] convinced that the testing of servicemembers authorized by [MRE 313] pursuant to an 'inspection' rationale [was] constitutionally valid." [FN191] The COMA identified several reasons to support its decision: (1) the effects of drugs on a servicemember's ability to accomplish the military mission; [FN192] (2) a servicemember's use of firearms; [FN193] (3) the legislative intent of Congress in criminalizing drug use and drug possession under the Uniform Code of Military Justice; [FN194] (4) a reduced expectation of privacy in the military; [FN195] (5) a dramatic reduction in positive test results; [FN196] (6) proper notification to servicemembers about the program; [FN197] and (7) the administrative purpose of the urinalysis program. [FN198]

Applying the Supreme Court factors and the COMA rationale, hair drug testing satisfies the "special needs" exception. First, since hair drug **\*63** testing and urine testing employ similar analysis procedures [FN199] and generally yield similarly accurate results, [FN200] hair drug testing uses the same justification criteria identified in *Bickel*. [FN201] Second, hair drug testing involves a faster and less intrusive collection procedure than urinalysis testing. [FN202] Even if the command needs to obtain body hair, the monitor can collect the hair sample quickly. [FN203] The hair collection procedure also eliminates the pressure of having to urinate under direct observation. [FN204] Third, the command can easily incorporate hair drug testing into current urinalysis programs and thereby avoid arbitrary application. [FN205]

Finally, hair drug testing, in conjunction with urine testing, will subject servicemembers to a testing program that can reveal drug use over a period of several months. [FN206] Commanders can use this information to identify patterns of drug use in their units and respond **\*64** with appropriate administrative measures. [FN207] This increased deterrent effect compensates for hair drug testing's lack of temporal application. [FN208] Hair drug testing's long drug detection window is not significantly different from current urinalysis testing's one to three week window for detecting marijuana use. [FN209] Although hair drug testing cannot identify immediate drug impairment, the military's need to identify "recent" drug use and prevent future drug use justifies a "special needs" application for hair drug testing. [FN210]

#### 2. Applying the Language of MRE 313

The strong similarities between hair drug testing and urine testing support hair drug testing analysis's ability to meet the textual requirements of MRE 313. The text of MRE 313 clearly recognizes the military urinalysis program as a valid inspection. [FN211] Hair drug testing employs the same RIA screening test and GC/MS confirmatory test as a **\*65** urinalysis. [FN212] Both hair testing and urine testing also use comparable collection methods. [FN213]

Additionally, MRE 313's text prevents a commander from using his inspection authority as a subterfuge for a search. [FN214] The government will need to prove by clear and convincing evidence that the commander did not subvert the search authorization requirement if the commander: (1) orders a urinalysis inspection directly following a report of drug use in the unit; (2) targets certain servicemembers during the inspection; and/or (3) subjects the servicemembers to "substantially different intrusions" during the same inspection. [FN215]

A subterfuge issue often arises when a commander seeks to drug test particular unit members based on rumors that these members use drugs. [FN216] The rumors frequently do not provide the commander with probable cause for a command-directed urinalysis. [FN217] Nevertheless, the commander may still want to take immediate action before the drugs process out of the servicemember's body. Therefore, the commander sometimes decides to rely on his inspection authority. [FN218] Consequently, if the commander specifically uses his inspection authority to avoid the probable cause requirement, the government cannot use the positive urinalysis results in court. [FN219]

Instead, a commander could rely on the long drug detection window of a previously scheduled hair drug test to avoid a subterfuge search. [FN220] For example, in February 2006 a commander schedules a hair sample test for 31 March 2006. On 1 March 2006 the commander becomes aware of **\*66** rumors of recent drug use in the unit. Instead of conducting a urinalysis on 1 March 2006, the commander could rely on the previously scheduled 31 March 2006 hair sample test. [FN221] The commander would receive the benefit of testing the time period of the suspected drug use without unlawfully ordering a urinalysis directly following rumors of drug use. Also, when the commander schedules a hair sample test, he could require 100% unit participation to avoid targeting specific servicemembers. [FN222]

Additionally, a commander could avoid subjecting servicemembers to "substantially different intrusions" during the inspection by obtaining primarily hair from the head, and by articulating strict guidelines for obtaining hair from the body. [FN223] If possible, the commander should first attempt to obtain a head hair sample from the servicemember. [FN224] If the servicemember cannot provide a sample of hair from his head, then the commander should follow clearly defined procedures for obtaining hair from the body. [FN225] As a result, the commander's inspection procedures would uniformly subject each servicemember to the same collection pro-

#### tocol. [FN226]

#### \*67 IV. Reliable and Relevant Results

Besides surviving Fourth Amendment scrutiny, hair sample tests have also defeated reliability arguments and relevancy challenges in the courts over the last fifteen years. [FN227] Prior to 1990, military appellate courts had only addressed hair sample testing in the context of comparing a hair sample taken from a person whose identity was known, to a crime scene sample. [FN228] Since 1990, military courts have allowed hair sample results into evidence. [FN229] The recent CAAF opinion in *United* \*68 States v. Bethea demonstrates the military judicial system's continuing acceptance of hair drug testing results. [FN230]

During this fifteen-year period, federal courts have also recognized the reliability of hair drug testing. [FN231] *United States v. Medina* provided an on-point analysis of hair drug testing's reliability in detecting cocaine use. [FN232] The *Medina* court referred to extensive scholarly writing on hair drug testing to support its conclusion. [FN233]

#### A. Evidentiary Reliability

Ironically, military appellate courts' first review of hair drug testing originated with the defense. [FN234] In *United States v. Nimmer*, the defense sought to enter a hair sample that tested negative for drug use into evidence to counter a positive urinalysis test. [FN235] The trial court and the Navy-Marine Corps Court of Military Review denied admissibility of the hair sample test. [FN236] Counsel often cite this case as authority for \*69 challenging the reliability of hair drug testing. [FN237] However, on appeal, the CAAF remanded the case to the trial court to apply the "new" *Daubert* guidance on admissibility of expert scientific evidence. [FN238] Since the *Nimmer* case, the military court system has accepted hair sample test results as reliable evidence under MRE 702. [FN239]

Additionally, hair drug testing also survives relevancy challenges under MRE 401 and 403. [FN240] In *United States v. Will*, the Navy-Marine Court of Criminal Appeals (NMCCA) upheld the logical relevance of a hair sample analysis test to rebut a charge of drug use. [FN241] In *United States v. Cravens*, the CAAF upheld the legal relevance of a hair sample analysis. [FN242] The CAAF deferred to the trial judge's decision that hair sample analysis results were not too confusing to be at issue before the court. [FN243] As a result, commanders should feel comfortable relying on hair sample test results.

#### \*70 B. Value of the Results [FN244]

Although hair drug testing emerged recently as a reliable drug use test method, hair drug testing has existed for several decades. [FN245] Since the 1950s, authorities have tested hair for arsenic or lead. [FN246] Despite hair sample testings's extensive track record, experts have raised concern over the interpretative variability hair drug testing. [FN247] These experts do not question the ability of hair drug testing to detect drugs, but instead question what a positive result reveals about drug use. [FN248] Environmental contamination and racial bias have surfaced as the predominant areas of concern. [FN249]

#### 1. Environmental Contamination
Congressional hearings on drug testing in the summer of 1998 examined the environmental contamination controversy. [FN250] As explained in the hearings, the environmental contamination issue involves hair drug testing's ability to distinguish between intentional drug use and innocent environmental exposure to drugs. [FN251] Some experts argue that illegal \*71 drugs could innocently infiltrate a person's hair through sweat absorption or smoke penetration. [FN252] The drugs presence would then create a "false" positive test result. [FN253]

For example, the Naval Research Laboratory conducted several studies which indicate that drugs can absorb into a person's hair. [FN254] The studies also indicate that continuous exposure to crack smoke could appear in hair drug testing results. [FN255]

However, additional studies prove that metabolite identification and proper wash procedures can eliminate external contamination. [FN256] External contamination would leave traces of the actual drug on the hair, while ingestion results in the deposit of drug metabolites within the hair. [FN257] A hair sample test's detection of these metabolites would tend to \*72 expose drug use versus mere drug exposure. [FN258] The results of these studies also showed that laboratory hair wash procedures effectively removed external drug deposits. [FN259]

In comparison, hair may also have a stronger resistance to drug penetration than the lungs and the gastrointestinal tract. [FN260] This difference would make urine samples and breath samples more susceptible to external contamination than a hair sample. [FN261]

Forensic laboratories have begun to set drug detection cut-off levels high enough to eliminate concerns over innocent exposure. [FN262] These cutoff levels originate from scientific studies research, [FN263] making it possible **\*73** for commanders to use hair drug test results without great concern over possible claims of false test results due to "innocent" exposure.

# 2. Racial Bias

In addition to environmental contamination, experts have also raised concerns that hair drug testing results in disproportionate treatment between races. [FN264] The experts argue that hair drug testing can detect lower levels of a drug in African-American hair than in Caucasian hair, [FN265] which has the potential to create a disproportionate population of criminal prosecutions for African-Americans, versus Caucasions. [FN266] Some studies attribute the difference in detection and drug absorbency rates due to variances in hair color, curvature, and structure. [FN267]

Although these differences do exist, the statistical differences between the races are not significant enough to support a racial bias claim. [FN268] Any test that examines servicemembers's biological processes **\*74** will have some degree of variation in the test's results due to the servicemembers's unique physiological makeup. [FN269] For example, if two servicemembers consume the same amount of cocaine at the same time, their bodies will not metabolize the cocaine in exactly the same time. [FN270] The fact that some servicemembers may have a longer drug detection window than other servicemembers does not invalidate the testing because the exposure differences are considered minimal.

Research demonstrating the difference between genders when testing for the presence of alcohol helps highlight the minimal impact of race on hair sample test results. Studies have shown that women's bodies generally retain more alcohol in their blood than men. [FN271] Consequently, a breathalyzer could return different results for a man and a woman, even when both drank the same amount of alcohol and have the same body weight. [FN272] However, police routinely enforce the same blood alcohol concentration (BAC) limit with both genders. [FN273] Apparently, the metabolizing difference between genders is not great enough to require different BAC levels for each gender. [FN274] This same analysis applies to hair drug testing cut-off levels for differing races.

# V. Commander's Use of the Results

The reliability of hair drug testing should give commanders confidence to use hair sample results involving servicemembers who test **\*75** positive for drug use. School districts, [FN275] prisons, [FN276] and businesses [FN277] have already used hair drug testing to effectively curtail drug use within their organizations. The United States Food and Drug Administration has approved hair drug testing kits for the commercial market-place. [FN278] Specifically, the long drug detection window inherent in hair drug testing will improve enforcement of suspension conditions, [FN279] confirm or deny urinalysis results, [FN280] and provide a new command inspection tool. [FN281]

# A. Suspension Actions

Military regulations allow an appropriate level commander to use his discretion to suspend a separation action, [FN282] an article 15 punishment, [FN283] and a court-martial sentence for illegal drug use. [FN284] As a conditions of the suspension, the servicemember is often requied to refrain from further illegal drug use. Witness reports of the servicemember's continued drug use and urinalysis tests provide the only way for the commander to ensure compliance with this suspension requirement. [FN285] \*76 Unfortunately, a servicemember's body can quickly flush most drugs from his urine, [FN286] greatly reducing the urinalysis's ability to catch a servicemember violating his suspension requirements. As a result, the commander may not support a suspension because he cannot monitor a servicemember's compliance with suspension conditions.

In contrast, hair drug testing could give the commander a greater ability to allow for suspension actions. First, hair drug testing provides a long drug detection window. [FN287] For example, two hair sample tests during a six-month suspension would identify any drug use over the entire length of the suspension. [FN288] A commander could also use the results of a hair sample test to ensure a servicemember's compliance with a drug rehabilitation program. [FN289] Therefore, hair drug testing promotes a greater willingness on the part of commanders to consider suspension options because it increases a commander's visibility of a servicemember's drug habits during a suspension period. [FN290]

#### B. Confirmatory Compatibility

The long drug detection window inherent to hair drug testing allows a commander to confirm positive urinalysis results despite an accused's denials, or corroborate an accused's confession. [FN291] For example, if the \*77 accused challenges a positive urinalysis test, the commander could use a hair drug test to confirm the urinalysis results. [FN292] Since commanders often have to wait weeks for urinalysis results, hair drug testing will allow them to test the same time period covered by the urinalysis test. [FN293] The commander could use this reach back capability to confirm any witness observations of servicemember drug use. [FN294] This capability could also help a commander corroborate a servicemember's admission of drug use outside of the urinalysis drug detection window. [FN295]

#### C. The Inspection Case

In addition to hair drug testing's confirmatory capability, hair drug testing alone can provide sufficient evidence to result in a criminal drug use conviction. [FN296] In *United States v. Bush*, the defendant avoided the urinalysis test by filling his specimen bottle with a saline solution. [FN297] The altered urine test forced the command to then conduct a hair sample test, which tested positive for cocaine. [FN298] The government offered the positive test results and testimony about the faulty urine sample. [FN299] Based on this evidence, panel members convicted the defendant of \*78 dereliction of duty for tampering with his urine sample and of the wrongful use of cocaine. [FN300]

In *United States v. Bethea*, the CAAF upheld a conviction for wrongful use of cocaine. [FN301] The case involved hair sample analysis results. [FN302] The hair sample analysis provided the only evidence for charging a specification of drug use on "divers" occasions. [FN303] The AFCCA has also allowed hair sample analysis to support specifications of divers drug use in two other cases. [FN304]

Although the *Bush* and *Bethea* decisions primarily involve search authorizations, [FN305] these decisions suggest that the results from a proper hair inspection alone could support a conviction. Since hair drug testing uses similar collection procedures and laboratory testing methods as urine testing, a hair sample test arguably meets the same legal requirements. [FN306] Trial counsel can rely on the permissive inference of wrongful use reconfirmed by *United States v. Green* for urinalysis cases when offering hair sample test results into evidence. [FN307] Drug testing laboratories can provide a urinalysis-like litigation packet to the prosecution. [FN308] As a result, commanders should incorporate hair drug testing into their arsenal of inspection tools.

## \*79 VI. Implementing a Hair Analysis Program

Given the benefits of hair drug testing, the Army should conduct a feasibility study on implementing hair drug testing into the Army's substance abuse program (ASAP). [FN309] Suggested changes to the Federal Workplace Drug Testing Program and the recently enacted Florida Drug-Free Workplace Act provide guidance on procedures to implement a hair drug testing program, [FN310] including information on employee notification, laboratory standards, quality control, and cut-off levels. [FN311] A complete review of the laboratory changes and policy updates needed to implement Army-wide hair drug testing goes beyond the scope of this article, however, a brief examination of *Army Regulation 600-85*, *The Army Substance Abuse Program (AR 600-85)* and unit drug policies provides some insight.

#### A. Adjusting Army Regulation 600-85

Currently, *AR 600-85* contains the Army's program for urine sample testing. [FN312] The regulation's text refers to biochemical testing instead of urine testing alone. [FN313] Also, the regulation defines biochemical testing as including the "identification of alcohol or other drug abuse through the testing of blood, urine, breath, or *other bodily substance*." [FN314] Therefore, the regulation's language could easily incorporate hair drug testing with minimal changes to the regulation's overall text.

\*80 The most significant changes to the regulation would need to occur in the appendices. [FN315] Ap-

pendix E provides a standard operating procedure for urine collection and urine sample processing. [FN316] The Army would need to add additional information describing the standard operating procedures for hair sample collection and processing. [FN317]

## B. Local Policy Memoranda

In the short term, commanders could implement hair drug testing through local policy memoranda, which would need to notify servicemembers of the implementation of hair drug testing. [FN318] The notification would support the special needs exception by putting servicemembers on notice of a reduced privacy interest in their hair. [FN319] The memoranda would also need to designate hair collection procedures to prevent disparate treatment of servicemembers during testing. [FN320] Each servicemember would then face the same collection protocol. The protocol would prevent the servicemembers from experiencing "substantially different intrusions." [FN321]

#### C. Cost-Benefit Analysis

The DOD should examine the cost of providing the DOD laboratories with the equipment and personnel necessary to conduct hair sample testing, which they do not currently perform. [FN322] Consequently, **\*81** the military would need to either contract with private companies or, on rare occasions, request support from Federal Bureau of Investigation laboratories, for example, to meet the military's hair drug testing needs. [FN323] The military's ability to perform in-house hair sample testing would likely help counter the costs of testing by reducing processing costs, eliminating expert fees, and reducing the military's current volume of urine tests. [FN324]

Currently, the cost for a hair sample test ranges from \$40 to \$100, as compared to a urine test for which the cost for an individual test is approximately \$8.50 per test. [FN325] The differing drug detection windows for hair sample testing and urine testing help eliminate this cost discrephancy. [FN326] For example, a urine sample has a detection window for cocaine of three days. [FN327] Conversely, a hair sample has a drug detection window for the same drug of approximately three months. [FN328] A commander would need to conduct thirty consecutive urinalysis tests to encompass the same drug detection window one hair sample test, and **\*82** these multiple urine tests would be \$225, as compared to one \$100 hair sample test.

Additionally, fewer drug tests per year would save a military unit many hours of labor. The replacement of several urinalysis tests by one hair sample test would decrease the ASAP's impact on military operations. [FN329] A commander could reduce the amount of time his servicemembers miss in training due to urinalysis' requirements. [FN330] Hair sample testing's deterrent effect and long drug detection window more than justify the additional costs associated with the test.

#### VII. Conclusion

Besides fighting insurgents in Iraq and Afghanistan, the military also faces a drug "insurgency" within the ranks. [FN331] The Army's current biochemical testing program supposedly provides commanders with an effective tool to identify drug use, deter future drug use, and monitor drug rehabilitation. [FN332] Unfortunately, the urinalysis's short drug detection window severely limits a commander's ability to effectively accomplish these objectives. [FN333] In order to identify drug users, the short detection windows force commanders to rely on creative drug test scheduling instead of the test itself. [FN334]

**\*83** Consequently, the need for another type of drug test exists in the military. Hair drug testing will meet this need because it: (1) extends a commander's ability to identify drug use to several months; [FN335] (2) involves a lawful search and seizure; [FN336] (3) provides relevant and reliable information; [FN337] and (4) easily complements current urinallysis programs. [FN338]

The hair's ability to permanently trap drug deposits provides hair drug testing with its greatest benefit. [FN339] This characteristic differs from the limitations of urine sample testing, which will only temporarily reveal drug traces. [FN340] A normal hair sample test can identify drug use over several months while a urinalysis may only identify drug use during the past few days. [FN341] Therefore, commanders should augment their current urinalysis programs with hair drug testing.

Additionally, over the last decade, military appellate courts have admitted hair drug test results into evidence and supported convictions based solely on hair sample analysis results. [FN342] Improvements in laboratory hair washing procedures and promulgated cut-off levels have reduced concerns over innocent exposure to drugs and concerns over racial bias. [FN343] Also, current unit policies and Army regulations could easily accommodate hair drug testing with only a few minor modifications. [FN344] As a result, commanders could quickly implement hair drug testing into their existing complement of drug programs, knowing that hair sample tests would provide them with reliable information.

\*84 Further, hair drug testing complies with Fourth Amendment protections against unreasonable searches and seizures. [FN345] Hair sample "inspections" fit into the "special needs" exception to the Fourth Amendment, because hair drug testing has a strong deterrent effect and shares many similarities with urine testing. [FN346] Hair sample testing's longer drug detection window can also help commanders avoid turning an inspection into a subterfuge for an unlawful Fourth Amendment search. [FN347]

Besides inspections, commanders can also grant search authorizations, based upon probable cause for the seizure of a servicemember's hair for drug testing. [FN348] An argument currently exists that a servicemember may not have an expectation of privacy in his hair. [FN349] If accepted, this argument would allow commanders to authorize a seizure of a servicemember's hair and a subsequent search of that hair on less than probable cause. [FN350]

Finally, hair drug testing helps commanders ensure justice is done, and furthers the goals of both trial counsel and defense counsel. Trial counsel can rely on hair test results alone to prosecute drug use cases. [FN351] Drug laboratories provide a litigation packet [FN352] and the *American Jurisprudence Proof of Facts 3d* provides example foundation questions. [FN353] Trial counsel can also use hair sample analysis results to **\*85** defeat an accused's claims of innocent ingestion. [FN354] In contrast, defense counsel can use hair sample analysis results to support an accused's claims of a procedurally defective urinalysis test. [FN355] The best initial step for either counsel is to contact a hair drug testing expert who can provide further details on hair drug testing capabilities.

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[FN1]. See United States v. Bickel, 30 M.J. 277, 284 (C.M.A. 1990) (recognizing urinalysis deterrent effects); Sergeant First Class Kathleen T. Rhem, A Look at Drug Use and Testing Within the Military, AMERICAN FORCES PRESS SERVICES, http://usmilitary.about.com/od/theorderlyroom/l/bldrugtests3.htm (last visited Oct. 23, 2006) (highlighting a twenty percent drop in servicemembers admitting drug use from 1983 to 1998). The article references admitted drug use by servicemembers as the basis for this statistic. *Id*.

[FN2]. U.S. Department of Health & Human Services, Substance Abuse and Mental Health Services Administration, Office of Applied Studies, *Results from the 2004 National Survey on Drug Use and Health: National Findings*, http:// www.drugabusesstatistics.samhsa.gov/NSDUH/2k4NSDUH/2k4results/2k4results.htm #8.3 (last visited Oct. 23, 2006) [hereinafter SAMHSA 2004 National Drug Survey] (providing report highlights on the first couple pages of the report). This web site contains any updates to the original, published report. *Id*.

[FN3]. See Rhem, supra note 1 (reflecting the military's zero tolerance policy toward drug use); Gerry J. Gilmore, *DOD Urinalysis Test (Drug Test) Results*, AMERICAN FORCES PRESS SERVICES, http:// usmilitary.about.com/od/theorderlyroom/1/bldrugtests2.htm (last visited Oct 23, 2006) (discussing the 2002 Department of Defense's (DOD) anti-drug policy).

[FN4]. SAMHSA 2004 National Drug Survey, supra note 2, § 2.

[FN5]. Id. The survey asked whether the person had used an illegal drug in the month prior to the survey. Id.

[FN6]. Id. at Highlights.

[FN7]. *See generally* Rhem, *supra* note 1 (highlighting the concern over ecstasy use by military members); Gilmore, *supra* note 3 (noting a modest increase in club drug use by servicemembers).

[FN8]. See Kits to Circumvent Drug Tests: Testimony Before the Comm. on House Energy and Commerce Subcomm. on Oversight and Investigations, 109th Cong. (2005) [hereinafter Testimony] (statement of Robert L. Stephenson II, Director of the Division of Workplace Programs at the Center for Substance Abuse Prevention in the Substance Abuse and Mental Health Services Administration of the U.S. Department of Health and Human Services), available at LEXIS, Federal Document Clearing House Congressional Hearing Summaries (defining the different methods to avoid testing positive on a drug test).

[FN9]. *See id.* (describing the results of an internet search for products available to avoid testing positive on a drug test). The author attempted the same internet search as described in the Stephenson testimony which produced similar results.

[FN10]. E.g., Pass the Drug Test, http://www.passthedrugtest.com/ (last visited Oct. 30, 2006) (providing consumers with information on how to avoid testing positive on a drug test); MB Detox Website, http://www.mbdetox.com (last visited Oct. 23, 2006) [hereinafter MB Detox Website] (selling drug detoxification products).

[FN11]. See MB Detox Website, *supra* note 10 (referencing their products ability to flush drugs from a person's body).

[FN12]. See DOD Urinalysis (Drug Test) Program, http:// usmilitary.about.com/od/theorderly ht-tp://usmilitaryroom/1/bldrugtests.htm (last visited Oct 23, 2006) [hereinafter DOD Urinalysis Program] (providing drug detection windows for urine testing).

[FN13]. See *id.; see also infra* Part II.D (comparing the drug detection windows of urine and hair). For example, a servicemember could smoke crack cocaine on Thursday night of a four-day weekend, knowing that by Tuesday morning the cocaine would have been flushed from his urine. *See id*.

[FN14]. See infra Part D.

[FN15]. See infra Part III.

[FN16]. See infra Parts IV, V.

[FN17]. See infra Part VI.

[FN18]. See generally Robert W. Vinal, Admissibility and Reliability of Hair Sample Testing to Prove Illegal Drug Use, in 47 AM. JUR. PROOF OF FACTS 3D 203, §§ 1-9 (2005) (providing a general overview of the technical background of hair drug testing).

[FN19]. Id. §§ 3-9.

[FN20]. See generally infra Parts II.D, E (describing the advantages and disadvantages of hair testing).

[FN21]. See Tom Mieczkowski et al., *Testing Hair for Illicit Drug Use, in* NAT'L INST. OF JUST. 1, 2 (Jan. 1993) (explaining the body's breakdown of drugs).

[FN22]. Proposed Revisions to Mandatory Guidelines for Federal Workplace Drug Testing Programs, 69 Fed. Reg. 19673, 19675 (Apr. 13, 2004); Mieczkowski, *supra* note 21, at 2 (defining metabolites as the "biochemical products of the breakdown of drugs within the body"). For example, the metabolite for marijuana is delta-9-tetrahydrocannibol-9-carboxylic acid (THCA), and the metabolites for cocaine are benzoylecgonine, norco-caine, and cocaethylene. Proposed Revisions to Mandatory Guidelines for Federal Workplace Drug Testing Programs, 69 Fed. Reg. at 19675.

[FN23]. Proposed Revisions to Mandatory Guidelines for Federal Workplace Drug Testing Programs, 69 Fed. Reg. at 19675. Sweat from sweat glands and sebum from sebaceous glands can also deposit drugs and drug metabolites on the hair shaft. *Id*.

[FN24]. Id.; Tom Mieczkowski, Hair Analysis as a Drug Detector, in NAT'L INST. OF JUST. 1, 1 (Oct. 1995).

[FN25]. See Mieczkowski, supra note 21, at 2.

[FN26]. E-mail from Dr. Donald J. Kippenberger, Deputy Program Manager for Forensic Toxicology, United

States Army Medical Command (MEDCOM), Fort Sam Houston, Texas, to Major Keven Kercher, Student, The Judge Advocate General's Legal Center and School, U.S. Army (Oct. 25, 2005, 18:18 EST) [hereinafter Dr. Kippenberger E-mail, Oct. 25, 2005] (on file with author); E-mail from Mr. William Thistle, Senior Vice President and General Counsel, Psychemedics Corp., to Major Keven Kercher, Student, The Judge Advocate General's Legal Center and School, U.S. Army (Nov. 3, 2005, 12:29 EST) [hereinafter Mr. Thistle E-mail, Nov. 3, 2005] (Psychemedics Corp. is the industry-leading hair testing company.) (on file with author).

[FN27]. Mieczkowski, *supra* note 21, at 2.

[FN28]. 69 Fed. Reg. at 19675. The drug amount in each band is proportionate to the amount of drug in the blood at the time of deposit. *Id*. A drug laboratory can estimate the approximate time of drug ingestion by measuring the band's distance from the skin's surface. *Id*.

[FN29]. See Dr. Kippenberger E-mail, Oct. 25, 2005, supra note 26 (explaining hair dormancy).

[FN30]. PSYCHEMEDICS CORP., SAMPLE COLLECTION TRAINING MANUAL 12 (2003) [hereinafter PSYCHEMEDICS TRAINING MANUAL] (The phone contact for Psychemedics Corp. Client Services Department is 1-800-522-7424.).

[FN31]. See Vinal, supra note 18, § 4.

[FN32]. See PSYCHEMEDICS TRAINING MANUAL, supra note 30, at 6-7.

[FN33]. Id. at 7-8 (providing pictures).

[FN34]. *Id.* at 8. The intent is to keep the hair strand ends that are taken closest to the scalp together. *Id.* The laboratory will need to know what end of the hair sample was next to the scalp to establish a drug use chronology. *See infra* Part II.C (analyzing the hair sample).

[FN35]. See PSYCHEMEDICS TRAINING MANUAL, supra note 30, at 8-9.

[FN36]. *Id.* at 11.

[FN37]. See Vinal, supra note 18, § 5 (describing initial intake procedures).

[FN38]. *Id*.

[FN39]. *Id.* § 6.

[FN40]. *Id.* (The technicians generally use a solvent that will not swell the hair to remove any external contamination from the hair strands.). *But see* David A. Kidwell & David L. Blank, *Environmental Exposure—The Stumbling Block of Hair Testing, in* DRUG TESTING IN HAIR 17, 52 (Pascal Kintz ed., 1996) (questioning the ability of decontamination procedures to remove external contamination).

[FN41]. See Vinal, supra note 18, § 2.

[FN42]. See Mieczkowski, supra note 21, at 2 (describing hair drug testing's ability to create a "time line" of drug use).

[FN43]. *Id.* The laboratory could also use smaller segments to create a more defined timeline. *Id.* A point to remember is that although the drug deposits create bands in the hair, the laboratory must dissolve the hair to determine the hair's drug contents. *See* Vinal, *supra* note 18, § 7. Therefore, segmentation provides the only way that a laboratory can create a drug-use timeline. *Id.* 

[FN44]. See id. § 7.

[FN45]. Id.

[FN46]. *Id.* §§ 8-9. The DOD laboratories use the same tests to check urine for illegal substances. *See* U.S. DEP'T OF DEFENSE, INSTR. 1010.16, TECHNICAL PROCEDURES FOR THE MILITARY PERSONNEL DRUG ABUSE TESTING PROGRAM paras. E1.5 & E1.6 (9 Dec. 1994) [hereinafter DOD DIR. 1010.16].

[FN47]. See Vinal, supra note 18, §§ 8-9.

[FN48]. Proposed Revisions to Mandatory Guidelines for Federal Workplace Drug Testing Programs, 69 Fed. Reg. 19673, 19697 (Apr. 13, 2004) (providing proposed drug detection cut-off levels for hair drug testing).

[FN49]. See generally E-mail from Dr. Donald J. Kippenberger, Deputy Program Manager for Forensic Toxicology, United States Army Medical Command (MEDCOM), Fort Sam Houston, Texas, to Major Keven Kercher, Student, The Judge Advocate General's Legal Center and School, U.S. Army (Oct. 27, 2005, 10:23 EST) (noting that laboratories can currently set their own cut-off levels for the amount of drug needed to reflect a positive test) (on file with author). *see also* E-mail from Mr. William Thistle, Senior Vice President and General Counsel, Psychemedics Corp., to Major Keven Kercher, Student, The Judge Advocate General's Legal Center and School, U.S. Army (Jan. 19, 2006, 10:36 EST) [hereinafter Mr. Thistle E-mail, Jan. 19, 2006] (on file with author). Mr. Thistle explained that the hair industry established cut-off levels through research and instrumentation limitations. *Id.* He also noted that ninety percent of workplace hair testing utilizes the same cut-off levels. *Id.* A hair testing working group of experts and critics established the hair cut-off levels in the Proposed Revisions to Mandatory Guidelines for Federal Workplace Drug Testing Programs. *Id.*; Proposed Revisions to Mandatory Guidelines for Federal Workplace Drug Testing Programs, 69 Fed. Reg. at 19697.

[FN50]. See supra note 46, DOD DIR. 1010.16, paras. E1.5.3 & E1.6.2 (requiring the DOD Coordinator for Drug Enforcement Policy and Support to set the DOD cut off levels for initial and confirmatory urinalysis testing.

[FN51]. Drug Testing in the Workplace: Drug Test Cut-off Levels, http:// www.ipassedmydrugtest.com/drug\_cutoff\_levels.asp (last visited Oct. 23, 2006).

[FN52]. The Department of Health and Human Services' Policy for Federal Workplace Drug Testing Programs: Hearing Before the Subcomm. on Oversight and Investigations of the H. Comm. on Commerce, 105th Cong. 21-23 (1998) [hereinafter Hearing on the Federal Workplace Drug Testing Program] (prepared statement of Christine Moore, Laboratory Director, U.S. Drug Testing Laboratories).

[FN53]. *Id.* at 22; Vinal, *supra* note 18, § 4; PSYCHEMEDICS TRAINING MANUAL, *supra* note 30, at 12 (noting that the Psychemedics laboratory only tests the first 1.5 inches of the hair sample).

[FN54]. See DOD Urinalysis Program, supra note 12 (providing the drug detection window for cocaine).

[FN55]. See Cutting Edge Issues in Drug Testing and Drug Treatment: Hearing Before the Subcomm. on National Security, International Affairs, and Criminal Justice of the H. Comm. on Gov't Reform and Oversight, 105th Cong. 10-11 (1998) [hereinafter Hearing on Drug Testing and Drug Treatment] (statement of Robert L. Dupont, President, Institute for Behavior and Health) (explaining hair's ability to create a ninety-day drug use history).

# [FN56]. Id.

[FN57]. *See id.* at 94-95 (statement of Tom Mieczkowski, Ph.D., Professor, University of South Florida) (explaining hair's ability to quantify drug use).

[FN58]. See Hearing on the Federal Workplace Drug Testing Program, supra note 51, at 22 (listing advantages).

[FN59]. See id. at 21; U.S. DEP'T OF ARMY, REG. 600-85, ARMY SUBSTANCE ABUSE PROGRAM (ASAP) para. E-5(1) (24 Mar. 2006) [hereinafter AR 600-85] (requiring observer to watch urine leave the body and enter the collection cup). A privacy concern may arise when the test subject does not have enough head hair for a proper sample. The collector would then need to seek hair from alternate body locations. See PSY-CHEMEDICS TRAINING MANUAL, supra note 30, at 6 (explaining that a hair sample can come from alternate body sites). These alternate sites, especially the public region, would raise the level of intrusion. The author proposes a strict collection protocol to reduce this intrusiveness. See infra p. 36 (discussing collection procedures). The author also notes that public hair collection does not require the subject to expose his genitals to the collector or an observer. E-mail from Mr. William Thistle, Senior Vice President and General Counsel, Psychemedics Corp., to Major Keven Kercher, Student, The Judge Advocate General's Legal Center and School, U.S. Army (Jan. 4, 2006, 15:39 EST) [hereinafter Mr. Thistle E-mail, Jan. 4, 2006] (on file with author).

[FN60]. Hearing on the Federal Workplace Drug Testing Program, supra note 52, at 22; id. at 9 (testimony of Harry F. Connick, District Attorney, City of New Orleans) (commenting on hair drug testing's ability to defeat adulteration and substitution methods associated with urinalysis testing). For example, individuals can consume solutions to dilute the drug concentration in their urine or use prosthetic devices that appear like real human anatomy (e.g. an artificial penis) to provide a clean sample. *See Testimony, supra* note 8 (providing different methods to avoid testing positive on a drug test).

[FN61]. See Mieczkowski, supra note 21, at 2 (noting that hair samples require no special storage conditions); *Hearing on the Federal Workplace Drug Testing Program, supra* note 52, at 21.

[FN62]. See Mieczkowski, supra note 21, at 2 (noting a hair sample's physical advantages over a urine sample).

[FN63]. See E-mail from Dr. Donald J. Kippenberger, Deputy Program Manager for Forensic Toxicology, United States Army Medical Command (MEDCOM), Fort Sam Houston, Texas, to Major Keven Kercher, Student, The Judge Advocate General's Legal Center and School, U.S. Army (Jan. 26, 2006, 10:23 EST) [hereinafter Dr. Kippenberger E-mail, Jan. 26, 2006] (on file with the author). The author proposed a question to Dr. Kippenberger, asking about the actions the Army takes to protect urine samples from extreme heat, especially in Afghanistan and Iraq. *Id.* Dr. Kippenberger responded that currently the Army does not take any additional protection measures for these types of samples. *Id.* The servicemember simply gets the benefit of reduced drug concentrations in his urine sample. *Id.* 

[FN64]. See E-mail from Mr. William Thistle, Senior Vice President and General Counsel, Psychernedics Corp., to Major Keven Kercher, Student, The Judge Advocate General's Legal Center and School, U.S. Army (Mar. 1, 2006, 14:20 EST) (explaining that urine samples need refrigeration to prevent bacteria growth (fermentation) which could affect the samples' chemical makeup) (on file with author).

[FN65]. See Mieczkowski, supra note 21, at 2 (noting the ease of retesting hair); Hearing on the Federal Workplace Drug Testing Program, supra note 52, at 21 (noting the ability to obtain another hair sample for testing if testing the original hair sample produces problems).

[FN66]. Hearing on the Federal Workplace Drug Testing Program, supra note 52, at 22. Id. at 2 (statement of the Honorable Joe Barton, Chairman of the House Subcommittee on Oversight and Investigations). Mr. Barton explained that ninety percent of the time, urine testing incorrectly identifies the consumption of poppy seeds or the consumption of certain prescription drugs as heroin use. Id. He also noted that hair sample testing can identify a particular heroin component that urine testing cannot. Id. As a result, hair drug testing can distinguish between the consumption of poppy seeds or medical prescriptions and the consumption of heroin. Id.

[FN67]. See Vinal, supra note 18, § 2.

[FN68]. See supra Part II.A (explaining how drugs deposit in the hair).

[FN69]. *Id*.

[FN70]. *Id.* (noting thatdrug deposits in the hair folicle will normally take about five to seven days to emerge from the skin's surface).

[FN71]. Mr. Thistle E-mail, Nov. 3, 2005, supra note 26.

[FN72]. *Id*.

[FN73]. Id.

[FN74]. *Id.; see also* United States v. Bethea, 61 M.J. 184, 184-88 (2005) (involving hair analysis and "binge" drug use).

[FN75]. See Werner A. Baumgartner & Virginia A. Hill, Hair Analysis for Organic Analytes: Methodology, Reliability, and Field Studies, in DRUG TESTING IN HAIR 223, 225 (Piscal Kintz ed., 1996). From the amount of drug found in each segment, a laboratory can estimate the amount of uses during a particular thirty-day window. Id. Hair sample analysis has the ability to distinguish between "heavy, intermediate, and light drug use". See generally Mieczkowski, supra note 21, at 2 (describing segmentation of the tested hair sample). For example, if the laboratory starts at the root end of a hair sample and cuts the hair into 1/2 inch segments, each segment will represent about thirty days of hair growth. Id. When the laboratory tests each segment, the laboratory will determine the amount of drugs trapped in each segment. Id.

[FN76]. U.S. CONST. amend. IV.

[FN77]. *Id*.

[FN78]. See Katz v. United States, 389 U.S. 347, 351 (1967) (noting that Fourth Amendment application focuses

on a person's intent to keep items and activities private).

[FN79]. See United States v. Dionisio, 410 U.S. 1, 8 (1973) (explaining Fourth Amendment applications when collecting physical evidence from a person's body); *cf. In re* Grand Jury Proceedings Cecil Mills, 686 F.2d 135, 136 (3rd Cir. 1982) (noting that a grand jury summons is not a Fourth Amendment seizure).

[FN80]. Dionisio, 410 U.S. at 8.

[FN81]. Id.

[FN82]. *See Katz*, 389 U.S. at 347 (1967) (determining when a person has an expectation of privacy protected by the Fourth Amendment).

[FN83]. Id. at 361 (Harlan, J., concurring) (explaining the test).

[FN84]. *Id*.

[FN85]. See MANUAL FOR COURTS-MARTIAL, UNITED STATES, MIL. R. EVID. 315(a), (b)(1), (b)(2) (2005) [hereinafter MCM] (explaining how the military utilizes search authorizations instead of search warrants). In the context of this article, the use of the term "search authorization" will also encompass the term "search warrant."

[FN86]. U.S. CONST. amend. IV; *see* Vernonia School Dist. 47J v. Acton, 515 U.S. 646, 652-53 (1995) (discussing the "reasonableness" concept of the Fourth Amendment and noting that a reasonable search does not always need a warrant or probable cause).

[FN87]. See Katz, 389 U.S. at 361 (Harlan, J., concurring); United States v. Dionisio, 410 U.S. 1, 14 (stating that a person does not have a reasonable expectation of privacy in his facial characteristics or in the physical characteristics of his voice).

[FN88]. *E.g.*, United States v. Bethea, 61 M.J. 184, 188 (2005) (finding probable cause for a hair sample search authorization).

[FN89]. *E.g.*, Skinner v. Ry. Labor Executives' Ass'n, 489 U.S. 602, 619-20 (1989) (utilizing the "special needs" exception to the warrant requirement for urine testing of railroad employees).

[FN90]. *See* Schmerber v. California, 384 U.S. 757, 768-72 (1966) (analyzing the manner of the search); Bouse v. Bussey, 573 F.2d 548, 550-51 (9th Cir. 1977) (holding that the forcible removal of pubic hair without a warrant violated the defendant's Fourth Amendment rights).

[FN91]. *See Katz*, 389 U.S. at 361 (Harlan, J., concurring) (creating a two-part test for determining a reasonable expectation of privacy); *see also Schmerber*, 384 U.S. at 768 (recognizing the "proper manner" test for obtaining body evidence).

[FN92]. See Coddington v. Evanko, 112 F. App'x 835, 835-38 (3rd Cir. 2004) (finding no reasonable expectation of privacy in hair); *In re* Grand Jury Proceedings Cecil Mills, 686 F.2d 135, 139 (3rd Cir. 1982) (concluding no expectation of privacy in hair that is on public display); *see also* United States v. Ruiz, No. 33084, 1999 CCA LEXIS 219, at \*2 (A.F. Ct. Crim. App. July 26, 1999) (unpublished) (raising an argument of no reasonable expectation of privacy in a hair sample); United States v. De Parais, 805 F.2d 1447, 1456 (11th Cir. 1996) *overruled on other grounds* by United States v. Kaplan, 171 F.3d 1351 (11th Cir. 1999) (recognizing the debate); United States v. Bullock, 71 F.3d 171, 176 n.3 (5th Cir. 1995) (recognizing Fourth Amendment issues associated with hair sample testing). The courts in the following cases found a reasonable expectation of privacy in hair but allowed the hair sample collection under an exception to the Fourth Amendment requirement. *See* United States v. D'Amico, 408 F.2d 331, 332-33 (2nd Cir. 1969) (holding that clipping hair is considered a seizure, but is reasonable); Knight v. Evanco, No. 02-CV-1748, 2003 U.S. Dist. LEXIS 23734, at \*16 (E.D. Pa. 2003) (finding "no viable claim of an illegal search under the Fourth Amendment" because a "special needs" exception applied); Ohio v. Coyle, No. 99CA2480, 2000 Ohio App. LEXIS 1079, at \*9-14 (Ohio App. 2000) (taking a hair sample from a suspect in custody is a seizure but reasonable as incident of a lawful arrest); State v. Sharpe, 200 S.E. 2d 44, 49 (N.C. 1973) (finding a seizure but no Fourth Amendment violation).

[FN93]. See Katz, 389 U.S. at 361 (Harlan, J., concurring) (explaining that the Fourth Amendment protects places where people have an expectation of privacy). See generally Coddington, 112 F. App'x at 838 (finding no reasonable expectation of privacy in hair); Sharpe, 200 S.E. 2d at 47-49 (holding that a police seizure of head and underarm hair without a warrant does not violate the Fourth Amendment).

[FN94]. See In re Mills, 686 F.2d at 139 (concluding "that there is no greater expectation of privacy with respect to hair which is on public display than with respect to voice, handwriting or fingerprints"). In Mills, a grand jury ordered Mr. Mills to provide facial and head hair to compare with hairs found in a robber's abandoned mask. *Id.* at 136. Mr. Mills refused to provide the sample unless the grand jury obtained a valid search warrant. *Id.* at 139. Mr. Mills filed a complaint with the district court to vacate the grand jury order. *Id.* 

[FN95]. United States v. Mara, 410 U.S. 19, 21-22 (1973).

[FN96]. United States v. Dionisio, 410 U.S. 1, 14 (1973).

[FN97]. Schmerber v. California, 384 U.S. 757, 767 (1966).

[FN98]. Nat'l Treasury Employees Union v. Von Raab, 489 U.S. 656, 678-79 (1989) (finding the collection of a urine sample for chemical analysis a search); Skinner v. Ry. Labor Executives' Ass'n, 489 U.S. 602, 617 (1989).

[FN99]. At press, the author's extensive research in military case law revealed no military case at the appellate level that addressed the reasonable expectation of privacy issue for hair sample drug testing.

[FN100]. United States v. Ruiz, No. 33084, 1999 CCA LEXIS 219, at \*2 (A.F. Ct. Crim. App. July 26, 1999) (unpublished).

[FN101]. *Id.* at \*3.

[FN102]. *Id*.

[FN103]. United States v. Pyburn, 47 C.M.R. 896, 907 (A.F.C.M.R. 1973). *Pyburn* reflects a problem created by *United States v. Katz*, 389 U.S. 347 (1967). In *Katz*, the Supreme Court focused on an individual's reasonable expectation of privacy in a particular place or item. 389 U.S. 347, 361 (1967). However, *Pyburn* focused on the "reasonableness" of obtaining the hair sample and did not examine if the individual had a reasonable expectation of privacy in his pubic hair. *Pyburn*, 47 C.M.R. at 907. Justice Black highlighted this distinction in his dissenting opinion in *Katz*. 389 U.S. at 373-74. He argued that the majority opinion in *Katz* inappropriately incorpor-

ated "right to privacy" language into the Fourth Amendment instead of simply interpreting the language of the Constitution, which prohibits "unreasonable" searches. *Id.* He feared the Court had given itself broad power to determine what constitutes a reasonable expectation of privacy instead of limiting itself to what the Constitution allowed. *Id.* at 374; *see also* Minnesota v. Carter, 525 U.S. 83, 97-98 (1998) (Scalia, J., concurring) (labeling the *Katz* test as the Court's "self-indulgent test"). This distinction creates the problem of what language a court should apply to a hair seizure: (1) should the court examine whether the person had an expectation of privacy in his hair sample? or (2) should the court determine whether the seizure was "reasonable" under the language of the Fourth Amendment?

[FN104]. Pyburn, 47 C.M.R. at 904 (considering the search incident to a lawful apprehension).

[FN105]. *See id.* at 907 (stating that the expectation of privacy associated with the taking of a hair sample falls somewhere between that associated with obtaining a fingerprint and bodily fluids).

[FN106]. See In re Grand Jury Proceedings Cecil Mills, 686 F.2d 135, 139 (3rd Cir. 1982) (comparing a hair sample used for comparison purposes to a fingerprint, a handwriting sample, and a voice sample and finding no reasonable expectation of privacy).

[FN107]. See generally Skinner v. Ry. Labor Executives Ass'n, 489 U.S. 602, 617 (1989) (considering a urine test a search).

[FN108]. See generally Ohio v. Coyle, No. 99CA2480, 2000 Ohio App. LEXIS 1079, at \*9 n.3 (Ohio App. 2000) (analyzing the seizure and subsequent testing of the accused's hair based solely on the police's limited usage of the sample for comparison purposes). In this case, the defendant argued that the authorities seized his hair sample for DNA testing instead of only a hair comparison. *Id.* Since the authorities only obtained and used the hair sample for comparison purposes, the court only analyzed the seizure for the purpose of comparing hairs. *Id.* 

[FN109]. See Bouse v. Bussey, 573 F.2d 548, 549-50 (9th Cir. 1977) (recognizing that clipping a few hairs from the defendant's head implicates less privacy concerns than taking a hair sample from the defendant's pubic region).

[FN110]. *Compare Bouse*, 573 F.2d at 549-51 (pulling of a pubic hair), *with* United States v. D'Amico, 408 F.2d 331, 332-33 (2d Cir. 1969) (cutting a few strands of head hair).

[FN111]. *Bouse*, 573 F.2d at 549-51; *D'Amico*, 408 F.2d at 332-33; *cf*. United States v. Millar, No. 32222, 1997 CCA LEXIS 30 (A.F. Ct. Crim. App. Jan 8, 1997) (arguing unsuccessfully that law enforcement's photographing of pubic hair collection constituted pre-trial punishment).

[FN112]. See Coddington v. Evanko, 112 F. App'x 835, 836 & 838 (3rd Cir. 2004) (obtaining hair sample from a person with short hair).

[FN113]. See PSYCHEMEDICS TRAINING MANUAL, *supra* note 30, at 6 (explaining that a hair sample can come from alternative sites); *cf.* Mr. Thistle E-mail, Jan. 4, 2006, *supra* note 58 (explaining that obtaining a pubic hair sample does not require a person to expose his or her genitals).

[FN114]. See United States v. Mitchell, 15 M.J. 654 (N.M.C.R. 1983), rev'd, 16 M.J. 95 (C.M.A. 1983) (involving an order to drink water for a urinalysis). The order would focus on servicemembers who have hair that is close to the required collection length. In these cases, a couple of weeks of additional growth would pre-

vent the commander from having to collect hair from an alternative location. The command could also randomly pick servicemembers at the present date for a future hair sample test. The commander would then inform the servicemembers of their selection and require them to maintain or grow the required length of hair by the test date. However, this practice would nullify the surprise element of the hair test and likely catch only chronic users.

[FN115]. *Id.* In *Mitchell*, the command randomly selected Petty Officer Flint as part of a unit urinalysis. *Id.* at 654-55. Since Petty Officer Flint could not provide a urine sample, the command directed her to the command's library and told her to drink water until she could provide a urine sample. *Id.* at 655. Petty Officer Flint eventually provided a urine sample which tested positive. *Id.* The trial judge suppressed the urinalysis results based on an improper application of Military Rules of Evidence (MRE) 315 and 312, which would require a search authorization in order to compel a servicemember to ingest a substance to find evidence of a crime. *Id.* On a government interlocutory appeal, the United States Navy-Marine Corps Court of Military Review (NMCMR) agreed with the government that MRE 313 provided the correct legal standard. *Id.* The court's opinion implied that MRE 313 would support the command's order. *Id.* However, the NMCMR did not reverse the trial judge's decision but relied on the court's opinion to put the judge on notice of his legal error. *Id.* at 655-56. The government then petitioned the COMA which reversed the NMCMR. United States v. Mitchell, 16 M.J. 95 (C.M.A. 1983).

[FN116]. See Coddington, 112 F. App'x at 838 (shaving head and body hair); Bouse, 573 F.2d at 550-51 (pulling pubic hair).

[FN117]. *Coddington*, 112 F. App'x at 838. In *Coddington*, the appellant served as a member of the Pennsylvania State Troopers. *Id.* at 836. Based upon information from confidential informants that Officer Coddington used cocaine, Coddington's superior officers ordered him to provide a hair sample for drug testing. *Id.* Since Officer Coddington had short hair, a police sergeant had to shave hair from Coddington's head, neck, and back. *Id.* at 836, 838. Officer Coddington argued that this method of hair sample collection violated his Fourth Amendment right to privacy. *Id.* at 837. However, the court found nothing wrong with the hair collection method because Officer Coddington did not have sufficient hair on his head to provide a cut sample. *Id.* at 838.

[FN118]. Id. (noting that the hair was in plain view).

# [FN119]. *Id*.

[FN120]. *See id.* at 837-38; *see also In re* Grand Jury Proceedings Cecil Mills, 686 F.2d 135, 140 (3rd Cir. 1982) (noting that cutting a hair sample from the head versus pulling a hair sample from the root may result in different constitutional outcomes). *But see* State v. Sharpe, 200 S.E. 2d 44, 47, 49 (N.C. 1973) (holding that plucking hairs from defendant's head and arm incident to a lawful arrest did not violate the Fourth Amendment).

[FN121]. Coddington, 112 F. App'x at 838.

[FN122]. Id. at 837-38 (citing In re Grand Jury Proceedings Cecil Mills, 686 F.2d 135, 139 (3rd Cir. 1982)).

[FN123]. United States v. Ruiz, No. 33084, 1999 CCA LEXIS 219, at \*2-3 (A.F. Ct. Crim. App. July 26, 1999) (unpublished) (raising but not addressing the issue of whether a servicemember has a reasonable expectation of privacy in his hair for drug testing purposes). The author's extensive research in military case law revealed no other military case at the appellate level that addressed the reasonable expectation of privacy issue for hair sample testing.

[FN124]. *See id.* at \*1-3 (giving a "no reasonable expectation of privacy" argument as a backup position to a sufficient probable cause argument).

[FN125]. See United States v. Dionisio, 410 U.S. 1, 4-5, 13-15 (1973) (disagreeing with the lower court's position that requiring a voice recording on less than probable cause violated the Fourth Amendment). The Court found that an individual did not have a reasonable expectation of privacy in his voice. *Id.* at 14-15. Therefore, the probable cause protections of the Fourth Amendment did not apply. *Id.* 

[FN126]. See generally United States v. Taylor, 41 M.J. 168, 168-69 (C.M.A. 1994) (involving an anonymous tip reporting drug use in the unit).

[FN127]. *See id.* at 168-72 (deciding whether a commander's urinalysis inspection constituted a subterfuge for a search); MCM, *supra* note 84, MIL. R. EVID. 313(a), (b).

[FN128]. See U.S. DEP'T OF DEFENSE, DIR. 1010.1, MILITARY PERSONNEL DRUG ABUSE TESTING PROGRAM para. 3.3.6 (9 Dec. 1994) (describing the competence-for-duty urine test); see also AR 600-85, supra note 59, para. 6-4(a)(1).

[FN129]. *See* AR 600-85, *supra* note 59, para. 6-4(a)(1) (explaining the limited use policy as the policy applies to command-directed biochemical testing).

[FN130]. See MCM, supra note 85, MIL. R. EVID. 311(a)(2); AR 600-85, supra note 59, para. 6-4(a)(1). The limited use policy would need to allow for a hair analysis exception for competency-for-duty tests. AR 600-85, supra note 59, para. 6-4(a)(1).

[FN131]. AR 600-85, *supra* note 59, para. 6-4(a)(1).

[FN132]. MCM, *supra* note 85, MIL. R. EVID. 311(a)(2).

[FN133]. See United States v. Fagan, 28 M.J. 64, 64-66 (C.M.A. 1989) (upholding a commander's order to provide fingerprint samples). The Court noted that "people ordinarily do not have enforceable expectations of privacy in their physical characteristics." *Id.* at 66.

[FN134]. See id.

[FN135]. *See* Davis v. Mississippi, 394 U.S. 721, 722-28 (1969) (finding that a police dragnet sweep of African-American males for fingerprinting violated the Fourth Amendment); *Fagan*, 28 M.J. at 66 (distinguishing between the Fourth Amendment applications of holding an individual to obtain physical evidence and of actually obtaining the physical evidence).

[FN136]. United States v. Dionisio, 410 U.S. 1, 8 (1973).

[FN137]. See id.; Davis, 394 U.S. at 727-28 (1969) (holding that law enforcement did not have proper legal authority to detain young African-American men for fingerprinting purposes); *Fagan*, 28 M.J. at 64-70 (upholding commander's order to require Marines to provide fingerprints to law enforcement despite the commander's lack of probable cause). Wrongful entries had occurred at the enlisted barracks of 1st Battalion, 12th Marines, located at Marine Corps Air Station, Kaneohe Bay, Hawaii. *Id.* at 64-65. The entries happened while the unit conducted off-island training. *Id.* at 65. The investigating agents did not have any evidence pointing to a particular Marine.

*Id.* Therefore, the commander decided to fingerprint all of the Marines, approximately 100, who had not attended the training and who had remained on the island. *Id.* 

[FN138]. *See generally* Knight v. Evanco, No. 02-CV-1748, 2003 U.S. Dist. LEXIS 23734, at \*2, 19-20 (E.D. Pa. 2003) (involving a Pennsylvania State Police regulation requiring a commander to have a reasonable suspicion of drug use by a police officer prior to ordering the police officer to submit to a hair drug test).

[FN139]. See Fagan, 28 M.J. at 68 (C.M.A. 1989) (requiring a commander to at least have knowledge that fingerprints may lead to perpetrator's identity).

[FN140]. *See Davis*, 394 U.S. at, 727-28 (1969) (noting that warrantless fingerprinting by law enforcement might survive Fourth Amendment scrutiny if law enforcement follow "narrowly circumscribed procedures"); Bouse v. Bussey, 573 F.2d 548, 549-50 (9th Cir. 1977) (finding police seizure of pubic hair sample as unreasonable).

[FN141]. Bouse, 573 F.2d at 550-51.

[FN142]. *Id.* at 550. Mr. Bouse had filed a claim under 42 U.S.C.S. § 1983 (LEXIS 2006) that the police officers had violated his Fourth Amendment rights when the officers allegedly obtained his public hair sample. *Id.* at 549. The district court dismissed the complaint on grounds that the alleged conduct did not constitute a Fourth Amendment violation. *Id.* The appellate court reversed the lower court, holding that Mr. Bouse would have a Constitutional claim based upon his allegations. *Id.* at 549, 551.

[FN143]. *See id.* at 550 (distinguishing between "reasonable" and "unreasonable" searches as envisioned by the language of the Fourth Amendment).

[FN144]. United States v. Montoya De Hemandez, 473 U.S. 535, 537 (1985); *cf.* Rochin v. California, 342 U.S. 165 (1952) (establishing a "shock the conscious" due process test for improper police action).

[FN145]. *See* United States v. Ruiz, No. 33084, 1999 CCA LEXIS 219, at \*2 (A.F. Ct. Crim. App. July 26, 1999) (unpublished) (raising but not addressing the issue of expectation of privacy in one's hair).

[FN146]. *See* Coddington v. Evanko, 112 F. App'x 835, 837-38 (3rd Cir. 2004) (finding no reasonable expectation of privacy for hair on "public display"); *Bouse*, 573 F.2d at 550-51 (involving the collection of public hair).

[FN147]. *Coddington*, 112 F. App'x at 838; *see also In re* Grand Jury Proceedings Cecil Mills, 686 F.2d 135, 140 (3rd Cir. 1982) (cutting a hair sample from the head versus pulling a hair sample from the root may result in different constitutional outcomes). *But see* State v. Sharpe, 200 S.E. 2d 44, 47, 49 (N.C. 1973) (holding that plucking hairs from defendant's head and arm incident to a lawful arrest did not violate the Fourth Amendment).

[FN148]. See Coddington, 112 F. App'x at 837-38 (finding no expectation of privacy in hair exposed to public view).

[FN149]. *See* United States v. Dionisio, 410 U.S. 1, 8 (1973) (stating that the Fourth Amendment applies both to the seizure of a person and then to the seizure and search of the person's body evidence); United States v. Fagan, 28 M.J. 64, 68-70 (C.M.A. 1989) (examining the "seizure" of a servicemember to collect body evidence).

[FN150]. See United States v. Bethea, 61 M.J. 184, 184-86, 188 (2005) (finding probable cause for search au-

thorization to collect a hair sample); United States v. Cravens, 56 M.J. 370, 370-75 (2002) (upholding magistrate's decision to grant search authorization); United States v. Bush, 47 M.J. 305, 308-09 (1997) (finding a proper search authorization without requiring an agent to apply a "precise mathematical limitation to the length of the hair obtained" from the accused); United States v. Adams, No. 33055, 2000 CCA LEXIS 196, at \*1-7 (A.F. Ct. Crim. App. Aug. 4, 2000) (unpublished) (supporting the magistrate's probable cause determination despite minor errors in the agent's affidavit); United States v. Johnson, No. 33134, 2000 CCA LEXIS 18, at \*1-5 (A.F. Ct. Crim. App. Jan. 27, 2000) (unpublished) (denying defense claim that agent's information to magistrate about hair drug testing was erroneous); United States v. Ruiz, No. 33084, 1999 CCA LEXIS 219, at \*2-11 (A.F. Ct. Crim. App. July 26, 1999) (unpublished) (involving Air Force Office of Special Investigations (AF OSI) agents obtaining a search authorization for a hair sample test based upon observations of the accused snorting a white substance); United States v. Millar, No. 32222, 1997 CCA LEXIS 30, at \*1-3 (A.F. Ct. Crim. App. Jan. 8, 1997) (involving a search authorization to obtain pubic hair).

[FN151]. See Johnson, 2000 CCA LEXIS 18, at \*1-5 (basing hair sample authorization on results of urinalysis test); *Ruiz*, 1999 CCA LEXIS 219, at \*2-11 (establishing probable cause for hair sample test based upon witness observation of drug use).

[FN152]. See Bethea, 61 M.J. at 184-86 (challenging agent's affidavit); Johnson, 2000 CCA LEXIS 18, at \*1-5 (rejecting defense claim that the magistrate's reliance on the case agent's and hair consultant's statements did not support probable cause for a hair test); see also Major Charles Pede, New Developments in Search and Seizure and Urinalysis, ARMY LAW., Apr. 1998, at 86-88 (analyzing agent's failure in United States v. Bush, 47 M.J. 305 (1997), to provide a commander with sufficient information about defendant's hair sample).

[FN153]. Bethea, 61 M.J. at 184-86.

[FN154]. United States v. Bethea, No. 35381, 2004 CCA LEXIS 175, at \*2 (A.F. Ct. Crim. App. July 20, 2004), *aff'd*, United States v. Bethea, 61 M.J. 184 (2005).

[FN155]. Id.

[FN156]. Bethea, 61 M.J. at 185.

[FN157]. Id. at 185-86.

[FN158]. *Id*.

[FN159]. See supra Part II.E (addressing hair testing's ability to detect a one-time use).

[FN160]. *Bethea*, 61 M.J. at 187-88. The CAAF noted that its opinion did not address whether hair testing could detect a one-time use. *Id.* at 186 n.3.

[FN161]. *Id.* at 187.

[FN162]. Id. at 187-88.

[FN163]. *Id*.

[FN164]. *Id.* at 184-88.

[FN165]. See generally id. at 185 (noting that the special agent on the case contacted a forensic science consultant and the National Medical Services Laboratory).

[FN166]. U.S. CONST. amend. IV; MCM, supra note 85, MIL. R. EVID. 313.

[FN167]. MCM, supra note 85, MIL. R. EVID. 313.

[FN168]. *Id.* at MIL. R. EVID. 313(a), (b).

[FN169]. *See* Skinner v. Ry. Labor Executives Ass'n, 489 U.S. 602, 618-34 (1989) (using the special need exception to the Fourth Amendment to uphold urine testing of certain railway employees); Nat'l Treasury Employees Union v. Von Raab, 489 U.S. 656, 665-79 (1989); United States v. Bickel, 30 M.J. 277 (C.M.A. 1990) (applying the special need exception to the military urinalysis program); *see also infra* Part III.C.1 (analyzing the special need exception).

[FN170]. See infra Part III.C.2.

[FN171]. *Id*.

[FN172]. See Skinner, 489 U.S. at 618-34 (addressing the special needs exception); Von Raab, 489 U.S. at 665-79.

[FN173]. See Bickel, 30 M.J. at 281-86 (remaining "convinced that the [compulsory urinalysis] testing of servicemembers authorized by MRE 313 pursuant to an 'inspection' rationale is constitutionally valid" in light of the Skinner v. Ry. Labor Executives' Ass'n, 489 U.S. 602 (1989), and Nat'l Treasury Employees Union v. Von Raab, 489 U.S. 656 (1989) decisions).

[FN174]. See Ferguson v. City of Charleston, 532 U.S. 67, 78 (2001); Skinner, 489 U.S. at 618-20.

[FN175]. *Skinner*, 489 U.S. at 624; *see also Von Raab*, 489 U.S. at 665-79. A "suspicionless" search refers to a search without a warrant or probable cause. *See generally Von Raab*, 489 U.S. at 665-66.

[FN176]. See Ferguson, 532 U.S. at 69-86 (finding that police and prosecution involvement in a public hospital's drug testing of pregnant mothers removed the testing from the special needs exception); Chandler v. Miller, 520 U.S. 305, 308-23 (1997) (finding no special need exception for drug testing of Georgia political candidates); Vernonia School Dist. 47J v. Acton, 515 U.S. 646, 648-66 (1995) (approving of school district's random drug testing of student athletes as a special need); *Skinner*, 489 U.S. at 602, 633-34 (upholding Federal Railroad Administration regulations requiring urinalysis testing for certain railroad employees); *Von Raab*, 489 U.S. at 659-79 (upholding special need of United States Customs Service to drug test employees seeking promotion to positions involving drug interdiction or involving firearm use); *see also* John B. Wefing, *Employee Drug Testing: Disparate Judicial and Legislative Responses*, 63 ALB. L. REV. 799, 800-14 (2000) (providing an overview of Supreme Court, federal, and state cases applying the special need exception).

[FN177]. See Skinner, 489 U.S. at 620-32 (identifying special need factors).

[FN178]. *See Ferguson*, 532 U.S. at 82-86 (finding no special need due to extensive law enforcement involvement in the drug testing program); *Skinner*, 489 U.S. at 620-21 & 621 n.5.

[FN179]. *See Skinner*, 489 U.S. at 621-22 (1989) (favoring limited discretion by persons who authorize the drug testing).

[FN180]. *See id.* at 629-30 (recognizing that a program preventing drug use will not work if employees have no fear of discovery).

[FN181]. *Id.* at 623, 631-32.

[FN182]. *See Ferguson*, 532 U.S at 77-78 (weighing the amount of intrusion into the person's individual privacy against the importance of the government's special need).

[FN183]. Skinner, 489 U.S. at 626-27.

[FN184]. *Id.* at 618, 624-25.

[FN185]. See *id.* at 627 (noting that a heavily regulated industry to ensure employee health, fitness, and safety supports a lower expectation of privacy among the industry's employees).

[FN186]. *Id*.

[FN187]. United States v. Bickel, 30 M.J. 277, 281-86 (C.M.A. 1990) (finding drug testing, pursuant to an inspection, as constitutionally valid).

[FN188]. Id. at 281-82.

[FN189]. *Id.* The COMA recognized that the Federal Railroad Administration in the *Skinner v. Railway Labor Executive's Association* conducted the drug testing for safety reasons and had not provided the results to law enforcement. *Id.* at 281 (citing Skinner v. Ry. Labor Executives Ass'n, 489 U.S. 602, 639 (1989)).

[FN190]. *Id.* at 281-82. The COMA referenced Justice Kennedy's note in *Skinner v. Ry. Labor Executive's Ass'n. Id.* at 282. In *Skinner*, Justice Kennedy pointed out that the railroad's drug testing regulations did not require a monitor's direct observation of sample collection. Skinner v. Ry. Labor Executives' Ass'n, 489 U.S. 602, 626-27 (1989).

[FN191]. *Bickel*, 30 M.J. at 282. The court countered the "prosecution" concern by highlighting the military's frequent use of urine test results in adverse administrative proceedings. *Id.* at 285. Also, the court supported the direct observation requirement with the need to prevent sample adulteration. *Id.* at 286.

[FN192]. *Id.* at 282-83 (highlighting that even a servicemember with a routine task may have to act quickly to perform a military mission).

[FN193]. Id. at 283.

[FN194]. Id.

[FN195]. Id.

[FN196]. Id. at 284.

# [FN197]. *Id*.

[FN198]. Id. at 285 (noting the military's priority in ensuring the mental and physical fitness of the force).

[FN199]. *Compare* PSYCHEMEDICS TRAINING MANUAL, *supra* note 30 (describing hair collection procedures) *with* AR 600-85, *supra* note 59, app. E (providing standard operating procedures for urine collection).

[FN200]. *Compare* Vinal, *supra* note 18, §§ 8-9 (noting the laboratory tests performed on hair), *with* DODI 1010.16, *supra* note 46, paras. E1.5, E1.6 (identifying the military laboratory tests performed on urine).

[FN201]. *See Bickel*, 30 M.J. at 282-85 (providing several reasons why the military urinalysis program meets the special needs exception).

[FN202]. See Nat'l Treasury Employees Union v. Von Raab, 489 U.S. 656, 680 (1989) (Scalia, J., dissenting) (noting that urine testing is "destructive to privacy and offensive to personal dignity"); Mr. Thistle E-mail, Jan. 4, 2006, *supra* note 59 (noting that clipping hair from a person's body is less intrusive than watching them urinate into a cup). Mr. Thistle noted that "in this country it is not unusual for people to get their hair cut in front of plate glass windows at the mall. It is quite unusual if someone urinates in front of a plate glass window at the mall." *Id.* Mr. Thistle also stated that a hair collection only takes a few minutes and a hair collector can obtain a public hair sample without having the individual expose his or her genitals. *Id.* 

[FN203]. See Mr. Thistle E-mail, Jan. 4, 2006, *supra* note 59 (stating that a collector needs only a few minutes to obtain a hair sample from a person).

[FN204]. See Bickel, 30 M.J. at 286 (justifying the direct observation requirement in the military's urinalysis program).

[FN205]. See infra Part VI (implementing a hair analysis program); see Bickel, 30 M.J. at 285 (noting that the military's extensive urinalysis regulations and extensive urinalysis policies help avoid arbitrary application of the urinalysis test).

[FN206]. See supra Part II.D (discussing hair drug testing's drug detection window); see also Hearing on the Federal Workplace Drug Testing Program, supra note 52, at 8-10 (testimony of Harry F. Connick, District Attorney, City of New Orleans) (explaining how hair testing's long drug detection window helped reduce recidivism in drug use offenders and helped decrease high school student drug use).

[FN207]. See generally Hearing on Drug Testing and Drug Treatment, supra note 55, at 10-11 (statement of Robert L. Dupont, President, Institute for Behavior and Health) (explaining the hair's ability to create a ninety-day drug use history).

[FN208]. *See supra* Part II.E (noting the inability of hair drug testing to detect immediate drug use, because hair must grow for several days to expose the hair containing the drugs above the skin's surface); *see also Bickel*, 30 M.J. at 283 (recognizing the deterrent effect of drug testing).

[FN209]. See DOD Urinalysis Program, supra note 12 (providing the DOD drug detection window for marijuana).

[FN210]. See Skinner v. Ry. Labor Executives' Ass'n, 489 U.S. 602, 631-33 (1989) (emphasizing that even in-

formation about "recent" employee drug use can help an employer identify how a particular accident occurred). Opponents of hair testing could argue that hair testing's lack of temporal application violates MRE 313 because they view MRE 313 as ensuring the "immediate" fitness of servicemembers. *See generally* MCM, *supra* note 85, MIL. R. EVID. 313. They might argue that MRE 313 supports an inspection before a unit deploys or conducts maneuvers but not an inspection that involves activities that occurred months prior to the inspection. Although the COMA did not directly discuss the temporal applicability of urine testing in *Bickel*, the court did provide some insight on drug testing for immediate impairment. *See Bickel*, 30 M.J. at 283. The court recognized that servicemembers's duties could require the use of a weapon at a moments notice. *Id*. The court then stated "[i]n such an event there would probably not be sufficient time to test a member's fitness to handle weapons; hence our more sweeping rule allowing random testing of all hands." *Id*. Under the same rationale, the military's unique environment would also support the larger drug detection window of hair testing.

[FN211]. *See* MCM, *supra* note 85, MIL. R. EVID. 313(b) (stating that "[a]n order to produce body fluids, such as urine, is permissible in accordance with this rule").

[FN212]. See supra note 199.

[FN213]. See supra note 198.

[FN214]. MCM, *supra* note 85, MIL. R. EVID. 313 (outlining inspection requirements); United States v. Taylor, 41 M.J. 168, 168-71 (C.M.A. 1994) (finding that a headquarters company commander's urinalysis inspection did not constitute a subterfuge for a search despite allegations of drug use by servicemembers in the personnel section); United States v. Campbell, 41 M.J. 177, 178-82 (C.M.A. 1994) (finding an improper urinalysis inspection where command selected the accused for the inspection based solely on suspicions of drug use).

[FN215]. MCM, supra note 85, MIL. R. EVID. 313(b); Campbell, 41 M.J. at 178-82.

[FN216]. *Campbell*, 41 M.J. at 178-82 (selecting certain servicemembers for an illegal urinalysis "inspection" after the commander heard rumors of drug use in the unit).

[FN217]. Id. at 182-83.

[FN218]. See id. at 178-82 (finding an improper urinalysis inspection).

[FN219]. Id. at 181-82.

[FN220]. See supra Part II.D (discussing hair sample analysis's long drug detection window).

[FN221]. See id. (noting that most hair sample test results encompass a three-month window).

[FN222]. See United States v. Bickel, 30 M.J. 277, 286 (C.M.A. 1990) (noting that a commander cannot "pick and choose the members of his unit who will be tested for drugs and then ... use the resulting evidence to obtain a criminal conviction").

[FN223]. See id. (requiring a urinalysis to follow established guidelines).

[FN224]. *See* PSYCHEMEDICS TRAINING MANUAL, *supra* note 30, at 6-7 (noting that head hair provides the easiest site for hair collection).

[FN225]. *See Bickel*, 30 M.J. at 286 (emphasizing the need for set guidelines and defined policies to regulate military drug testing to avoid arbitrary application of the tests by the command); PSYCHEMEDICS TRAINING MANUAL, *supra* note 30, at 6 (describing body hair collection).

[FN226]. See Bickel, 30 M.J. at 286 (requiring a urinalysis to avoid arbitrary application). Lieutenant Colonel Mark Jamison, Professor, The Judge Advocate General's School, Charlottesville, Virginia, and Major Jennifer Santiago, Professor, The Judge Advocate General's School, Charlottesville, Virginia, raised a concern about the disparate treatment hair testing could have on female servicemembers. Their concern involves the use of alternative hair collection sites for a female servicemember who does not have sufficient head hair to provide an adequate hair sample. As noted in the text above, this article proposes the use of alternative hair sites according to an established protocol. The protocol would require the collector to first seek head hair, then body hair (e.g., arm and chest hair), and as a last resort pubic hair. Nevertheless, the vast majority of female servicemembers, if not all, would likely not have alternative body hair other than pubic hair. Therefore, this lack of body hair creates an argument that female servicemembers would face a more intrusive hair collection protocol than male servicemembers. Although female servicemembers would likely not have alternative body hair, this should not prevent hair drug testing for several reasons. First, the author's casual observance of female servicemembers's hair seems to indicate that very few female servicemembers would have insufficient head hair for a hair sample. See generally U.S. DEP'T OF ARMY, REG. 670-1, WEAR AND APPEARANCE OF ARMY UNIFORMS AND IN-SIGNIA paras. 1-8 (a)(2), (3) (3 Feb. 2005) (allowing female servicemembers to have longer hair than male servicemembers). Second, pubic hair collection is less intrusive than current urine collection methods because pubic hair collection does not require observation of the genitals. See Mr. Thistle E-mail, Jan. 4, 2006, supra note 59. Third, use of trained female collectors for female servicemembers would reduce the emotional impact of hair collection. See AR 600-85, supra note 59, E-4(d) (requiring a commander to designate same sex observers for tested Soldiers). Furthermore, military regulations already account for differences in gender physiology and in gender anatomy when appropriate. For example, while not completely analogous to this situation, male servicemembers could argue that lower physical fitness test standards for female servicemembers results in unequal treatment for male servicemembers. See U.S DEP'T OF ARMY, FIELD MANUAL 21-20, PHYSICAL FIT-NESS TRAINING 14-3 to 14-7 (1 Oct. 1998) (providing the fitness test point scales for male and female Soldiers); U.S. DEP'T OF ARMY, REG. 600-8-19, ENLISTED PROMOTIONS AND REDUCTIONS para. 3-47(b) & tbl. 3-21 (10 Jan. 2006) (linking promotion points to physical fitness test scores). Nevertheless, the author argues that the military supports these different standards based on physiological and anatomical differences, not on gender alone. The hair collection protocol would create the same distinction—a distinction based upon biological differences and not upon a servicemember's gender status. As a result, hair drug testing does not create a male-female distinction, but instead creates a hair-no hair distinction, regardless of gender. In the author's opinion, the few servicemembers (male or female) who would have to give body hair or pubic hair would suffer no more embarrassment or intrusion than the few servicemembers (male or female) who could not provide a urine sample due to the anxiety of urinating under direct observation.

[FN227]. *See* United States v. Medina, 749 F. Supp. 59, 61-62 (E.D. N.Y. 1990) (setting precedent for hair analysis reliability); United States v. Bush, 47 M.J. 305, 310 (1997) (rejecting defense argument that hair drug testing is only reliable as a confirmatory test).

[FN228]. *See* Major Samuel Rob, *Drug Detection by Hair Analysis*, ARMY LAW., Jan. 1991, at 14 (noting that the author's case law research could not find a single case where the military appellate courts had admitted hair drug test results at trial); United States v. Pyburn, 47 C.M.R. 896, 904-07 (A.F. C. M. R. 1973) (comparing hair samples).

[FN229]. See United States v. Bethea, 61 M.J. 184, 184-88 (2005) (upholding search authorization for hair samples); United States v. Brewer, 61 M.J. 425, 427 (2005) (noting that the trial court allowed hair drug test results into evidence); United States v. Cravens, 56 M.J. 370, 370-75 (2002) (affirming lower court's ruling on the admissibility of a hair sample obtained under a search authorization); United States v. Bush, 47 M.J. 305, 306-12 (1997) (upholding hair analysis evidence); United States v. Will, No. 9802134, 2002 CCA LEXIS 218, at \*12-18 (N-M Ct. Crim. App. Sept. 27, 2002) (unpublished) (finding that the trial court should have allowed the defense to submit a hair sample testing negative for the presence of drugs into evidence); United States v. Ruiz, No. 33084, 1999 CCA LEXIS 219, at \*3-11 (A.F. Ct. Crim. App. July 26, 1999) (unpublished) (involving AF OSI agents obtaining a search authorization for a hair sample test based upon observations of the accused snorting a white substance); see also United States v. Webb, No. 32521, 1998 CCA LEXIS 270, \*6 (A.F. Ct. Crim. App. June 12, 1998) (unpublished) (mentioning an order to provide a hair sample to test for cocaine); United States v. Millar, No. ACM 32222, 1997 CCA LEXIS 30, at \*2-7 (A.F. Ct. Crim. App. Jan. 8, 1997) (claiming pretrial punishment because an agent took photographs of pubic hair collection); United States v. Baker, 45 M.J. 538, 539-41 (A.F. Ct. Crim. App. 1996), aff'd, United States v. Baker, 50 M.J. 223 (1998) (challenging accused's consent to a hair test).

[FN230]. Bethea, 61 M.J. at 184-88.

[FN231]. See also Medina, 749 F. Supp. at 61-62 (accepting the reliability of a hair sample analysis report).

## [FN232]. Id. at 60-62.

[FN233]. *Id.* at 61. As a starting point for their case research, counsel can refer to *American Jurisprudence Proof* of *Facts 3d* to find multiple references on hair drug testing. *See* Vinal, *supra* note 18.

[FN234]. See United States v. Nimmer, 41 M.J. 924 (N.M.C.M.R. 1994), remanded by United States v. Nimmer, 43 M.J. 252 (1995).

# [FN235]. Id. at 926.

[FN236]. *Id.* at 927-28. The judge found that the scientific community generally did not accept the ability of a hair test to detect one-time use. *Id.* at 927. The Navy-Marine Court of Military Review (NMCMR) agreed with the trial judge and concluded that hair analysis needed more scientific study. *Id.* at 928-29.

[FN237]. See United States v. Bush, 47 M.J. 305, 309 (1997) (citing the decision of the NMCMR in United States v. Nimmer, 39 M.J. 924 (1994)).

[FN238]. United States v. Nimmer, 43 M.J. 252, 260 (1995). Between the time of the trial and the CAAF ruling on the case, the Supreme Court had decided *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993) . *Id.* at 256-60. *Daubert* provided a non-exclusive list of factors to assist a trial judge in determining the admissibility of scientific evidence. *Id.* at 256.

[FN239]. See Bush, 47 M.J. at 309-12 (upholding a trial judge's ruling under MRE 702 to admit hair drug testing results after the judge conducted a *Daubert* hearing). Military Rule of Evidence 702 states "[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." MCM, *supra* note 85, MIL. R. EVID. 702.

[FN240]. See United States v. Cravens, 56 M.J. 370, 376 (2002) (confirming the trial judge's decision to admit hair sample evidence under MRE 401 and 403); United States v. Will, No. 9802134, 2002 CCA LEXIS 218, at \*15 (N-M Ct. Crim. App. Sept. 27, 2002) (unpublished decision, this opinion does not serve as precedent). The United States NMCCA uses the phrase "as an unpublished decision, this opinion does not serve as precedent" on all of its unpublished decisions. *See* UNITED STATES NAVY-MARINE CORPS COURT OF CRIMINAL AP-PEALS RULES OF PRACTICE AND PROCEDURE para. 6-4 (C1, 15 Feb. 2002). Although the Navy-Marine court does not give these cases precedential value, the court still allows counsel to cite to the cases as persuasive authority. *Id*.

[FN241]. Will, 2002 CCA LEXIS 218, at \*15; see also Major Charles H. Rose III, New Developments: Crop Circles in the Field of Evidence, ARMY LAW., Apr./ May 2003, at 49-52 (providing an overview and analysis of United States v. Will).

[FN242]. Cravens, 56 M.J at 376.

[FN243]. *Id.* (noting that the trial judge "specifically considered and admitted this hair analysis evidence under Mil.R.Evid. 401 and 403").

[FN244]. The author acknowledges that researchers (medical and legal) have written hundreds of articles about hair sample analysis and the interpretative concerns of hair analysis results. *See, e.g.*, DRUG TESTING IN HAIR (Pascal Kintz ed., 1996) (providing a compilation of articles, including references, about hair analysis). A complete analytical review of all of the hair analysis writings is well beyond the scope of this article. However, the following subsections provide the author's view of the current status of these concerns.

[FN245]. See Tom Mieczkowski, New Approaches in Drug Testing: A Review of Hair Analysis, in 521 AN-NALS AM. ACAD. POL. & SOC. SCI. 132, 135 (1992).

[FN246]. See United States v. Bush, 44 M.J. 646, 651 (A.F. Ct. Crim. App. 1996), aff'd, United States v. Bush, 47 M.J. 305 (1997) (noting that hair drug testing for heavy metals and arsenic had existed for fifty to sixty years at the time of the case).

[FN247]. See Theresa K. Casserly, *Evidentiary and Constitutional Implications of Employee Drug Testing Through Hair Analysis*, 45 CLEV. ST. L. REV. 469, 473-77 (1997) (discussing some scientists' concerns over external drug contamination and hair drug absorbency rates).

[FN248]. Interview with Charles Guenzer, Forensic Toxicologist, Federal Bureau of Investigations Laboratory, in Quantico, California (Oct. 5, 2005) [hereinafter Mr. Guenzer Interview].

[FN249]. Hearing on the Federal Workplace Drug Testing Program, supra note 52, at 21-22.

[FN250]. *See id.* at 20, 25, 27-28, 33, 63, 85 (providing testimony and prepared statements from various experts in the hair testing field on environmental contamination); *Hearing on Drug Testing and Drug Treatment, supra* note 55, at 10-11.

[FN251]. Hearing on the Federal Workplace Drug Testing Program, supra note 52, at 21-22; Tom Mieczkowski, Distinguishing Passive Contamination from Active Cocaine Consumption: Assessing the Occupational Exposure of Narcotics Officers to Cocaine, 84 FORENSIC SCI. INT'L 87, 108 (1997) (discussing "passive contamination" of hair in narcotics officers); see also United States v. Bush, 47 M.J. 305, 307 (1997) (noting that the appellant routinely suggested "passive" exposure of his hair sample to drug smoke as a defense).

[FN252]. Hearing on the Federal Workplace Drug Testing Program, supra note 52, at 21; Wen Ling Wang & Edward J. Cone, Testing Human Hair for Drugs of Abuse. IV. Environmental Cocaine Contamination and Washing Effects, 70 FORENSIC SCI. INT'L 39, 49 (1995) (finding cocaine deposits in hair exposed to crack cocaine smoke and hair exposed to cocaine-filled solutions); Kidwell & Blank, supra note 40, 28-29 (addressing the effects of passive exposure on hair testing).

[FN253]. See Wang, supra note 252, at 49 (discussing how false positives can ruin a testing methodology's validity).

[FN254]. *Hearing on Drug Testing and Drug Treatment, supra* note 55, at 141 (statement of David Kidwell, Ph.D., Naval Research Laboratory). The Naval Laboratory conducted hundreds of laboratory tests where the laboratory soaked hair in drug solutions. *Id.* Within five minutes, the experiment indicated that some drugs had absorbed into the hair. *Id.* 

[FN255]. *Id.* (describing the Naval Research Laboratory's studies). The Naval Research Laboratory conducted a study of the hair of children living with cocaine-smoking mothers. *Id.* The study found that the children's hair had similar cocaine levels as their mother's hair. *Id.* 

[FN256]. See Virginia Hill et al., *Removing and Identifying Drug Contamination in the Analysis of Human Hair*, 145 FORENSIC SCI. INT'L 97, 108 (2004); Mieczkowski, *supra* note 251, at 108 (assessing the effects of wash procedures on narcotic officer hair samples).

[FN257]. *See* Mr. William Thistle, *Accounting for Environmental Contamination*, Pyschemedics Corp. (2004) (available by contacting Mr. Thistle at billt@psychemedics.com or 1-800-522-7424) (describing metabolites as "unique compounds created by the body's processing of the drugs"). Mr. Thistle works as the Senior Vice President and General Counsel of Psychemedics Corporation.

# [FN258]. Id.

[FN259]. See Hill, supra note 256, at 97-99, 108 (combining in-depth wash procedures and detailed wash criteria to effectively identify contamination). The authors used a wash criterion that subtracted the amount of drug left in the wash solution from the amount of drug found in the hair segment to further prevent false positives. *Id.* at 99. See Gideon Koren et al., *Hair Analysis of Cocaine: Differentiation between Systematic Exposure and External Contamination*, 32 J. CLINICAL PHARMACOLOGY 671, 674 (1992). The researchers placed volunteers in a 2.5 x 3 x 2.5 meter unventilated room and exposed them to crack cocaine smoke. *Id.* at 672. The researches also placed hair samples in closed beakers and exposed the hair to the equivalent of 5 - 5000 "lines" of cocaine (100mg per line). *Id.* After exposure, the researchers washed the hair using ethanol. *Id.* All cases of contaminated hair tested negative after washing except for the highest amount- 5000 cocaine lines. *Id.* at 673.

[FN260]. *See* Dr. Kippenberger E-mail, Jan. 26, 2006, *supra* note 63 (estimating that the lungs and the gastrointestinal tract would absorb drugs more easily than hair). "The cortex of hair is surrounded by a protect-ive layer of epithelia cells called the cuticle. The cuticle cells overlap in a shingle arrangement, holding the cortex together and serving as a protective barrier to the environment." Wang, *supra* note 252, at 40.

[FN261]. See generally Dr. Kippenberger E-mail, Jan. 26, 2006, supra note 63 (estimating that the lungs and the

gastrointestinal tract would absorb drugs easier than hair).

[FN262]. *See* United States v. Fuller, No. 35058, 2004 CCA LEXIS 182, at \*4 (A.F. Ct. Crim. App. June 23, 2004) (referencing Associated Pathologies Laboratories, Las Vegas, Nevada, cut-off's levels for cocaine in hair); Proposed Revisions to Mandatory Guidelines for Federal Workplace Drug Testing Programs, 69 Fed. Reg. 19673, 19697 (Apr. 13, 2004) (providing cut-off concentrations—i.e., 500 pictograms of cocaine metabolites for 1 milligram of hair); FLA. STAT. ANN. § 112.0455 (13)(b)(1)(b) (LEXIS 2005) (establishing a cut-off level for cocaine of 5 nanograms of drug per 10 milligrams of hair). Cut-off levels exist for both the initial drug screening test and the subsequent drug confirmatory test. *See id.* § 112.0455 (13)(b)(1)&(2) (creating screening cut-off levels and confirmatory cut-off levels).

[FN263]. See Mr. Thistle E-mail, Jan. 19, 2006, supra note 49 (explaining how approximately 90% of the hair testing industry uses the same cut-off levels based upon instrument limitations and scientific research); E-mail from Mr. Tom Mieczkowski, Ph.D., Professor and Chair of the Department of Criminology, University of South Florida, to Major Keven Kercher, Student, The Judge Advocate General's Legal Center and School, U.S. Army (Jan. 24, 2006, 10:46 EST) (on file with author) (stating that extensive writing and extensive testimony by toxicologists and members of the drug testing industry formed the basis for the cut-off levels in the *Proposed Revisions to Mandatory Guidelines for the Federal Workplace Drug Testing Program*).

[FN264]. See Hearing on the Federal Workplace Drug Testing Program, supra note 52, at 7-8, 21, 26 (providing statements from experts about racial bias in hair testing); Letter from Theodore F. Shults, Chairman, American Association of Medical Review Officers, to Walter F. Vogt, Division of Workplace Programs, Substance Abuse and Mental Health Services Administration, Comments to Proposed Revisions to Mandatory Guidelines for Federal Workplace Drug Testing Program, 69 Fed. Reg. 19673-01 (June 30, 2004), available at http:// workplace.samhsa.gov/DrugTesting/comments/Public%20Comment%208400121.doc (questioning hair analysis). But see Mr. Thistle E-mail, Jan. 19, 2006, supra note 49 (attacking Mr. Shults' comments about hair testing).

[FN265]. See David A. Kidwell et al., *Cocaine Detection in a University Population by Hair Analysis and Skin Swab Testing*, 84 FORENSIC SCI. INT'L 75, 83-84 (noting that a "selection" bias may exist).

[FN266]. *See Hearing on Drug Testing and Drug Treatment, supra* note 55, at 152 (statement of the Honorable Mark Souder) (grappling with the racial bias concern of hair testing).

[FN267]. See Thomas M. Mieczkwoski, Effect of Color and Curvature on the Concentration of Morphine in Hair Analysis, 3 FORENSIC SCI. COMMUNICATIONS 4 (Oct. 2001), available at http://www.fbi.gov/hq/lab/fsc/backissu/oct2001/mzkowski.htm (providing a synopsis of studies concerning the relationship of hair characteristics to hair drug test results).

[FN268]. See Tom Mieczkowski & Richard Newel, Statistical Examination of Hair Color as a Potential Biasing Factor in Hair Analysis, 107 FORENSIC SCI. INT'L 13, 36 (2000) (finding no "distinction between black and brown hair on the basis of drug concentration"). Mieczkowski and Newel examined 2791 hair tests from previous hair analysis studies. *Id.* at 35. Using statistical analysis, they compared the significance of a hair sample's color to the various drug concentration levels found in the sample. *Id.* at 15. They concluded that although some drugs may bind to melanin (the substance that gives hair its color), this binding effect does significantly affect the overall amount of drug retained in the hair. *Id.* at 35-36.

[FN269]. *See* Avitar, Inc. Website, *Drug Detection Windows*, http:// www.avitarinc.com/Resources/drug-detection-windows.cfm (last visited Oct. 23, 2006) (explaining how differences in a person's metabolic rate, body mass, age, overall health, drug tolerance, and urine pH can affect the length of time a drug remains in the person's body).

# [FN270]. See id.

[FN271]. *Hearing on the Federal Workplace Drug Testing Program, supra* note 52, at 34 (prepared statement of Dr. Carl Selavka, Director of the Massachusetts State Police and a Consultant to the Department of Health and Human Services) (noting that women generally have more fat and less muscle than men, which causes women to absorb less alcohol and thus have more alcohol in their blood).

[FN272]. Id.

[FN273]. Id.

[FN274]. See generally id. "In the end, either laboratories need to start correcting for all possible physiological, morphological and behavioral differences among test subjects, or the administrators of drug testing programs, and the regulatory agencies involved, must accept that *bias is a reality of every broad testing program.*" *Id*.

[FN275]. See Hearing on the Federal Workplace Drug Testing Program, supra note 52, at 10 (curtailing drug use at a New Orleans high school through hair drug testing).

[FN276]. See Thomas E. Feucht & Andrew Keyser, *Reducing Drug Use in Prisons: Pennsylvania's Approach*, NAT'L INST. JUST. J. 10, 11-14 (Oct. 1999) (describing the effective use of hair drug testing as part of a prison anti-drug program).

[FN277]. See CBS NEWS Website, SCI-TECH, Feds Eye New Kinds of Drug Tests, Jan. 15, 2004, http://www.cbsnews.com/stories/2004/01/15/tech/main593356.shtml (noting that Kraft Foods Inc., Anheuser-Busch, and MGM Mirage use hair drug testing); see also Nevada Employment Sec. Dep't v. Holmes, 914 P.2d 611, 612-15 (Nev. 1996) (finding that a hair analysis provided "substantial evidence" to deny the respondent unemployment benefits).

[FN278]. See United States Food and Drug Administration Website, New Device Clearance: Psychemedics Corporation Opiate Assay—K000851, http:// www fda.gov/cdrh/mda/docs/K000851.html (last visited Oct. 23, 2006) (approving the commercial marketing of a hair test for heroine use).

[FN279]. See infra Part V.A.

[FN280]. See infra Part V.B.

[FN281]. See infra Part V.C.

[FN282]. See U.S. DEP'T OF ARMY, REG. 635-200, ACTIVE DUTY ENLISTED ADMINISTRATIVE SEP-ARATIONS para. 1-18 (6 June 2005) (allowing commanders to suspend execution of a servicemember's administrative separation).

[FN283]. See U.S. DEP'T OF ARMY, REG. 27-10, MILITARY JUSTICE para. 3-24 (16 Nov. 2005)

[hereinafter AR 27-10] (allowing a commander to suspend execution of Article 15 punishment).

[FN284]. *See* MCM, *supra* note 85, R.C.M 1108, 1109 (authorizing a convening authority to suspend execution of a sentence and to vacate the suspension of a sentence).

[FN285]. *Cf.* AR 27-10, *supra* note 283, para. 3-24 (stating that an Article 15 suspension action "automatically includes a condition that the Soldier not violate any punitive article of the [Uniform Code of Military Justice] UCMJ"). Punitive Article 112a prohibits the wrongful use of an illegal substance. UCMJ art. 112a. (2005).

[FN286]. See DOD Urinalysis Program, supra note 12 (listing the drug detection windows for a urinalysis); United States v. Medina, 749 F. Supp. 59, 60 (E.D. N.Y. 1990) (discussing urine's short drug retention window).

[FN287]. See supra Part II.D.

[FN288]. *See Hearing on Drug Testing and Drug Treatment, supra* note 55, at 10-11 (statement of Robert L. Dupont, President, Institute of Behavior and Health) (explaining how a typical hair drug test covers a ninety-day drug detection window).

[FN289]. See AR 600-85, supra note 59, para. 4-7(a)(2) (noting that commanders should assess drug rehabilitation progress by considering further incidents of drug abuse).

[FN290]. See generally Medina, 749 F. Supp. at 60 (using hair drug testing to prove noncompliance with probation terms). Medina, a probationer, denied that he had used drugs while on probation. *Id*. During probation hearings, the court ordered Medina to provide a hair sample to test for drugs. *Id*. Medina's hair sample tested positive for cocaine. *Id*.

[FN291]. See United States v. Bethea, 61 M.J. 184, 185-88 (2005) (finding probable cause to seize and search a hair sample after defendant challenged positive urinalysis results); United States v. Cravens, 56 M.J. 370, 370-75 (2002) (finding probable cause to seize and search a hair sample after defendant admitted using drugs); see also Lieutenant Colonel Michael R. Stahlman, Fourth Amendment and Urinalysis Update: "A Powerful Agent is the Right Word," ARMY LAW., Apr./May 2003, at 139-40 (providing a synopsis of United States v. Cravens).

[FN292]. See Bethea, 61 M.J. 184, 184-88 (finding probable cause for seizing a hair sample based upon evidence of a positive urinalysis).

[FN293]. See Mieczkowski, supra note 21, at 2 (explaining the long drug detection window of hair sample analysis); see also Bethea, 61 M.J. at 185-88 (using a hair drug test to confirm or deny the results of a urinalysis test). When the commander finally receives the urinalysis results, the illegal substance will have already processed out of the servicemember's urine. See supra Part II.D (comparing the drug detection windows of urine and hair). However, the servicemember's hair will still contain the illegal substance. Id.

[FN294]. *See* United States v. Ruiz, No. 33084, 1999 CCA LEXIS 219, at \*5-7 (A.F. Ct. Crim. App. July 26, 1999) (unpublished) (basing search authorization for hair sample on agent observations that occurred a few months prior to the search authorization request).

[FN295]. *See Cravens*, 56 M.J. at 372-73 (using a hair test to confirm a drug-use admission because too much time had expired to obtain a search authorization for a urinalysis).

[FN296]. See United States v. Bush, 47 M.J. 305, 312 (1997) (upholding a drug conviction based solely on hair test results).

[FN297]. Id. at 306, 312.

[FN298]. See *id.* at 306-07, 312. The command did not know about the altered urine test until after the laboratory notified the command of the adulteration several weeks after the test. *Id.* at 307. By this time, the servicemember's body had already processed the illegal drugs out of the servicemember's urine. *Id.* Consequently, Staff Sergeant Bush's actions forced the command to result to a hair drug test. *Id.* at 307, 312.

[FN299]. Id. at 306-07.

[FN300]. Id. at 307-08.

[FN301]. See United States v. Bethea, 61 M.J. 184, 184-88 (2005) (involving cocaine use on "divers" occasions over a one-month period).

[FN302]. Id. at 184-85.

[FN303]. Id. at 184.

[FN304]. United States v. Fuller, No. 35058, 2004 CCA LEXIS 182, at \*1-6 (A.F. Ct. Crim. App. June 23, 2004) (unpublished), *cert. granted*, United States v. Fuller, 60 M.J. 424 (2004); United States v. Brewer, No. 34936, 2004 CCA LEXIS 136 (A.F. Ct. Crim. App. Apr. 28, 2004) (unpublished), *rev'd on other grounds*, United States v. Brewer, 61 M.J. 425 (2005). In the *Brewer* case, the CAAF did not hold that the hair sample test results could not support the conviction. *Brewer*, 61 M.J. at 426-32. Instead, CAAF found that the exclusion of defense witnesses and the military judge's instruction to the court members on the permissive inference of wrongful use violated the accused's constitutional due process rights. *Id*.

[FN305]. Bethea, 61 M.J. at 184-88; Bush, 47 M.J. at 306-09.

[FN306]. See supra note 198 (comparing collection methods); see also supra note 199 (comparing laboratory testing methods).

[FN307]. See United States v. Green, 55 M.J. 76, 77-81 (2001) (finding that a positive urinalysis test result, in conjunction with expert testimony about the test, can support a permissive inference that the accused knowingly and wrongfully used an illegal controlled substance).

[FN308]. *See* United States v. Adens, 56 M.J. 724, 726 (Army Ct. Crim. App. 2002) (referencing a hair analysis litigation packet prepared by a toxicology laboratory).

[FN309]. See generally AR 600-85, supra note 59 (governing the Army's drug abuse program); see also U.S. ARMY EUROPE, REG. 27-10, MILITARY JUSTICE para. 13 (30 Mar. 2005) (prohibiting units in Europe from using random hair analysis to test for the use of illegal drugs without commanding general approval). The implementation of a military-wide hair testing program would eliminate the need for this restriction. Interestingly, the regulation does not restrict the use of hair analysis to test for illegal substances when probable cause exists to support the hair test. *Id*.

[FN310]. Proposed Revisions to Mandatory Guidelines for Federal Workplace Drug Testing Programs, 69 Fed. Reg. 19673, 19675-76, 19679, 19682, 19697, 19705 (Apr. 13, 2004); FLA. STAT. ANN. § 112.0455 (LEXIS 2005).

[FN311]. Proposed Revisions to Mandatory Guidelines for Federal Workplace Drug Testing Programs, 69 Fed. Reg. at 19675-76, 19679, 19682, 19697, 19705; § 112.0455.

[FN312]. AR 600-85, *supra* note 59, paras. 8-1 to 8-5.

[FN313]. See id. (using the term "biochemical testing" throughout the regulation).

[FN314]. Id. para. 6-2(a) (emphasis added).

[FN315]. See id. apps. A-F.

[FN316]. Id. app. E.

[FN317]. See generally id. apps. A-F (ending appendices at letter F).

[FN318]. See United States v. Bickel, 30 M.J. 277, 284-85 (C.M.A. 1990) (noting that "[t]he extensive notice that has been given to servicemembers about the drug-testing program is another circumstance tending to establish that compulsory drug tests are reasonable searches" under the Fourth Amendment).

[FN319]. See id.; see also supra Part III.C.1 (analyzing the special need exception to the Fourth Amendment).

[FN320]. *See Bickel*, 30 M.J. at 285 (highlighting that "detailed regulations and policies ... reduce the occasion for arbitrariness and abuse of discretion" by the authorities implementing the test).

[FN321]. See MCM, supra note 85, MIL. R. EVID. 313(b) (requiring the prosecution to prove by "clear and convincing evidence" that an inspection was not a subterfuge for a search when the command subjects service-members to "substantially different intrusions during the same examination").

[FN322]. *See* E-mail from Edmund Tarnburini, Forensic Science Coordinator, United States Army Criminal Investigation Laboratory (USACIL), Forest Park, Georgia, to Major Keven Kercher, Student, The Judge Advocate General's Legal Center and School, U.S. Army (Aug. 30, 2005, 8:33 EST) (stating that USACIL and the other DOD Laboratories do not perform hair toxicology testing) (on file with author).

[FN323]. *Id.* (stating that USACIL has to contract hair toxicology tests with commercial laboratories); Mr. Guenzer Interview, *supra* note 248 (stating that in limited circumstances the FBI Laboratory has conducted hair analysis for military prosecutors).

[FN324]. The author acknowledges that only an in-depth cost-benefit analysis of hair drugtesting could identify all the financial costs and financial benefits associated with hair drug testing, which is beyond the scope of this article. Nevertheless, the military's ability to process a high volume of hair samples appears more cost effective than contracting with several private laboratories throughout the country. Of course, the cost-benefit analysis would need to determine whether outsourcing hair drug testing or expanding in-house laboratory capabilities would provide the most cost effective way to proceed in both the short and long term. A pilot hair drug testing program at the brigade level would assist in this analysis. [FN325]. E-mail from Dr. Donald J. Kippenberger, Deputy Program Manager for Forensic Toxicology, United States Army Medical Command (MEDCOM), Fort Sam Houston, Texas to Major Keven Kercher, Student, The Judge Advocate General's Legal Center and School, U.S. Army (Sept. 19, 2005, 11:31 EST) (stating the cost of a urinalysis test equals \$8.50 while a hair sample test costs over \$100) (on file with author); E-mail from Mr. William Thistle, Senior Vice President and General Counsel, Psychemedics Corp., to Major Keven Kercher, Student, The Judge Advocate General's Legal Center and School, U.S. Army (Sept. 27, 2005, 11:44 EST) (stating that hair drug testing costs between \$40 and \$100 dollars per sample) (on file with author).

[FN326]. See supra Part II.D (addressing drug detection windows).

[FN327]. Id.

[FN328]. Id.

[FN329]. See id. (describing the typical three-month hair test).

[FN330]. The commander would save the time of the servicemembers participating in the drug test and the time of the servicemembers administering the test. In the Army, command-designated servicemembers oversee the collection of the urine samples during a urinalysis inspection. *See* AR 600-85, *supra* note 59, para. 1-26 & app. E (detailing the personnel requirements for executing a urinalysis program).

[FN331]. See SAMHSA 2004 National Drug Survey, *supra* note 2 (noting that 19.1 million Americans currently use illegal substances); Rhem, *supra* note 1 (highlighting the concern over ecstasy use by military members); Gilmore, *supra* note 3 (noting an increase in club drug use by servicemembers); *see also* AR 600-85, *supra* note 59, para. 1-31(a) (recognizing that the illegal drug use is "inconsistent with Army values and the standards of performance, discipline, and readiness necessary to accomplish the Army's mission").

[FN332]. See AR 600-85, supra note 59, para. 8-1 (listing the objectives of the Army's biochemical testing program).

[FN333]. See DOD Urinalysis Program, supra note 12 (showing that urine testing can only detect drug use for most illegal drugs that occurred a few days prior to the test).

[FN334]. *See* AR 600-85, *supra* note 59, para. 8-3 (encouraging commanders to use "unpredictable testing pattern[s]" and to test during "non-traditional times").

[FN335]. *See supra* Part II.D (advantages of hair testing); *see also supra* Part V.A (showing how hair testing's long drug detection window can support suspension actions).

[FN336]. See supra Part III.

[FN337]. See supra Parts IV, V.

[FN338]. *See supra* Part II.E (noting that hair testing, unlike a urinalysis, cannot detect immediate drug impairment); Part V.B (addressing hair testing's ability to confirm urinalysis results); Part VI.A (incorporating hair drug testing into the Army's current biochemical testing program).

[FN339]. See supra Part II.A (examining drug deposits in hair); see also supra Part II.D (advantages of hair test-

ing).

[FN340]. See DOD Urinalysis Program, supra note 12 (providing drug detection windows for urine testing).

[FN341]. See supra Part II.D (explaining hair drug testing's drug detection window).

[FN342]. See cases cited, supra note 229 (listing military cases involving hair drug testing); see also supra Part V.C (examining the use of hair testing results to support a court-martial conviction).

[FN343]. See supra Part IV.B (addressing environmental contamination and racial bias concerns).

[FN344]. See supra Part VI (implementing hair analysis).

[FN345]. See supra Part III (analyzing hair drug testing and the Fourth Amendment).

[FN346]. See supra Part III.C.1 (applying the special needs exception to hair analysis).

[FN347]. See supra Part III.C.2 (applying the language of MRE 313 to hair drug testing).

[FN348]. See supra Part III.B (analyzing military search authorizations for hair samples).

[FN349]. See Coddington v. Evanko, 112 F. App'x 835, 835-38 (3rd Cir. 2004) (finding no reasonable expectation of privacy in hair); In Re: Grand Jury Proceedings Cecil Mills, 686 F.2d 135, 139 (3rd Cir. 1982) (concluding no expectation of privacy in hair that is on public display).

[FN350]. A finding of no expectation of privacy would allow commanders and law enforcement officials to obtain hair samples without a warrant in the same fashion as handwriting exemplars. *See* United States v. Mara, 410 U.S. 19, 21-22 (1973) (analyzing handwriting samples under the Fourth Amendment); *Coddington*, 112 F. App'x at 837 (citing *In re* Grand Jury Proceedings Cecil Mills, 686 F.2d 135, 139 (3rd Cir. 1982)) (comparing obtaining a hair sample to obtaining a handwriting exemplar).

[FN351]. See United States v. Bethea, 61 M.J. 184, 184-85 (2005) (involving cocaine use on "divers" occasions); United States v. Bush, 47 M.J. 305, 312 (1997) (upholding a drug conviction based solely on hair test results).

[FN352]. *See* United States v. Adens, 56 M.J. 724, 726 (Army Ct. Crim. App. 2002) (referencing a hair analysis litigation packet prepared by a drug laboratory).

[FN353]. See Vinal, supra note 18, §§ 13-25 (providing hair analysis foundation questions to assist trial counsel in the courtroom).

[FN354]. *See Bethea*, 61 M.J. at 184-85 (involving law enforcement's use of a hair analysis test to refute defendant's denial of knowing cocaine use); United States v. Johnson, No. 33134, 2000 CCA LEXIS 18, at \*1-2 (A.F. Ct. Crim. App. Jan. 27, 2000) (unpublished) (obtaining a hair sample after defendant claimed that his positive urinalysis resulted from unknowingly smoking cocaine-laced cigarettes).

[FN355]. See United States v. Nimmer, 43 M.J. 252, 252-54 (1995) (concerning the defense's efforts to introduce expert testimony on the inferences of a negative hair sample test); United States v. Will, No. 9802134, 2002 CCA LEXIS 218, at \*12-18 (N-M Ct. Crim. App. Sept. 27, 2002) (unpublished) (finding that the military judge should have allowed the defense to enter a negative hair analysis into evidence). 188 Mil. L. Rev. 38

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# TAB K
**TJAGLCS Practice Note** Faculty, The Judge Advocate General's Legal Center and School

#### Criminal Law Notes

#### Spice—"I Want a New Drug"\*

#### Major Andrew Flor<sup>1</sup>

#### What Is "Spice"?

As early as 2002, a new drug product emerged on the market: Spice.<sup>1</sup> Spice is advertised as an herbal incense not intended for human consumption.<sup>2</sup> Spice is a green, leafy product sprayed with synthetic cannabinoid substances that mimic the effects of marijuana when smoked.<sup>3</sup> It is marketed under numerous brand names, including Spice, Spice Silver, Spice Gold, Spice Diamond, Spice Tropical Synergy, Spice Arctic Synergy, Spice Gold Spirit, PEP Spice, PEPpourri, K2, Genie, Yucatan Fire, Dream, Ex-ses, Blaze, Spike 99, Spark, Fusion, Magma, Hard Core, and Deliverance, as well as other names.<sup>4</sup> Spice is generally packaged in two inch by three inch metallic packets containing approximately three grams of the substance;<sup>5</sup> three grams is enough to make seven or eight "joints."<sup>6</sup> Spice products are commonly sold in "head shops" and on the Internet.<sup>7</sup> Google trends show that in 2010, the term

 $^{3}$  Id.

"spice drug" has been searched numerous times and a majority of those searches have come from the United States.<sup>8</sup>

The popularity of Spice has continued to rise since it was first introduced in 2002. Some seek it for a "legal high," while others are just curious.<sup>9</sup> With some of the synthetic substances claiming to be one-hundred times as potent as THC, the market for these products is vast.<sup>10</sup> Despite its popularity, Spice can also be dangerous. "Poison centers nationwide have reported 352 cases [of patients sickened by Spice] in 35 states."<sup>11</sup> Common symptoms include "rapid heart rate, dangerously high blood pressure and sometimes hallucinations or paranoia."<sup>12</sup>

#### Is Spice Legal?

Spice and most synthetic cannabinoid substances are currently legal in the United States, with the exceptions of Kansas<sup>13</sup> and Kentucky;<sup>14</sup> laws to ban synthetic cannabinoid substances are currently pending in Alabama, Florida, Georgia, Illinois, Louisiana, Missouri, New York, Tennessee, and Utah.<sup>15</sup> The most notable exception to the legality of synthetic cannabinoids is the substance HU-210.<sup>16</sup>

<sup>8</sup> Google Trends: Spice Drug, http://www.google.com/trends?q-spice+drug &ctab=0&geo=all&date=all&sort=0 (last visited May 21, 2010).

<sup>9</sup> Brian Neill, *Legal Weed?*, METRO SPIRIT, Apr. 28, 2010, http://metrospirit.com/index.php?cat=1211101074307265&ShowArticle\_ID =11012704104659247.

<sup>10</sup> See NADAP Presentation, supra note 4.

<sup>11</sup> Donna Leinwand, *Places Race to Outlaw K2 "Spice" Drug*, USA TODAY, May 24, 2010, http://www.usatoday.com/news/nation/2010-05-24-k2\_N.htm.

<sup>12</sup> Id.

<sup>13</sup> KAN. STAT. ANN. § 65-4105 (2010).

<sup>14</sup> KY. REV. STAT. ANN. § 218A.010 (West 2010).

<sup>15</sup> Research on file with author.

<sup>&</sup>lt;sup>\*</sup> HUEY LEWIS AND THE NEWS, *I Want a New Drug, on* SPORTS (Chrysalis 1983).

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<sup>&</sup>lt;sup>1</sup> NCIS Norfolk Field Office, *Introduction to Spice*, Dec. 9, 2009 (on file with author).

<sup>&</sup>lt;sup>2</sup> Sarah Aarthun, *Synthetic Marijuana a Growing Trend Among Teens, Authorities Say*, CNN.COM, Mar. 24, 2010, http://www.cnn.com/2010/HEA LTH/03/23/synthetic.marijuana/index.html?hpt=T2.

<sup>&</sup>lt;sup>4</sup> This note refers to all synthetic cannabinoid herbal incense products as "Spice." Any attempt to list all Spice products is probably futile. The market moves quickly to evade detection by law enforcement. *See* Navy Alcohol and Drug Abuse Prevention (NADAP), *Herbal Incense an Awareness Presentation*, Nov. 17, 2009 [hereinafter NADAP Presentation] (providing a recent listing, including pictures) (on file with author). *See infra* appendix (providing pictures of Spice products).

<sup>&</sup>lt;sup>5</sup> Drug Enforcement Agency, *Intelligence Alert: "Spice"—Plant Material(s) Laced with Synthetic Cannabinoids or Cannabinoid Mimicking Compounds*, Mar. 2009, MICROGRAM BULL., http://www.justice.gov/dea/programs/forensicsci/microgram/mg0309/mg0309.html (last visited May 21, 2010).

<sup>&</sup>lt;sup>6</sup> European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), *Drug Profile: Synthetic Cannabinoids and "Spice*," http://www.emcdda.eu ropa.eu/publications/drug-profiles/synthetic-cannabinoids (last visited May 21, 2010).

<sup>&</sup>lt;sup>7</sup> A "head shop" is a "shop specializing in articles (as hashish pipes and roach clips) of interest to drug users." MERRIAM-WEBSTER ONLINE DICTIONARY, http://mw1.m-w.com/dictionary/head%20shop (last visited May 21, 2010). A recent Google search for "spice" turned up nine

sponsored links advertising Spice and other "herbal incense" products for sale (research on file with author).

<sup>&</sup>lt;sup>16</sup> HU-210 was developed in 1988 in Israel (HU stands for Hebrew University, located in Jerusalem). *See* Spice Cannabinoid—HU-210, http://www.deadiversion.usdoj.gov/drugs\_concern/spice/spice\_hu210.htm (last visited May 25, 2010). HU-210 is "structurally and pharmacologically similar to [Delta-]9-tetrahydrocannabinol, the main active ingredient of marijuana. *Id.* However, HU-210 is approximately sixty-six to eighty

HU-210 is currently a schedule I controlled substance and is equally as illegal as marijuana.<sup>17</sup> HU-210 has been found to be an ingredient in Spice, which led to a customs seizure of Spice in Ohio.<sup>18</sup>

Since virtually no synthetic cannabinoids are listed as controlled substances under the Controlled Substances Act, the possession or use of these substances cannot be charged as a violation under Article 112a, UCMJ;<sup>19</sup> however, use of any of these substances "for the purpose of inducing excitement, intoxication, or stupefaction of the central nervous system is prohibited" by Army Regulation 600-85.<sup>20</sup> Unfortunately, a violation of this regulatory provision can only be charged as a failure to obey a lawful general regulation under Article 92, UCMJ.<sup>21</sup> Moreover. establishing a violation of the regulation can be difficult because these substances cannot currently be detected by standard Department of Defense drug testing methods.<sup>2</sup> This makes prosecution of Spice use very challenging. Significantly, the regulation does not prohibit the possession. distribution, introduction, or manufacture of these substances.23

#### Is Spice Being Used in the Military?

Reports from the field are sporadic and mostly anecdotal at this point; however, there have been several high profile media reports about Spice use in the military. In a case study conducted at the Naval Air Station in Pensacola, Florida, twenty-eight Sailors were involved in incidents with Spice over a two-year period.<sup>24</sup> At Hill Air Force Base near

<sup>18</sup> See Steve Bennish, Synthetic Drug Seized at DHL Hub, DAYTON DAILY NEWS, Jan. 15, 2009, http://www.daytondailynews.com/n/content/oh/story/ news/local/2009/01/15/ddn011509bustweb.html.

<sup>19</sup> Except for the above mentioned HU-210. *See* UCMJ art. 112a (2008) (requiring prohibited drugs to be listed in Article 112a, specified by the President, or to be listed in the controlled substances act. 21 U.S.C. § 812.

<sup>20</sup> U.S. DEP'T OF ARMY, REG. 600-85, THE ARMY SUBSTANCE ABUSE PROGRAM para. 4-2p (RAR, 2 Dec. 2009) [hereinafter AR 600-85].

<sup>21</sup> UCMJ art. 92 (2008).

<sup>22</sup> See NADAP Presentation, *supra* note 4. However, European countries are reported to have detection capabilities via blood tests. *Id.* 

<sup>23</sup> AR 600-85, *supra* note 20, para. 4-2p.

<sup>24</sup> Id. A Navy instruction prohibits

[t]he unlawful use by persons in the DON [Department of the Navy] of controlled substance analogues (designer drugs), natural substances (e.g., fungi, excretions), chemicals (e.g., chemicals wrongfully used as inhalants), propellants, and/or a prescribed or over-the-counter drug or pharmaceutical compound, with the intent to induce Tab K-2 Salt Lake City, Utah, the Air Force discharged seven Airmen in early 2010 for Spice use, and another eleven Airmen are pending disciplinary action for Spice use.<sup>25</sup> Outside of the use prohibition in AR 600-85, the Army has been handling the possession, distribution, and introduction of these products on an installation–by–installation basis. The promulgation of an installation general order banning the possession, use, sale, distribution, or introduction of these products has been the most common solution to the Spice dilemma.<sup>26</sup>

#### **Recent Opinion**—United States v. Larry<sup>27</sup>

On 18 May 2010, the Navy-Marine Corps Court of Criminal Appeals (NMCCA) decided *United States v. Larry*. The appellant was convicted, contrary to his pleas, at a special court-martial of conspiracy to violate a lawful general order, violation of a lawful general order, false official statement, wrongful possession of "Spice" with intent to distribute, and solicitation of another to distribute "Spice."<sup>28</sup> He was sentenced to six months confinement and a bad-conduct discharge.<sup>29</sup> One of the issues on appeal was whether or not "possession with intent to distribute the substance is a violation of Article 134."<sup>30</sup>

During trial, a Navy Criminal Investigation Service (NCIS) agent had testified that Spice use and distribution was "a huge problem for the military . . . and [Spice] was being widely abused by military members."<sup>31</sup> On appeal, the appellant argued that because possession of Spice was legal, the use of the word "wrongful" in the charge made the specification legally insufficient. The NMCCA cited *United* 

intoxication, excitement, or stupefaction of the central nervous system.

U.S. DEP'T OF NAVY, SEC'Y OF NAVY INSTR. 5300.28D, MILITARY SUBSTANCE ABUSE PREVENTION AND CONTROL para. 5.c (5 Dec. 2005).

<sup>25</sup> Associated Press, 7 Air Force Airmen Discharged for Utah Spice Use, GAZETTE, Mar. 27, 2010, http://www.gazette.com/articles/size-96303-font-11px.html. The Air Force has an instruction that requires separation for use of "any intoxicating substance, other than alcohol, that is inhaled, injected, consumed, or introduced into the body in any manner for purposes of altering mood or function." U.S. DEP'T OF AIR FORCE, INSTR. 36-3208, ADMINISTRATIVE SEPARATION OF AIRMEN para. 5.54.1 (10 June 2004). The only exception is if the Airman meets all seven listed criteria for retention. *Id.* para. 5.52.2.1.

<sup>26</sup> For example, Fort Drum, New York, recently prohibited the "actual or attempted possession, use, sale, distribution, manufacture, or introduction of" Spice and other similar substances. *See* Installation Policy Memorandum 10-30, Headquarters, 10th Mountain Division (Light Infantry), Fort Drum, New York, subject: Prohibition of Certain Unregulated Intoxicants (21 Apr. 2010).

<sup>27</sup> No. 200900615 (N-M. Ct. Crim. App. May 18, 2010) (unpublished).

<sup>28</sup> *Id.* at \*1.

<sup>29</sup> Id.

<sup>30</sup> *Id.* at \*2.

<sup>31</sup> *Id.* at \*3.

times more potent than Delta-9-tetrahydrocannabinol based upon laboratory animal tests. *Id.* 

<sup>&</sup>lt;sup>17</sup> 21 U.S.C. § 812 (2006) (listing tetrahydrocannabinols as a Schedule I controlled substance). HU-210 is a tetrahydrocannabinol.

*States v. Erickson*<sup>32</sup> for the proposition that there "is nothing on the face of the statute creating Article 112a or in its legislative history suggesting that Congress intended to preclude the armed forces from relying on Article 134 to punish wrongful use by military personnel of substances, not covered by Article 112a, capable of producing a mindaltered state."<sup>33</sup> The NMCCA held that "a reasonable fact finder could have found beyond a reasonable doubt that the appellant's wrongful possession of Spice with the intent to distribute was prejudicial to good order and discipline in the armed forces."<sup>34</sup> Based on *Erickson* and the testimony of the NCIS agent, the court upheld the conviction.<sup>35</sup>

The primary take away from the *Larry* case is that even in the absence of a lawful general order or regulation prohibiting certain types of conduct with Spice products, the Government may still be able to prosecute that conduct as a violation of Article 134. The NMCCA specifically did not decide whether "the mere possession of Spice was prohibited or illegal in a general sense," but the court left the door open to include other types of misconduct involving Spice as violations under Article 134.<sup>36</sup> In *Larry*, the Tab K-3 specific conduct was possession with the intent to distribute. However, other types of conduct, such as introduction or simple possession of Spice, may qualify as chargeable offenses under Article 134 if the Government can prove that the conduct was prejudicial to good order and discipline in the Armed Forces.

#### **Practice Pointers**

Practitioners in the field should be vigilant of the threat that Spice and Spice-like products pose to the good order and discipline of their installations. Until these substances are declared illegal or prohibited completely by regulation, Soldiers will continue to use and potentially abuse these products. Installation legal offices should push for general orders that prohibit more than just the use restriction contained in AR 600-85.<sup>37</sup> Additionally, establishments that sell Spice near military installations should be considered being placed off limits by the local Armed Forces Disciplinary Control Board.<sup>38</sup>

<sup>32 61</sup> M.J. 230 (C.A.A.F. 2005).

<sup>&</sup>lt;sup>33</sup> *Id.* at 233.

<sup>&</sup>lt;sup>34</sup> Larry, No. 200900615, at \*3.

<sup>&</sup>lt;sup>35</sup> Id.

<sup>&</sup>lt;sup>36</sup> *Id.* at \*2.

<sup>&</sup>lt;sup>37</sup> AR 600-85, *supra* note 20, para. 4-2p.

<sup>&</sup>lt;sup>38</sup> See U.S. DEP'T OF ARMY, REG. 190-24, ARMED FORCES DISCIPLINARY CONTROL BOARDS AND OFF-INSTALLATION LIAISON AND OPERATIONS (27 July 2006).

## Appendix

# **Pictures of Spice Products**







# TAB L

### SECRETARY OF THE ARMY WASHINGTON



# 1 0 FEB 2011

### MEMORANDUM FOR SEE DISTRIBUTION

## SUBJECT: Prohibited Substances (Spice in Variations)

1. Purpose. The purpose of this memorandum is to establish an Army-wide policy prohibiting the use and possession of synthetic cannabis and other THC substitutes. This policy remains in effect until rescinded or superseded.

2. References.

a. DoD Directive 1010.4, *Drug and Alcohol Abuse by DoD Personnel*, 11 January 1999.

b. AR 600-85, The Army Substance Abuse Program, 2 February 2009.

c. Uniform Code of Military Justice (2008).

3. Applicability. This policy is applicable to the Active Army, the Army National Guard of the United States when in Title 10 status, and the U.S. Army Reserve. This policy is punitive and violations of the provisions of this policy may result in punitive actions against Service members. This policy does not apply to alcohol, caffeine, tobacco or lawfully-used prescription medications.

4. Background. Synthetic cannabis and other THC substitutes have no known application other than mimicking the effects of THC in the human body. Numerous synthetic THC substitutes are now available on the open market in many states. Synthetic cannabis and THC substitutes are used in drugs such as "Spice," which is designed and sold solely to be used as a means to produce excitement, intoxication and/or stupefaction of the central nervous system. Synthetic cannabis and THC substitutes are so closely related in action to THC as to make it obvious that synthetic cannabis and THC substitutes will have the same potential for abuse as THC. It is, therefore, reasonable to assume that synthetic cannabis and THC substitutes have substantial capabilities of creating hazards to the mission of the Army, the health of the user and to the safety of the Army community.

## SUBJECT: Prohibited Substances (Spice in Variations)

5. Prohibition. All personnel listed in paragraph 3 above are prohibited from, without proper authorization, using, possessing, manufacturing, selling, distributing, importing into or exporting from the United States, or introducing into any installation, vessel, vehicle, or aircraft used by or under the control of the Army: Any controlled substance analogue or homologue such as "Spice" or similar substances containing synthetic cannabis, any THC substitute, or any synthetic cannabinoid. This prohibition will be included in the next revision of AR 600-85, The Army Substance Abuse Program and such other regulations as required.

6. Point of contact for this memorandum is Dr. Les McFarling at 703-681-5577 or email Les.McFarling@us.army.mil. The G-1 action Officer is Mr. Buddy Horne at 703-681-5576 or email buddy.horne@us.army.mil.

John M. McHugh

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## SUBJECT: Prohibited Substances (Spice in Variations)

## **DISTRIBUTION: (CONT)**

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# TAB M



CIRC-ABL

24 March 2010

MEMORANDUM FOR See distribution

Subject: Legal Highs - Criminal Alert Notice (CAN) 0061-10-CID022/9A1D/9H

**1. References:** AR 600-85 The Army Substance Abuse Program, Chapter 4.2 p (5); U.S. Army Criminal Investigation Laboratory Bulletin - Issue III - September 2009; Multiple Internet Product Sites, Forums, and Research Sites (see exhibit 1). Official sources are reliable, but internet and other sources are subjective and considered reliable when viewed in context.

**2. Purpose:** To inform the Fort Lee Law Enforcement Community, Commanders and other leaders on the current trend of some Soldiers and DoD personnel smoking certain legal herbal products such as "Spice".

**3. Executive Summary:** There has been a rise in the use of substances touted as "legal highs", "legal smokes", legal smoke-able herbal mixtures, incense and potpourris. They are marketed under names such as Spice, Spike 99, Yucatan Fire and Tribal Warrior. In a recent incident on Fort Lee, two products confiscated were "Stinger" and "Dark Night". They are sold over the internet and at various smoke shops around the tri-city area. They do not contain THC, the cannabinoid produced in the marijuana plant. The samples tested by the U.S. Army Criminal Investigation Laboratory (USACIL) did not contain HU 210, a synthetic cannabinoid and a Schedule I substance in the United States (Fadness, 2009). They did contain other cannabin mimetic substances that are not yet controlled substances but act in the same way as THC and HU 210. They are not detectable in urinalysis or drug detection kits.

**4. Background:** Products like Spice and Spike99 are substances marketed as "incense", potpourri or even as cachets, although some are blatant about being "herbal smoking blends". There are innumerable products like these that go by other names such as Ice Bud, Tribal Warrior, Buzz, Spicey, Yucatan Gold, Sticky Buds, and Fire and Ice. A new product that is rapidly gaining popularity is called K2. These products are available through the internet and at a few local smoke shops around the area. The ingredients in these products include plants and herbs that generally fall into the ethnobotanical category and whose properties range from acting as filler or flavors to slightly toxic or psychoactive. They do not contain salvia divinorum which is a Schedule 1 Controlled Substance in Virginia. The ingredients listed for Spike99 and another product, Spicey XXX Ultra Strong, as well as the recently confiscated Stinger and Dark Night

are identical. Many of the other products have similar ingredients. The amounts of the ingredients are not listed. Online, both products tout four "tasty flavors" and three sizes. Both products have various disclaimers attached, including: "Not for human consumption for use as incense only", "Any references about the use or effects of these natural healing herbs is based on traditional use or shamanic practices." and "Must be 18 or older to place an order."



The list of ingredients include: Vanilla (orchid, Orchidaceae), which does not seem to have any effect other than as a flavoring. Baybean (Canavalia maritima) is used as a potentiator and along the Gulf Coast of Mexico is smoked as a marijuana substitute. Its effects are reported to be similar to those of marijuana. Blue Lotus (Nymphaea caerulea & Nymphaea alba) is a potentiator, and is traditionally smoked or brewed as a tea. Large dosages (five to ten grams of the flowers) can create effects from mild stimulation to closed-eyed visual hallucinations. Indian Warrior (Pedicularis densiflora) is a stout green herb and is apparently filler, but may have some psychoactive effects including muscle relaxation, tranquilization and sedation. It is grown in some climates as forage for animals. The dried seeds of Maconha Brava (Zornia latifolia) are often smoked as a substitute for cannabis and produce mild hallucinogenic effects. Marshmallow (Althaea officinalis) is a common plant, often used for food and various medicinal purposes. Blueberry (Vaccinium corymbosum) is apparently one of the "tasty flavors" as are Strawberry (Fragaria) and Wild Cherry (Prunus avium), although all parts of the wild cherry plant except for the ripe fruit are slightly toxic, containing cyanogenic glycosides. Pink Lotus (Nelumbo nucifera), also known as Sacred lotus, Indian lotus and Sacred water-lily is the national flower of India. It has been cultivated for food and decoration. It does contain the alkaloids nuciferine and aporphine. Damiana (Turnera aphrodisiaca) is a relatively small shrub that produces small, aromatic flowers. The leaves have traditionally been made into a tea which was used by native people of Central and South America for its aphrodisiac effects.



Spice is a very popular herbal smoke product. It is similar to Spike99 in packaging and appearance. It is also marketed as Spice Silver, Spice Gold, Spice Diamond and other variations on the Spice name such as Spice Arctic Synergy and Spice tropical Synergy. Tribal Warrior has been marketed as the "new Spice Gold". Ingredients found in these products include Baybean. Blue Lotus, Lion's Tail, Lousewort, Indian Warrior, Dwarf Scullcap, Maconha Brava, Pink Lotus, Marshmallow, Red Clover, Rose, Siberian Motherwort, Vanilla, and Honey. Some of these products are also listed in Spike99. Lion's Tail (Leonotis leonurus), also known as Wild Dagga, is traditionally smoked or made into a tea. It induces sleep while enhancing dreaming and has relaxing and calming effects. It has been used in folk medicine to relive the effects of PMS. Wild Dagga is often referred to as a cannabis substitute for its euphoric, cannabis-like effects. Lousewort is a common name used for any of 350 to 600 plants belonging to the broomrape family. Indian Warrior as mentioned above is in the same genus as lousewort. Dwarf Scullcap (Scutellaria nana) is a small perennial herb that is native to California. It is well-known and traditionally used among Native American tribes for its sedative properties. Opium Lettuce (Lactuca virosa) also known as wild lettuce, has been used medicinally for insomnia, nervousness, hysteria, muscle spasms, coughs, and painful digestion for many years.



USACIL has tested Spice, Spice Gold, Spice Diamond, Spike99, Smoke, Genie and Yucatan Gold. They found JWH 018 and JWH 073, both cannabin mimetic substances, neither of which are controlled in the United States. They are purported to produce the same or similar effects as marijuana. HU 210 has been detected in these products twice, once by the U.S. Border Patrol Laboratory in January 2009 and again by a laboratory in the United Kingdom in July 2009.

Whether or not these products are dangerous is still being debated. The potential to harm oneself or others while under the influence of these products is as likely as it is with other substances that are abused. Drawing the smoke of any burning substance into the lungs can only have an adverse effect on the health of an individual. No verifiable deaths have been reported associated with the use of these products.

There are several forums on the internet that are dedicated to those who partake in drugs of all types, including ethnobotanicals. Mention is often made of "legal smokes" and they are most often compared to marijuana. Mention is often made of wanting to use drugs and not be detected through drug testing programs. From many of the thread subjects and context used, some of the persons on these forums are very likely military.

Army Regulation 600-85, chapter 4.2 p., specifically prohibits Soldiers from using controlled substance analogues (designer drugs), naturally occurring substances for the purposes of inducing excitement, intoxication or stupefaction of the central nervous system. Violations of this provision are subject to punishment under Article 92, UCMJ and/or administrative action.

5. Point of contact for any questions concerning this memo is William Willis at (804)734-0624 or william.a.willis@conus.army.mil

Report Prepared By:

Report Approved By:

WILLIAM A. WILLIS Criminal Intelligence Analyst

Special Agent in Charge

Distribution:

1 – CDR, USACIDC, ATTN: CIOP-IN

1 – CDR, 3<sup>rd</sup> MP Grp

1 - CDR, 10<sup>th</sup> MP Battalion (CID) (ABN)

1 - Garrison Commander, Fort Lee, VA

1 – CDR, 16<sup>th</sup> Ord Bde, Fort Lee, VA

1 - CDR, 23rd QM Bde, Fort Lee, VA

1 - CDR, 49<sup>th</sup> QM Grp, Fort Lee, VA

1 - Directorate of Emergency Services, Fort Lee, VA

1 - Staff Judge Advocate, Fort Lee, VA

1 - File (original)

Exhibit 1:

#### References:

Army Regulation 600-85, The Army Substance Abuse Program, Chapter 4.2, p.

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# TAB N

# **Drug Screening Lab Glossary**

**Abundance** – The concentration of ions reaching the mass spectrometer detector in GC/MS.

**Aliquots** – A portion of the sample. This is obtained by pouring the urine from a bottle into a test tube. All testing is done using aliquots of the original sample. Nothing is added to the original urinalysis bottle.

**Batch** -100 samples that are tested at the same time under the exact same conditions.

**BZE** – Benzoylecgonine, a metabolite of cocaine.

**Butalbital** – A type of barbiturate, occasionally encountered for short acting sedative-hypnotic use.

**Certification** – A review of the chain of custody, quality control, and scientific data for completeness and compliance with the local operating procedures and standard operating procedures from the Department of Defense. Certifying Scientists are appointed by the Commander.

**Cocaine** – Parent drug. One of the most potent naturally-occurring central nervous system stimulants (see also BZE).

**Confirmation** – Samples that are found to be presumptive positive on initial screen and re-screen are sent for confirmatory testing using the GC/MS.

# Controls -

**Blind control** – A control whose position and content are unknown to the operator.

**Low control** – Control containing drug(s) at a concentration higher than a negative, yet below the Department of Defense cutoff concentration.

**Negative control** – A control certified not to contain drug.

**Open control** – A control whose position and concentration are known to the operator or the analyst.

**Positive control** – Control containing drug at a concentration greater than the Department of Defense cutoff concentration for that drug.

**Codeine** – Narcotic analgesic occurring naturally in opium. Metabolizes to morphine.

**Cutoff** – Department of Defense established concentration of drug in urine, at which the specimen is considered positive.

**DD Form 2624** – The Department of Defense external chain of custody document for urinalysis specimens.

**Dilutions** – A procedure used to dilute specimens which are suspected to have high amounts of the drug/metabolite prior to confirmatory analysis.

Ecstacy – See MDMA.

**Ephedra** – Compounds consisting of the I-isomer (pseudoephedrine) and d-isomer (ephedrine). Used as a nasal decongestant and bronchodilator. Both species are minimally metabolized by N-demethylation. Chemically removed from urine samples prior to screening. Will not "cross react" or give a "false positive" with NDSL, SD confirmation.

**Extraction** – The process by which an analyte in one matrix is chemically transferred to another matrix.

**Extracted Standard** – A urine sample which is certified to contain drug at the Department of Defense cutoff level. This standard is place in an extraction batch and is used to calibrate the GC/MS instrument.

**Gas Chromatography / Mass Spectrometry (GC/MS)** – In forensic toxicology, GC/MS is considered "the gold standard" for identification and quantitation of drugs of abuse. GC/MS is a tandem of 2 instruments: gas chromatograph and the mass spectrometer. The GC separates difference components found in the urine extract. The time it takes for the different components to exit the GC is known as the retention time (RT). The component of the extract with the RT ±0.2% from the known drug is transferred to the MS. The MS bombards drug molecules with electrons and breaks them apart into smaller fractions. The type of fractions and the relative abundance of the fractions (MIR) along with the RT is considered the "fingerprint" of the drug.

GC/MS – Gas Chromatography / Mass Spectrometry.

**Heroin** – First synthesized from morphine in 1874. Average street grade heroin is 2-6% pure heroin. Metabolizes to morphine, then to codeine.

**Initial Screen** – The first test that is performed on every urine sample received. This initial test and all required re-screens are performed on a rapid auto analyzer using immunoassays.

**Injection** – Process of injecting a sample or an extract into a GC/MS instrument. This is usually done with a syringe.

**Internal Standard** – A specially chosen compound not normally present in the sample but added to it to aid in quantitative analysis. It is usually the drug/metabolite of interest to which several hydrogen atoms have been replaced with deuterium atoms.

**Immunoassay** – A screening method used to quickly and efficiently segregate negative specimens from positive specimens. An antibody-antigen (Ab/Ag) reaction is used to detect various drug classes in the urine. The instrument measures the amount of light that passes through the urine/antibody mixture. The more light that passes through the mixture, the higher the concentration of drug in the urine. The instrument is calibrated to the Department of Defense cutoff for each of the drugs tested and is normalized to 100. Therefore any specimen screening result that is 100 or higher is considered presumptively positive.

**Ketamine** – Veterinary anesthetic. Failed clinical trials due to its unpleasant side effects during anesthetic recovery.

**Laboratory Accession Number (LAN)** – A unique number assigned to each sample by the laboratory. It is used to identify and track a specimen, and still maintain anonymity of the donor during testing.

**Laboratory Certifying Official (LCO)** – An individual who is trained and certified to evaluate the chain of custody and scientific data for completeness and acceptance per the SOP.

LC/MS – Liquid Chromatography / Mass Spectrometry.

**Liquid Chromatography / Mass Spectrometry (LC/MS)** – A technique which effects the physical separation of two or more components in a mixture. LC/MS is a tandem of two instruments: liquid chromatograph and the mass spectrometer.

The LC separates different components found in the urine extract. The time it takes for the different components to exit the LC is known as the retention time (RT). The component of the extract with the RT  $\pm 0.2\%$  from the known drug is transferred to the MS. The MS bombards drug molecules with electrons and breaks them into smaller fractions. The type of fractions and the relative abundance of the fractions (MIR) along with the RT is considered the "fingerprint" of the drug.

**Litigation Packet** – Copies of chain of custody and scientific data associated with a particular donor LAN. A litigation packet is prepared only when an appropriate authority at the unit requests its preparation.

LSD – Lysergic Acid Diethylamide.

**Long Term Storage** – Secured, limited access freezer where the positive specimens are kept. Specimens are kept for one year.

**LOP** – Local Operating Procedure.

**MDA** – Methylenedioxyamphetamine, psychotropic amphetamine, designer amphetamine and metabolite of MDMA.

MDEA – Methylenedioxyethylamphetamine, designer amphetamine.

**MDMA** – Methylenedioxymethamphetamine, Ecstacy, designer amphetamine.

**d-Methamphetamine** – Derivative of amphetamine, first prepared in 1919. Methamphetamine in overdoses causes restlessness, confusion, anxiety, hallucinations, cardiac arrhythmias, hypertension, hyperthermia, circulatory collapse, convulsions and coma. Chronic abusers may develop paranoid psychosis.

**Morphine** – Narcotic analgesic, often found in small quantities in poppy seed food. Morphine is also a metabolite of codeine, ethylmorphine, heroin and pholcodine.

**Operator** – An individual who is operating a scientific instrument used to test the specimen.

OH-LSD – 2-oxo-3-hydroxy LSD, metabolite of parent LSD compound.

**PCP** – Phencyclidine, veterinary tranquilizer. Structurally related to ketamine.

**Phenobarbital** – A type of barbiturate that has been used as a daytime sedative and very extensively as an anticonvulsant.

**Prolyl** – Amphetamines are derivatized using S-(-)-N-(trifluoroacetyl)prolyl chloride, an optically active derivatizing reagent.

**Pseudoephedrine** – See Ephedra.

**Re-Screen** – All samples that test presumptive positive on the initial screening are re-screened using immunoassays on a new aliquot. All re-screen presumptive positive samples are tested using a new aliquot using GC/MS for confirmation.

**Screening Assay** – An immunoassay procedure performed on a rapid autoanalyzer used to screen for the presence of drugs in a urine sample. All presumptive positive samples are tested a second time using a new aliquot. All re-screen presumptive positive samples are tested using a new aliquot using GC/MS for confirmation.

**Secobarbital** – A type of barbiturate, short duration. Used as a sedative or hypnotic.

**SOP** – Standard Operating Procedure.

**Temporary Storage** – A secure specimen storage area of the drug laboratory, designated by SOP.

THC – D9-Tetra-hydroxy cannabinol. This is the drug found in marijuana.

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