TIME FOR ANOTHER HAIRCUT: A RE-LOOK AT THE USE OF HAIR SAMPLE TESTING FOR DRUG USE IN THE MILITARY

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I. Introduction

The Army's urinalysis program has made great strides in reducing drug use in the military ranks.[1] However, the current military operational tempo and the prevalence of illegal drugs in local communities[2] warrant a more comprehensive approach to eliminating drug use in the service.[3] An annual national drug survey by the U.S. Department of Health and

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[1] *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.*

[2] 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.*

[3] *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/l/bldrugtests2.htm (last visited Oct 23, 2006) (discussing the 2002 Department of Defense's (DOD) anti-drug policy).

Human Services' Substance Abuse and Mental Health Services Administration reflects the gravity of the drug problem in America.[4] According to the 2004 survey, 19.1 million Americans, age twelve and over, currently use illegal drugs.[5] Seventy-five percent of the 16.4 million drug users, aged eighteen and older, had current employment.[6] 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.[7] 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.[8] An Internet Google search using the words "beat a drug test" provided over 1,200,000 hits.[9] Many of these sites offer to provide pills or chemical solutions that counter urinalysis tests.[10] These products claim to help avoid a positive drug test result by flushing drugs out of a person's urine prior to a test.[11]

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[4] SAMHSA 2004 National Drug Survey, *supra* note 2, § 2.

[5] *Id.* The survey asked whether the person had used an illegal drug in the month prior to the survey. *Id*.

[6] *Id.* at Highlights.

[7] *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).

[8] *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).

[9] *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.

[10] *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).

[11] *See* MB Detox Website, *supra* note 10 (referencing their products ability to flush drugs from a person's body).

Additionally, a urinalysis can only detect, for most drugs, drug use occurring a few days prior to the test.[12] 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.[13]

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;[14] (2) satisfies any Fourth Amendment concerns;[15] (3) provides commanders with reliable results;[16] and (4) requires only minor adjustments to current military drug testing programs.[17] 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.[18] The concepts include: how drugs deposit in the hair; how authorities collect hair samples; and how laboratories analyze these samples.[19] These concepts will highlight hair drug testing's advantages and disadvantages by explaining the biological process behind the test.[20]

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[12] *See DOD Urinalysis (Drug Test) Program*, http://usmilitary.about.com/od/theorderly http://usmilitaryroom/l/bldrugtests.htm (last visited Oct 23, 2006) [hereinafter *DOD Urinalysis Program*] (providing drug detection windows for urine testing).

[13] *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.*

[14] *See infra* Part D.

[15] *See infra* Part III.

[16] *See infra* Parts IV, V.

[17] *See infra* Part VI.

[18] *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).

[19] *Id.* §§ 3-9.

[20] *See generally infra* Parts II.D, E (describing the advantages and disadvantages of hair testing).

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.[21] The drug and its metabolites then enter the servicemember's blood stream and circulate throughout his body.[22] As the blood brings nutrients to the hair, the blood also deposits the drug and drug metabolites in the hair follicles.[23] The drug metabolites and actual drug traces come to rest permanently in the hair strand.[24]

As the hair grows, the hair section containing the drug deposit grows beyond the skin's surface.[25] Normally, a hair must grow for five to seven days before the hair containing the drug deposit emerges from the skin's surface.[26] Hair grows at an average rate of about 1/2 inch (approximately 1.3 centimeters) per month.[27] Chronic drug use creates a band-like pattern of drug deposits within the exposed hair, similar to rings in a raccoon's tail.[28] The hair continues to grow until it becomes dormant and eventually falls out of the head.[29]

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[21] *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).

[22] 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, norcocaine, and cocaethylene. Proposed Revisions to Mandatory Guidelines for Federal Workplace Drug Testing Programs, 69 Fed. Reg. at 19675.

[23] 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.*

[24] *Id.*; Tom Mieczkowski, *Hair Analysis as a Drug Detector*, *in* NAT'L INST. OF JUST. 1, 1 (Oct. 1995).

[25] *See* Mieczkowski, *supra* note 21, at 2.

[26] 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).

[27] Mieczkowski, *supra* note 21, at 2.

[28] 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

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,[30] with this sample size covering a three-month period.[31] The back of the crown of the head is the primary area used for sample collection.[32] 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.[33] Keeping the hair root ends of the sample aligned, the collector then deposits the hair sample into a foil packet.[34] Next, the collector places the foil packet into a sealed envelope secured with an integrity seal.[35] Finally, the collector mails the sample and accompanying paperwork to the designated laboratory.[36]

C. Analyzing the Test Results

Upon arrival at the laboratory, technicians subject the hair sample to rigid procedures.[37] First, the technicians inspect the hair sample and accompanying paperwork for any existing discrepancies that may upset the integrity of the sample.[38] Next, the technicians wash the hair.[39] The washing procedures eliminate any drugs or oils that may have attached to the hair strands through external exposure.[40] The technicians then cut the

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approximate time of drug ingestion by measuring the band's distance from the skin's surface. *Id.*

[29] *See* Dr. Kippenberger E-mail, Oct. 25, 2005, *supra* note 26 (explaining hair dormancy).

[30] 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.).

[31] *See* Vinal, *supra* note 18, § 4.

[32] *See* PSYCHEMEDICS TRAINING MANUAL, *supra* note 30, at 6-7.

[33] *Id.* at 7-8 (providing pictures).

[34] *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).

[35] *See* PSYCHEMEDICS TRAINING MANUAL, *supra* note 30, at 8-9.

[36] *Id.* at 11.

[37] *See* Vinal, *supra* note 18, § 5 (describing initial intake procedures).

[38] *Id.*

[39] *Id.* § 6.

[40] *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

hair strands into 1/2 inch segments for separate testing.[41] Segmentation establishes a monthly drug history; each segment represents roughly thirty days of hair growth.[42] If a laboratory finds drug metabolite in a segment, the laboratory will then know that the drug use occurred within that thirty-day window.[43]

After segmentation, the lab combines each hair sample segment with an enzymatic solution that breaks down the hair.[44] This procedure converts the hair into liquid form for testing.[45]

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.[46] The laboratory reports the drug results of both the RIA and GC/MS tests in nanograms per ten milligrams (NPM) of hair[47] or in picograms per one milligram of hair.[48] Each laboratory has established drug cut-off levels for each drug.[49] Although laboratory differences in drug cut-off levels for

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IN HAIR 17, 52 (Pascal Kintz ed., 1996) (questioning the ability of decontamination procedures to remove external contamination).

[41] *See* Vinal, *supra* note 18, § 2.

[42] *See* Mieczkowski, *supra* note 21, at 2 (describing hair drug testing's ability to create a "time line" of drug use).

[43] *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.*

[44] *See id.* § 7.

[45] *Id.*

[46] *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].

[47] *See* Vinal, *supra* note 18, §§ 8-9.

[48] 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).

[49] *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.

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.[50] 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.[51]

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.[52] 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.[53] 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.[54] In contrast, a hair drug test could show cocaine use over a three-month period.[55] As a

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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.

[50] *See supra* note 46, DOD DIR. 1010.16, paras. E1.5.3 & E1.6.2 (requiring the DOD Co-ordinator for Drug Enforcement Policy and Support to set the DOD cut off levels for initial and confirmatory urinalysis testing.

[51] *Drug Testing in the Workplace: Drug Test Cut-off Levels*, http://www.ipassedmydrug test.com/drug_cutoff_levels.asp (last visited Oct. 23, 2006).

[52] *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).

[53] *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).

[54] *See DOD Urinalysis Program*, *supra* note 12 (providing the drug detection window for cocaine).

[55] *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).

result, the typical hair test would give the command a three-month "snapshot" of the servicemember's drug use.[56] 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.[57]

In addition to a long drug detection window, hair drug testing also provides several other advantages.[58] 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.[59] Second, hair drug testing does not have the potential inherent adulteration problems of urine testing such as dilution or usage of prosthetics.[60] Third, the command can easily transport and store hair samples.[61] In austere environments, the command would not have to worry about crushed samples, contaminated samples, or the effects of extreme heat or cold.[62] For example, the current conflict in Iraq

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[56] *Id.*

[57] *See id.* at 94-95 (statement of Tom Mieczkowski, Ph.D., Professor, University of South Florida) (explaining hair's ability to quantify drug use).

[58] *See Hearing on the Federal Workplace Drug Testing Program*, *supra* note 51, at 22 (listing advantages).

[59] *See id.* at 21; U.S. DEP'T OF ARMY, REG. 600-85, ARMY SUBSTANCE ABUSE PROGRAM (ASAP) para. E-5(l) (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* PSYCHEMEDICS TRAINING MANUAL, *supra* note 30, at 6 (explaining that a hair sample can come from alternate body sites). These alternate sites, especially the pubic 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 pubic 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).

[60] *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).

[61] *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.

[62] *See* Mieczkowski, *supra* note 21, at 2 (noting a hair sample's physical advantages over a urine sample).

represents such an environment, where the extreme heat could cause the drug concentrations in urine samples to decrease.[63] The intense heat could also stimulate rapid bacteria growth in the urine sample.[64] Fourth, the command could obtain another similar hair sample if the laboratory indicated a problem with the original hair sample.[65] Fifth, hair drug testing can help discriminate heroin users from codeine users or poppy-seed consumers, which urine testing allegedly cannot do.[66]

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.[67] After a servicemember consumes an illegal drug, the actual drug and drug metabolite must circulate through the blood to reach the hair.[68] Once the drug reaches the hair root, the hair must then grow long enough to

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[63] *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.*

[64] *See* 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 (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).

[65] *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).

[66] *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.*

[67] *See* Vinal, *supra* note 18, § 2.

[68] *See supra* Part II.A (explaining how drugs deposit in the hair).

expose the drug deposits above the skin's surface.[69] Consequently, a commander would have to wait almost a week to obtain a hair sample reflecting present-day drug use.[70]

Hair drug testing also might not detect a one-time use based upon selected, drug detection, cut-off levels.[71] For example, the average amount of cocaine ingested during one use is 125 mg.[72] A hair sample test would require the user to ingest approximately 200 mg of cocaine to return a positive result.[73] 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.[74] 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.[75] 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.[76] Unless an exception applies, the government actor must operate with a proper warrant issued upon probable cause to conduct a search or a seizure.[77]

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[69] *Id.*

[70] *Id.* (noting thatdrug deposits in the hair folicle will normally take about five to seven days to emerge from the skin's surface).

[71] Mr. Thistle E-mail, Nov. 3, 2005, *supra* note 26.

[72] *Id.*

[73] *Id.*

[74] *Id.*; *see also* United States v. Bethea, 61 M.J. 184, 184-88 (2005) (involving hair analysis and "binge" drug use).

[75] *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.*

[76] U.S. CONST. amend. IV.

[77] *Id.*

Specifically, the Fourth Amendment applies to situations where a government actor intrudes into an area where a person has a reasonable expectation of privacy.[78] Hair drug testing raises three areas of Fourth Amendment concern: (1) the seizure of the servicemember to obtain the hair;[79] (2) the seizure of the hair;[80] and (3) the search of the hair for illegal substances.[81]

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.[82] 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.[83] 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.[84] If a reasonable expectation of privacy exists, the government must possess a valid search authorization[85] or a search authorization exception prior to searching and/or seizing a particular person or item or prior to searching a particular place.[86]

When applying these rules to hair drug testing, three questions emerge. First, does a servicemember have a reasonable expectation of privacy in his hair?[87] Second, if the servicemember does have an

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[78] *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).

[79] *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).

[80] *Dionisio*, 410 U.S. at 8.

[81] *Id.*

[82] *See Katz*, 389 U.S. at 347 (1967) (determining when a person has an expectation of privacy protected by the Fourth Amendment).

[83] *Id.* at 361 (Harlan, J., concurring) (explaining the test).

[84] *Id.*

[85] *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."

[86] 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).

[87] *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).

expectation of privacy in his hair, does the government actor taking the hair sample have a search authorization based upon probable cause,[88] or does an exception to the search authorization requirement exist?[89] Third, is the manner in which the government actor collected the hair sample reasonable?[90] Hair drug testing must satisfactorily navigate these legal checkpoints before military counsel may use hair sample results in court.[91]

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.[92] If an individual does not have an expectation of privacy in his hair, law

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[88] *E.g.*, United States v. Bethea, 61 M.J. 184, 188 (2005) (finding probable cause for a hair sample search authorization).

[89] *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).

[90] *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).

[91] *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).

[92] *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).

enforcement officials could conduct a warrantless seizure of it.[93] The courts often analyze whether a hair sample is more akin to a handwriting or voice sample, or to a blood or urine sample.[94] The Supreme Court has found that a person has no reasonable expectation of privacy in a handwriting sample[95] or a voice sample.[96] However, the Court has held that a person does have an expectation of privacy in a blood sample[97] and a urine sample.[98] 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.[99] In *United States v. Ruiz*, government counsel argued that the accused did not have an expectation of privacy in his drug-tested hair sample.[100] However, the Air Force Court of Criminal Appeals (AFCCA) found that a valid search authorization existed in the case.[101] Therefore, the Air Force court avoided confronting the privacy issue.[102] 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

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[93] *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).

[94] *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.*

[95] United States v. Mara, 410 U.S. 19, 21-22 (1973).

[96] United States v. Dionisio, 410 U.S. 1, 14 (1973).

[97] Schmerber v. California, 384 U.S. 757, 767 (1966).

[98] 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).

[99] 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.

[100] United States v. Ruiz, No. 33084, 1999 CCA LEXIS 219, at *2 (A.F. Ct. Crim. App. July 26, 1999) (unpublished).

[101] *Id.* at *3.

[102] *Id.*

Amendment.[103] At the time of the hair seizure, the military police had Pyburn in custody, but did not have a search authorization.[104]

Pyburn highlights the distinction between and consequent implications of a hair sample obtained for drug testing purposes, with one obtained for comparison purposes.[105] 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.[106] However, a hair sample seized to chemically analyze the sample for drugs arguably correlates more to a seizure of a urine sample.[107] 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. [108] One category, "drug testing", would create a reasonable

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[103] 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 incorporated "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?

[104] *Pyburn*, 47 C.M.R. at 904 (considering the search incident to a lawful apprehension).

[105] *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).

[106] *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).

[107] *See generally* Skinner v. Ry. Labor Executives Ass'n, 489 U.S. 602, 617 (1989) (considering a urine test a search).

[108] *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.*

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.[109] Removing hair from a person's head differs in level of intrusiveness from removing hair from the body, especially from the pubic region.[110] 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.[111] This difference could create difficulties for commanders who have servicemembers with short or shaved haircuts.[112] A commander may counter this problem by first seizing hair from a servicemember's chest or underarm.[113] A commander could also require a servicemember to grow out the hair on his head.[114] 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.[115]

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[109] *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).

[110] *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).

[111] *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).

[112] *See* Coddington v. Evanko, 112 F. App'x 835, 836 & 838 (3rd Cir. 2004) (obtaining hair sample from a person with short hair).

[113] *See* PSYCHEMEDICS TRAINING MANUAL, *supra* note 30, at 6 (explaining that a hair sample can come from alternative sites); c*f.* 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).

[114] *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 prevent 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.

[115] *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

The method of hair collection method may also affect the reasonable expectation of privacy analysis.[116] In *Coddington v. Evanko* the Third Circuit Court of Appeals examined the hair collection method used.[117] 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.[118] The *Coddington* court found no reasonable expectation of privacy in a hair sample that was "above the body surface and on public display."[119] However, the court noted that plucking the hair from the root may raise an expectation of privacy.[120] Consequently, the court created an expectation of privacy for subsurface hair but not for surface hair.[121] 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.[122]

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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).

[116] *See Coddington*, 112 F. App'x at 838 (shaving head and body hair); *Bouse*, 573 F.2d at 550-51 (pulling pubic hair).

[117] *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.

[118] *Id.* (noting that the hair was in plain view).

[119] *Id.*

[120] *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).

[121] *Coddington*, 112 F. App'x at 838.

[122] *Id.* at 837-38 (citing *In re* Grand Jury Proceedings Cecil Mills, 686 F.2d 135, 139 (3rd Cir. 1982)).

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.[123] This argument, if successful, could preserve evidence from a command-directed hair collection regardless of whether sufficient probable cause exists.[124] Additionally, a commander could order a hair drug test based on less than probable cause and still have the results admitted.[125]

For example, assume a commander hears rumors that three of his servicemembers consumed illegal drugs over the past weekend.[126] 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.[127] In consultation with his legal advisor, the commander might decide to order a fitness-for-duty urinalysis test.[128] 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.[129]

If servicemembers had no expectation of privacy in their hair, a hair sample test might legally sidestep the limitations of the Army's limited

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[123] 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.

[124] *See id.* at *1-3 (giving a "no reasonable expectation of privacy" argument as a backup position to a sufficient probable cause argument).

[125] *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.*

[126] *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).

[127] *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).

[128] *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).

[129] *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).

use policy.[130] The limited use policy covers "results of a command-directed biochemical testing that [are] inadmissible under the Military Rules of Evidence."[131] However, MRE 311 only makes the evidence of a search inadmissible if "the accused had a reasonable expectation of privacy in the person . . . searched."[132] 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. [133] 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.[134]

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.[135] 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.[136] 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.[137] A commander must be able to articulate a reasonable suspicion about a

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[130] *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).

[131] AR 600-85, *supra* note 59, para. 6-4(a)(1).

[132] MCM, *supra* note 85, MIL. R. EVID. 311(a)(2).

[133] *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.

[134] *See id.*

[135] *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).

[136] United States v. Dionisio, 410 U.S. 1, 8 (1973).

[137] *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.*

certain servicemember,[138] or at least possess a reasonable belief that a hair sample test would identify a perpetrator.[139]

Additionally, the hair sample seizure must utilize reasonable collection procedures.[140] In *Bouse v. Bussey*, the Ninth Circuit Court of Appeals held that a hair sample collection violated the Fourth Amendment.[141] 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.[142] The court found that these actions exceeded the "minor intrusions upon privacy and integrity that . . . are not generally considered searches or seizures."[143] "[W]hat is reasonable depends upon all of the circumstances surrounding the search or seizure and the nature of the search or seizure itself."[144]

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.[145] However, commanders should always try to obtain samples of hair from the head instead of the body to

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[138] *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).

[139] *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).

[140] *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).

[141] *Bouse*, 573 F.2d at 550-51.

[142] *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 pubic 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.

[143] *See id.* at 550 (distinguishing between "reasonable" and "unreasonable" searches as envisioned by the language of the Fourth Amendment).

[144] United States v. Montoya De Hernandez, 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).

[145] *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).

minimize any intrusiveness concerns.[146] Commanders should also obtain hair samples using cutting, not plucking, methods.[147] These techniques will strengthen the government's argument that a servicemember does not have a reasonable expectation of privacy in his seized hair.[148] Finally, the commander should be able to articulate a basis for seizing hair from the servicemember and should follow established collection procedures.[149]

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.[150] Witness observations and positive urinalysis results usually provide the facts necessary to

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[146] *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 pubic hair).

[147] *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).

[148] *See Coddington*, 112 F. App'x at 837-38 (finding no expectation of privacy in hair exposed to public view).

[149] *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).

[150] *See* United States v. Bethea, 61 M.J. 184, 184-86, 188 (2005) (finding probable cause for search authorization 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).

support a probable cause determination.[151] 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.[152]

For example, *United States v. Bethea* involved confusion over the ability of hair sample testing to detect a one time drug use.[153] When a Criminal Investigation Division (CID) special agent confronted the accused with a positive urinalysis test, the accused denied using cocaine.[154] The special agent then sought a magistrate's search authorization for a hair sample.[155] The special agent's affidavit stated that hair sample testing analysis could detect only chronic or binge drug use.[156] The defense argued that the positive urinalysis result lacked probable cause for a second test that could detect one time use.[157] 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.[158]

Even if a hair sample analysis might not detect all one time uses,[159] the Court of Appeals for the Armed Forces (CAAF) stated that this possible limitation did not invalidate the search authorization.[160] The court held that because a urinalysis could detect not only a one time use but also multiple uses, [161] a urinalysis could provide sufficient probable

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[151] *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).

[152] *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).

[153] *Bethea*, 61 M.J. at 184-86.

[154] 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).

[155] *Id.*

[156] *Bethea*, 61 M.J. at 185.

[157] *Id.* at 185-86.

[158] *Id.*

[159] *See supra* Part II.E (addressing hair testing's ability to detect a one-time use).

[160] *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.

[161] *Id.* at 187.

cause for a hair sample test.[162] The court effectively dodged the one time use issue by focusing on a urinalysis's ability to detect multiple drug uses.[163]

Bethea represents the problems that lack of precise wording in affidavits can create in the search authorization process.[164] 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.[165] 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.[166] Military Rule of Evidence 313 outlines the legal standards applicable to a command inspection.[167] These standards provide guidance on inspection procedures and regulate the admissibility of evidence collected pursuant to an inspection.[168] Hair drug testing complies with these standards because it satisfies the rule's underlying "special needs" exception to the Fourth Amendment's warrant clause.[169] 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.[170]

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[162] *Id.* at 187-88.
[163] *Id.*
[164] *Id.* at 184-88.
[165] *See generally id.* at 185 (noting that the special agent on the case contacted a forensic science consultant and the National Medical Services Laboratory).
[166] U.S. CONST. amend. IV; MCM, *supra* note 85, MIL. R. EVID. 313.
[167] MCM, *supra* note 85, MIL. R. EVID. 313.
[168] *Id.* at MIL. R. EVID. 313(a), (b).
[169] *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).
[170] *See infra* Part III.C.2.

Adhering to these proscribed requirements also helps prevent subterfuge inspections.[171]

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.[172] A compulsory urinalysis ordered pursuant to MRE 313 already complies with this exception both in the rule's text and supportive case law.[173] 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.[174] "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."[175]

The Supreme Court has analyzed the "special needs" exception in five separate cases.[176] These cases developed factors the Court applies in

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[171] *Id.*

[172] *See Skinner*, 489 U.S. at 618-34 (addressing the special needs exception); *Von Raab*, 489 U.S. at 665-79.

[173] *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).

[174] *See* Ferguson v. City of Charleston, 532 U.S. 67, 78 (2001); *Skinner*, 489 U.S. at 618-20.

[175] *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.

[176] *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*

articulating a special governmental need and in weighing that need against a person's privacy interests.[177] First, the Court will not find a special need that serves simply as a pretext for criminal prosecution.[178] Second, the Court will look favorably upon a special need that does not subject an individual to arbitrary testing.[179] Third, the Court will give great weight to the deterrent effect of the government tests when the Court finds a special need.[180] Fourth, the Court will consider the temporal applicability of the government test—whether the test can prevent destruction of evidence or determine immediate impairment.[181]

Additionally, the Supreme Court prefers a special need that minimally intrudes on a person's privacy.[182] When analyzing a unit drug testing program, the Court will consider the intrusiveness of the collection procedures.[183] The Court will also examine the amount of restriction the test places on a person's freedom of movement.[184] The nature of the person's employment will also receive close review by the Court.[185] The Court has found that an employee has a lower expectation of privacy in a heavily regulated work environment.[186]

In *United States v. Bickel*, the Court of Military Appeals (COMA) found a special need for the military's urine testing program.[187] The *Bickel* court identified several distinctions between the Supreme Court's

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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).

[177] *See Skinner*, 489 U.S. at 620-32 (identifying special need factors).

[178] *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.

[179] *See Skinner*, 489 U.S. at 621-22 (1989) (favoring limited discretion by persons who authorize the drug testing).

[180] *See id.* at 629-30 (recognizing that a program preventing drug use will not work if employees have no fear of discovery).

[181] *Id.* at 623, 631-32.

[182] *See Ferguson*, 532 U.S at 77-78 (weighing the amount of intrusion into the person's indi vidual privacy against the importance of the government's special need).

[183] *Skinner*, 489 U.S. at 626-27.

[184] *Id.* at 618, 624-25.

[185] *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).

[186] *Id.*

[187] United States v. Bickel, 30 M.J. 277, 281-86 (C.M.A. 1990) (finding drug testing, pursuant to an inspection, as constitutionally valid).

"special needs" drug cases and the military urinalysis inspections.[188] 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.[189] 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.[190]

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."[191] The COMA identified several reasons to support its decision: (1) the effects of drugs on a servicemember's ability to accomplish the military mission;[192] (2) a servicemember's use of firearms;[193] (3) the legislative intent of Congress in criminalizing drug use and drug possession under the Uniform Code of Military Justice;[194] (4) a reduced expectation of privacy in the military;[195] (5) a dramatic reduction in positive test results;[196] (6) proper notification to servicemembers about the program;[197] and (7) the administrative purpose of the urinalysis program.[198]

Applying the Supreme Court factors and the COMA rationale, hair drug testing satisfies the "special needs" exception. First, since hair drug

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[188] *Id.* at 281-82.

[189] *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)).

[190] *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).

[191] *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.

[192] *Id.* at 282-83 (highlighting that even a servicemember with a routine task may have to act quickly to perform a military mission).

[193] *Id.* at 283.

[194] *Id.*

[195] *Id.*

[196] *Id.* at 284.

[197] *Id.*

[198] *Id.* at 285 (noting the military's priority in ensuring the mental and physical fitness of the force).

testing and urine testing employ similar analysis procedures[199] and generally yield similarly accurate results,[200] hair drug testing uses the same justification criteria identified in *Bickel*.[201] Second, hair drug testing involves a faster and less intrusive collection procedure than urinalysis testing.[202] Even if the command needs to obtain body hair, the monitor can collect the hair sample quickly.[203] The hair collection procedure also eliminates the pressure of having to urinate under direct observation.[204] Third, the command can easily incorporate hair drug testing into current urinalysis programs and thereby avoid arbitrary application.[205]

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.[206] Commanders can use this information to identify patterns of drug use in their units and respond

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[199] *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).

[200] *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).

[201] *See Bickel*, 30 M.J. at 282-85 (providing several reasons why the military urinalysis program meets the special needs exception).

[202] *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 pubic hair sample without having the individual expose his or her genitals. *Id.*

[203] *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).

[204] *See Bickel*, 30 M.J. at 286 (justifying the direct observation requirement in the military's urinalysis program).

[205] *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).

[206] *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).

with appropriate administrative measures.[207] This increased deterrent effect compensates for hair drug testing's lack of temporal application.[208] 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.[209] 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.[210]

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.[211] Hair drug testing employs the same RIA screening test and GC/MS confirmatory test as a

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[207] *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).

[208] *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).

[209] *See DOD Urinalysis Program*, *supra* note 12 (providing the DOD drug detection window for marijuana).

[210] *See* Skinner v. Ry. Labor Executives' Ass'n, 489 U.S. 602, 631-33 (1989) (emphasizing that even information 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.

[211] *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").

urinalysis.[212] Both hair testing and urine testing also use comparable collection methods.[213]

Additionally, MRE 313's text prevents a commander from using his inspection authority as a subterfuge for a search.[214] 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.[215]

A subterfuge issue often arises when a commander seeks to drug test particular unit members based on rumors that these members use drugs.[216] The rumors frequently do not provide the commander with probable cause for a command-directed urinalysis.[217] 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.[218] 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.[219]

Instead, a commander could rely on the long drug detection window of a previously scheduled hair drug test to avoid a subterfuge search.[220] 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

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[212] *See supra* note 199.

[213] *See supra* note 198.

[214] 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).

[215] MCM, *supra* note 85, MIL. R. EVID. 313(b); *Campbell*, 41 M.J. at 178-82.

[216] *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).

[217] *Id.* at 182-83.

[218] *See id.* at 178-82 (finding an improper urinalysis inspection).

[219] *Id*. at 181-82.

[220] *See supra* Part II.D (discussing hair sample analysis's long drug detection window).

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.[221] 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.[222]

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.[223] If possible, the commander should first attempt to obtain a head hair sample from the servicemember.[224] 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.[225] As a result, the commander's inspection procedures would uniformly subject each servicemember to the same collection protocol.[226]

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[221] *See id.* (noting that most hair sample test results encompass a three-month window).

[222] *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").

[223] *See id*. (requiring a urinalysis to follow established guidelines).

[224] *See* PSYCHEMEDICS TRAINING MANUAL, *supra* note 30, at 6-7 (noting that head hair provides the easiest site for hair collection).

[225] *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).

[226] *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.

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.[227] 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.[228] Since 1990, military courts have allowed hair sample results into evidence.[229] The recent CAAF opinion in *United*

DEP'T OF ARMY, REG. 670-1, WEAR AND APPEARANCE OF ARMY UNIFORMS AND INSIGNIA 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 FITNESS 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.

[227] *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).

[228] *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).

[229] *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

States v. Bethea demonstrates the military judicial system's continuing acceptance of hair drug testing results.[230]

During this fifteen-year period, federal courts have also recognized the reliability of hair drug testing.[231] *United States v. Medina* provided an on-point analysis of hair drug testing's reliability in detecting cocaine use.[232] The *Medina* court referred to extensive scholarly writing on hair drug testing to support its conclusion.[233]

A. Evidentiary Reliability

Ironically, military appellate courts' first review of hair drug testing originated with the defense.[234] 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.[235] The trial court and the Navy-Marine Corps Court of Military Review denied admissibility of the hair sample test.[236] Counsel often cite this case as authority for

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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).

[230] *Bethea*, 61 M.J. at 184-88.

[231] *See also Medina*, 749 F. Supp. at 61-62 (accepting the reliability of a hair sample analysis report).

[232] *Id.* at 60-62.

[233] *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.

[234] *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).

[235] *Id.* at 926.

[236] *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.

challenging the reliability of hair drug testing.[237] However, on appeal, the CAAF remanded the case to the trial court to apply the "new" *Daubert* guidance on admissibility of expert scientific evidence.[238] Since the *Nimmer* case, the military court system has accepted hair sample test results as reliable evidence under MRE 702.[239]

Additionally, hair drug testing also survives relevancy challenges under MRE 401 and 403.[240] 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.[241] In *United States v. Cravens*, the CAAF upheld the legal relevance of a hair sample analysis.[242] 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.[243] As a result, commanders should feel comfortable relying on hair sample test results.

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[237] *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)).

[238] 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.

[239] *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.

[240] *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 APPEALS 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.*

[241] *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*).

[242] *Cravens*, 56 M.J at 376.

[243] *Id.* (noting that the trial judge "specifically considered and admitted this hair analysis evidence under Mil.R.Evid. 401 and 403").

B. Value of the Results[244]

Although hair drug testing emerged recently as a reliable drug use test method, hair drug testing has existed for several decades.[245] Since the 1950s, authorities have tested hair for arsenic or lead.[246] Despite hair sample testings's extensive track record, experts have raised concern over the interpretative variability hair drug testing.[247] 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.[248] Environmental contamination and racial bias have surfaced as the predominant areas of concern.[249]

1. Environmental Contamination

Congressional hearings on drug testing in the summer of 1998 examined the environmental contamination controversy.[250] 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.[251] Some experts argue that illegal

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[244] 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.

[245] *See* Tom Mieczkowski, *New Approaches in Drug Testing: A Review of Hair Analysis*, *in* 521 ANNALS AM. ACAD. POL. & SOC. SCI. 132, 135 (1992).

[246] *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).

[247] *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).

[248] Interview with Charles Guenzer, Forensic Toxicologist, Federal Bureau of Investigations Laboratory, in Quantico, California (Oct. 5, 2005) [hereinafter Mr. Guenzer Interview].

[249] *Hearing on the Federal Workplace Drug Testing Program*, *supra* note 52, at 21-22.

[250] *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.

[251] *Hearing on the Federal Workplace Drug Testing Program*, *supra* note 52, at 21-22; Tom Mieczkowski, *Distinguishing Passive Contamination from Active Cocaine*

drugs could innocently infiltrate a person's hair through sweat absorption or smoke penetration.[252] The drugs presence would then create a "false" positive test result.[253]

For example, the Naval Research Laboratory conducted several studies which indicate that drugs can absorb into a person's hair.[254] The studies also indicate that continuous exposure to crack smoke could appear in hair drug testing results.[255]

However, additional studies prove that metabolite identification and proper wash procedures can eliminate external contamination.[256] External contamination would leave traces of the actual drug on the hair, while ingestion results in the deposit of drug metabolites within the hair.[257] A hair sample test's detection of these metabolites would tend to

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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).

[252] *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).

[253] *See* Wang, *supra* note 252, at 49 (discussing how false positives can ruin a testing methodology's validity).

[254] *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.*

[255] *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.*

[256] *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).

[257] *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.

expose drug use versus mere drug exposure.[258] The results of these studies also showed that laboratory hair wash procedures effectively removed external drug deposits.[259]

In comparison, hair may also have a stronger resistance to drug penetration than the lungs and the gastrointestinal tract.[260] This difference would make urine samples and breath samples more susceptible to external contamination than a hair sample.[261]

Forensic laboratories have begun to set drug detection cut-off levels high enough to eliminate concerns over innocent exposure.[262] These cut-off levels originate from scientific studies research,[263] making it possible

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[258] *Id.*

[259] *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.

[260] *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 protective 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.

[261] *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).

[262] *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).

[263] *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.

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.[264] The experts argue that hair drug testing can detect lower levels of a drug in African-American hair than in Caucasian hair,[265] which has the potential to create a disproportionate population of criminal prosecutions for African-Americans, versus Caucasions.[266] Some studies attribute the difference in detection and drug absorbency rates due to variances in hair color, curvature, and structure.[267]

Although these differences do exist, the statistical differences between the races are not significant enough to support a racial bias claim.[268] Any test that examines servicemembers's biological processes

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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*).

[264] *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).

[265] *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).

[266] *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).

[267] *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).

[268] *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

will have some degree of variation in the test's results due to the servicemembers's unique physiological makeup.[269] 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.[270] 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.[271] 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.[272] However, police routinely enforce the same blood alcohol concentration (BAC) limit with both genders.[273] Apparently, the metabolizing difference between genders is not great enough to require different BAC levels for each gender.[274] 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

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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.

[269] *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).

[270] *See id*.

[271] *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).

[272] *Id.*

[273] *Id.*

[274] *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.*

positive for drug use. School districts,[275] prisons,[276] and businesses[277] 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 marketplace.[278] Specifically, the long drug detection window inherent in hair drug testing will improve enforcement of suspension conditions,[279] confirm or deny urinalysis results,[280] and provide a new command inspection tool.[281]

A. Suspension Actions

Military regulations allow an appropriate level commander to use his discretion to suspend a separation action,[282] an article 15 punishment,[283] and a court-martial sentence for illegal drug use.[284] 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.[285]

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[275] *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).

[276] *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).

[277] *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).

[278] *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).

[279] *See infra* Part V.A.

[280] *See infra* Part V.B.

[281] *See infra* Part V.C.

[282] *See* U.S. DEP'T OF ARMY, REG. 635-200, ACTIVE DUTY ENLISTED ADMINISTRATIVE SEPARATIONS para. 1-18 (6 June 2005) (allowing commanders to suspend execution of a servicemember's administrative separation).

[283] *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).

[284] *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).

[285] *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

Unfortunately, a servicemember's body can quickly flush most drugs from his urine,[286] 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.[287] For example, two hair sample tests during a six-month suspension would identify any drug use over the entire length of the suspension.[288] A commander could also use the results of a hair sample test to ensure a servicemember's compliance with a drug rehabilitation program.[289] 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.[290]

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.[291] For example, if the

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[Uniform Code of Military Justice] UCMJ"). Punitive Article 112a prohibits the wrongful use of an illegal substance. UCMJ art. 112a. (2005).

[286] *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).

[287] *See supra* Part II.D.

[288] *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).

[289] *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).

[290] *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.*

[291] *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*

accused challenges a positive urinalysis test, the commander could use a hair drug test to confirm the urinalysis results.[292] 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.[293] The commander could use this reach back capability to confirm any witness observations of servicemember drug use.[294] This capability could also help a commander corroborate a servicemember's admission of drug use outside of the urinalysis drug detection window.[295]

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.[296] In *United States v. Bush*, the defendant avoided the urinalysis test by filling his specimen bottle with a saline solution.[297] The altered urine test forced the command to then conduct a hair sample test, which tested positive for cocaine.[298] The government offered the positive test results and testimony about the faulty urine sample.[299] Based on this evidence, panel members convicted the defendant of

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Agent is the Right Word," ARMY LAW., Apr./May 2003, at 139-40 (providing a synopsis of *United States v. Cravens*).

[292] *See Bethea*, 61 M.J. 184, 184-88 (finding probable cause for seizing a hair sample based upon evidence of a positive urinalysis).

[293] *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.*

[294] *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).

[295] *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).

[296] *See* United States v. Bush, 47 M.J. 305, 312 (1997) (upholding a drug conviction based solely on hair test results).

[297] *Id.* at 306, 312.

[298] *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.

[299] *Id.* at 306-07.

dereliction of duty for tampering with his urine sample and of the wrongful use of cocaine.[300]

In *United States v. Bethea*, the CAAF upheld a conviction for wrongful use of cocaine.[301] The case involved hair sample analysis results.[302] The hair sample analysis provided the only evidence for charging a specification of drug use on "divers" occasions.[303] The AFCCA has also allowed hair sample analysis to support specifications of divers drug use in two other cases.[304]

Although the *Bush* and *Bethea* decisions primarily involve search authorizations,[305] 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.[306] 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.[307] Drug testing laboratories can provide a urinalysis-like litigation packet to the prosecution.[308] As a result, commanders should incorporate hair drug testing into their arsenal of inspection tools.

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[300] *Id.* at 307-08.

[301] *See* United States v. Bethea, 61 M.J. 184, 184-88 (2005) (involving cocaine use on "divers" occasions over a one-month period).

[302] *Id.* at 184-85.

[303] *Id.* at 184.

[304] 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.*

[305] *Bethea*, 61 M.J. at 184-88; *Bush*, 47 M.J. at 306-09.

[306] *See supra* note 198 (comparing collection methods); *see also supra* note 199 (comparing laboratory testing methods).

[307] *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).

[308] *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).

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).[309] 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,[310] including information on employee notification, laboratory standards, quality control, and cut-off levels.[311] 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.[312] The regulation's text refers to biochemical testing instead of urine testing alone.[313] 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*."[314] Therefore, the regulation's language could easily incorporate hair drug testing with minimal changes to the regulation's overall text.

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[309] *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*.

[310] 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).

[311] Proposed Revisions to Mandatory Guidelines for Federal Workplace Drug Testing Programs, 69 Fed. Reg. at 19675-76, 19679, 19682, 19697, 19705; § 112.0455.

[312] AR 600-85, *supra* note 59, paras. 8-1 to 8-5.

[313] *See id.* (using the term "biochemical testing" throughout the regulation).

[314] *Id.* para. 6-2(a) (emphasis added).

The most significant changes to the regulation would need to occur in the appendices.[315] Appendix E provides a standard operating procedure for urine collection and urine sample processing.[316] The Army would need to add additional information describing the standard operating procedures for hair sample collection and processing.[317]

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.[318] The notification would support the special needs exception by putting servicemembers on notice of a reduced privacy interest in their hair.[319] The memoranda would also need to designate hair collection procedures to prevent disparate treatment of servicemembers during testing.[320] Each servicemember would then face the same collection protocol. The protocol would prevent the servicemembers from experiencing "substantially different intrusions."[321]

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.[322] Consequently,

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[315] *See id.* apps. A-F.
[316] *Id.* app. E.
[317] *See generally id.* apps. A-F (ending appendices at letter F).
[318] *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).
[319] *See id.*; *see also supra* Part III.C.1 (analyzing the special need exception to the Fourth Amendment).
[320] *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).
[321] *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 servicemembers to "substantially different intrusions during the same examination").
[322] *See* E-mail from Edmund Tamburini, Forensic Science Coordinator, United States Army Criminal Investigation Laboratory (USACIL), Forest Park, Georgia, to Major

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.[323] 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.[324]

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.[325] The differing drug detection windows for hair sample testing and urine testing help eliminate this cost discrepancy.[326] For example, a urine sample has a detection window for cocaine of three days.[327] Conversely, a hair sample has a drug detection window for the same drug of approximately three months.[328] A commander would need to conduct thirty consecutive urinalysis tests to encompass the same drug detection window one hair sample test, and

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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).

[323] *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).

[324] 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.

[325] 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).

[326] *See supra* Part II.D (addressing drug detection windows).

[327] *Id.*

[328] *Id.*

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.[329] A commander could reduce the amount of time his servicemembers miss in training due to urinalysis' requirements.[330] 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.[331] 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.[332] Unfortunately, the urinalysis's short drug detection window severely limits a commander's ability to effectively accomplish these objectives.[333] In order to identify drug users, the short detection windows force commanders to rely on creative drug test scheduling instead of the test itself.[334]

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[329] *See id.* (describing the typical three-month hair test).

[330] 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).

[331] *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").

[332] *See* AR 600-85, *supra* note 59, para. 8-1 (listing the objectives of the Army's biochemical testing program).

[333] *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).

[334] *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").

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;[335] (2) involves a lawful search and seizure;[336] (3) provides relevant and reliable information;[337] and (4) easily complements current urinalysis programs.[338]

The hair's ability to permanently trap drug deposits provides hair drug testing with its greatest benefit.[339] This characteristic differs from the limitations of urine sample testing, which will only temporarily reveal drug traces.[340] 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.[341] 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.[342] Improvements in laboratory hair washing procedures and promulgated cut-off levels have reduced concerns over innocent exposure to drugs and concerns over racial bias.[343] Also, current unit policies and Army regulations could easily accommodate hair drug testing with only a few minor modifications.[344] 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.

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[335] *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).

[336] *See supra* Part III.

[337] *See supra* Parts IV, V.

[338] *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).

[339] *See supra* Part II.A (examining drug deposits in hair); *see also supra* Part II.D (advantages of hair testing).

[340] *See DOD Urinalysis Program*, *supra* note 12 (providing drug detection windows for urine testing).

[341] *See supra* Part II.D (explaining hair drug testing's drug detection window).

[342] *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).

[343] *See supra* Part IV.B (addressing environmental contamination and racial bias concerns).

[344] *See supra* Part VI (implementing hair analysis).

Further, hair drug testing complies with Fourth Amendment protections against unreasonable searches and seizures.[345] 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.[346] 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.[347]

Besides inspections, commanders can also grant search authorizations, based upon probable cause for the seizure of a servicemember's hair for drug testing.[348] An argument currently exists that a servicemember may not have an expectation of privacy in his hair.[349] 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.[350]

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.[351] Drug laboratories provide a litigation packet[352] and the *American Jurisprudence Proof of Facts 3d* provides example foundation questions.[353] Trial counsel can also use hair sample analysis results to

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345 *See supra* Part III (analyzing hair drug testing and the Fourth Amendment).

346 *See supra* Part III.C.1 (applying the special needs exception to hair analysis).

347 *See supra* Part III.C.2 (applying the language of MRE 313 to hair drug testing).

348 *See supra* Part III.B (analyzing military search authorizations for hair samples).

349 *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).

350 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).

351 *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).

352 *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).

353 *See* Vinal, *supra* note 18, §§ 13-25 (providing hair analysis foundation questions to assist trial counsel in the courtroom).

defeat an accused's claims of innocent ingestion.[354] In contrast, defense counsel can use hair sample analysis results to support an accused's claims of a procedurally defective urinalysis test.[355] 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.

[354] *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).

[355] *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).