

Case Readings

The “Bobby Joe” Long Serial Murder Case

A Study in Cooperation

Capt. Gary Terry

Hillsborough County Sheriff’s Office, Tampa, Florida

SA Michael P. Malone, M. S.

Hairs and Fiber Unit, Laboratory Division, Federal Bureau of Investigation, Washington, DC

Reprinted in part from *FBI Law Enforcement Bulletin*, November/December, 1987.

On May 13, 1984, the Hillsborough County Sheriff’s Office (HCSO) responded to the scene of a homicide in southern Hillsborough County, where the body of a nude female had been discovered. This was the beginning of an intensive, 8-month investigation into the abduction, rape, and murder of at least 10 women in 3 jurisdictions in the Tampa Bay area. This investigation would ultimately involve personnel from the HCSO, the Federal Bureau of Investigation (FBI), the Tampa Police Department (TPD), the Pasco County Sheriff’s Office (PCSO), and the Florida Department of Law Enforcement (FDLE).

Never before had the HCSO been involved in a serial murder case of this magnitude. During one period of time in the 8 months, the killer was averaging a murder every other week. This series of grisly killings would eventually end due to the efforts of the homicide detectives who pored over each crime scene striving to find any and all physical evidence, the expertise and skill of the examiners in the FBI Laboratory who analyzed this evidence, the close cooperation and continu-

ous exchange of information between the law enforcement agencies involved, and the fact that the killer released one of his victims alive, yielding physical evidence that would ultimately tie all of the cases together.

The first body, nude and bound, of a young Oriental female was discovered by young boys late in the afternoon, in a remote area of southern Hillsborough County. This victim was identified as Lana Long, a 20-year-old Laotian female. She was employed as an exotic dancer at a lounge located on Nebraska Avenue in the city of Tampa. She normally worked the evening shift and was known to use alcohol and drugs. Long was last seen in the apartment complex where she lived. This was in an area near the University of South Florida, where many of the residents were transient. She had been missing for approximately 3 days.

Long had been dead for approximately 48 to 72 hours. She was lying face down with her hands tied behind her back with rope and fabric. A rope was also observed around her neck which had a "leash-like" extension approximately 14 inches in length. It was noted that the ropes around the wrists and neck were different in nature.¹ Under the victim's face was a piece of fabric which may have been used as a gag. The victim's feet were spread apart to a distance of over 5 feet, and it appeared as if the body had been deliberately "displayed" in this manner. The victim's clothing and personal belongings were never found. During the autopsy a large open wound was discovered on the victim's face. Decomposition was extensive in this area, but the cause of death was determined to be strangulation. Tire impressions were found on the roadway leading to the body. It appeared that three of the tires were of different brands and all were worn.

Hillsborough County had been averaging about 30 to 35 homicides per year, and while some prior victims had been bound, none had been bound in this manner. Prior to the death of Long, the HCSO had completed a difficult homicide investigation in which the forensic work had been

done by the FBI Laboratory. The close cooperation between the HCSO and the FBI Laboratory resulted in the successful conclusion of the case and the conviction of the individual who had committed the murder. Thus, the decision was made to fly the evidence in the Long murder to the FBI Laboratory in Washington, D.C., accompanied by an HCSO homicide detective.

The hairs that were removed from the evidence were examined and found to be either the victim's hairs or unsuitable for comparison. The serology examinations were also negative due to the decomposition of the body. The knots in the ropes were examined and were identified; however, these knots were extremely common and not unique to any particular profession or occupation. The tire casts of the tire tread impressions were examined and photographs of these impressions were kept for future reference.

The fibers which were removed from the items in this case were also examined, and this evidence would provide the first important lead in the case. Eventually, it would prove to be the most critical evidence of the entire case. The equipment used for the fiber examinations consisted of a stereoscopic microscope, a comparison microscope, a polarized light microscope, a microspectrophotometer, a melting point apparatus, and eventually, an infrared spectrophotometer. A single lustrous red trilobal nylon fiber was found on a piece of fabric found near the victim. Because of the size, type, and cross-sectional shape of this fiber, it was determined that this fiber was probably a carpet fiber. Because the body had been exposed to the elements for a substantial period of time, and fibers which have been transferred are very transient in nature,² it was surmised that most of the carpet fibers which had originally been transferred to the victim's body had been lost. Since the victim's body was found in a remote area, she had probably been transported in a vehicle, and the carpeting of this vehicle was probably the last item she had been in contact with. Furthermore, since there is normally a transference of trace materials (i.e., fi-

bers) when two objects come into close contact, it was also surmised that the killer was probably driving a vehicle with a red carpet. Vehicular carpets readily shed their fibers, and these types of fibers are commonly found on the bodies of victims at crime scenes. These fibers could then provide a critical “link” in determining whether a serial murderer was operating in the Tampa Bay area.

The above information was provided to the HCSO, with the caution that the fiber information should be kept confidential. Experience has shown that if the existence of fiber evidence is publicized, serial killers might change their pattern and start disposing of the bodies in such a manner that this fiber evidence is either lost or destroyed. The most famous example of this is the Wayne Williams case. [See pp. 87–97.] The possibility also existed that if the killer knew of the existence of the red carpet fibers, he would probably get rid of the vehicle that was the source of this evidence.

Two weeks later, on May 27, 1984, at approximately 11:30 A.M., the body of a young white female was discovered in an isolated area of eastern Hillsborough County. The victim was found nude, with clothing near the body. The victim was on her back, with her hands bound at the waist and a ligature around the neck. Her throat had been cut, and she had sustained multiple blunt trauma injuries to the head. The victim had been at the scene for approximately 8 to 10 hours. The victim’s hands were bound to her sides with a clothesline type of rope. The ligature at the neck was made of the same type of rope and was tied in a type of hangman’s noose. There was a 3- to 4-foot length of rope extending from the noose. The victim also had what appeared to be a man’s green T-shirt binding her upper arms. Hair and fiber evidence were collected from the victim’s body.

Several tire tread impressions were located in a dirt roadway that passed approximately 8 feet

from the victim's body. These impressions appeared to have been caused by a vehicle turning around in the area next to the victim's location.

The responding homicide detectives believed this homicide was related to the Long case. Since the victim was unidentified, a composite drawing of the victim was made and released to the media. It was through this effort that the victim was identified as Michelle Denise Simms, 22 years old and a native of California. She was last seen the previous night talking with two white males near Kennedy Boulevard in an area that is popular for working prostitutes. Simms had previously worked as a prostitute.

The evidence collected from where Simms was found was immediately flown to the FBI Laboratory. Since this had been a "fresh" site, the chances of recovering significant evidence would be tremendously improved. The tire casts were examined and one of the impressions from the right rear area was identified as being from a Goodyear Viva tire, with the white wall facing inward. The tire impression from the left rear area could not be immediately identified, as it was not in the FBI Laboratory reference files. However, the HCSO was provided with the name of an individual in Akron, Ohio, who was a tire expert, and the tire casts were flown to Akron, where the tire impression was identified as being made by a Vogue tire, an expensive tire that comes only on Cadillacs. A Vogue tire was obtained and photographed in detail.

The fibers removed from the evidence revealed red lustrous trilobal nylon fibers, which matched the Long fiber. In addition, a second type of fiber, a red trilobal delustered fiber, was found, indicating that the killer was driving a vehicle containing two different types of carpet fibers.

Grouping tests conducted on semen stains identified on the clothing of Michelle Simms disclosed the presence of the "B" and "H" blood group substances.

The hairs from the body and clothing of Michelle Simms were examined. Brown, medium-length Caucasian head hairs were found that could have originated from the killer. Human hair is valuable evidence, and in addition to providing information on race, body area, artificial treatment, or other unusual characteristics, it can be strongly associated with a particular individual when matched with a known hair sample from the individual. With this information, the HCSO was able to build a “physical evidence” profile of the killer, which was distributed to other law enforcement agencies; however, the information on the carpet fibers and cordage was kept confidential.

On June 24, 1984, the body of another young white female was found, the third victim in this series of homicides, although this would not be known for a few months. The victim was found in an orange grove in southeastern Hillsborough County. The victim was found fully clothed, and the body was in an advanced stage of decomposition. The total body weight of the victim, including her clothes, was only 25 pounds. There were no ligatures present, and the victim was not found near an interstate as the first two victims had been. During the initial stages of the investigation, the victim’s boyfriend failed a polygraph examination and appeared to be an excellent suspect. Evidence from the case was sent to the FBI Laboratory; however, no request was made for this evidence to be compared to the evidence from the previous two homicides until much later.

The victim was identified as Elizabeth B. Loudenback, 22, of Tampa. Loudenback was employed as an assembly line worker and was last seen at approximately 7:00 P.M. on June 8, 1984. She was known to frequent the area of Nebraska Avenue and Skipper Road in northern Hillsborough County, but had no criminal history.

The hairs from the Loudenback case were examined with negative results. Serology examina-

tions were also negative due to the extensive decomposition of the body. The fibers, examined later, were determined to be both types of the red carpet fibers evidenced in the two previous cases. If this examination had been done initially, it would have been immediately known that Loudenback was, in fact, the third victim. When the evidence arrived at the FBI Laboratory, it was not assigned to the examiner who had worked the first two homicides. One of the most important aspects of handling a serial murder investigation is to have the same crime scene technician at all crime scenes and the same forensic examiners at the laboratory, so that one individual can become totally familiar with the forensic portion of the investigation, in order to recognize patterns and associations which might be present.

On October 7, 1984, the nude body of a young black female was discovered near the Pasco/Hillsborough County line, lying next to the dirt entrance road of a cattle ranch. The victim's clothing, except for her bra, was found next to the body. The bra had been tied in a knot and was found hanging from the entrance gate. The head area was in an advanced state of decomposition, much more so than the remainder of the body. The autopsy revealed a puncture wound to the back of the neck, but a gunshot wound to the neck was the cause of death.

The victim was identified as Chanel Devon Williams, an 18-year-old black female. The victim had been previously arrested for prostitution. She was known to frequent a gay bar on Kennedy Boulevard in Tampa. She had been last seen on the night of September 30, 1984, by another prostitute with whom she had been working. The pair were working the area of Nebraska Avenue when Williams' companion was solicited by a "john." They were approximately two-tenths of a mile from the motel where they were conducting their "business." Williams' companion rode back to the motel in the "john's" car, and Williams was instructed to slowly walk back to the motel in order to check on her companion. Williams never made it back to the motel.

The homicide detectives who responded to the place Williams was found began looking for similarities to the previous homicides. Other than the fact that the victim was found nude in a rural area and that Williams was a prostitute, there were no other apparent similarities.

At this point in the investigation, the HCSO requested a criminal personality profile be done by the FBI on the Long, Simms, and Williams cases, and one other homicide in which another female had been shot. A profile was returned (see Figure R1-1) indicating strong similarities between the Long case and the Simms case. However, due to various differences (race, lack of ligatures, and cause of death), it was believed that the Williams case and the other above-mentioned cases were not related.

The evidence from the Williams case was sent to the FBI Laboratory a second time, and both types of the red nylon carpet fibers were found on various articles of her clothing. A brown Caucasian pubic hair, which would ultimately be associated with Robert Long, was also discovered on the victim's sweater. Grouping tests conducted on semen stains identified on Williams' clothing disclosed the presence of the "A" and "H" blood group substances. This was inconsistent with the grouping results found in the Simms case; however, this could be due to their working as prostitutes.

On the morning of October 14, 1984, the body of a white female, nude from the waist down, was discovered in an unpopulated area of northeastern Hillsborough County. The body was found in an orange grove approximately 30 feet from a dirt road, apparently dragged from the roadway. The body had been placed on a gold-colored bedspread, and a blue jogging suit was tied outside the blanket. The bedspread had been tied at both ends with common white string. The victim's hands were bound in front with a red and white handkerchief. Her right wrist and legs were bound with another white string. The victim's feet were bound with a drawstring, and there were

ligature marks on the victim's throat. She had been struck on the forehead and strangled.

The victim was identified as Karen Beth Dinsfriend, a 28-year-old cocaine user and prostitute.

Dinsfriend had been working the area of Nebraska and Hillsborough Avenues and was last seen during the early morning hours of October 14, 1984.

Upon arriving at the scene, the detectives strongly suspected that Dinsfriend's death was related to the previous homicides. The ligatures were almost a "signature" of the offender. Red fibers were found when the body was examined at the medical examiner's office.

By this time, all homicide detectives of the HCSO were assigned to the case. Other assaults, suicides, and unrelated homicides were assigned to property detectives. Six tactical deputies were assigned to do night surveillance in the suspect's "hunting grounds," the area of Nebraska Avenue and West Kennedy Boulevard in North Tampa. The patrol divisions were again given alerts and were continually sending in field interrogation reports (FIR), which were checked. A personal computer was purchased specifically for this investigation and was used to record information on vehicles, vehicular tags, information gathered from talking to prostitutes, and information derived from the FIRs. At this point, the HCSO again went "public" to warn the community about these related homicides. However, the fiber information was kept confidential.

The evidence from the Dinsfriend disposal site was sent directly to the FBI Laboratory, and it yielded valuable evidence. The knots in the ligatures were similar to the knots from the previous cases; a brown Caucasian pubic hair, eventually associated with Robert Long, was found on the bedspread; and semen was found on the bedspread and sweatshirt and tests again disclosed the "A" and "H" blood group substances. The bedspread was tested and found to be composed of gold delustered acrylic fibers. These fibers would also provide a link to Long's vehicle.

Both types of red nylon carpet fibers were again found on most of the items and were microscopically compared to the previous carpet fibers. The color produced by the dyes from the red carpet fibers was also compared using the microspectrophotometer. The microspectrophotometer is one of the most discriminating techniques which can be used in the comparison of fibers. Since these carpet fibers both microscopically and optically matched the red carpet fibers from the previous five cases, it was strongly believed that all of these fibers were consistent with having originated from the same source, and therefore, all of the cases were related.

On October 30, 1984, the nude mummified remains of a white female were discovered near Highway 301 in northern Hillsborough County just south of the Pasco County line. No clothing, ligatures, or any other type of physical evidence were found at the scene. Due to the amount of time the body was exposed to the elements and the fact that the victim was nude, no foreign hairs, fibers, semen, or any other type of evidence were discovered. This victim would not be identified until after the arrest of the suspect, Robert Long, who referred to the victim by her street name, "Sugar." Using this information, the HCSO was able to identify the victim as Kimberly Kyle Hopps, a 22-year-old white female, last seen by her boyfriend getting into a 1977-78 maroon Chrysler Cordoba. Hopps would eventually be associated with Long's vehicle through a comparison of her head hairs with hairs found in his vehicle.

On November 6, 1984, the remains of a female were discovered near Morris Bridge Road in Pasco County just north of the Hillsborough County line. The bones of the victim were scattered about a large area; however, a ligature was found. Another ligature was discovered on an arm bone. A shirt, a pair of panties, and some jewelry were also found. Human head hairs, presumed to be from the victim, were also recovered.

On learning of the discovery of this body, the Hillsborough homicide detectives met with the

Pasco County detectives, and because of the ligatures, believed that this case was related to their homicides. The two agencies worked together to identify the victim, Virginia Lee Johnson, an 18-year-old white female originally from Connecticut. It was learned that she split her time between Connecticut and the North Tampa area, working as a prostitute in the North Nebraska Avenue area in Hillsborough County.

The evidence from the Johnson site was sent by the PCSO to the FBI Laboratory. Again, due to the extensive decomposition, the body yielded very little physical evidence; however, in the victim's head hair from the crime scene a single red lustrous carpet fiber was found, relating this case to the others. Eventually, Virginia Johnson would also be associated with Robert Long's vehicle through a transfer of her head hairs.

On November 24, 1984, the nude body of a young white female was found on an incline off of North Orient Road in the City of Tampa, involving yet a third jurisdiction in the homicides. The victim had been at the scene less than 24 hours. A wadded pair of blue jeans and a blue flowered top were near the body. The victim was wearing knee high nylons; the body was face down with the head at the lower portion of the incline. Faint tire impressions were observed in the grass next to the roadway, and a piece of wood with possible tire impressions was found. It appeared that the killer had pulled off the road and had thrown the body over the edge and onto the incline. Examination of the body revealed that fecal matter was present on the inside of the victim's legs and on the exterior of the clothing. The body had a pronounced ligature mark on the front portion of the neck. There were also ligature marks on both wrists and on both arms; however, no ligatures were found.

This victim was identified as Kim Marie Swann, a 21-year-old female narcotics user, who worked as a nude dancer. She was last seen walking out of a convenience store near her parents'

home at approximately 3:00 P.M. on November 11, 1984.

When the Tampa Police Department responded and noted the ligature marks on the victim, they immediately called the HCSO and requested that they also respond. This homicide was also believed to be related to the previous seven homicides.

The evidence from the Swann disposal site was sent to the FBI Laboratory. The tire tread impressions on the board bore limited design similarities to the tire impressions from the Lana Long and Michelle Simms homicides. Again, red nylon carpet fibers were found on the victim's clothing. The head hair of the victim was examined and would eventually be associated with the suspect's vehicle.

Even though the three jurisdictions now directly involved in the eight homicides continued to work separately on their own cases, there was continual exchange of information among these agencies, which enabled the HCSO to learn that the Tampa Police Department sex crimes detectives were working on an abduction and rape of a 17-year-old white female. This exchange of information would ultimately lead to the big "break" in the case, a case which had completely captivated the attention of the Tampa Bay area and one which was beginning to attract national attention as well.

On November 3, 1984, a young girl, Lisa McVey, was leaving a doughnut shop in northern Tampa when she was abducted. The offender took her to an unknown apartment and sexually assaulted her for 26 hours before releasing her. The HCSO urged the Tampa Police Department to send their rape evidence to the FBI Laboratory, and on November 13, 1984, the FBI Laboratory called with the biggest break yet in the serial murder case; they found the same red fibers on McVey's clothes as had been found on the homicide victims.

After the rape case had been linked to the murders, a task force was formed the next day, consisting of the Hillsborough County Sheriff's Office, the Tampa Police Department, the Florida Department of Law Enforcement, the Pasco County Sheriff's Office, and the Federal Bureau of Investigation. The rape victim, McVey, was extensively interviewed and recalled that after leaving the apartment where she was held, the suspect stopped at a "24-hour teller machine" to withdraw some money at approximately 3:00 A.M. She described the suspect's vehicle as being red with a red interior and red carpet, with the word "Magnum" on the dash. En route to the release site, the victim recalled peeking out from under the blindfold and seeing a Howard Johnson's motel as they drove up on the interstate.

At this time, there were approximately 30 officers assigned to the task force. They immediately flooded the North Tampa area searching for the apartment and vehicle (only a 1978 Dodge Magnum has the word "Magnum" on the dash). A task force member was flown to the State capital and returned with a list of every Dodge Magnum registered in Hillsborough County. An examination of the computer printout of these registrations revealed Robert Joe Long's name as a listed owner of a Dodge Magnum.

Each team of detectives was assigned certain areas to search, and as one team drove to their area, they noticed a red Dodge Magnum driving down Nebraska Avenue in North Tampa. The vehicle was stopped, and the driver was told that they were looking for a robbery suspect. The driver, identified as Robert Joe Long, was photographed and a field interrogation report was written.

During the same time period, bank records for all bank machines in North Tampa were being subpoenaed. These bank records revealed that Robert Long had used the 24-hour teller machine close to his apartment at approximately 3:00 A.M. on the morning the rape victim was released.

The rape victim identified Long as her assailant from a photo selection. Based on McVey's

statements, both an arrest warrant and a search warrant were drawn up and approved by a circuit court judge.

Robert Long was located at his apartment approximately 2 hours after being stopped by the task force members. They began a 24-hour surveillance of Long, also using aircraft to minimize the chances that Long would spot the surveillance teams.

The task force then consulted the Behavioral Science Unit at the FBI Academy for guidelines to use when interviewing the suspect. A Special Agent from the FBI Laboratory in Washington was flown to Tampa for an immediate comparison of fibers from the suspect's apartment and vehicle and to assist in the crime scene searches. An aircraft was standing by so that after the arrest this Agent could be flown immediately to the closest FDLE laboratory which had the special microscope required for comparison of the fiber samples.

The following teams were organized from the task force:

1. Arrest team selected to physically arrest Long. Two of these officers were selected to interview Long at the office after the arrest.
2. Search and seizure team for the vehicle.
3. Search team for the residence.
4. Neighborhood survey team to interview Long's neighbors in his apartment complex after the arrest and before any information was released to the media.

After all task force teams were at their assigned locations, the signal to effect the arrest was given. By this time, Long was in a movie theater; as Long walked out of the theater, he was arrested. This arrest occurred only 36 hours after the task force was formed.

Long was returned to his apartment where approximately 10 to 15 detectives were waiting. In this jurisdiction (Hillsborough County), it is preferred to serve a search warrant while the owner of the property is there to witness the search. In this case, an embarrassed Long refused to exit the police vehicle and witness the search. Long was then taken to the HCSO operations center for interrogation. The interview was begun after the interviewing officers had consulted with the FBI Agent present who had prepared the criminal personality profile. The Agent advised that this suspect would most likely cooperate if the officers displayed both their authority and a thorough knowledge of the case.

The officers opened the interview by carefully talking only about the McVey rape and abduction until the suspect confessed to the McVey case. Then, the detectives began going into the other homicide cases. Long denied any involvement in the homicides initially.

Meanwhile, the suspect's vehicle had been brought to the Sheriff's office where it was being searched. The vehicle was found to have the Vogue tire and the Goodyear Viva tire, all with the white wall inverted and in the exact location on the vehicle as had been suspected. A sample of the carpet was removed from the vehicle, and the FBI fiber expert was immediately flown with this sample and previous fiber samples to the FDLE lab in Sanford, Florida, which had a comparison microscope. A short time later, the Agent telephoned the HCSO confirming that the fibers from Long's vehicle matched the red carpet fibers found previously on the victims. Long continued to deny committing the murders until the fibers were matched. The interviewing detectives then explained the physical evidence to the suspect. They also explained the significance of the matched fibers and what other comparisons would be done, i.e., hair, blood, etc. At this time, the suspect confessed.

The suspect gave a brief description of each homicide. He admitted killing Loudenback (victim

#3) and using her money card. In each case, Long had talked the victims into his vehicle, immediately gaining control of them with a knife and gun. He then bound them and took them to various areas where he sexually assaulted and then murdered them. The suspect also drew a map showing where he had placed victim number nine. This victim had been abducted from the City of Tampa during an earlier part of the investigation, and the Tampa Police Department had informed the HCSO of this fact. They believed she fit the “victim profile” but she remained missing until Long told them where to find the body.

Eventually, a total of 10 homicides which had occurred in and around the Tampa Bay area over a period of approximately 8 months were attributed to Long (see Table R1–1). The victims ranged from 18 to 28 years in age, and the majority of the victims were prostitutes. Most victims were strangled and/or asphyxiated; however, one was shot and one died of a cut throat....

As a result of laboratory examinations, numerous associations were made between the various crime scenes, the suspect, the victims, and the suspect’s vehicle. (See Table R1–2.) The probative value of these associations was explained to the prosecutors from the Hillsborough County State Attorney’s Office and the Pasco County State Attorney’s Office. The importance of the fiber evidence was apparent from the beginning, as 8 of the 10 victims were associated with Long’s vehicle through fiber comparisons. The importance of the hair evidence also began to emerge as all of the forensic examinations were completed. Six of the victims were associated to Long’s vehicle through hair transfers, even though Long had thoroughly vacuumed his Dodge Magnum the day before he was arrested. Two of the 10 victims were associated directly to Long by transfer of his hairs to these victims. The significance of the ligatures and knots should not be overlooked as these provided a valuable link between cases. The tire tread evidence provided many leads and would associate Long’s vehicle directly to the crime scene in two of the cases.

The importance of the criminal personality profile should also be noted (see Figure R1–2). In addition to providing valuable leads, it can also “guide” a case. It cannot, however, take the place of a thorough and competent investigation.

The first trial of Robert Long was held in Dade City, Florida (Pasco County), on April 22, 1985. This was the trial for the murder of Virginia Johnson. The strongest evidence presented at this trial was the hair and fiber associations, as well as the confession of Long. The trial lasted a week and received a great deal of media coverage. Long was found guilty of the murder of Virginia Johnson and was sentenced to die in the electric chair.

Table R1–1

Victim’s Name	Date Vic-tim Found	Date Vic-tim Miss-ing	Body Recov-ery Area	Cause of Death	Age	Occupation
Lana Long	5/13/84	5/10/84	Isolated Area Southern Hillsbor- ough Co.	Asphyxia- tion	20	Exotic Dancer
Michelle Simms	5/27/84	5/25/84	Isolated Area Eastern Hillsbor- ough Co.	Blunt Force, Cut Throat	22	Prostitute
Elizabeth	6/24/84	6/8/84	Orange	Unknown	22	Factory

Louden- back			Grove Southeast Hillsbor- ough Co.				Worker
Chanel Wil- liams	10/7/84	10/1/84	Isolated Area Northern Hillsbor- ough Co.	Gunshot Wound to Head	18		Prostitute
Karen Dins- friend	10/14/84	10/13/84	Isolated Area Northeast Hillsbor- ough Co.	Asphyxia- tion	28		Prostitute
Kimberly Hopps	10/30/84	9/31/84	Isolated Area Northern Hillsbor- ough Co.	Unknown	20s		Prostitute
Juvenile Female	11/4/84	11/3/84	—	—	17		Doughnut Shop Worker
Virginia Johnson	11/6/84	10/15/84	Isolated Area Pasco Co. near	Strangula- tion	18		Waitress (Prostitute)

			County	Line		
Kim Swann	11/24/84	11/11/84	Tampa Near Rt. 60	Strangula- tion	21	Student (Part-Time Exotic Dancer)
Vicky Elliot	11/16/84	9/7/84	Isolated Area Northern Hillsbor- ough Co.	Strangula- tion	21	Waitress
Artis Wick	11/22/84	3/28/84	Isolated Area Southern Hillsbor- ough Co.	Unknown	18	

It was decided that the first case that would be tried in Hillsborough County would be the Michelle Simms case. This case was picked due to the brutal nature in which she had been killed and the fact that it contained the strongest forensic evidence. The second case to be tried would be the Karen Dinsfriend case. As a result of discussions between the Hillsborough County State Attorney's Office and the Public Defender's Office of Hillsborough County, a plea bargain was agreed upon for 8 of the homicides and the abduction and rape of Lisa McVey. Long pled guilty on September 24, 1985, to all of these crimes, receiving 26 life sentences (24 concurrent and 2 to run consecutively to the first 24) and 7 life sentences (no parole for 25 years). In addition, the

State retained the option to seek the death penalty for the murder of Michelle Simms. In July of 1986, the penalty phase of the Michelle Simms trial was held in Tampa. It lasted 1 week and again received great media attention. Long was found guilty and was again sentenced to die in Florida's electric chair.

Table R1-2

Name of Victim	Red De-	Red Lus-	Yellow	Hair	Hair		Tire Tread	Cordage/ Knots	Misc.
	lustered Trilobal Nylon Fibers	trous Tri-lobal Nylon Fibers	Delustered Acrylic Fibers	Long → Victim	Transfer	Victim → Long's Car			
Lana Long	Neg.	Yes	—	Neg.	Head Hair	Neg.	Similar Design and Size	Yes	Partially De-composed —3 Days
Michelle Simms	Yes	Yes	—	Neg.	Head Hair	“B” & “H”	Similar Design and Size	Yes	Intact Body —2 Days
Elizabeth	Yes	Yes	—	Neg.	Neg.	—	—	No	Badly De-

Louden- back									composed —16 Days
Chanel Wil- liams	Yes	Yes	—	Pubic Hair— Sweater	Neg.	“A” & “H”	—	Yes	Badly De- composed —6 Days
Karen Dins- friend	Yes	Yes	Blanket to Trunk	Pubic Hair— Blanket	Head Hair	“A” & “H”	Neg.	Yes	Intact Body —1 Day
Kimberly Hopps	Neg.	Neg.	—	Neg.	Head Hair	Neg.	—	No	Skeletonized —1 mo.
Juvenile Female	Yes	Yes	—	Head Hair— Shirt	Neg.	Neg.	—	Yes	Head Hairs Like Vic- tim in Long’s Apartment

Virginia Johnson	Neg.	Yes	—	Neg.	Head Hair	—	—	Yes	Skeletonized —3 wks.
Kim Swann	Yes	Yes	—	Neg.	Head Hair	Neg.	Limited Design	No	Intact Body —3 Days
Vicky Elliot	Yes	Yes	—	Neg.	Neg.	Neg.	—	Yes	Skeletonized —60 Days
Artis Wick	Neg.	Neg.	—	Neg.	Neg.	Neg.	—	Yes	Skeletonized —6 mos.

Figure R1–1 FBI criminal personality profile.

Figure R1–2 FBI criminal personality profile compared against Robert Long.

¹ Ropes and cordages were found in 7 of the 10 homicide cases. All of these were compared with one another. Even though cordages found in one case were sometimes found to be of the same type, there were no instances in which cordages from two or more different cases were found to be similar. However, these cordages and knots did provide a “link” in the patterns which would associate these cases together.

² C. A. Pounds and K. W. Smalldon, “The Transfer of Fibers between Clothing Materials during Simulated Contacts and Their Persistence during Wear,” *Journal of the Forensic Science Society*, 15 (1975), 29.

The Attempted Assassination of Archbishop Makarios

A Forensic Science Case Study

Julius Grant, MSc, Ph.D., FRIC

Reprinted by permission from the *Medico-Legal Journal*, Vol. 40, Part 2, 1972.

At about 7:05 a.m. on the morning of Sunday, March 8, 1970, the President of the Republic of Cyprus, Archbishop Makarios, boarded his personal helicopter in the courtyard of the archbishop’s palace in Nicosia, in order to fly to Macheras Monastery to officiate at a memorial service. He sat on the left of the pilot, Major Zacharias Papadoyiannis. The helicopter took off, and when it had attained the height of the Archbishopric, it made a turn of 150 degrees, still climbing. At a point about 10 metres above the roof of the Archbishopric (Figure R2–1), a shot was heard from the left and rear, and a burst of machine-gun fire came from the same direction.

The Archbishop was not hit, but his pilot sustained a severe wound in the abdomen. With great difficulty in view of his wound, the damage caused to the helicopter and the proximity of buildings and electric cables, the pilot managed to land on an open space on the corner of two neighbouring streets, out of range of the firing (Figure R2–2). The Archbishop and pilot dismounted from the helicopter and ran away from it, having in mind the possibility of an explosion. However, the pilot collapsed and was taken to a hospital where, after a critical illness, he eventually recovered.

The Presidential Guard at the Archbishopric was conscious that the firing came from the roof of the Pancyprian Gymnasium opposite the Archbishop's palace, and they fired in that direction (see Figure R2–1). Shortly after the firing occurred, early risers in Thyseos and Othellos Streets, which adjoin the high side wall of the Pancyprian Gymnasium, saw four men climbing over the wall of the school into Thyseos Street. One spectator asked what was happening, but received no reply; he called out to the men to stop or he would shoot them. One then held his hands to his face, and turned back and said to one of the others who was coming up behind him and was holding a pistol, "They are shooting at us." All four then turned into Othellos Street. The spectator and other onlookers then saw the four men board a car waiting nearby and drive off. The first spectator telephoned the police and subsequently identified the car by appearance, although he was unable to note the number. Other spectators were able to provide confirmatory evidence regarding the car, although the evidence of identification of the four persons was weak. However, eventually it seems to have been established that the car was of a light blue colour with a white line and was a Fiat, Model 850, registration number ZDR 320. In the meantime the police had been informed of the incident. They entered the Pancyprian Gymnasium, and took possession of the firearms and other exhibits found on the roof.

In another part of Nicosia, at a distance of about a mile from the scene of the attempt, a merchant opening his shop at about 8:30 in the morning noticed a self-drive car having the above description. As this had not been moved by 11:30 a.m. he telephoned the police. On Sunday, March 8, the day of the attempt, at 8:30 in the morning, one G. A. Taliadoros went to the Larnaca Road police station and reported that the car which he had hired on February 12 had been stolen from a parking place. His agitated condition and confused replies to questions aroused suspicion, and he was questioned about the circumstances of the theft of his car as well as about his own movements. In due course two associates of Taliadoros were also detained. They were questioned as to their whereabouts at the relevant time, and as their answers were deemed to be unsatisfactory, they were held in custody. Further arrests were made subsequently, and six persons, as follows, were ultimately detained, namely (Figure R2–3):

Adamos Haritonos, 23, student; and associate of Taliadoros

Georghios Alexandrou Taliadoros, 33, estate agent

Antonakis Prokopi Solomonodos, 32, former inspector of police

Antonakis Petrou Yenagritis, 28, police constable

Costas Polykarpou Ioannides, 32, newspaper editor

Polikarpos Antoni Polykarpou, 32, police constable

Monday, March 9, was a holiday and when on Tuesday, the 10th, Maria Constantinou, a cleaner of the Pancyprian school unlocked the toilets, she found below an aperture in the wall two dirty blankets in a heap. One was light grey in colour and the other a darker colour, rather brownish. These also were taken by the police for examination.

The police force acted with great promptitude and efficiency under the direction of Chief Supt. G. Hadjiloizou of the C.I.D. They took possession of the weapons found on the roof of the Pancyprian school and a number of other articles from the school roof, and also the blankets referred to above. At about the same time a shepherd found a cache of arms, also wrapped in two blankets, hidden in a ditch near Nicosia; and these were taken by the Police. They were similar to the arms found on the roof of the Gymnasium and fingerprints were obtainable from them.

Shortly after the above events, I received a telephone call from the High Commissioner for Cyprus in London asking me if I could fly to Cyprus at once; he hinted at the reason. A few days later I attended a Cabinet meeting at the Presidential Palace, where I met the President, and I was formally invited to be responsible for the forensic investigation of the assassination attempt. The resources of the police force and Government Analyst were placed at my disposal, and I take pleasure in paying tribute to the assistance and hospitality I received.

The activities of the police had resulted in the following list of articles of potential importance to be investigated:

From the school: weapons; two blankets; cigarette ends; button; fecal matter.

From the arms cache: weapons; two blankets.

From the car: dust from the floor; dust from boot; fingerprints; cigarette ends.

From the persons detained: all outer clothing; also some 50 articles of other miscellaneous clothing; dust from a car and blankets from the homes of the persons detained.

Miscellaneous: revolver holster; newspapers; car cover; etc.

The forensic examination of the above is now dealt with in order of importance. The jacket worn

by Taliadoros, when he was arrested, bore a smear of white dust on the right shoulder approximately 3×2 cm in dimensions, and similar in colour to that of the whitewashed walls of the school. Taliadoros said that he picked it up while sitting on a bench and leaning against the wall of the police station where he was originally detained. The police had assiduously taken samples of plaster from the walls of the school along the escape route of the gunmen from the roof to the wall of Thyseos Street, but it was apparent that the mark on the jacket was a surface rubbing, and was a top coat of whitewash and not plaster. In view of the importance of this smear and the lack of wholly positive other forensic evidence concerning Taliadoros, I thought it advisable to make a fresh examination of the scene. Surface rubbings were, therefore, first taken from the areas from which the plaster had been removed. An attempt was then made to reconstruct the early stages of the escape after the shots had been fired.

It will be seen from Figure R2–1 that the gunmen must have climbed down from the flat roof where they had fired at the President on to an open air passage flanked on the right by the high whitewashed wall shown in Figure R2–4. Free passage down the area was prevented on the left by the pitched skylights (four in number) which serve the classroom below and which are apparent in the photograph. It was found that the most convenient way of travelling along this passage in a hurry was to pass between the wall and the skylight, a distance of only 40 cm. This is too small to accommodate a man facing the direction in which he was running. Indeed there was a natural instinct, I found, to half-turn to the left, i.e., away from the wall, on passing between the narrow gaps. If this was done, the right shoulder did not necessarily touch the wall but, as a runner emerged from the gap, there was a distinct probability that his right shoulder would rub against the square-section vertical drainpipes from the roof, which project from the wall to the extent of about 10 cm. When this happened, a smear could be produced on the shoulder of the

same size and type and in the same location as that found on Taliadoros's jacket.

A surface rubbing was, therefore, taken from one of the drainpipes at shoulder level, and it was found that the superficial coating was apparently unlike ordinary whitewash but was consistent with a mixture of whitewash and a white emulsion paint. A likely explanation of this is that it had been found that the whitewash would not cover the metal drainpipe, as well as on the actual wall, and a topcoating of emulsion paint had, therefore, been applied over it. The claim that the smear had come from the police station was easily disposed of, because the bench on which Taliadoros had sat had a wooden back separating the sitter from the wall; and moreover, the whitewash on the wall was not pure white but a pale yellow colour. Table R2-1 shows the spectroscopic analysis of all the powders collected, from which it will be seen that the powder from the coat and that from the drainpipe matched perfectly; moreover they have no counterpart in any of the other samples, which are characteristic of an ordinary lime wash. The presence of both calcium and titanium is consistent with the use of a paint of good covering power, with the limewash on the pipe; and this occurs also on the coat.

In the course of the hearing the defense pointed out that in Nicosia all the drainpipes of the houses are of this rectangular type, so that the rubbing could have come from one of hundreds in the town. Having foreseen this argument I had spent nearly two hours roaming the streets of the town and rubbing my jacket against drainpipes—often to the mystification of passersby! Out of many in various parts of the town I found that about 60% were whitewashed; with the whitewash often partly rubbed off, and the remainder were painted with a gloss paint which could not be rubbed off. I did not find one which had the appearance or effect of the drainpipes in the roof corridor at the school. The Court regarded this as significant, according to the Presiding Judge in his summing-up.

Table R2-1

Sample	J	1	2	3	4	5
Aluminum	Minor	Absent	Trace	Minor	Trace	Minor
Barium	Minor	Major	Trace	Minor	Trace	Major
Calcium	Major	Major	Major	Major	Major	Major
Chromium	Trace	Trace	Trace	Trace	Trace	Trace
Iron	Trace	Minor	Trace	Trace	Trace	Trace
Magnesium	Minor	Major	Major	Minor	Major	Major
Silicon	Major	Minor	Trace	Major	Trace	Minor
Titanium	Major	Absent	Absent	Major	Absent	Absent
Zinc	Absent	Minor	Absent	Absent	Trace	Trace

Key

J—Taliadoros's jacket.

1—Landing outside classroom door.

2—Lavatory outside wall.

3—Drainpipe on roof.

4—Lavatory wall where blankets were found.

5—Column at foot of staircase near classroom.

Coming now to the two blankets found by the lavatories, these consisted of a grey blanket, torn,

with bloodstains and dark stains resembling grease. There was also a brown blanket with several holes, also with dark stains resembling grease. The majority of the fibres comprising it were of wool, and were of a rather unusual shade of brown. The grease stains were extracted, and it was possible to show that the substance present was similar to a type of greasy lubricant in the stores of the Police Department; and that both were similar to the grease on the weapons, which doubtless was used to prevent them from rusting. Infrared spectroscopy was used for this purpose. There was nothing characteristic about this grease, and this evidence, though contributory, was not in itself conclusive. However, an interesting fact noted was that the grease stains on the blanket and the grease on the weapons, while alike, were completely dissimilar from four other types of oil or grease also kept in the police store. Thus, although the weapons were not police weapons, the grease on them could have come from the police store.

It has been mentioned that bloodstains were found on the grey blanket. These were of human blood. It was thought at first that they were associated with the observation that one of the fugitives seen climbing over the wall had his hand against his face. However, none of the men arrested had any wounds, and examination of the bloodstains showed that they were of the drop rather than of the smear type to be expected from a wound. Medical examination showed no evidence of recent nose-bleeding from any of the men detained. As the stains were old, it was not possible to carry out a grouping test. It was felt that they could have been produced before the relevant date, and this aspect of the evidence was not pursued further.

So far as the weapons found on the scene were concerned, these are shown in Figure R2-1. They comprised a Bren gun, a Lee Enfield rifle, and an M6 rifle; 39 spent cartridges were found, and there were about the same number unused. The only features of importance were the grease referred to above, and fingerprints in the grease. On the weapons were found two prints each hav-

ing 13 points of diagnostic identity with the right forefinger of Haritonos; one was on the magazine of the Bren gun. On some ammunition was found a print which had 16 points of diagnostic identity with the print from the right forefinger of Yenagritis. On other ammunition was found a print which had 16 points of identity with a print from the left thumb of Solomonodos. On further items of ammunition was found a print which had 16 points of diagnostic identity with a print from the left thumb of Yenagritis. Other prints were found, but were not produced in evidence. On the loaded Bren gun magazine and ammunition found on the roof of the Gymnasium were two prints having 16 points of diagnostic identity with a print from the right thumb of Solomonodos. Other fingerprint evidence attributable to Taliadoros, Haritonos, and Yenagritis was found on the car. Some of these were found near the top edge and on the outside of one of the windows, indicating that the door had been pulled shut, using the partly opened window, by the owner of the print who was sitting inside.

In England 16 points of identity are taken as conclusive evidence of the identity of origin of two fingerprints. In Cyprus, in general the courts accept the same standards as in this country. It will be seen that except in one case the requisite 16 points were obtained. In the case of Haritonos only 13 such points per print were obtained, but points from different parts of more than one print from the same finger can be added together to make the necessary 16. It could be claimed that the lack of further points of identity was due to the poor character of the prints found on the scene in this instance and that there were no dissimilarities between the two prints which could not be accounted for in the same way. Solomonodos, who had been a police officer, accepted that the prints found could have been his. Both he and Yenagritis were in the National Guard in 1963–67, and they stated that they had been in the habit of handling arms and ammunition. In mid-1969 the police authorized the collection of arms surrounded by civilians. Yenagritis and

Solomonodos claimed to have been involved in this operation; no Bren guns were among the arms then collected. Haritonos was in the National Guard in 1968 and said that he had handled Bren guns within nine months of the assassination attempt.

This gave rise to a lively controversy as to the age of the fingerprints, which is always difficult to determine with certainty. Supt. Dekatris, the capable fingerprint expert of the Cyprus C.I.D., held the view that the sharpness of the prints indicated recent origin. This was contested by the defence, but I felt that I could support the prosecution's argument because the prints were made in grease, which in the hot climate of Cyprus tends to run; and under these conditions fingerprints become blurred rapidly. An experiment in which prints made in grease on metal were kept at 20°C and 30°C (the summer temperature in Cyprus) for a few days showed a distinct difference in sharpness when developed.

The defence called an expert, formerly of the Greek police force, but he was unable to convince the Court that the fingerprints were old or that the blurring on aging theory was untenable, especially bearing in mind that at least nine months had elapsed since the alleged handling of the weapons and the discovery of the arms. In any case this referred only to the presence of the fingerprints of Solomonodos and Yenagritis, and not to those of their associates.

Fingerprint evidence was also sought from the cigarette ends. These were found on the scene, in the car, and in the police station after detention. Practically all were of the same make and had been smoked in the same way, i.e., to the extent of two-thirds of their length. They were then stubbed out in a similar way by being bent almost at right-angles. It was hoped that the stubbing-out operation would have left a fingerprint on the cigarette paper, but unfortunately nothing that could be satisfactorily used as evidence was found when we used the ninhydrin test. On the other

hand, experiments in which we produced similar stubs did leave fingerprints. The reason for this difference may have been the greater heat of burning in the case of the cigarette ends believed to have been associated with the accused; or because the smoker was one of the few people whose fingerprints do not respond to the ninhydrin test. It would have been interesting to have tested the fingerprints of the six men on paper to check this. A saliva grouping test on the cigarette ends might also have been helpful, but facilities were not available.

Much of the forensic work concerned fibres. The objective was to link the fibres from one or more blankets with one or more of the accused. This applied both to the fibres of which the blankets were made and to adventitious fibres found on the blankets. To this end a large collection from the wardrobes of the six men was seized and thoroughly examined, including the pocket linings—since the latest style in trousers can apparently contain as many as seven pockets! In all some 60 outer garments, including shoes, were tested; also included were contents of cars and blankets from the homes of the accused, which the defence alleged were the source of certain of the fibres found. This was extremely laborious work but was fully justified. The connecting links in the evidence were small in number but important. In my evidence on this aspect I thought it advisable to make clear the significance and limitation of evidence based on fibres. This disarmed some anticipated cross-examination.

In making a comparison between fibres found on a suspect and fibres found at the scene of a crime or on an article associated with it, there are three principal criteria to be taken into account, namely:

- a. the material of which the fibre is made;
- b. the colour of the fibre;

c. its dimensions, i.e., shape and size.

1. Now, if one has two single fibres, one from the scene and one from the suspect, and they are alike in all the three above respects, then one can say that the fibres could have come from the same source, but that there is no certainty that they did so.
2. On the other hand if the fibres being compared are unusual in some respect as well as being alike, then the chance that they come from the same source is greater.
3. Finally, if one is examining groups of fibres, i.e., tufts of fibres of different kinds and different colours, then if the two groups contain the same fibres in the same proportions, then the possibility that they come from the same source is very high indeed; but one still cannot say with absolute certainty that they did so.

On the jacket belonging to Taliadoros, which had the white smear referred to above, I found a number of fibres which were not part of the composition of the jacket, i.e., extraneous fibres. On the left shoulder of the jacket was such a brown fibre, which matched closely the principal fibres of the brown blanket found at the scene of the assassination attempt. Since this was an unusual fibre, I placed it in category 2 above. This could not be regarded as conclusive evidence because the brown fibre could have come from some other source. However, as stated, the shade of the colour was unusual and it is interesting to note that although some hundreds of fibres from various items of clothing, car dust, etc. were examined, in no case did a brown fibre similar to that from the blanket occur except on the left shoulder of Taliadoros's jacket. It should be added that the police took a multicoloured blanket from the home of Taliadoros. It contained brown fibres, which were said to have accounted for the fibre on his jacket; there was a superficial resemblance, but microscopical methods showed the fibres to be quite different.

In the right-hand pocket of the trousers of Taliadoros I found a tuft of fibres which was similar to the fibres comprising one of the blankets used to wrap the weapons. Since this consisted of no less than four fibres of different colours and types in each case, I placed this in the third category, representing the strongest possibility of identity.

On a pullover belonging to Yenagritis I found a human hair which was similar to a human hair which I found on one of the blankets from the school lavatory. It is impossible to say with complete certainty that two human hairs are or are not identical. However, these were alike in colour; they were both relatively long, too long for a male hair, even in these days; and I felt that the possibility that they came from the same source was strong. This was another link between Yenagritis and the blanket.

On the left arm of the jacket of Polykarpou I also found a tuft of fibres similar to those of one of the blankets, and the nature of these was such as to put them in the third category, of the strongest possibility. I also examined debris I collected from the body and boot of the car of Solomonodos and here I found a tuft of fibres similar to those of one of the blankets presumably used to wrap the guns. Here again the nature and the proportions of the fibres placed them in the category of maximum possibility.

The forensic evidence established links as follows:

Linking:

Arms to blankets—grease.

Arms to accused—fingerprints.

Blanket to accused—fibres.

Scene to accused—white smears (Taliadoros).

Car to accused—fingerprints and fibres.

The preliminary enquiry was heard in Nicosia starting April 15, 1970, with Mr. A. Frangos, Senior Counsel of the Republic, for the prosecution. Ninety-five witnesses were called by the prosecution; cross-examination was reserved.

The subsequent trial was held in the assize court room of Nicosia in October 1970. The prosecution was conducted by Mr. Talarides, Senior Counsel, and Mr. Frangos. In Cyprus legal procedure resembles that of England except that there is no jury, the verdict resting with the three presiding Judges. In a small country such as Cyprus this is regarded as a more desirable procedure. Apart from the prosecution's forensic evidence, testimony was largely concerned with the actions, behaviour, and alleged alibis of the accused. The Defence sought to establish alibis and to prove reasonable doubt as to the forensic evidence, but the combined effect of the latter apparently convinced the Judges. The charge against Polykarpou was withdrawn at the first hearing due to lack of evidence; only that from the fibres being available. Ioannides was acquitted owing to insufficient evidence; he was expelled from Cyprus. The remaining four were sentenced to 14 years imprisonment in Nicosia and, according to the press, they subsequently confessed that theirs was one of several plots which were due to take place at the time of the attempted assassination and which undoubtedly would have done so had it not been for the prompt action of the authorities. The accused instructed their respective Counsel not to place any factors in mitigation before the Court; Haritonos stated that he did not pray for leniency.

The author is indebted to the Government of Cyprus for permission to reproduce the illustrations; and to Chief Supt. Hadjiloizou for his cooperation in the preparation of this paper.

Figure R2–1

Figure R2–2

Figure R2–3

Figure R2–4

Teamwork in the Forensic Sciences

Report of a Case

L. W. Bradford and A. A. Biasotti

Director and Supervising Criminalist, respectively, Laboratory of Criminalistics, San José, California

Reprinted by permission of the American Society for Testing and Materials from *Journal of Forensic Sciences*.

The scene in which the following events occurred is a single story dwelling in a quiet residential neighborhood where the victim lived. The victim was a 45-year-old woman who lived in the second house on a particular cul-de-sac street next to a red house on the corner (which is of later significance). A streetlight is situated here.

The investigative events began with the discovery of the victim lying face up over the foot of her bed with the top of her head completely blown off. Tissue debris covered both walls and the ceiling surrounding the victim. The gruesome discovery was made and reported immediately at 2:30 a.m. by an elderly male boarder who rented one bedroom in the victim's house. The boarder had entered the house, using his key, at about 1:15 a.m. after working as a bartender since 4 p.m. the previous day. He went directly to his bedroom and read for about an hour. When ready to retire,

he noticed lights in the victim's bedroom and kitchen. Investigating, he discovered the victim.

The first patrol unit arrived at the scene within minutes. The patrol officer found no weapon and, after a quick search for a possible intruder on the premises, called for assistance.

The detective team arrived at the scene within ten minutes and was followed within the hour by a team of four investigators who were immediately deployed to interview neighbors for possible leads. A more detailed search of the scene revealed that:

1. All doors were locked and there were no signs of forced entry.
2. The victim's clothing was neatly arranged on a chair next to her bed.
3. There was no indication of a struggle prior to the fatal shot.
4. Valuables appeared to be intact and undisturbed.

After photographing the victim and the scene, the body was removed; and a search was made for the projectile which caused the extensive trauma to the victim. A high-velocity weapon was assumed to be the cause of death.

The major portion of a 150 grain, military type, jacketed bullet was recovered in the wall space in back of the headboard of the victim's bed. A projection of the bullet path through the mattress, headboard, and wall, in conjunction with the position of the body, an apparent "defense" type wound on the lower right wrist of the victim, and the lack of powder residues indicated that the victim was shot while sitting on the end of the bed, leaning back at about a 30-degree angle, and holding her right arm in defensive fashion over her face. Class characteristics of the rifle impressed on the .30 caliber bullet indicated the possibility of Remington Rifles, Model numbers 721 to 760.

This fatal bullet was destined to be the vital link in connecting the suspect with the victim, but in a very unusual manner. The second vital link, discovered later in the investigation, was a cancelled check, which will be discussed separately.

Canvassing of the immediate neighbors developed several witnesses who on the evening before:

1. Heard a loud “bang” or “back fire” between 10:15 p.m. and 10:30 p.m.
2. Saw a red station wagon with white top, round taillights, and loud muffler start up and drive out of cul-de-sac within a few minutes after hearing the “loud bang.” The license number was not obtained.
3. Described the driver of the vehicle as a male—without further details.

It was also learned from persons in the neighborhood that a vehicle similar to the described station wagon had been parked near the scene on several occasions.

Careful and methodical interrogation of all the neighbors, known friends, and former husband (amicably separated) of the victim continued until such time that a conference was called by the detective-in-charge to summarize and evaluate the information assembled. Logical suspects, including the boarder, the former husband, and several known acquaintances, were quickly eliminated because alibis were confirmed by investigation. One lead, however, needed to be followed. It was learned from friends that the victim frequented a local commercial dance studio. Questioning of persons present during Wednesday afternoon at the dance studio indicated that most of the victim’s dancing lessons had been with a part-time instructor who would be in a position to give more information about the victim’s acquaintances and habits than anyone else.

Through further leads and contacts, the address of this man was found to be an apartment in an adjacent city. The instructor was 23 years old and married with two children. Two detectives,

upon arriving at the suspect's apartment, noted a red and white 1955 Ford station wagon parked in the stall of the apartment. Upon knocking and identifying themselves they were invited into the living room by the instructor. While questioning him about the victim, her acquaintances, and his actions the night of the murder, the detectives noted a marble-topped coffee table, end table, and lamp which fitted the description of furniture taken in a burglary of the victim's residence several months prior. When asked about this furniture, the instructor said that he had purchased it somewhere at a department store. He later changed his story indicating that it was given to him by a friend. The suspect further stated that he had visited the victim the previous week to borrow \$50; but instead he sold her a painting for \$140. He denied any knowledge of the murder or of owning a .30 caliber rifle.

He had a good alibi for the night of the murder. He had taken his wife (a waitress) to work early Wednesday evening, taking their children (girl, age 5; boy, age 3) with them and returned home to baby-sit, clean house, and watch TV until about 12:30 a.m. when he departed, leaving the children at home alone, to pick up his wife at work.

As the result of this initial questioning, during which the suspect had changed some of his story, and considering the presence of the stolen furniture, the investigators asked the suspect to go to police headquarters for further questioning, which he did willingly. Further interrogation of the suspect at headquarters, and interrogation of his wife, separately, strengthened the investigators' suspicions that the suspect was not telling the truth and knew more about the murder than he had admitted. At the conclusion of these interviews, the man and wife accepted the police opinion that the furniture was stolen property and allowed it to be taken from their apartment. The man was released at this time after agreeing to a polygraph examination the following day.

Shortly after midnight when the investigators arrived at the suspect's apartment to recover the

furniture, they learned from a neighbor adjacent to the suspect's apartment that their apartment had been burglarized about three weeks earlier while she and her husband were away for that weekend. This burglary had been investigated and revealed a forced entry by cutting a screen over the bathroom window and entry through an unlocked window. Reported stolen were a Remington .30-'06 Model 760 Gamemaster rifle and \$10 in cash. With this information in hand, a warrant to search the suspect's apartment and station wagon was obtained and executed on Friday afternoon, the second day following the murder.

The search of the suspect's apartment brought forth the following:

1. A paper target with bullet holes which appeared to be about .30 caliber.
2. One fired caliber .30-'06 cartridge case (established by laboratory examination to be not connected with the stolen rifle).
3. A caliber .22 rifle, a .410 gauge shotgun, and a caliber .25 pistol.
4. An electric shaver identified as belonging to the boarder living in the victim's house and reported stolen in a burglary.
5. A pair of stained trousers (lab examination revealed no blood or human tissue on these trousers).

The search of the suspect's station wagon developed the following:

1. Cuff links identified as taken with the electric shaver found in the apartment.
2. A large "gunshot" penetration from interior to exterior at about a 45 degree angle in the right side with the entry in line with the top of the rear-seat cushion.

The "gunshot" hole in the suspect's vehicle was an unexplained event which later developed into

yet another interesting speculative aspect of this case. From an examination of the penetration, powder, pattern, and lead pellets found in the vehicle, it was determined that this hole was consistent with the firing of a .410 gauge shotgun. It was found that this single shot, bolt action Mossberg, Model 173 A, .410 gauge shotgun found in the suspect's apartment would fire when dropped on its butt with the thumb safety in the "fire" position. This information at the time did little more than add mystery to the investigation. About 19 days after the murder, however, this event assumed new significance when one of the investigators in checking out the neighborhood near the scene observed what appeared to be a pellet pattern on the sidewalk next to the curb in front of the house on the corner next to the victim's residence. This was the area in which the red and white station wagon had been observed parked on previous occasions. Examination of the pattern in conjunction with the hole in the vehicle indicated that the pattern, size, shape, shot imprints, and angle were all consistent with the hypothesis that the suspect's .410 shotgun discharged through the right side while parked at the curb. No statements had been given by the suspect to the point of this evidence.

When again questioned about the items recovered in the search and his alibis, the suspect refused to answer most questions without his attorney. He did, however, attempt to explain the target with the caliber .30 bullet holes by saying that he had recently been to a local outdoor shooting ranch where he was shooting a "large caliber rifle" which he described as "more than a .22 and smaller than a cannon." This statement, which must have been an inadvertent "slip" by the suspect, provided a useful clue.

All information thus far obtained pointed to a connection between the suspect and the victim, the burglaries, and possibly the murder; but a direct link with the crime was not a matter of established fact. Based upon these tenuous developments and on the advice of the District Attorney of

Santa Clara County, the suspect was arrested and charged with Burglary, Receiving Stolen Property, and Murder. After the arrest the chief detective found a key in the personal property taken from the suspect at the time of booking which appeared to be identical with the house key to the victim's residence. The suspect when questioned about the key said that it was for a prior residence in the area and gave an address. A check of this alibi address revealed that the suspect and his wife had lived at that address. The locks had not been changed after they had moved, and the key taken from the suspect and matching the victim's key did not open any of the locks at the alibi address; but it did open the entrance door to the victim's house. How or when the suspect obtained this key has never been determined, but it was known that the victim stored her wraps and purse in the cloak room at dancing periods when the suspect was present. Consequently, he had an opportunity to make a duplicate.

At this point, a service station attendant was located who tentatively identified the suspect as one who had stopped at his gas station in the vicinity of the death scene on the night of the murder.

The suspect, when faced with all of the apparent contradictions to his alibis, accused the police of lying and attempting to falsely implicate him and refused to answer further questions. When the time for an agreed polygraph examination arrived, he refused to undergo the examination.

From this point on no further information was obtained directly from the suspect which would aid in the solution of the case.

Two days after the murder, the police were faced with an array of alibis, contradictions, and facts which appeared to be pieces of a puzzle, but which defied fitting together in any logical way. It was again time for reflection and contemplation before planning the next move. A review of the progress to date indicated that the next two main lines of investigation should be:

1. To contact the neighbors of the suspect who resided in the apartment adjacent to the suspect to determine whether any fired components from the caliber .30-'06 Remington Model 760 rifle were available from the period prior to the time of the burglary in which the rifle was taken.
2. To investigate the shooting range for spent bullets where the suspect indicated that he may have fired a rifle.

The neighbors were contacted first, and three fired .30-'06 cartridge cases were obtained which had been fired from the rifle before it was stolen. When asked when and where the rifle had last been fired, the neighbor replied that it had been at a pine tree during the recent fall deer hunting season in the Sierra Nevada mountains located about 150 miles from his apartment. This occurred while he was hunting with a friend and a nephew. The neighbor had his .30-'06 Remington Model 760 rifle; the friend had a .30-'06 Springfield Model 1903 rifle; and his nephew had a .30-30 Winchester Model 94 rifle. He said that he and his nephew had sighted in their rifles with targets placed against a large pine tree at a distance of about 150 feet from a clearing near a road. Several shots were fired. He thought that he could locate the tree. Four days after the murder, the neighbor guided investigators to a pine tree approximately 100 feet tall and about 30-in. in diameter. A small section surrounding one apparent bullet hole was cut out, and a jacketed bullet was recovered and returned to the laboratory in San Jose for examination. This bullet was found to be from a caliber .30 weapon of six right-hand riflings with a land width consistent with the Model 94 Winchester used by the neighbor's nephew. A second trip to the pine tree was made; and with permission and assistance of the U.S. Forest Service, the tree was felled. A five-foot section of the trunk was returned to Santa Clara County where it was split and dissected. With the aid of X-ray equipment, a second bullet was recovered. The bullet was fully mushroomed,

leading to a cover over the rifling marks which had preserved the class and individual characteristics on the base portion of the metal jacket. The bullet proved to be a soft point fired from a caliber .30 weapon with class characteristics consistent with a Remington Model 760 rifle. These class characteristics were the same as those of the fatal bullet. Further study revealed a significant similarity of individual characteristics between the fatal bullet and the bullet from the tree indicating that both had been fired by the neighbor's stolen rifle (Figures R3-1 and R3-2).

The next phase of the investigation proceeded to the shooting range where it was believed that the suspect may have fired a rifle prior to the murder. Nine days after the murder the range master of the Sunnyvale Rod and Gun Club was contacted, and it was determined that the range had opened about a month prior to the murder after renovating the sandstone-shale embankment which served as a backstop at 100 yards from the firing point. The range had been closed for about three months while the embankment was scraped and cleared. When shown a photo of the suspect and asked if he recognized the person, the range master stated that the photo resembled a person using the range during the past month who was shooting a .30-'06 Remington Model Gamemaster "pump-action" rifle. Entries on the sign-in register required for all persons using the range were hastily searched for the name and address of the suspect. None being found, the list was submitted to the Laboratory of Criminalistics for a handwriting examination to determine whether or not the suspect could have signed the register using an assumed name.

When the register was examined at the Laboratory, the only immediately available authentic specimen of handwriting of the suspect was his endorsement of a \$140 check which he had earlier mentioned in connection with the purported sale of a painting to the victim. An examination of the complete range record revealed the name of the suspect one week later than the date first indicated by the range master. This name was identified with the writing on the check endorse-

ment. There was further examination of the check which will be discussed separately. The signature on the range record was dated three days prior to the murder. The register indicated that he was assigned to firing Point #29. Point #30 was the last firing position. A man and his son assigned lanes 27 and 28 and another person assigned lane 30 were immediately contacted and questioned. Lanes 29 and 30 were customarily the only targets used for high velocity weapons.

The man and his son from shooting lanes 27 and 28 identified the suspect from a photograph and said he was firing a .30-'06 Remington Model 742 or 760 in lane 29. Also that he was firing military type ammunition and when asked if they could have his brass, the suspect replied that he was saving it for a friend. They further noted that a girl, about 5, and a boy, about 3, accompanied the suspect at the range. Based upon this information the embankment covering targets #28, 29, and 30 was searched with the aid of a screen. Several buckets of metal jacket fragments were recovered. The buckets of projectiles were taken to the laboratory where rapid sorting based on gross class characteristics eliminated all but a few jackets and jacket fragments with class characteristics similar to the fatal bullet (see Figure R3-1).

A detailed comparison microscope examination was now begun which revealed that two bullet jackets from the range had class and individual characteristics that established an identity between the .30 caliber bullet from the tree and the fatal bullet (see Figures R3-1 and R3-2). Thus, about three weeks after the murder, the two bullets from the range provided the needed missing link between the stolen rifle and the fatal bullet. Without this evidence a connection between the stolen rifle and the fatal bullet would never have been established because the rifle had not been found. The physical evidence had now provided a link between the murder weapon and the suspect and the fatal bullet. To strengthen this link further, a third trip was made to the area from which the neighbor had fired at the pine tree. With the aid of a metal detector, three fired .30-'06

cartridge cases were found. Microscopic comparisons of breech bolt marks on these cases led to an identification with the three fired cases previously obtained from the neighbor (Figure R3–3).

Returning to the subject of the \$140 check, the endorsement was of interest as an exemplar of the defendant's signature for the purpose of comparison with the range record. Much to the surprise of the investigators during the preliminary examination of this document at the laboratory, it was discovered that the entire face of the check was traced. It was further determined that the payer signature was traced from an authentic victim's signature and the remainder of the check was traced from authentic writing of the suspect, including his own name as payee.

The document examiner, upon this finding, asked the detectives to obtain the victim's check stubs for the period involved with the \$140 check.

It was found that the traced check was numbered in a sequence different from those covering the period of her stubs. The traced check was number 330. A new group of five personalized check-books had recently been received from the bank by mail. Four of these were found by the detectives in an opened bank envelope on the victim's desk. The fifth book containing checks No. 325 through 349 was missing. Speculate now as to the reason that check No. 330 was cashed by the defendant rather than Nos. 325, 326, 327, 328, and 329.

The prosecutor charged first degree murder. The defendant was found guilty and was sentenced to life. The prosecutor used the following lines of argument following the presentation of all the evidence:

1. The victim was a lonely woman who had spent several thousand dollars for dancing lessons over a period of years as a form of recreation.
2. The defendant gained a knowledge of the victim's habits, address, and situation through fre-

quent association as a dance instructor.

3. Through access to the defendant's wraps and purse while at dancing sessions, the defendant gained possession of a key by either replication or theft.

4. Using this illicit key, the defendant had made visits to the victim's home while she was attending dance sessions in other areas. He had taken property from this home on several occasions. This included the furniture, boarder's cuff links, and checkbook.

5. The defendant had burglarized his neighbor's apartment and had taken the .30-'06 rifle. When entering the victim's home, he was armed, first with the .410 gauge shotgun, later with the .30-'06 rifle. The long-barreled weapons were concealed by placing them on the floor behind the driver's seat of the vehicle. On one of these occasions, while the vehicle was parked near the victim's home, the shotgun was accidentally discharged while in the act of placing or removing it from this position.

6. The defendant traced the victim's signature on check No. 325, using the technique of carbon paper; however, when he covered the tracing with ink, it was a different color than his freehand writing on the remainder of the check face. He continued practicing the forgery until he learned that tracing the entire check face was the only method of avoiding a difference in appearance of the ink color between the payer line and remaining entries. In this way he used up checks Nos. 325, 326, 327, 328, and 329, and finally perfected the forgery on check No. 330.

7. After cashing the check, the defendant waited until the day that he thought cancelled checks through the mail would arrive at the victim's house, at which time he again entered the home armed with the rifle intending to remove the cancelled check No. 330 and destroy it in order to conceal the forgery; he unexpectedly encountered the victim and killed her.

The case is bizarre for several reasons:

1. The connection of the fatal bullet with the suspect without the rifle is exceptionally uncommon.
2. The fact of a defendant tracing his own name is very peculiar.
3. The good fortune of finding exemplar bullets in examinable condition from the tree and range under the circumstances described is unlikely.

It is to the credit of the investigators, examiners, and prosecutors that they recognized the value and significance of all the facets of the evidence and were able to communicate with each other in a manner which made the most effective use of all of it.

Figure R3–1 Bullets used to link the fatal bullet with the missing murder rifle. The fatal bullet and the two range bullets are metal-jacketed, spitzer, 150 grain M2 ball (U.S. Army) military type. The bullet from the tree is a 180 grain soft point corresponding to ammunition possessed by the owner of the stolen rifle. The two tests were not fired by the murder weapon and are included solely for the purpose of illustrating bullet type and class characteristics of rifling marks.

Figure R3–2 Comparison photomicrographs demonstrating the identification between the bullets shown in Figure R3–1.

Figure R3–3 Comparison photomicrographs demonstrating the identification between cartridge cases recovered near tree to cases from the owner of stolen rifle.