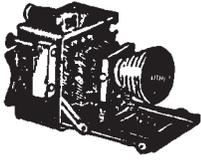




# THE PRINT

*The Official Publication of the Southern California Association of Fingerprint Officers  
An Association for Scientific Investigation and Identification Since 1937*

*Jan/Feb/March 2007 Volume 23 Issue 1*



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## Fingerprints, shotgun shells led to arrests in old police killing

*(Reprinted from the January 25, 2007 article from the Californiawire website)*

By KIM CURTIS

Associated Press Writer

SAN FRANCISCO (AP) A fingerprint on a cigarette lighter left at the crime scene, testimony from an informant and old shotgun shells helped lead to the arrests this week of eight men accused of murdering a police officer in a spree of violence aimed at law enforcement in the 1960s and 70s.

The evidence some of which was recovered using new forensic techniques was listed in court papers used to obtain an arrest warrant in the case. The 21-page document was released Thursday by the state attorney general's office.

Prosecutors say members of the Black Liberation Army, a violent offshoot of the Black Panthers, stormed the lobby of a San Francisco police station Aug. 29, 1971, killing Sgt. John V. Young with a shotgun and injuring a civilian clerk with gunfire.

Arrested Tuesday on charges of murder and conspiracy were: Francisco Torres, 58, of Queens, New York; Richard Brown, 65, of San Francisco; Harold Taylor, 58, of Panama City, Fla.; Ray Michael Boudreaux, 64, of Altadena; Henry Watson Jones, 71, of Altadena; Herman Bell, 59, and Anthony Bottom, 55, both of whom are currently incarcerated in New York.

Richard O'Neal, 57, of San Francisco, was arrested on a charge of conspiracy.

A ninth suspect, Ronald Bridgeforth, is believed to have fled the country.

On the night of the shotgun siege, police recovered 48 items, including a ballpoint pen, a key, a cigarette lighter, shotgun shells and buckshot.

Advances in the recovery of fingerprints helped a state Justice Department forensic investigator in 2003 match the prints on the lighter to Torres, according to the affidavit used to obtain his arrest warrant.

Torres' lawyer did not immediately return a call seeking comment.

The following year, an FBI investigator matched five of the 15 shotgun shells recovered from the crime scene to spent shells recovered from a shotgun found at Bell's New Orleans home in 1973. The shotgun has since been lost by police.

Bell's lawyer, Stuart Hanlon, said he was excited for all the defendants.

“To say, ‘Whoops, we lost the record. We lost the shotgun.’ None of this is admissible,” he said. “It’s unbelievable.”

Hanlon and others have said they suspected investigators had DNA evidence, something not available in 1971. In 2005, DNA warrants were served on two dozen people, five of whom had been identified as potential suspects in the Ingleside case in 1973.

Gareth Lacy, spokesman for state Attorney General Jerry Brown, refused to respond, but referred to the affidavit, which said it “does not represent the entire universe of information” about the crimes.

An unidentified informant, who was provided with immunity from prosecution and financial assistance for housing relocation, identified the men responsible for attack. The informant also told investigators that Bell criticized Torres for “dropping some item at the scene.”

The informant said all were members of the BLA, whose mission, according to police, was to “create chaos and terror ... through the assassination of law enforcement officers.”

Authorities have not identified the informant, though some believe it may be Ruben Scott, the only former BLA member previously indicted who has not been named this time.

Scott, Taylor and a third former BLA member who died in December, were indicted in 1975 for the Young murder, but that case was eventually dismissed because the men had allegedly been tortured by police officers during an interrogation.

Police also said that Bottom confessed after his arrest in 1971 to organizing the police station attack.

A month after the attack, Bottom was questioned by San Francisco police inspectors and “admitted that he devised a plan to attack the Ingleside Police Station” and discussed it with Bell, according to the affidavit.

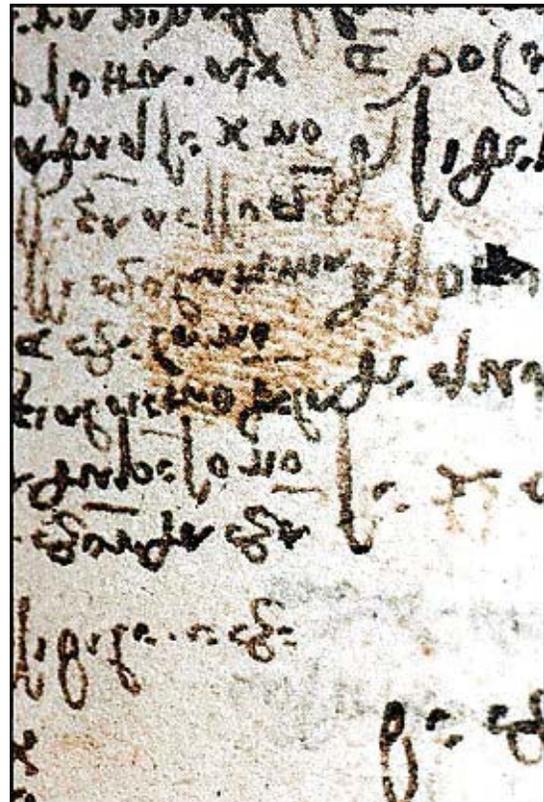
He said he went to the station a few days earlier to look it over, filing a fake report about a stolen bicycle. Police confirmed that report was filed five days before the attack.

Police set up surveillance cameras outside his apartment and saw several people entering and leaving, including Bell, Jones, Brown and Torres.

Bottom was jailed on an attempted murder charge the night before the Ingleside attack, but bragged to his cellmate about how he planned it, according to the affidavit.

On Aug. 28, 1971, Bottom had attempted to shoot a San Francisco police officer while he was stopped at a traffic light. After his gun jammed, he led the officer on a high-speed chase and shoot-out before he crashed. In his car, police found a revolver that had been stolen from the body of a New York police officer killed three months earlier. Bell and Bottom were convicted of murder in 1975 and have been in prison ever since. They maintain they were framed by the FBI.

## Fingerprints might paint a new picture of Da Vinci



*(This article is reprinted from the Detroit Free Press web site, December 5, 2006, [www.freep.com](http://www.freep.com).)*

These fingerprints are on a paper believed to have been handled by Leonardo da Vinci. Chieti University in Italy released the photo Thursday. (PIERO LUCCO/Associated Press)

ROME -- Anthropologists said they have pieced together Leonardo da Vinci's left index fingerprint -- a discovery that could help provide information on such matters as the food the artist ate and whether his mother was of Arab origin.

The reconstruction of the fingerprint was the result of three years of research and could help attribute

disputed paintings or manuscripts, said Luigi Capasso, an anthropologist and director of the Anthropology Research Institute at Chieti University in Italy. The research was based on a first core of photographs of about 200 fingerprints -- most of them partial-- taken from about 52 papers handled by da Vinci in his life.

The artist often ate while working, and Capasso and other experts said his fingerprints could include traces of saliva, blood or food. It is information that could help clear up questions about his origins.

Certain distinctive features are more common in the fingerprints of some ethnic populations, experts say. "The one we found in this fingertip applies to 60% of the Arabic population, which suggests the possibility that his mother was of Middle Eastern origin," Capasso said.

Biological information on Leonardo is largely incomplete. The artist, who was generally but not exclusively left-handed, used his fingers to paint.

It is my pleasure to serve as your President for the coming year. Through SCAFO, I have had the privilege of meeting and working with some of the finest people in our field. I hope to meet more of you as the year goes by. I have valued the fellowship that SCAFO provides and I look forward to the years upcoming events.

What I would like to see SCAFO and it's membership do this year, is grow. I have requested that the Board of Directors think of ways to gain members this year. Through membership drives and other means I hope to make SCAFO a much more diverse organization. We all have colleagues that we work with, or know that meet the qualifications to become members, but for one reason or another they have not joined our illustrious ranks. I ask you to encourage these people to come to meeting as your guest. Introduce them to our organization, so they can see what we offer.

With new blood we gain a deeper well of fingerprint experts in which to dip. We are always looking for experts to speak at our dinners and conferences. With this well of experts we can expand our understanding in the field of fingerprints. What are other departments doing in the field, that could help us do more in our own department? What research is being done? What challenges are you facing in court? Seek out help from your fellow members. SCAFO is there for you.

In closing I would like to say thank you for your confidence in electing me your President.

I will do my best to lead SCAFO to a bright future.

Respectfully

Craig L. Johnson, President

## Presidents Message



Greetings to all the members of SCAFO.

I hope you all have had a glorious holiday season and the new year brings you health and good fortune.

# How we can improve the reliability of fingerprint identification

*Fingerprints are an excellent source of unique identification. Unfortunately, enormous population growth, worldwide terrorism, and the incorporation of new fingerprint features have occurred without the benefit of badly needed reengineering and recalibration. Our fingerprint matches are no longer foolproof.*

by MICHAEL CHERRY and EDWARD  
IMWINKELRIED

A perfect storm is developing. The reliability of fingerprint identification has declined while the population of fingerprints has exploded. Who is going to tell prospective employees that their fingerprints indicate they have a criminal background? Every night an automated process takes place where the fingerprints of approximately 50,000 job applicants are computer analyzed as a part of civil and government pre-employment investigations. Unfortunately, the FBI systems performing the fingerprint screenings have significant calibration issues that can affect decisions of great importance, both civil and criminal, domestic and international.

Our fingerprint concerns used to be local. Local police departments and agencies maintained their own collections of fingerprints and there was little coordination among those with fingerprint databases. Now, with the threat of international terrorism, the United States faces a global population of dangerous individuals. National security requires a national system that will enable us to correctly identify fingerprints. If analyzed properly, fingerprints can be as accurate as DNA.

The intent of this article is to make several fingerprint identification recommendations to correct our fingerprint problems and reestablish reliability. It describes some old and new concepts regarding fingerprints, briefly traces the evolution of fingerprint examination systems, identifies the major problems in the current system, and offers recommendations for addressing those problems.

## Concepts

Nature appears to be random until you examine it closely. There are approximately six billion individuals in the world. However, most of them have dark hair, dark eyes, are right handed, and share one of two major blood types. If we are to reliably identify criminals and terrorists, we need to rely on their other physical characteristics. Of course, one such characteristic is DNA type. In truth, though, fingerprints offer amazing uniqueness. A full fingerprint is unique and even if the probability of two independent people accidentally having the same fingerprints is only 1,000,000 to 1, then under the same assumptions the probability of the same two people having not one but three matched fingerprints would be 100,000,000,000,000,000 to 1.

In the late 19th century Sir Francis Galton developed the first system for classifying and identifying fingerprints. He is quoted as having said that “the odds of two individual fingerprints being the same are 1 in 64 billion.” The world population exceeds six billion, and each person has 10 fingerprints. Thus, the world population of fingerprints is now close to 64 billion. If we accept Galton’s assertion, there may well be instances of different persons possessing the same single fingerprint. To ensure reliability, we then need to take into account an individual’s neighboring fingerprints.

Fingerprint identification is predominately based on viewing all the ridges within a fingerprint and then categorizing it into one of three somewhat similar appearing patterns—loops, arches, and whorls. Each of these three patterns can be sub-divided into one of several sub-patterns. The final step is to find and map the location of small predetermined shapes and contours.

When fingerprints are said to “match,” it means the pattern, subpattern, and at least some of the small predetermined shapes and contours present roughly correspond with each other. Since it is very difficult for humans to visualize all of the small predetermined shapes and contours that are present in a fingerprint, a rigorous, systematic procedure is required.

In 1918 Dr. Edmond Locard established the first rules as to the minimum number of minutiae necessary for fingerprint identification. He wrote that “if 12 points (Galton Characteristics) were the same between two fingerprints, that match sufficed as a

basis for a positive identification.” By definition, the likelihood of two or more people sharing a partial fingerprint has to be very high in a population of 60 billion fingerprints. As our population grows, the criteria (e.g. number of points) needed to establish a match must evolve.

## **Evolution of fingerprint systems**

The American fingerprint system has evolved through several stages, including nationalization, computerization, and digitization. Initially and for many years, inked fingerprint cards were used. The cards were not stored in alphabetical order. Instead, they were sorted into one of several predefined categories specified by the Henry Fingerprint Classification System, e.g., whorl or tented arch. The Henry System used all 10 fingers and their interrelationships in classifying an individual. Each finger was classified by its pattern and sub-pattern. Searches for a match were limited to the appropriate Henry group. Since the number of prints in a given group tended to be small, it was feasible to manually search for a match.

The Henry System not only allowed for manual searches. It also had important corroboration built into it; a crime scene partial fingerprint often was ruled out when the neighboring partials did not correspond to their expected patterns and sub-patterns.

Over the years, government agencies collected more and more fingerprints. The databases became so large that manual searches became increasingly time-consuming and impractical. In addition, it was clear that many sophisticated offenders did not obligingly limit their criminal activity to a single metropolitan area or state. Coupled with the growing size of the databases, this consideration generated pressure to nationalize and computerize the fingerprint system. By 1946, the F.B.I. had processed 100 million fingerprint cards in manually maintained files; by 1971, that figure had ballooned to 200 million cards.

With the introduction of computer based Automated Fingerprint Information System (AFIS) technology, the files were split into computerized criminal files and manually maintained civil files. Many of the manual files were duplicates; the records actually represented somewhere in the neighborhood of 25 to 30 million criminals, and an unknown number of individuals in the civil files.

Within the last 10 years, however, new

shapes and contours have been incorporated into the identification process. They include sweat pores, ridge width, shape, path deviation, and their governance. In addition, we now rely on the FBI's computerbased paperless Integrated Automated Fingerprint Information System (IAFIS) and the related regional Automated Fingerprint Identification systems instead of manual searches of conventional fingerprint cards. IAFIS is used by law enforcement, border patrol, and many other agencies including latent fingerprint agencies.

It is critical to realize that the now dominant IAFIS computer system does not incorporate the Henry System. We no longer have the reliability inherent in all 10 fingers. However, these computer systems could be modified to support the Henry System, alphabetic indexing, and individual fingerprint indexing.

The shift away from the Henry System has been a step backward. Regardless of what was said to Judge Milton Pollack regarding fingerprint governance during the two Daubert hearings in the famous Llera Plaza case, none of the witnesses addressed the question of why the fingerprint system was modified, and the lack of mathematical studies supporting: (1) the decision not to program the Henry Classifications into the new computer systems; and (2) the choice to incorporate pore and ridge measurements into the identification process.<sup>1</sup>

Many defense attorneys are so distrustful of fingerprints that they don't bother to defend against them. They simply state their reasons for disbelieving in fingerprints and hope the trial judge will be open to their distrust. Unfortunately many of their clients might be better served if an attempt was made to dispute their fingerprint identification that was based on the discovery of partial fingerprints. As the Henry Classification System factored in neighboring fingerprints and IAFIS does not, they could seek permission to determine if the correct patterns and sub-patterns are present in the neighboring partial fingerprints that point to their client.

## **Need for further research**

There are approximately 500 million criminal fingerprints in the FBI's IAFIS Fingerprint Repository. The current world population of fingerprints exceeds 60 billion. The population of fingerprints has increased so dramatically that we can

no longer naively assume the reliability of our current fingerprint standards. We need to conduct further testing.

That testing could—and should—take the form of data mining. Computer-based analysis that looks for patterns, trends, and associations within the repository can help us identify the best ways to use ridge information, pores, Galton Characteristics, additional sub-patterns, and other structural elements as identifying characteristics. This type of analysis is commonly referred to as data mining. Wikipedia, the free encyclopedia, says the following about data mining “...Although data mining is a relatively new term, the technology is not. Companies for a long time have used powerful computers to sift through volumes of data, such as supermarket scanner data, and produce market research reports...”

Every biometric system must be reevaluated and often recalibrated or retuned when a large number of new participants are added. For example, a person’s hair color might be unique when observing a small number of people. However, the uniqueness of hair color as an identifying characteristic vanishes when we compare millions of people.

Data mining can assist us in determining the best way to work with fingerprint ridges. For instance, we may want to develop an independent fingerprint identification system based solely on fingerprint ridges. We may also want to incorporate several new fingerprint sub-patterns. We might want to substantially increase or decrease the number of Galton Characteristics needed to serve as the basis for an identification. Data mining helps us find the path to these solutions.

## **Restoring the Henry System**

In general, the reform of the fingerprint system should follow where the research, including data mining, leads. However, it seems relatively clear that research will point to the need to reinstitute some version of the Henry System. On a daily basis our automated computer fingerprint systems— without any human intervention— check approximately 130,000 arrest booking, watch-list, criminal background pre-employment checks, and other go or no-go decisions. Although they are presented as 10 finger “matches,” the corroboration of neighboring fingers found in the Henry Classification System is lacking. For example, the early, prescreening

IAFIS step analyzes only the index fingers. If the prescreening yields a very low score, a non-match decision is made without analyzing the images of the other fingers.

Given the failure to analyze images of other fingers, the system can fail to identify the person who is the source of the fingerprint patterns that produced the latent image. Jeremy Jones is a recent example of this failure. Jones was an alleged serial killer who killed a woman each time he was released from custody. Even though the IAFIS library included images of Jones’ fingerprint patterns, the computer system failed to “match” those images to the new images produced each time Jones was re-arrested. Other IAFIS weaknesses can incorrectly match a prospective employee with someone who had a criminal past.<sup>2</sup>

There appears to be some proprietary Henry-like filters. If they work the government must mandate they be turned on or choose more reliable alternatives, e.g. a two finger match.

One additional, specific problem needs to be addressed. It has been estimated that at least 5 percent of the fingerprints that are in the IAFIS repository are attributable to aliases for individuals who have assumed multiple identities. These aliases are almost never found. As a result, recidivists who are convicted again may receive an undeservedly light sentence because the sentencing judge does not realize the full extent of the defendant’s criminal history.

## **Recommendations**

The Henry 10 Finger Classification System increases reliability by incorporating information from the neighboring fingerprint. It should be reinstated and used whenever possible. In particular, when feasible, it should be employed with partial (latent) fingerprints and with the daily 130,000 arrest booking, watchlist, employment background, and criminal checks.

In addition, the current fingerprint paradigm needs to be data-mined and then refined. There has been a huge population explosion since the advent of fingerprint analysis; and, to complicate matters, there has been a recent incorporation of new pore and ridge measurements. New empirical research should lead to improved match criteria and give us further confidence in the reliability of match or no-match decisions.

Aliases should be detected and corrected, and use of the Henry System ought to simplify the detection of aliases.

Until the above systemic recommendations are implemented, judges will have to decide on a case by case basis whether a fingerprint opinion is sufficiently reliable to pass muster under Daubert. Of course, defense attorneys will have to do their part to help judges make those decisions. For a variety of reasons, many defense attorneys put up little fight against fingerprint evidence. In many cases where the identification rests on partial fingerprints, it is worth putting up that fight. For example, since, unlike the Henry Classification System, IAFIS does not factor in neighboring fingerprints, defense counsel should consider seeking to discover any neighboring prints found at the crime scene. In a given case, the limitations of the existing system can raise grave doubts about the reliability of the match opinion. Given the stakes—not only justice in a particular case but national security itself— we must do better.

**MICHAEL CHERRY,**

president of Cherry Biometrics, designs identification systems. He is Vice Chair, Digital Technology Committee, National Association of Criminal Defense Lawyers (NACDL). (mcherry@cherrybiometrics.com)

**EDWARD IMWINKELRIED**

is the Edward L. Barrett, Jr. Professor at the University of California, Davis, School of Law. (ejimwinkelried@law.ucdavis.edu)

1. In *Llera Plaza*, 188 F.Supp.2d 549 (E.D.Pa. 2002) after initially deciding to bar expert testimony on the ultimate question of whether the fingerprints belonged to the defendant, Judge Pollack ruled that the testimony would be admissible as non-scientific evidence. However, the opinion contains no discussion of the questions raised in this article.
2. See, Edward J. Imwinkelried and Michael Cherry, *The Myth of Fingerprints*, *Champion Magazine*, September-October 2003, at 36; Michael Cherry and Edward Imwinkelried, *A cautionary note about fingerprint analysis and reliance on digital technology*, 89 *JUDICATURE* 334 (2006).

www.ajs.org *JUDICATURE* 57

# Will Adding Color During Superglue Fuming Enhance Latent Prints?

*(The following paper is an abstract from a 2006 Science Fair Project presented by the author. Thanks to Alan McRoberts for submitting this paper and the girl's story to The Print.)*

**By AVERY L. SMITH**  
**Raney Intermediate School**  
**Corona, CA**

## Objectives/ Goals

Superglue (cyanoacrylate) fuming is used by crime scene investigators around the world to find latent prints at crime scenes. The superglue, when heated, produces a cloud of cyanoacrylate fumes, which then attach to the oils left behind from fingers / hands that have touched an item. Color in a powder form is then applied to the print to make it more visible for comparison to known prints. My experiment questions whether adding color in a liquid form to the superglue during the fuming process will enhance the visibility of latent prints. I hypothesized that adding Glo-It paint to the process of superglue fuming will enhance latent prints the most.

## Materials

- 5 acrylic frames with a latent print from the same subject
- 1 .07 oz tube of super glue (cyanoacrylate ester)
- 1 1 mL glass dropper
- 1 aluminum foil 9" x 8"
- 1 cardboard box 10" x 10" x 10"
- Lightstick fluid (green)
- Glo-It Glow-in-the-Dark paint (yellow green)
- Glass stain (white)
- Highlighter ink (pink)

Five acrylic frames were prepared with a latent print from the same subject. Five test groups were set up with a frame.

Test 0 - was the test standard to compare other prints and was fumed using the standard superglue

fuming technique with no color added.

Test 1 - used lightstick fluid (green).

Test 2 - used Glo-It Glow-in-the-Dark paint (yellow-green)

Test 3 - used glass stain (white)

Test 4 - used highlighter fluid (pink)

## Method

The method of superglue fuming I used was heating a coffee warmer to 150 °F, placing superglue with color liquid added in a foil test area on the coffee warmer, placing test frame 3 inches from the coffee warmer, and covering with a cardboard box for 10 minutes. Each test was examined in a black painted box, with the naked eye, and a magnifying glass with a black light attached.

## Results

Test # 4 using the highlighter fluid (pink) handprint was very visible. Print lines were readable and glowed with the black light. Points of identification were easy to match. This was the best overall print for visibility and comparison.

## Discussion

The tests disproved my hypothesis that the Glo-It Glow-in-the-Dark paint would enhance the visibility of latent prints. The pink highlighter fluid had the best results. The findings led me to believe that the Glow-It paint was too thick of fluid to mix well with the superglue. The glass stain was too runny, and white might not have been the best color to use. The lightstick fluid was a close second in visibility.

## Conclusion

I discovered that adding something as simple as hot pink highlighter ink to the superglue prior to the fuming process will enhance the visibility of a latent print.

## Acknowledgments

Thank you to Dr. Henry Lee, a great role model and inspiration; Jeremy and Cari Smith (parents) for getting supplies and watching me fume; Cal-Draulics, Inc. (Grandma and Grandpa Johnson) for allowing me to use their place of business to do my experiments; Pam Smith (Grandma) for helping with

supplies; and Stan Cox (Grandpa) for helping with supplies.

## The Story Behind the Science Project

When Lloyd P. Thomas, a latent print examiner with the Seattle Police Department, was researching whether adding dye to superglue prior to the fuming process would enhance the procedure, he came across the above research conducted by Avery Smith, a middle-school student at Raney Intermediate School in Corona, California.

Avery Smith is now 13 years old and is in the 8th grade. She loves science. She plans on majoring in chemical engineering and mechanical engineering, and after college, her goal is to become an "F.B.I. Forensic Scientist". Ever since kindergarten she has wanted to be a scientist. Her favorite TV shows are Trace Evidence, Forensic Files, and Body of Evidence on Court TV, and two of her favorite people are Dr. Henry Lee and Dale Hineman.

Last year, her 7th grade science fair project, "Superglue Girl to the Rescue! Will Adding Color During Superglue Fuming Enhance Latent Prints?" (Figure 1), took her to the California State Science Fair. This was after winning an Honorable Mention at her junior high school, First Place at the district fair, and First Place at the R.I.M.S. (Riverside, Inyo, Mono, and San Bernardino County) Inland Science and Engineering Fair. Although she did not place at the state science fair last year, she hopes to return this year and WIN!

In the 6th grade, her science project was "Do Females or Males Make a Better Eyewitness of a Crime?" She had fun with that and won a cash award, but she didn't get to go on to the county fair. After completing the 6th grade competition, her first thoughts were to figure out a project involving DNA because she is planning to be a DNA specialist when she finishes college. However, the science fair rules on using blood made it hard to do a DNA project. So then she started thinking about things she had seen on Court TV and remembered how cool it is that superglue, when heated, attaches to latent prints. She had seen some shows on the method and then started researching cyanoacrylate fuming on the Internet. For a few weeks she tried different ideas on how she could

improve the method. Then she read about adding color after the superglue process to make the print stand out and that's when it clicked that maybe she could enhance the print **during** the process by adding color to the superglue **before** fuming. She searched the Internet for information on adding color during the process instead of after and really didn't find any information. That's when she knew she had her science project!

At the beginning of last year she focused on making the latent print more visible under a black light and chose things that would glow under a black light. She picked glow paint, glow stick fluid, white glass paint, and pink highlighter fluid. The pink highlighter in her initial tests seemed to glow more and make the print more visible. She tested each variable once and knew she needed to perform the tests more than once to have more accurate results.

During the interview process at each science fair, the judges really didn't have questions for her. Most of the judges had never even heard of cyanoacrylate fuming. *At the state science fair, one of the judges interviewing her told her to stop talking because her project "had no value or use". He just walked away from her project and went on to the next, without another word.* She was shocked and disappointed by his comment, but she believed then and still does that her project is important and does have a use.

At the awards ceremony, she noticed that almost all of the winning projects were second- and third-year projects. Therefore, she is continuing on her project this year, focusing more on making a fumed latent print show up in color that is more visible even without a black light. She refuses to let that judge's comments discourage her! She hopes that someone doesn't copy her project because she has found her project and state science fair abstract on several science fair idea web sites.

She was so thrilled when she went back to school in November to find out that a Seattle Latent Print Examiner, Lloyd Thomas, had found her project and was interested in it. It gave her new hope that her work was really worth something. With Lloyd's assistance, she plans to do a poster presentation with

her 2007 Science Project this year at the C.S.D.I.A.I. and I.A.I. joint conference in San Diego.

[Editorial comment by Alan McRoberts - When this local girl's story was brought to my attention by Lloyd, I thought it would be a wonderful story for *The Print*. Although the girl's concept is not totally new (many of us will remember aerosol cans of fluorescent spray glue that were tested in the late 1980s), the lack of insight by the judge in suggesting that this project had "no value" is disturbing. Beyond the potential value of Avery's actual project, the girl's interest and creativity should be a motivator for all of us. Thanks to Lloyd for bringing forth her story.]

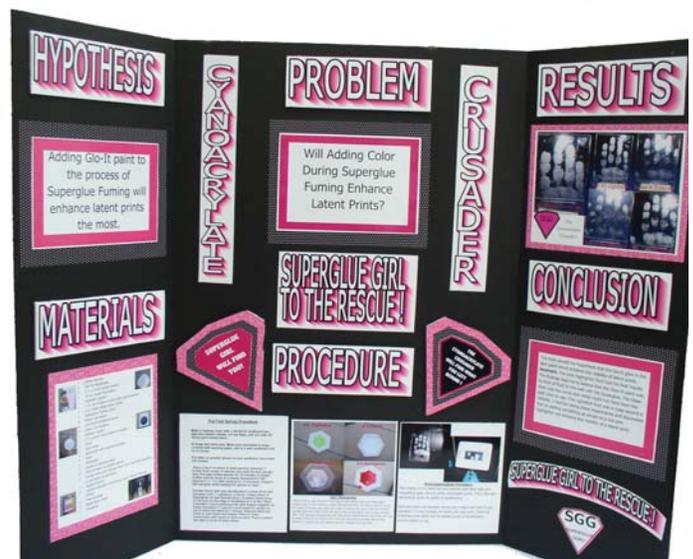


Figure 1  
"Superglue Girl to the Rescue!" 2006 science project.

# Sheriff's deputy was investigative pioneer

**OBITUARY:** Westchester resident helped solve 1957 murder of El Segundo Officers through fingerprint analysis

By Larry Altman, Daily Breeze, Dec 8, 2006



Howard Speaks, the sheriff's deputy whose discovery of partial fingerprints at the scene of the killing of two El Segundo police officers in 1957 helped solve the case more than 45 years later, has died. He was 85.

The Westchester resident and pioneer in the field of crime scene investigations died at home Nov. 30 of natural causes, his daughter, Cathe Gordon, said.

Speaks' work on July 22, 1957, was the key to solving the killings of officers Richard Phillips and Milton Curtis, even though the technology necessary for that to happen was not created until the new millennium.

"If it hadn't been for what he had been able to do all those years ago ... that case would not have been solved," sheriff's homicide Capt. Ray Peavy said.

Curtis and Phillips had no idea that night that the car they were pulling over on Rosecrans Avenue was driven by a man who had just raped a 15-year-old girl in Hawthorne, stranding her and three friends naked and taking their 1949 Ford.

The man shot both officers on what was then a two-lane road, sparking a massive manhunt.

Speaks recovered partial thumbprints inside the car and spent decades trying to match them to a name.

His daughter said he carried a copy everywhere he went, stopping at police stations across the country over the years to try to identify them.

"It didn't matter what he was doing, where he was, he would always have that fingerprint with him, and he would try to compare it" Gordon said.

Police revisited the case in 2002, submitting the prints to a new national database that included prints from South Carolina.

They matched Gerald Mason, a 69 year old husband and father who had owned a service station in Columbia and raised a family there after the crime.

He had once been arrested in a burglary and his fingerprints had been on file for years.

Mason's stunned wife, who knew nothing about the killing, watched deputies arrest him Jan 29, 2003. He pleaded guilty two months later in Los Angeles Superior Court and was sent to prison for the rest of his life.

"I've been waiting for this day a long time, but the wait was worth it," Speaks said outside court that day.

Born May 13, 1921, Speaks grew up in Missouri. He served as a radar operator on a troop ship in the U.S. Navy in World War II, and settled in Southern California in 1944.

He met his wife, Barbara, and joined the Sheriff's Department, where he became an expert on fingerprints.

In the 1950s and '60s, he helped to develop and teach the ninhydrin process, obtaining fingerprints from inside a criminal's rubber gloves, from paper and other porous surfaces.

He also helped establish the Sheriff's Department's chemical-processing laboratory, and taught classes at East Los Angeles College.

"Many people in the Southern California area have that have gone into crime lab and fingerprint work were originally trained by Howard Speaks" said Bill Leo, a Sheriff's Department forensic identification expert and historian for the Southern California Association of Fingerprint Officers.

Speaks retired from the Sheriff's Department in 1975, but continued to work until recently as an expert trial witness on fingerprints.

In 2002, the organization awarded Speaks a lifetime achievement award (the Welford Award). His wife died in 2003.

Speaks is survived by two daughters, Cathe and Terry, seven grandchildren and three great-grandchildren.

Services were held on Dec 8, 2006 at the Church of the Way in Van Nuys. Burial at Inglewood Park Cemetery.

# MINUTES OF DECEMBER MEETING

**DATE:** December 9, 2006  
**LOCATION:** Portafino Resturant, Whittier  
**HOST:** Craig Johnson  
**SECRETARY:** Mari Johnson  
**PROGRAM:** Christmas Program  
**CALL TO ORDER:** Business meeting, 1335 hours by President Susan Garcia  
**PLEDGE OF ALLEGIANCE** Lead by Past President Dell Freeman  
**ATTENDANCE:**

**PAST PRESIDENTS:** Dell Freeman (1973), Bill Leo (1996), Alan McRoberts (1991), Bob Goss (2001), Steve Tillmann (2002).

**EXECUTIVE BOARD:** Mari Johnson, Lisa DiMeo, Marvin Spreyne, Amy Hines, Debbie Stivers, Steve Tillmann, Craig Johnson, Susan Garcia, Bill Leo. (Absent: Clark Fogg, Sarah Watson and Sue Baker)

**Members and guests present:** 48

## OLD BUSINESS:

### Second Readings:

None

## Swear Ins by Past President Bob Goss

Lacy Johnson, Hemet Police Dept.  
Timothy Sutcliffe, Santa Barbara Sheriff's Dept.  
Nancy Torres, Santa Barbara Sheriff's Dept.

## OTHER:

Alan McRoberts spoke to the members and guest about Howard Speaks. Howard Speaks past away November 30, 2006. Howard became a member of SCAFO in 1975 and was a pioneer in the field of fingerprints. He was always happy to share his knowledge and held many classes in the field of fingerprints. Howard was a great man and will be remembered fondly and missed greatly.

The Excutive Board members for 2007 were sworn in by Past President Bob Goss. Craig Johnson President, Marvin Spreyne

***"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***

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First Vice President, Amy Hines Second Vice President, Mari Johnson Secretary, Debbie Stivers Sergeant at Arms, four Directors Lisa Jackson, Amy Adams, Terri Eklund, and Mariah O'Donnell, Bill Leo Historian, Lisa DiMeo Treasurer, Steve Tillmann Editor, and Susan Garcia Chairman of the Board. Clark Fogg Parliamentarian was not present and will be sworn in at the January 6, 2007 Excutive Board Meeting.

Susan Garcia presented our new President, Craig Johnson, with his gavel and turned the meeting over to him. Craig thanked Susan for all her hard work and presented her with a plaque to display the gavel she used during her service as President.

## ANNOUNCEMENTS:

None

## ATTENDANCE DRAWING \$25.00:

**Tim Sutcliffe**

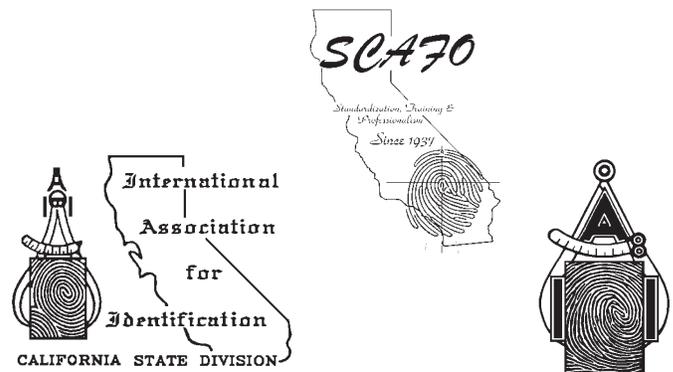
## DOOR PRIZES:

Provided by Dick Rogers from Armor Forensic's donated money towards some real nice door prizes. Thank you for all the things you have provided to SCAFO this year. Bill Leo who found the wonderful collectors plate of a fingerprint being testified to in court (a great Ebay find). Dana Goss and SCAFO.

## MOTION TO ADJOURN:

Amy Adams  
Second: Marvin Spreyne

**MEETING ADJOURNED:** 1420 hours



**APRIL MEETING  
PAST PRESIDENT'S NIGHT  
70TH SCAFO ANNIVERSARY**

**MARCH AIRBASE MUSEUM  
APRIL 28, 2007  
FINE DINING  
DANCING  
ENTERTAINMENT**

**FORMAL OR BUSINESS ATTIRE**

More info to follow, Contact Bill Leo, [leo@scafo.org](mailto:leo@scafo.org) or Steve Tillmann, [tillmann@scafo.org](mailto:tillmann@scafo.org) for more info

*Special Note: Past Presidents are invited at no cost for the dinner, come and enjoy the evening with old freinds*

***In This Issue***

- pg.  
1 Fingerprints, shotgun shells led to arrest in old police killing  
2 Fingerprints might paint a new picture of Da Vinci  
3 Presidents Message  
4 How we can improve the reliability of fingerprint identification  
7 Will adding color during Superglue fuming enhance latent prints  
10 Obituary -Speaks  
13 Minutes of December Meeting

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

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

April 28, 2007

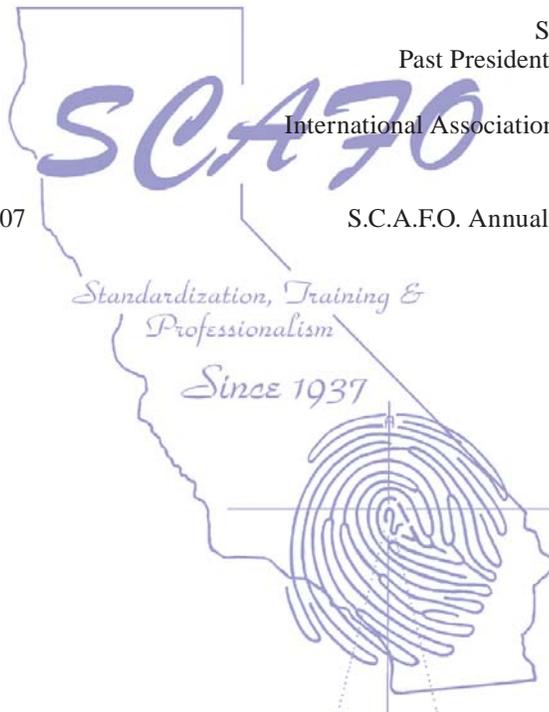
S.C.A.F.O. Meeting  
Past President's Dinner Meeting

July 22 -27, 2007

International Association for Identification  
San Diego, CA

October 1 - 2, 2007

S.C.A.F.O. Annual Training Seminar  
Riverside, Calif.



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