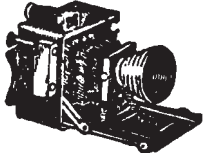




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OFFICERS 2006

#### PRESIDENT

Susan Garcia  
Los Angeles Sheriff's Dept.  
(213) 989-2163  
sjgarcia@scafo.org

#### FIRST VICE PRESIDENT

Regina Russell-Durgin  
Escondido Police Dept.  
(760) 839-4770  
russell@scafo.org

#### SECOND VICE PRESIDENT

Craig Johnson  
Los Angeles Sheriff's Dept.  
(213) 989-2163  
c2johnso@lasd.org

#### SECRETARY

Mari Johnson  
Los Angeles Sheriff's Dept.  
(213) 989-2163  
a911girl@att.net

#### SERGEANT AT ARMS

Sarah Watson  
Los Angeles Sheriff's Dept.  
(213) 989-2163  
watson@scafo.org

#### CHAIRMAN OF THE BOARD

Dennis Uyeda  
Calif. Dept of Justice  
(916) 227-3314 x12  
uyeda@scafo.org

#### DIRECTOR

Sue Baker  
Los Angeles Sheriff's Dept.  
(213) 989-2163  
sebaker@lasd.org

#### DIRECTOR

Debbie Stivers  
Glendale Police Dept.  
(818) 548-3149  
dstivers@ci.glendale.ca.us

#### DIRECTOR

Amy Hines  
Riverside District Attorney's Office  
(951) 304-5398  
alhines@co.riverside.ca.us

#### DIRECTOR

Marvin Spreyne  
Riverside District Attorney's Office  
(760) 863-8984  
mspreyne@co.riverside.ca.us

#### HISTORIAN

William F. Leo  
Los Angeles Sheriff's Dept.  
(213) 989-2163  
leo@scafo.org

#### TREASURER

Lisa DiMeo  
Arcana Forensics  
(619) 992-0690  
ldimeo@arcanaforensics.com

#### PARLIAMENTARIAN

Clark Fogg  
Beverly Hills Police Dept.  
(310) 285-2116  
fogg@scafo.org

#### EDITOR

Steven Tillmann  
Los Angeles Sheriff's Dept.  
(213) 989-2163  
tillmann@scafo.org

#### WEBMASTER

Alan McRoberts  
McRoberts Forensic Investigations  
(951) 693-9082  
mroberts@scafo.org

WWW.SCAFO.ORG

## MASS DISASTERS MEAN TWO THINGS: MULTIPLE DEATHS AND DMORT DEPLOYMENT.

(Downloaded online from "Forensic Magazine" Dec 2005/Jan 2006 Issue at [www.forensicmag.com](http://www.forensicmag.com))

The call comes anytime jetliners go down, de-orbiting shuttles disintegrate, terrorists raze skyscrapers, or killer hurricanes roar ashore.

David R. Senn, DDS, a member of the Bexar County, TX, Forensic Dental Team, was in Colorado when his call came on Saturday, August 27, 2005, 48 hours before Katrina made landfall. The commander of the Region VI Disaster Mortuary Operational Response Team (DMORT) was calling. Katrina was a monster, growing to a Category 5 hurricane on the Saffir Simpson scale, and headed straight for New Orleans. Destruction and death was certain.

Senn, a veteran forensic DMORT odontologist, was to report to Baton Rouge, LA, where a temporary morgue was being set up in an empty brick warehouse in nearby St. Gabriel, a Louisiana town of 6,000, once home to a leper colony. There would be bodies to identify. Senn altered his plans, caught the next plane back home to San Antonio, cleared his teaching schedule, collected his DMORT grab-and-go bag containing enough gear, clothing, and personal items to last about two weeks, and was in Dallas on Sunday, where his team assembled before caravanning 370 miles overnight to Baton Rouge, arriving at 3 A.M. Monday, August 29, just as Katrina began pounding the Gulf coast.

"We took 30 people from Dallas to Baton Rouge, including the DMORT Region VI commander, deputy commander, and administrative officer," said Senn, a diplomat of the American Board of Forensic Odontology (DABFO). Another deputy commander lived in Baton Rouge and was already on the job. Region VI covers Texas, Oklahoma, New Mexico, Arkansas, and Louisiana.

### Last Responders

The National Funeral Directors Association (NFDA) is credited with conceiving the concept of DMORT in the early 1980s. NFDA was concerned at the time about lack of standards handling the dead in mass casualty events. Protocols needed to be imposed on a process that had none. It was also soon apparent that the services of outside forensic professionals would be necessary to augment local resources during disaster response. The NFDA subsequently purchased the components of the first portable morgue, called a Disaster Portable Morgue Unit (DPMU).

DMORTs and DPMUs are now part of the National Disaster Medical System (NDMS), a section of Operations Branch of the Federal Emergency Management Agency's (FEMA) Response Division. NDMS determines when to activate, which DMORTs to deploy, and where

the DPMUs are to be dispatched - usually any incident in which the number of casualties overwhelms local forensic or mortuary resources. The country is divided into ten DMORT regions, geographically similar to the ten Federal Emergency Management Agency (FEMA) regions.

In 1997, the Aviation Disaster Family Assistance Act was signed into law in response to several aircraft accidents. The Act directed the National Transportation Safety Board (NTSB) to coordinate federal resources to identify victims. The NTSB then signed an agreement with NDMS to provide DMORT support in such cases. In 1998, a DMORT team specializing in bio-chemical fatalities was created in response to increasing concern for the release of weapons of mass destruction by terrorists.

The DMORT idea has rooted. A small group of DMORT members is now routinely deployed in advance of situations where mass fatalities might result from terror attack, such as presidential state-of-the-union addresses, papal visits, or Olympic Games.

Since their 1993 formation, DMORTs have responded to about twenty incidents, from cemetery floods and plane crashes to train derailments and terror attacks. Senn, for instance, was part of the team called to attempt dental identification at the 2001 World Trade Center disaster and again at the 2003 STS-107 Columbia crash.

DMORTs usually cover disaster incidents in their own area, although four DMORTs were dispatched to New York City following September 11, three to Washington, D.C., and one to Somerset County, PA. Katrina was even more unusual. All ten teams were mobilized to the Gulf Coast.

“That’s unprecedented,” said Patricia Kaufmann, MD, commander of DMORT Region III (Pennsylvania, Maryland, Washington DC, Delaware, Virginia, and West Virginia). Still, the nationwide DMORT response to the Gulf Coast was scarcely enough. Remains were still being recovered seven weeks after the storm. Brian Chrz, DDS, DABFO, a Perry, OK, forensic odontologist said six weeks after the storm DMORTs were using dental resources wherever they could find them.

“We used military and public health dentists if they were available,” he said.

## License to Heal

During emergency response, DMORTs work under the direction of local authorities, providing technical assistance in recovering, identifying, and processing the deceased. DMORTs are truly traveling morgues - composed of medical examiners, coroners, pathologists, forensic anthropologists, funeral directors, medical records technicians and transcribers, fingerprint specialists, forensic odontologists, dental assistants, X-ray technicians, mental health specialists, as well as computer professionals, administrative support staff, and security and investigative officers.

DMORT members are required to maintain appropriate certification and licenses within their discipline, but when teams are activated customary regional licensing issues are

suspended and all professional licenses and certification are legally valid in all 50 states. Team members are compensated for duty time by the federal government as temporary federal employees. Most take leave of absence from their regular jobs. Like National Guard personnel, DMORT members are given job security.

At the same time DMORTs were activated for Katrina, two DPMUs were also ordered south, to provide temporary mortuary services. FEMA’s Response Division maintains two of these forensic caches, staged at the two FEMA Logistics Centers; one in Rockville, MD, the other in San Jose, CA. Both were deployed for Katrina; one to Gulfport, MS, the other to St. Gabriel.

Depending on the incident, DPMUs can be dispatched by rail, truck, or air. Each unit contains over 10,000 individual items, ranging from exam tables, forceps, scalpels, and hemostats to high tech digital dental X-ray devices and full body X-ray machines, as well as a full complement of office computers, faxes, and forms - all accompanied by a team of experts called Red Shirts.

“All DMORT members are cross-trained to help quell the initial chaos when setting up and getting started,” Senn said.

Then, as soon as possible, pathologists, anthropologists, and odontologists begin the solemn task of examining and documenting victims.

## Death is Wet

Film critic Roger Ebert says every single movie depicting a morgue uses dripping or running water on the sound track. Katrina provided enough real water to make artificial moisture unnecessary. At St. Gabriel, heavy gauge plastic was spread over the warehouse floor to insulate the facility against the damp. Then, air-conditioned tents were erected for each station. The dental exam area, for example, was set up in an area about 14 ft. by 45 ft. housing three post-mortem bays so dental teams of three or four dentists each could work simultaneously.

There was much to do. Katrina killed over 1,250 people, nearly 850 of whom were taken to St. Gabriel. Fourteen more bodies were found the week of October 14, forty eight days after the storm.

“We preferred teams of four so one person can take a break for an hour or two without interrupting the identification process,” said Chrz, who previously worked the World Trade Center and the 1995 Murrah Federal Building bombing in Oklahoma City. Chrz also spent time in Thailand following the 2004 Indonesian tsunami. Forensic professionals work 12-hour 7-7 shifts, ideally rotating in and out of the disaster site every two weeks.

Inside, morgue operations are controlled by a regimented protocol, capable of processing up to 140 bodies a day.

The remains, which have been stored in body bags in refrigerated trucks, are first cleaned and decontaminated with a chlorine solution, assigned a number, folder, and escort, before being moved to forensic stations.

A forensic pathologist then examines, photographs, and X-rays the body at the first station. Personal items such as jewelry are inventoried. Fingerprints are taken when the condition of the body permits. When prints are not on file, FBI agents or local law enforcement may obtain latent prints from personal belongings in victims' homes. Body identification in the aftermath of Katrina was made particularly difficult by the poor condition of corpses some left for days if not weeks in contaminated flood waters. Visual identification was generally impossible.

Pathologists also look for other potential identifiers like tattoos, scars, orthopedic devices, and surgical implants. Pacemakers and orthopedic devices are particularly useful; newer units have serial numbers that can be tracked through manufacturer's records. Autopsies are sometimes necessary.

"We examine the bodies inside and out looking for any clues that will help us determine who this person is," said Kaufmann, one of several forensic pathologists on each team. Kaufmann, a Johnson & Johnson research physician in her other life, was previously deployed to the crash site of United Airlines Flight 93 on September 11, 2001, the 2002 Walker County, GA, crematorium incident, and the 2003 Providence, RI, night club fire.

DMORT autopsies are different than routine forensic proceedings because the primary focus is not on determining cause of death but rather on finding positive identification.

"In this case, we usually know how they died," Kaufmann said.

Forensic anthropologists help by creating a profile of the remains based on skeletal assessment of such things as age, sex, ancestry, and stature.

"We're trained to identify fragments of bones, which is what you get in plane crashes," said Mercyhurst College forensic anthropologist Dennis Dirkmaat, a diplomat of the American Board of Forensic Anthropology, and one of the first DMORT volunteers in 1994. "Even with X-rays, it's hard for a pathologist to determine what the bone is. Sometimes, we can feel a fragment and know that it's, say, a right proximal humerus. Pathologists are not trained to do that."

Forensic anthropologists are also adept at reading X-rays to determine bone age. "There is a relationship between the age of the individual and the amount of lipping -- lip-like structures sometimes found at the articular end of an osteoarthritic bone," Dirkmaat said.

Forensic anthropologists now use computers to augment their fingers. Programs such as Fordisc (Forensic Anthropology Center, University of Tennessee) help classify unknown skeletal remains based on measurements.

"These are valuable in cases where you have significant decomposition," Dirkmaat said.

For the most part, Katrina victims were intact, though many were badly decomposed after so long in the water.

There were also numerous cemetery remains to deal with.

"The storm hit cemeteries, too, sometimes destroying coffins, so skeletal remains and bone fragments were later found on adjacent properties or on the beach," Dirkmaat said.

## To the Teeth

The dental examination and digital X-ray station is next, where Senn, Chrz, and other odontologists record dental characteristics. Dental records are the traditional gold standard of forensic identification.

A new addition here is digital imaging, which eliminates the need for conventional film-based dental X-rays. With digital technology, images are transferred directly into computer storage and can be viewed immediately on computer monitors, enabling easier, faster ante-mortem and post-mortem comparison. During the 1999 Bourbonnais, IL, Amtrak derailment, identification of a victim from Japan was facilitated by Internet transmission of dental radiographs sent from Japan to DMORT odontologists at the crash scene.

In the case of Katrina, however, the comparison process was aggravated by the almost total absence of ante-mortem dental X-rays that were missing or destroyed by the storm. Normally, a DMORT unit called the Family Assistance Center (FAC) will collect all ante-mortem records from dental offices. FACs also serve as the buffers between temporary morgue operations and those searching for lost family members.

"Usually, families will come in and say so and so is missing, but there will be some sort of list like a flight manifest that we can work from," Chrz said. Hurricanes leave no manifest. In New Orleans, dental offices were flooded and everyone, including dentists, was evacuated. Initially there was no one even to report who was missing.

"The most difficult job was not actually doing post-mortem examination and charting, it was trying to get enough ante-mortem information together just to find out who's missing," Chrz said. Even where ante-mortem dental records survived the storm and existed intact, the dental offices were closed and the dentists and office staff nowhere to be found.

"First, we have to find the dentists, something we've never had to do before," said Kaufmann, who spent six weeks in Gulfport, MS, working at the pathology station, then, after a short break, was reassigned to the FAC at St. Gabriel.

Kaufmann said the family assistance process can be emotional because families have to answer detailed questions about the missing - describing any tattoos, surgeries, or previous bone fractures - all while grieving at the same time.

"Sometimes, they're not even certain there has been a death, making it all the more difficult," she said.

## Gene Sweep

Mitochondrial DNA (mtDNA) is another important tool now included in the DMORT arsenal for positive identification and reassociation of remains. As with dental identification, mtDNA requires post-mortem samples to compare to ante-mortem or family reference samples. DMORT DNA specialists are trained to collect DNA samples from family and victims.

“Typically, we like to take it from the same bone,” Dirkmaat said. “Currently, when possible, we take samples from the right tibia.”

DMORT uses DNA protocols established by the Armed Forces DNA Identification Laboratory, which specifies that samples be treated as evidence, requiring chain of evidence documents.

Some have questioned whether traditional medical and dental radiographs and fingerprinting are still necessary in light of the accuracy of mtDNA identification techniques. The answer seems to be that DNA still takes too long to process and is too expensive to replace the more conventional, if less absolute, forensic methods. After the 1996 crash of TWA Flight 800, all 230 victims were identified through DNA, but it took 13 months.

After passing through all the stations, the remains are properly returned to the refrigerated trucks to await formal identification, at which time the body is embalmed either by DMORT or local morticians - at the choice of the family - then released for final disposition to a funeral home.

## No Place Like Home

The turmoil in the first days following the storm invited a strange paradox at the DMORT camp in Gulfport. The convoy of refrigerated trucks brought in to store unidentified remains served as temporary housing for the living.

“When we first arrived, we slept in cars and inside the trucks that had been brought in to house the bodies,” said Richard A. Weems, DDS, DABFO, a DMORT odontologist and director of clinical operations at the University of Alabama School of Dentistry. Weems said during the first few days, the teams had to endure Spartan conditions, including scant food supplies, no running water or electricity, shortages of fuel, and lack of a communication infrastructure.

While DMORT’s needs were met in fairly short order by FEMA and units of the Mississippi National Guard, some were surprised that NDMS decided to establish the Gulfport DMORT operation squarely in the disaster area, presenting something of an unnecessary hardship for DMORT personnel whose job is already inherently stressful.

“The storm didn’t affect the entire state of Mississippi, so why not just move the operation and bring the bodies out to you and be comfortable?” Dirkmaat wondered. “Working in a morgue twelve hours a day is stressful enough, why make people sleep on a cot with thirty other

people in a school room?”

Eventually, DMORT moved into air conditioned tents, and later still into hotels in Biloxi.

Conditions were similar in St. Gabriel, where dozens of DMORT people slept dormitory-style in an unused elementary school and on air mattresses in an unfinished condo unit.

“They house you wherever they can,” Chrz said. “You might have to sleep in tents.”

## The Job as Tonic

Some physicians, dentists, and other forensic professionals are drawn to DMORT work in spite of the bleak, austere conditions at disaster scenes. The job itself is the lure, and the tonic.

“DMORT people consider themselves strangely lucky in that they actually get to go to disaster sites and do something useful,” Senn said.

Training accounts for their efficiency. Dirkmaat, for instance, teaches forensic anthropology year around.

Dirkmaat said DMORT work is not like routine civil cases, where you may have a day or two to do a forensic examination.

“This is more like a MASH unit - the remains come to your table and you have to be quick. In ten to fifteen minutes, you’re moving the body on to the next station,” he said.

Senn said being prepared is a matter of being trained and ready to work as a team, yet remaining flexible enough to adjust to whatever the situation presents. When adjustment becomes a little more difficult, every DMORT has mental health professionals available to deal with special problems that arise, and every team member has an exit interview with the mental health unit.

“DMORT is very attentive to the psychological needs of their members,” Chrz said. Psychiatrists and psychologists are not only on duty at the site, they keep in regular contact with DMORT members for up to a year following an incident, looking for signs of unhealthy coping mechanisms.

Team members have evolved their own more informal means of dealing with stress. Many decompress after a shift by hanging out together, sharing experiences - all while keeping a learned eye on each other.

“Many of us have become friends over the years at previous deployments and training sessions,” Weems said.

Ultimately, the reward of performing a public service well is the greatest bracer. “The work itself is the psychological salve that helps us deal with disasters,” Senn said.

Douglas Page (douglaspage@earthlink.net) writes about science and medicine from Pine Mountain, California.



## Exposed: The Criminal Cover-Up at the Heart of Fingerprint Scandal

*(This article was downloaded from February 12, 2006 issue of the Scotsman News at scotsman.com)*

MINISTERS and top justice officials were warned five years ago by police of “cover-up and criminality” in the case of a Scottish detective falsely accused of perjury.

Scotland on Sunday has obtained a previously secret report which confirms in shocking detail that fingerprint experts tried to cover up blunders over the case of Shirley McKie.

The 43-year-old former Strathclyde officer was awarded £750,000 compensation last week in an out-of-court settlement following a nine-year battle to clear her name. First Minister Jack McConnell claimed in parliament it had been an “honest mistake”.

But we reveal today that in a report into the case, Jim Mackay, the then deputy chief constable of Tayside Police, told the Crown Office in October 2000: “There was criminality involved in the actings of the SCRO [Scottish Criminal Records Office] experts and that... criminality first reared its head in February 1997.”

He added: “It should have been patently obvious... a mistake had been made and there were opportunities... for the mistake to be acknowledged. The fact that it was not... led to ‘cover-up’ and criminality.”

Despite Mackay’s crystal-clear warning of criminal

conduct at the SCRO - which is directly accountable to Scottish ministers - neither the Crown Office nor the Scottish Executive took action against those responsible.

Last night, the McKie case erupted into a major political row. Opposition politicians and legal experts demanded to know how the Lord Advocate, Colin Boyd, and the then justice minister, Jim Wallace, could have remained unaware of the Mackay report or failed to act on it.

Questions were also asked about how McConnell could have insisted in parliament last week that an “honest mistake” had been made.

The scandal began in February 1997 when McKie was accused of unauthorized presence at a murder scene after SCRO officers claimed to have found her left thumbprint on a door-frame at a Kilmarnock house. McKie denied the allegation and was later charged with perjury.

She was cleared at her trial in 1999 after an American fingerprint expert, Pat Wertheim, gave evidence that the print could not have been hers.

The SCRO continued to deny a mistake had been made. McKie’s civil case for compensation was due to start last Tuesday, but the Scottish Executive settled at the last minute.

Scotland on Sunday’s investigation has also revealed:

- Pat Wertheim was about to give devastating evidence for McKie that the SCRO tampered with images of her fingerprints in an effort to strengthen their case. Wertheim claims the images were electronically blurred and cropped to improve the likeness. Wertheim told Scotland on Sunday: “That is the smoking gun that tells me they knew this was an erroneous identification. This had to be done intentionally.”

- The SCRO officers implicated in the scandal are not only still working for the organization, but have been placed in roles where they supervise the work of other fingerprint experts.

- The organization continues to make serious errors. A charge of robbery against a man in Ayrshire had to be dropped two years ago after independent fingerprint experts and Northern Ireland police told the SCRO they had misidentified a print on a glass.

Shirley McKie, who has suffered depression following her ordeal at the hands of the Scottish justice system, said: “I am totally disgusted by these revelations. The thought that government ministers could be part of a cover-up beggars belief. There must be a public inquiry looking into people

at the highest level. The Lord Advocate must be called to account for this.”

Her father, Iain, a former policeman who has campaigned ceaselessly on his daughter’s behalf, said: “It is becoming clearer and clearer by the minute that this was far from an honest mistake and the fact that our First Minister should stand up in the Scottish Parliament and say so is unbelievable.”

Alex Neil, the Nationalist MSP, who has campaigned for years on the case, said: “It is clear from the Mackay report that the Lord Advocate has got no option but to resign. If he doesn’t resign then there will be a motion of no confidence placed in the Parliament calling for him to do so. But the other big question is did Jack McConnell know? If he did, then his position is totally unsustainable as well.”

Mike Russell, the former MSP who has battled for the McKie family since their ordeal began, said: “We now know that Shirley McKie’s nightmare should have ended years earlier.

“For every day she has to suffer there needs to be an explanation, and it is now certain that the explanation is one of carelessness, incompetence and dereliction of duty at the highest level that shames Scotland.”

Robert Black, professor of Scots Law at Edinburgh University, said: “I find it inconceivable that after the Crown commissioned this report that the Lord Advocate would not have seen it.”

The Mackay report was ordered by Her Majesty’s Chief Inspector of Constabulary (HMCIC) in June 2000. In August that year, four fingerprint experts were suspended.

The next month, the Crown Office ordered an extension of the inquiry to other fingerprint anomalies in the case. On October 20, Mackay’s completed report was submitted to the Crown Office and HMCIC.

A Scottish Executive spokesman said matters arising from the inquiry were a matter for the Crown Office.

A spokesman for the Crown Office said: “In light of the Mackay report, Crown counsel instructed the regional procurator fiscal of North Strathclyde to carry out an independent investigation.

“On receipt of that report, Crown counsel gave careful consideration to all the material, including the Mackay report, and concluded there was insufficient reliable evidence to found a prosecution.”

## **Casting a Wide Net: Lifting Fingerprints from Difficult Surfaces**

*(This article is reprinted from the August/September Issue of Forensic Magazine - Forensicmag.com)*

**Casting materials are not just for bite and tool mark impressions, but can be used to obtain fingerprint evidence on rough surfaces, human skin, blood prints, and other types of evidence.**

Ask any evidence technician or crime scene detective, “What is the best way to collect or preserve bite and tool mark evidence?” The answer would most likely be: use a casting material. Casting materials are great for recording gouges, scrapes, and scratches in metals and some types of wood products.

Traditionally, firearm and tool mark examiners use casting materials to record the scratches and striations on recovered projectiles, firing pin marks on bullet casings, and tool mark impressions from tools used to break in or pry open doors and windows. Tools often have nicks from wear and tear that leave individual characteristics. There are various types of materials used to record impression marks, such as: AccuTrans Auto-Mix, a casting silicone applied by an extruder gun; Mikrosil, a self-mix putty with a catalyst applied by spatula; Liquid Silicone, mixed with several different agents used to release the rubber or thin the rubber; and DuroCast, a compound mixed with a catalyst (hardener) applied by spatula.

### **New Technology for an Old Problem**

As a Crime Scene Detective, I often look for new techniques that will aid me in the collection and preservation of crime scene evidence. When problems arise, old and new methods must be obtained or adapted to meet these problems. There are several common problems that crime scene evidence technicians and detectives encounter. One such problem is that of preserving fingerprint evidence on rough surfaces, human skin, blood prints, and curved surfaces.

Photography is the current choice to record

fingerprints on rough surfaces, human skin, blood prints, and curved surfaces; however, poor lighting conditions, type of surface, and a technician's knowledge of photography all play a crucial role in the quality and usefulness of the photos. Photographs should always be taken but other methods should also be used to preserve fingerprint evidence, especially when photographic means fail to record the image properly. This is the reason why I began to experiment with using casting materials for applications other than what they were intended.

Casting materials usually come in white or brown. Different colors give the evidence technicians a better choice of selecting a contrasting color when used with fingerprint powders. When casting materials are used to lift fingerprints, the technician lifts a reverse image of the print. This image must be reversed for comparison. Reversing the image is accomplished by photography. The image is photographed and the negative is simply reversed for printing. Technicians with access to an AFIS (Automated Fingerprint Identification System) simply scan the lift into the AFIS. The image can then be directly checked in the database.

Rough surface prints do not lift with ordinary hinge lifters. The textured surfaces tend to break up ridge formations. Casting materials fill in the textured areas allowing the whole print to be lifted. I set out to determine if casting materials could be used for lifting prints from surfaces that are traditionally difficult.

Current casting studies talk about lifting prints from uneven surfaces and tool marks. Few studies have been done involving the use of casting materials to recover latent fingerprints on other types of surfaces or evidence.

### **Choice of Casting Silicone**

For my experiments, I chose to use AccuTrans® Auto Mix from Ultronics, Inc., a casting silicone applied by extruder gun. The material, also used in the dental industry for making impression molds, is flexible and does not distort the image. Once the impression is lifted, it cannot be smeared or smudged; it is permanent on the lift. The extruder gun allows the material, and not the tip of the gun, to come in contact with the fingerprint, preserving the integrity of the print.

The silicone comes in both white and brown and is also available as a transparent material. This allows for instant comparison of the print without reversing the image. The transparent silicone allows the technician to place the lift on any color of background. This works well for photographic purposes. The silicone can be used on curved surfaces, horizontal, and vertical planes. When used on vertical planes, only a small amount of the silicone is needed. The material will smooth itself over the area. If too much of the material is applied, the silicone may run down past the fingerprint. To avoid this, the technician can simply place a piece of tape a few inches below the print. The tape will allow for the excess to gather in this area. This casting silicone can be used on rough surfaces, human skin, blood evidence, and curved surfaces.

It should be noted that before treatment with silicone, rough or grooved surfaces should first be dusted with magnetic fingerprint powders. Magnetic powders come in a variety of colors, which is beneficial for surface contrast and for photographic purposes. Magnetic powders contain ferromagnetic particles. The powder is applied using a magnetic applicator or wand. The powder sticks to the wand. The advantage here is that the applicator does not come into direct contact with the print, just the powder. Excess powder is easily removed by moving the applicator back over the print. Magnetic powders cannot be used on other ferrous surfaces.

### **Experiment 1: Rough Surfaces**

My first experiment was to place test prints on rough surfaces. Prints were placed on bricks and textured surfaces including the side of a computer monitor, textured wall, and leather handbag. The prints were then dusted with black magnetic powder. The prints could be viewed by the naked eye and could have been photographed. Both white and transparent casting silicones were then placed on top of the dusted prints. Once the silicone had hardened, the casts were removed from the four surfaces. The silicone lifts contained very good ridge detail; they were of comparison quality. One must remember that the prints lifted by the white silicone contain a reversed image and the transparent lift would not be a reversed image because the image can be viewed as it was on the surface. The transparent lift allowed me to do a direct comparison for minutia points.

## Experiment 2: Human Skin

Lifting fingerprints from human skin is one of the hardest tasks a crime scene technician can attempt. There are many factors that contribute to the rapid deterioration of the fingerprints on human skin. Heat, moisture, age of the fingerprint, condition of the skin, and environmental exposure all affect recovery. Most prints on human skin must be recovered within the first few hours of deposit. There are many chemical applications used to enhance fingerprints on human skin. Cyanoacrylate (super glue), fuming (then treated with a luminescent stain), iodine fuming, and ninhydrin are just a few of the chemicals used for enhancing fingerprints on dead bodies. The most common techniques for preserving prints off of "live" skin are the use of magnetic powders, lifting paper, and photography.

For my second experiment, I placed several test prints on my skin. I pressed several of my fingers into my forearm for about 20 to 30 seconds. Afterward, I dusted the area with black magnetic powder. The prints could be seen by the naked eye and were of photographic quality. I tried to lift the prints with conventional hinge lifters, but this did not produce a quality lift. I then covered the test prints with white and transparent AccuTrans casting silicone. After the silicone had hardened, the lifts were removed.

The ridge details on the transparent lifts were of comparison quality. The transparent silicone had better ridge detail than the white. The white casting silicone lifted the print too, but skin patterns could be seen on the print. The skin pattern interfered with the minutia points of comparison. This problem can be corrected by using a scanner program that allows the technician to remove the skin pattern by filtering them out. Once the area is filtered, the print can be seen.

The transparent casting silicone eliminates this process altogether. No skin patterns were seen in the transparent casting silicone. The transparent material allows for direct comparison of minutia points. This technique, which worked well for fresh prints, under two hours old, can be used on live and dead bodies. The main advantage of the casting silicone over lifting papers is that there is no fear of smearing the print. The silicone lift also preserves the print for additional examination at a later date.

Note that magnetic powder is not carcinogenic thus

is safe to use on live persons. After dusting and lifting a print, the area dusted with magnetic powder should be washed with soap and water. Those persons who have skin rashes or skin allergies should not be dusted with the magnetic powder. Dusting them may cause additional irritations and redness.<sup>1</sup> The AccuTrans is also non-toxic. The material is made from Polyvinylsiloxane, a silicone elastomer. It has no harmful reactions or secondary effects.<sup>2</sup> It is advised to wash with water after handling the silicone and avoid contact with eyes.<sup>3</sup> This type of material was originally developed for use in dental procedures.

## Experiment 3: Blood Prints

Bloody fingerprints are often found on crime scenes. Bloody fingerprints are traditionally treated with chemical properties to enhance them for photographic purposes. They cannot be lifted after treatment. The chemicals used are attracted to the proteins in blood or heme (hemoglobin molecules) of red blood cells. Benzidine was previously one of the most popular chemicals used to enhance prints; however, it was found to be extremely carcinogenic and is no longer used for the enhancement of bloody fingerprints. Other chemical applications used to enhance bloody fingerprints include Amino Black, which is sensitive to the proteins in blood.

Fresh blood prints that are easily seen are photographed for evidential value and comparison purposes. Again, the technician must rely on his or her photographic abilities and hope nothing goes wrong during the photo taking or the processing of the film. Technicians find blood prints on a variety of surfaces and items which often cannot be taken back to the laboratory for further analysis. Being able to lift a blood print would allow the technician to preserve the print for court purposes or take any additional photography after the technician has left the crime scene.

For my third experiment, I placed several bloody test prints on tile, painted walls, a plastic dispenser, and raw drywall. After the prints dried, they were dusted with black magnetic powder. The white and transparent casting silicone was then placed on top of the dusted blood prints. After the silicone had hardened, the lifts were removed. Both the white and transparent silicones were able to lift the prints from

the tile, plastic dispenser, and painted wall. The raw drywall blood print could not be lifted. I speculate that this is due to the absorption of the blood into the raw drywall. The prints that were lifted were of comparison quality. It is also important to note that after the first lift was removed, a second dusting of magnetic powder was applied and then the silicone again. The second lift was of better quality than the first. This technique would allow the technician to preserve the print after photography.

#### **Experiment 4: Curved Surfaces**

Fingerprints are often found on curved surfaces such as doorknobs, bottlenecks, cans, and glasses. Fingerprints developed on curved surfaces are usually lifted by gel-lifters or roll tape. Care must be taken to ensure that no air bubbles are trapped, which could lead to the distortion of the fingerprint. Most often, gel-lifters or tape must be cut to fit the curved surface. When ordinary hinge lifters are used on curved surfaces or tape that has not been cut properly to fit the area, creases often form because the tape or lifter tries to wrap around the curve surface. These creases interfere with the fingerprint. My experiments showed that casting silicone can be used to lift prints on curved surfaces.

Several test prints were placed on various curved surfaces for my fourth experiment. I placed prints on doorknobs, bottlenecks, and a gun magazine. The test prints were dusted with black magnetic fingerprint powder. The white and transparent casting silicone was then placed on the test prints. The white silicone lifted the prints on the gun magazine. The material molded itself around the magazine. The lifts were of comparison quality and the ridge detail was excellent. The transparent silicone was used on a beer bottleneck. The transparent silicone smoothed itself around the print. The detail and quality of the lift was excellent. The transparent silicone would lay flat after it was removed from the bottleneck. The white silicone from the gun magazine did not lie flat by itself. The white and transparent silicones are excellent sources for lifting fingerprints from curved surfaces.

#### **Conclusion**

In conclusion, all fingerprints must be photographed before any type of recovery is attempted. Photography,

however, should not be the only means used to preserve fingerprints. Hard to lift prints, such as those on rough surfaces, human skin, blood, and curved surfaces can be accomplished by using magnetic powder and casting silicone. Silicone lifts provide a means to preserve fingerprints from some of the most difficult surfaces. Additionally, transparent silicone will allow the technician to lift the prints and perform a direct fingerprint comparison without having to reverse the image. The silicone lifts are permanent and will not smear or become smudged when touched. The use of silicone casting is faster and safer than most chemical applications. My experiments prove that casting silicone is not just for tool and impression marks, but fingerprints too!

#### **References**

1. Lightning Powder Company, Inc., January 20, 2003, Material Data Safety Sheet
2. Coltene Whaledent, January 2004, Product Instruction for Use Sheet
3. Coltene Whaledent, December 2004, Safety Data Sheet

Detective Mill Morris is a thirteen year veteran of the Akron, OH Police Department. She holds a Master of Evidence Technician certification from the Ohio State Police Training Academy. Detective Morris can be reached at [forensics@ultronicsusa.com](mailto:forensics@ultronicsusa.com)

Disclaimer: All material is original and experiments were conducted by the author. The Akron, OH Police Department is not associated with this article in any fashion or form.

(Editors Note: The original article does have several photographs associated with the text, which can be viewed at the following website, [www.forensicmag.com](http://www.forensicmag.com).)

# Factors Affecting the Recovery of Latent Prints on Firearms

*(This article appeared as a Technical Report in the Mar/Apr 1997 issue of the Journal of Forensic Identification.)*

*(Editors Note: This article was previously published in The Print several years ago and I believe is worthy of being published again for new Latent Print Examiners who may have not had the opportunity to read it.)*

CLIVE A. BARNUM\*

DARRELL R. KLASEY

Bureau of Alcohol, Tobacco and Firearms

Walnut Creek, CA

## Introduction

Latent fingerprint examiners generally know that even when cutting edge technology such as cyanoacrylate fuming and laser/forensic light source examination are utilized, successful development of latent prints on firearms is difficult to achieve. In reality, very few identifiable latent prints are found on firearms, a fact that has been discussed in both the literature [1,2,3] and the judicial system [4]. Fingerprint Specialists at the Bureau of Alcohol, Tobacco and Firearms San Francisco Laboratory Center have had, however, some success in this endeavor.

In the examination of 1,000 firearms from February, 1992, through August, 1995, 114 identifiable latent prints were developed on 93 firearms. Although successful recovery occurred in approximately one of ten firearms, it should be understood that not all identifiable latent prints may have been left by an offender. Some developed latent prints, for example, are subsequently identified as belonging to a person involved in the collection of the evidence.

Jurors have been inundated with fingerprint information from television, movies and newspapers and feel that latent print evidence is a reliable means of establishing positive personal identity [5]. However, jurors are generally under the impression that every item that is touched by fingers or palms will be left with an identifiable latent print impression [6]. If an offender is arrested for possession of a firearms, jurors therefore expect his/her prints to be on it. In fact, most of the time, fingerprint specialists find no identifiable latent prints on firearms. Accordingly, attorneys often call on the fingerprint specialist to explain to the jury the many reasons for the absence of identifiable latent prints. The following reasons make latent print recovery from firearms difficult and when they are recovered, the time of deposition can seldom be determined. The purpose of this paper is to provide information to both technical and non-technical users of fingerprint identification services about what factors affect the recovery of latent prints on firearms.

## Life of latent prints

Unless there is a witness to the offender handling the firearm, there is no way of knowing when the firearm was

touched by him/her. It could be days, months, or years since the firearm was handled by the offender.

Professor Andre A. Moenssens has studied latent print age determination extensively. He stated at the 57th Annual Conference of the International Association for Identification (Milwaukee, WI, 1972), "I would simply say that I cannot tell with any degree of precision because there is no known way to determine positively, or to even closely approximate by opinion testimony, the length of time a latent has been on an object. You can sometimes establish the length of time a print has been on an object circumstantially, but not scientifically"[7].

Charles R. Midkiff has examined the results of tests done by others. He states "from studies and cases examined, it is apparent that wide variations exist in the ability of a latent print to survive, even under rather harsh conditions. Development of a latent print at a crime scene is no guarantee of its having been recently placed. In addition, the studies suggest that no reliable indication of a print's freshness can be obtained from its rate of development or appearance after it is developed. Speculation or court testimony concerning the time when a latent print was placed may be hazardous to the reputation of the examiner"[8].

## Atmospheric conditions

Air, temperature, and water all have an effect on the survivability of latent prints, and their subsequent development. Moderate air currents will cause gradual evaporation of the water portion of perspiration, while stronger winds will cause rapid evaporation, but may have little immediate affect on the remaining salts, amino acids, fats and lipids.

Air temperature and the temperature of the surface receiving the latent print can also affect the latent impression. If the surface is hot, it may cause rapid evaporation. A cold surface can eventually create condensation, as in the case of a glass of cold water on a warm day. And generally, less perspiration is secreted during low temperatures.

High humidity can cause moisture to condense on an object's surface, possibly causing the latent deposits to wash away. Low humidity will cause rapid evaporation of the water portion of perspiration because of the lack of moisture in the air.

Rain, of course, will wash away non-fatty/oily deposited latent print material adhering to an object's surface. Dew and snow, much like rain, will adversely affect the latent print. Not only will they combine with the water in perspiration to dilute the latent print residue, but they may form a barrier between the surface and the friction ridge skin. This barrier may prevent residue from being left in sufficient quantity to be detected [7,9].

## Environmental factors

What happens to the firearm between the time a latent print is deposited and the time the weapon is recovered can greatly affect the processing outcome. Placing firearms in holsters, in the waist-band of trousers, between car seats, and under mattresses, to give a few examples, may cause

the latent prints to rub off. Latent prints on firearms that are thrown from moving vehicles onto roadways, dusty fields, and into rapidly--running rivers, etc., may also be obliterated. Offenders have also been known to wipe off the interior and exterior parts of firearms, thereby eliminating any chance of developing identifiable latent prints.

### **Damage of friction ridge skin**

Friction ridge skin can be damaged permanently or temporarily, depending on the circumstances of the trauma. Permanent damage can occur because of scarring or disease (e.g. dissociated ridges or dysplasia<sup>3</sup>). Temporary damage is usually due to superficial burns, warts, and occupational situations (e.g. construction workers who handle drying material such as lime, plaster, or cement or dish washers whose hands are continually wet). All of the above examples will cause the donor to leave very poor or unidentifiable latent fingerprints.

### **Perspiration**

Considering perspiration alone, the amount transferred from the skin to the object touched is the main factor bearing on the identifiability of latent prints. Perspiration excreted from the fingers and palms is reported to contain from 98.5 [10,11] to 99.5 [12,13] per cent water, and 0.5 to 1.5 per cent solid matter. There may be insufficient perspiration to which developing agents can adhere, either because there was little initial perspiration on the skin or because one or more objects were handled prior to the evidence being handled. When sufficient perspiration accumulates on the skin, it should yield a clear impression to which developing reagents will adhere. The anxiousness or nervousness of the individual may also have an effect on the secretion of perspiration through the pores.

### **Processing problems**

Firearms can be difficult to process due to various reasons such as the condition of the metal and the limited smooth area available for processing (most firearms have few smooth surfaces, although an auto loading pistol generally has more processing area for latent prints than a revolver). In addition, more and more guns, like the Glock pistols, are being produced using polymers instead of metal. These polymer parts usually have textured surfaces that are not conducive to the retention of latent prints.

Fingerprints can also become superimposed or smudged because of the way a firearm is handled, or because the surface is dirty, oily, or greasy [14]. Usually, the investigator must touch the same areas of the firearm as the offender in order to unload it safely. While many investigators wear gloves when handling evidence, it has been suggested by some that they should not, "but must become accustomed to work in such a way that they do not leave their own prints. If they wear gloves, there is always the risk that they may become careless and destroy prints" [15,16].

The reason for handling a firearm will determine which surfaces are touched. Persons who discharge firearms usually hold them in a conventional manner, as a matter of

safety, using the weapon's grips/stock. The wooden or plastic grips/stock of firearms are often serrated in order to provide a non--slip means of holding the firearm to fire it. These uneven surfaces usually yield no identifiable latent prints. On the other hand, a firearm being casually inspected, loaded/unloaded, cleaned, etc., will be handled much differently than one held for firing. In these instances, more of a firearm's overall surfaces are usually handled, resulting in a greater likelihood than identifiable latent prints will be deposited.

### **Firearm finishes**

The type of finish applied to the metal surface of firearms by the manufacturer, gunsmith, or home repair person can have a detrimental affect upon the development of latent prints. For example, latent prints are particularly difficult to develop on the Parkerized finish found on many military firearms. This type of finish is used on firearms to prevent rust. The metal surface is usually sandblasted prior to the Parkerizing process to produce a nonreflective surface [17]. Weapons with chrome, smooth nickel, or stainless steel finishes are better for the recovery of latent prints.

Most of the firearms received at the Bureau of Alcohol, Tobacco and Firearms San Francisco Laboratory Center have been processed by the manufacturer with bluing. The primary object of bluing is to dull the bright color of the barrel and other metal parts [18]. It also helps prevent the metal from rusting. Since perspiration contains 98.5 to 99.5 per cent water, bluing may retard latent prints as well.

When referring to a firearm finish, attorney Richard Dienst stated that firearm "manufacturers such as Intratec advertise and use the slogan 'as tough as your toughest customer' and emphasize that the gun's finish provides an 'excellent resistance to fingerprints'" [19]. Intratec guns are characterized as having a matte non--glare finish that seldom retains an identifiable latent print. Beretta produces the Model 92F pistol which was adopted by the U.S. Government as the M--0 service pistol. This entire weapon, except the grips, is reported to be covered with a teflon derivative coating for protection and lubrication [20]. Almost everyone is familiar with the non--stick qualities of teflon. Corroded firearm surfaces and badly machined or finished surfaces also make the development of latent prints difficult.

### **Packaging the firearm**

When firearms are submitted to a crime laboratory for latent print examination, a sturdy box with the firearm tied or strapped down to the bottom of the box should be used. Boxes designed specifically to transport and store firearms are available from several vendors<sup>4</sup>. Paper, plastic bags, and foam packing chips tend to smudge latent prints during handling, so whenever possible, the firearm should be shipped in a box that is not packed with these materials in close contact with the firearm surfaces [21].

### **Summary**

There are a number of factors that affect the fingerprint specialist's ability to recover identifiable latent prints on firearms. These are: the longevity of a latent print due to how it was deposited; atmospheric

and environmental condition; perspiration variation; the nature of the firearm's surface and finish; how the firearm was handled; and packaging. Due to the reasons stated in this article it is difficult to obtain identifiable prints from firearms, but since in the experience of the authors it occurs almost 10 per cent of the time, the attempt should be made.

It is important that fingerprint specialists be able to describe the reasons why, despite their training, experience, and access to state-of-the-art equipment, identifiable latent prints are developed on firearms infrequently. So-called "negative results testimony" can be an important part of the judicial process, as it presents a more complete account of latent print processing and will allow the absence of identifiable latent prints to be put into proper perspective [22].

#### Acknowledgments

The authors wish to thank A.T.F. Firearms and Tool Mark Examiner John E. Murdock for his assistance.

For further information, please contact:

Darrel R. Klasey  
Fingerprint Specialist  
Bureau of Alcohol, Tobacco and Firearms  
San Francisco Laboratory Center  
355 N. Wiget Lane  
Walnut Creek, CA 94598  
(510) 486-3170

\* During the preparation of this report for publication in the Journal of Forensic Identification, the JFI editor was informed that Clive A. Barnum, Senior Fingerprint Specialist with the Bureau of Alcohol, Tobacco and Firearms, had died on December 26, 1996. This report serves as only one indication of Mr. Barnum's dedication to professionalism.

1-The standard approach to latent print processing at the Bureau of Alcohol, Tobacco and Firearms San Francisco Laboratory Center is atmospheric cyanoacrylate fuming, followed by staining with ethyl alcohol-based Rhodamine 6G, and examination with an Omnichrome Laserprint 1000 portable laser. Additional processing techniques can include the following: Coherent 20-watt argon laser; Omnichrome Omniprint 1000 Alternate Light Source; ardrox; ultra-violet light; standard and magnetic fluorescent powders; standard and magnetic black and silver powder; Polaroid high-contrast photography; and crystal violet.

2-Of 114 latent prints developed, 24 were identified as coming from an offender and one was identified as coming from a law enforcement employee. To put the number of identifications in proper perspective, several factors should be considered.

First, the authors' laboratory, one of three regional A.T.F. forensic laboratories, provides forensic services to fourteen western states and the territory of Guam. Since there are no fingerprint files maintained at the San Francisco Laboratory Center, the authors are dependent on federal agents and police officers to submit inked fingerprints or rap sheet information.

In cases where identifiable latent palm prints are developed on firearms, inked palm prints are virtually never submitted for comparison. In most cases where an offender's inked fingerprints are submitted for comparison and not identified, no elimination fingerprints are submitted for comparison. Most unidentified latent fingerprints are submitted

to the California Department of Justice for a search of the CAL-ID, and the Western Identification Network (W.I.N.), if appropriate, for a search of the automated latent print system.

3-Dissociated ridges resemble short curved or dotted ridges over an area of the pattern, while dysplasia results in patternless surfaces.

4-Two that the authors are familiar with are: Lightning Powder Company, Salem, OR, (800)852-0300, and Evi-Pac, Phoenix, AZ, (800) 377-0450

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17. Olsen, *supra* note 1, at 416.

# MINUTES OF THE JANUARY BOARD MEETING

**DATE:** January 14, 2006  
**LOCATION:** Bruno's Italian Villa, San Bruno  
**SECRETARY:** Sue Baker (in the absence of Mari Johnson)  
**PROGRAM:** Executive Board Meeting  
**CALL TO ORDER:** Board meeting, called to order at 1110 hours by Chairman of the Board Dennis Uyeda.  
**ATTENDANCE:** EXECUTIVE BOARD: Dennis Uyeda, Susan Garcia, Craig Johnson, Steve Tillmann, Marvin Spreyne, Amy Hines, Sue Baker, Lisa DiMeo, and Sarah Watson. (Absent: Gina Russell-Durgin Mari Johnson, Bill Leo, Debbie Stivers, Alan McRoberts, and Clark Fogg.)

## OLD BUSINESS:

The Historian and Editor reports were not presented due to the Historian and Editor not present.

The issue of scholarships was revisited and the board decided to go with additional training classes instead.

The Chairman of the Board, Dennis Uyeda brought up the issue of the meeting flyer not getting out to the membership in a timely manner. There were several suggestions on how to rectify this. The announcements for the next meeting should be handed out at each meeting, whenever possible. The announcement will be emailed to members that have provided their email addresses, the responsibility is solely with the membership to supply the SCAFO Secretary with their current address. Additionally emails will be sent out to Latent Print Units at Southern California law enforcement agencies. For those who do not have email, the SCAFO web site and The Print will have the basic information on the meeting and the member can contact any of the board members to find out additional information.

The certification test was revisited. Bill Leo and Alan McRoberts would like to see SCAFO go forward with the certification since IAI did not change the specs on their certification test. Due to the time it would take to administer the test, the board has decided not to go forward at this time.

Motion to drop: Susan Garcia 2nd : Sarah Watson

The Louis Herbert Training Reimbursement Program was discussed. The bylaws for the program are under-going some final revisions. The board discussed what would qualify someone for the program. A few ways a member would qualify are: (1) the member would have to belong to an agency that is not reimbursing them for the training. (2) and the member would have to have attended at least 2 SCAFO meetings for the year that they are applying for the program. (3) the member would have to be an active member in good standing. Once the bylaws are finalized and it has passed the vote of the board, it will have to go to the membership for the final vote.

## NEW BUSINESS:

The possibility of reinstating SCAFO membership cards was discussed. SCAFO stopped issuing membership cards in 1996. Treasurer Lisa DiMeo will look into something along the lines that IAI issues.

Motion : Sarah Watson 2nd: Amy Hines

The 2006 meeting schedule is:

Feb. 4th - Sarah Watson

April 8th - Dennis Uyeda (Past President)

June 3rd - Amy Hines and Marvin Spreyne

August 4th - Craig Johnson and Sue Baker

Sept. 29th - 30th - Seminar

December 2nd - Gina Russell-Durgin

January Executive Board meeting - Susan Garcia

February 3rd, 2007- Debbie Stivers

Life Membership of SCAFO requires 25 years of continued service. President Garcia requested that Secretary Johnson review the membership book to see if any members qualify as Life Members.

The subject of Distinguished Membership was also discussed, several members do qualify (see bylaws). Eligible recipients will need to send a letter on their own behalf on why they qualify for the award to the current SCAFO President.

President Garcia received an email from Gail Fitzgerald of the Los Angeles County Forensics Supervisors Group (LACFSG), requesting SCAFO's assistance in the formation of a committee to support a change in current legislation that would include Forensic Specialists / Crime Scene Investigators along with sworn officers in Safety Retirement. Parliamentarian Clark Fogg and Director Debbie Stivers are members of the LACFSG and will assist on behalf of SCAFO.

Motion to accept: Marvin Spreyne 2nd : Susan Garcia

The idea of the Past Presidents not having to pay for their dinner at the April meeting, which is the Past Presidents meeting, was discussed. Their guest/spouse will have to pay but the Presidents dinner will be paid for by SCAFO.

Motion: Sarah Watson 2nd: Lisa DiMeo

Miscellaneous notes:

1. There will be a board meeting before each meeting to discuss issues that need to be addressed
2. Craig Johnson is heading the SCAFO 2006 seminar committee assisted by the Directors. They will give updates to the board at each board meeting.
3. The issue of fees not being collected at the meeting was brought up and will be enforced:  
(No badge, not introducing your guest/spouse, and forgetting to announce your position on the SCAFO board during the round table).
4. The update of the SCAFO letterhead.
5. Updating the speaker gift was discussed, other than the mug.
6. Sending a letter of appreciation to the speakers, vendors and restaurants was also discussed
7. Boosting membership was brought up.

## MOTION TO ADJOURN:

By: Steve Tillmann

2nd : Amy Hines

**MEETING ADJOURNED:** 1510 hours.

**Southern California Association of Fingerprint Officers**

15th Annual Forensic Training Seminar  
Friday, September 29th, 2006  
Saturday, September 30th, 2006

**FORENSIC IDENTIFICATION 2006 PROGRAM**

Remember the general meeting is on Saturday after lunch. Any readings or swear-ins will be done at that time along with the election of the 2007 SCAFO Executive Board. If you are interested in serving on the board please contact Clark Fogg with any questions at cfogg@beverlyhills.org.

**Friday, Sept. 29th**  
**Registration 0700-0745**

**Saturday, Sept. 30th**  
**Registration 0700-0745**

“Daubert Update & legal Issues Affecting Fingerprints”

By: William Leo, L.A. Co. Sheriff’s Dept.

“Persistence of Scars in Friction Skin”

By: Alice Maceo Las Vegas P.D.

“Michael Jackson Child-Molestation Case”

By: T. Sutcliff, B. Spinner, N. Torres  
Santa Barbara Co. S.O.

“Friction Skin Distortion”

By: Alice Maceo Las Vegas P.D.

“Hidden Hazards at the Crime Scene

By: KJ Kadziauskas

“AAA-Steam & Clean”

*“Additional speakers TBA”*

**0800 to 1630 daily**

**South Coast Air Quality Management District (SCAQMD) Office**  
**21865 Copley Drive, Diamond Bar, CA. 91765-4182**  
**(909) 396-3378**

If you would like to reserve a room at the Ayres Hotel, tell them you are reserving a room for the SCAFO seminar.  
Double room occupancy rate is \$92.00 a night.

This includes full breakfast in morning for both days and a free beer, wine and soda social on week nights.

**21951 Golden Springs Drive**  
**Diamond Bar CA. 91765**  
**888-592-9737**

Certificates of attendance will be awarded for 8 hours of continuing education training for each day. All materials, continental breakfast and lunch are included.

Mail reservation with check or money order, (NO CASH) to:

**We will honor memberships in most other forensic associations for registration:**

**SCAFO**

Mari Johnson  
3233 Grand Ave. #N45  
Chino Hills, CA. 91709

**Registration Fees**

Member both days	\$100.00
Non-Member both days	\$125.00
All Reg after 9-9-06	\$125.00
Member single day	\$55.00
Non-Member single day	\$60.00
<b>Single day after 9-9-06</b>	<b>\$60.00</b>

Name as to appear on certificate (PLEASE PRINT)

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Agency: \_\_\_\_\_

E-mail address: \_\_\_\_\_

Please Circle which day(s) you will be attending:

09-29-06      and/or      09-30-06

For any questions please e-mail Mari Johnson at M2johnso@lasd.org or Craig Johnson at C2johnso@lasd.org Payment will be accepted at the door, however registration must be made in advance. Reservations made and not canceled by 9-9-06 will be held financially responsible.

# MINUTES OF FEBRUARY MEETING

**DATE:** February 4, 2005

**LOCATION:** Maria's Kitchen, Pasadena

**HOST:** Sarah Watson

**SECRETARY:** Mari Johnson

**PROGRAM:** Murder in Topanga, by Steve Schliebe of LASO Crime Lab.

**CALL TO ORDER:** Meeting called to order by President Susan Garcia. at 1530 Hours

## ATTENDANCE:

**PAST PRESIDENTS:** Dell Freeman (1973), Clark Fogg (1994), Robert Goss (2001),

**EXECUTIVE BOARD:** Susan Garcia, Gina Russell-Durgin, Craig Johnson, Sarah Watson, Mari Johnson, Lisa DiMeo, Marvin Spreyne, Amy Hines, Debbie Stivers and Clark Fogg. (Absent: Alan McRoberts, Sue Baker, Steven Tillmann, Bill Leo, and Dennis Uyeda.)

**Members and guests present:** 35

## OLD BUSINESS:

### Second Readings:

Emily Schum

Leonard Correa

Barbara Maestas

Motion to accept: Bob Goss

Second: Amy Adams

### Swear Ins by Past President Clark Fogg:

Magda Perez, Santa Ana Police Dept.

Mary Ellen Gorski, Glendale Police Dept.

Ellen C. Will, Los Angeles Sheriff's Dept.

## NEW BUSINESS:

### First Readings

None

## ANNOUNCEMENTS:

SCAFO Director Debbie Stivers, who also belongs to a group called Los Angeles County Forensics Supervisors Group, wanted to share with the membership that LACFSG is providing training free of charge. They just

need to know who is going to attend. The upcoming training is going to be a workshop in Crime Scene Investigation, which will be some hands on and lecture. The date has not been set, but you can inquire about this workshop or if you're a supervisor of a lab and want to join this organization the email address is joi.dickerson@culvercity.org.

CSDIAI President Bob Goss, spoke about the upcoming California State Division International Association of Identification seminar on May 8th - May 11th. It will be held in Ontario at the Doubletree Hotel and the seminar information can be accessed through the email address of www.csdiainet.net.

Parliamentarian Clark Fogg from the Beverly Hills Police Dept. is still looking for a lateral Forensic Identification Specialist 1. Anyone interested in applying can access the information at the Beverly Hills Police Dept. web site. Clark also wanted to let everyone know of some good training through NIJ. They put on a good training seminar this year and this might be something to look up on their web site for next years seminar.

2nd Vice President Craig Johnson gave us an update on the 2006 SCAFO Seminar, to be held on Sept. 29th and 30th, in the Diamond Bar area of Los Angeles County. The seminar will be at the AQMD building and will hold 300 people. Flyers were passed out and speakers will be updated as additional ones are added.

Please remember to call and make reservations for any upcoming meetings. Depending on the meeting location there might not be room for walk ins and we do not want to turn anyone away. Also if you do make reservations and can not attend please call so that if there is a waiting list we can call those members and invite them to the meeting.

## ATTENDANCE DRAWING \$25.00:

Sarah Watson.

## DOOR PRIZES:

Provided by Sarah Watson and Mari Johnson.

## MOTION TO ADJOURN:

Marvin Spreyne

Second: Amy Adams

## MEETING ADJOURNED: 1630 hours

*"Every man owes a part of his time and money to the business or industry in which he is engaged. No man has a moral right to withhold his support from an organization that is striving to improve conditions within his sphere."*

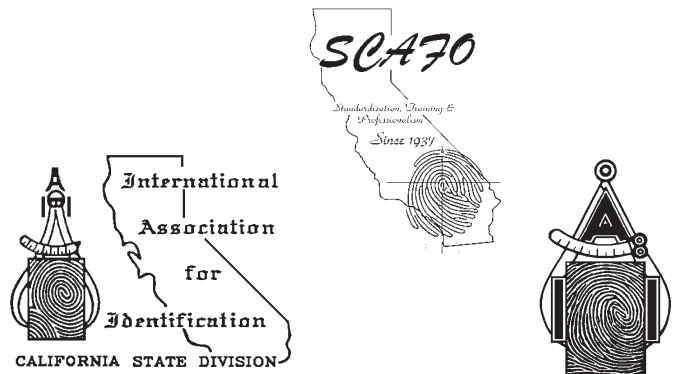
*- President Theodore Roosevelt, 1908*

For subscription or membership information, or address corrections contact:

**S.C.A.F.O.** Lisa DiMeo, Treasurer  
P.O. Box 4146  
La Mesa, CA 91944-4146  
dimeo@scafo.org  
\$20.00 yearly subscription (attendance required for membership)  
\$30.00 yearly for International Subscriptions

**C.S.D.I.A.I.** Felita D. Chapman  
P.O. Box 125  
Fairfield, CA 94598  
(707) 208-2348  
csdiainet@sbeglobal.net  
\$25.00 yearly membership

**I.A.I.** Joe Polski, Chief Operations Officer  
2535 Pilot Knob Road, Suite 117  
Mendota Heights, MN 55120-1120  
(651) 681-8566 iaiaia@theiaia.org  
\$60.00 yearly membership



## ***JUNE SCAFO MEETING***

**SATURDAY, JUNE 3, 2006  
OLD SPAGHETTI FACTORY  
3191 MISSION INN AVENUE  
RIVERSIDE, CA, 92507**

**PROGRAM: "FINGERPRINTS ON THERMAL PAPER"**

**SPEAKER: MICHAEL RENNEY  
SUPERVISING FORENSIC TECHNICIAN  
RIVERSIDE SHERIFF'S OFFICE**

**REGISTRATION - 1130 AM**

**LUNCH 1230 PM**

**E-MAIL AMY HINES AT ALHINES@CO.RIVERSIDE.CA.US OR  
CALL (951) 304-5398 NO LATER THAN JUNE 1, 2006**

**COST: \$18.00**

**MAKE YOUR RESERVATION BY MAY 15TH AND YOU'LL BE INCLUDED IN A  
DRAWING FOR A PAPER SHREDDER. WINNER MUST BE PRESENT**

### ***In This Issue***

pg.

**1 Mass Disasters Mean Two Things: Multiple Deaths And DMORT Deployment**

**5 Exposed: The Criminal Cover-Up at the Heart of Fingerprint Scandal**

**6 Casting a Wide Net: Lifting Fingerprints from Difficult Surfaces**

**10 Factors Affecting the Recovery of Latent Prints on Firearms**

**13 Minutes of January Board Meeting**

**15 Minutes of February Meeting**

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**SCAFO Members:  
Get "yourname@scafo.org".  
See instructions on the  
website's email page.**

### ***-- Upcoming Events/Schools/Seminars--***

May 7 - 11, 2006

C.S.D.I.A.I. 90th Annual Training Seminar  
Ontario, CA

June 3, 2006

SCAFO Meeting  
Riverside, CA

July 2 - 8, 2006

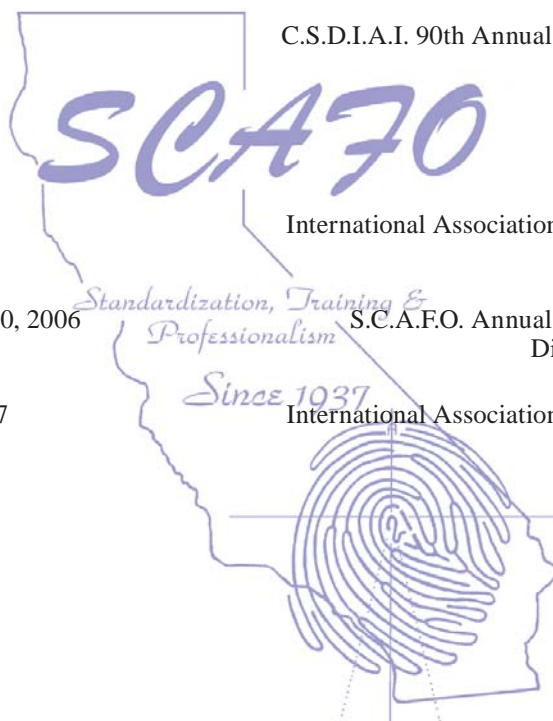
International Association for Identification  
Boston, MA

September 29 - 30, 2006

*Standardization, Training & Professionalism*  
S.C.A.F.O. Annual Training Seminar  
Diamond Bar, Calif.

July 22 - 27, 2007

*Since 1937*  
International Association for Identification  
San Diego, CA



***Southern California Association of Fingerprint Officers  
An Association for Scientific Investigation and Identification Since 1937***