

# FBI

*Law Enforcement*

# BULLETIN



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Federal Bureau of Investigation  
United States Department of Justice  
J. Edgar Hoover, Director

# FBI Law Enforcement Bulletin

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United States Department of Justice  
Federal Bureau of Investigation  
Washington 25, D. C.

June 1, 1959

TO ALL LAW ENFORCEMENT OFFICIALS:

Summertime, the customary period for leisure and relaxation, is certainly not the season for a vacation from crime prevention. Day and night, twelve months of the year, the criminal plots and plies his nefarious trade. The carefree atmosphere of summer living and the relaxed attitude of vacation-bound citizens, however, give the lawbreaker many additional opportunities for illegal gain.

In recent years, local programs of alerting the public to these seasonal crime hazards have produced beneficial results for many progressive law enforcement agencies. The cooperation of citizens in protecting themselves and their property increases community-police cooperation and greatly lessens the chances of success for the lawless.

Each summer there is an exodus of countless Americans away from their homes to the mountains, the seashore, parks, or some other favorite spot. In far too many instances, these householders who would not think of leaving their windows or doors open at night while at home, will completely fail to provide any protection for their vacated domiciles. Unlocked windows and doors, accumulated newspapers or milk bottles, notes on the door for the attention of delivery men, drawn window shades, and other tell-tale signs of absence serve as invitations for burglars and thieves.

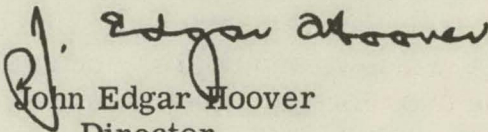
Coincidentally with the rise of the thermometer in the warm months, the intensity and frequency of crimes of passion and violence increase. In this category, the hitchhiker and the child molester have become especially dangerous menaces. A vital form of life insurance for the motoring public is the policy of avoiding the beckoning thumb of the unknown wanderer on the highway. In the gamble with the hitchhiker the unwary motorist risks his own safety as well as the lives of his family or friends traveling with him.

As a fundamental preventive measure against the child molester, it is imperative that parents impress upon their youngsters the dangers of playing in lonely and secluded spots, accepting invitations for rides, or taking gifts or enticements from strangers. In the face of the harrowing crimes committed on innocent children by depraved sex maniacs, a little time and attention on the part of parents are indeed a logical contribution to crime prevention.

By far the largest group of lawbreakers is the army of careless and negligent motor vehicle operators--presenting a serious police problem on every highway and road in the land. The deluge of traffic violators who sap the manpower and strength of law enforcement ranges from the illegal parker who creates inconvenience to the reckless or drinking driver who causes bloodshed and destruction on the road. Particularly during this season when the highways are overcrowded with travelers, obedience to the traffic regulations by motorists can prove to be a positive program in the public interest.

In the all-out effort to stem the annual tide of summertime crime, law enforcement must necessarily seek and obtain the wholehearted cooperation of the public. Crime prevention is both community and personal insurance. Assuredly, individual alertness and caution are reasonable premiums for each citizen to pay for his own protection.

Very truly yours,

  
John Edgar Hoover  
Director



## FEATURE ARTICLE

The 20,157 square miles of San Bernardino County in southern California constitute the largest county in the world. Into this county the States of Rhode Island, Delaware, Connecticut, and New Jersey could be placed with sufficient room remaining for half of the State of Massachusetts. This county provides the population of southern California an area of mountains, lakes, rivers, and desert for scenic drives, hunting, fishing, hiking, and other summer and winter sports. The rugged mountains and the desert, though innocent looking from a distance, are to many persons an invitation to tragedy or near tragedy.

To the personnel of the San Bernardino County sheriff's office, the thousands of square miles of mountains and desert are a matter of concern. The vast area includes terrain and weather from one extreme to the other—from below sea level desert area to over 11,000-foot mountain peaks and temperatures ranging from 135° desert heat to 0° mountain cold.

The mountain ranges in the county contain more than 50 peaks which are more than 5,000 feet in height. The mountain areas are all rough and dangerous country but the most dangerous of all is the area of Mount San Gorgonio, towering 11,485 feet above the desert on one side and above beautiful valleys and the city of San Bernardino on the other.

At about the 6,500-foot level of Mount San Gorgonio lies an area known as Big Falls, the name taken because of the 700-foot waterfall that cascades down the mountain at that point. Big Falls, tucked back in a rocky corner with sheer walls on both sides and an overhanging cliff, attracts hikers by the thousands because of its natural beauty. Beautiful as it may be, this area has been the scene of 22 tragedies in the past—22 persons have been killed or seriously injured at or near this giant waterfall.

On February 13, 1958, Big Falls claimed its 22d victim. On that bleak, wintry morning, a weary band of deputies from the San Bernardino County sheriff's office and volunteer mountain

## ***Planned Program of Search and Rescue Work***

by SHERIFF FRANK BLAND, *San Bernardino County, San Bernardino, Calif.*

rescue men were low in spirit because they had been defeated by Mount San Gorgonio and its Big Falls. During the night a 13-year-old boy had perished because he could not be reached on the lonely ledge halfway to the bottom of 700-foot Big Falls.

On February 12, 1958, at about 3:35 p.m., our headquarters was advised by a deputy sheriff at the Yucaipa substation of the San Bernardino County sheriff's office that a 13-year-old boy, one of a party of 10 hikers, had plunged down the sheer walls of Big Falls and that rescue units were needed immediately. We rushed to the scene after alerting mountain rescue men from our own department and rescue units of Norton Air Force Base in San Bernardino and March Air Force Base in Riverside. In addition, the



*Sheriff Frank Bland.*

Los Angeles County sheriff was requested to contact the Sierra Madre Mountain unit, a citizen organization of mountain climbers, for volunteers who could assist in the rescue.

While the victim waved feebly to the rescuers far above, the climbers fought against sheer, slippery granite walls, ice, snow and darkness. The rescue proceeded until about 2 a.m., February 13, when operations were ceased. Rain, cold and zero visibility halted operations until daylight.

Thirty hours after the boy had fallen, a Sierra Madre rescue member knelt beside the boy on a narrow ledge of the sheer cliff of Big Falls and radioed just one word to the rescuers on the ledges above, "Negative." The boy was dead. Big Falls had claimed its 22d victim.

### **Organization**

This tragedy prompted immediate action to preclude a repetition. It was decided that an expert crew of trained mountain men on call at all times



*Big Falls near San Bernardino, Calif.*

for emergency rescue missions, not only in San Bernardino County, but also in neighboring Riverside and Los Angeles Counties, would have to be organized.

Immediately, our staff went into action; and at the first organizational meeting, over 100 men, volunteers all and from various walks of life, attended. The plans and demanding tasks of the rescue unit were carefully explained. The volunteers were told that mountain rescue work was tough, that it was hazardous and that there was little glory in it. It was pointed out that there was no room for errors—that one mistake was one mistake too many. The volunteers were bluntly advised that if they were over 30 years of age or had a family, they should not consider training for the rescue unit.

The weeding-out process began, and on the day of the first training climb in March of 1958, 14 volunteers were on hand and ready to begin training. Had those who reported for the first training class known what was in store for them, they might have wondered if any human being could finish the training. For days, Sgt. Charles M. Petrovich, head of the sheriff's Search and Rescue, and Capt. Lester Liess, Chief of Plans and Training, explored the phases of training needed to weld the unit into a smoothly operating group with the overall knowledge and stamina to withstand hours of traveling over rough mountain terrain in bitter cold or scorching heat. Selected to accomplish the training and instruction and to put the volunteers through their paces was Sgt. Edward M. Healy of the U.S. Air Force, stationed at Norton Air Force Base in San Bernardino County. Sergeant Healy is a tough and experienced rock climber and a graduate of the Army Mountain School at Fort Carson, Colo.

### **Training**

Week after week for the next four months, the volunteers were taken into the mountains for 8 to 10 hours of the hardest type of training. The training was planned in a series of increasingly difficult maneuvers and laid out to take the team into all types of mountainous areas. Commencing with simple climbs, the unit soon progressed to the point where they found themselves inching up virtually vertical cliffs, descending sheer canyon walls and traversing steep, rocky gorges. The unit gradually hardened into thoroughly experienced mountaineers able to negotiate any hazard-

ous terrain. Unit confidence was gained and each member had confidence in the others—that each could be relied upon in emergencies to give the team unit protection against falls.

Many hours were spent training the men in rope management, knots and rope ties so vital to the safety of the unit. At one phase of the training, every member was required to simulate a free fall down a cliff while his companions on the ledge above practiced securing the linking rope to prevent a greater free fall. Uses of the sling ropes, the pitons and piton hammers were repeated and repeated until near perfection was reached.

The mountain training was supplemented by classroom instruction in first aid. Each unit member attended Red Cross first aid classes and holds basic and advanced first aid certificates. The two doctors in the unit gave each member extensive instructions on measures to take to save lives of injured victims when doctors are not available. They taught each member how to splint and to set broken bones, immobilize broken necks and backs, the application of pressure bandages, and other lifesaving practices.

### ***Class Graduation***

After weeks of arduous training, graduation day finally arrived. Every member of the original group, including the two doctors, completed the training and was ready for graduation. Those in charge of the unit decided that the graduation would not be accomplished amid soft lights and the snapping of photographers' cameras. The graduation exercise would take the unit back to Big Falls—to the very spot where the 13-year-old had become the 22d victim of Big Falls.

On a day in August 1958, the unit was loaded into the now completed rescue vehicle and proceeded to the Big Falls area and set up a base camp. The entire unit then scaled the 1,500-foot cliff to the top of Big Falls where a field camp was established. Working in teams of three men, each descended to the ledge on which the 13-year-old boy had died and returned to the field camp above. In the second phase of the operation, the 3-man team, along with a fourth man for a "victim," once again descended to the ledge. Each of the 3-man teams effected a rescue from the ledge by returning the "victim" in a stretcher to the field camp, over 300 feet above, with the assistance of the unit members at the field camp. Each



***Rope training.***

member of the unit observed proudly that each of the several rescues, starting from the time the descent was begun until the "victim" was removed from the gorge, averaged 90 minutes—not the 30 hours that it had taken to reach the victim many months earlier.

Upon completion of the graduation exercises, each member of the unit was awarded a Reserve Deputy Sheriff Commission and badge identifying him as a member of the Mountain Rescue Unit.

### ***Equipment***

While the unit was being trained, we exerted every effort to equip the team. Civic organizations and citizens contributed money and materials. One civic organization, the Argonauts of San Bernardino, contributed over \$1,000 which was used to purchase nylon rope.

Purchased by the county, a 1-ton panel truck was modified for special use. Equipped with bench compartments, it accommodates all of the equipment and the members of the unit who respond to an emergency call. Stored in the vehicle are 1,200 feet of nylon rope, portable lights,

binoculars, clothing, medical kits, blankets, transceivers, field rations, water, steel cables, tow chains, brush hooks and axes, bolt cutters, a portable public address system, and other supplies. Two Stokes litters are carried in racks on top of the truck.

In addition to the equipment carried in the truck, each man has been issued a helmet, helmet headlamp, his own specially fitted rope sling for ascents and descents, boots, climbing clothes, jacket, pistol belt, and canteen. Each man's gear is kept in the trunk of his car so that he can answer a headquarters call on a moment's notice and with minimum delay.

In the headquarters office in San Bernardino, a complete file of names, addresses, and home and business telephone numbers of each member is maintained. On weekends and holidays, members leave emergency telephone numbers in the event they are away from their homes or businesses.

Since graduation, the unit conducts a training and climbing mission not less than once each month. The original members of the unit have been augmented by 8 additional members so that the unit now totals 22.

We in the sheriff's office look with pride on the newly established Mountain Rescue Unit and now feel that this search and rescue organization is complete. In addition to the Mountain Rescue Unit, our sheriff's office has several other established organizations that may be called on for searches and rescues.

The sheriff's Aero Squadron, established years ago, is made up of 26 pilots and observers who man 13 light aircraft. The squadron is used primarily for air search of missing aircraft; however, they have been called out for search of lost hunters or hikers. The Aero Squadron has been augmented by the recent county purchase of a specially equipped 180 Cessna aircraft for use by the sheriff's department. Pilots and observers for this aircraft come from the department.

The Aero Squadron has been largely responsible for locating the nearly 160 aircraft wreckages that dot the mountains and desert of the county. Once located, the wreckages, if not removed, are painted a brilliant yellow or orange for later identification purposes. The Aero Squadron logs hundreds of hours of flight time each year in searches for downed aircraft.

The Mountain Search and Rescue Team, also a long-established unit, is composed of 14 volunteers headed by one deputy from the Yucaipa

substation. This unit is best described as "The Walkers" since their searches are restricted to the valleys and more easily accessible portions of the mountains in the southern section of the county. Included in their search area is Mount San Geronio. In December 1958, this unit, augmented by other members of the organized units, accomplished the rescue of a small girl in the mountainous Crestline area after a 16-hour search.

The Central Mounted Posse is composed of 51 volunteers all of whom own their own horses, horse trailers and related equipment. This unit is used for searches and rescues in the southern section of the county. Their equipment includes a fully equipped "chuck wagon" for use when searches are extended over a long period of time. The Central Mounted Posse is completely uniformed. The effectiveness of this group is demonstrated by the fact that for 2 years in succession, the group won first-prize trophies at the Los Angeles County Sheriff's Employees Rodeo. Invitations are received by this group to participate in rodeos and parades throughout the state.

In the central desert area of Lucerne Valley is the Lucerne Valley Mounted Posse made up of 18 volunteers, who, like other posse members, own their own horses, horse trailers and related equipment. This particular unit is for use in desert searches in the central desert area.

To the south of Lucerne Valley is the Apple Valley Mounted Posse composed of 25 special deputies who are on call for emergencies in any part of the county. Here again, all horses and equipment are owned by the posse members.

### **Other Units**

At the Barstow substation, 70 miles to the north of the sheriff's office headquarters, is the Barstow Search and Rescue Unit, known as the Jeep Unit. This unit is made up of 25 volunteers and their modified jeeps which are used to conduct searches on the Mojave Desert. To these intrepid searchers go the task of searching the desert for downed aircraft or missing persons. In January of 1959, after a 14-hour search, this unit accomplished the rescue of a little girl lost in the desert.

Still farther to the north and east at Needles, Calif., 245 miles from San Bernardino, is the Needles Search and Rescue Team, a composite unit made up of a mounted posse, a jeep posse, an underwater search unit and a boat patrol. The

*(Continued on page 22)*



## FBI National Academy Men Who Head Washington, D.C., Area Agencies Visit Director Hoover

On April 15, 1959, a group of law enforcement officials of particular significance met in the office of FBI Director J. Edgar Hoover at FBI Headquarters. This group consisted of eight chiefs of police of the metropolitan area of Washington, D.C., who are graduates or current members of the FBI National Academy.

Two of these law enforcement agency heads, Chief Silas Edward Dennis, Jr., Hyattsville, Md., and Maj. William G. Fawver, Arlington County, Va., are presently attending the 63d session of the FBI National Academy, which convened on March 11, 1959, and will conclude with graduation exercises on June 3, 1959. The other six meeting with Mr. Hoover on this occasion, who rose to leader-

ship of their organizations subsequent to graduation from previous National Academy sessions, were Maj. William L. Durrer, Chief, Fairfax County, Va., Police Department; Col. James S. McAuliffe, Superintendent, Montgomery County, Md., Police Department; Samuel A. Foster, Chief, Takoma Park, Md., Police Department; Maj. George J. Panagoulis, Superintendent, Prince Georges County, Md., Police Department; Maj. Russell A. Hawes, Superintendent of Police, Alexandria, Va., Police Department; and Harold Stewart, Chief, U.S. Park Police, Washington, D.C.

The chiefs summarized the greatest values received from their National Academy training as a



Shown during a visit to FBI Headquarters on April 15, 1959, are eight chiefs of police from the Washington, D.C., metropolitan area, who are either graduates of or current attendants of the FBI National Academy, from left to right: Major William L. Durrer, Chief, Fairfax County, Va., Police Department; Col. James S. McAuliffe, Superintendent, Montgomery County, Md., Police Department; Silas Edward Dennis, Jr., Chief, Hyattsville, Md., Police Department; Samuel A. Foster, Chief, Takoma Park, Md., Police Department; Director Hoover; William Garrett Fawver, Chief, Arlington County, Va., Police Department; Maj. George J. Panagoulis, Superintendent, Prince Georges County, Md., Police Department; Maj. Russell A. Hawes, Superintendent of Police, Alexandria, Va., Police Department; and Harold Stewart, Chief, U.S. Park Police, Washington, D.C.

clear understanding of the value of working together with other law enforcement agencies and officers, knowledge of using the FBI crime laboratory, and close cooperation with FBI Agents in day-to-day operations. Each chief cited particular instances and cases in which the training and experience gained in the Academy had been of material benefit.

In speaking to the visiting chiefs of police, Director Hoover mentioned the importance of the series of conferences on organized crime which the FBI has conducted in conjunction with local law enforcement throughout the country during April and May of 1959. He expressed the hope that the combined efforts of Federal and local law enforcement authorities could keep such pressure on hoodlums and racketeers that they would not be able to remain anywhere.

Commenting on the graduates of the FBI National Academy, which since the founding of the Academy in 1935 now total 3,636, with 86 members in the present session, Director Hoover stated:

"These officers go out almost as missionaries for what is decent and honorable without any regard to political pressures. It takes courage to stand up against political pressures, and these graduates have shown they could do it."

## **Assistance Against Car Thieves**

Chief Rodney J. Weinberg, Globe, Ariz., Police Department, values the help of service station employees in his campaign against car thieves.

On February 17, 1959, Chief Weinberg sponsored a meeting held for the purpose of acquainting service station personnel in the methods by which they could identify a stolen car and how they should report this information to the Globe Police Department.

To the owners, managers and personnel of service stations in its area, the Globe, Ariz., Police Department has issued a small booklet listing suggestions for their assistance and cooperation in apprehending and bringing to justice the many automobile thieves who pass through the city of Globe on Highway 60-70. It is stressed that this program does not endanger the lives or property of service station personnel.

Among the suggestions set out are the following:

1. While servicing a vehicle, observe it closely for evidence of being stolen, at the same time giving no evidence of suspicion while vehicle is in the station.

2. Never call the police while a suspected vehicle is in the station.

3. Phone the police as soon as the vehicle leaves the station, giving the direction of travel, how many subjects in car, whether they are men or women and how many of each and, most important, an accurate description of the license plate (number, State, etc.).

Numerous circumstances which should immediately be reported are listed in the booklet and include:

1. Occasions when anyone tries to sell or trade for gasoline, any equipment or accessories from their car, or guns, cameras, clothing, etc.

2. When license plates show evidence of having been tampered with.

3. When subjects who are obviously traveling over long distances purchase abnormally small amounts of gas, indicating limited funds.

4. When groups of juveniles are traveling together.

5. When vehicle contains quantities of materials that could conceivably be stolen, such as large quantities of cigarettes, new clothing, unusual quantities of merchandise that may have been taken in a burglary.

6. When ventilation windows are broken.

7. When there is evidence that an automobile is "hot-wired."

## **BURGLAR IDENTIFIED**

In July of 1957, the Superintendent of Haverford Township Police, Havertown, Pa., submitted evidence in connection with a burglary investigation.

An examination in the FBI Laboratory disclosed that the serrated edge of one of the blank checks found in possession of a suspect in the burglary matched the serrated edge of one of the stubs remaining in the victim's checkbook. An examination in the Latent Fingerprint Section of the FBI Identification Division disclosed that fingerprints found at the scene of the burglary matched those of the suspect.

By letter dated September 6, 1957, the FBI was advised that the suspect admitted the burglary upon being confronted with the findings of the FBI Laboratory and Latent Fingerprint Section.

# TRAFFIC

## Traffic Toll Cut by Planned Enforcement

by CAPT. J. R. EILAND, *Montgomery, Ala., Police Department*

It is a well-known fact that rigid, objective traffic law enforcement, in itself, is the most effective weapon or deterring factor employed by law enforcement agencies in the effort to lower the auto accident toll. Good enforcement is a "must" for communities sincerely desiring improvement in traffic conditions. Wherever strict enforcement coupled with impartial adjudication is effected, accident rates are certain to drop.

To provide more effectiveness or to increase the value of enforcement efforts it is necessary that enforcement activities be selective, that is, directed where they can accomplish more in accident prevention rather than being applied on a haphazard basis. The object of planned enforcement, in its broadest terms, is to make the most efficient use of traffic enforcement personnel by a preselection of times, places and types of enforcement, based on the causes of accidents as reflected by accident investigations. This factor of selectivity must be allowed to govern or influence administrative planning in enforcement programs. Quality rather than quantity is desired.

Selective enforcement has been defined by a leading traffic administrator as "the application of enforcement efforts at the times when, and in the locations where, trouble is most predominant, concentrating on the causes of accidents and sometimes on the persons or groups responsible for the trouble."

As reflected in the definition of "selective enforcement," the three areas of analysis and action are time, place and cause. A thorough study of each of these areas is of prime importance before a program of action can be outlined.

The problem must be clearly and distinctly defined. "When, where, and why are accidents occurring" are questions which must be answered in order that effective countermeasures may be determined.

These answers must be found by an open-minded, thorough, and accurate study of accident reports, records and statistics covering a period of time long enough to eliminate chance varia-

tions. Accident patterns must be determined and various trends recognized. It is important that the raw data, the basic records, be reliable in order to assure sound analysis.

A major factor in the "selective enforcement" program is proper assignment of enforcement personnel. The principal considerations of assignment are time and place and should follow the patterns set by the times and places of traffic accident occurrence.

Monthly traffic accident summaries will provide adequate information to permit proper assignment on a time basis (hour of day, day of week). The accident statistics should include all accidents rather than just "fatals" or injury figures, and should be shown by day and by hour on a percentage basis thereby simplifying the assignment of personnel by similar methods.



*Capt. J. R. Eiland.*

## MONTHLY ADMINISTRATIVE TRAFFIC SAFETY SUMMARY

TRAFFIC ACCIDENTS				
	This Month	This Mo. Last Yr.	This Year To Date	Last Year To Date
Fatal Accidents				
Pedestrian Fatal Accidents				
Persons Killed				
Pedestrians Killed				
Personal Inj. Accidents				
Ped. Inj. Accidents				
Persons Injured				
Pedestrians Injured				
Property damage Accidents				
<b>TOTAL ACCIDENTS</b>				
<b>HIT &amp; RUNS</b>				

ADMINISTRATIVE CHECKS					
	Accepted Rate	This Month	This Mo. Last Yr.	To Date This Yr.	To Date Last Yr.
Enforcement Index					
Conviction Rate					
Percent of Accidents Investigated by AI Units					
Accident Arrest Rate					
Conviction Rate on Accident Arrests					
Fatalities Per 100,000 Population					
Fatalities Per 10,000 Registered Vehicles					
Accident Ratio					
Hit and Run Clearance Rate					
Hit and Run Conviction Rate					

Accidents & Hazardous Vio. Arrests By Hour				
HOUR	No. Of Accidents	Percent Of Accs.	No. Of Arrests	Percent Of Arr.
12 M				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12 N				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
<b>TOTAL</b>				

ACCIDENT CAUSES VS. HAZARDOUS VIOLATION ARRESTS				
MOVING VIOLATIONS	No. Of Acc. Caused	% Of Acc. Caused	No. Of Arrests	% Of Arrests
Driving Under Influence				
Reckless Driving				
Speeding				
Stop Signs				
Signal Lights				
Imp. Lane Changing				
Improper Turns				
Improper Passing				
Following Too Closely				
Improper Starts				
Wrong Side of Street				
Leaving The Scene				
One Way Streets				
Falling To Yield R.O.W.				
Improper or No Signal				
Improper Backing				
Defective Brakes				
Improper Lights				
Manslaughter				
Drivers License Vio.				
Miscellaneous				

Accidents & Arrests By Day of Week				
DAY	No. Of Accidents	% Of Accidents	No. of H.V. Arrests	% Of H.V. Arrests
MONDAY				
TUESDAY				
WEDNESDAY				
THURSDAY				
FRIDAY				
SATURDAY				
SUNDAY				
<b>TOTAL</b>				

TRAFFIC ARRESTS BY DIVISION				
Division, Bureau Or Unit	TOTAL	Hazardous Violations	Parking	Other Non-Haz.
Foot Traffic				
Accident Investigation				
Enforcement				
Parking Detail				
Total Traffic Div.				
Patrol Division				
<b>TOTAL</b>				

Prepared By ..... Month ..... Year .....

Charts or graphs may be employed to more clearly exhibit a comparison of accident experience with personnel assignments.

### **Spot Maps**

Accident spot maps are of prime importance in effective enforcement planning. A general accident spot map should be a routine operation for all cities. It presents the overall picture of accident concentrations better than other methods. For best results a map scaled 1 inch to 400 feet is most adaptable. The accident locations may be pinned, pasted or drawn, using shapes or colors to indicate variations. The legend should not provide over five or six breakdowns; fatalities, injuries, property damage and pedestrian accidents are the most important. This map should be maintained on an annual basis.

In most cities special spot maps are required to indicate special accident types and varied or unusual circumstances such as bicycle accidents, pedestrian accidents, night accidents, day accidents, commercial vehicle accidents and residences of drivers. The size of these special maps may be reduced as needed in proportion to the accident experience. Usually a map scaled 1,000 feet to the inch is large enough.

### **Program**

In 1955 the Montgomery Police Department, under the administration of Police Commissioner Clyde C. Sellers and Police Chief Goodwyn J. Ruppenthal, inaugurated a rigid selective enforcement program to cope with the increasing accident problem. It was believed that this type of program, carefully planned and administered, would prove beneficial in a few months.

The first step in setting up the program consisted of a complete evaluation of our accident reporting and investigating processes. The need for additional training of Accident Investigation units with emphasis on the reporting of accident cause was evident. This was accomplished through in-service training sessions devoted to that particular phase of the operation.

An array of spot maps was then set up to accurately pinpoint trouble areas and to make possible a comparison with enforcement efforts. These were designed to provide information concerning accidents by time of day, violation and



**Chief Goodwyn J. Ruppenthal.**

location. A new system of filing accident reports by location was adopted to facilitate the processes of survey and evaluation necessary in the administration of an effective "selective enforcement" program.

Several accident summaries (monthly, quarterly and annually) were developed to provide the comparative data, on a percentage basis, necessary for the proper assignment of personnel and for use in determining areas of need.

Pertinent information was communicated by enforcement bulletins and regular meetings with enforcement groups, and evaluations of progress were made periodically.

At the end of that first year, 1955, we found that we had experienced 11 fatalities. The year of 1956 brought about an improvement with only six fatalities, and during the next year, 1957, only two fatalities were recorded. Montgomery, Ala., was designated that year as the "Safest City" in its population group (100,000-200,000) by the National Safety Council.

The different phases of the program are under a constant review and evaluation process to determine and effect any possible improvements. The values of selective assignment and effective enforcement have been recognized by this department. We believe the results in our area attest to these values.

## SCIENTIFIC AIDS

# Instrumentation of Law Enforcement

by DONALD J. PARSONS, *FBI Assistant Director,  
in charge of FBI Laboratory, Washington, D.C.*

*The duties of a law enforcement agency, although relatively simple in definition, are often exceedingly intricate in execution. Among these duties, few are more important than the collection of physical evidence. However, the collection and preservation of the evidence alone will usually not suffice for purposes of its introduction in court, nor will collection of the evidence itself establish its importance to the investigation. The pertinence of physical evidence and its relationship to the facts of the case must be determined before it can either be used to reconstruct these facts or be introduced for consideration of the court. This pertinence can often be established only by scientific analyses such as those conducted in the Federal Bureau of Investigation Laboratory. Law enforcement relies on science for this all-important phase of its work.*

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The concept of applying science to law enforcement is not new. Even before crime laboratories came into existence, individual scientists were

sometimes called upon in specific instances in individual investigations but not as part of a broad program. The Federal Bureau of Investigation Laboratory was established in 1932 by J. Edgar Hoover, Director of the Federal Bureau of Investigation, to take maximum advantage of the contributions of science to a large variety of criminal investigations. This laboratory is concerned with applications of science to communications, engineering, technical aspects of field investigations, and practically every aspect of FBI activity. This report to analytical chemists, however, is concerned primarily with the examination of physical evidence. A high degree of specialization is practiced in the Federal Bureau of Investigation Laboratory and the activities described herein are functions of several units within the Physics and Chemistry Section. Comment will be made later on related work, the coordination between specialists, and the volume of work in the overall operation.

Evidence or, specifically, physical evidence is simply the forensic term for samples. Herein lies the basis for some of the principal problems



*Mr. Donald J. Parsons, standing, discusses radiation measurements with a laboratory examiner.*

of the analytical chemist in law enforcement work, in that he has no control over the quantity or the purity of the samples he is called upon to analyze. He must accept what is recovered at the scene of the crime or in the course of the investigation, even though it be a minute bit of residue or a grossly contaminated stain. In some instances, impurities require special procedures or controls to eliminate interference; in other instances trace impurities are of greater interest than the principal compounds of the sample.

Consistent variety characterizes the requests for examinations in the Federal Bureau of Investigation Laboratory. Materials uncovered during the course of investigations which require examinations vary from oysters to cosmetics, from soils to precious metals, and from refractory slags to volatile solvents.

### New Instruments

The versatility and adaptability of instrumental methods of analysis have been paramount factors in making possible laboratory analyses of such heterogeneous submissions. Generally, instrumental methods will permit analyses of extremely small gaseous, liquid, or solid samples; afford relatively rapid analysis; spare the specimen from complete consumption; and yield a tremendous amount of detailed intelligence.

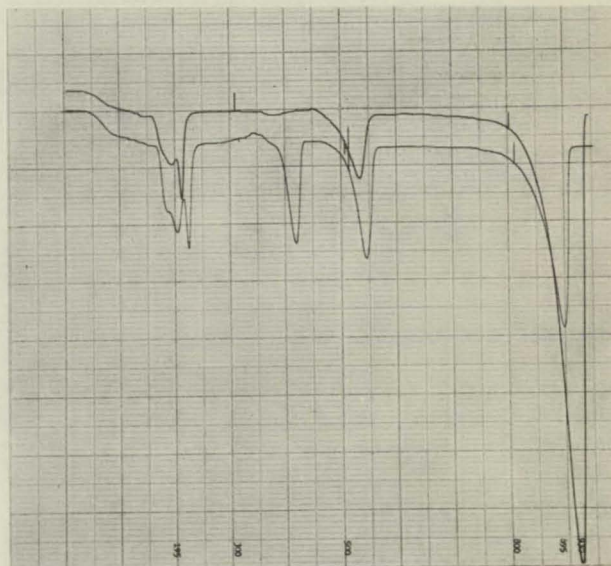
Although many procedures and instruments are not unlike those in laboratories devoted to other objectives, the sampling problem in the examination of physical evidence is one that cannot be overcome and, therefore, has a great influence on procedures and equipment. In addition to the advantages offered in helping overcome the sampling problem, the instrumental approach has also been sought for another reason—the need for speed. In many instances, the results of the analysis will influence the direction of the investigation. The dye in two similar appearing fibers may be found to be different, thus showing that the fibers clinging to the window sill did not come from the jacket of a suspect. Obviously, another source of the evidence fibers must be sought. In so many instances, the sooner the results are made available, the greater value they are to the investigation. In many instances, even where multiple analyses are involved, the report is made available the same day that the evidence is received.

Every effort is made to keep abreast of analytical approaches in other laboratories and of new

techniques and instruments which are available. In some instances, it is found that minor modifications will adapt commercially available instruments to our specific needs in dealing with some problems. In other cases it has been necessary to design and construct equipment because it was not commercially available.

An example of the latter arose in the study of the application of differential thermal analysis to a variety of problems. Many chemical and mineral substances exhibit thermal changes when heated. Decomposition, oxidation, rearrangement of molecular structure, dehydration, and other phenomena cause exothermic and endothermic reactions. A measure of these thermal changes provides data for the identification of crystalline compounds or mixtures of compounds. The temperature difference between the sample and an inert compound such as alumina is plotted against sample temperature over a range of 1000° C. or more. The resulting curve will show the number of reactions, the nature of each reaction, the amount of heat evolved or absorbed, and the temperatures at which the reactions take place.

This approach has application in a number of laboratories. Although commercial instruments are now available, individual laboratories have



Results obtained by the differential thermal analysis apparatus are quite precise. Shown above are comparisons of two specimens of plaster approximately 9 months old. The upper curve shows the presence of calcium sulfate, calcium hydroxide, and calcium carbonate. The lower curve shows, in addition, the presence of magnesium hydroxide which denotes a different plaster.

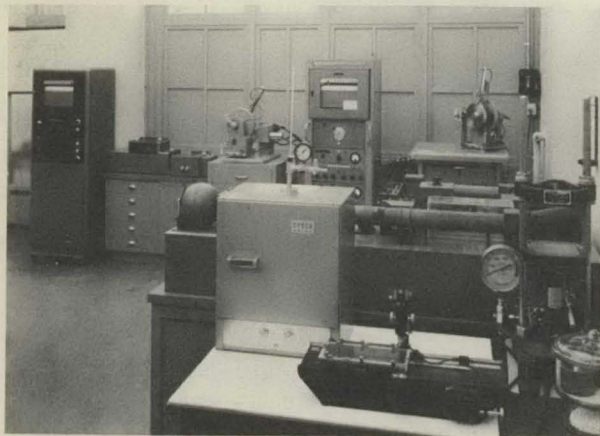
done research work and designed and constructed instruments tailored to their specific problems.

The differential thermal analyzer constructed in the FBI Laboratory consists basically of twin furnaces, sample holders, thermocouples, furnace heat controllers, preamplifiers, and recorders. The temperature difference between sample and reference is obtained by the use of double terminal thermocouples. One terminal is inserted in the sample and the other in the inert reference (alumina). As long as both terminals experience the same temperature, no current is produced. However, a thermal reaction occurring in the sample causes a temperature difference between the two terminals and the current produced is amplified and recorded as a peak on a chart.

This method of analysis has been applied successfully to the study of clays, soils, plasters, cements, safe insulations and, experimentally, the study of lubricating oils. Plasters, mortars, safe insulations, and other cement products are found frequently on the tools of burglars who have used them to break into buildings and break open the safes.

### **Typical Examinations**

The nature of the specimens received frequently prohibits the use of standard schematic analysis procedures. As an example, small translucent particles, which exhibited strong indications of a nitrate in microchemical tests, were identified as nitrocellulose particles when studied on the infrared spectrophotometer. Furthermore, the infrared absorption spectrum, which reveals the



*General view in Spectrographic Unit showing visible and ultraviolet spectrophotometers and X-ray spectrograph and diffractometer.*



*The X-ray spectrograph and diffractometer shown above are particularly useful tools in forensic chemistry where samples are often very small and must be subjected to nondestructive examinations.*

amount of nitration, enables the examiner to distinguish between the nitrocellulose of the common lacquer and the smokeless powder explosive. This nonconsuming penetrative examination of a very limited specimen enables the examiner to make identifications and distinctions of vital importance to the investigation.

### **Sabotage or Accident?**

Following the crash of a heavy bomber, reports of suspected sabotage were received. These reports were prompted by microchemical tests at the scene, which pointed to the likelihood of a foreign strong oxidizing agent or explosive mixture, not entirely consumed, being present in the aircraft and causing its ultimate destruction. The material in question was subjected to instrumental analysis (spectrographic and X-ray diffraction). It was identified as the rare active crystalline compound—magnesium silicide. Further investigation revealed that the magnesium silicide was produced in the bomber as a result of intense heat from the fire following the crash and was not the initiating cause. Costly investigations relating to saboteur activity were eliminated.

### **Paint Studies**

Paint covers a large variety of items which make up the hardware, vehicles, and structures of modern living. The hoodlum cracking open a safe, prying open a window, or crashing his car into a building during a hasty getaway often leaves paint



at the scene of the crime or unknowingly carries paint from the crime scene. In both cases the paint is deposited accidentally, and thus is usually limited in quantity. The main objective in both instances is to identify the paint and associate or eliminate the sources. During the course of the FBI Laboratory's paint examinations, three limiting factors normally present themselves almost automatically—the paint evidence is dry, small, and contaminated. This particular type of examination leans heavily on instrumental analysis. Under the microscope many important factors of identification and comparison can be discerned. These include layer structure, colors, texture, and surface peculiarities such as orange peel, wrinkling, cracking, and blistering. Cleaning of the specimens, layer separation, and preparations essential for instrumental analysis are carried out under the microscope. Frequently, infrared spectrophotometric analysis reveals the type of paint—i.e., lacquer, alkyd, acrylic, or styrene. Organic coloring agents, if present, can be removed in solvents and studied on the recording spectrophotometer (4,000 to 10,000 Å.). Metallic pigments and the extender in paints in many instances can be identified. Rutile and anatase forms of titanium dioxide and lead chromates are a few of the complex pigments in small samples which are adroitly fingerprinted by X-ray diffraction which might otherwise only be categorized by other examinations. The electron microscope with its electron diffraction adaptation is called into play to perform similar identifications when only micro samples are available.

The emission spectrograph reveals not only the basic metallic constituents of paints but also traces which normally indicate the metallic component of the drier and distinguishing accidental impurities.

The presence of indium in a paint specimen exemplifies the penetrativeness of the spectrographic examination. Indium is not a normal paint ingredient. Unexpected trace impurities which would not ordinarily be tested for are routinely unveiled during the examination.

Concerning an alleged patent violation, it was necessary to determine if certain licensed paints possessed the claimed property of fluorescing when excited by visible light. If true, this would disprove the allegation that the paints fluoresced because of invisible ultraviolet radiation.

By adapting the Hardy spectrophotometer to irradiate the specimens with a monochromatic

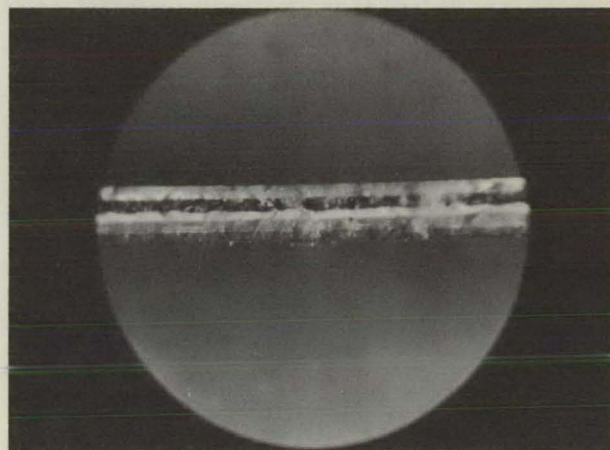
beam of blue visible light after filtering out any ultraviolet, it was conclusively demonstrated that the samples did in fact fluoresce, emitting wave lengths different from the incident source. This disproves the allegation that the paints fluoresced because of invisible ultraviolet radiations.

This case illustrates another problem which the analytical chemist engaged in forensic work often faces. The results he obtains not only must be technically precise but they must be presented in such a way that they can be understood by juries composed of nontechnical persons. This often involves presentation of exhibits which demonstrate the manner by which the conclusions were reached.

### ***Body Tissue Examinations***

Toxicological examinations are conducted in the chemical section of the laboratory. These chemical analyses, as performed on human body tissue, are a combination of well established chemical methods and many recently developed procedures. Most difficult of all toxicology cases is the general unknown, in which no indication is developed by investigation or pathology as to the probable cause of death.

Procedures for such an examination usually follow this pattern: Representative samples of submitted body organs are minced and steam distilled to coagulate protein material and remove steam-volatile components. Chemical screening tests for poisons are run on the distillate. If results are positive, specific qualitative and quantitative tests



*Paint chips, which are examined by chemical, instrumental, and microscopic techniques, yield much information to investigators.*

for the poisonous substance in the distillate are conducted. When the steam-volatile material shows no traces of poisons, the tissue residue after steam distillation is treated with ethyl alcohol or other solvents and refluxed. The filtrate from this material is then collected, evaporated, and redissolved in alcohol-water mixtures in order to denature and precipitate as much of the protein and other normal body material as possible. The final residue is then dissolved and extracted with solvents at various concentrations. The residue from evaporation of the solvents, although usually not free from normal components of body tissue, contains a concentration of certain types of poisons if they are present. Spot tests and crystal tests of this material can be used to detect certain poisons.

Should poisons be indicated, their separation and specific identification, along with quantitative measurement, must be accomplished. This may be done on a sample of the material already concentrated or another sample treated specifically for the type of poison indicated. Chromatography, electrophoresis, infrared and ultraviolet absorption techniques all have been helpful in this last phase of the analyses. It is essential that new procedures be added to the former methods of analyses, because of the large number of compounds developed each year which may be poisonous if taken in overdoses. The spectrograph has been used in toxicology cases since it was first acquired by the FBI Laboratory. Wet- and dry-ashed samples of tissue can be screened rapidly for most metallic poisons, leaving the more volatile to chemical analysis. If chemical quantitative methods are indicated, they may be performed after spectrographic identification of a metallic poison.



Portion of Serology Unit where bloodstains on evidence and related examinations are made.

## Blood Studies

Blood is one of the most convenient substances usually available for toxicological analyses. A large amount of data on toxicity has been determined in relation to blood specimens. Another convenience in using blood is that tests for specific types of poisons such as alcohol or carbon monoxide can often be conducted more rapidly and conveniently on samples of blood. Many sensitive tests have been designed which permit analyses of small quantities of blood for such poisons as barbiturates, carbon monoxide, alcohols, and cyanide.

In the Serology Unit, most of the work consists of the examination and identification of blood and seminal stains. This identification consists of determining whether the blood is of animal or human origin and, if human, the blood group of the person from whom it originated. To achieve this identification, a hypersonic oscillator is frequently utilized to put difficultly soluble bloodstains into solution. It is also used to "shake" spermatozoa free from textile fibers to which they adhere.

The results of some preliminary research work with the hypersonic oscillator indicate that a person's blood group probably can be determined from a piece of bone, fingernail, toenail, or a few strands of his hair.

Another type of instrumentation used in the Serology Unit is the Photronreflectometer amplifier, which is used for the measurement of turbid systems. It gives readings which are proportional to the relative content of suspended precipitate. It has a high degree of accuracy and sensitivity over a wide range of concentrations. It is usually operated with a reflection system and is useful in that it measures the precipitated material *in situ*, thereby avoiding errors in collecting and handling of precipitated materials. This instrument is utilized in determining the origin of blood and tissue specimens if the samples are not too limited. The advantage of using the Photronreflectometer over the normal precipitin procedure is that the intensity of the antibody-antigen reaction can be measured over a wide range of varying concentrations. Work done in this field indicates it may be possible, by use of electrophoresis or paper chromatography, to determine the origin of samples by identification of the various protein components.

Two relatively new methods of analyses, gas chromatography and electrophoresis, are of interest to the Federal Bureau of Investigation Lab-

oratory. These methods require small amounts of material and are useful for separating mixtures into their components. The component parts may then be identified by infrared spectrophotometry.

By means of electrophoresis, it has been possible to separate and identify opium alkaloids. The amount of alkaloid detected by this method may be extremely small and below the level usually detected by classical methods.

Applications of gas chromatography are of increasing interest to our laboratory. Possible uses of chromatographs include the identification of petroleum fractions obtained in arson cases, chlorinated hydrocarbons used in various solvents, and volatile liquids such as alcohols, aldehydes, ethers, esters, amines, and fatty acids.

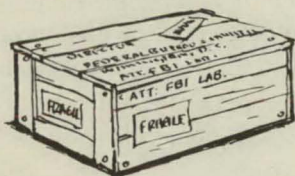
Other than for purposes of radiography, radioactive isotopes have had only limited application in Federal Bureau of Investigation analytical procedures. Seldom is the sample to be analyzed available for tagging prior to its recovery as physical evidence. Consideration has been given to a number of applications such as the tagging of gasoline dispensed from a supply tank in order to trace thefts of the fuel. Simpler means have been devised, however, which permit immediate identification of the stolen fuel. The laboratory is called upon to analyze and assay ores and materials recovered in connection with the criminal violations of the Atomic Energy Act. These violations in-

clude unauthorized possession of, transfer in interstate commerce of, receipt of, import or export of source materials, special nuclear materials, production facilities, and atomic weapons.

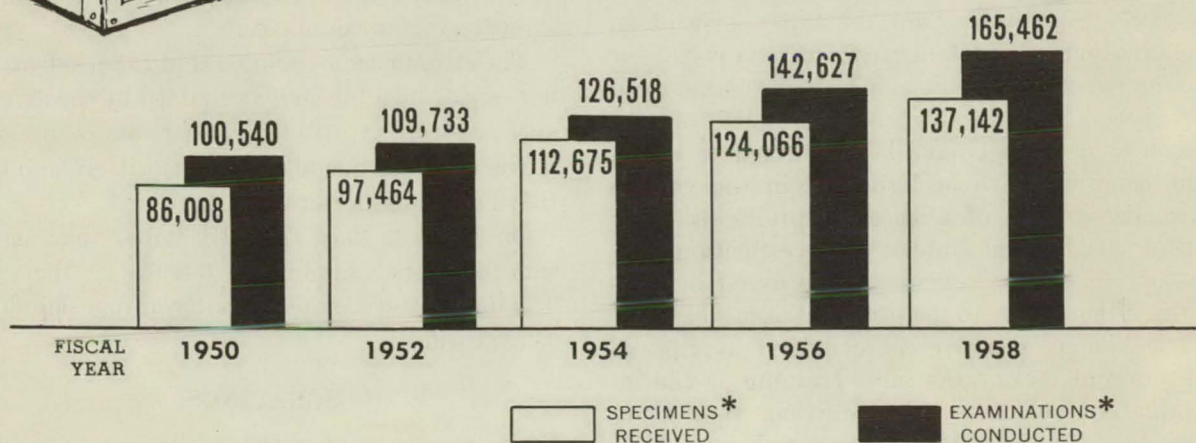
### Other Laboratory Facilities

The above examples are procedures applied in the Serology, Toxicology, Spectrography, and Petrography Units of the Physics and Chemistry Section. The other units of this section—Metallurgy, Hair and Fiber, and Firearms Units—make their contributions. For example, in the Firearms Unit, evidence bullets are identified with the guns from which they were fired by microscopic comparisons. In addition, special chemical procedures are used for detecting and determining the patterns of gunpowder residues on the clothing of shooting victims. Also, analysis of residues will frequently show the kind of explosive used in a homemade bomb.

Because of the large volume of documentary evidence, an entire section is devoted to specialized studies applicable. In addition to comparison of handwriting, typewriting, and other mechanical means by which a document may be produced, microscopic and chemical examinations are made in the analysis of the paper itself. Paper chromatography has been applied to the study of inks and is particularly helpful because it permits



## INCREASED DEMANDS UPON SERVICES OF FBI LABORATORY



\* In many instances more than one examination is required with respect to individual specimens of evidence received by the FBI Laboratory.

analysis on samples so small that they can be removed from the written document without changing its appearance. Chemical tests are applied to estimate the age of ink writing based on the migration of invisible constituents of the ink.

Since the establishment of the Federal Bureau of Investigation Laboratory by Director Hoover, the facilities have been made available free of charge to other Federal agencies and to all State and municipal law enforcement agencies as a cooperative function. The assistance of science has been well received and requests for such assistance have grown rapidly. In the fiscal year 1958, more than 165,000 examinations were conducted, an average of more than 450 for every day in the year. To explain this figure better, it should be observed that one examination consists of the one or more procedures that are applied to a specimen in one specialized field. Hence, the relatively simple procedure used to determine the percentage of carbon monoxide in a blood sample would be one examination. However, the multiple procedures applied to a blood sample in seeking an unspecified poison would also be one examination. A single specimen may, however, be subjected to more than one examination. A letter demanding ransom in a kidnaping case may be subjected to paper fiber analysis in the Document Section as one examination and further examined in the Serology Unit to analyze the stains suspected of being blood, as a second examination.

### **Laboratory Staff**

The staff of the Federal Bureau of Investigation Laboratory numbers approximately 215 divided into three categories: the examiner or expert who has full responsibility for the supervision of an examination and presents testimony in court, the technician or laboratory aide to the examiner, and the clerk. Specialization is encouraged and the scientific personnel have been selected to represent comprehensive backgrounds in the various specialized fields of science. Training is given within the Federal Bureau of Investigation Laboratory to aid the scientist in applying his specialized knowledge to the problems of law enforcement. These men are all classified as Special Agents and receive the same training as the investigative personnel. In addition, they serve periods of time in the field service to become fully conversant with the investigative problems encountered there.

The technicians and laboratory aides also are selected on the basis of technical qualifications and are required to have at least two years of college science. In many instances these employees are seeking degrees in the field of their specialties to qualify for further advancement.

The general picture of the laboratory in law enforcement has been brought into sharp focus within recent years. Importance of laboratory analyses has been effectively demonstrated in many instances. However, the Federal Bureau of Investigation Laboratory shares the feeling of other scientific endeavors in realizing that success must not bring about complacency. It must only make us realize how much more can be accomplished. It is to this end that our efforts are directed and we hope that the years ahead will see us able to increase constantly our contribution to good law enforcement and good government.

*(Reprinted with permission of The American Chemical Society from "Analytical Chemistry," Vol. 31, No. 2, February 1959.)*

### **TIRE EXAMINATION**

In October 1957, a police officer found a badly wrecked automobile some 50 miles north of Rawlins, Wyoming, in which the girl companion of the driver met her death. Investigation developed that the driver was intoxicated and had reached a speed of about 120 miles per hour when the accident occurred. The driver claimed a blown-out tire caused him to lose control of his automobile. In order to check this claim, the Carbon County, Wyoming, Sheriff's Office submitted all four wheels of the wrecked automobile to the FBI Laboratory for examination.

The examination disclosed that the accident was not caused by a blowout as claimed by the defendant. Instead, it was found that loss of pressure in the tires was due to the accident itself, and that they had not been run while flat.

On April 1, 1958, the FBI Laboratory expert who made the examination testified at the trial. The defendant was found guilty of manslaughter, as charged.

### **SCRAPINGS**

Stains appearing on objects too large for shipping should be carefully scraped off with a clean instrument and placed in a tightly covered pillbox.

## OTHER TOPICS

The value of a thorough crime scene search cannot be minimized. Recently, this technique was the only factor which led to the solving of a burglary and the conviction of the burglar at Salida, Colo.

During the night of August 26, 1958, an attempt was made by an unknown individual to gain entry to a pharmacy through a transom over a rear door. Entrance was not successfully gained; however, sufficient evidence was obtained through a crime scene search which I conducted to prove that a portion of the perpetrator's body had entered the building, which fact is necessary under Colorado Criminal Law Statutes to constitute the crime of burglary.

A preliminary visual investigation revealed that the perpetrator had obtained access to the transom by moving a trash barrel, located near the rear door of the drugstore, and using it to stand on. This was determined from roll-type ridges found on the ground under and near the rear door. The glass of the transom was observed to have been broken and an examination of the broken pieces of glass revealed heavy scratches which appeared to have been made by a glass cutter. Further examination of the broken pieces of glass found both inside and outside the drugstore revealed bloodstains. The bloodstained glass found inside the building was very important as this established the entry of a portion of the perpetrator's body inside the building which is necessary to constitute burglary.

With the use of a ladder, a more careful examination of the broken transom was made. As the result of this search, a small piece of flesh was found on a piece of jagged glass in the frame of the transom. The piece of flesh was removed, placed into a container, properly marked and dated, and then taken to a local physician for further examination. At this point the actual significance of the piece of flesh was not recognized other than to indicate that the perpetrator had been injured while committing the crime.

## Crime Scene

### Search Leads to Burglary Solution

by CHIEF HARRY H. CABLE, *Salida, Colo., Police Department*

The piece of flesh, when found, was not particularly hard but had assumed some degree of firmness and was curled away from the hair side. Within 1 hour after the flesh had been given to the local physician, the physician reported that he had softened the skin by wrapping it in a sponge saturated with a normal salt solution. He stated that after the skin had regained a semblance of normal pliability, he had flattened it out on a smooth gauze surface and found that it measured approximately  $\frac{3}{8}$  by  $\frac{1}{4}$  inch in its greater diameters.

The physician estimated that the skin fragment was not more than 24 hours old as it still maintained some elasticity, pliability, and showed no evidence of structural damage. The physician



Chief Harry H. Cable.

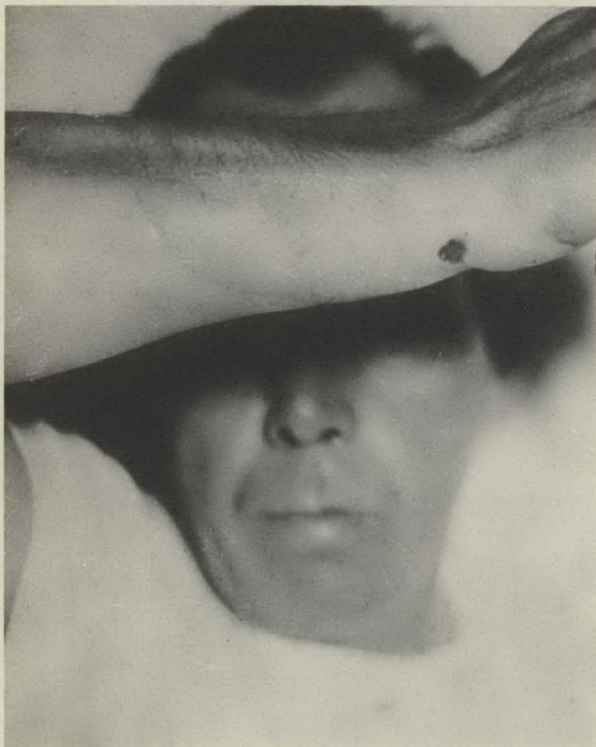
further advised that it had the appearance of having been gouged out by a sharp edge as it was a clean cut and dipped markedly in the center which portion was four or five times thicker than the edges.

For identification and exclusion purposes in locating a possible suspect, the physician related the following pertinent items which were responsible for the speedy apprehension of the perpetrator:

1. The hair in the piece of flesh was definitely black and the pigmentation of the skin would indicate a certain degree of brunette coloring, although definitely not Negroid or dark Mexican.

2. Under the magnifying glass there were noted small black smear specks which would indicate that a suspect would possibly be employed around grease or some type of black adherent substance.

All officers of the department were advised of the circumstances of the case and of the physician's findings. The radio dispatcher on the 4 p.m. to 12 a.m. shift on the previous night recalled receiving two telephone calls which were very significant in the apprehension of the perpetrator. First, a check of the police radio log reflected that at 11:01 p.m. on August 26, 1958, a tenant in an apartment house near the victimized pharmacy had called and reported hearing noises in the alley,



*Wound on right wrist of suspect.*

and also said that she thought she had heard the sound of breaking glass. Second, the police radio log revealed the receipt of a telephone call from a local tavern at 11:26 p.m. on August 26, 1958, to the effect that a man had appeared at the tavern with a severe bleeding wound of the arm or hand. The police officers who responded to those calls at that time were not as yet aware of the burglary. They did, however, make adequate investigations which proved very valuable in the burglary investigation. In effect, the police officers contacted the wounded man, identified him, and then took him to his residence.

With the foregoing information, the suspect was arrested at 5:30 p.m. on August 27, 1958, as he terminated a day of work in the local railroad yards. It was obvious that the suspect had a wound on the outer side of his right wrist, and he was immediately taken to the office of the local physician who had examined the piece of flesh found at the crime scene.

As the result of an examination, the physician reported that on the ulnar aspect of the right wrist there was a relatively fresh wound which measured  $\frac{3}{8}$  by  $\frac{1}{4}$  inch in its greater diameters. He stated the wound was definitely gouged out and clean cut and considered to be relatively fresh because of the thin layer of serous exudate over the surface of the wound. He said there was no scabbing, granulation, or swelling, all of which would indicate a recent injury.

Under a magnifying glass, the skin fragment previously obtained from the transom at the crime scene was fitted into the wound and the edges and depth were found to match almost perfectly, allowing for what could be considered normal shrinkage, which was estimated to be less than 1 millimeter at the edges. The physician was also able to identify the skin lines of the skin fragment which continued consistent with the skin lines of the adjoining skin. In addition to this, the physician was able to state that the distribution of the black hair and the direction in which the hair lay were identical with that on the suspect's skin.

Finally, with the use of a magnifying glass, the foreign substance, previously identified as being black specks, possibly grease or some other adherent debris, was very noticeable in the skin lines of the evidence specimen and in the normal skin lines of the suspect's wrist.

Further investigation as to the type of work the suspect's employment entailed revealed that

## BAREFOOT FUGITIVE

he had been handling and loading creosoted railroad ties which would very probably account for the black smear specks found in the skin lines of the evidence specimen and in the skin lines of the suspect's wrists.

An effort was made to have the suspect willingly furnish a sample of his blood for the purpose of comparing his blood with the bloodstains found on the broken glass at the crime scene; however, this request for a blood specimen was refused. Therefore, the only evidence linking the suspect with the crime was the fragment of flesh obtained from the jagged glass in the frame of the transom.

All of the facts in this matter were furnished to the district attorney, and the suspect was duly charged with the burglary of the pharmacy.

On November 20, 1958, the local physician who examined the fragment of flesh and the suspect's wrist wound testified before a district court jury at Salida, Colo., and carefully reported his findings from the examinations he had made. He concluded in his testimony that "it is inconceivable that the piece of flesh obtained at the crime scene came from any other source than the right wrist of the defendant," and that it was his expert opinion "that the same piece of flesh was intact on the wrist of the defendant less than 24 hours prior to his examinations."

After deliberating less than 1 hour and 15 minutes, the jury returned a verdict of "guilty as charged"; and the defendant on December 9, 1958, was sentenced to the Colorado State Penitentiary for a term of not less than 3 years and not more than 10 years.

Thus, the finding of a small fragment of flesh on a broken transom and the finding of bloodstains on pieces of broken glass lying on the inside of a building upon which an attempted burglary had been committed were the sole factors which resulted in the apprehension and conviction of a burglar who might have gone undetected had it not been for a careful and thorough crime scene search.

### METAL EXAMINATIONS

Pieces of metal found at crime scenes may have major significance in the solution of a case. Pieces of wire, parts of crowbars, parts of automobiles, and other metal fragments can sometimes be traced and frequently identified with samples of similar material in the possession of the suspect.

On June 29, 1958, a 19-year-old woman, a bride of only 3 months, was reported missing from her home in a small town in Maryland. She had disappeared from her home between the hours of 12:30 p.m. and 6 p.m. on the previous day.

Investigation by local police officers reflected that a gray and pink car had been observed in the vicinity of the victim's home. This car had also been observed near the edge of the woods not far from the victim's house for 2 hours on the day of the murder. In development of this information, an extensive search of the wooded area resulted in the discovery of the victim's body a few days later.

Subsequent examination of the body showed that the woman had been severely beaten around the face, had a concussion over the right ear, and her death had been caused by strangulation.

Police investigators located a gray and pink car—the only one like it in the locality—and upon examination found the victim's left thumb print on a window of the car. A single red hair was also found in the back seat of the car. An FBI agent later testified that this hair was similar in all observable characteristics to the known head hair of the young victim.

When police officers went to the home of the owner of this car, a man in his mid-twenties and the father of three small children, he fled barefoot, entering a large wooded area behind his home. A helicopter and bloodhounds were later used to aid in the search but with negative results.

The FBI was called upon to help in the search when it was ascertained that the fugitive had crossed a State line in his flight, in violation of the unlawful flight to avoid prosecution statute.

During the early morning hours on July 21, 1958, local police answering a burglar alarm in a neighboring State apprehended the fugitive in the act of attempting to break into a building. It was found that the fugitive had been living off the land, stealing vegetables and fruit, and for the last 3 days had been hiding in a cornfield.

Records reflected that this man had a police record dating back to 1950, including convictions for grand larceny, robbery, assault, and beating. He had also spent several months in a State hospital, having been diagnosed as having a sociopathic personality disturbance with antisocial reactions.

Brought to trial, the suspect was convicted of first-degree murder and sentenced to life imprisonment in the State penitentiary in October 1958.

## SEARCH AND RESCUE WORK

(Continued from page 6)

36 volunteers of this team, under the direct control of the Needles substation, are responsible for the desert and mountain searches in the Needles area. The regular deputies comprise the boat patrol which effects rescue of persons from the waters of the Colorado River. Over 100 miles of rugged river shoreline, accessible by boat only, comes within the rescue area of the boat patrol. Three members of the Aero Squadron reside at Needles and their aircraft are also available to the Needles substation.

In the southeastern portion of the county, which is mostly high desert country, is the Yucca Valley Mounted Posse composed of 20 volunteers. This posse is used for the high desert searches of missing aircraft or missing persons in the Yucca Valley area and the southeastern portion of the county.

The oldest established volunteer unit in the county is the Sheriff's Rangers. This 65-man uniformed group is available for use in any part of the county for desert, foothill or low mountain searches of any type.

Established about 2 years ago, the Underwater Rescue Unit is the most unique search and rescue group in the San Bernardino County sheriff's office. This volunteer group, consisting of 10 men, is ready to perform searches in any part of the county or State. Six of the 10-man unit are ex-Navy underwater demolition team men, better known as "frogmen." Equipped with rubber diving suits, aqua lungs and boats, the unit is prepared to search lake bottoms at elevations of 7,000 feet, rivers in the desert area, or are prepared to leave the county and conduct underwater searches in ocean waters along the coast of California.

These volunteer search and rescue units are not merely names on pieces of paper or on file cards. Each unit conducts at least one training mission each month and, in addition, holds one organization meeting each month. Each unit has its own elected officers, constitution and bylaws. Periodical inspections of the units are made by the sheriff or his designated representatives. The various volunteer search and rescue units are backed by a sheriff's reserve at central headquarters and at each of the nine substations located throughout the county. The 800 uniformed

volunteers of the sheriff's reserve assist the regular deputies at special celebrations and events, and also assist the United States and State forestry services in fire prevention patrols. Each of the members is required to attend at least one training class and one business meeting each month.

We feel that our search and rescue programs and operations form a vital part of our law enforcement work. The sheriff's office of San Bernardino County deems itself fortunate and is proud that the citizens of this county and the budgetary powers have allowed it to do the job which all law enforcement officers are under oath to do, namely, the protection of life and property.

### HEEL PRINT EVIDENCE

In October of 1957, the Louisville, Ky., Police Department submitted the shirt, jacket, and trousers of a 46-year-old man who died as a result of a crushed chest and other injuries received from a fight with an unknown person or persons. Also submitted was a pair of shoes belonging to a suspect.

Examination in the FBI Laboratory disclosed that the heel prints on the victim's jacket and shirt matched the heels of the suspect's shoes. The heel prints were apparently made while the subject jumped up and down on the victim's chest.

On November 25, 1957, the FBI was advised that the suspect entered a plea of guilty to voluntary manslaughter and received a sentence of 15 years in the penitentiary.

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### POSTER

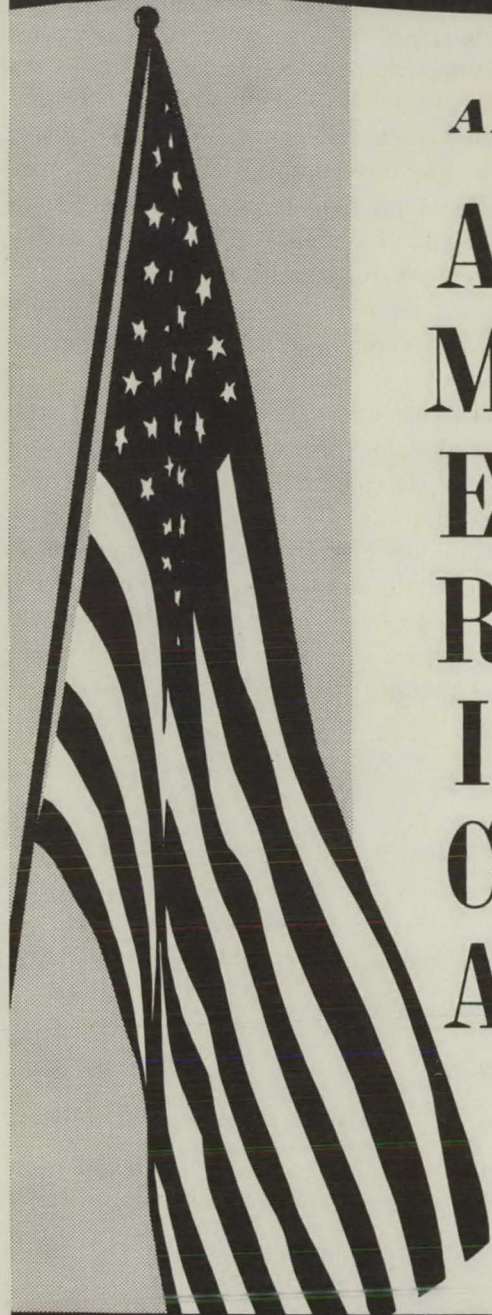
*On the adjacent page there appears a poster concerning the measures individual citizens can take to combat the menace of communism and to preserve the traditions and heritage of America. Public apathy concerning a national problem such as the communist threat is indeed dangerous. Copies of the black and white illustrated poster for display purposes are available free of charge to heads of business and industrial firms, civic and patriotic organizations, and other interested groups upon request to the Director, FBI, Washington 25, D.C.*

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# WHAT YOU CAN DO TO FIGHT COMMUNISM



## AND PRESERVE

**A** lert yourself -- learn the true nature and tactics of communism.

**M** ake civic programs for social improvement your business.

**E** xercise your right to vote; elect representatives of integrity.

**R** espect human dignity -- communism and individual rights cannot coexist.

**I** nform yourself; know your country--its history, traditions, and heritage.

**C** ombat public apathy toward communism--indifference can be fatal when national survival is at stake.

**A** ttack bigotry and prejudice wherever they appear; justice for all is the bulwark of democracy.



**J. Edgar Hoover**

DIRECTOR, FEDERAL BUREAU OF INVESTIGATION

# PATRIOTISM IS EVERYBODY'S JOB!

# WANTED BY THE FBI

**EDWIN SANFORD GARRISON, with aliases: James Brown, George Coleman, James Gardner, Edwin Garretson, Edward Sanford Garrison, Gary Garrison, George E. Garrison, George E. Garry, George E. Martin, George F. Martin, George Walker, George E. Williams, George Walter Williams, "Brownie" and others**



## ***Unlawful Flight To Avoid Confinement (Robbery)***

Edwin Sanford Garrison has recently been placed on the FBI's list of "Ten Most Wanted Fugitives" for a second time.

Initially placed on the "Top Ten" on October 26, 1953, Garrison was then being sought for unlawful flight to avoid confinement after escaping from an Alabama prison. Eight days later, Garrison was apprehended by FBI Agents and Detroit, Mich., police officers when an alert citizen observed his photograph in a newspaper and notified authorities.

On August 23, 1958, Garrison again escaped from confinement and has since remained at large.

## ***Process***

A Federal complaint was filed on August 25, 1958, at Montgomery, Ala., charging Garrison with unlawful interstate flight to avoid confinement after conviction for the crime of robbery.

## ***The Criminal***

Garrison has a criminal record dating back over a period of more than 30 years and listing con-

victions for armed robbery, burglary, grand larceny, arson, kidnaping, and murder. He has twice received life sentences and at the time of his escape, was serving joint sentences of 15 to 20 years for burglary and grand larceny and life for robbery.

This fugitive is reportedly a mathematical genius and is referred to as a "human adding machine." He is said to be capable of mentally computing arithmetical problems faster than other individuals can on a calculating machine. Garrison is described as an excellently qualified office clerk, bookkeeper, and accountant. Following apprehension after a previous escape, Garrison stated that he had gained a livelihood by doing accounting and tax work for small businesses.

The subject reportedly has false teeth, suffers from acute sinus trouble and, on occasions, drinks excessively.

Garrison's past deeds have revealed him to be a cunning and vicious criminal. Among the more sordid of his past criminal accomplishments was the ruthless murder of a 5-year-old child. Former acquaintances describe him as "dangerous as a rattlesnake" and he reportedly will shoot without hesitation to avoid capture. Officials at the prison from which Garrison escaped consider him the most dangerous man to have escaped in recent years.

## ***Caution***

Garrison reportedly will violently resist arrest. He has a record of several escapes from penal institutions. Garrison has been armed when arrested. He should be considered armed and dangerous.

## ***Description***

Edwin Sanford Garrison is described as follows:

Age.....	59, born March 25, 1900, Newport, Ky. (not supported by birth records).
Height.....	5 feet 9½ inches.
Weight.....	137 to 143 pounds.
Build.....	Slender.
Hair.....	Grey.
Eyes.....	Blue.
Complexion.....	Medium.
Race.....	White.
Nationality.....	American.
Occupations.....	Accountant, bookkeeper, auditor.

Scars and marks----- 2 dim scars left side of forehead, scar right side of forehead, 1½-inch scar inner right eyebrow, scar on right cheek, ¼-inch scar left side upper lip, pitted scars on back of neck, scar on back of left hand, scars on back of right hand and wrist, ½-inch scar left ring finger, ¾-inch scar left index finger, burn scar lower right leg, burn scar lower left leg, 2½-inch scar on left biceps.

FBI Number ----- 32,852

Fingerprint classification ----- I 31 W IOO 22  
I 28 W OII

### Notify FBI

Any person having information which may assist in locating this fugitive is requested to notify the Director of the Federal Bureau of Investigation, United States Department of Justice, Washington 25, D.C., or the Special Agent in Charge of the nearest FBI field office, the telephone number of which is listed on the first page of local telephone directories.

### SHOE PRINT FILE

The FBI Shoe Print File contains photographs of rubber and composition heel and sole designs.

### RAPIST CONVICTED

Early on the morning of May 3, 1957, an unknown man broke into a home in Hampton, Va., and feloniously raped a woman resident who was 4 months pregnant at the time. The victim's husband returned home and encountered the rapist before he could escape. During the struggle, the attacker lost his cap.

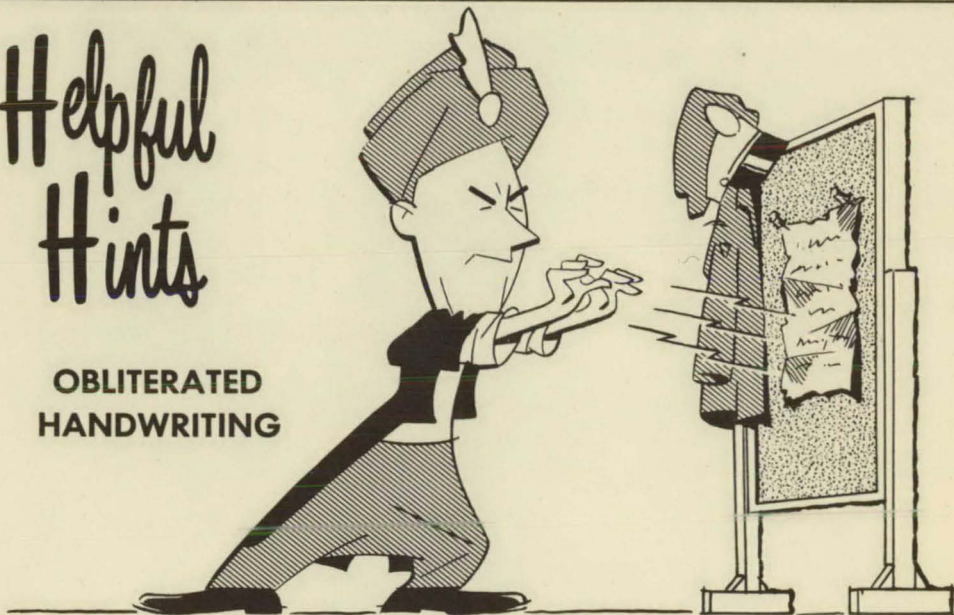
Later, a numbers slip was found inside the cap. Investigation by the Hampton, Va., Police Department resulted in the location of a numbers book in the home of a suspect. This suspect was identified by the victim's husband as the person with whom he had struggled and the victim identified his voice as that of her assailant.

The numbers slip found in the cap left at the victim's residence, together with the numbers book found at the home of the suspect, was submitted to the FBI Laboratory. Examination of these articles disclosed that the edge of a stub in the numbers book matched the torn edge of the numbers slip found in the cap.

At the trial of the suspect an FBI Laboratory expert testified to the results of his examination. The subject was subsequently found guilty and was sentenced to serve 10 years on the burglary charge and 40 years, not to run concurrently, for the rape charge.

Helpful  
Hints

OBLITERATED  
HANDWRITING



DOCUMENT EXPERTS ARE FREQUENTLY ABLE TO  
MAKE FADED WRITING VISIBLE AND READABLE



UNITED STATES DEPARTMENT OF JUSTICE  
FEDERAL BUREAU OF INVESTIGATION  
WASHINGTON 25, D. C.

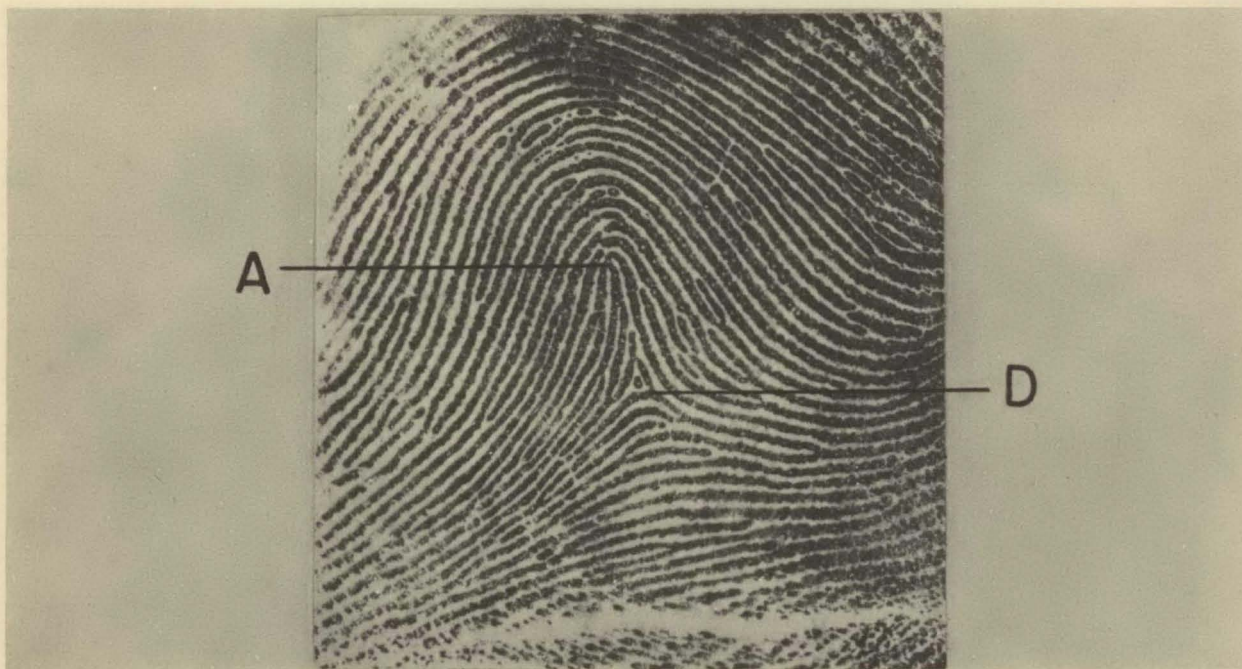
OFFICIAL BUSINESS

RETURN AFTER 5 DAYS

POSTAGE AND FEES PAID  
FEDERAL BUREAU OF INVESTIGATION

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## *Questionable Pattern*



The questionable pattern shown here is classified as a tented arch and is referenced to a loop. The only possible recurve is spoiled by an appendage attached to the shoulders of the recurve at a right angle at point A. The delta formation is located at D.