

# FBI

## *Law Enforcement Bulletin*

MAY 1976



## LAW DAY, U.S.A.

"200 Years of Liberty and Law"



# FBI

## Law Enforcement Bulletin

MAY 1976  
VOL. 45, NO. 5



Published by the  
FEDERAL BUREAU of INVESTIGATION  
UNITED STATES DEPARTMENT of JUSTICE  
Washington, D.C. 20535

### CONTENTS

#### MESSAGE FROM THE DIRECTOR

*"In this Bicentennial Year, observance of Law Day, U.S.A., on May 1 carries a special significance that is aptly suggested by its theme, '200 Years of Liberty and Law.'"*

1

THE TOTAL EXAMINATION ENVIRONMENT: A SUCCESSFUL POLICE PROMOTIONAL EXPERIENCE, by Col. Richard A. King, Chief, Fairfax County Police, and Cornelius J. O'Kane, Deputy Director of Personnel for Fairfax County, Fairfax, Va.

2

DON'T MISS A HAIR

9

RANGER HALL OF FAME, by Dayton Kelley, Director, Texas Ranger Hall of Fame, Waco, Tex.

16

TECHNIQUE FOR FINGERPRINTING DETERIORATED SKIN TISSUE, by George M. Fisher, Evidence Technician, Crime Laboratory, Police Department, San Diego, Calif.

24

DEVELOPMENTS IN THE LAW OF EXPUNCTION OF ARREST RECORD ENTRIES (Conclusion), by Robert C. Blunt, Special Agent, Federal Bureau of Investigation, Washington, D.C.

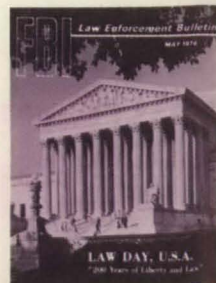
28

WANTED BY THE FBI

32

#### THE COVER

Shown on this month's cover is the U.S. Supreme Court Building, Washington, D.C. Under the rule of law, our Nation's cherished heritage of freedom and justice has been perpetuated. Mr. Kelley's Message, beginning on page one of this issue, discusses the primacy of law in a free and just society. Photo courtesy of the Foundation of the Federal Bar Association.





## Message from the Director . . .



IN THIS BICENTENNIAL YEAR, OBSERVANCE OF LAW DAY, U.S.A., on May 1 carries a special significance that is aptly suggested by its theme, "200 Years of Liberty and Law." The occasion provides an appropriate opportunity to emphasize how greatly the spirit of the law is infused in the "Spirit of '76."

As a Nation and as individual citizens, we can take great and justifiable pride in America's historic dedication to the rule of law.

The founders and architects of our democratic system of government built wisely on the solid bedrock of this principle—and they built well. Their staunch faith in the primacy of duly constituted law has served our Nation with high distinction through two centuries of challenge and change. They recognized—as we must continue to clearly recognize—the essential function of law in securing and safeguarding for every citizen the blessings of freedom, justice, and equality. Through our heritage of law, the basic rights and liberties proclaimed at the creation of this young democracy remain central to American life today. Under the dominion of law, the United States has achieved unprecedented levels of prosperity and promise and has long stood as the free world's strongest citadel of liberty.

Law enforcement may note with particular pride of accomplishment the rich legacy bestowed by the rule of law upon the citizens of our country. To a great extent, this legacy has been sustained through the dedicated efforts of countless police officers at all levels of government.

The law enforcement role continues to call for the fullest possible commitment to the ideals of justice and public service. If the rule of law is to prevail, the increasingly complex and difficult challenges confronting those sworn to uphold it must be effectively met.

Toward this end, law enforcement can surely make no more meaningful contribution to the purpose of Law Day than to rededicate itself to the pursuit of excellence. In this worthy endeavor, we serve in an indispensable fashion the vital cause of freedom and justice under law. Although we may view with considerable satisfaction law enforcement's progress in many significant areas of activity, there is yet much to be achieved professionally.

As we seek to attain higher goals of conduct and performance, let us be guided by the high ideals that this Law Day celebrates and that have for two centuries inspired our Nation to greatness.

  
CLARENCE M. KELLEY  
Director

MAY 1, 1976



# THE TOTAL EXAMINATION ENVIRONMENT

## A Successful Police Promotional Experience



**COL. RICHARD A. KING**  
Chief  
Fairfax County Police, Fairfax, Va.



By  
**CORNELIUS J. O'KANE**  
Deputy Director of Personnel for  
Fairfax County, Fairfax, Va.

Is it possible for 400 police officers to shape a promotional examination and have that process identify the most qualified candidates for promotion? The Fairfax County, Va., Police and Personnel Departments decided to find out by trying participatory management in the police promotional field. Did it work? Yes! In fact, the results exceeded all expectations of the staff. Commenting on the process, one candidate observed, "It was an excellent promotional examination. I gave it my best shot, and although I wasn't pro-

moted, no one is to blame but myself." A district commander noted, "I am amazed at the attitude of candidates who were not promoted."

### **Background**

The promotional processes employed by police departments are being challenged with increasing frequency by law enforcement officers seeking upward mobility in the field. A number of departments have faced vexing court suits challenging specific phases of a promotional system.

This article describes a unique and innovative approach to police promotions by the Fairfax County Police and Personnel Departments—an employee-structured promotional examination process. Although participative involvement is the central feature, this would not have sufficed without exhaustive attention to details and individual problems.

While the Fairfax County experience seems to satisfy many of the issues raised in the courts, the authors wish to recognize that this process will not insulate a police department from



court challenges, nor was this its primary intention. Rather, the goals were twofold: to design a promotional process which would accurately rank the most proficient candidates and introduce a system which not only was fair, but which was acknowledged to be fair by all who participated in it. Not only would this improve overall morale in the department, but it would greatly ease the transition of the promoted officers by giving them a departmentwide stamp of legitimacy.

In 1972, the Fairfax County Police Department experienced a court suit relative to the oral board phase of the police promotional system, and as a result, the court struck down the eligible list. Although a promotional list was finally established, nothing has produced more acrimony among the officers than discussions about past promotions.

Given a candidate population dissatisfied, if not hostile, and suspicious, if not distrustful, there was a need for openness and sincerity. Knowing that quality, validated testing instruments and pre-examination techniques might win court cases but certainly do not prevent them, it was felt that scrupulous concern must be shown to the entire examination environment in order to communicate to the police force the high regard accorded by the county to their service careers.

During consideration of how to develop this thesis, the thought emerged, "Why not attempt an employee-structured promotional system?" An employee task force, organized a year earlier, had proved very effective in generating new concepts, gaining feedback relative to existing programs, and facilitating the introduction of operational and administrative programs. There was a history of employee involvement in staff decisionmaking.

Realizing the need for quality testing and evaluation instruments, a pro-

fessional firm was awarded a contract to aid in developing this customized promotional system. Their cooperation and support of the concept was crucial to the development of such a program. After several introductory meetings with the firm, the deputy director of the Fairfax County Personnel Department and the commander of the police department's Services Bureau were designated to coordinate the development of the system.

### *Positions Open*

The tests were to select persons for promotion to three ranks: corporal, sergeant, and lieutenant. A total of 333 police officers and investigators were eligible for promotion to corporal, 32 corporals were eligible for promotion to sergeant, and 25 sergeants were eligible for promotion to lieutenant.

### *Consultation Meetings*

In order to gain maximum input from candidates competing for promotion, representatives from the classes of Police Officer I, Police Officer II, and Criminal Investigator were asked to attend a consultation meeting with the consultant and project coordinators. In a memorandum disseminated to members of the department detailing the anticipated process, each squad of police officers was asked to select democratically among themselves a squad member to attend the consultation meeting on their behalf. Forty-seven employees, representing 333 officers and investigators, participated in this consultation meeting regarding the corporal promotions. Representatives had an opportunity to question the background of the consultant firm—their experience, their knowledge of validation procedures, etc. Two additional consultation meetings were held for all cor-

porals competing for sergeant and all sergeants competing for lieutenant.

These meetings were both revealing and memorable. The anger and aggressive indictments of past practices and perceived injustices thundered forth. Gradually the coordinators of the session put the message across, "Why don't you call the shots," and the voting began on the process components. There was only one prohibition and that was that nothing considered a breach of police or personnel professionalism would receive concurrence; however, it was not necessary to invoke this escape clause in any instance.

It must be admitted that some approved practices certainly took a beating, and the personnel coordinator blanched perceptibly at the weights assigned to examination components by vote, especially considering the high quality material available. It was the police coordinators' turn in the "barrel" when candidates for sergeant and lieutenant insisted that their oral boards be staffed by members who "never" had any relationship with the department or jurisdiction. In all, the three groups took 17 to 20 votes, and their decisions are reflected in the accompanying table.

As these meetings terminated, it cannot be said that the attitude of the men had been transformed; the feeling prevailed that management was taking an interesting posture, but would somehow betray their hopes in the end. When the examination announcements were published and individually mailed to each candidate containing every particular item they had requested (except for the reduction of the duration of the sergeant and lieutenant list to 1 year), there was a dramatic attitudinal change which continued to grow more favorable and enthusiastic through the entire process. Also in this mailing were an application and a pamphlet that described how to take a written test.



## Consensus Items

In the meeting with prospective corporals, candidates requested that an oral board not be given. Recognizing the sheer numbers involved—333—the police department was not particularly anxious to utilize an oral board for police corporals. Since participating members had also requested that there be no failing mark in any phase, there was no mechanism for substantially reducing the number of candidates eligible for the oral board.

The written examination was discussed in considerable detail. The participants agreed to the necessity for having some instrument to identify a candidate's knowledge of police work, so there was very little mention of not having a written examination. They did voice, however, a strong desire to have only job-related questions. The overriding concern of all candidates relative to the written examination was one of not having a failing score. Heretofore, a score of 70 had been required of applicants in order for them to be eligible to compete at the next level in the process; thus, candidates had been eliminated at each phase. A number of percentages was discussed as to a weight for the written examination, but 60 percent was finally set with a unanimous vote by the 47 representatives of the candidates for corporal. Candidates for sergeant and lieutenant voted in their meetings for a weight of 30 percent.

Candidates for sergeant and lieutenant voted for an oral board. The sergeants' group recommended a weight of 30 percent, with all outside members; the lieutenants' group, hearing of the sergeants' recommendation during their consultation meeting, also voted for a 30-percent weight, with one inside member on the board. Arguments for and against external/internal panelists

were discussed, but the consensus was that having all oral board members from outside the Fairfax County Police and Personnel Departments offered more objectivity.

Evaluation by supervisors was expected to play a part in selecting those to be promoted. The basic questions were: should this evaluation be based on performance in the current rank, or on potential to perform in the rank being sought; and which supervisor should prepare the evaluation?

Candidates for all three ranks requested that performance in their current position be utilized as a basis for evaluating them for promotion. As to "performance evaluation," candidates voiced the notion that how well an individual performs the duties in his present rank is a meaningful indication of the likelihood of how well the person will perform the duties of the next higher rank. Candidates for corporal asked that their direct supervisors evaluate them with no changing of scores by higher staff. Candidates for sergeant requested that their sergeant, lieutenant, and captain evaluate them separately and then meet together to determine a "consensus" rating, which would not necessarily be an average. Lieutenant candidates requested a rating by their lieutenant and captain separately with a consensus rating also. Both ranks requested no review above those levels (in the previous examinations, staff officers had reduced or raised performance scores). Each of the three groups asked that a weight of 30 percent be placed on this category.

All candidates requested that a weight of 10 percent be placed on seniority. The minimum number of years of service required to be eligible to compete was given a value of 70. For the 8 years of service beyond the qualifying period of 2 years, the candidate received 2 points per year.

He received an additional point for each of the next 10 years of service. Therefore, a 10-year veteran officer competing for corporal received 70 for 2 years of qualifying service and 2 points for each of the next 8 years, yielding a total score of 86. Since a candidate with only minimal qualifications would receive a 70, the 10 percent factor would reduce the 10-year officer's final score advantage to 1.6 points. It is interesting to note that the final eligible list showed a negative correlation between written examination scores and years of service. The younger officers tended to do better.

## Bibliography

One salient issue was the development of a bibliography of readings from which test questions would be drawn. During the consultation meetings, all candidates voiced support for the posting of a bibliography. The consultant indicated that a complete or partial bibliography could be provided to the department, emphasizing that availability of the reading materials should be a primary concern to the department in publishing a bibliography. This issue presented a serious dilemma. On the one hand, there existed a commitment to the publication of a bibliography. On the other hand, the source material for the validated test involved a large number of books. The problem was resolved by publishing a partial bibliography, which, it was explained, contained source material for at least 50 percent of the questions. In this manner, the jurisdiction was able to make available a substantial number of valuable study materials.

Since local libraries and colleges did not have adequate supplies of the books in question, a decision was reached to purchase 40 sets of 4 books each to be available for candi-



dates competing for the ranks of corporal and sergeant. An informational bulletin was distributed to all candidates stating that the department would purchase these books, and an accompanying chart illustrated the manner in which the books were to be distributed—a set of books for approximately each eight eligible candidates. Sets of books were also ordered for lieutenant candidates. The purchase of this source material was costly to the county, but it demonstrated management interest and concern to the candidates. Also, the texts will continue to be used in the police department for training programs. The following four books were utilized for the corporals' and sergeants' examinations:

O'Connor, George W., and Charles Vanderbosch. *Patrol Operation*, 2d ed., IACP, Washington, D.C., 1970.

Lamore, N. F. *Supervision of Police Personnel*, 2d ed., Prentice Hall, Englewood Cliffs, N.J., 1970.

Gocke, B. W., and G. T. Payton. *Police Sergeants Manual*, 5th ed., Legal Book Corp., Los Angeles, Calif., 1972.

Clift, Raymond. *Guide to Modern Police Thinking*, 3d ed., W. H. Anderson, Co., Cincinnati, Ohio 1973.

### **Development of Performance Evaluation**

The promotional firm assigned a member of its staff to work with the project coordinators to develop a performance evaluation form and instructions. Two forms were developed, one for corporals and sergeants and one for lieutenants. Categories relating to supervisory/management skills were included in the form for lieutenants.

The following categories were

established for police corporal and sergeant: technical police knowledge; learning ability; quality of work; judgment/analytical ability; interpersonal relationship abilities; attitude (job demeanor); ability to function under pressure; and initiative.

For lieutenant, the following categories were developed: technical police knowledge; supervisory knowledge; leadership ability; judgment/analytical ability; quality of work; interpersonal relationship abilities; ability to function under pressure; willingness to assume responsibility; and management skills.

After developing the categories with a detailed analysis of each, a numerical index from 64 to 100, grouped into 5 descriptive categories, was established. The categories were dispersed as follows:

- 64-69 The ratee's knowledge/performance is not as good as that of most persons in the rank being rated;
- 70-77 The ratee's knowledge/performance is not quite as good as that of the persons in the rank being rated;
- 78-86 The ratee's knowledge/performance is at the level of the average person in the rank being rated;
- 87-94 The ratee's knowledge/performance is better than the average person in the rank being rated; and
- 95-100 The ratee's knowledge/performance is almost always better than most persons in the rank being rated.

A very essential feature of an evaluation system is a clear and uniform understanding by raters as to the way

subordinates should be evaluated; therefore, an instructional format was developed and training sessions were

***"A very essential feature of an evaluation system is a clear and uniform understanding by raters as to the way subordinates should be evaluated . . . ."***

arranged for all police supervisors in the department. Each factor was very thoroughly explained to supervisors so that all raters would be employing the same references to the factor.

A number of instruments have been developed to measure performance ratings. The key to personnel evaluations, though, is well-developed standards of performance. It is one thing to have job descriptions thoroughly defined; it is another to have standards of performance for measuring the degree to which the person gets results.

In evaluating employees, it is always difficult for supervisors to strike what could be termed as an "average" or "norm." The supervisors in this case were asked to establish a "benchmark." They were instructed: "The basic point of reference, or benchmark, on which the rating standards are based is the concept of the 'average performer.' The concept of the average performer was defined as a 'level of performance which represents the average level of performance, or norm, which the rater had observed throughout his entire career in both working with and supervising police officers functioning in the rank in question.'" The instructions involved many other crucial areas such as avoiding the "most recent effect"—imbalance in ratings caused by a recent outstanding contribution by a member. To maintain continuity in evaluations, supervisors were asked



to grade all subordinates on one category before proceeding to another.

To avoid comparisons, candidates were evaluated on the same day, with several exceptions due to leave time and sickness. All candidates were allowed to see their score sheets. An appeal format was developed which allowed candidates an opportunity to appeal to a police major of their choice. They had requested this appeal avenue. However, the candidates agreed that appeals relating to a supervisor's professional judgment would not be accepted; implicit in their requests for supervisors to evaluate without staff review was the notion that they had to keep the score. Only appeals relating to personal biases were accepted. Of the 400 evaluations, only 11 candidates appealed. Six candidates received minor changes because their raters acknowledged the change was necessary; the scores of the remaining five were sustained.

### **Written Examination**

For written examinations to be meaningful, validation is a prerequisite. The Equal Employment Opportunities Commission's (EEOC) guidelines state that validated tests shall be locally validated if it is technically feasible. While the firm had used content-valid and job-valid tests for over a decade, the EEOC guidelines suggest that content validity be supplemented by empirical-statistical validation where technically possible. This firm had devoted extensive work to meet these guidelines.

The consultant firm developed a self-administered job analysis checklist. A representative number of corporals, sergeants, and lieutenants described the duties of their various jobs by checking off task statements on the checklist and providing information as to frequency and impor-

tance. In addition, members of the firm conducted on-site analysis interviews of many of the different tasks performed by members of the department. Extensive interviews were conducted with the commanders of the major sections to determine what specific tasks were performed by officers and supervisors and to provide a program of verification by the on-site analysts.

The consultant firm had just previously completed the empirical-statistical validation of two equated forms of a written promotional examination for the position of sergeant. The job analysis information indicated Form 1 of this examination was also content valid for the position of sergeant in Fairfax County. Accordingly, the decision was made to use Form 1 as the written examination in this selection process.

Job analysis also disclosed that in Fairfax County the job of corporal was much more responsible than in many police departments. In fact, it was found that the duties and tasks of a corporal were very similar indeed to the duties and tasks of a sergeant. Accordingly, a decision was made to use Form 2 of the empirically statistically validated sergeant examination as the corporal examination in Fairfax County. Job analysis indicated that this form was also content valid for the rank.

For lieutenant, a specific examination had been developed to fit the job analysis so as to provide a content-valid examination for this rank. The law questions in all three examinations were based specifically on the criminal and traffic codes of the State of Virginia and were specifically referenced to these codes. As an additional check, the accuracy of the key answers of the questions were subjected to a technical review by the Commonwealth's Attorney of Fairfax County.

All of the questions in the examination were referenced to a bibliography of standard texts in police science and police management, and a majority of the questions were referenced to the four books made available to candidates for study.

The written examination for corporal and sergeant was administered at a local high school, utilizing 13 classrooms so that all applicants for one promotion could take the examination at the same time. The candidates had agreed that no make-up examination would be provided. Since weekdays might conflict with court schedules, the examination was administered on Saturday morning. Candidates for lieutenant took the written examination on Monday following the other examination. Candidates who did not compete for the promotion or who were not eligible to take the examination—those with under 2 years of service—worked overtime to fill the voids. Employees taking the examination were not granted overtime compensation. Personnel assigned to the 12 to 8 a.m. shift were allowed to take leave so that fatigue would not be a factor in taking the examination.

Applicants were given 3½ hours to take the examination and an additional one-half hour to note written exceptions to any questions. Less than 10 applicants availed themselves of this avenue. The prevailing comments of those applicants leaving the examination rooms were, "It was a fair exam." The Personnel Department administered the examination with monitors who had been especially trained. The police department decided to have a representative of the promotional firm available on Monday and Tuesday after the examination to allow all candidates an opportunity to view a keyed test booklet and discuss additional exceptions to the questions. The representative spent most of those 2 days by him-



# DECISIONS RENDERED BY REPRESENTATIVE GROUPS' VOTES

	<i>Corporal</i>	<i>Sergeant</i>	<i>Lieutenant</i>
<b>Type of examination and weights:</b>			
Written.....	60 percent.....	30 percent.....	30 percent.
Special performance evaluation.	30 percent.....	do.....	Do.
Oral.....	None.....	do.....	Do.
Seniority.....	10 percent.....	10 percent.....	10 percent.
Duration of eligible list.....	2 years.....	1 year.....	2 years.
Pass point <sup>1</sup> .....	Top 100 eligibles to comprise list.	No failure—ranking list only.	No failure—ranking list only.
<b>Performance evaluation type:</b>			
Type.....	On performance in present rank (police officer).	On performance in present rank (corporal).	On performance in present rank (sergeant).
Number of factors.....	8.....	8.....	9.
Rater(s).....	Supervisor.....	Next 3 supervisory echelons.	Next 2 supervisory echelons.
Appeal procedure.....	To bureau commander of candidate's choice.	To bureau commander of candidate's choice.	To bureau commander of candidate's choice.
<b>Written examination:</b>			
Number of items.....	100.....	100.....	100.
Review/appeal procedure.	See text.....	See text.....	See text.
Oral evaluation.....	None.....	3 external panel members.	3 external panel members.
Appeals from final exam results.	None.....	None.....	1. <sup>2</sup>
Seniority formula.....	Uniform.....	Uniform.....	Uniform.

<sup>1</sup> There was to be no failing score established on examination components. All scores were to be averaged into a final examination score according to assigned weights.

<sup>2</sup> Upon refusal, appeal was dropped after first level.



self, because fewer than 10 percent of the candidates asked to view the booklet. Why? Candidates indicated that the questions were fair, and they didn't know them. This attitude was in sharp contrast to previous post-examination comments.

### **Oral Board**

The oral board, which had previously worked together, proved to be very effective in evaluating candidates for promotion to sergeant and lieutenant. All oral examiners employed by the firm had received training in the art of oral examination. The board consisted of a member of the firm, a police chief from a large city in Virginia far removed from Fairfax County, and a deputy chief from a large department in another State. Hence, no member of the board knew any candidate competing for promotion.

The oral board was conducted in a suite rented by the county so that candidates would not have to report to a police facility for the interview. The project coordinators felt that such a setting was more conducive to a relaxed atmosphere. Each applicant was allowed 1 hour, if necessary, to respond to the same questions. The prevailing comment coming from candidates taking the oral board was, "It was a good board."

According to one seasoned oral board member, the attitude of supervisors appearing before the board was generally better in comparison with candidates who had been interviewed elsewhere. This is attributed, in part, to employee involvement in the process.

### **Notification and Eligibility Lists**

Simultaneous with the publication of the three eligible lists, each candidate was mailed an individual sheet showing the separate component

scores and detailing the arithmetic steps in arriving at the final rating. An accompanying memorandum identified the date and place where candidates could review their test sheets and verify the computations. Less than 5 percent availed themselves of this opportunity.

### **Promotions**

The department promoted 57 members of the organization as a result of this promotional process—the largest in the history of the department. While the usual level of post-promotion blues was anticipated, this was not the case. In this promotional process, members of the department felt they had more than a "fair shake." They had asked for a specific process, and they received it. One could not begin to suggest that such a promotional exercise would work in all police departments; however, the experiment exceeded all expectations of the staff in Fairfax County. Those employees promoted in this promotional examination were outstanding officers and supervisors.

It is strongly felt that the process, which took 3 months, would not have succeeded with only surface mechanics. It was necessary to give in-depth attention to all facets of the examining environment in order to achieve complete credibility not only for the present promotional series, but also, as a basis for trust and acceptance in the years to come. The following are a few examples of this type of comprehensive concern:

The personnel and police coordinators spoke with more than 150 police officers individually and in groups in order to deal with personal anxieties, problems, dispensing information, clarifying, dispelling rumors, etc.—they were constantly available and receptive.

The oral evaluation was held

in an attractive motel suite for the benefit of the participants.

A sergeant who was hospitalized was given the complete performance evaluation training one-on-one because he was to rate a few officers.

Forty sets of the bibliography were purchased and made available.

Sick or injured officers were administered the tests in their homes.

A community college made a crash course available to officers based on the bibliography. (Eighty-five officers attended, and there was no statistically significant correlation between attendees and final rank on the eligible list.)

Absolute leave policy for 12 to 8 a.m. shift prior to written examination to avoid candidate fatigue.

The presence of the police chief and his entire command staff at the written examination site who remained until the end to obtain reactions.

A final overview of the results of this total examination environment approach reveal:

A very satisfied candidate population.

No union complaints.

A police chief delighted with the caliber of the promotional appointments.

A personnel department with adequate eligible lists and no litigation.

Of course, in promotional testing there is always that problem of the encore. What about the future of police promotions in Fairfax County? While budgetary strictures might require some modification, the Fairfax County Police and Personnel Departments plan to continue participative involvement in future promotional examinations. (F)





# Don't Miss a Hair

**T**he successful investigation of violent offenses such as rape, murder, hit and run, assault, etc., is often materially assisted through the examination of hairs. Hairs are likely to become detached from the scalp, other

areas of the body, or clothing and transferred from one person to another in any violent encounter. Evidence of this nature is present in a large number of criminal cases which come to the attention of the FBI Laboratory.

Assaults and murders are often accomplished by blows to the head area. Hairs readily become attached to the instrument used, especially where there are bloodstains on the weapon to which the hairs will adhere. An examination of such hairs will aid in

establishing whether or not the instrument was used to perpetrate the crime. (See fig. 1.)

Hair evidence has been used to advantage in the solution of other crimes, such as breaking and entering, burglary, robbery, kidnaping, etc., where the subject or victim has brushed against objects or has come in contact with animal furs.

The examination of hairs may prove of value in identifying both the living and the dead. It tends to identify the perpetrator of a crime by placing him

---

This article, first printed in the August 1952 issue of the BULLETIN, and reprinted in the December 1968 issue, has been revised and brought up to date. Because of its basic value in scientific crime detection, it is being reprinted for BULLETIN readers.

---



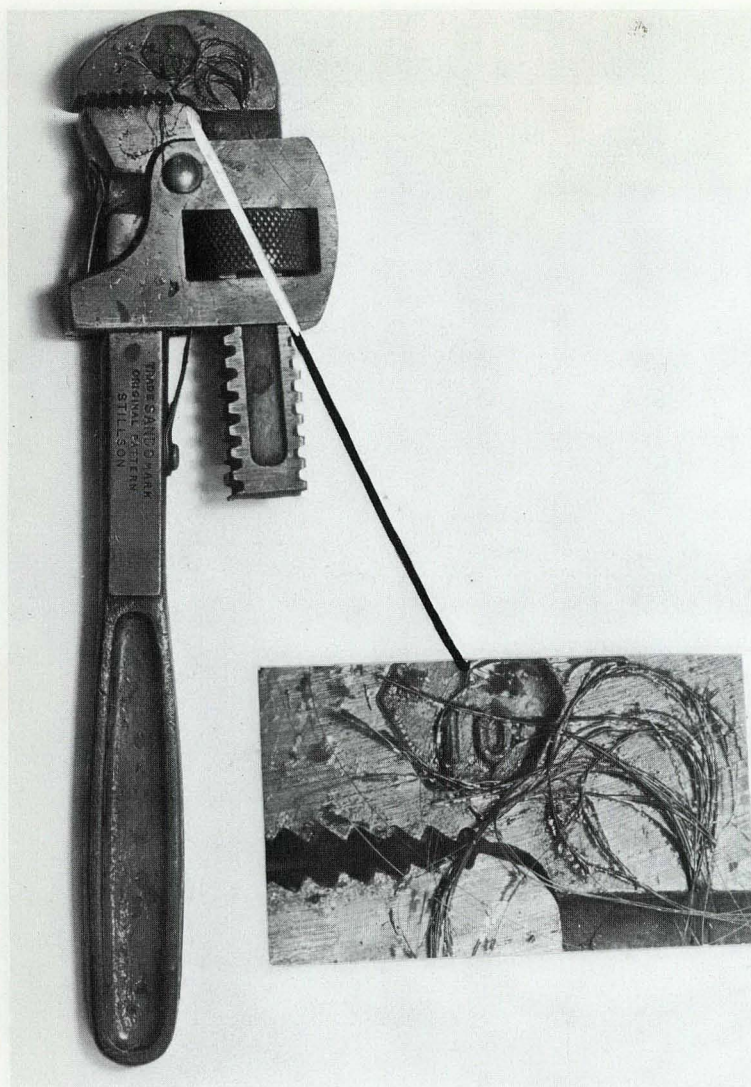


Figure 1. Hairs and bloodstains were found on death weapon in car of suspect.

at the scene of a crime or with the victim. (See fig. 2.) Hairs are very resistant to decomposition and putrefaction. They often remain as evidence of identification long after other means, such as facial features and fingerprints, have been destroyed.

Hair evidence can be difficult to locate, and a search for it can hardly be too meticulous. For example, in a hit-and-run case it is suggested that if the investigation reveals a car was possibly involved in the case, the car be placed on a lift or over a grease pit

and searched thoroughly with an oblique light from the underneath side to the top. (See fig. 3.)

If a hair examination is requested, all foreign fibrous debris is removed from the submitted specimens in the laboratory. The hairs are separated from the other debris and are prepared for examination.

If hairs are not fully developed or are too fragmentary, they are not suitable for an adequate hair examination.

Except in rare instances, there are

not enough individual characteristics in hair from which to determine positively that a hair of unknown source came from a particular person to the exclusion of all other persons.

### Examination of Hair Evidence

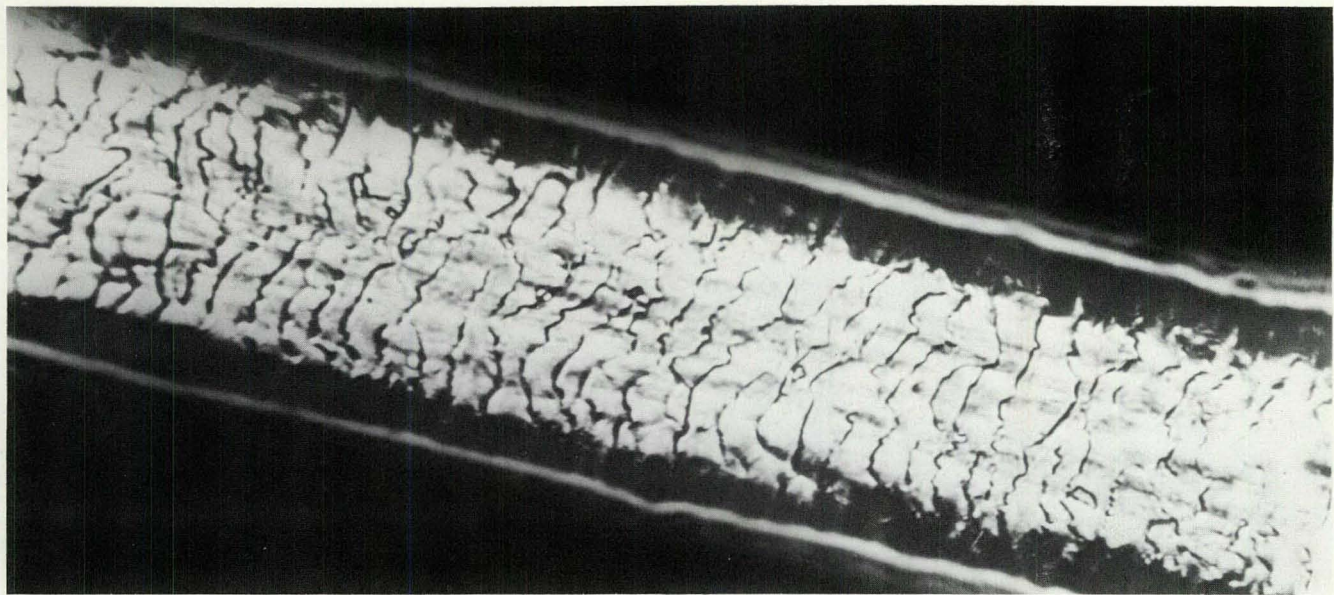
A hair is an appendage of the skin and consists of a bulb or root end, the shaft, and a tip end. The shaft grows outward from the root end and is composed of the cuticle or outside covering, the cortex, and the medulla or core. The cuticle is formed by overlapping scales which always point toward the tip end of the hair. The cortex consists of elongated cells which comprise the bulk of the hair. The medulla or core is composed of variously shaped cells. The pigment, when present, may be found in varying amounts distributed throughout the hair and is responsible for the color of the hair.

### Human or Animal

It can be determined whether hair is human or animal in origin. Such a determination is based on root shape, scale shape, color patterns, pigment distribution, and medulla width. Also, in contrast to humans, most animals have two types of hairs; namely, an outer coat of guard hairs and an inner coat of fur hairs.

Hairs of many different types of animals are sufficiently characteristic that the kind of animal can usually be determined. Different breeds of the same animal family, such as the dog family, cannot be differentiated by an examination of a limited number of hairs. Animal hairs from an unknown source can be compared with a hair sample from a particular animal to determine if possibly the two samples could have come from the same animal, but animal hair comparisons are not as conclusive as human hair comparisons because of the many varia-





A human hair magnified 900 diameters.

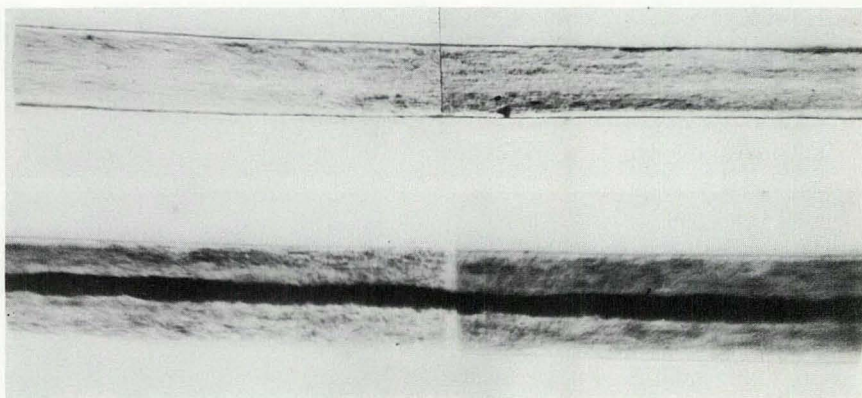
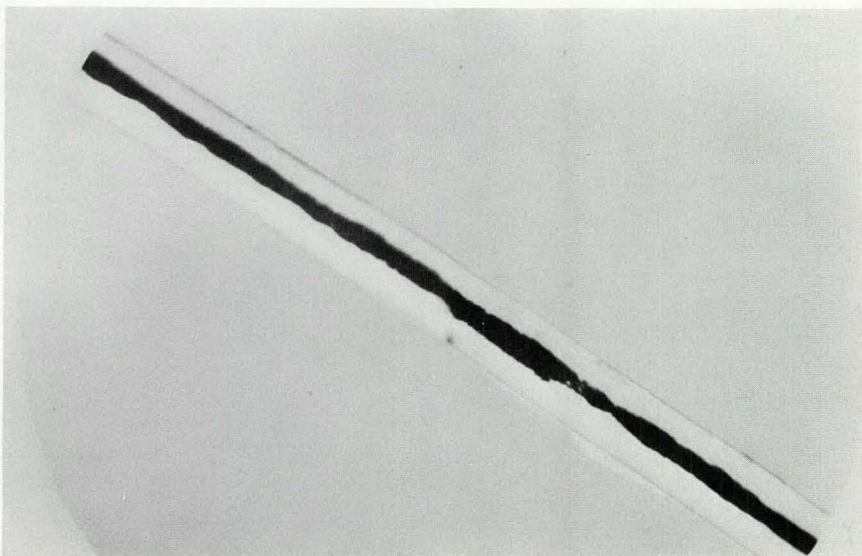


Figure 2. Caucasian-type hairs from a murdered police officer were found around the button of a suspect's shirt. These hairs were placed in the left field of a comparison microscope. Known specimens taken from the head of the deceased were placed in the right field. Note how the variations in the questioned specimens match those of the known specimens.





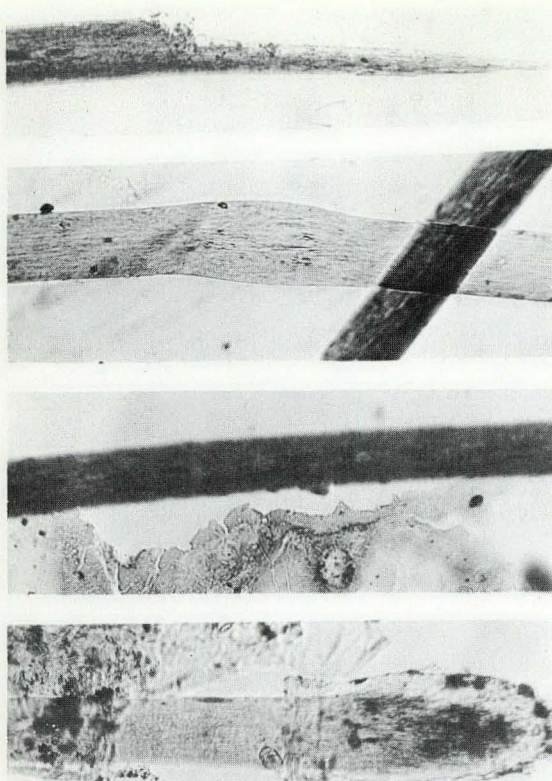


Figure 3. Caucasian-type scalp hairs were found on the undercarriage of an automobile involved in a "hit-and-run" accident. Hair No. 1 (reading from top to bottom) was forcibly shattered. Hair No. 2 was crushed at the widened area. Hair No. 3 shows a stain of human blood. Hair No. 4 was forcibly removed from the scalp. The microscopic variations in the structure of these hairs were also present in the known samples obtained from the victim. The subject in this case was found guilty of manslaughter.

Hair from members of the Caucasian race contains very fine to coarse pigment. The pigment is more evenly distributed than in hair from members of the Negroid and Mongoloid races. Cross sections of hairs from Caucasians are oval to round in shape. (See fig. 4.) Caucasian hair is usually straight or wavy and not tightly curled. It can vary in diameter along the shaft very little or to a moderate amount.

Hair from a person of mixed races contains primarily characteristics of the race that is prominent in the person's physical appearance.

The age and sex of a person cannot be definitely determined from a hair examination.

tions found in the hair from the same animal.

In most instances, it can be determined whether a human hair came from a member of the Negroid, Mongoloid, or Caucasian race or from a person of mixed racial origin.

Hair from members of the Negroid race contains heavy pigment distributed unevenly. A thin cross section of a hair from a member of the Negroid race is flat to oval in shape. (See fig. 4.) Negroid hair is usually tightly curled with marked variations in the diameter along the shaft.

Members of the Mongoloid race, which includes the American Indian, the Eskimo, and the Oriental, have hair containing dense pigment distributed more evenly than in Negroid hair. Cross sections made of Mongoloid hair are typically round in shape. (See fig. 4.) Mongoloid hair is coarse and straight with very little variation in diameter along the shaft of the hair. It usually contains a heavy black medulla or core.



Figure 4. Cross sections of scalp hair—Negroid, Mongoloid, and Caucasian, reading from top to bottom.



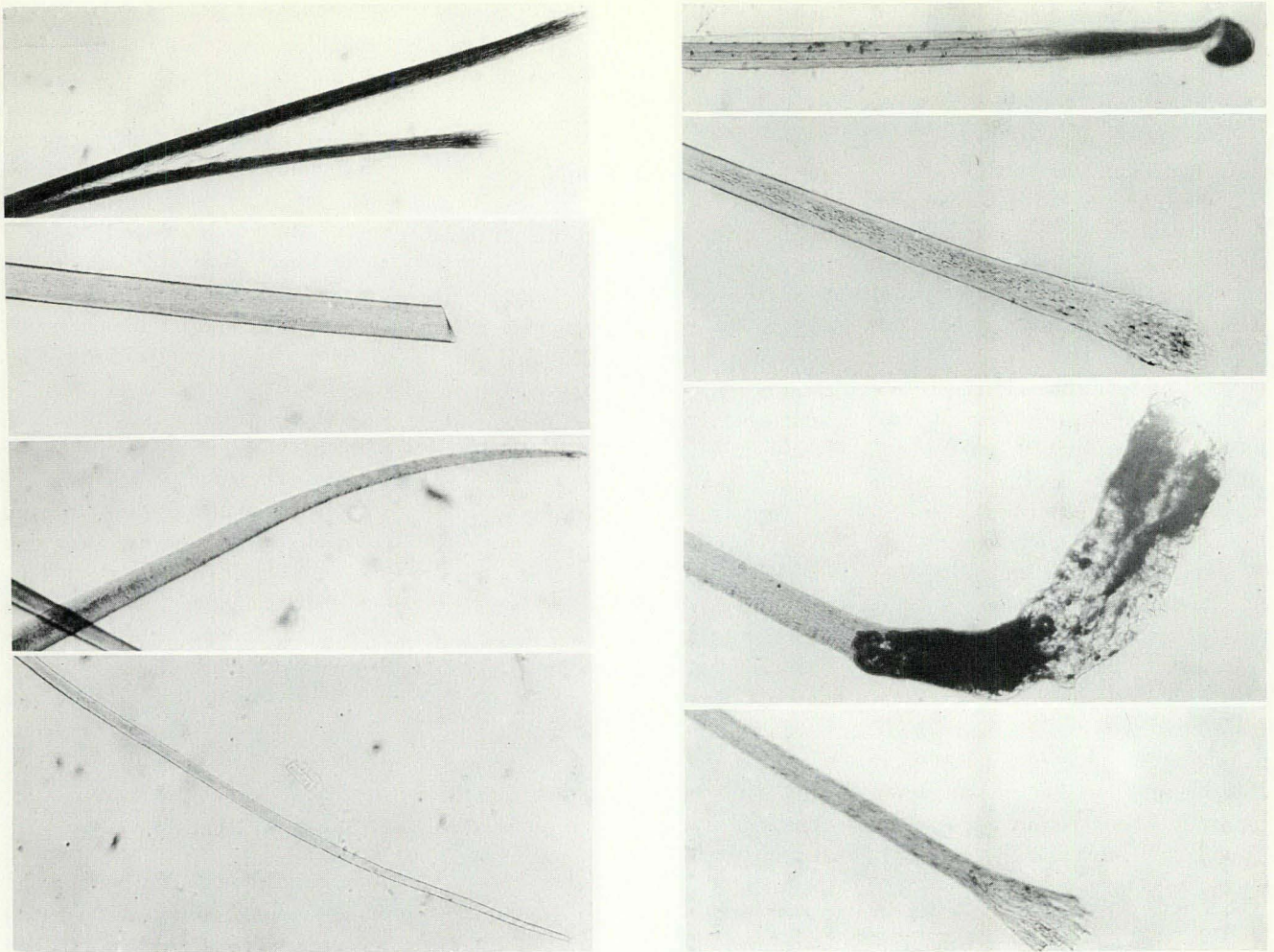


Figure 5 (left). Hair No. 1 (reading from top to bottom) is a scalp hair with a split tip end. Hair No. 2 has been cut with a sharp instrument. Hair No. 3 is from the nostril. The tip end has not been cut. Hair No. 4 is from the scalp, and the tip end has not been cut. Figure 6 (right). Hair No. 1 (reading from top to bottom) has been forcibly removed. Hair No. 2 fell from the scalp from natural causes. Hair No. 3 shows a burned end. Hair No. 4 was severed by crushing.

## Body Area

The region of the body from which the human hair has been removed can be determined with considerable accuracy from the length, size, color, stiffness, curliness, general gross appearance, and microscopic appearance.

Scalp hairs generally show less diameter variation and a more constant pigment distribution than hairs from other body areas.

Beard hair is coarse, curved, and often triangular in cross section.

Hairs from the eyebrow, eyelid, nose, or ear are short, stubby, and

have wide medullas. They taper rapidly to a fine point and can be distinguished by the general overall appearance. (See fig. 5.)

Limb hairs typically taper from base to tip, have a granular medulla, and form an arc.

Axillary hairs are fairly long with unevenly distributed pigment. They vary considerably in diameter along the shaft, sometimes have a bleached appearance, and have fine pointed tips when not cut.

Pubic hairs are similar to axillary hairs but are coarser and do not appear bleached. They also are more wiry, have more constrictions and

twists, and often have continuous broad medullas.

It is not difficult to establish whether hair has fallen out or has been pulled out forcibly, if the root end is present. Hairs which have fallen out from natural causes will have a bulb-like root. This bulb will have a clean appearance with nothing adhering to it. (See fig. 6.) Hairs that have been pulled forcibly will usually have a portion of the sheath clinging to the bulb, the bulb might not be fully developed, and the bulb will often have a mutilated appearance. (See fig. 6.)

An examination of the shafts of hairs often reveals that the hairs have



been crushed or shattered with a blunt object or cut with a sharp instrument. Under high magnification, crushed or shattered areas of the hair shaft are readily observable. A sharp cutting instrument leaves the cortical cells of the shaft severed with a clean and smooth cut. (See fig. 5.) A blunt instrument will leave the ends of the severed cortical cells of the hair shaft with a jagged or rough appearance. (See fig. 6.)

Dyed or bleached hair can be distinguished from natural hair. Dyed hairs, when observed microscopically, have a dull appearance, the inner margin of the cuticle is obscured, and the pigment granules are less prominent than in natural hairs. (See fig. 7.) Bleached hairs have a rough appearance and contain less pigment than natural hairs, varying with the degree of bleaching. (See fig. 7.) If there has been a subsequent growth of hair since dyeing or bleaching, the natural end portion will stand out markedly. Human hair grows approximately one-half inch per month,

and thus, by mathematical computation, it is possible to estimate the amount of time that has passed since dyeing or bleaching.

### Origin of the Specimen

The prime purpose of human hair examinations in the FBI Laboratory is to determine whether a human hair specimen of unknown source, hereafter referred to as a questioned specimen, could have originated from the same source as a known hair sample representing a particular person. (See fig. 2.) As pointed out previously, it is not possible except in very unusual cases to determine definitely by microscopic examination that a questioned hair sample came from a particular person. It can be determined, however, that the hair of unknown source matches a known hair sample from a certain individual in all microscopic characteristics and, accordingly, could have originated from the same source or that it is sufficiently dissimilar to the known hair sample

and, therefore, is not from the same person.

In making hair comparisons, a comparison microscope is most essential so that the questioned hairs and the known hairs can be viewed at the same time. Any variations in the microscopic characteristics can thus be readily seen. Hair from any given area of the body, such as the scalp, will exhibit a range of characteristics. Therefore, it is very important to have several hairs in the known specimen in order to determine if all the variations in the questioned sample are also present in the known sample.

The hairs should first be observed microscopically in the condition that they were obtained. In this examination, particular attention should be given to any foreign material, such as blood, that might be on the hair. Any foreign material on the hair should be identified, if present in sufficient quantity for testing.

### Microscopic Examination

The hairs should then be mounted on a glass slide in one of the commercially available mounting media for detailed microscopic examination. Such an examination would normally include considerations of: race; body area; color; tip (cut, broken, split, pointed, rounded); root (normal, distorted); diameter (fine or coarse, variation); cuticle (thickness, clarity, color); scales (protrusion, length); pigment (granule size, density, distribution); medulla (distribution, width, dark or light, clarity); cortex (cells prominent or obscured); artificial treatment (bleached, dyed, time since treatment); and damage (cut, crushed, broken, burned).

On occasion, a hair will possess special characteristics that are particularly useful in comparing questioned hairs with a known sample. Such characteristics include a cracked cuticle, abundant cortical

Figure 7. The top hair is dyed, and the bottom hair is bleached.

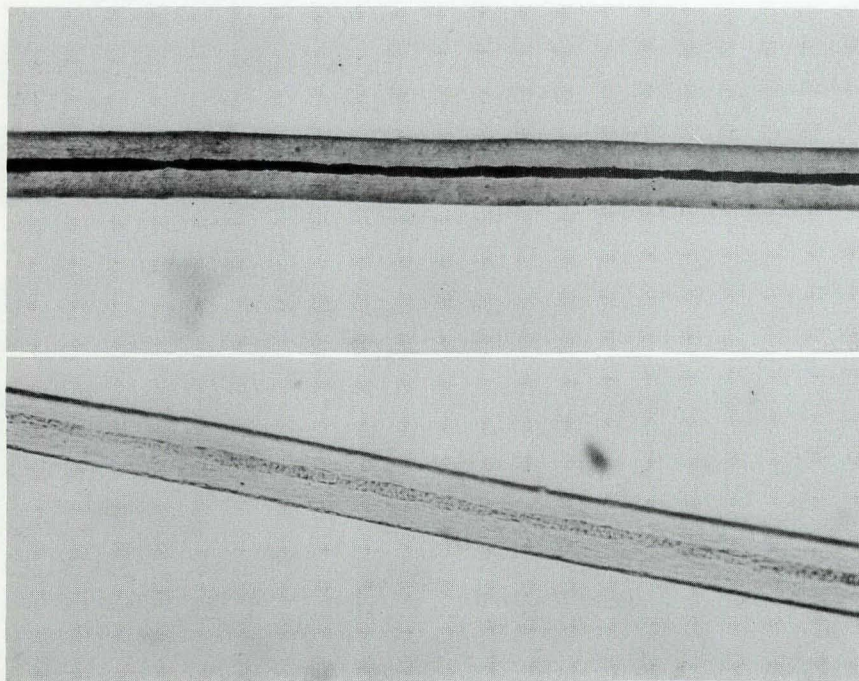
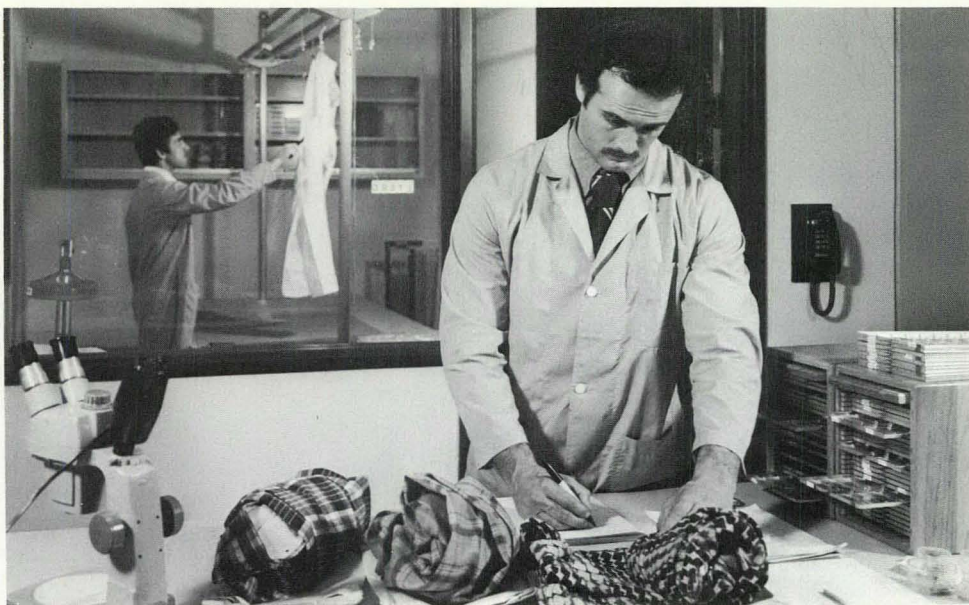




Figure 8. Known samples of different kinds of hairs and fibers are mounted on glass microscope slides in a hair and fiber reference file.



fusi (intercellular spaces, diseases, a double medulla, and vermin).

The examiner of hairs should have a ready reference file containing samples of human and animal hairs which can be used for comparison purposes in the examination of questioned hairs. (See fig. 8).

No opinion should be expressed as to the results of the examination of hairs unless the examiner has had wide experience in examining and identifying hairs.

### Collecting and Submitting Evidence

A complete search of the crime scene should be made as soon as possible. All of the hairs in the questioned specimens should be submitted, but do not mix hairs found at different places.

In assault and murder cases, obtain the clothing of the victim from the hospital or morgue to avoid the loss of evidence by careless handling and to prevent the clothing from being destroyed.

Avoid placing the victim's clothing and the subject's clothing in the same part of an automobile; on the same

object, such as a table; or in the same container or package before each piece has been separately wrapped and sealed to insure against transfer of hairs or other evidence from one garment to another.

### Representative Samples

Representative samples of hair from the victim, as well as the suspect, should be obtained if available. To be representative, at least a dozen hairs should be taken from different areas of the scalp, pubic region, or other body areas being sampled. Full length hairs are preferable, but they may be cut close to the skin surface rather than pulled. If there has been an injury, the hair sample should be taken from the injured area. Do not mix known samples of hair from different parts of the body, such as, for example, scalp and pubic hairs.

The hairs should be placed in a powder paper (folded paper) or in a pill box, and the containers should be securely sealed with tape.

Hairs should never be secured to a piece of paper or cardboard with tape. The hairs may be damaged, and any debris clinging to them may be lost.

Do not put hairs loosely in an en-

velope. The corners of envelopes are not securely sealed and hairs will be lost.

Areas on an object containing hairs should be protected with cellophane or paper taped over the areas before wrapping the object for transmittal to the laboratory. Hairs should be removed from objects too large to transmit; however, it is suggested that photographs of the hairs on the object be made before removing the hairs.

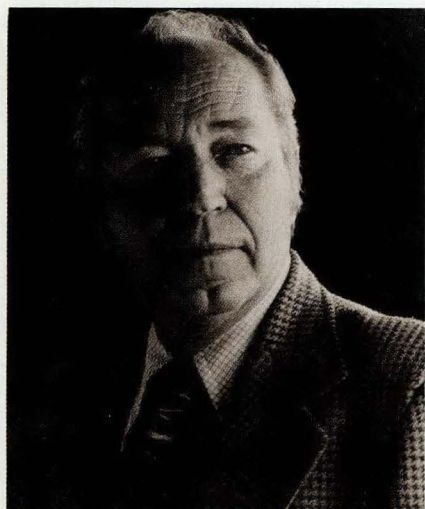
Although hairs cannot be positively identified as originating from a particular person to the exclusion of all others, hair evidence can contribute significantly to the investigation of a case and subsequent court action. From the investigative standpoint, hair recovered at a crime scene can provide valuable leads and most certainly should not be overlooked. At a trial, testimony concerning hair examinations has the primary value of corroborating other evidence such as the statement of witnesses. The testimony of FBI Laboratory experts concerning the results of hair examinations has long been accepted in State and Federal courts throughout the Nation.



## Ranger Hall of Fame



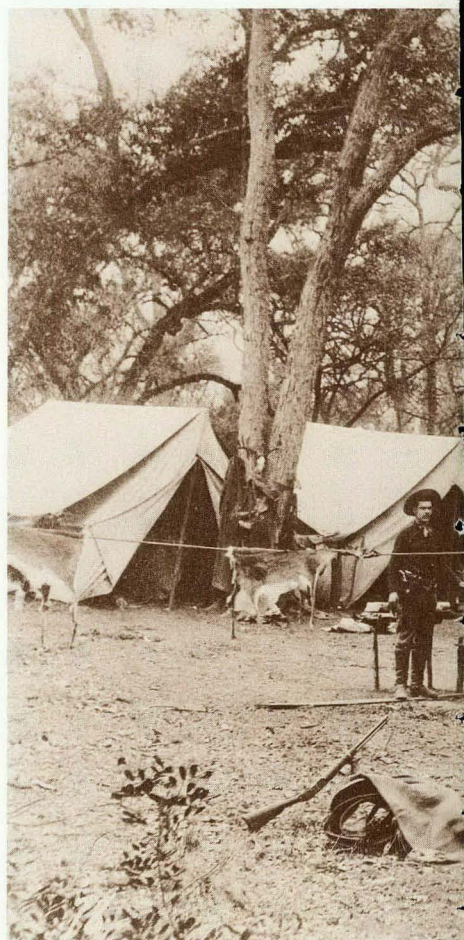
By  
**DAYTON KELLEY**  
Director  
Texas Ranger Hall of Fame  
Waco, Tex.



*" . . . the [Texas Ranger] Hall of Fame was built . . . in honor of the Rangers and their contributions to law and order in the growth and development of Texas from 1823 to the present."*

Photos appearing on pp. 20-23 by Steve Ashley, Waco, Texas.

Texas Ranger encampment, circa 1870.





With the opening of the Texas Ranger Hall of Fame in February 1976, Texas now has one of the prime tourist attractions in the Southwest. Located just off Interstate 35 on the banks of the Brazos River at Waco, the Hall of Fame was built by the Texas Ranger Commemorative Foundation in honor of the Rangers and their contributions to law and order in the growth and development of Texas from 1823 to the present. Many

regard the Texas Rangers as being the first State-level law enforcement agency in the United States.

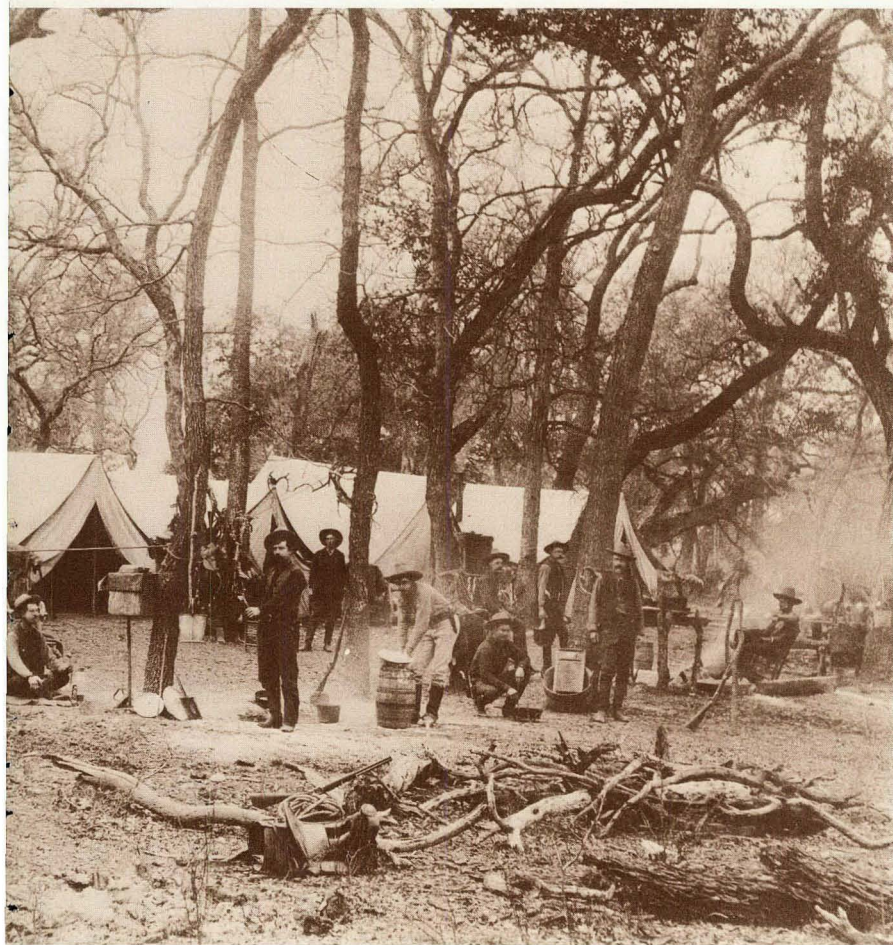
The foundation grew out of the efforts of the Texas Ranger Commemorative Commission which was authorized by the Texas Legislature to plan a suitable event to celebrate the 150th anniversary of the Rangers' founding. That anniversary was commemorated in August 1973 with groundbreaking ceremonies at the future site of the Hall of Fame.

The Hall of Fame was formally opened the weekend of February 6 and 7. Ceremonies included a banquet attended by State and national dignitaries, among whom were the Governor and both U.S. Senators from Texas, as well as a well-known television comedian who served as master of ceremonies. Several high ranking law enforcement officers were also present.

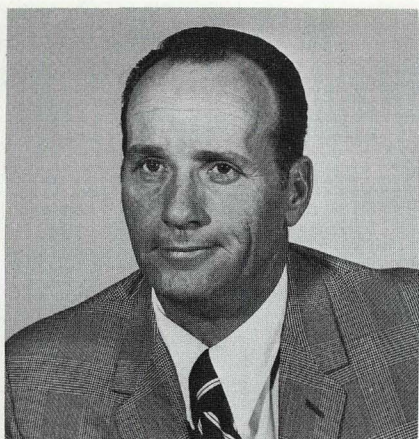
The 12,000-square-foot Hall of Fame was constructed at a total cost of almost three-quarters of a million dollars. It includes dioramas, exhibits, and graphic displays depicting noteworthy events and persons associated with the history of the Texas Rangers. The building also houses a library of books and other materials on Ranger history, a gift shop, an art exhibit area, and offices for the Hall of Fame staff.

Visitors can also watch a specially produced multimedia show on the Rangers' history. This is shown on three large screens in the main exhibit area and utilizes seven slide projectors, one movie projector, and the necessary sound equipment.

There are five dioramas, each in-







Senior Ranger Captain Bill Wilson,  
Texas Rangers

cluding wax figures, which depict five events from Ranger history in three-dimensional form. The 20 semipermanent exhibits utilize artifacts, graphics, and copy to tell the Ranger story.

### ***Rangers Memorialized in Bronze***

Twenty Rangers chosen as the initial honorees in the Hall of Fame are memorialized by bronze plaques in the main exhibit area. A biographical sketch and photograph of each is shown. Other Rangers will be added to the roll in the future.

The 20 initial honorees are John B. Armstrong, Ira Aten, George W. Baylor, J. A. Brooks, John S. "Rip" Ford, James B. Gillett, Jesse Lee Hall, Frank Hamer, John C. "Jack" Hays, Tom Hickman, John R. Hughes, John B. Jones, Ben McCulloch, W. J. "Bill" McDonald, L. H. McNelly, J. H. Rogers, L. S. Ross, William A. "Big Foot" Wallace, Samuel H. Walker, and W. L. Wright.

A Galveston, Tex., foundation awarded a grant of \$47,254 to be used to furnish and equip the library of the Hall of Fame. Of this figure, \$20,264 is to be spent for the purchase of books, microfilm, documents, letters, and other original source materials for the library. The remainder is for

furniture and equipment for the library and vault storage area.

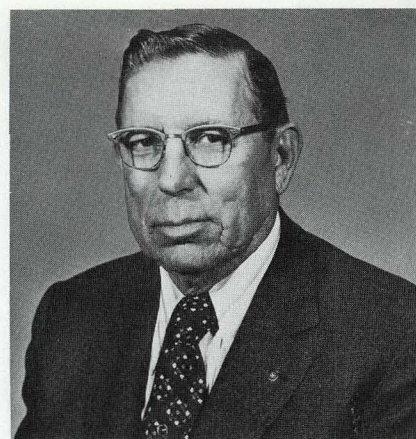
***"Twenty Rangers chosen as the initial honorees in the Hall of Fame are memorialized by bronze plaques in the main exhibit area."***

The Hall of Fame staff hopes that the library will be "of such nature and of such stature that no one doing research in the history of the Texas Rangers will be able to say he had completed his research unless and until he has consulted the holdings at the Texas Ranger Hall of Fame."

### ***The First "Rangers"***

In the early 1800's, Stephen F. Austin, known as the "Father of Texas," contracted with the government of Spain to settle 300 families in what is now Texas. By late 1823, there were only a few hundred people who had come to Texas, but those that did were of hardy pioneer stock from older areas of the United States. One problem they encountered was that of Indians who occupied the region. Raids on lonely cabins in the wilderness were a common occurrence, and to protect his settlers, Austin offered to employ several men to "act as rangers" to pursue and punish the marauding Indians. Although he did not specifically call them "Texas Rangers," Austin was the first to use the word and thus made these men the first Texas Rangers in word as well as in fact.

Throughout the colonial period of Texas history, and even after attaining statehood status, Texans were troubled by Indians, and since there was no Army to protect them, the settlers relied upon armed groups of their own people. The Indians would strike suddenly at a lonely cabin and just as suddenly disappear into the



Col. Wilson E. Speir, Director,  
Texas Department of Public Safety

wilderness. A band of settlers would pursue them, and because these pursuers ranged over the entire country, they came to be called Rangers. In 1832, in a convention at San Felipe de Austin, the headquarters of Austin's Colony in Texas, the delegates from the various settlements suggested that a militia group be raised and paid by the Government. Though the name "Ranger" was not used, it is clear that the job of these men was to "range and guard the frontiers."

By 1835, the Texans' relations with Mexico, which had won its independence from Spain and thus established claim to Texas, had deteriorated to the extent that Texans were talking of securing their own independence.

***"All during the days of the Republic of Texas, companies of men were raised for various periods of time, under a variety of names, but always for the purpose of defending the frontier."***

When the provisional government of Texas was established, an ordinance was passed authorizing a "corps of rangers under the command of a major, to consist of 150 men." Maj.



R. M. "Three-Legged Willie" Williamson, a fiery young editor and lawyer from Georgia, was appointed to command them.

All during the days of the Republic of Texas, companies of men were raised for various periods of time, under a variety of names, but always for the purpose of defending the frontier. Most of them were called up in time of urgent need and disbanded when the emergency was over. Some companies served for only a few days, others for several months. Most of them were made up of men from the area where they were needed. Sometimes they were called spies, sometimes volunteers, sometimes militia or mounted gunmen, but always their job was the same. Although it was not until 1870 that the words "Texas Ranger" appeared in the legal acts raising such companies, these early "rangers" were certainly Texas Rangers.

### **Weapons**

All Rangers who served during the early days were required to furnish their own horses, arms, and other

equipment. They were a mobile force, depending on their horses for speed when engaged with hostile elements and for endurance in covering the long distances of the Texas landscape. In the beginning, their weapons were inferior to those of the Indians who had become adept at fighting with bow and arrow while mounted on a swift horse. An Indian could discharge several arrows at his foe while galloping at full speed. A Ranger could fire his rifle or pistol only once and then was compelled to dismount in order to reload.

With the development of the repeating weapon, however, the Ranger had the advantage. Armed with two repeating pistols, one Ranger had the firepower of 10 men armed with the old single-shot weapons.

It was a Texas Ranger who was largely responsible for the adoption of the revolver as the Rangers' favorite weapon. Samuel Colt, a young inventor, had patented and manufactured at his factory in Paterson, N.J., a six-shooter of .34 caliber. Somehow a few of these found their way to Texas and were soon in use by Texas Rangers. Samuel H. Walker,

a Marylander who had come to Texas in 1836, was sent to New York to buy arms for the new Republic of Texas. While there, he met Samuel Colt and told him that even though the new six-shooter was the best yet made, it was not rugged enough for use on the frontier. Walker spent several days with Colt at the Paterson factory before returning to Texas. In a short time, a new model Colt, the Walker, was introduced. Heavier and stronger, of .44 caliber, and easier to handle, the Walker Colt became the favorite weapon of the Texas Rangers. Now, they could fight from horseback and had the advantage over their old enemy.

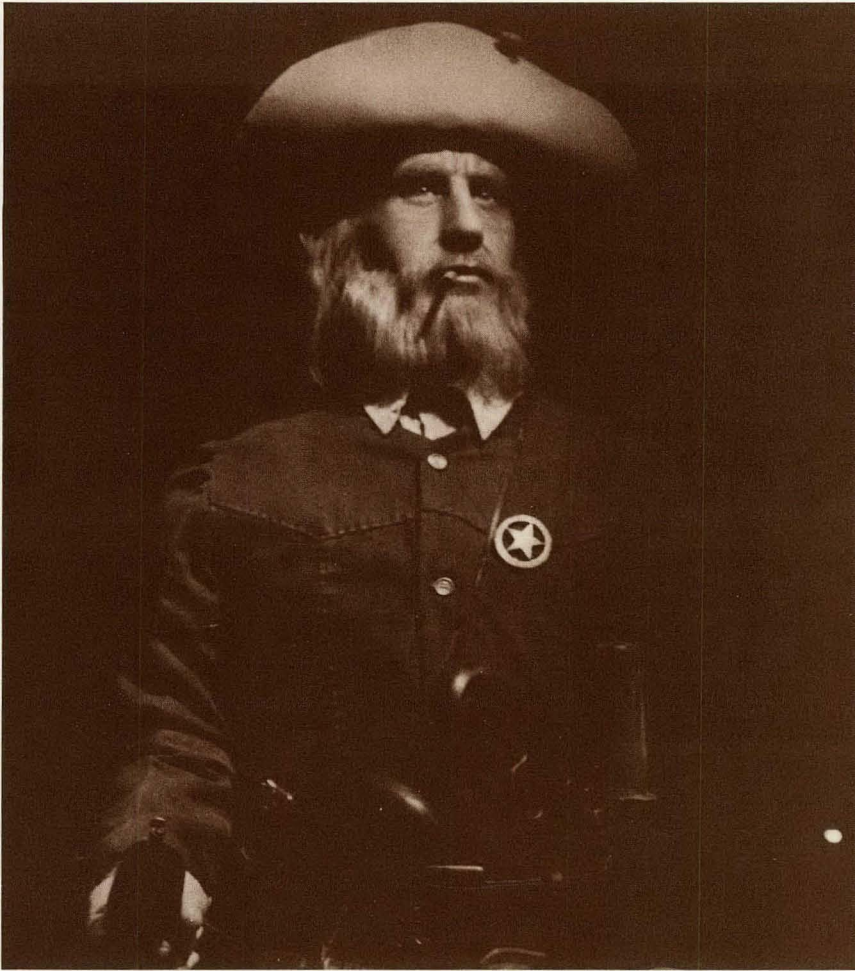
### **Rangers as Soldiers**

When Texas joined the Union in 1845, war with Mexico was inevitable. This was the chance many Rangers had been waiting for, and they joined the Texas militia units. Men like Jack Hays, Samuel Walker, and Ben McCulloch, who had already made names for themselves as Indian fighters, became even better known because of their conduct on the bat-

Headquarters, Company F of the Texas Rangers, adjacent to Texas Ranger Hall of Fame.







Wax figure of a typical Texas Ranger of the mid-1800's.

tlefields. Sam Walker was killed leading a charge against Mexican soldiers.

For a decade or more after the Mexican War, the Rangers continued to pursue the Indians who periodically attacked the settlements or lone cabins in the wilderness. The troops which the United States sent to Texas to protect the frontier were inadequate and Ranger companies were often called into action to supplement their efforts against the Indians. From 1849 on, several Texas Governors ordered that mounted units be raised to help protect the frontier. Some of the men who joined these units had either already established their reputations as Rangers or would later become well known because of their

conduct. Among these were John S. "Rip" Ford, William A. "Big Foot" Wallace, and others.

Sometimes the Ranger companies were paid by the Federal Government, other times they were entirely in State service. Occasionally, companies were raised only to learn that there was no provision made for anyone to pay them.

When the Civil War began in 1861, the Federal troops were withdrawn from Texas. Several groups of men were raised to protect the frontier, but only a few of them were called Rangers. Most of the men who enlisted in these units were soon mustered into the service of the Confederacy, and the frontier remained largely un-

protected until the end of the war and the return of United States troops. Although the Texas Legislature in late 1866 authorized three battalions of Texas Rangers to be raised, no funds were provided for them, and it was 1870 before another Texas Ranger was in the field.

Twenty companies, over 1,000 men, were to have been raised from the citizens of frontier counties. Officially called—for the first time—Texas Rangers, the organization was to have been under the direct orders of the Governor. By the end of 1870, 14 companies were formed, but these were soon reduced to 7, both because of the difficulty of paying them and because of criticism that they comprised a "Governor's Police." These Rangers were soon phased out of service. Although the record of the Rangers during the days of Reconstruction was not spectacular, they performed the same job they had been doing on the Texas frontier for 50 years—protecting the settlements advancing across Texas from Indian and outlaw depredations.

### **Reorganization**

In 1874, the Rangers were reorganized into two separate forces. One was the Frontier Battalion, led by Maj. John B. Jones, which operated on the western outskirts of Texas. The other was the Special Force, under Capt. L. H. McNelly, which was sent to the Mexican border.

Major Jones, a quiet, tactful man, found few Indians left to fight, although his Frontier Battalion worked closely in cooperation with the Federal forces. Together the Rangers and the Regular Army brought to a close the last Indian raids during those years, and then the Rangers turned their attention to the lawbreakers and bandits who had come to Texas dur-



ing Reconstruction. Jones believed that civil lawlessness was the area in which the Rangers could be most helpful and, by 1877, ordered that no more scouts after the Indians be made unless in hot pursuit. In Major Jones' words, "The operations of the companies will be directed, more than has heretofore been the case, to the suppression of lawlessness and crime."

A good example of subsequent action taken in this regard was the Ranger campaign to stop the legendary outlaw Sam Bass. Jones personally directed these efforts which culminated on July 19, 1878, in Round Rock, Tex. Bass was fatally shot by Texas Rangers, and his gang was broken up for good.

Another example was the capture of noted gunman John Wesley Hardin, in 1877, by Ranger John B. Armstrong. Hardin, who had killed numerous men in his long career, had taken his family to Florida in an ef-

fort to escape capture. He was tracked down by Armstrong who found the outlaw and four of his friends as passengers on a train at Pensacola. The Ranger drew his Colt .45, and Hardin exclaimed, "Texas, by God!" and drew his own weapon. When the smoke cleared, one of Hardin's men was dead, Hardin had been pistol whipped to the floor, and the other three outlaws were looking down the barrel of the Ranger's gun. Hardin was returned to Texas and sentenced to a long prison term.

While Major Jones and his Frontier Battalion were working the western portions of Texas, the Special Force under Captain McNelly was bringing law and order to the southern border. There had been open warfare in the region between cattle thieves and local ranchers operating as vigilantes. McNelly, who became in a few short months the most feared lawman along the border, disarmed

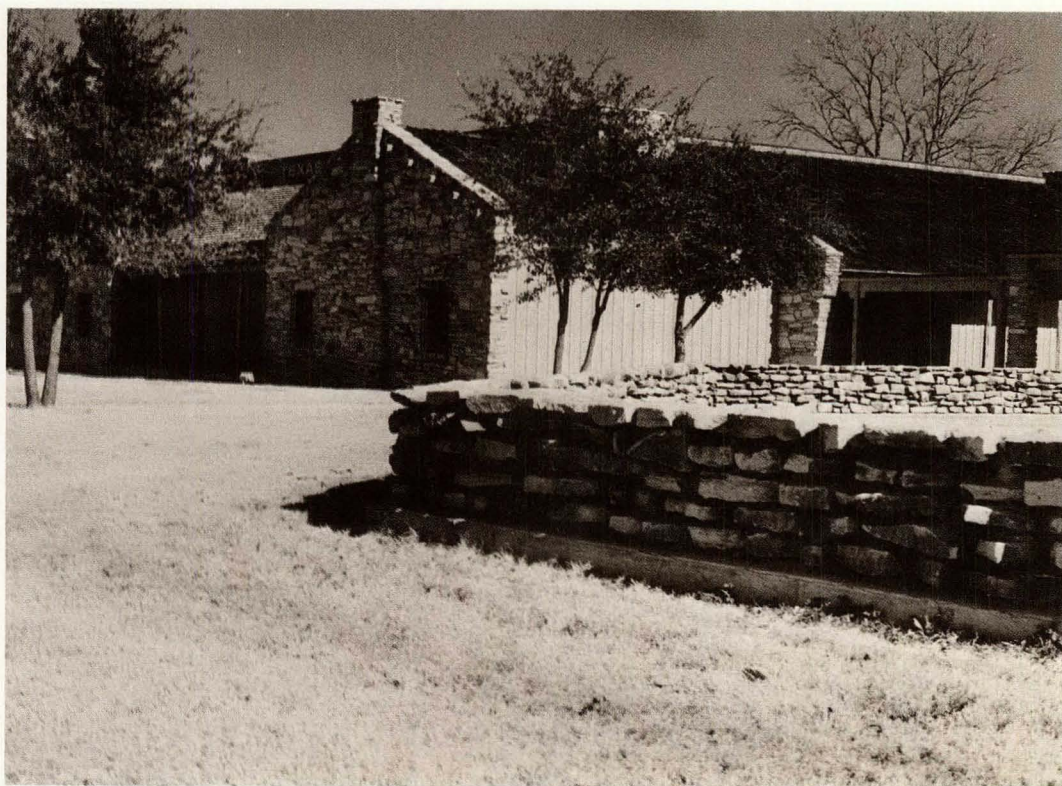
the vigilantes, often allowing them only a minute or two to put down their arms or he would "consider them outlaws," and pursued the bandit gangs even into Mexico. Soon he had won the respect of both sides, especially the local Mexican Texans whom he insisted the Rangers treat with complete respect. By the time his career was cut short by tuberculosis in 1877, Leander H. McNelly was a part of Ranger legend.

### *Peace-Keeping Duties*

The Special Force came under the command of Capt. Lee Hall when McNelly died, and Major Jones continued to lead the Frontier Battalion. Both organizations devoted more and more time to peace-keeping duties, and the Rangers became more and more a civil police force.

In 1901, a new law authorized an organization designated as "The

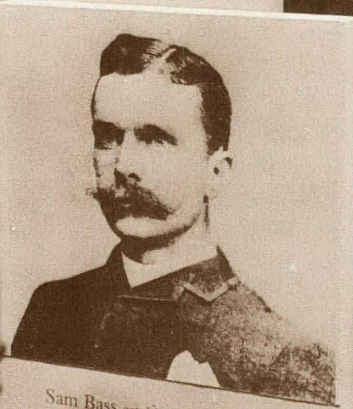
The Texas Ranger  
Hall of Fame.



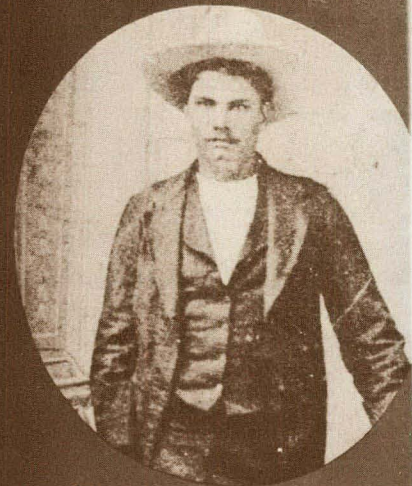


# OUTLAWS IN TEXAS

In the years after the War Between the States, a lawless element was on the rampage and now the Texas Ranger faced a new challenge in keeping the peace. Banditry became so widespread that a *Book of Wanted Men* was put together — 3,000 names, with more being added. They were fence-cutters, stage and train robbers, gamblers, murderers, and outlaws. Captain Goliad described his home as a place where escaped cutthroats, outlaws, and gamblers roamed the streets at night, shooting and robbing. The Rangers were organized to bring them to justice. The



Sam Bass established train robbery as a new brand of outlawry on the frontier and soon became a romantic, even beloved, figure of Texas folklore. Ranger Major John B. Jones directed the campaign that finally brought him to justice. The



John Wesley Hardin had killed four men by the time he was 15. The Rangers brought him to justice.

One of the exhibits is devoted to famous outlaws brought in by the Texas Rangers.

Single-shot weapon used by early Texas Rangers.





Ranger force for the purpose of protecting the frontier against marauding or thieving parties, and for the suppression of lawlessness and crime throughout the State." The Ranger captains chose their own men who still wore no distinctive uniform or badge and continued to furnish their own horses. "Ranging" took on a new meaning, and the Rangers often found themselves riding trains instead of horses. Most of the notable Ranger activity from 1910 to 1920 was on the Mexican border, but Rangers also served in other areas.

There were few Ranger scouts in the old sense by 1920, but with enactment of Prohibition, and smuggling as a way of life along the border, the Texas Rangers were confronted with a new challenge. During the

years of World War I, Rangers had patrolled the border looking for saboteurs and enemy agents so it was familiar territory they now patrolled seeking bootleggers and smugglers. During this period of changing times and added responsibilities, the Texas Rangers continued to perform in the

***"From chasing Indians on horseback to pursuing lawbreakers in helicopters, the Texas Rangers have come a long way."***


same admirable manner as in the past.

In the 1920's and 1930's the Texas Rangers became more of a statewide force and found themselves assigned as peace keepers in numerous sensi-

tive situations. Labor troubles in Galveston, oil field rowdiness and riots, bank robberies during the depression era, all have claimed the time and energy of the Rangers.

The Rangers were placed under the Department of Public Safety in 1935, where they still remain.

### Conclusion

From chasing Indians on horseback to pursuing lawbreakers in helicopters, the Texas Rangers have come a long way. Today, they compose a highly modern and efficient law enforcement agency whose members are deeply proud of the heritage documented in the Texas Ranger Hall of Fame on the banks of the Brazos River at Waco. 

One of the five dioramas depicting scenes from Ranger history.



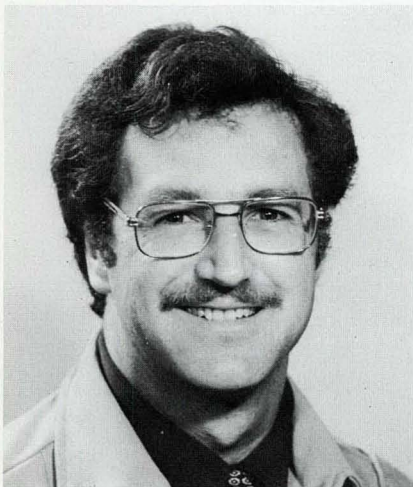


## *Technique for Fingerprinting Deteriorated Skin Tissue*

By

**GEORGE M. FISHER**

Evidence Technician  
Crime Laboratory  
Police Department  
San Diego, Calif.



**P**ositively identifying unknown, decayed human bodies through fingerprint techniques has been a continuing problem in our criminalistics laboratory as it has for many other similar laboratories. Standard fingerprinting techniques frequently necessitated an excessively long delay in establishing the identities of victims in homicide investigations. In two somewhat unusual, recent cases of this

nature that the San Diego Police Department Crime Laboratory handled, photography was utilized in a rather unique manner to obtain readable fingerprints with nondestructive photographic procedures.

In one case, the body of the unidentified deceased was discovered in an unshaded area. The pathologist determined the person died approximately 9 days prior to being found, and weather during that period was sunny during daylight hours with temperatures in the high seventies and low eighties. When found, the body was heavily infested with maggots and other insects, the face was unrecognizable, and the skin was beginning to separate from underlying tissue.

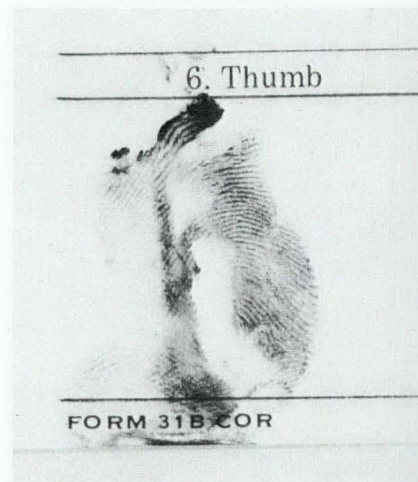
Attempts were made to obtain rolled fingerprints by the standard method, and illustration A shows the results of fingerprinting the left thumb in this manner. The skin was too distorted to make a classification from the prints thus obtained.

A San Diego Police Department evidence technician, who had successfully photographed ridge details on

decayed fingers in the past, was consulted by the author, who was assigned to this particular case, and a special procedure was worked out for successfully photographing such ridge details for fingerprint identification purposes.

The pathologist on this case treated the fingers with a formaldehyde solution which hardened the skin tissue.

**Illustration A.** Rolled left thumb obtained using standard fingerprinting procedures. The core was not recorded, and the lower right side is smudged.







William B. Kolender  
Chief of Police

Illustration B. The right index fingerprint produced as a positive. It shows a headed cut to the left of center and a burn scar in the upper right corner. The medical clamp used to press the finger against the glass can be seen at the top of the photograph. The dark line in the lower part of the photograph delineates the first joint of the finger.

The fingers were first blotted to remove as much moisture as possible. They were then manually shaped to remove wrinkles and to smooth the area around the core into a flat surface. Next, a piece of flat glass was placed over the individual fingers, and a large medical clamp was used to press the glass against each finger as securely as possible without damaging the skin. Another clamp was then placed over the first clamp and locked in place. Before each photograph was taken, a label identifying the specific finger under scrutiny was first photographed.

Our camera positioning was an important aspect of our procedure. A Nikon F2s with bellows and a 105 mm. bellows lens were mounted on a copy stand, and the camera was tilted until the film plane was approximately parallel to the glass. Alignment was checked optically by focusing on the section of the finger in contact with the glass.

The camera had been set for a 1:1 reproduction on the negative. To change the focus, the entire camera assembly was moved up and down the enlarger stand, or the camera assembly was rotated to the left or right.



**EDITOR'S NOTE:** Articles and other material in the *FBI Law Enforcement Bulletin* are published solely to inform and assist the law enforcement community. While commercial names may be mentioned in an objective fashion from time to time, their use should not, under any circumstances, be construed as an endorsement or an approval of any particular product, service, or equipment by the FBI.



One high intensity light was used at about 30° to the plane of the finger. This light produced dark shadows between the ridges. Light intensity was measured by the internal camera meter, and the exposure was approximately one-eighth second at f/5.6 with Panatomic-X rated at E.I.64.

The film was processed as negatives in Microdol-X to produce a low contrast image. Contact printing of the film was accomplished with the back of the film to the paper emulsion, producing a positive image oriented as a rolled print. Photograph B illustrates the detail possible with this technique.

Photographs C and D of the left thumb show the increase in detail over the original rolled print (illustration A). Photograph D is a paper negative

of C. It was produced by making a positive image on 4- by 5-inch Kodalith and projecting the positive image. A negative image could have been produced by processing the Panatomic-X as a positive. This would have produced a negative contact image that could be easily read by the latent print personnel; however, they were able to use the contact positive image to classify the fingerprints.

In the other case, the unknown deceased individual had been buried for approximately 30 days. The grave was found in a desert area, and the hands were partially mummified. Illustration E shows the condition in which one hand was found.

Attempts were made to restore the tissue and roll the prints, utilizing

procedures outlined in the article, "Problems and Practices in Fingerprinting the Dead," that appeared in the FBI Law Enforcement Bulletin in April 1949 (Revised 1968). All attempts to roll the fingerprints proved futile because the ridge detail was almost gone from the fingers.

Finally, a combination of inking and photography was successful. The right middle finger was soaked in a 1-percent solution of sodium hydroxide for 5 hours to restore the tissue to its original size. The finger was then inked and rolled against glass until there was no trace of ink being transferred to the glass. However, there was still ink adhering to the ridges. The finger was photographed using the same procedure as in the first case. Illustration F shows how the ridge de-

Illustration C. The left thumb photograph can be compared to illustration A, the rolled print. Considerably more detail, particularly the core area, is apparent in this photograph. The scale is in centimeters.

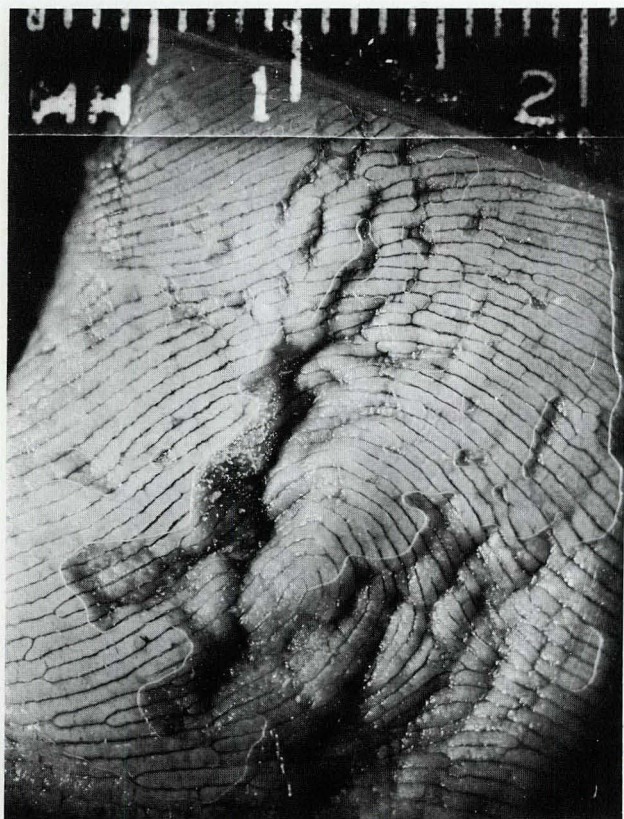


Illustration D. A negative image of illustration C gives the same tonal qualities of a rolled print. This photograph was first printed on Kodalith film and then projected on enlarging paper. The scale is in centimeters.

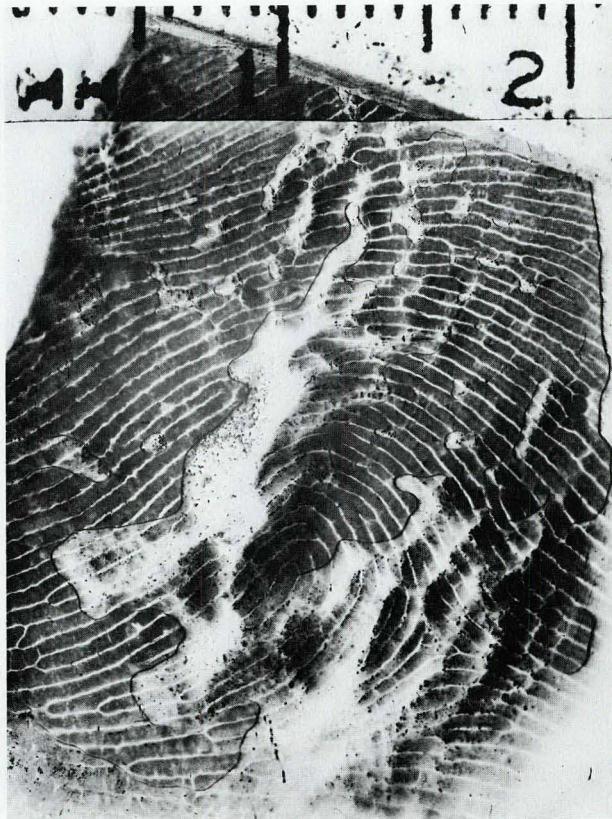






Illustration E.

tail was enhanced with ink.

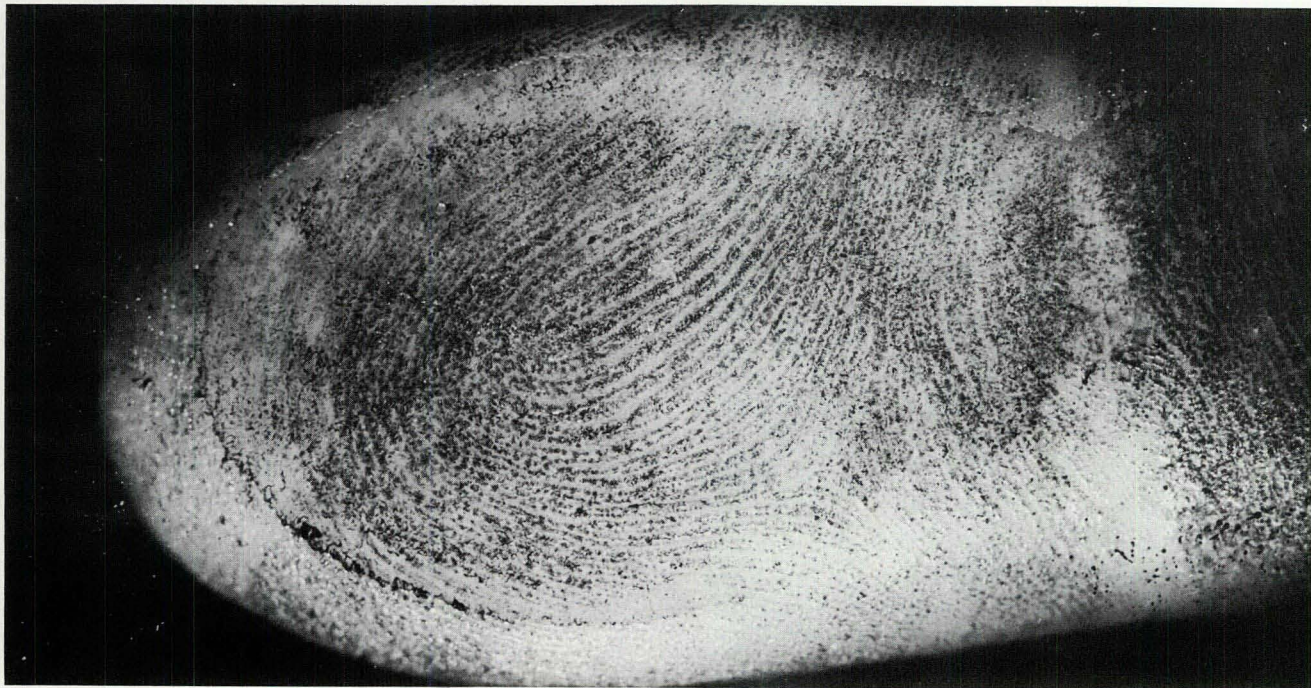
A positive identification was subsequently made by our latent print personnel in this instance also. In both cases, by utilizing this photo-

graphic technique, a positive identification was made within 24 hours of the time each body was found.

The aforementioned technique for obtaining fingerprints of deteriorated

skin tissue have been successful, and it is believed that other law enforcement agencies may find them equally effective in handling difficult problems of this nature.

Illustration F.





# Developments in the Law of Expunction of Arrest Record Entries

By

ROBERT C. BLUNT

Special Agent  
Federal Bureau of Investigation  
Washington, D.C.

*This is the conclusion of a two-part article. Part I appeared in the April issue.*

## ***Suggestions Regarding Fingerprint Record Keeping Systems***

**W**e have seen that the general rule is that an acquittal or dismissal standing alone is not enough to justify an order that arrest records be expunged. There must be an indication that there was some defect in the arrest itself, or that the arrest was the product of

*Law enforcement officers of other than Federal jurisdiction who are interested in any legal issue discussed in this article should consult their legal advisor. Some police procedures ruled permissible under Federal constitutional law are of questionable legality under State law, or are not permitted at all.*

police error or misconduct. If an individual is able to prove that the arrest record in issue came into existence as the result of improper action on the part of the authorities, or that the record of an otherwise valid arrest record is being misused, the courts, in the exercise of their equity powers, can and will order expungement or return of the record.

In the absence of an illegal arrest or improper use of arrest records, the courts will order expungement if the subject of the record can prove that the existence of the record has caused and will continue to cause him harm to a degree that outweighs the law enforcement interest in retaining the records.



We in law enforcement are well aware of the value fingerprint records have in solving what might otherwise be an unsolvable crime. As one commentator aptly stated:

"The innocent person of today, unfortunately, may be tomorrow's criminal. The day before some poor soul kills his fellow man, he is an innocent person. The minute possibility that his previously obtained identification records may help to apprehend him and prevent further tragedy is, it is submitted, substantial enough to outweigh the alleged invasion of his right of privacy."<sup>50</sup>

It is, however, a fact that the courts are becoming more and more sensitive to the rights of the individual living, as we all are, in a society which seems to run on records of every imaginable description coupled with telecommunications devices which can instantane-

***"It is . . . incumbent on criminal justice agencies to adopt procedures which have as their goal the retention of arrest fingerprint records which serve a valid law enforcement function, while insuring that these records do not cause unnecessary harm to a citizen."***

ously retrieve and disseminate these records. There are decisions which allow the individual who believes he has been harmed by his arrest record to seek redress from the governmental entity having actual custody of the records,<sup>51</sup> rather than the agency which was the source of the records,<sup>52</sup> or the governmental or nongovernmental entity which relies on the records to the detriment of the subject of the record.<sup>53</sup>

It is safe to say that the day when

the courts would permit law enforcement authorities unfettered discretion with regard to retention, use, and dissemination of arrest records is past. It is, therefore, incumbent on criminal justice agencies to adopt procedures which have as their goal the retention of arrest fingerprint records which serve a valid law enforcement function, while insuring that these records do not cause unnecessary harm to a citizen.

It is now possible for an individual to obtain a copy of his FBI Identification Record.<sup>54</sup> As more and more people obtain copies of their FBI Identification Records, it is reasonable to expect that some individuals will find what they believe to be inaccuracies, omissions, or misleading entries in their records. If disputes regarding arrest records are not resolved administratively between the individual and the criminal justice agency which contributed the arrest record to the FBI, the result is sure to be increased recourse to the courts on every level. Increased litigation, in addition to becoming a drain on the resources a criminal justice agency has available to engage in its primary law enforcement function, may lead to decisions or legislation which will further erode the discretion criminal justice agencies possess with regard to arrest fingerprint records.

Some procedures which could be of benefit in forestalling judicial or legislative intervention are as follows.

### ***Charges and Dispositions***

An arrest record, including the arrest fingerprint card itself and any record such as an FBI Identification Record which is compiled from one or more arrest fingerprint cards, should clearly and accurately describe the offense charged. Recording that the subject was charged with violation of Section 211(x) of the Penal Law may be entirely accurate and may also

be crystal clear to one familiar with the criminal laws in a particular jurisdiction; however, if one considers that this arrest entry may someday be disseminated to a criminal justice agency or licensing authority in a jurisdiction thousands of miles away, it would be better to explain that Section 211(x) is the statute which codifies the crime of second degree murder. In this regard, it should be noted that the FBI now requires that criminal justice agencies include the "literal"

***"Dispositions must be followed closely and promptly added to the appropriate arrest records as they occur."***

or exact charge under which a subject was arrested, in addition to any statutory citation of the charge, on all arrest fingerprint cards submitted to the FBI.

Dispositions must be followed closely and promptly added to the appropriate arrest records as they occur. Probably no other element on an arrest fingerprint card or identification record catches the attention of a court more quickly than a lack of an entry in the space reserved for a disposition. As quick as the courts are to notice a lack of a disposition, they are even quicker in criticizing the omission,<sup>55</sup> even though the courts are criminal justice agencies which have input into the criminal records system.<sup>56</sup> The FBI has repeatedly requested that all agencies which furnish arrest fingerprint information to the FBI's central repository be alert to record and submit dispositions as they occur.<sup>57</sup> Incomplete arrest records can be attacked on grounds that they serve no valid law enforcement function, while at the same time conveying the impression that the subject of the record is in all probability guilty as charged.

Dispositions, just as arrest entries,



should clearly describe what took place.

"Even if we assume that the cryptic reference on appellant's fingerprint card to release 'in accordance with 849(b) (1)' would be understood by police, it is questionable whether it would be understood by potential employers or the general public."<sup>58</sup>

If the subject is acquitted, the listing of the acquittal will suffice. If he is convicted, the sentence imposed should be clearly and accurately set forth. Charges that are eventually dismissed present a different situation. A dismissal following a finding that there was insufficient probable cause to support the arrest is far removed from a dismissal due to the unavailability of a key prosecution witness.<sup>59</sup> It is very likely that a dismissal resulting from some type of technicality, like the Government's inability to bring the subject to trial within the statutorily prescribed period, will better withstand a challenge to its retention than a dismissal based on a decision that there was insufficient evidence to hold a subject for trial.<sup>60</sup>

### ***What Types of Information Should Be Retained and Disseminated***

Multiple fingerprint card submissions relating to the same charge should be avoided. Although the multiple submissions of fingerprint cards, reflecting that an individual was temporarily held by a particular criminal justice agency while on transfer from one facility to another, may provide a record of incarceration prior to or following court adjudications, it is believed that the addition of such entries into an identification record serves little useful purpose in the overall operation of a centralized criminal records system.<sup>61</sup> Transfer or lodging entries do not result in dispositions, and there have been in-

stances where such entries have been mistaken for recordations of criminal conduct and have resulted in bond being denied.<sup>62</sup>

In line with the belief that a centralized criminal records system should record only significant interaction between individuals and criminal justice agencies, the FBI, in 1973, advised all criminal justice agencies which submit arrest fingerprint cards to it that cards concerning certain nonserious offenses would no longer be retained, and the arrest in question would not be included in the individual's FBI Identification Record. Among the types of violations deemed nonserious are charges of drunkenness and/or vagrancy, disturbing the peace, curfew violations, loitering, and false fire alarms. Traffic violations are excluded except those which relate to driving under the influence of liquor or drugs, hit and run, or manslaughter. Nonspecific charges such as suspicion or investigation are also excluded, as are certain gambling offenses such as card game playing, dice game playing, and lottery playing. Liquor law violations which involve only a minor misrepresenting age are not recorded. Finally, there are excluded all juvenile offender charges unless the juvenile is tried in court as an adult.<sup>63</sup>

The improper dissemination of arrest identification data will arouse the ire of the courts more quickly than any other aspect of use or misuse of arrest records.<sup>64</sup> Any time an arrest record is disseminated to an agency or individual not entitled to such information, the subject of the arrest record is provided with an almost certain cause of action in the courts.

A pattern of improper dissemination of arrest records by a criminal justice agency could lead to judicial or legislative restructuring of arrest record retention procedures. Judicial or legislative intervention into arrest records management is sure to curtail

the discretion criminal justice agencies are accorded in this area with the resultant loss of many records which could be of great benefit to law enforcement.

The weight of authority is that there is no automatic right to the expunction of arrest records upon the dismissal of the charges or acquittal of the subject of the record.<sup>65</sup> Courts of equity can and will balance the right of the individual to privacy against the value to law enforcement in retaining the record. Many factors will

***"There are no clear-cut factors which will mandate either expunction or retention, and each case will be decided on its own facts."***

be considered during this balancing process. There are no clear-cut factors which will mandate either expunction or retention, and each case will be decided on its own facts. Criminal justice agencies have an interest in retaining every arrest record which could aid law enforcement. Adherence to sound principles of records management will help insure that the discretion to retain or expunge a record will continue to reside principally with criminal justice agencies.

### **FOOTNOTES**

<sup>50</sup> De Angelis, *The Right of Persons Who Have Been Discharged or Acquitted of Criminal Charges to Compel the Return of Fingerprints, Photographs, and Other Police Records*, 27 Temple L. Q. 441 (1954).

<sup>51</sup> *Menard v. Saxbe*, 498 F. 2d 1017 (D.C. Cir. 1974). Where the Attorney General of the United States was joined as a party defendant in a suit seeking the expunction of arrest fingerprint records submitted to the FBI by a local police agency.

<sup>52</sup> *Hughes v. Rizzo*, 282 F. Supp. 881 (E.D. Pa. 1968).

<sup>53</sup> *Fite v. Retail Credit Co.*, 386 F. Supp. 1045 (D. Mont. 1975).

<sup>54</sup> Title 28, Code of Federal Regulations, Sections 16.30-16.34; Title 5, United States Code, Section 552(a), "The Privacy Act," 88 Stat. 1897.

<sup>55</sup> *Shadd v. United States*, 389 F. Supp. 721 (W.D. Pa. 1975).

<sup>56</sup> See FBI Letters to All Fingerprint Contributors dated June 2, 1971; July 22, 1971; and Oct. 2, 1972, or example.

<sup>57</sup> *Id.*, In addition, see FBI Letter to All Fingerprint Contributors dated Mar. 14, 1975.

<sup>58</sup> *Menard v. Mitchell*, 430 F. 2d 486 (D.C. Cir.



1970) at 492-493.

<sup>50</sup> *United States v. Hudson* (D.C. Super. Ct., Feb. 19, 1975).

<sup>60</sup> *Id.* See *Morrow v. District of Columbia*, 417 F. 2d 728 (D.C. Cir. 1969).

<sup>61</sup> See FBI Letters to All Fingerprint Contributors dated Nov. 15, 1973, and Nov. 29, 1974.

<sup>62</sup> *Id.*, Nov. 15, 1973, letter.

<sup>63</sup> See Title 28, Code of Federal Regulations, Section 20.32(b).

<sup>64</sup> *Carr v. Watkins*, 177 A. 2d 841 (Md. Ct. App. 1962). The dissemination of Identification Records by the FBI is regulated by the provisions of 28 U.S.C. 534(b) as implemented by Title 28, Code of

Federal Regulations, Section 0.85 (b) and (j), and Title 28, Code of Federal Regulations, Section 50.12 which provides that the FBI will not include, on identification records provided to federally chartered or insured banking institutions and to officials of State and local governments for purposes of employment and licensing, arrest data more than 1 year old not accompanied by dispositions.

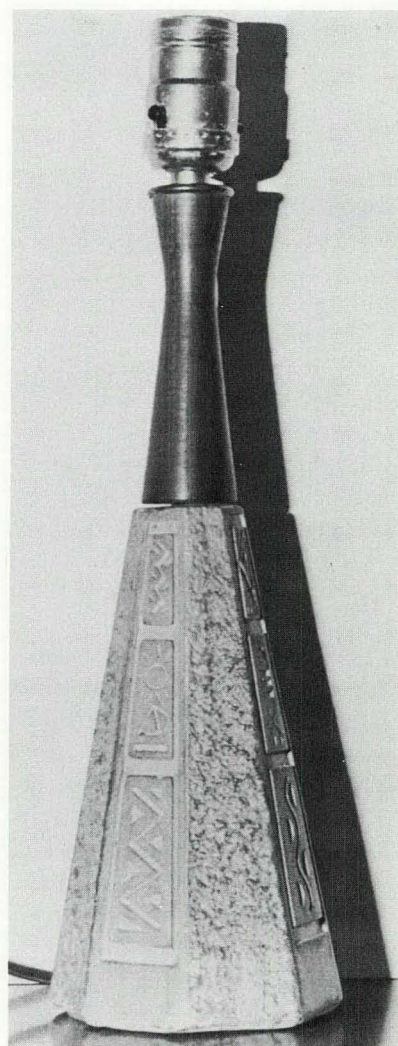
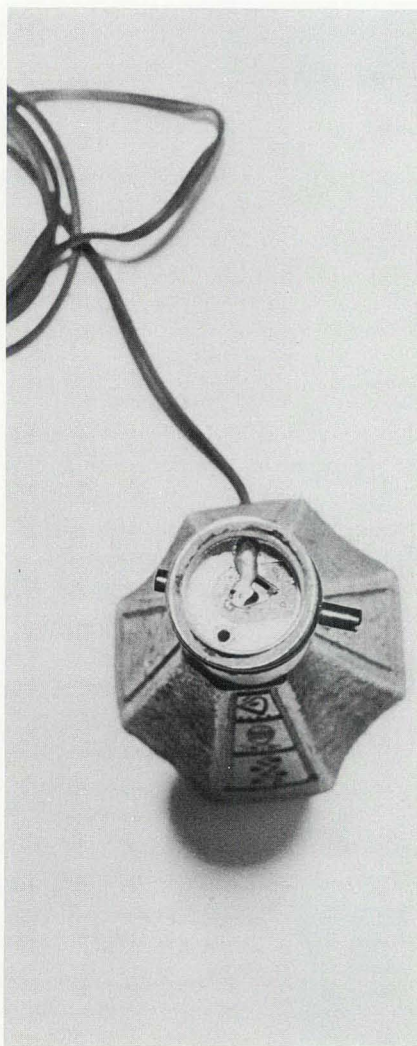
<sup>65</sup> The FBI will expunge fingerprint files concerning non-Federal arrests and convictions at the request of the criminal justice agency which originally contributed the arrest fingerprint card in question. The criminal justice agency submitting the expungement request must furnish sufficient identify-

ing data, such as the FBI number or the agency's own registry number, to insure that the correct fingerprint card is located and returned to the submitting agency. In the case of Federal arrests, the fingerprint cards submitted in connection with the arrest becomes a part of official U.S. Government records, and may not be returned or destroyed except upon issuance of an order to that effect from a Federal court. In either non-Federal or Federal arrests, return to the contributing agency of the fingerprint card submitted in connection with the arrest will result in the deletion of the arrest in question from the subject's FBI Identification Record.

## ON AND OFF TELEPHONE SERVICE

Upon serving a search warrant at an alleged gambling operation in a large metropolitan city, investigating officers uncovered the usual gambling paraphernalia and telephones. However, the officers found it unusual that the telephones were not in working order. A closer examination of the premises determined that the telephone lines were attached to an ordinary wall receptacle into which the electric cord of a desk lamp was plugged. A soldered connection had been made inside the lamp's light socket between the base and the side of the socket, thus, completing an electrical circuit when the lamp was turned on. In this position, the soldered connection produced a direct short across the telephone lines, thereby, eliminating this service. With the lamp turned off, normal telephone operation was restored.

Investigators, upon discovering this device, were able to establish telephone service and, thereafter, received wagers and betting information from unsuspecting callers to be used as evidence in the case.



Lamp used to control telephone service.



# WANTED BY THE FBI

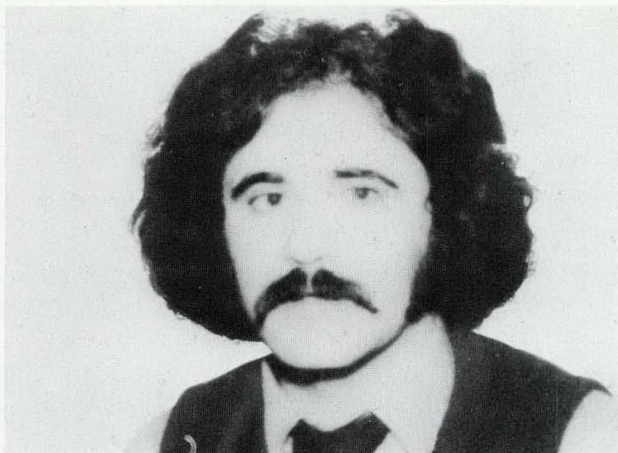


Photo taken 1973.

**THURSTON DREW SHRADER, also known as Drew Bernier, Kenneth Bruce Krohn, Phillip John Schroeder, Glen Hunter Suter**

## ***Kidnaping; False Statements; Obstruction of Justice; Embezzlement***

Thurston Drew Shrader is currently being sought by the Federal Bureau of Investigation for kidnaping, false statements, obstruction of justice, and embezzlement.

### **The Crime**

On January 20, 1973, Raul Hernandez, a Mexican national, was allegedly abducted upon arrival in the United States at Dulles International Airport, Chantilly, Va., by Shrader and an accomplice. The victim was reportedly transported to the State of Maryland where he was forced to write letters to his family directing them to transfer approximately \$300,000 to his abductors. Hernandez was then allegedly murdered, his body dissected, and disposed of

in various bodies of water. A Federal warrant was issued for his arrest on February 5, 1975, at Alexandria, Va., charging Shrader with kidnaping, false statements, and obstruction of justice. A bench warrant was issued on December 6, 1974, at Washington, D.C., charging Shrader with embezzlement.

### **Description**

Age----- 29, born Nov. 12, 1946, Martinsburg, W. Va.  
Height----- 5 feet 9 inches.



Left Index  
Fingerprint.

Weight----- 165 to 175 pounds.  
Build----- Medium.  
Hair----- Brown.  
Eyes----- Brown.  
Complexion----- Medium.  
Race----- White.  
Nationality----- American.  
Occupation----- School teacher (math and science).  
Scars and marks--- Scar right finger, scar right knee.  
Social Security Nos. used----- 223-19-5479, 219-48-5936, 219-37-5738.  
FBI No.----- 244, 449 J11.  
Fingerprint classification:  
14 M 1 U OOI 10 Ref. 1  
M 1 U OOI 5  
NCIC classification:  
14 14 11 12 10 14 10 11 13 08

### **Caution**

Shrader has previously taught school under assumed names in Florida, Maryland, Virginia, Georgia, and the District of Columbia and on each occasion has obtained the identification and scholastic credentials of other teachers. In the past, he has used private teacher placement services to gain teaching positions. Shrader is being sought for a kidnaping in which the victim was allegedly brutally murdered. He should be considered armed and dangerous.

### **Notify the FBI**

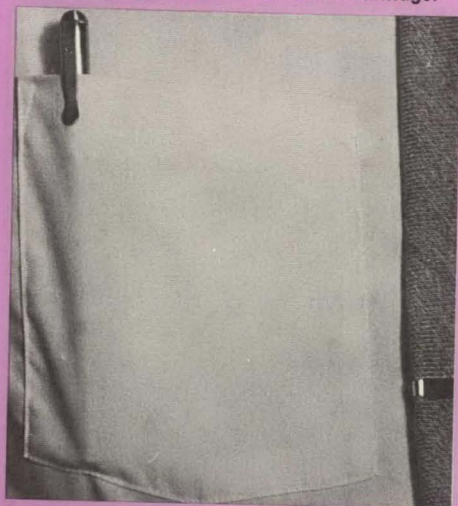
Any person having information which might assist in locating this fugitive is requested to notify immediately the Director of the Federal Bureau of Investigation, U.S. Department of Justice, Washington, D.C. 20535, or the Special Agent in Charge of the nearest FBI field office, the telephone number of which appears on the first page of most local directories.



# Lethal Pencil

The Largo, Fla., Police Department recently brought to the BULLETIN's attention an ingeniously devised and easily concealed firearm that closely resembles an automatic pencil or tire gauge. This confiscated, single-shot weapon, less than 6 inches in length, was handmade and designed to fire a .22 caliber cartridge. The weapon was found to operate efficiently and to be deadly at close range. Because of its deceptive appearance, a lethal device of this type could easily be overlooked by officers involved in searching persons or other encounters with potentially dangerous individuals.

Handmade weapon resembles automatic pencil or tire gauge and fires .22 caliber cartridge.



## FOR CHANGE OF ADDRESS ONLY

(Not an Order Form)

Complete this form and return to:

DIRECTOR

FEDERAL BUREAU OF INVESTIGATION

WASHINGTON, D.C. 20535

NAME

TITLE

ADDRESS

CITY

STATE

ZIP CODE



UNITED STATES DEPARTMENT OF JUSTICE  
FEDERAL BUREAU OF INVESTIGATION  
WASHINGTON, D.C. 20535

OFFICIAL BUSINESS

ADDRESS CORRECTION REQUESTED



POSTAGE AND FEES PAID  
FEDERAL BUREAU OF INVESTIGATION  
JUS-432

THIRD CLASS



## QUESTIONABLE PATTERN

The pattern at left has the general appearance of an accidental type whorl. However, a closer examination reveals there is no recurve in front of the inner delta formation. Therefore, this pattern is classified as a double-loop-type whorl with an inner tracing.